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THE EFFECTS OF THE EEC AND THE EFTA ON TRADE FLOWS:

A CROSS SECTIONAL ANALYSIS

by

Munawar Iqbal

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Abstract

Since World War II a number of preferential trading blocs have come into existence, of which the European Economic Community (EEC) and the European Free Trade Association (EFTA) are the most successful. The core of all such arrangements has been that the members of each would extend to their partners favours and privileges--especially free access to their markets--not available to others. For members, this means a larger market and a better allocation of resources. For outsiders, however, this involves intensified discrimination. As a result, trade among the members is expected to increase and that with outsiders to decrease relatively. Some studies have measured these effects, but none of them is entirely satisfactory.

This thesis improves upon the existing techniques by developing an alternative method of measuring the trade effects of the EEC and the EFTA. A gravitational model of trade flows is employed, using cross-sectional data. The preference effects of the trading blocs are incorporated by including dummy variables along with other independent variables in a multiple regression equation. Separate equations are estimated for each year of the 1950-70 period and the pattern of coefficients

analysed. Further, the trade effects for different groups of countries are evaluated. Finally, the import performance of these blocs is reviewed with a special reference to developing countries.

The analysis reveals that the EEC had significant trade creation as well as trade diversion effects. The effect of the EFTA, on the other hand, mainly took the form of trade diversion. Also the effect of the FEC was more pronounced. The results were further supported by the finding that the "degree of preference" created in favour of members was higher in the EEC than in the EFTA. Further, the analysis of regional effects indicated a diversion effect of both the EEC and the EFTA against all groups of countries considered except one comprising Greece, Ireland, Spain and Turkey. In case of each bloc, the strongest diversion effect was that against the other.

The import performance of these blocs shows that they have been turning inward. Developing countries have especially lost ground. Their share in the West European market has declined in all product categories except fuels.

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I will fail my duty if I do not record my deep sense of gratitude to Dennis Maki who inspired in me a sense of confidence at every stage and for his capable supervision. I drew upon his time very lavishly.

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Last, but not the least, I am grateful to Barbara Barnett who typed it with great patience and expertise.

The remaining errors or omissions, if any, are my personal property to which no one has any title.

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CHAPTER ONE

CUSTOMS UNIONS -- SOME THEORY AND PRACTICE

Section 1

Introduction

The world trade statistics for the period since World War II reveal a rising trend towards economic regionalism. The European endeavours to establish some sort of economic cooperation were only a beginning of a world-wide movement. The European Economic Community (EEC), the European Free Trade Association (EFTA), the Latin American Free Trade Association (LAFTA), the Central American Common Market (CACM), the Maghreb Economic Community (MEC), and many other regional arrangements are a product of this movement.

In most of these schemes the political urgencies were as important as if not more than the economic ones. One reason for the formation of the EEC--the most successful and the most visible of these--was, for example, the desire to restore Europe to a place of dignity in the world. Compared to such colossal powers as the U.S.A. and the U.S.S.R., it was felt that individual European states had been eclipsed to a point of

insignificance. If Europe was to have some say in the world affairs vis-a-vis U.S.A. and U.S.S.R. and not become merely a footnote to history, individual nations would have to combine and speak with a unified voice. Another reason was the wish to institutionalize the rapprochement between Germany and the other members, especially France.

On the economic side, the main argument for forming the EEC was that none of the parties was large enough to command the immense amount of research and investment needed to launch the economic revolution heralded by the advent of the atomic age. It was argued that national markets were too small to permit the optimum use of the new production techniques that were becoming available, and that the static and dynamic effects of a customs union would be favourable for world welfare.

In general, regional customs unions and free trade areas imply an acceptance of the logic of free trade but an acceptance restricted by political and nationalistic considerations to a limited area. The justification in terms of free trade doctrine may be that so long as "international integration" is hindered by cultural, religious, economic and political differences, "regional integration" may be the second best since economies of the large market, the division of labour and specialization, the competitive spur, and the allocative efficiency can be sufficiently, if not fully, realized within such an area.

The core of all new regional arrangements was that the members of each would extend to their partners favours and privileges not available to others. In each of these some--and sometimes all-- partners had signed the General Agreement on Tariffs and Trade (GATT) and so had committed themselves to policies of non-discrimination. However, those forming these new institutions did not ask for a waiver of their non-discriminatory obligations under the GATT, but rather asked that the new arrangements be recognized as qualifying for customs union or free trade areas. Customs unions and free trade areas have traditionally been treated as legitimate exceptions to the most-favoured-nation principle. Thus, article XXIV of the GATT provides for the exemption, under certain conditions, of customs unions and free trade areas from the general rules aimed at the abolition of tariff preferences and discrimination.[1]

This study looks into the effects of the EEC and the EFTA on trade flows. The rest of this chapter provides the theoretical and historical background. Chapter two contains a survey of the existing techniques of measuring the integration effects highlighting their shortcomings. In chapter three an alternative technique for arriving at the trade creation and trade diversion effects has been developed and these effects estimated. In chapter four, the question of whether or not the incidence of the Common External Tariff of the EEC is higher than the national tariffs it replaced has been explored. In

4

this context the concept of the "rate of discrimination" has been expounded. A new concept, "degree of preference" has been developed and estimated. Chapter five documents the importance of the EEC and the EFTA in world trade especially for the developing countries, and reviews the import performance of these blocs. Finally, chapter six gives a summary of the conclusions.

Section 2

The Political Economy of Customs Unions

The theory of customs unions is of relatively recent origin, but the theoretical developments have kept pace with the customs unions themselves. The two main questions which have been addressed are: (i) what is the economic rationale, if any, for forming customs unions, and (ii) what are the economic effects of a customs union, once established? In this chapter I review the relevant parts of this theory. My main interest is with that part of the theory which deals with the effects of customs unions on trade flows and the efficiency of resource allocation.

The pioneering work in developing the economic theory of customs unions was done by Jacob Viner and James Meade. Their analysis was mainly confined to a study of the effects of customs unions on welfare. The question of the "economic rationality" of customs unions was largely ignored because of the Vinerian belief that customs unions are best viewed as essentially non-economic institutions. Lately, however, some economists have attempted to develop an "economic" theory of the formation of customs unions on the basis of a divergence between private and social productivity and presence of externalities. The economics profession is not as yet convinced that this provides a general economic argument for customs unions, however. This underlines the importance of empirical investigation to ascertain the economic costs or benefits of customs unions.

The earliest customs union theory was largely embodied in the oral tradition, for it hardly seemed worthwhile to state it rigorously. The argument was simple. Free trade maximizes world welfare; a customs union reduces tariffs and is a movement towards free trade; a customs union will, therefore, increase world welfare even if it does not lead to a world-welfare maximum.

Viner argued that the above contention is not without qualifications. So far as its members are concerned, a customs union does introduce free trade, but since this action is limited to a few, it involves intensified discrimination against outsiders. It affords an opportunity for members to displace from their markets the imports from non-members. To the extent that it displaces the low cost sources of supply, a customs union would mean a less efficient allocation of resources and hence a decrease in world welfare. Focusing on this location-of-production effect, Viner developed the fundamental theoretical concepts of trade creation and trade diversion.

Section 3

Trade Creation and Trade Diversion:

A Comparative Static Analysis

Formation of a customs union may affect resource allocation in two ways: (i) the new supply from a partner country may displace high-cost domestic production, hitherto protected by a tariff. (ii) The new intra-union supply may displace a member's imports from a low-cost source outside the union. As an example of the first, consider the following cost position:

<u>USA</u>	<u>ITALY</u>	<u>FRANCE</u>	
\$100	\$120	\$150	(Original cost position)
\$160	\$192	\$150	(60% duty is imposed by France)
\$160	\$120	\$150	(After Italy and France form customs union).

Before the formation of the customs union, the domestic producers supply the market at \$150. But after the union is formed, Italian production enters the French market at \$120 and displaces the higher-cost domestic production. This is called "trade creation". Whereas international trade did not exist before, it would have been created. It results in a better utilization of resources through specialization. For an example of the second, suppose the duty had been only 30%. The situation would appear as follows:

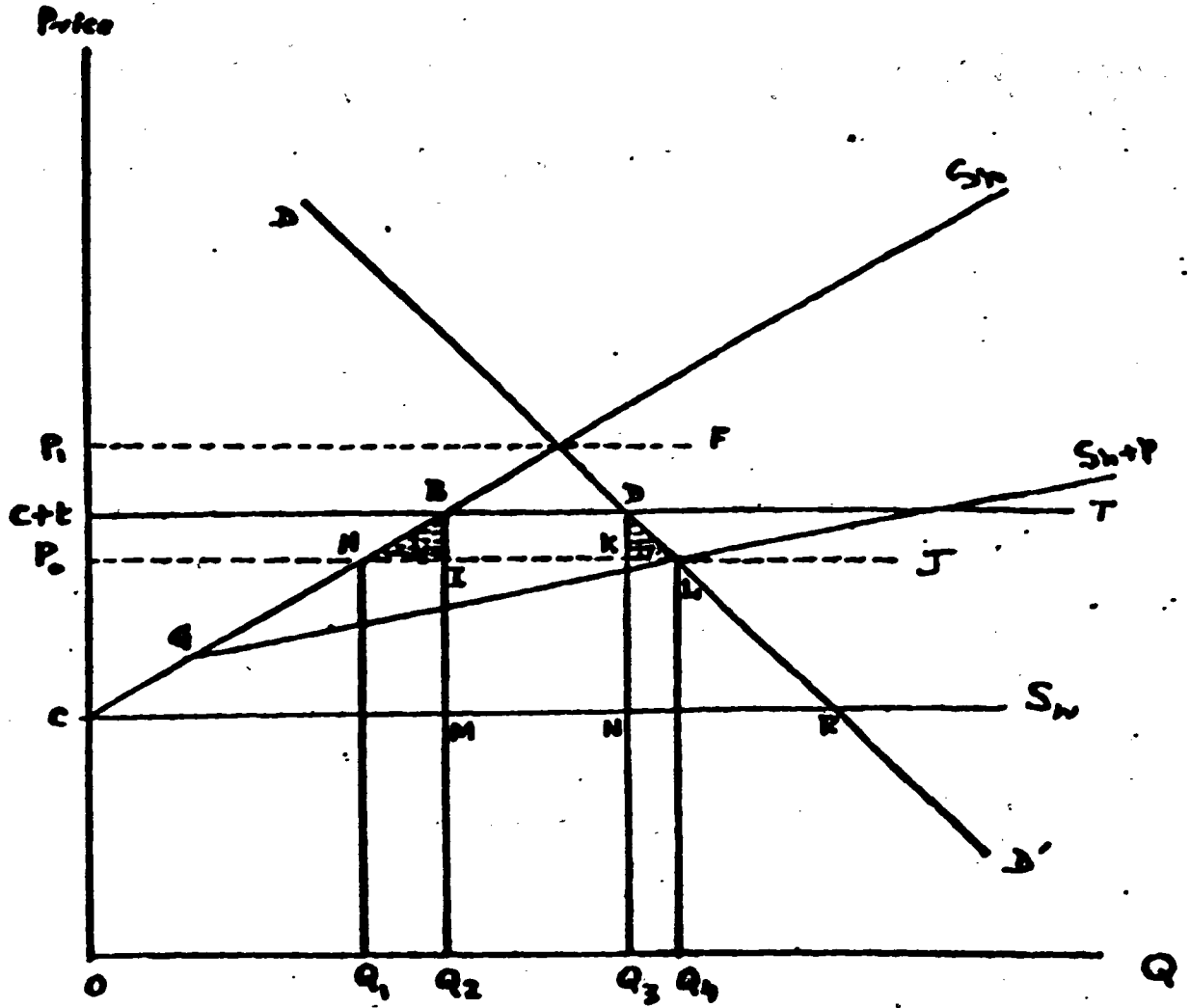
<u>USA</u>	<u>ITALY</u>	<u>FRANCE</u>	
\$100	\$120	\$150	(Original cost position)
\$130	\$156	\$150	(30% duty is imposed by France)
\$130	\$120	\$150	(After Italy and France form customs union).

Before the customs union, France would import from the US at a price of \$100 and with a 30% duty. After the union is formed Italy will displace previous imports from the US -- a low cost source. This is called "trade diversion". It reduces the efficiency of world resource utilization.

The differences in the unit costs thus give rise to trade creation and trade diversion. These two constitute the production effects of a customs union. An estimate of the net production effects can be made through a comparison of the amount of trade created (volume of trade creation multiplied by the difference in cost per unit) and the amount of trade diverted (volume of trade diversion multiplied by the difference in costs). This can best be seen in the following diagram:

Figure 1.1

Trade Creation and Diversion: Partial Equilibrium



In Figure 1-1, the curve $D D'$ is the home demand curve; S_h is the supply curve of domestic producers; S_{h+p} is the supply curve of the home-plus-partner countries, assuming that the partner's goods are admitted duty free; and S_w is the world supply curve. For greater generality, increasing costs have been assumed in the home and partner countries. However, it is assumed that the home country is small compared to the rest of the world, so that the world supply curve, S_w will appear horizontal in this market, even if there are increasing costs. The import price from ROW is OC . If the home country imposes a uniform, non-preferential tariff of t per unit of imports, the relevant supply curve is CBT and the equilibrium is found at D . Then quantity OQ_3 will be consumed, of which OQ_2 will be produced at home and the remainder $Q_2 Q_3$ will be imported from the lowest-cost (ROW) supplier. (It may be noticed that the welfare loss due to protection is equal to the sum of the two triangles of deadweight loss, $CBE + DDE$.)

Now suppose that countries A and B form a customs union. The effective supply curve will now be CGS_{h+p} . In the new equilibrium OQ_4 is consumed at a price OP . The new equilibrium

is characterized by a lower production at home (OQ_1), increased consumption OQ_4 and increased trade $Q_1 Q_4$. Trade creation is measured by the reduction in the size of the original deadweight triangle losses by an amount equal to the sum of the two smaller shaded triangles, $BIH + DKL$. Trade diversion is measured by $MIKN$, which takes the form of lost tariff revenue.

As can be seen from figure 1-1, depending on the elasticities of various demand and supply curves, the size of the pre-union tariff, and differences in the costs, the relative magnitudes of the gains from trade creation, and the losses from trade diversion may lead to net welfare gains or losses. There can be no general presumption as to which of the two will dominate.

The case we have analyzed above is the general case where both trade creation and trade diversion are observed. As special cases, it may be noticed that if the tariff is CP_1 or more, there will be only trade creation, and if the tariff is CP_0 or less, there will be only trade diversion. In the first case, the effective world supply curve (including the tariff) lies above $P_1 F$, and the entire local demand is supplied out of local production. If a union is formed, the effective supply curve

becomes CGS_{h+p}, partner displaces some of the high-cost local production, and the local production drops to OQ₁, giving rise to trade creation. In the second case, with a tariff equal to CP₀, the effective supply curve is CHL, consumption is OQ₄, and the domestic production is OQ₁. The formation of the union will leave unchanged the price, quantity consumed, and level of local production. However, the higher-cost partner country will displace the lowest-cost world supplier. This is a case of pure trade diversion.

To sum up, formation of a customs union provokes two contrasting forces--a trade-creating force resulting from the elimination of protection of domestic producers from their counterparts in partner countries, and a trade-diverting force resulting from the increased protection granted to domestic producers vis-a-vis third country producers through the extension of their protected market to the partner country. There is no logical necessity that one should dominate the other.

This latter conclusion has led the analysts to a consideration of the factors which influence the production effects.

determinants of Production Effects:

Certain factors which affect productive efficiency, play an important role in determining the welfare effects of a customs union. In a static framework, complementarity and competitiveness, size of the union, transport distances and tariff levels may be regarded as the main determinants of the production effects. These factors are discussed below.[2]

(1) Complementarity and Competitiveness:

The terms complementarity and competitiveness have been given different meanings. According to Ellsworth, the manufacture of similar goods can be the criterion for the competitiveness of the economies merged in a customs union. In more recent interpretations, the terms "rival" and "complementary economies" have been used for economies with "similar" and "dissimilar" costs.[3]

Concerning the advantages or disadvantages of complementarity or competitiveness of economies, there are two schools of thought. Some economists--mainly Viner and Meade--are of the opinion that the advantages of a customs union will be greater the greater is the degree of rivalry of the union members prior to the customs union.[4] Conversely, complementarity between the economies of

the union members will give rise to negative production effects.

On the other hand, Makover and Horton[5] hold that the benefits arising from a customs union are enhanced when its members are complementary. According to these authors, countries with widely different production advantages stand to gain most through the formation of a union. I believe the Viner-Heade argument to be more reasonable, because the more similar the production patterns before union, the more competition the union will stimulate and the greater affect will it have in displacing uneconomic units. As a matter of fact the economic rationale for customs unions (i.e. movement towards free trade) relies on such a competition being taking place.

(2) Size of the Union:

There is again a divergence of opinion as to the effects of the size of a union on world welfare. Viner, Heade and Tinbergen hold that the positive production effects of a customs union will be greater the larger the area of the union. Some other economists--Duncan, Hawtray and Wilhelm Hopke--maintain exactly the opposite.[6] These latter authors envisage modifications in economic policies as the area of the union.

increases. They maintain that while small nations are interested in the international division of labour, large nations are more inclined towards autarky, since protectionist interests can have greater scope in a larger nation. I think there is no reason to hold such an a priori view and the recent developments in Europe do not bear it out.

The Viner-Heade argument is more convincing. They maintain that, other things remaining the same, a larger economic bloc increases the potential scope for the internal division of labour and provides more chances for the reallocation of production. Moreover, the possibility of trade diversion is also reduced with successive increases in the union size.

Accepting the view that an enlargement of the union increases potential benefits, the question is how the size of the union can be measured. Various definitions of market size have been suggested and subsequently challenged. After reviewing some of these Balassa concluded that volume of production--the "yardstick" provided by Allyn Young--is the most appropriate. According to this definition, the size of the market for a union can be measured by its gross national product.

(3) Transport Distances:

Many empirical studies have indicated that geographical distance has a considerable effect on economic relations between nations. According to the findings of the German National Bureau of Statistics, a fairly high negative correlation exists between geographical distance and the flow of trade between the 23 areas of the World covered by their study. Similar results have been reached in studies on internal trade by Rutledge Vining and by Isard and Peck.[7]

However the importance of "economic distance" rather than "geographical distance" is considered more relevant for evaluating the relative gains of a customs unions. The former concept is based on the costs involved in the transportation of goods rather than actual mileage. In some cases the "economic distance" between two locations, A and B, may be smaller than that between B and C, even though the "geographical distance" is greater. It may be so because of better transportation facilities and/or continuity of economic activity across national boundaries between the first two locations. In this context, a customs union will have beneficial effects to the extent that it establishes the continuity of economic flows disturbed by national boundaries.

(4) Tariff Levels:

The production effects of a union will tend to be positive (a) the higher the average level of tariffs of the participating countries before the union (b) the lower the common external tariff of the union against third countries and (c) the lower the level of tariffs in export markets outside the union. Moreover, from the point of view of third countries it is notable that those countries which have been trading mostly with low-tariff members of the customs union, will suffer more from trade diversion due to the customs union.

Consumption Effects

Viner's analysis implicitly assumed that commodities are consumed in some fixed proportions which is independent of the structure of relative prices. He therefore, ignored the welfare effects of the substitution between commodities resulting from changes in relative prices which necessarily accompany a customs union. This shortcoming has been overcome by the analyses of Meade, Lipsey and Gehrels.[8] We will not go into the details of that analysis here. It is sufficient to note that their analysis shows that similar to production effects, consumption effects could serve either a welfare-increasing or welfare-decreasing function.

Section 4

Trade Creation and Trade Diversion:

A General Equilibrium Approach

We now present briefly the arguments about trade creation and trade diversion in terms of general equilibrium analysis for a small country A.

Consider Figure 1-2 [9] in which we show country A's conventional production possibility frontier with initial equilibrium production at P_0 and consumption at W_0 . The line CC' is the price ratio available for trade with country C. A tariff on the import of good X results in the domestic price ratio TT' , which prompts producers to be at P_0 on the production frontier. Now suppose country A forms a customs union with country B which affords it the possibility to trade at the price ratio of partner country represented by BB' . Before union, with the same tariff rate applicable to imports from country B and C, it was not profitable for country A to import from B. But after the preferential elimination of the tariff country A is in new equilibrium with production at F_1 and consumption at W_1 . Imports of good X from B have replaced those from C.

The gains and losses from the formation of the customs union can be measured by means of a Slutsky compensating income variation taken at the new price ratio. For this purpose we consider what income, measured in terms of good X, is required at the new price ratio to attain the initial income bundle of X and Y which country A enjoyed before the union. In Figure 1-2, the quantity OB_2 represents the value of income in terms of good X at W_0 expressed in the new relative price. The value of income in terms of good X attainable by country A if it had remained at its initial point of production P_0 is OB_3 . As can be seen, the diversion of trade from country C to B causes a reduction in income of B_2B_3 of good X. This diversion takes place whenever formation of the union leads to a switching of suppliers, because in this case it must be true that the relative price at which country A can acquire its import good X is less favourable than before the union. The trade creation effect is measured by B_3B_1 which is gained by the increased efficiency of production in moving from P_0 to P_1 .

In the case described above, trade creation dominates and hence it is seen that welfare increases as the community

moves to a higher consumption level, W_1 . It can easily be shown
 that this may not happen. For example, we can imagine a
 situation where the initial equilibrium is W_0 , which lies outside
 of the trade opportunity curve $B_1 B'_1$, attainable after the
 formation of the union. Under these conditions B_1 would lie
 between B_2 and B_3 , trade diversion would dominate and
 the highest attainable welfare position would lie below that
 reached before the union.

Section 5

Search For An Economic Rationale for Customs Unions

The resource allocation and consumption effects which have been discussed above may be considered to be a "possible" rationale for customs unions. However, Cooper and Massell challenged this.[10] They established that a non-preferential tariff policy is necessarily superior to customs unions as a trade liberalizing device. They argued that analytically the welfare effects of a customs union can be split into two components: (a) a tariff reduction component, and (b) a pure trade diversion component. The tariff reduction component is the sole source of any gain in consumer's welfare that might result from a customs union. It accounts for both trade creation and the consumption effect. Using as a point of reference an appropriate policy of non-preferential protection, a customs union necessarily results in pure diversion, and is consequentially "bad" in the traditional welfare sense.

The Cooper-Massell argument can easily be established using Figure 1-2. For this purpose, compare the gain that accrues to the home country after forming the customs union (B B'), with that which would accrue to the country as a result of a given non-preferential reduction of its tariff involving the same change in domestic prices. The effect of reducing the tariff and thus the tariff-inclusive price to P B is again to shift

production to P_1 , and if it is assumed that the government returns the tariff proceeds to consumers, to shift consumption to W_2 . If it is assumed that the tariff proceeds are kept by the government, the new consumption point will be at W_1 and $W_1 W_2$ is conceived of as a gain to the government. In any case the total value of gain of the country, measured in terms of good X will be equal to $B_3 B_4$. The amount $B_1 B_4$ represents the difference between the customs union and an equivalent policy of non-preferential tariff reduction, which takes the form of tariff revenue but represents the real resource cost of diverting demand from a low-cost foreign to a higher cost partner source. The welfare effect of a customs union has two components: a pure tariff reduction component ($B_3 B_4$) and a pure trade diversion component ($B_3 B_1$). Thus, compared to a policy of non-preferential tariff reduction, a customs union necessarily results in pure trade diversion and is consequently inferior to the former from a resource allocation point of view.

By eliminating resource allocation as a possible economic rationale for a customs union, the Cooper-Hassell analysis has had the effect of focussing attention on three other potential sources of gain from a customs union: the public good argument for

protection, the terms of trade effects and the dynamic effects. Each of these will be discussed briefly.

Public Goods Argument

Cooper-Massell have argued that the essence of the problem of rationalizing customs union on economic grounds is that classical trade theory with its free trade orientation is, with a few exceptions, unable to explain what motivates a tariff. What is needed is an "economic" theory of protectionism, whose development would allow a comparison of non-preferential tariff policy with a customs union as alternative protectionist rather than trade-liberalizing mechanisms. This is the task undertaken by Harry Johnson and Cooper-Massell in independent analyses. They achieve the required reorientation of the theoretical framework from free trade to protection by introducing the concept of "public goods" into the community's social welfare function along with private goods.[11] In these models the form of the public good is a collective preference for certain types of economic activity, namely industrial production, which is assumed to yield the community satisfaction over and above that obtained through the private consumption of industrial products. In fact the public good can take any number of forms, and thus is potentially applicable to a wide variety of different situations. The Common Agricultural Policy of the EEC, for example, can be rationalized by these models if it is

assumed that a public preference exists for agricultural rather than industrial production.

The danger with the Johnson-Cooper-Massell type models, is that they lend themselves easily to abuse by governments as a justification for whatever they might choose to do. As is well known from the famous infant-industry argument for protection, the problem is operational rather than conceptual. There may be, in certain cases, a perfectly valid argument for protection on public goods grounds, but the argument is not a general one. The problem, on the one hand, is identifying those activities that have legitimate public good characteristics and which do not, and, on the other, determining whether protection is indeed required. In the event that a valid argument for protection can be established, there is the further problem of an efficient protection mechanism. It has been argued that customs unions are not the best mechanism even in that case.[12] While being more efficient than a non-preferential tariff, they are inferior to a direct production subsidy. Thus so long as governments have the option of granting and adjusting direct production subsidies, a customs union will not be the most efficient protective mechanism. An economic rationale for customs unions on public goods grounds can only be established if for political or other such reasons governments are denied the use of direct production subsidies.

Terms of Trade Effects. A more convincing argument for a customs union is related to its terms-of-trade effects. If a country is assumed large enough to affect the prices it pays in international markets for its traded goods, non-preferential tariff reduction will provoke a terms of trade loss, whereas a customs union, under certain circumstances, may improve the union's terms of trade. However, it is hard to say on a priori grounds which way the terms of trade of the union will move. Two important factors which affect the union's terms of trade in the short run are (i) elasticity of the reciprocal demand of the union members and (ii) size of the union.

(i) Elasticity of Reciprocal Demand:

The trade diversion effects of a union, which involve a shift in the reciprocal demand of union members for foreign goods, tend to improve the union's terms of trade. As a result of the reduced demand for products of the outside world, the terms of trade are likely to turn in favour of the union members. The elasticity of reciprocal demand depends upon the elasticities of demand and supply of the goods traded between the union and third countries.

(ii) Size of the Union:

The larger the size of the trading area forming a union, the better position it enjoys in its bargaining with other countries and the better its terms of trade are likely to be with the rest of the world. The size of the union is also related to the elasticity of reciprocal demand. It is believed that the larger the size of the union, the greater would be the elasticity of its reciprocal demand for the products of third countries and the smaller would be the elasticity of reciprocal demand in third countries for the products of the union.

Dynamic Effects:

The preceding analysis dealt with a static framework. There is a consensus that the gains arising in a comparative static analysis of customs union are rather meager. Many economists believe that the real gains arise because of dynamic effects. These include a number of factors which are difficult to measure and do not readily fit into rigorous analytical models. A few of these are discussed below.

(1) Economies of scale. These include economies internal to the firm as well as those internal to the plant. Specialization in production is an increasing function of the market size. A customs union enlarges the market size for producers in many industries

permitting the development of greater specialization and thus, lower costs. A second source of internal scale economies which has found much empirical support in recent years, is the length of run in the production of differentiated goods within the same plant. These economies arise because, when a plant produces less varieties of a product, it can keep lower inventories of inputs and outputs, and idle machine time for switching of cutting and shaping of parts is reduced.

(2) External economies which include enlargement of technical and managerial skills and certain other factors such as economies of specialization, innovation and basic research, are another source of potential gains to members of a union. Research and development of skills is encouraged because the free trade access to a larger market in the customs union permits firms to spread these fixed costs over a larger quantity of output.

(3) Customs union may attract foreign capital by encouraging firms especially multinational corporations, to establish business within the union and thus avoid the common external tariff and avail the benefits of a larger market. It is maintained that the formation of the EEC, for example, has created special incentives for U.S. firms to invest in the EEC.[13]

(4) The union may also eliminate risks and uncertainties of foreign transactions and thus expand trade and investment.[14]

A final point relating to dynamic factors is that since the increased market size affects the growth rate of the union positively, it is believed that the dynamic factors will offset the negative effects of static factors on non-participating countries through the foreign trade multiplier. However, such depends on the income elasticity of demand for imports from non-member countries. Third countries can benefit from the long run income effects of a customs union only if the income elasticity of demand in the union for the products of non-members is high.

Section 6

History of Economic Cooperation in Europe

The free trade movement occupies one of the most significant chapters in the commercial history of Europe. In place of the doctrine of economic nationalism in which each country pursued the mirage of self-sufficiency, it substituted the doctrine of international division of labour and specialization based on comparative advantage. The movement, although economic in content, is political in its inspiration.

The history of cooperation in Western Europe goes back as early as the nineteenth century. The first effective customs union was formed in the name of German Zollverein in 1833, which included eighteen states. It was an important historic precedent. It led to the economic and political unification of Germany and its transformation from a technically backward and mainly agricultural country into one of the leading industrial states on the Continent.

The outbreak of the first World War and the hostilities created because of it led to the break up of Zollverein. After the War certain proposals for customs union on smaller scale came to light but all ended in a stalemate. The outbreak of the second World War dealt a further blow to the movement of European unity. These Wars left Europe--once dominant in the world--much weaker than the United States or the Soviet Union.

On the economic scene, the European economies were on the verge of bankruptcy. The pressure of these circumstances opened the eyes of the Europeans and they began to think again in terms of cooperation in place of competition and co-destruction.

The ball was set rolling by three governments--Belgium, Netherlands and Luxemburg--when they established the Benelux Economic Union in 1944. The movement took on a sense of urgency after the War. The gigantic task of reconstruction of the war-torn economies required close cooperation. The first concrete step towards European cooperation in the economic sphere was taken in 1948 with the setting up of the Organization for European Economic Co-operation (OEEC) whose functions were to distribute Marshall Plan funds, to coordinate investment programmes and to resuscitate intra-European trade. A more decisive turn of events was set in motion in 1949, when Mr. Paul Hoffman, the Marshall Plan administrator delivered a major address before the Council of the OEEC. In this address he made a forthright appeal for European integration. He defined this as the formation of a single large market, within which quantitative restrictions upon the movements of goods, monetary barriers to the flow of payments and eventually all tariffs are permanently swept away.

The motive of Mr. Hoffman in making this appeal was, no doubt, the desire of the United States to see the weakened economies of Western Europe restored as rapidly as possible so that they would cease to be dependent upon United States'

aid. From this time there were two tendencies in Europe. One was led by the proponents of European integration, assured as they now were of U.S. support. The other was led by the British, who preached close co-operation as the alternative to integration. The British did not wish to become too closely involved with the countries on the Continent as they were afraid of the supranational leanings of those promoting European unity. A European Customs Union Study Group had earlier been created only to find that the proposal for a customs union embracing all the countries of Western Europe was still a far cry from reality.

When by 1950 it was evident that economic integration through a customs union was very difficult, efforts were made to bring about integration by sectors. Success was made on these lines with the establishment of the European Coal and Steel Community (ECSC) in 1952, with France, Germany, Italy and the three Benelux countries--the Six--as members. The primary object of the Community was to set up common markets in coal, iron ore, scrap and steel. The experience proved to be a successful one.

Encouraged by the success of the European Coal and Steel Community and the Benelux Economic Union (1944), the Benelux group of countries initiated a proposal for the extension of

economic cooperation and integration between the members of the ECSC at a meeting of the foreign ministers of the Six held in 1955 at Messina. They surveyed six possible fields of integration and decided that those offering the most promise were (1) a common market and (2) co-operation in the field of nuclear energy. They agreed to set up committees to investigate these two possibilities. Under the leadership of Mr. P.H. Spaak the Belgian Foreign Minister, the committee on the common market made rapid progress and was ready with a report that was submitted to the Foreign Ministers of the Six at a meeting held in Venice in May 1956. The Spaak report was approved at this meeting as a basis for the negotiation of a treaty establishing the common market. On March 25th, 1957 the historic Rome Treaty establishing the European Economic Community (EEC) was signed by the representatives of the Six countries and came into force from January 1st, 1958. The Treaty provides for the gradual establishment of a Common Market by developing a single market for the products of the members without tariffs or quantitative restrictions and formation of common external tariffs and trade policies vis-a-vis the outside world. It envisages common policies on atomic energy (through the European Atomic Energy Community), agriculture and transport, gradual elimination of monopolistic practices, co-ordination of economic and social policies, promotion of labour mobility, mutual assistance in financing social security and provision for a fund for European development.

In the meanwhile the British had been intently following developments, more or less on the sidelines. They maintained a very guarded attitude towards the supranational features that were emerging from the deliberations of the Spaak committee. In July 1956 the British submitted their proposal for an all-European industrial free trade area at a meeting of the OEEC. For the next two and a half years the discussions relating to the proposed free trade area became the main pre-occupation of OEEC. The Six in the meantime established EEC. The prospects of tariff discrimination accentuated the British attempts to create an all-European industrial free trade area. The negotiations broke down in 1958 when the French resented a veiled threat of retaliation by the British. The French were concerned about the possible deflections of trade resulting from the varying levels of external tariffs. They pointed to the free access to raw materials and semi-manufactured goods from the Commonwealth enjoyed by the United Kingdom. They contended that new investment would be concentrated in the United Kingdom, where advantage could be taken of preferential treatment both in the Commonwealth and in the proposed association with the Common Market.

The breakdown of negotiations for the free trade area left the British in a quandary. Thus in 1959 they welcomed a Swedish suggestion that OEEC countries outside of the Common Market should form a free trade area amongst themselves. Seven countries

(Austria, Denmark, Norway, Portugal, Sweden, Switzerland and the United Kingdom) responded to this appeal and concluded the Stockholm Convention late in 1959, which established the European Free Trade Association (EFTA).

It did not take the United Kingdom very long to realize that the EFTA could not serve its purposes. Also the success of the EEC was far more impressive than Britain thought. So only eighteen months after the establishment of the EEC, Britain applied for joining it. It was followed by a period of tumultuous negotiations marked by two vetos by France. However, the situation eased after President De Gaulle lost power, and Britain along with Denmark, Ireland and Norway were finally granted entry into the EEC. Norway could not join because of a popular referendum in the country. Thus on January 1st, 1973 the Community of Six turned into a Community of Nine. This enlargement brought with it additional arrangements with non-member countries. In particular the non-applicant EFTA countries negotiated free trade agreements with the Community. Cooperation has also been growing in many other areas especially monetary integration. In short, Western Europe seems to be on its way to the United States of Europe.

Footnotes -- Chapter One

1. A customs Union means that the members, while abolishing tariffs on trade within the union, adopt a common tariff schedule on imports for non-members. In a free trade area the members retain their separate national tariff schedules against imports from non-members but eliminate them on intra-area trade. The relevant clauses of the GATT in article XXIV provide an exception for customs unions or free trade areas so long as the tariffs and trade restrictions are eliminated on "substantially all the trade" between the members, and so long as the tariffs and trade restrictions on non-members are "not on the whole" more restrictive than those previously imposed by the constituent states.
2. The following discussion rests on, Balassa, B., The Theory of Economic Integration, Irwin, Homewood, Illinois, 1961.

3. Makower, H., and Merton, G., "A Contribution Towards a Theory of Customs Union", Economic Journal, March, 1953.
4. Viner, J., The Customs Union Issue, New York: Carnegie Endowment for International Peace, 1950, pp. 51-55.
5. Makower, H., and Merton, G., op. cit.
6. For a summary of their arguments see, Balassa, B., op. cit.: p. 35.
7. For a short description of this analysis and its results see, Walter Isard, Location and Space-Economy, New York: M.I.T. John Wiley and Sons, 1956, pp. 73-75.
8. Heade, J., The Theory of Customs Unions, Amsterdam: North-Holland, 1955; Lipsey, R., "The Theory of Customs Unions: A General Survey", Economic Journal, September 1960; Gehrels, R., "Customs Unions From a Single Country Viewpoint". Review of Economic Studies, vol. XXIV, 1956-57.
9. This figure has been adopted from Grubel, H., International Economics, Illinois: Richard Irwin, 1977, p. 590.
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12. Krauss, H.B., "Recent Developments in Customs Union Theory: An Interpretative Survey", Journal of Economic Literature, June, 1972.
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14. Kreinin, M.E., "On the Dynamic Effects of a Customs Union", Journal of Political Economy, vol. LXXII, 1964.

CHAPTER TWO

A CRITICAL SURVEY OF THE LITERATURE

Section 1Introduction

There have been many attempts at measuring the trade creation and trade diversion effects of a customs union, particularly of the European Economic Community and the European Free Trade Area after their establishment. Unfortunately none of these taken separately can be regarded as entirely satisfactory. Any attempt to quantify trade creation and trade diversion essentially involves measuring what the level of imports of the members of the union would have been in the absence of integration from various sources of supply and then comparing it with the actual trade. In order to estimate what the trade would have been one has to make some assumptions about the underlying parameters in the pre- and post-integration periods. Another issue in the empirical work has been to determine what exactly are the pre- and post-integration periods, i.e. to decide when one would expect the first integration effects to have taken place. A further complication arises because of the fact that there are many variables which affect international trade flows, and all studies are faced with the common problem of isolating (or controlling) the effects of other variables from that of the integration. In view of these difficulties, there is a consensus

among the writers in this field that all estimates of trade creation and trade diversion are affected by ceteris paribus assumptions, by choice of the bench-mark year, by the method of isolating the effects of integration from other variables, by the choice of the length of the pre- and post- integration periods and so on. Therefore, the magnitude of no single estimate can be taken too seriously. It is only the collective evidence derived from studies using a variety of approaches that can provide an idea of the orders of magnitude involved. In this chapter a survey of the existing techniques is provided and in the following chapters an attempt is made to improve upon some aspects of these studies.

Section 2

The Ex-Ante Approach

The empirical studies on trade creation and trade diversion have been of two kinds: ex-ante and ex-post. In the ex-ante models, the authors had to solve two major problems: first, to forecast the imports of the EEC countries in the post integration period on the assumption that the EEC would not be established and second, to forecast the EEC's imports in the post integration period on the assumption that the EEC would be established. To forecast the EEC's imports in the assumed absence of integration, a crucial but perhaps unrealistic assumption has to be made i.e., the relative price elasticities, the income elasticities, elasticities of substitution and parameters of the demand for imports in the post integration period would have remained the same as in the pre-integration period. To forecast the EEC's imports in the post integration period on the assumption that EEC would be established, imports must be computed on the basis of hypothetical changes in internal and external tariffs and the relevant elasticities obtained from other sources or observed in the pre-integration period.

Among the studies in this category, those by P.J. Verdoorn, L.H. Janssen and L.B. Krause are worth mentioning as a representative sample.[1] Both Verdoorn and Janssen used a general equilibrium framework in their investigation and inquired into the effects

of changing one variable--eliminating internal tariffs in the union--on trade flows. Removal of tariffs has two effects on prices: a decrease in average price of that commodity and a change in the relative prices of substitutes. Verdoorn's estimate essentially rested on partitioning the effect of a reduction in the price of an imported good from one source (the member country) into its effect on the average price of imports and its effect on the relative price of the good from that source compared with other sources. The effect of the first price change on import demand depends on the overall elasticity of demand for imports of that commodity and of the second on the substitution or the share elasticity. In arriving at the actual estimates, Verdoorn used average tariff levels to estimate price changes consequent on customs union and "plausible" average values of the two elasticities to estimate the effects on customs union trade patterns. His results did not show any trade creation or trade diversion effects.


Janssen's technique was very similar. He attempted to improve upon it in two ways: by breaking total consumption into domestic production and import demand components and by partitioning the demand effects into income and substitution elasticities. As a result Janssen obtained larger changes in the predicted trade patterns but no substantive change in the conclusion that the effects of the customs union on economic welfare would be negligibly small.

Verdoorn himself notes some of the limitations of this technique: the impact of the abolition of quantitative restrictions, as well as secondary repercussions are disregarded, and the method used has a downward bias in regard to gains forthcoming in effectively protected industries. Balassa points out some further deficiencies. First, the relevant elasticities have been under-estimated which imparts a downward bias in the trade creation and trade diversion estimates. Second, short-run estimates are inappropriate in measuring gains from trade, even in the absence of a downward bias in the coefficients. Over a longer period, existing contracts run out, political and psychological obstacles are overcome, new investments can be made, etc., and the responsiveness of trade flows to price changes is correspondingly higher.

Krause used an entirely different technique to assess the prospective effects of the formation of the EEC. His analysis rests on a comparison of the protectiveness of the Common External Tariff with that of the national tariffs which it replaced. The Common External Tariff was calculated by taking an unweighted average of the French, German, Italian and Benelux tariffs. Krause argued that the protectiveness of CET cannot be determined by merely comparing the resulting increases and decreases in national tariffs required to reach the calculated

level. For a producer within the Community who was previously protected by a high tariff, the most serious challenge will come from low cost producers within the community. The essence of economic integration depends on this kind of competition taking place. Thus, prices of the large low cost producers in the Community will set the competitive level for the entire market. The Common External Tariff will be protective only to the extent that it protects the firms that can survive the internal competitive struggle.

Krause analysed the protectiveness of the external tariff by estimating the amount of protection it provides to the dominant low cost suppliers within the EEC. The dominant suppliers were identified by looking at the trade flows among the member countries before the establishment of the Community. It was assumed that the dominant suppliers of a particular product class were to be found in the country which had the largest share of intra-Community trade in that product class. One can compare the level of the external tariff for each commodity class with the former national tariff of the country with the largest share of intra-Community trade. If the new tariff rate is higher than the old national rate, then the amount of protection it affords is greater than before and vice versa. After a comparison of the common external tariff for 61 three-digit SITC commodity classes with the former national tariffs protecting the dominant



suppliers, he concluded that 75% of all manufactured products would have their protection raised, and by large amounts. As a result of this higher protection to the "Community products" the exports of non-members would suffer substantially.

As far as the question of the level of protection in the EEC before and after its formation is concerned, the problem is not as simple as Krause thought it to be. I will comment on some of the complications involved in chapter four. Here I wish simply to note that many scholars believe that the CET was less protective than the tariffs it replaced and that the evidence on the protectiveness of the CET is far from conclusive. Secondly, his analysis is open to the objections raised against the use of nominal tariffs as a measure of protection as compared to effective protection. Thirdly, Krause asserted that if the production of dominant suppliers could be expanded substantially without a significant rise in costs, then the new higher external tariff would permit these producers to expand sales greatly, both at the expense of high cost producers within the EEC (and thus give rise to trade creation) and of producers of third countries (and, therefore, result in trade diversion). But as Cooper pointed out, that is a big if.[2] The assumption of high supply elasticity, he thought, is open to question. In criticising Krause's argument Balassa noted that the effects of the Common Market on imports from third countries should

properly be considered in two steps: (a) the implications of the averaging of national tariffs, and (b) the discriminatory effects of eliminating duties on intra-EEC trade. The averaging of tariffs by itself is likely to reduce, rather than increase, protection in the European Common Market: low-cost dominant suppliers who compete in the world market would receive greater--but largely unnecessary--protection while the lowering of duties would expose high-cost producers to foreign competition. He further expressed doubts about the possibility of dominant suppliers being able to expand output at constant costs to exploit the possibilities offered by tariff discrimination and to replace third country exporters in the markets of partner countries. He actually showed that the share of dominant suppliers in the intra-EEC trade declined in the period 1958-63.[3]

Section 3

The Ex-Post Approach

The second kind of models are the ex-post ones. The main task of the authors of these models is to estimate imports of the EEC countries in the assumed absence of economic integration. The effect of the EEC is then the difference between the estimated imports of the member countries and their actual imports in the same post integration year. The difficulty lies in constructing the hypothetical estimates. Various methods are employed for this purpose. Usually they involve projecting into the future some pre-integration growth rates under the assumption that these trends would have continued if it had not been for the customs union. The techniques range from simple extrapolation of pre-integration growth rates of EEC imports from internal and external sources to extrapolation of a world trade matrix. Some of the important studies are reviewed below.

One of the earliest studies of the effects of the formation of the EEC on these lines was done by A. Lanfalussy.[4] He suggested that we should compare changes in the share of the European Economic Community, as an import market, in the exports of member and non-member countries and should examine the relative performance of the EEC countries in the markets of the Community and elsewhere. After considering the changes in trade flows between 1958 and 1960 as well as 1960-62, he concluded that

neither the trade creation nor the trade diversion effect was significantly felt.

His method is subject to all the criticisms of the "share approach" which will be discussed later. In addition to those the shortness of the time series that he was working with makes his results highly tenuous.

A similar technique was employed later by Willianson and Bottrill.[5] According to them, the share performance of a supplier in markets where he neither gains nor loses preferential advantages gives a good indication of his hypothetical performance in markets which were in fact affected by integration. In order to separate the effects of trade creation and trade diversion, however, further assumptions were introduced. For this purpose, they utilized estimates of earlier studies (Balassa [1967], and Truman [1969]). Plugging the relevant estimates into their model, they reached the conclusion that intra-EEC trade in 1969 was something like 50 per cent greater than it would have been if the EEC had not been created. They attributed most of this rise to trade creation rather than trade diversion. The harm done to the exports of other countries due to trade diversion in some commodities was largely offset by positive external trade creation in other products.

The method employed by Willianson and Bottrill may be useful

in dealing with changes in export shares. However, in order to arrive at trade creation and trade diversion estimates, the piecemeal approach followed by them is highly undesirable, since the estimates from other studies that they have adopted have serious weaknesses, some of which will be discussed later in this chapter.

Probably the most prominent among the earlier studies is the one by Balassa (1967).[6] He suggested a comparison of ex-post income elasticities of import demand in intra-area and extra-area trade, for periods preceding and following integration. The ex-post income elasticities of import demand were defined as the ratio of the average annual rate of change of imports to that of gross national product. Under the assumption that the income elasticities of import demand would have remained unchanged in the absence of integration, an increase in the income-elasticity of the demand for imports for intra-area imports in the post integration period 1959-65,[7] compared with the pre-integration period 1953-59, would indicate gross trade creation,[8] while an increase in the income elasticity of demand for imports from all sources of supply would give expression to trade creation proper. In turn, a fall in the income elasticity of demand for extra-area imports would provide evidence of the trade diverting effects of the union. On the basis of changes in the average income elasticities in the period 1959-65, he concluded that the evidence provides a clear indication of trade creating effects of the Common Market. Trade diversion was indicated in some

commodity categories but in others there was evidence of "external trade creation", such that the two balance each other out. On an aggregate level, therefore, no trade diversion was observed.

Among other objections that are common to all models of the ex-post kind, Balassa's method of measuring average yearly income elasticities of the demand for extra-area imports by taking the average of the yearly rate of growth of imports, divided by the average yearly rate of growth of GNP in the union is also questionable. The higher the variability in imports relative to the fluctuations in income, the more the income elasticity will be an over-estimate of the real average income elasticity. The method also has a tendency to over-estimate extra-area trade creation if the variability of income is higher in the post integration period than in the pre-integration period. It is preferable to choose a linear regression technique, rather than the above method to compute the average yearly income elasticities of the demand for extra-area imports in the EEC for periods prior to and after the economic integration for three reasons: (i) the statistical significance of the income elasticity can be tested (ii) the percentage of variation in imports which can be explained by the variation in income can be indicated, (iii) a test for the statistical significance of the change in the income elasticity in the post relative to the

pre-integration period can be developed.[9]

In a similar fashion, the EFTA secretariate has attempted to estimate trade creation and trade diversion in the EFTA by projecting pre-integration trends of the share of imports in total consumption on the assumption that "the share of imports from EFTA and from other countries in the apparent consumption of a given commodity in any EFTA country would have developed over the period 1959-65 in the same way as they had over the period 1954-59", had it not been for the EFTA integration. Deviations of actual from expected shares are attributed to the effect of the EFTA. A positive trade creation (TC) in the following expression results from a rise in the share of imports in total consumption in the importing country.

$$TC = M_{65} - [M_{59} - \frac{6}{5} (M_{59} - M_{54})] C_{65} \quad (2.1)$$

where M , C and m stand respectively for imports (from all sources), consumption and the share of imports in consumption. The subscripts denote the years. In this expression $\frac{1}{5}(m_{59} - m_{54})$ stands for the annual average increase in the share of imports in total consumption. When 6 times this is added to m_{59} , it gives the extrapolated share for 1965, which multiplied by C_{65} gives the extrapolated imports for 1965. The difference between these and the actual imports denotes the trade creation

effect.

Similarly, if the share of non-EFTA sources of supply in the consumption of EFTA falls, there is trade diversion. Trade diversion was measured as:

$$TD = N_{65} - [n_{59} + 6/5 (n_{59} - n_{54})] C_{65} \quad (2.2)$$

where N is imports into a member country from non-EFTA countries and n is N/C . The EFTA Secretariate came up with a figure of \$0.37 billion for trade creation and \$0.46 billion for trade diversion, for 1965.

This approach ascribes the entire change in the import consumption ratios of the EEC countries to integration. However, the import consumption ratios could have changed over time even in the absence of integration, because of the general tendency for imports to increase faster than consumption (since the income elasticity of imports is believed to be above unity and the income elasticity of consumption to be below unity), and because of changes in EEC's competitive position, shifts in buyers' preferences and other reasons. Generally, this method would over-estimate trade creation and under-estimate trade diversion.

Because of these inadequacies of the "pure share approach",

Kreinin and Truman have independently developed what is called the "adjusted share approach".[10] Kreinin employed two different methods for isolating the effects of the above mentioned changes from that of integration: (i) adjustment of the changes in the EEC ratios for measurable changes induced by price and income movements, utilizing price and income elasticities obtained elsewhere; and (ii) utilization of the import consumption ratios in a non-EEC country over the 1960's as a guide to what changes in the EEC ratios would have been in the absence of integration.

The first method suffers from inaccuracy of the available price and income elasticities and from the inability to account for non-measurable factors. And the second method is handicapped by the need to assume that the factors affecting the import-consumption ratios changed in an identical fashion in the EEC and the non-EEC "control country" or that the biases involved cancel each other out.

Truman first applied the EFTA Secretariat's pure share approach to the EEC. Later realizing that the approach is based on rather unrealistic assumptions, he experimented with a linear regression model based on time series to separate the effects of income changes and relative price changes from the effects of tariff changes caused by the EEC. Because of the short period of analysis (11 observations), the variability of the data, the poor

quality data on relative prices and tariff changes, and because of other statistical problems his results were not very conclusive. To circumvent the problem of short time series, he pooled time series and cross-section data in a variant of his time series approach. Although the tariff variable gained in importance the statistical results were still unsatisfactory, [11] and he had to rely on ad hoc adjustments to get "meaningful" results.

Generally, in all these studies, the integration effect, whether trade creation or trade diversion, is estimated by the difference between actual imports and extrapolated imports for a post-integration year. The extrapolation of imports is done by a time trend of imports or by relating imports to income or consumption in the importing country. All of these studies suffer from the following drawbacks:

(1) The difference between the actual and estimated imports could be due to (i) changes in income, consumption or some other variable representing macro-economic activity, (ii) autonomous changes in prices in the supplying and importing countries (iii) changes in variables other than income/consumption and autonomous price movements (iv) revision of tariffs and/or other barriers as a result of integration and (v) residual errors. The studies discussed above try to segregate the effect of (i) only. The

remaining difference between the actual and estimated imports would be due to (ii), (iii), (iv) and (v) but it is ascribed to (iv) i.e. the effect of revision of tariff and/or other barriers to trade as a result of integration. Even if prices are included as another variable in the estimating equation, it would amount to segregating the effect of (i) and (ii), so that the difference between actual and estimated imports would be due to (iii), (iv), and (v). It would be still wrong to ascribe it to (iv) only. for this reason the "residual method" used by Balassa, EFTA Secretariate, Truman and others, is highly unreliable for estimating the trade creation and trade diversion effects of integration.

(2) The "integration effect" itself is usually attributed to reduction in tariffs on intra-area trade, whereas the "preference" in favour of partner countries constitutes many other factors as well. These include greater mobility of the factors of production, government policies discriminating against non-members, increased information flows, the establishment of repair services and selling outlets, elimination of the risk that tariff concessions may be reversed, and perhaps most important, the psychological factors emanating from being united.

(3) Almost invariably, the studies ignore the supply side. They concentrate entirely on the demand for imports. However, the

non-member suppliers might lose in EEC markets because of production problems at home, or for other reasons that are not related to changes in demand patterns.

(4) Another problem is the question of how justifiable it is to project past trends of various sorts into the future. The implicit assumption that the pre-integration relationships were "normal" leaves many authors uncomfortable. As Clavaux states "The crux of the entire problem is to establish which relationship should be regarded as 'normal' so that this relationship can be used as a yard-stick for measuring deviating trends".[12] Many authors believe that the pre-integration period used in these studies was not "normal" in the sense that it does not provide an appropriate estimate of the long term income elasticity of import demand.

(5) A related problem is that in the empirical literature there is no agreement on the date on which the first integrating effects on trade flows might have taken place. Concerning the EEC, the Treaty of Rome was signed on March 25, 1957, but was effective on January 1, 1958. Internal tariff reductions started on January 1, 1959, but were extended to non-members. Internal discriminatory tariff reductions started on July 1, 1960. There are three "benchmark" years in the literature. Researchers believing in the announcement or anticipatory effects of the EEC,

prefer 1958 as base year. Those who consider the announcement effects to be negligible prefer 1959 as the base year. Scholars who want to make sure that the discriminatory effects of the EEC on extra area imports are present and who believe in the delayed response of quantity changes to changes in relative prices choose either 1960 or 1961 as the "benchmark" year. As Sellekaerts has shown, the choice of the pre-integration period seriously affects the estimates of trade creation and trade diversion.

Section 4

The Regression Approach

A third approach, to the measurement of trade creation and trade diversion effects, which I believe is the best, has been the application of gravitational models of trade flows to the problem at hand. Gravitational models were developed first by Jan Tinbergen, Hans Linnemann and others, not in the context of economic integration but in an attempt to explain world trade flows. The details of these models will be given in the next chapter. Here we are interested in the applications of those models to economic integration in Europe. The first attempt on these lines was made by Walbroeck (1964). He tried to explain the trade flows between pair of countries by the following formula;

$$X_{ij} = c_i c_j \frac{Y_i Y_j}{r_{ij}^d} \quad (2.3)$$

where X_{ij} is the exports of country i to country j , Y_i and Y_j are the gross national products of the two countries i and j and c_i and c_j are their export and import parameters indicating the "openness" of their economies, r_{ij} is the distance between

them and c is a scale factor. He assumed that the coefficients c_i , c_j and c would remain unchanged over time, and utilized the values of a and b , estimated from cross-sectional investigation of world trade from 1958 to 1962. Comparing the hypothetical trade figures derived by the use of this method with actual trade, he found evidence of trade creation but no trade diversion against imports from North America and from the countries of the European Free Trade Association. Rather external trade creation was observed in the case of these countries. [13]

The assumption that c_i and c_j would remain unchanged over time is highly objectionable. To the extent that domestic high cost production is replaced by partner countries the economies of the integrating countries will become more "open". Further, the use of average income elasticities obtained from a cross-sectional study for making forecasts of EEC imports is not appropriate because these elasticities may be different for different countries. Also, the use of estimates obtained from a single year (1958) for projection purposes is hazardous.

Last but not the least, Aitken (1973) has estimated a gravitational model of trade flows among the EEC and the EFTA countries. [14] It is that model which I have attempted to improve upon in the next chapter, so I will review it in a greater detail.

Aitken estimated the following cross-sectional model using least squares regression for each year of the 17-year period 1951-67.

$$\begin{aligned} \log X_{ij} = & \log b_0 + b_1 \log D_{ij} + b_2 \log Y_i + b_3 \log Y_j + b_4 \log N_i \\ & + b_5 \log N_j + b_6 \log A_{ij} + b_7 \log P_{ij}^{EEC} + b_8 \log P_{ij}^{EFTA} \\ & + \log e_{ij} \end{aligned} \quad (2.4)$$

where X_{ij} is the dollar value of country i 's exports to country j measured according to country j 's import data, Y_i and Y_j are the nominal GNP of countries i and j , N_i and N_j are the populations of the respective countries, D_{ij} is the distance between the commercial centres of the two countries, A_{ij} is a dummy variable for adjacent or neighbouring countries, P_{ij}^{EEC} and P_{ij}^{EFTA} are dummy variables for trade between partners of the EEC and the EFTA respectively.

The variables Y_i and N_i together determine the potential export supply of country i , with Y_i determining economic capacity and N_i determining the domestic market to foreign market production ratio. Similarly Y_j and N_j together

determine the import demand for country j . D_{ij} is a proxy variable for natural trade resistance.[15]

An important feature of this model is the annual estimation of the model for the period 1951-67, which permits comparing the values taken in individual years by the intra-trade dummies

P^{EEC} , P^{EFTA} which represent gross trade creation without the need to specify before hand when the first integration effects might have taken place. Rather the model itself provides information concerning the timing of the first integration effects. Also, the model provides a series of independent parameter estimates which can then be considered as a whole in terms of whether their pattern indicates the expected cumulative growth in the preference effects.

The coefficient for the EEC intra-trade dummy was found not to be significantly different from zero in the pre-integration years (1951-58). The value of the coefficient had a big jump in 1959 and again in 1960 with small but monotonic increases afterwards and it became significant at the 5% level in 1961. These results led Aitken to conclude that the first effects of integration were felt in 1959 and also to confirm the expected cumulative growth in the preference effects. (Similar results were observed for the EFTA).

Having determined the base year from the results of the

model, Aitken proceeded to find the projection estimates for later years on the basis of the estimated equation of 1958. A comparison of projected trade with the actual trade flows was used to find the trade creation and trade diversion of each bloc against the other. The trade creation of the EEC was estimated to be \$9.2 billion in 1967 and the trade-diverting effect on imports from the EFTA countries worked out to be \$0.7 billion per year.

Even though the model avoids most of the pitfalls of the earlier studies and hence is a step in the right direction, I have the following major criticisms of it:

The dummy variable technique was used in such a way that it could determine only the gross trade creation effects. It was unable to segregate the trade creation and trade diversion effects. In the second part of the paper, therefore, the residual approach of the earlier studies was employed to find the trade creation and trade diversion effects. That technique is in turn unsatisfactory because it applies the parameters estimated from a cross-section analysis to the European Economic Community. To the extent that these parameters are different for the EEC, the results will be biased,

Second and more important, the model normalizes on the trade flows between the two blocs, which biases upwards the gross trade creation effect. Specifically, the sample from which the

equations were calculated included the original seven EFTA members plus the five EEC trading countries. The sample thus contained 20 trade flows between EEC partners, 42 trade flows between EFTA members and 70 trade flows between the members of one bloc with those of the other. These later 70 flows were assumed to constitute "normal" trade and it is against these "normal" trade flows that trade among the members of the respective communities was tested for preferential effects.

As a matter of fact those flows would have been less than normal because of the trade diversion effects of each bloc against the members of the other bloc. Therefore, the preference coefficients are biased upwards. Aitken himself realized this, but believed that the trade diversion effects were non-existent or negligibly small.

In the next chapter I will use a model similar to that of Aitken but will use the dummy variables in such a way that the biases involved in his analysis will be avoided. In conclusion to this chapter, I reassert that most of the studies while having their own biases, have contributed to a better understanding of the problem. Thanks to the availability of better data and superior techniques, continuous refinement and sophistication has been taking place. My study will be a further step in this evolution.

Footnotes -- Chapter Two

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13. Waelbroeck, as quoted in Balassa, B., "Trade Creation and Trade Diversion in European Common Market", Economic Journal, March, 1967.
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CHAPTER THREE

A CROSS-SECTIONAL MODEL FOR THE ANALYSIS OF TRADE FLOWS

Section 1Introduction

The formation of the European Economic Community and the European Free Trade Area were doubtless, one of the most important developments in the 1950s in the field of international trade. The countries forming these blocs constituted a large proportion of world trade. In 1958, for example, they imported respectively 20% and 17% of total world imports. Thus the formation of these blocs could be expected to have a considerable effect on trade flows of the members as well as of non-member countries.

The task that I have confronted myself with, is to measure how far the trade flows have been "deflected" from the "normal" pattern because of the trade liberalization between the members of respective blocs. This requires that I find out first, what "normal" trade is and then to judge whether or not the formation of the EEC and the EFTA has resulted in significant movements from that level in one or the other direction. The model that I will use for this task is developed in the next section. Section three gives the set up of the empirical analysis. The results are discussed in section four and five.

Section 2

The Model

Jan Tinbergen and Hans Linnemann have separately developed a model for the "normal" or "standard" pattern of trade. This model analyzes the main factors which enter into the explanation of trade between any two countries. Since this model is the starting point of my analysis, it will be useful to give the essentials of the model.[1]

The factors that might contribute to an explanation of the size of the trade flow between any pair of countries--say, the exports from country A to country B--may be classified in three categories:

(i) factors indicating total potential supply of country A--the exporting country--on the world market.

(ii) factors indicating total potential demand of country B--the importing country--on the world market.

(iii) factors representing the "resistance" to a trade flow from potential supplier A to potential buyer B.

These factors are in turn determined by a number of other variables. Some of these are discussed below:

The first two factors, potential supply and potential demand can easily be discussed together, as they are each other's counterpart and, therefore, are determined by the same forces. What creates supply and demand on the world market? We know that supply and demand on the world market are simply horizontal summations of individual country's supplies and demands. But why does a country engage in foreign trade at all? This is because of an incongruity of domestic production and domestic demand. Countries involve themselves in the exchange of goods among one another for exactly the same reason as the individuals do. In each case exchange takes place because the production of a "unit" does not correspond in detail with the composition of its demand. Why is it that production in a country is not adapted completely to domestic demand? Because the country has developed comparative advantages in certain fields of production, whereas other countries have relative advantages in other fields, thus creating a division of labour and international exchange which leads to a greater volume of production for all countries taken together.

The easiest and most direct way of measuring this lack of correspondence between production and domestic demand is to disregard all commodity detail and define potential foreign supply simply as total production minus production for the home market under conditions of perfect mobility of products between

countries. This latter condition (the perfect mobility of products between countries) is, however, far from reality. As a matter of fact the trade between two countries is subject to many trade impediments. The existence of these obstacles to trade tends to reduce the importance of foreign trade. These impediments produce a strong incentive in favour of production for domestic demand and in most countries production for home demand would in fact, surpass production for foreign demand. The foreign trade that remains is due to comparative advantages in production which are not offset by trade obstacles. The trade obstacles in turn, are not equal for all countries and, therefore, the importance of foreign trade will also be different for various countries.

It will be a useful simplification to assume that the "trade resistance" faced by any country has two components: A "general" trade resistance which is equal for all countries and a "specific" trade resistance caused by the special circumstances of that country. In practice therefore, no country will be able to realize completely its foreign trade potentialities, and the degree to which this realization is possible differs from country to country. A nation whose products would meet higher than usual trade obstacles will realize a smaller part of its foreign trade potential than other countries.

Production in any country of the world, then takes place partly for the domestic market and partly for foreign markets. It follows that a country's potential foreign supply depends on its national product and on the ratio between production for the home market and production for foreign demand (DM/FM).

The domestic market to foreign market production ratio can be explained satisfactorily by differences in population size. The economic reasoning in support of this assertion is based on (i) the existence of economies of scale or of a minimum output (due to indivisibilities) below which the production process is inefficient and hence not competitive and (ii) the diversification of demand at higher levels of per capita income.

Consider a certain country with given national product and given population as a starting point. In a world in which trade impediments exist, the country will not be fully specialized but will produce part of its needs domestically. In principle, every country will try to produce as much of its requirements as possible at home, in order to avoid transportation costs etc. Limiting forces are the size of the domestic market (which may be too small for certain production processes) and the impossibility of finding a substitute for certain production factors or conditions that are absent. As a result of

these forces, the country concerned will be characterized by a certain DM/FM production ratio.

This first country may be compared with another country which has a higher income but the same population. Apparently, the higher per capita income of this latter country is due to a large amount of resources per capita. But would this also mean that a greater part of domestic needs can be produced at home? This does not necessarily follow. The higher per capita income will certainly lead to an increased demand for commodities already produced domestically, and it may create sufficient additional demand for products so far not made domestically that home production becomes feasible. But at the same time higher per capita income implies demand for new products which cannot as yet be made economically in the country itself because the market is not large enough, and demand for goods of particular quality and design which may be demanded for the very fact of their being foreign-made. Actually, there is no real evidence pointing to a tendency for the macro-economic import quota either to fall or increase when per capita income increases.[2] It seems justifiable to state that the two tendencies will probably largely offset each other, so that the DM/FM production ratio corresponding to a given population size is virtually the same for different levels of per capita income.

Compare now two countries with population of different size. If per capita incomes are equal, it is obvious that the bigger country will reach or surpass the minimum market size for efficient domestic production in more lines of production than the smaller country. The DM/FM production ratio will be higher for the country with a larger population than for the smaller nation. However, as the DM/FM production ratio does not vary with the level of per capita income (as was argued in the preceding paragraph) this conclusion holds irrespective of the per capita incomes of the countries concerned. It follows, therefore, that the DM/FM production ratio is systematically linked to the population size of a country. The argument necessarily relies on the existence of economies of scale. Fortunately the existence of such economies is supported both on theoretical and empirical grounds. The theoretical arguments in favour of economies of scale are well known, and need not be discussed here. On the empirical side the studies by Balassa, Chenery, Centre for Industrial Development, Kuznets and others[3] have shown that minimum output level and economies of scale are by no means theoretical concepts only, and that population size is an important determinant of these. After a careful study of the problem, Balassa maintained that the "available evidence suggests that, as a general proposition, we can establish the existence of economies internal to the plant in a number of industries".[4] In an important study, Chenery attempted to statistically "explain" per capita imports during 1952-54 for 62 countries with

the help of per capita income and population size.[5] The assumed relationship between these variables was logarithmic linear. The exponent of per capita income did not differ significantly from one, and the exponent of the population variable was significantly different from zero (-0.281 ± 0.045), meaning that imports per capita were negatively related to a country's population size. Deutsch, Bliss and Eckstein have also tried to explain the ratio of foreign trade to gross national income for 73 different countries with the help of a number of variables.[6] The most significant variable was the population size. In his article on the economic growth of small nations[7] Kuznets described the results of an analysis for 1938/39 in which import and export ratios were compared with the countries' population size by measuring the rank correlation. The rank correlation coefficient was significant "at a demanding level of confidence" both for the import ratio and for the export ratio. Another study by Kuznets, this time based on 1949 data, demonstrated again the negative relationship between population size and the foreign trade ratio.

Thus, we may conclude that the potential supply and demand of a country are linked systematically to the size of its national product (simply as a scale factor) and the size of its population (as the factor determining the DM/FM production ratio.)

Before going further, it may be mentioned that other factors (beside GNP and population) might affect the potential demand and supply of a country. I believe that these are not of major importance and hence they will be ignored in the empirical estimation. Two such factors are the effect of natural resources and of changes in relative prices. Let us briefly investigate their importance in empirical work.

Concerning natural resources, the usual argument is that the possession of a particular resource will make the production structure very one-sided, which implies a lower-than-normal DM/PM production ratio. However, normally one would expect that in the long run the income obtained from resource exploitation will lead to increased domestic market production in many lines, thus bringing DM/PM up toward the normal ratio. Also, it may be noted that to some extent, there will be a tendency for differences in domestic demand to partly offset differences in natural resource endowment, as for instance in respect of demand for various types of food, for varieties of building material, and for different kinds of energy. Admittedly these factors will not offset the effects of natural resources in cases where there is a high skewness in resources, but the importance of such cases is limited. The typically highly-skewed resources like fuels and metallic ores accounted in 1960 for only 10 and 3% of total world

trade respectively. More important, in the sample of countries that is used here, no such skewness exists.

The effect of relative prices is ignored for the reason that I have used a cross-sectional analysis in which the trade flows are assumed to be equilibrium flows. Hence, potential demand and potential supply on the world market are equal. This equality implies that no country can have, in the long run, "too low" or "too high" a price level (adjusted for exchange rate differences). This is the well-known hypothesis that the price of traded goods will tend to be equal in different countries under free trade. Except in the short run, therefore, the general price level will not influence a country's potential foreign demand and supply. This short-term price level effect will be neglected. The contention that the relative price effect is relatively unimportant in explaining trade flows is further supported by the results of the studies which tried that variable. In his study of trade creation and trade diversion by the EEC and the EFTA, Kreinin used the following regression equation.

$$\log H = a + b \log \text{GNP} + c \log \frac{P_H}{P_D} \quad (3.0)$$

where H is the volume of imports, P_H is import price index

and P_D is domestic wholesale price index. He concluded, "The

relative price coefficient is almost invariably insignificant and/or carries the wrong sign".[8] In his well-known study, Balassa also reported that inclusion of relative prices in the analysis did not improve the results.[9] Again, Sellekaerts maintained that "excluding relative prices is not a major loss, because the estimates of the relative price elasticities are often statistically insignificant and carry the wrong sign".[10] Finally, Truman noted, "the limited available data on price competitiveness for all manufactured products for the period 1960-68 were examined and they lend little systematic support to the view that the results (presented) are dominated by such factors".[11]

The third factor to be included in the empirical estimation is "trade resistance". This encompasses a variety of factors. For analytical purposes the forces determining trade resistance can be grouped in two categories, natural trade obstacles and artificial trade impediments. The artificial trade impediments include import duties, quantitative restrictions and foreign exchange controls. Among the natural obstacles the most obvious (which may not be the most important) is the costs of transportation. Some of the major factors are discussed below.

Costs of transportation is mentioned quite often as a trade-resisting factor. Other things being equal, the greater

the costs of transportation between two countries, the smaller the trade flow. But what determines the costs of transportation? That may not be a question as simple as it appears to be. The transportation costs are of a complex nature and their relative magnitude is different for different types of commodities. The cost of shipping an article from one country to another may depend on a number of considerations: its weight, bulk, value, physical characteristics, the distance to be traversed, the mode and speed of transport and so on. How can we incorporate these complex factors in an empirical analysis, if at all?

The architects of the model under construction have proposed to use the geographical distance between two countries as a proxy for natural trade obstacles. To justify that, they have argued that even though for individual commodities transport costs per unit vary considerably, the impact on a country's average transport costs of an "unusual" commodity (from the point of view of transport costs) is limited since in most trade flows a variety of goods is involved, and the abnormalities in the transport costs of one commodity will be partly offset by the "normality" of other goods.

In addition to transportation costs there are other factors which constitute natural barriers to trade and which can also be

captured by geographical distance. Two types of factors can be mentioned here which are at least as important as direct transport costs. Any transport process requires time and this is particularly true in international trade. The time element constitutes an obstacle to trade for many reasons. For perishable goods it is an important constraint. The interest costs involved also vary directly with the time required. It also implies losing the possibility of immediate adaptation to changing conditions and irregularities in supply. Besides, the longer the time of transportation for a certain commodity the greater the necessary stocks of it in the importing country and the greater the risk of losing profitable opportunities. These are especially relevant with regard to raw material and semi-finished goods.

Another factor is what is called the "psychic distance". Perfect knowledge of the market does not exist either for producers or for consumers. The spectacular improvements of the world's communication system have improved that knowledge a lot, but still we are much better informed about what happens and exists in our immediate neighbourhood than about conditions prevailing in far away countries. Thus, propinquity leads to better business information, greater familiarity with laws, institutions, habits and language of the partner country, more

similarity in the way of life and in the preference pattern between the countries and similar--sometimes rather intangible --trade-stimulating factors. As Beckerman noted, "while the transport costs paid (directly or indirectly) by an Italian entrepreneur on a raw material supplied by Turkey may be no greater than the same material supplied by Switzerland, he is more likely to have contacts with Swiss suppliers, since Switzerland will be "nearer" to him in a psychic evaluation (few language difficulties and so on) as well as in the economic sense that air travel will absorb less of his time".[12]

Let us now turn to the artificial trade impediments. It is assumed that the trade-reducing effects of these factors are normally distributed i.e., that there is a certain average trade reducing effect with random deviations from it following the pattern of the normal distribution. It is believed that, with some exceptions, the artificial trade barriers tend to have an equal impact on the trade of all countries and thus there are no "systematic" differences in artificial trade resisting forces with regard to the trade flows between different pairs of countries. The two exceptions which have been mentioned are the political hostility or distrust which may lead to partial or complete embargo on trade with the hostile nation and the political and economic alliance which may have the opposite effect. It is this latter effect which I propose to measure in the following sections.

The three factors which have been shown to be related to the size of the trade flow between two countries i.e., potential supply, potential demand and the trade resistance can be combined into one expression:

$$X_{ij} = f(E_i, M_j, R_{ij}) \quad (3.1)$$

where X_{ij} denotes the exports of the country i to country

j , E_i denotes the potential supply of country i , M_j

represents the potential demand of country j and R_{ij} is the

trade resistance between the two countries.

These explanatory factors can be replaced by the variables determining them in the light of the previous discussion which has shown that both potential supply and potential demand are positive functions of gross national product (Y) and negative functions of population size (N) and the trade resistance can conveniently be represented by geographical distance (DST) which exerts a negative influence on the trade flows between the two countries. Thus, equation (3.1) can be rewritten as a log-linear regression equation of the form:[13]

$$X_{ij} = b_0 (Y_i)^{b_1} (Y_j)^{b_2} (N_i)^{-b_3} (N_j)^{-b_4} (DST)^{-b_5} \quad (3.2)$$

or

$$\log X_{ij} = b_0 + b_1 \log Y_i + b_2 \log Y_j - b_3 \log N_i - b_4 \log N_j - b_5 \log DST \quad (3.3)$$

As noted earlier the political and economic alliance between a pair of countries can have a systematic effect on trade flows which is not captured by these variables. It is our main interest to measure such an effect if it exists. To accomplish that, the above equation will be modified in the following way.

Political and economic alliance leads to a selective lowering of tariff barriers and quantitative restrictions through the establishment of a preferential trading area. This leads to a smaller than usual trade resistance for the member countries on the one hand and greater than usual trade resistance for the non-member countries on the other. As discussed in chapter one this is generally expected to increase the trade between members and reduce it with the non-members or both. Different preferential arrangements may lead to different effects, and whether the trade creation or the trade diversion effect is more important is an empirical question. The "preference" in favour of partner countries consist of many factors of which tariff reductions and the removal of quantitative restrictions are only

two. The other factors include greater mobility of the factors of production, government policies discriminating against non-members, increased information flows, the establishment of repair services and selling outlets, elimination of the risk that tariff concessions may be reversed and, perhaps most important, the psychological factors emanating from the sense of being united. It is impossible to estimate the effect of these factors separately. I will capture these effects by including catch-all dummy variables into the regression equation. Thus, the effects of the formation of the two major trading blocs in Europe i.e., the EEC and the EFTA will be analysed using the following regression equation

$$\begin{aligned}
 \log X_{ij} = & b_0 + b_1 \overset{\text{EEC}}{\text{ICD}} + b_2 \overset{\text{EEC}}{\text{TDD}} + b_3 \overset{\text{EFTA}}{\text{ICD}} + b_4 \overset{\text{EFTA}}{\text{TDD}} \\
 & + b_5 \log Y_i - b_6 \log W_i + b_7 \log Y_j - b_8 \log W_j \\
 & - b_9 \log \text{DST}_{ij} + \log e_{ij} \quad (3.4)
 \end{aligned}$$

where TCD and TDD are dummy variables for trade creation and trade diversion effects respectively and superscripts identify the two blocs.

Section 3

The Empirical Analysis

We are now ready to confront the task of empirical estimation of the parameter values of the trade flow equation developed in the previous section. This will be done in a cross-sectional framework using a multiple regression model. The effect of trade preferences will be estimated by introducing dummy variables into the regression equation along with other independent variables. In this way I will be able to overcome the common problem faced by all empirical studies attempting to measure integration effects, namely, isolating the effects of integration on trade from the effects of income growth and changes in other variables which normally affect international trading patterns. By estimating the preference effect as an independent variable in a multiple regression equation one is able to hold constant other major variables which affect trade.

In addition, the use of a cross-sectional model allows the estimation of trade preference coefficients for each year in the integration period and hence a series of parameter values can be obtained which can then be considered as a whole in terms of whether their pattern indicates the expected cumulative growth in the preference effects.

The preference parameters can in turn be used to estimate the dollar value of gross trade creation for each of the two European communities. Because the estimates for each year are derived from the cross-sectional equation for that year, each estimate is independent of the others and the estimating procedure does not require the use of a base year. In fact, the results of the study provide information which may be useful in determining when the first integration effects on trade occurred.

Since my analysis hinges upon the estimated coefficients of the dummy variables, it is useful to provide their exact specification. Table 3.1 gives that specification.

Table 3.1
Specification of the Dummy Variables in
Equation 3.4

	EEC TCD	EEC TDD	EFTA TCD	EFTA TDD
EEC To EEC	1	0	0	0
non EEC To EEC	0	1	0	0
EFTA To EFTA	0	0	1	0
non EFTA To EFTA	0	0	0	1
non EEC, non EFTA To non EEC, non EFTA	0	0	0	0

The sample from which the equations were estimated consists of twenty one countries. The five EEC trading countries (Belgium-Luxembourg being one trading community); the original seven EFTA members; Greece, Ireland, Spain, Turkey, Canada, Japan, U.S., Australia and New Zealand. The sample thus has 420 flows of which the 20 between EEC partners and the 42 between EFTA members are the ones to be tested for the preferential effects of the EEC and EFTA respectively. The 72 trade flows between the countries which are not members of either bloc are assumed to constitute normal trade. The flows going from non-members to the members of either bloc are tested for the trade diversion effects of the two trading communities against the same benchmark i.e., the 72 trade flows between non-EEC, EFTA countries in my sample. [14]

The countries selected are the major trading partners of the EEC and the EFTA. The trade of these twenty one countries constituted about 75 per cent of world trade in 1970. The countries are at various stages of development and furthermore, have different export interests. Exporters of both agricultural and manufactured goods have been included. So the sample is representative of world trade.

The details on the data used and their sources are given in Appendix A. However, two points are worth mentioning here. In the trade statistics used in this study, the smallest unit reported is \$0.1 million (which may actually have been obtained

by a rounding off a figure bigger than \$50,000). All trade flows smaller than that are recorded as being zero. This creates a problem for empirical estimation of the model since the trade flow equation is log-linear. How do we include in the regression the observations which are zero? It would make sense to put a small positive value instead of zero, because in fact the value of the trade flow may very well have been larger than zero. However, it makes a considerable difference what figure we use instead of zero. Although the absolute values of the alternative figures below \$50,000 would not differ too much when compared with trade flows of \$10 million or more, their logarithms may differ appreciably. In terms of logarithms the difference between \$1,000 and 2,000 is just as large as between \$100 million and \$200 million.

To overcome this problem the equations were estimated omitting these small flows. It turned out that there was no significant difference between the two approaches. This is because the number of such flows was very small in the sample.

Another problem was that some countries included in the sample were members of the British Commonwealth. The trade flows between these countries may have been affected by Commonwealth preferences. To assess any possible effects, again the equations were estimated omitting these flows and found that the pattern of

coefficients was unaltered, even though their absolute values were somewhat different. Therefore, in the text the results of the 420 sample are reported and discussed.

Section 4
Empirical Results

Table 3.3 contains the estimated parameter values for the trade flow equation for the twenty year period 1951-70. The results are self explanatory. However, the following points are worth mentioning. It is the dummy variables which are of direct interest to us in the present study, so the other variables will be touched upon very briefly. First, it will be noticed that all of these variables are statistically significant at the .01 significance level and carry expected signs. All variables taken together explain between 0.72 to 0.86 of the total variation in the dependent variable. How important are the various explanatory variables? Which of them contribute most to a statistical explanation of the trade flows? In order to answer these questions the parameter estimates were converted into so-called beta coefficients. The beta coefficients are the parameters that are obtained if all variables are measured in terms of their standard deviations. Thus, the relation between b_1 - the coefficient of $\log Y_1$ in a regression upon $\log X_1$ and β_1 is as follows:

$$\beta_1 = \frac{\sigma \log Y_1}{\sigma \log X_1} b_1 \quad (3.5)$$

where σ stands for standard deviation. A beta coefficient indicates the relative contribution the variable in question makes to the explanation of the dependent variable. The following beta coefficients were calculated as average values over the twenty year period.

Table 3.2

Beta Coefficients from Equation 3.4

Variables	Beta Coefficients
Y_1	0.921
Y_j	0.666
N_1	-0.331
N_j	-0.181
DST	-0.344
D_1	0.071
D_2	0.060
D_3	0.110
D_4	0.031

Thus, the greatest contribution to an explanation of the variations in trade flow sizes is made by the two GNP variables

and the distance variable. Other variables, even though significant, make secondary contributions. This finding conforms to the results of earlier studies.[15]

Let us now turn to the dummy variables. Their pattern will be studied in more detail. Our analysis starts from the assumption that the trade flows between any pair of member countries of the same community is subject to trade stimulating or trade diverting forces of equal strength in all cases. Thus, if the trade between West Germany and France is multiplied by a factor n because of the EEC preferences, similarly the trade between France and Italy will be n times bigger than it would have been without the EEC preference. The same is true for the trade flows between all member countries of the second group, except that the multiplier will be different.

Using the dummy variable coefficients to estimate the trade creating and trade diverting effects of integration in any year after integration requires one to assume that the size of the coefficient is being determined solely by the effect of the integration and therefore, that it is not in part reflecting some other special trade relationships which had existed in the pre-integration period. Consequently, it will be necessary to test the dummy variable coefficients for non-significance in the pre-integration period as well as for significance in the post-integration period.

Interestingly, however, an examination of Table 3.3 reveals that with a few exceptions the dummy variables are significant in the pre-integration period as well. More importantly, the coefficients are positive for both trade creation and trade diversion dummies. Ideally we would expect the trade diversion dummy to have a negative coefficient in the post-integration period. The interpretation for the positive signs in the pre-integration period for both trade creation and trade diversion dummies is simply that the countries of both blocs had a higher "propensity to import" as compared to the countries constituting "normal trade" or in other words the European countries were relatively more "open" in those years. This argument becomes more persuasive when one considers the fact that European countries were removing quantitative restrictions on intra-European trade on the one hand and were liberalizing trade with the U.S. on the other.

The test for trade creation therefore, becomes whether the coefficient of the trade creation dummy is significantly higher in the post integration period than in the pre-integration period. Similarly, the test for trade diversion becomes whether the coefficient of the trade diversion dummy is significantly smaller in the post-integration period as compared to the pre-integration period.

Table 3.3

Coefficient Estimates for Equation 3.4

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	TCD ^{EEC}	TDD ^{EEC}	TCDEFTA	TDD ^{EFTA}	DST	YI	NI	YJ	NJ	Constant	R ²
1951	0.512 (1.701)	0.472 (2.914)	0.783 (3.659)	0.219 (1.441)	-0.528 (-9.96)	1.477 (18.234)	-0.675 (-7.417)	1.081 (13.183)	-0.433 (-4.655)	4.138	0.716
1952	0.411 (1.407)	0.479 (3.051)	0.621 (2.985)	0.153 (1.040)	-0.550 (10.577)	1.442 (18.23)	-0.631 (-7.17)	0.972 (12.304)	-0.305 (-3.39)	4.011	0.726
1953	0.299 (1.034)	0.346 (3.323)	0.610 (2.961)	0.107 (0.732)	-0.608 (-11.921)	1.374 (17.844)	-0.577 (-6.557)	0.819 (10.500)	-0.099 (-1.10)	4.193	0.729
1954	0.449 (1.720)	0.294 (2.085)	0.533 (2.865)	0.116 (0.878)	-0.569 (-12.369)	1.316 (18.80)	-0.556 (-6.95)	0.887 (12.493)	-0.232 (-2.829)	4.151	0.750
1955	0.575 (2.017)	0.475 (3.104)	0.677 (3.335)	0.045 (0.313)	-0.561 (-11.22)	1.446 (18.304)	-0.609 (-6.842)	1.041 (13.177)	-0.427 (-4.64)	3.909	0.744
1956	0.649 (2.309)	0.597 (3.959)	0.789 (3.945)	0.129 (0.908)	-0.552 (-11.040)	1.462 (18.506)	-0.630 (-6.923)	1.017 (12.55)	-0.365 (-3.925)	3.586	0.752
1957	0.818 (2.86)	0.636 (4.130)	0.876 (4.294)	0.262 (1.807)	-0.513 (-10.05)	1.504 (17.90)	-0.700 (-7.29)	1.012 (11.905)	-0.341 (-3.479)	3.148	0.742
1958	0.826 (-2.744)	0.549 (3.388)	0.865 (4.023)	0.221 (1.444)	-0.535 (-9.91)	1.497 (16.27)	-0.713 (-6.855)	1.097 (11.924)	-0.443 (-4.462)	3.381	0.715
1959	0.822 (3.090)	0.366 (2.559)	0.783 (4.12)	0.286 (2.118)	-0.554 (-11.78)	1.392 (17.18)	-0.605 (-6.576)	1.036 (12.79)	-0.344 (-3.66)	3.360	0.758
1960	0.738 (2.988)	0.368 (2.767)	0.710 (4.011)	0.196 (1.555)	-0.553 (-12.57)	1.401 (19.73)	-0.553 (-6.827)	1.043 (14.48)	-0.363 (4.32)	3.289	0.796
1961	0.606 (2.623)	0.234 (1.87)	0.627 (3.80)	0.060 (0.508)	-0.565 (-13.78)	1.319 (21.27)	-0.455 (6.408)	0.956 (14.94)	-0.272 (-3.626)	3.372	0.820
1962	0.601 (2.720)	0.189 (1.575)	0.568 (3.592)	0.094 (0.831)	-0.581 (-14.90)	1.295 (21.23)	-0.457 (-6.53)	0.935 (14.84)	-0.221 (-3.027)	3.429	0.830
1963	0.671 (3.050)	0.205 (1.72)	0.596 (3.796)	0.024 (0.214)	-0.581 (-13.28)	1.341 (21.63)	-0.507 (-7.04)	0.920 (14.37)	-0.208 (2.773)	3.362	0.833
1964	0.725 (3.307)	0.259 (2.105)	0.707 (4.364)	0.1221 (1.04)	-0.573 (-14.23)	1.367 (21.36)	-0.540 (-7.30)	0.979 (14.61)	-0.262 (-3.40)	3.121	0.827
1965	0.686 (3.022)	0.167 (1.357)	0.682 (4.209)	0.054 (0.465)	-0.591 (-14.775)	1.362 (20.95)	-0.520 (-7.02)	0.989 (14.76)	-0.275 (-3.525)	3.150	0.826
1966	0.769 (3.464)	0.187 (1.558)	0.771 (4.849)	0.097 (0.851)	-0.576 (-14.769)	1.377 (21.18)	-0.529 (-7.05)	0.960 (14.12)	-0.208 (-2.67)	2.799	0.835
1967	0.786 (3.605)	0.120 (1.02)	0.841 (4.391)	0.059 (0.526)	-0.573 (-14.69)	1.353 (20.50)	-0.509 (-6.788)	1.066 (15.676)	-0.311 (-3.936)	2.633	0.840
1968	0.797 (3.742)	0.021 (0.182)	0.739 (4.83)	-0.041 (-0.372)	-0.591 (-15.55)	1.345 (21.02)	-0.524 (-7.081)	1.069 (15.95)	-0.326 (-4.126)	2.879	0.848
1969	0.827 (3.97)	0.083 (0.73)	0.789 (5.295)	-0.056 (-0.523)	-0.584 (-15.78)	1.349 (21.413)	-0.539 (-7.383)	1.095 (16.59)	-0.370 (-4.868)	2.794	0.852
1970	0.910 (4.375)	0.151 (1.336)	0.881 (5.952)	0.029 (0.271)	-0.552 (14.92)	1.374 (22.52)	-0.528 (-7.44)	1.097 (17.14)	-0.394 (-5.324)	2.328	0.856

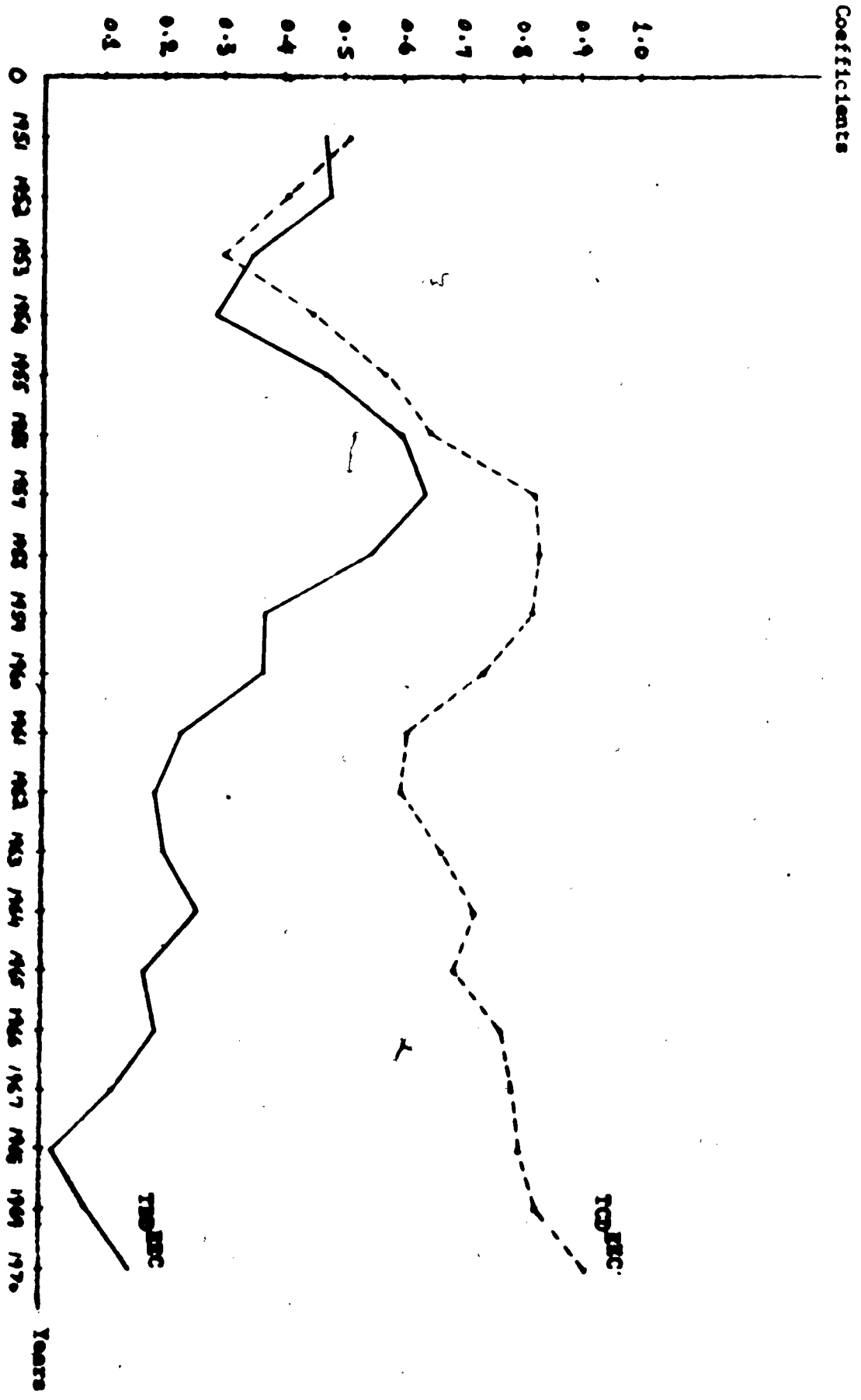
(Values shown in parenthesis are t-values)

It is also important to note that the way the dummy variables have been defined, the TCD gives an estimate of gross trade creation rather than pure trade creation. Gross trade creation as defined by Balassa refers to the total increase in trade among members of a trading community brought about through integration, regardless of whether the additional trade replaces domestic production or whether it replaces non-member exports. Thus, gross trade creation is equal to trade creation plus trade diversion.

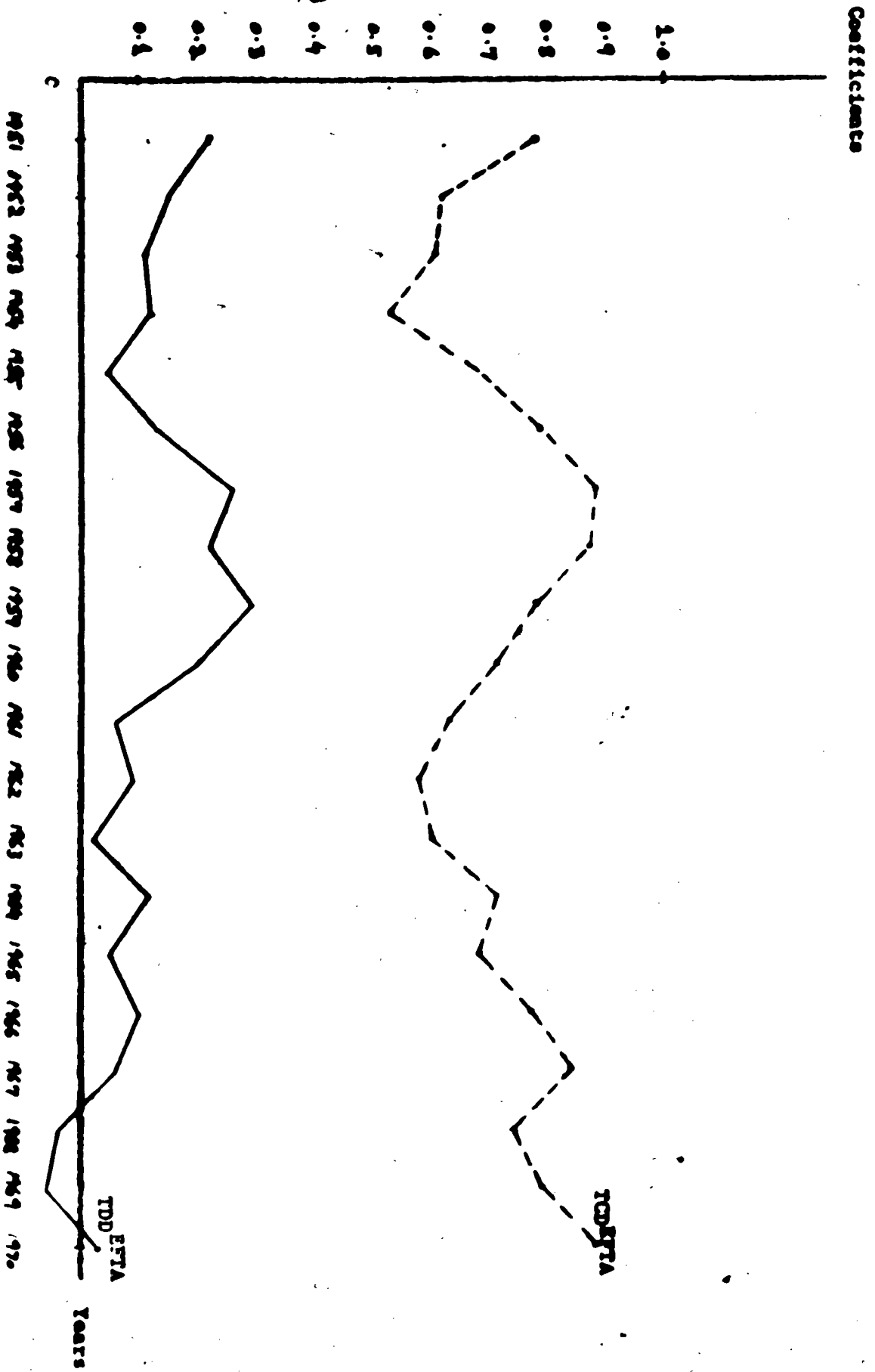
In a similar way, the TDD measures what I will call Gross Trade Diversion and it refers to the total decrease of non-members' exports to the trading community regardless of whether the non-member exports are displaced by member exports or by increase in domestic production. Thus, gross trade diversion is equal to pure trade diversion plus trade erosion.

After these explanatory remarks let us scrutinize the pattern of coefficients of the dummy variables for the EEC and the EFTA in turn. They are plotted on Graphs 3.1 and 3.2. The pattern of coefficients for TDD^{EEC} is very clear. As can be seen, it was significant in all the pre-integration years. It shows an increasing trend and goes as high as 0.636. In 1959, the first year of integration, it drops to 0.366 and from there keeps on dropping in a cumulative manner and goes as low as 0.021. It also becomes insignificant in 1967.

Graph 3.1
Coefficients of TCD_{IRC} and TDD_{IRC}



Graph 3.2
Graph of the Coefficients of TDD_{ERT}A and TDD_{ERT}A



and remains so thereafter. All this is consistent with the theoretical expectation. These results give a strong indication of a gross trade diversion effect of the EEC. The sharp decline in the coefficient in 1959 and a reversal of the previous trend lends support to the opinion that the first EEC effect took place in 1959.

A similar examination of the pattern of coefficients of EEC TCD indicates that the coefficient has been significant throughout the period with the only exception of 1953. It does not show an abrupt increase in the years immediately following integration. It fluctuates around the pre-integration level for 1959-62 and then starts increasing. On the other hand there is a perceptible upward drift in the coefficient in the years 1956-57. It may be argued that this jump is an evidence of the "announcement effects" of integration. However, I would tend not to argue that way for several reasons. First, it may be noticed that a similar increase in the coefficient is observed in the years 1953-55. Second, the Treaty of Rome was signed in March 1957 and was effective from Jan. 1st 1958. There is no reason to believe that the effect could have taken place as far back as 1956. Third, I believe that a better explanation exists. It seems to me that the increase in the coefficient may have been caused by the liberalization of trade in Europe, the temporary tariff cuts by Italy and Germany in 1957, and the French devaluation of 1957.

That view is also supported by the increase in EEC imports from non-EEC countries as well, which is evident by a corresponding increase in b_2 . These effects, however, would not have continued. The monotonic increase in the coefficient since 1962 (with the exception of 1965), therefore lends support to the view that the trade creation effect of the EEC took place with a lag. This needs further comment.

Independent studies[16] have shown that the formation of the EEC did not cause many domestic firms of any member country to become totally non-competitive with their counterparts in the partner countries. Instead of concentration implied by interindustry specialization, an increasing diversification in export patterns of the EEC countries has been observed. In addition, there is increasing similarity in the pattern of manufactured exports among the Common Market countries. Balassa calculated rank correlation coefficients with regard to 91 industries ranked by the value of intra-EEC exports. These coefficients increased from 1958 to 1963 and again from 1963 to 1970 in all cases, a partial exception being the Italy-Netherlands comparison which showed a small decline between 1963 and 1970 although the figure for the latter year still exceeded that for 1958 by 20 per cent. The indexes for intra-industry

trade computed by Grubel and Balassa also confirm the above conclusion.[17] There were very few firms which vanished because of competition from the firms of other members of the union. Rather, the firms tended to specialize in particular makes and designs. Before the union-national markets were protected and plants tended to produce relatively large numbers of differentiated products in short production runs, each to satisfy the spectrum of its national consumer tastes. The customs union formation permitted the national oligopolistic industries of each country to penetrate the markets of the others. In the process national industries tended to drop certain lines of differentiated products for which members were able to supply close substitutes at a lower price, while they expanded output of product lines that they could sell abroad successfully.[18]

Now it will not be reasonable to expect that process to take place very quickly. Firms cannot shut down some lines of production within very short periods of time. They have to figure out their comparative advantages in specific lines of production. Also they need time to make necessary changes in plant sizes to cater for the wider market in the lines of production in which they eventually specialize. In some cases, they might have to fulfil contracts for delivery for the orders already taken. In view of all these considerations a lag of two to three years may very well be expected.

To sum up, it appears from my analysis that the first impact of the EEC took the form of trade diversion while the trade creation effect followed with a lag. Since the pattern of these coefficients is the crux of the study, further statistical investigation was undertaken to test for the claimed changes in the coefficients of the dummy variables.

First, the estimated coefficients were regressed upon a dummy (i.e. $Y_i = \alpha_0 + \alpha_1 D_i$ where Y_i are the estimated coefficients of the dummy variables from the yearly regressions and $D = 0$ for pre-integration period and $D=1$ for the post integration period). The procedure may have some qualifications on theoretical grounds. However, I believe that it is legitimate at least to test the "existence" or "non-existence" of an effect, especially when this is not the only test used. This regression gives the following results:

$$Y_i = 0.45 - 0.285 D_i \quad \text{for the trade diversion dummy (3.6)}$$

(-5.8)

$$Y_i = 0.57 + 0.177 D_i \quad \text{for the trade creation dummy (3.7)}$$

(2.81)

The Durbin Watson Statistics were 0.67 and 0.51 respectively. That indicates presence of serial correlation which is to be expected because, as I noted earlier, on theoretical grounds we would expect the pattern of coefficients to be cumulative which is confirmed by a low D.W. statistic. It may be emphasized that I am not "estimating" parameter values from this equation. I

as testing just for the existence of a certain effect. So that the inefficiency in the coefficient estimates entailed by serial correlation ~~is not~~ of great concern.

Second, the most important and conclusive evidence was obtained by pooling the cross-section, time series data and running a regression on the 8400 observations thus obtained, using the dummy for the integration period and allowing the coefficients to vary. This is perhaps, the best test since it uses all the information.[18] The complete results of this regression are reported in Appendix table A3.2. Here I wish simply to note that they confirm my observations concerning significant trade creation and trade diversion effects of the EEC. The coefficient of the TDD^{EEC} was significantly smaller in the post integration period as compared to the pre-intergration period (by a factor of -0.244 with an F value 14.63). Also the coefficient of the TCD^{EEC} was considerably bigger in the post-intergration period (by a factor of 0.249 with an F value of 4.435).

A parallel examination of the dummy variables for the EFTA reveals that the pattern of coefficients is a little less clear. We observe in Table 3.3 that in the pre-integration period the TDD^{EFTA} starts with a positive and significant coefficient in the years 1951-52. It becomes insignificant again in 1957-59. In

addition, the coefficient seems to have an increasing trend during 1953-59. Compared to this, in the post integration period it is consistently insignificant (with the exception of 1960) and also decreases in size. This trend, I believe, does indicate a trade diversion of the EFTA even though it appears to be weaker than the corresponding effect of the EEC.

The same result i.e., a less pronounced effect of the EFTA than that of the EEC, emerges from an analysis of TCD ^{EFTA}. Its coefficient is significant both in the pre- and post - integration periods and is positive throughout. Similar to the trade creation dummy for the EEC it shows an increase only after a lag but even then does not show a significant increase. I find it hard to believe that the EFTA had any significant trade creation effect.

Thus, a comparison of the EEC and the EFTA effects would indicate that the EEC has a more pronounced effect on trade flows. This finding is in conformity with the theoretical expectation expressed by many economists as to the differential effects of the EEC and the EFTA.

On theoretical grounds some studies[20] had judged such earlier that the formation of the EFTA would have a smaller economic effect than that of the EEC. On the basis of Jacob

Viner and James Meade's criteria for determining the effects of customs unions, the EFTA emerges as notably inferior to the EEC on virtually all counts. First, it is somewhat smaller in population, production and trade and thus has smaller potential scope for promoting regional and industrial specialization and can benefit fewer people. Second, the EEC has imposed a Common External Tariff on imports from the non-member countries whereas the EFTA in principle leaves the external tariffs as they were before. Third, there are certain indirect indications that the spread of costs within protected industries of the same kind in the EEC is greater than in those of the EFTA. Viner considers this some measure of the potential gains from a customs union, since a wide spread of costs means that the withdrawal of protective barriers will lead to the elimination of more uneconomic high cost production and the achievement of more specialization along the lines of comparative advantage. Fourth, the fact that the degree of internal product substitutability is much higher within the EEC than in the EFTA should also mean that a customs union will stimulate more competition, have a greater effect in displacing uneconomic units, and lead to greater gains in stimulating economies of large scale production along lines of comparative advantage.

In addition to the effects analyzed above, which are directly concerned with trade flows, it is important to recall

that the EFTA lacks certain broad features of an economic union found in the EEC, such as liberalization of capital and labour movements, co-ordination of economic stability and growth policies, joint investment funds and policies, the restraints on governmental or private measures having discriminatory or restrictive effects which might offset, replace, or nullify the benefits of the removal of restraints on trade and especially the adoption of the Common Agricultural Policy. I tend to agree with Emile Benoit's view that these factors are far more important than the effects of any restructuring of trade.[21]

Before closing this discussion I would like to mention that additional tests similar to the ones conducted for the EEC were undertaken for the EFTA to test for the claimed changes. They confirm the above results. Second, in order to provide some idea of the dollar value of the gross trade creation and gross trade diversion, I used the coefficients of the relevant dummy variables to estimate the hypothetical trade in 1970. The evidence provided in the above pages indicate that the trade among the members of the EEC increased by a factor of 0.2 because of the integration and the imports from extra-area decreased by a factor of 0.25.[22] Thus the actual trade in 1970 divided by 1.2 provide an estimate of the hypothetical imports from intra-area. Similarly actual 1970 imports multiplied by 1.25 give the hypothetical imports from extra-area in 1970. The

difference in the hypothetical and actual imports is the integration effect. Gross trade diversion was found to be \$7.1 billion and gross trade creation to be \$8.0 billion, in 1970.[22]

In the present model it was not possible to estimate the pure trade creation and trade diversion effects directly using the dummy variable technique. From many aspects gross concepts are more relevant anyway. For example from the non-member point of view it is immaterial whether their exports have been displaced by partner exports or by an increase in domestic production. For members too, Meade's concepts imply that trade diversion which displaces low-cost foreign suppliers is mixed with the expansion effect of a price decrease.

From a world point of view, however, it is of interest to judge whether the formation of a particular union is a movement towards free trade (i.e., abolition of tariffs on intra-community trade) or towards protectionism (i.e., discrimination against non-members). Obviously these are two ways of looking at the same thing. Both of the changes occur simultaneously. However, it makes a considerable difference for world welfare whether the first or the second has a more pronounced effect. A qualitative decision can be arrived at in the context of our model by looking at the changes in the sum of the coefficients of TCD and TDD e.g., $\Delta(b_1 + b_2)$.

$$\Delta (b_1 + b_2) = \Delta b_1 + \Delta b_2 \quad (3.8)$$

But we know from the previous discussion that Δb_1 is a measure of gross trade creation (GTC) and Δb_2 measures gross trade diversion (GTD). [2] Therefore,

$$\Delta (b_1 + b_2) = TC + TD + ID + TE \quad (3.9)$$

where TC denotes pure trade creation, TD is pure trade diversion and TE represents trade erosion.

Now suppose $\Delta (b_1 + b_2) = 0$. In that case $TC + TD = ID + TE$

$$\text{OR} \quad TC = TE \quad (3.10)$$

i.e., domestic production has displaced non-member exports in the same amount as the partner's have displaced domestic production. This means that the formation of the union has no effect on the total volume of world trade. We can call this type of economic integration to be "neutral". In a similar manner it can be inferred that if $\Delta (b_1 + b_2) < 0$ then $TC < TE$ and the formation of the union reduces the volume of world trade. The union will be called an "anti-trade union" in that case. And if

$\Delta(b_1 + b_2) > 0$, then $TC > TE$, the formation of the union increases

the volume of world trade and we will call that to be a
"pro-trade union".

Let us now see how the EEC and the EFTA have behaved in this regard. Table 3.4 gives the relevant coefficients.

Table 3.4
Coefficients of the Dummy Variables in Equation 3.4

Year	b_1	b_2	$b_1 + b_2$ $= Y_1$	b_3	b_4	$b_3 + b_4$ $= Y_2$
1951	0.512	0.472	0.984	0.783	0.219	1.002
1952	0.411	0.479	0.890	0.621	0.153	0.774
1953	0.299	0.346	0.545	0.610	0.107	0.717
1954	0.449	0.294	0.743	0.533	0.116	0.649
1955	0.575	0.475	1.050	0.677	0.045	0.722
1956	0.649	0.597	1.246	0.789	0.129	0.918
1957	0.818	0.636	1.454	0.876	0.262	1.138
1958	0.826	0.549	1.375	0.865	0.221	1.086
1959	0.822	0.366	1.188	0.783	0.286	1.069
1960	0.738	0.368	1.106	0.710	0.196	0.906
1961	0.606	0.234	0.840	0.627	0.060	0.687
1962	0.601	0.189	0.790	0.568	0.094	0.662
1963	0.671	0.205	0.876	0.596	0.024	0.620
1964	0.725	0.259	0.984	0.707	0.121	0.828
1965	0.686	0.167	0.853	0.682	0.054	0.736
1966	0.769	0.187	0.956	0.771	0.037	0.808
1967	0.786	0.120	0.906	0.841	0.059	0.900
1968	0.717	0.021	0.738	0.739	-0.041	0.698
1969	0.827	0.083	0.910	0.789	-0.056	0.733
1970	0.910	0.151	1.061	0.881	0.029	0.910

Source: Table 3.1





An examination of Table 3.4 reveals that $\gamma_1 (=b_1 + b_2)$ increases in the pre-integration period. In the immediate year following integration it shows a tendency to decline which is consistent with our earlier finding that the immediate effect of the EEC was trade diverting in nature. From 1962 it picks up again as trade creation takes place. If we consider the entire period, and the fact that years 1956-58 were affected by temporary changes in tariffs of Germany and Italy and by French devaluation, it seems to me that by and large the European Economic Community was "neutral" in its effect on world trade. Regarding γ_2 , we notice that it drops in the post-integration period and the drop is more pronounced than that of γ_1 which is due mainly because of failure of b_3 to show an increase, i.e. negligible trade creation effect if at all. A regression of γ_2 on a dummy (i.e., $\gamma_2 = \alpha_2 + \alpha_3 D$, where $D = 0$ for 1951-59 and $D = 1$ for 1960-1970) gives the following result:

$$\gamma_2 = 0.897 - 0.120 D$$

(-1.81)

which means that γ_2 has declined significantly in the post-integration period. The pattern of γ_2 , therefore, indicates that from the world point of view, the EFTA has destroyed more trade than it has created.

Thus on the basis of this qualitative evidence, it can be concluded that the EEC has been a "neutral trade union" whereas the EFTA can be said to be an "anti-trade bloc". It must be remembered, however, that the test is only an approximation.



Section 5
Regional Effects

Another useful feature of the present model is that it is possible to measure the effects of the formation of the EEC and the EFTA on individual countries or a set of countries in the sample. All we have to do is to dummy the observations for the exports of those countries to the EEC and EFTA separately. The coefficients of those dummies can then be tested for a possible change between the pre- and post- integration periods.

For this purpose, we split our sample into five regional groups: (i) EEC (ii) EFTA (iii) Greece, Ireland, Spain and Turkey (GIST) (iv) Canada, Japan and United States (CUJ) and (v) Australia and New Zealand (AN). The following regression was then estimated for each of the twenty years.

$$\begin{aligned}
 \text{Log } X_{ij} = & b_0 + b_1 D_{11} + b_3 D_{33} + b_6 D_{66} + b_7 D_{77} + b_8 D_{88} + b_9 D_{99} + b_{10} D_{1010} \\
 & + b_{11} D_{11} + b_{12} D_{12} + b_{13} D_{13} + b_{14} \log DST + b_{15} \log Y_i \\
 & + b_{16} \log N_i + b_{17} \log Y_j + b_{18} \log N_j + \log e_{ij}
 \end{aligned}
 \tag{3.11}$$

In this section we are interested in the pattern of the coefficients of regional dummies. The four regional dummies for the flows going to the EEC from the group of non-member countries concerned are discussed first. The coefficient of D6 (i.e. the dummy for the exports of the EFTA countries to the EEC) shows the clearest pattern. In all the pre-integration years it is significant at the 0.01 level and has a positive sign. It also shows an increasing tendency and goes as high as 0.869 in 1958. In 1959, the first year of integration, it suddenly drops to 0.662 and keeps on dropping in later years and goes as low as 0.035. It also becomes insignificant in 1965 and remains so in the later years with the exception of 1966. All this is an evidence of the fact that the EEC had a strong trade diversion effect against the EFTA countries.

An examination of b_7 (the coefficient of the dummy for exports of Greece, Ireland, Spain and Turkey to EEC) shows no trade diversion effect against these countries. This is exactly what one would expect, because most of these countries have signed "Association Agreements" with the EEC. The coefficient is insignificant both in the pre-integration as well as the post-integration years. Also the coefficient seems to behave randomly, having both positive and negative signs spread over the sample period. The fact that the coefficient is not significant in the 1964-1970 period indicates that either the Association

Table 3.6

Coefficient Estimates for Dummy Variables in Equation 3.11

	D1	D3	D6	D7	D8	D9	D10	D11	D12	D13	R ²
1951	0.546 (1.738)	0.874 (3.995)	0.617 (2.563)	0.089 (0.314)	-0.059 (-0.192)	1.819 (4.937)	0.978 (3.213)	-0.106 (-0.427)	-0.436 (-1.63)	0.458 (1.421)	0.741
1952	0.504 (1.641)	0.716 (3.340)	0.585 (2.482)	0.209 (0.751)	0.060 (0.197)	1.656 (4.602)	0.731 (3.087)	-0.084 (-0.344)	-0.294 (-1.116)	-0.002 (0.000)	0.745
1953	0.275 (0.920)	0.673 (3.226)	0.440 (1.92)	-0.136 (-0.502)	-0.165 (-0.565)	1.880 (5.36)	0.567 (2.457)	-0.155 (-0.655)	-0.561 (-2.19)	0.360 (1.174)	0.756
1954	0.486 (1.816)	0.639 (3.424)	0.492 (2.398)	-0.114 (-0.470)	-0.303 (-1.164)	1.641 (5.23)	0.643 (3.120)	-0.157 (-0.739)	-0.622 (-2.72)	-0.439 (1.597)	0.780
1955	0.643 (2.204)	0.777 (3.821)	0.687 (3.068)	0.130 (0.493)	-0.150 (0.562)	1.692 (4.95)	0.733 (3.260)	-0.592 (-0.762)	-0.453 (-1.818)	0.388 (1.296)	0.774
1956	0.731 (2.525)	0.892 (4.417)	0.802 (3.607)	0.304 (1.159)	-0.019 (-0.063)	1.744 (5.145)	0.816 (3.658)	-0.480 (-2.097)	-0.330 (-1.333)	0.397 (1.337)	0.779
1957	0.919 (3.110)	0.964 (4.671)	0.845 (3.723)	0.196 (0.735)	0.221 (0.766)	1.728 (4.898)	0.985 (4.325)	-0.383 (-1.646)	-0.033 (-0.130)	0.319 (1.048)	0.768
1958	0.962 (3.098)	0.968 (4.462)	0.869 (3.648)	-0.028 (-0.01)	0.215 (0.708)	1.494 (4.810)	1.030 (4.30)	-0.520 (-2.132)	-0.074 (-0.277)	0.319 (1.000)	0.745
1959	0.933 (3.430)	0.899 (4.726)	0.662 (3.176)	-0.117 (-0.478)	-0.123 (-0.463)	1.453 (4.465)	0.996 (4.730)	-0.278 (-1.301)	-0.149 (-0.639)	0.442 (1.583)	0.787
1960	0.881 (3.42)	0.840 (4.663)	0.596 (3.011)	0.127 (0.541)	-0.139 (-0.55)	1.329 (4.438)	0.792 (3.985)	-0.102 (-0.495)	-0.223 (-1.016)	0.147 (0.561)	0.814
1961	0.755 (3.138)	0.770 (4.573)	0.421 (2.273)	0.151 (0.681)	-0.305 (-1.304)	1.155 (4.154)	0.604 (3.246)	-0.056 (-0.288)	-0.472 (-2.30)	-0.019 (-0.077)	0.836
1962	0.661 (2.864)	0.661 (4.092)	0.292 (1.643)	-0.025 (-0.118)	-0.240 (-1.072)	1.224 (4.595)	0.495 (2.774)	0.025 (0.130)	-0.461 (-2.347)	0.122 (0.521)	0.845
1963	0.713 (3.103)	0.672 (4.178)	0.318 (1.797)	-0.072 (-0.34)	-0.178 (-0.890)	1.158 (4.38)	0.419 (2.362)	-0.182 (-0.983)	-0.445 (-2.275)	0.152 (0.657)	0.847
1964	0.761 (3.109)	0.774 (4.647)	0.281 (1.563)	0.185 (0.847)	-0.219 (-0.948)	1.227 (4.472)	0.448 (2.435)	-0.004 (-0.031)	-0.379 (-1.87)	0.214 (1.140)	0.840
1965	0.708 (2.95)	0.742 (4.418)	0.188 (1.014)	0.044 (0.202)	-0.203 (-0.871)	1.061 (3.838)	0.405 (2.186)	-0.122 (-0.630)	-0.391 (-1.910)	0.175 (0.722)	0.837
1966	0.806 (3.433)	0.838 (5.089)	0.220 (1.218)	0.129 (0.600)	-0.221 (-0.965)	1.019 (3.761)	0.458 (2.515)	-0.082 (-0.432)	0.311 (1.547)	0.187 (0.787)	0.845
1967	0.852 (3.703)	0.927 (5.738)	0.195 (1.102)	0.133 (0.628)	-0.298 (-1.329)	0.771 (2.911)	0.462 (2.591)	-0.165 (-0.888)	-0.386 (-1.958)	0.249 (1.073)	0.850
1968	0.735 (3.257)	0.799 (4.039)	0.035 (0.204)	-0.001 (0.000)	-0.361 (-1.643)	0.783 (3.027)	0.269 (1.536)	-0.178 (-0.975)	-0.490 (-2.534)	0.127 (0.562)	0.857
1969	0.826 (3.775)	0.840 (5.476)	0.073 (0.435)	0.057 (0.282)	-0.321 (-1.506)	0.904 (3.630)	0.254 (1.499)	-0.235 (-1.33)	-0.515 (-2.741)	0.163 (0.745)	0.863
1970	0.982 (4.436)	0.966 (6.226)	0.178 (1.044)	0.285 (1.405)	-0.205 (-0.949)	0.702 (2.771)	0.344 (2.007)	0.028 (0.154)	-0.421 (-2.216)	0.060 (0.272)	0.863

(Values shown in parenthesis are t-values)

Agreements of EEC with Greece, Spain and Turkey had little trade creation effect or that the TC and TD effects were cancelled out.

The coefficient of the dummy for the exports of Canada, Japan and U.S. has a negative sign throughout (with the exception of 1957-58). However, in the post integration period it drops significantly (i.e. becomes a bigger negative number). Further in the post integration period it is significant in five years (at least at the 90% significance level) and nearly significant in another two years whereas in the pre-integration period it was insignificant throughout. This leads me to believe that the EEC had a trade diversion effect against these countries, even though the effect is not as strong as against EFTA countries.[25]

The last group of countries, i.e. Australia and New Zealand, have clearly suffered a trade diversion effect of the EEC. The coefficient of the dummy for the exports of these countries to the EEC is significant throughout the sample period, but drops considerably in the post-integration period. In the pre-integration period it is roughly at the level of 1.75 whereas in 1959, the first year of integration, it drops to 1.45 and thereafter drops almost monotonically until the end of the period, going as low as 0.702.

To sum up, the formation of the EEC had a trade diversion effect against all non-member countries except for Greece, Spain and Turkey, which have signed Association Agreements with the EEC. The effect is most pronounced against the EFTA countries; then comes Australia and New Zealand followed by Canada, Japan and the U.S.

Turning to the EFTA, we observe a similar pattern. The trend of the coefficient of the dummy for the exports of the EEC countries to the EFTA countries is seen to have a phenomenal decline in the post integration period. The coefficient is significant throughout the period and seems to have an increasing trend in the pre-integration period. However, in the post-integration period it drops considerably. In 1960, the very first year of integration it falls from 0.994 to 0.792. In later years it declines almost monotonically and goes as low as 0.254. Thus, there is clearly a trade diversion effect of the EEC against the EFTA.

The coefficient of the dummy for Greece, Ireland, Spain and Turkey is insignificant in most of the pre- as well as post-integration periods and seems to be behaving randomly. It can be concluded therefore, that these countries did not suffer from diversion effect of the EFTA. I believe this result is due to special trade links between Ireland and the United Kingdom.

The position of Canada, Japan and the U.S. is a little less clear. However, a careful examination of the pattern of b_{12} (the coefficient of the dummy for these countries' exports to the EFTA), reveals that they have also suffered a trade diversion effect of the EFTA. The negative coefficient was not only becoming smaller in the 1951-59 period, but also it became insignificant in 1957-59. In the post integration period it picks up again, becomes significant and the negative number grows larger in absolute value until it reaches -0.515 in 1969.

Finally, we see that b_{13} , the coefficient of the dummy for the exports of Australia and New Zealand, is positive and significant in 1951-59. In 1959 it has a value of 0.442. In 1960 that drops to 0.147 and also becomes insignificant. In all later years, with the exception of 1969, it remains insignificant. This pattern confirms that these countries have also suffered a trade diversion effect of the formation of the EFTA.

The analysis of Table 3.6 provides a little more insight than the earlier analysis. Whereas it confirms that the two European trading groups had both a trade diversion effect against all groups of countries in the sample (except GIST, which has special reasons, noted above), it reveals that the most pronounced effect has been against each other.

This latter result may in part be due to the fact that the two blocs had a substantial portion of their trade with the other bloc and hence more chances of trade diversion. In 1958, for example, 17% of total EEC imports came from the EFTA countries, and 29% of the EFTA imports came from the EEC. However, the economic structure and the trade patterns of the two groups may be more important in explaining that result which was anticipated by many economists. Three quarters of the exports of the EFTA consist of items in which one partner (usually the U.K.) had a clear comparative advantage as measured by export-import ratios. Thus, the formation of the EFTA did not seriously enhance the amount of competition in the EFTA countries. On the other hand, about two thirds of the trade of both the EEC and the EFTA consist of items in which both groups have a comparative advantage, and in which they are highly competitive. This is particularly the case with respect to machinery, chemicals, and miscellaneous manufactures categories in which trade between the EFTA and the EEC was particularly important.[26]

Thus the high degree to which the EFTA economies complement one another and, on the other hand the high degree to which they are substitutable for and competitive with those of the EEC, present greater likelihood of trade diversion for both blocs against each other and less possibility of trade creation in the EFTA countries.

Before concluding this chapter, I wish to note that while my study finds significant trade creation effect of the EEC, it does not confirm the result arrived at by Balassa, Kreinin and Aitken that the trade creation exceeds trade diversion several times. My results are more in line with the estimates given by Resnick and Truman which show the trade diversion effect to exceed trade creation. Furthermore, the finding that the effect of the EFTA is not as significant as that of the EEC is in conformity with earlier studies.[27]

Footnotes -- Chapter Three

1. The following discussion rests heavily on Sharing the World Economy, by J. Tinbergen, suggestions for an International Economic Policy, New York: The Twentieth Century Fund, 1962, and An Econometric Study of International Trade Flows, by H. H. Linnemann, Amsterdam: North-Holland, 1966.
2. For empirical evidence see H. Linnemann, op. cit.
3. Balassa, B., The Theory of Economic Integration, Irwin, Homewood, Illinois, 1961; "A Study of Industrial Growth", United Nations, 1963; H.B. Chenery, "Patterns of Industrial Growth", AFR, vol. L, 1960.
4. Balassa, B., op. cit.
5. Chenery, H.B., "Patterns of Industrial Growth", American Economic Review, vol. iv, 1960.
6. Deutsch, K.W., Bliss and Eckstein, A., "Population, Sovereignty, and the Share of Foreign Trade", Economic Development and Cultural Change, 1962, pp. 353 ff.
7. Kuznets, S., Economic Growth of Small Nations, Economic consequences of the size of nations, London: MacMillan, 1960.
8. Kreinin, M.E., "Trade Creation and Trade Diversion by the EEC and EFTA", Economia Internazionale, 22, 1969.
9. Balassa, B., "Trade Creation and Trade Diversion in the European Common Market", Economic Journal, 77, 1967.
10. Sellekaerts, "How Meaningful are Empirical Studies on Trade Creation and Trade Diversion", Weltwirtschaftliches Archiv, 109, 1973.
11. Truman, "The European Economic Community: Trade Creation and Trade Diversion", Yale Economic Essays, 9, 1969.
12. Beckerman, W., "Distance and the Pattern of Intra-European Trade", Review of Economics and Statistics, 28, 1956.
13. The log-linear form was chosen after a preliminary test on the data.

14. The selection of such a bench-mark is a matter of assumption. Contrary to the earlier studies, I have chosen a cross-section of countries which are not members of either bloc to minimize any bias entailed by this assumption. As Don Devoretz has pointed out to me, to the extent that any independent variable affects the countries in the 'normal' group and those of the trading blocs differentially, the changes in that variable may entail a bias. For example, if distance variable is more important in trade among normal group than others, the reduction in transportation costs over time will mean that we are underestimating trade creation.
15. Linnemann, H., op. cit., pp. 87-88.
16. Grubel, H. and Lloyd, P.J., Intra-Industry Trade: The Theory and Measurement Of International Trade In Differentiated Products, London: Macmillan, and New York: Halsted Press, 1975; and Belassa, B., European Economic Integration, 1975.
17. See studies cited in footnote 16.
18. Grubel, H., International Economics, op. cit., p. 597.
19. I am grateful to Prof. Steve Easton for suggesting this test.
20. H.E. Kreinin, "The 'Outer Seven' and European Integration", American Economic Review, June 1960. Emile Benoit, Europe at Sixes and Sevens, New York: Columbia University Press, 1961.
21. Emile Benoit, op. cit.
22. These are derived from the pooled cross-section time series analysis and the regression of the dummy variable coefficients reported on page 99 above.
23. These figures should be taken as approximate values.
24. These terms have been defined on page 92 above.
25. The effect will appear to be more pronounced if one realizes that machinery exports of the U.S. increased significantly, for expansion of EEC firms.
26. Emile Benoit, op. cit., pp. 101.
27. See studies cited in footnote 19.

CHAPTER FOUR

THE EEC PROTECTIVE WALLS

Section 1Introduction

The Treaty of Rome, which brought the EEC into being, required the member states to adopt a Common External Tariff (CET), after a transitional period. As all the six countries were signatories of the General Agreement on Tariffs and Trade, the level of CET could not be more protective than the national tariffs that it replaced. Within this limit, the low tariff members especially Benelux, desired CET to be very low so as to protect their import-using consumers and producers. On the other hand, the high tariff members--France and Italy--wanted it to be higher, so as to protect their producers of import-competing goods. The architects of the EEC wrestled for a long time with this issue, so as to reach an agreement acceptable to both parties. In the end they decided that, after making some important exceptions to take account of highly valued national interests, the rule for determining the CET should be the simple unweighted arithmetic average of the rates of the members as on January 1, 1957, with Benelux counting as one area. This implies

an "upward adjustment" for countries having low tariffs and a "downward adjustment" for countries having high tariffs previously. The Common External Tariff envisaged by this formula was to be established in five steps ending on July 1, 1968.[1]

Whether or not CET is more protective, it certainly involves discrimination against outsiders and places the members at a relatively advantageous position. This chapter reviews some of these issues. In the next section the incidence of the Common External Tariff and the concept of "rate of discrimination" against outsiders are discussed. As a case study the rate of discrimination against Pakistan has been calculated. In section three, the shortcomings of "rate of discrimination" are outlined and in the next section a new concept, "degree of preference" is developed and estimated using the model developed in chapter three with a slight modification.

Section 2The Incidence of The Common External Tariff

The Community claimed that it had met the GATT requirement that CET, "should not have a more protective effect than the national tariffs it replaced". But the other countries considered this contention to be unacceptable. They argued, first, that the GATT rules demanded not the unweighted arithmetic mean but a weighted one. They maintained that the simple arithmetic mean would tend to have an upward bias because the high rates of France and Italy would be given as much weight as the low ones of Benelux and Germany, even though the volume of trade of the latter was greater than that of the former.

Some studies were made in this connection. I. Frank, on the basis of incomplete data, tentatively concluded that the weighted index probably yielded a lower Common External Tariff.[2] Balassa on the other hand concluded that there was no significant differences.[3] While R. Hinshaw using different years for comparison, found the weighted level to be substantially lower if

all goods were included, but only slightly lower for manufactured goods.[4]

Secondly, some analysts noted that even if the trade in a given product was evenly distributed over the six, a ten per cent increase in the duties of some might very well decrease imports more than a ten per cent decrease in other's duties would increase them. This could happen because the decrease might be simply removing excess protection, or because there was no established market in that country, or because the demand was price inelastic, while the increase might add effective protection in the other.

Thirdly, it was realized that in calculating the arithmetic averages the Six intended to use the duties which they had a "legal" right to use as of January 1, 1957. These rates were, however, in many cases appreciably above the rates "actually" being applied at the date. This was so, largely because the calculations did not take into account the 25 per cent "business cycle" reduction by Germany in 1957 or the approximately 10 per cent cut in the Italian tariff.

In this respect a GATT Working Party tentatively concluded that the general incidence of the Common External Tariff on imports into the Common Market probably was lower (by about ten

per cent, Common Market spokesman said) than the general incidence of legal or bound rates in member states on the base date. But it seemed to be higher (and for some countries it was said to work out to as much as 30 - 40% higher) than the general incidence of the rates actually encountered by exporters to the Common Market countries on January 1, 1957.[5] Because the legal position in this matter was not clear, the issue could not be settled.[6]

Rate of Discrimination

Finally, it was maintained that the provision that members would now face no restrictions in trade with each other meant that for some goods any Common External Tariff, however low it may be, represents an increase in the effective protection against the non-members.

The elimination of tariffs on intra-EEC trade and the granting of essentially similar treatment by the Community to imports from the associated overseas members (AOH), while maintaining a common external tariff, introduces an element of discrimination against third countries. Tinbergen has investigated this impact of the EEC. He defined the "rate of discrimination" as the difference between the import duties levied on imports from outsider countries and the duties imposed

as an average on all imports. The latter consist partly of imports into the EEC from partner countries and the associated overseas members and to that extent are exempt from tariffs. In general the average duty varies between zero (if all imports of the given commodity originate within the EEC and AOM) and the Common External Tariff rate (if all imports of a commodity originate outside the Community and the ACM countries).

According to Tinbergen's analysis, the level of the rate of discrimination for any third country depends on the following important factors:

- (i) The magnitude of the country's exports to the Community.
- (ii) The composition of the country's exports to the Community.
- (iii) The height of the Common External Tariff on these exports.
- (iv) The competition to the country concerned within the Community and its Associated States.

His analysis resulted in the following figures for the "rate of discrimination" in the EEC against various countries on the basis of 1955 trade data.[7]

Table 4.1

Tinbergen's Calculation of "Rate of Discrimination" in the EEC on Exports of Various Countries

Australia	0.03
Austria	1.52
Brazil	0.73
Burma	0.07
Ceylon	0.21
Columbia	0.59
Cuba	5.00
Ecuador	1.47
Greece	1.89
Iceland	0.80
Iran	1.12
Liberia	0.00
Iraq	0.26
New Zealand	0.13
Pakistan	0.00
Portugal	0.50
Saudi Arabia	0.00
Spain	1.49
Turkey	1.19
U.A.R.	0.11
Yugoslavia	0.88

Source: Tinbergen, J., op. cit.

Though Tinbergen's calculations may no longer hold, since his formula was applied to the 1955 pattern of trade, his technique is a useful one. For an assessment of the changed situation since 1955 for various countries, it is necessary to re-evaluate the "rate of discrimination". In the following paragraphs the change in the "rate of discrimination" against Pakistan's exports is analysed as a case study.

The simple inference which can be drawn from the 0.00 rate of discrimination reported above, is that in 1955 (i) the magnitude of Pakistan's trade with the EEC countries was very small (ii) the commodities exported by Pakistan were not heavily protected.

In 1955, Pakistan's exports to the EEC largely consisted of raw materials, especially cotton and jute, on which there was a zero tariff in the EEC countries even prior to the union, and there was also virtually no competition to Pakistan's exports within the countries that now form the EEC. The situation has radically changed since 1955. Not only has the magnitude of Pakistan's exports to the EEC countries increased significantly, but also the share of manufactured goods in the total exports of Pakistan has gone up. In the present conditions, the "rate of discrimination" in the Community against Pakistan's major manufactured exports--cotton fabrics, woollen carpets, leather and sports goods etc. is high; as the tariff wall in the

community for these goods is fairly high and effective competition exists in the community against these commodities. It is therefore appropriate to re-evaluate the rate of discrimination for Pakistan's exports to the Community in view of these major changes. This has been done on 1970 data using Tinbergen's approach.

For any commodity i , let the Common External Tariff be t (expressed as a percentage of the value of imports). Let p be the proportion of imports of commodity i into the Community from other member countries and its overseas Associates, so that the share of imports from third countries is $1-p$.

The third countries pay t on their exports while Community and Associate suppliers pay 0, so that the average rate for imports of commodity i into the EEC is $0p + t(1-p) = t(1-p)$. The rate of discrimination is the difference between the duty paid by a third country (t) and the "average" duty paid on imports of that commodity into the Community i.e., the rate of discrimination is $t - t(1-p) = tp$.

Thus, if there are no suppliers of the commodity within the Community and its Associates i.e., $p = 0$, the rate of discrimination is also zero. Similarly if $p = 1$ then the rate of discrimination is equal to t . The larger the share of Community suppliers, the more the rate of discrimination approaches the Common External Tariff.

The average rate of discrimination against any country i can be calculated either as a simple arithmetic average of the rates of discriminations against the commodities that country i exports to the EEC i.e.,

$$R0D = \frac{1}{N} \sum_{i=1}^N rod_i$$

where R0D is the average rate of discrimination against any country and rod_i is the rate of discrimination against commodity i .

Alternatively, R0D can be calculated as the weighted average of the rates of discrimination for individual commodities, the weights being the values of exports of each commodity to the Community from country i . i.e.,

$$R0D = \frac{\sum_{i=1}^N rod_i \frac{V_i}{V_c}}{\sum_{i=1}^N \frac{V_i}{V_c}}$$

where V_c stands for all exports by country i to the Community.

The results of these calculations are reported in Table 4.2. It is seen that the unweighted average rate of discrimination comes out to be 3.2 per cent and the weighted average to be 2.2 per cent, which is quite high compared to zero per cent that fiberyen case up with.

Table 4.2
 CALCULATIONS OF "RATE OF DISCRIMINATION" IN THE EEC ON EXPORTS
 FROM PAKISTAN IN 1970

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Imports into EEC From
 (US Thousand Dollars)

Commodities	World	EEC	Associated Territories	ROW	Average Duty	Duty on	Rate of	Volume	
					on imports	Imports	Discrim-	of Imports	
					$t(1 - p)$	t	rod	V	rod, V
							i	c	i
							i		i
Raw Cotton	560097	17073	161835	381189	0	0	0	2907	0
Cotton Fabrics	340561	201581	5080	133900	6	15	9	2287	20583
Hides & Skins	380597	87132	10107	283358	0	0	0	833	0
Leather	262318	138085	2205	122028	1.4	3	1.6	16383	26213
Footwear	446988	372225	2985	71718	1.3	8	6.7	720	4824
Medical Instruments	80271	34238	-	46033	4.6	8	3.4	494	1680
Fish & Preparations	431518	143784	29586	258248	7.2	12	4.8	700	3360
Rice	56229	17474	10210	37545	6.9	12	5.1	1051	51
Woolen Carpets (knotted)	127817	2826	2112	122879	23	24	1.0	4308	4308
Wool & Animal hair	672213	169122	118550	384541	0	0	0	467	0
Sports Goods	68263	24632	-	38631	6.1	10	3.9	1824	7114

$$ROD = \frac{\sum_{i=1}^N rod_i}{N} = \frac{35.5}{11} = 3.2$$

$$\text{Weighted ROD} = \frac{\sum_{i=1}^N rod_i V_i}{\sum_{i=1}^N V_i}$$

$$= \frac{68137}{30933} = 2.2$$

Section 3

Other Protective Devices

So far we have discussed the tariff barriers in the EEC against outsiders. But there are other protective devices which increase the discrimination against outsiders. There are many such techniques, but here we will briefly discuss the two most important ones applied by the EEC: (i) quota restrictions and (ii) The Common Agricultural Policy.

Quota Restrictions. In spite of the progress in import liberalization under the aegis of the General Agreement on Tariffs and Trade and other world forums, industrialized countries including the EEC continue to maintain quantitative restrictions on many goods which are of interest to developing countries. Tariff walls, if not too high, can to some extent be crossed over by improving efficiency and thereby reducing the costs of production. The non-tariff barriers are more absolute in nature and cannot be removed by any lowering of costs.

As contained in the Community's Generalised System of Preferences, the EEC has granted duty free entry to all manufactures and semi-manufactures in chapters 25-99 of the Common External Tariffs, but the amount of imports from developing countries that benefit from duty free entry are subject to the limitation of quota ceilings. These ceilings are calculated under a standard formula applicable to all products

under which each ceiling has two elements.

First, the basic amount is the total value of imports of the product from the beneficiary countries in a base year, 1968. To this a supplementary amount is added which is calculated by taking 5% of total imports into the Community from all sources other than the beneficiary countries. Trade between member States is excluded from the total from which the 5% is calculated but the imports from the Associated States are included. Another provision in the formula is that the preferential imports of each product from any one country will not as a general rule be allowed to exceed 50% of the total ceiling for that product. Once the ceiling for duty free entry has been reached in any year, further imports of that commodity from foreign countries are charged the full rate of duty.

But this is not the end of the story. Regretfully, even with full duty, imports into the EEC have been restricted by quota restrictions. For many commodities quotas have been fixed for the world as well as for individual countries beyond which imports are completely banned from outside the Community.

Common Agricultural Policy. Apart from the establishment of the Customs Union, the most visible sign of the EEC's existence has been the adoption of the Common Agricultural Policy. The Six

Countries which founded the EEC in 1957, agreed at the outset to establish a common policy for agriculture as well as to free intra-area trade in agricultural products.

The Treaty of Rome established the objectives of the agricultural policy, i.e. (a) to increase agricultural productivity, (b) to maintain a fair standard of living for farmers, (c) to stabilize markets, (d) to ensure regular supplies to consumers and, (e) to maintain reasonable consumer prices. These objectives are not necessarily complementary, and consequently many conflicts arise in the implementation of this policy. This has made it a controversial policy and it is under attack not only from outside but also from within the Community. As will be noted later, many empirical studies have been undertaken in this field, most of which find negative effects.

In essence, the Common Agricultural Policy tends to assure the maintenance of high farm incomes through a complex framework of regulations, involving support prices fixed well above world prices, variable levies on imported agricultural products from non-EEC sources, and the granting of export subsidies enabling certain EEC commodities to compete in the world market.

Even though the market and price policies of the CAP differ from commodity to commodity, there are some common features which

result in an equal treatment of agricultural producers in the member countries by ensuring free access for all products to all markets within the Common Market; by operating a common system of protection against third countries and a common price policy internally. This common price policy relies, basically, on a "variable levy" system of protection.

The calculation of the "variable levies" to be applied on imports from non-EEC countries involves three steps: (a) a target or indicative price is determined which is a theoretical price towards which the market price should tend, (b) a threshold price is fixed at which imports from non-member countries can enter the EEC, which is lower than the target price by the transport cost from the port of entry, and (c) the import levy is computed on a daily basis as the difference between the threshold price for a commodity and the world price.

Along with the variable levies intervention prices are employed to ensure the maintenance of a guaranteed floor price-- which is set somewhere between 90 and 95 per cent of the target price. At that level government agencies undertake support buying should the market price show a tendency to fall below it. The CAP keeps market prices within two limits. The upper limit is the threshold price and the lower limit is the intervention price. If excess demand or rising costs in the market for an

agricultural product tend to raise the market price above the threshold price, imports from non-EEC sources enter the Community to fill the gap in demand at that price. On the other hand, if an excess supply causes the market price to fall below the intervention price, the EEC Commission enters the market and supports the price.

Several studies have attempted to measure the effects of the CAP on production and trade of agricultural products in the EEC. The main conclusions of these studies have been that:

(i) This policy has resulted in raising the average level of agricultural protection over what it had been in the individual countries, particularly France. (It must be remembered that the CAP was the pre-condition for French participation.) The system operates in such a way that the demand for agricultural commodities in a member country is met first by domestic production, second, by imports from other member countries, and finally by imports from non-EEC. Many authors have attempted to measure the protection provided by the variable-levy system by expressing it in terms of an "implicit tariff" which indicates the percentage excess of the prices which the domestic producers actually receive over import prices. The studies by E.L. Bernston, and H.B. Malangren and Schlechty[8] conclude that the post-CAP protection level is about triple the pre-CAP level.

(ii) It had considerable trade diversion effect. It has

encouraged high cost production by closing the doors to efficient foreign producers. A study by R.W.Fox indicates a trade diversion of \$565 million by 1970, while the study by L.B.Krause (1962) put the figure at \$500 million per year by 1970.[9]

(iii) It has involved economic cost by generating surpluses in some foodstuffs and by retarding the movement of labour to industry.

Section 4

The "Degree of Preference"

The first two sections of this chapter have indicated the height of the tariff walls raised by the Common External Tariff and the last section has outlined the non-tariff barriers which the EEC has erected against outsiders. Beside these, there are many factors which create "preference" in favour of member countries or "discrimination" against non-member countries. These include government policies discriminating against non-members, increased information flows, the establishment of repair services and selling outlets, greater mobility of factors of production, elimination of the risk that tariff concessions, may be reversed and the psychological feeling of being united. The calculation of the "rate of discrimination" discussed in section two considers only tariff barriers. However, in view the non-tariff barriers and these other factors are even more important in creating "preference" in favour of members. The sum of all these is, perhaps the most important to look at, as that indicates the total net effect of the formation of the Union on the level of protection against non-members or the level of preference generated for the member.

In this section I attempt to measure that sum total effect qualitatively. I call it the "degree of preference" because I view it from the point of view of the members. The "degree of preference" is the factor by which the trade among members is increased as a result of the union compared to all sources of supply to the common market. This in fact, is another useful feature of the model developed in chapter three using dummy variables to measure the effects which are otherwise very hard to quantify.

All I have to do is to specify my dummies a little differently. This specification is given in the following table.

Table 4.3

Specification of the Dummies in Equation 4.1

	*	*	*	*
	D	D	D	D
	1	2	3	4
EEC TO EEC	1	1	0	0
N.EEC TO EEC	0	1	0	0
EFTA TO EFTA	0	0	1	1
N.EFTA TO EFTA	0	0	0	1
N.EEC TO N.EEC	0	0	0	0
N.EFTA TO N.EFTA				

* D is used to dummy all flows going to any EEC member (i.e.,

both from member and non-member countries) and D_1 is used to dummy only the flows going from EEC members to EEC members and thus its coefficient will pick up any "preference effect". Now if we want to test that the formation of the EEC is the only factor which has created preference among members, it becomes strictly necessary to test the coefficient for non-significance in the pre-integration period. Thus, the test for the preference effect is a two-tier test. The coefficient should be non-significant in the pre-integration period and significant for the post integration period if the formation of the EEC (and only its formation) has generated "preferences". D_3 and D_4 are analogous dummies for the EFTA and the reasoning is strictly parallel.

The following equation was estimated for each year of the period 1951-70 using a cross-sectional model.

$$\log X_{ij} = c_0 + c_1 D_1 + c_2 D_2 + c_3 D_3 + c_4 D_4 + c_5 \log Y_i + c_6 \log Y_j + c_7 \log N_i + c_8 \log N_j + c_9 \text{EST} + \log e_{ij} \quad (4.1)[10]$$

The results are reported in Table 4.4. It is D_1 and D_3 which are of interest for us in this context. The behavior of their coefficients is briefly discussed here even though the results speak for themselves.

The pattern of c_1 is exactly as expected. It is insignificant in all the pre-integration years (1951-58) and becomes significant in all the post integration years.

In addition, it shows a sharp rise in 1959 from 1958 which corresponds to the year the EEC was formed. The coefficient increases to 0.457 from 0.277 in that year. Thereafter it rises monotonically each year with only one exception in the year 1960.

The pattern is so clear and strong that we can safely conclude that the formation of the EEC had an immediate "preference creation" effect which has since been growing in a cumulative fashion. The coefficient itself can be taken to represent the "degree of preference" in each year. However, it must be noted that the approximate nature of the dummy variables implies that these results should also be taken as approximations.

The pattern of c_3 is not so clear. It turns out to be

Table 4.4
Coefficient Estimates for Equation 4.1

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	*	*	*	*							2
	D	D	D	D	DST	YI	NI	YJ	NJ	Constant	R
	1	2	3	4							
1951	0.040 (0.138)	0.472 (2.907)	0.564 (2.612)	0.219 (1.442)	-0.528 (-9.869)	1.477 (18.247)	-0.675 (-7.443)	1.081 (13.239)	-0.433 (-4.666)	4.138	0.716
1952	-0.068 (-0.234)	0.479 (3.045)	(0.468) (2.233)	0.153 (1.039)	-0.550 (-10.618)	1.442 (18.407)	-0.631 (-7.154)	0.972 (12.292)	-0.305 (-3.372)	4.011	0.726
1953	-0.047 (-0.167)	0.346 (2.226)	0.503 (2.430)	0.107 (0.733)	-0.608 (-11.856)	1.374 (17.837)	-0.577 (-6.544)	0.820 (10.532)	-0.099 (-1.105)	4.193	0.729
1954	0.156 (0.608)	0.294 (2.086)	0.417 (2.430)	0.116 (0.877)	-0.569 (-12.254)	1.316 (18.693)	-0.557 (-6.925)	0.887 (12.439)	-0.232 (-2.813)	4.151	0.750
1955	0.100 (0.358)	0.475 (3.010)	0.632 (3.1010)	0.45 (0.311)	-0.561 (-11.112)	1.446 (18.352)	-0.609 (-6.769)	1.041 (13.045)	-0.427 (-4.636)	3.909	0.744
1956	0.052 (0.187)	0.597 (3.945)	0.659 (3.973)	0.129 (0.907)	-0.552 (-11.061)	1.462 (18.345)	-0.630 (-6.921)	1.017 (12.599)	-0.365 (-3.916)	3.586	0.752
1957	0.183 (0.649)	0.636 (4.137)	0.614 (2.993)	0.262 (1.811)	-0.513 (-10.100)	1.504 (17.915)	-0.700 (-7.309)	1.012 (11.920)	-0.341 (-3.482)	3.148	0.742
1958	0.277 (0.931)	0.550 (3.396)	0.644 (2.977)	0.221 (1.445)	-0.535 (-9.987)	1.497 (16.340)	-0.713 (-6.833)	1.097 (11.863)	-0.474 (-4.447)	3.381	0.715
1959	0.457 (1.743)	0.366 (2.563)	0.497 (2.603)	0.286 (2.118)	-0.554 (-11.705)	1.392 (17.262)	-0.605 (-6.598)	1.036 (12.715)	-0.344 (-3.662)	3.360	0.758
1960	0.370 (1.527)	0.368 (2.764)	0.514 (2.912)	0.196 (1.559)	-0.553 (-12.580)	1.401 (19.786)	-0.553 (-6.843)	1.043 (14.397)	-0.363 (-4.347)	3.289	0.796
1961	0.371 (1.646)	0.234 (1.876)	0.568 (3.452)	0.060 (0.507)	-0.565 (-13.823)	1.319 (21.380)	-0.455 (-6.374)	0.956 (14.955)	-0.272 (-3.643)	3.372	0.820
1962	0.412 (1.907)	0.189 (1.574)	0.474 (3.005)	0.094 (0.833)	-0.581 (-14.846)	1.295 (21.335)	-0.457 (-6.517)	0.935 (14.846)	-0.221 (-3.007)	3.429	0.830
1963	0.465 (2.17)	0.205 (1.723)	0.572 (3.656)	0.024 (0.217)	-0.581 (-14.970)	1.341 (21.618)	-0.507 (-7.095)	0.920 (14.294)	-0.208 (-2.78)	3.361	0.833
1964	0.465 (2.106)	0.259 (2.111)	0.586 (3.638)	0.121 (1.043)	-0.573 (-14.328)	1.367 (21.316)	-0.500 (-7.33)	0.979 (14.685)	-0.262 (-3.394)	3.121	0.827
1965	0.520 (2.343)	0.167 (1.356)	0.628 (3.888)	0.054 (0.464)	-0.591 (-14.723)	1.362 (20.98)	-0.520 (6.996)	0.989 (14.67)	-0.275 (-3.535)	3.150	0.826
1966	0.582 (2.678)	0.187 1.552	0.674 (4.254)	0.097 (0.850)	-0.576 (-14.66)	1.377 (21.044)	-0.529 (-7.059)	0.960 (14.156)	-0.208 (-2.655)	2.780	0.835
1967	0.667 (3.133)	0.120 (1.015)	0.782 (5.033)	0.059 (0.528)	-0.573 (-14.88)	1.343 (20.62)	-0.509 (-6.789)	1.066 (15.66)	-0.311 (-3.95)	2.633	0.840
1968	0.695 (3.346)	0.021 (0.184)	0.780 (5.147)	0.041 (0.375)	-0.591 (-15.69)	1.345 (20.959)	-0.524 (-7.037)	1.070 (15.92)	-0.326 (-4.156)	2.879	0.848
1969	0.744 (3.669)	0.083 (0.734)	0.845 (5.719)	-0.562 (-0.526)	-0.584 (-15.89)	1.349 (21.389)	-0.539 (-7.417)	1.095 (16.62)	-0.370 (-4.84)	2.794	0.853
1970	0.759 (3.752)	0.151 (1.340)	0.852 (5.777)	0.029 (0.276)	-0.552 (-15.059)	1.374 (22.40)	-0.528 (-7.46)	1.097 (17.104)	-0.394 (-5.28)	2.328	0.856

(VALUES SHOWN IN PARENTHESIS ARE T-VALUES)

significant even in the pre-integration period and remains so throughout. As noted above, ideally, we would expect it to be insignificant in the pre-integration period. The only reason to suspect any preference-creating effect of the formation of the EFTA rather than some other factor which is causing preferential trade relations is the fact that the coefficient shows an increasing trend in the post integration period which was not present in the pre-integration period. I would, however, tend to conclude that the EFTA did not create significant "preference" for members, because this latter effect does not appear to be very strong.

Footnotes -- Chapter Four

1. In fact it was achieved by 1967.
2. Frank, I., The ~~European~~ Common Market: An Analysis of Commercial Policy, New York: Frederick A. Praeger, 1961, pp. 175-181.
3. Balassa, B., The Theory of Economic Integration, op. cit., p. 48.
4. Hinshaw, R., European Community and American Trade, New York: Praeger, 1965.
5. See GATT, DOC, L/1479, 16th May 1961.
6. See GATT, DOC, L/1919, 14th Nov. 1962.
7. Jan Tinbergen, "The Impact of the EEC on Third Countries", Sciences Humaines et Integration Europeane.
8. Bernston, B.L., Goclsby and Mohre, "The European Community's Common Agricultural Policy, USDA, Economic Report No. 55; Malangren, H.B., and Schlechty, "Technology and Neo-Mercantalism in International Agricultural Trade", American Journal of Agricultural Economics, 51, 1969.
9. Fox, R.W., "Some Possible Production and Trade Effects of the EEC's CAP for Grains", Ph.D. Dissertation, Michigan State University (1965); Krause, L.B., "The European Economic Community and American Agriculture, Joint Economic Committee report in US Congress (1962).
10. This equation is the same as equation 3.4 in chapter 3, except for the dummies which are specified differently.

CHAPTER FIVE

IMPLICATIONS OF WEST EUROPEAN INTEGRATION FOR DEVELOPING
COUNTRIES WITH SPECIAL REFERENCE TO PAKISTANSection 1Introduction

International trade has often been viewed as an important instrument in the development process. IN the post World war II period, when the developing as well as the developed nations seemed to be concerned about the widening gap between the East and the West, the issue became yet more important. Some saw the development of the West to be based on an exploitation of the primary producing countries through trade, and to others the protectionist policies of the developed countries were one of the biggest obstacles in the development of poorer nations. There has been a growing realization on the part of developed countries of their responsibility to help the LDC's through trade and aid. The General Agreement on Tariffs and Trade, the International Bank for Reconstruction and Development, the International Development Agency, the United Nations Conference on Trade and Development and many other organizations are the products of this realization.

Western Europe, which has been a center of trade and commerce for centuries, is of special importance to underdeveloped countries. The establishment of the EEC and the EFIA was not hailed by these countries as they genuinely feared a substantial portion of their exports being eroded or displaced by the members of these groups. Most of these LDC's were already plagued by chronic deficits in their balance of payments, and the situation was expected to worsen after the institutional changes in Western Europe. This had important implications not only for trade but also for the development strategies in many countries. The gloomy prospect for their exports led many countries to follow the expensive strategy of import substitution.

This chapter looks into some of these issues. The next section is devoted to an analysis of the role of international trade in economic growth. Section three documents the importance of Western Europe for the trade of less developed countries, particularly Pakistan. In the last section the import performance of the West European countries is reviewed and again special reference is made to the imports from Pakistan.

Section 2

International Trade and Economic Growth

The role of international trade in economic growth has been the subject of a long controversy among economists, with the dominance in the argument shifting between free trade and protectionism. In recent years, however, the sentiment for free trade has strengthened due to intellectual support by the neo-classical economists coupled with the trade-led development of many countries. A vast majority of economists today are convinced that free trade can make impressive contributions to economic development through: (i) more efficient allocation of resources (ii) economies of scale (iii) increased competition (iv) availability and adoption of new technology (v) discovery of profitable areas for lending and investment and the resultant capital flows.[1]

The optimism of the neo-classical economists has been vindicated in many cases. International trade did have a propulsive role in the development of a number of countries, which lends a great deal of support to the view that "trade is an engine of growth", using Cairncross's terminology. In the case of United States and Canada export industries, especially agriculture and mining, expanded rapidly in the 19th century and attracted foreign investment in transportation facilities and the manufacture of farm

equipment. The growth of these industries in turn had important feedback effects on the demand for steel and other inputs.[2] Similarly, in Britain, development was fostered by the export trade in woollen manufactures and cotton textiles; for Sweden it was the timber trade; for Denmark, dairy produce; for Australia, wheat and wool; for Switzerland, clock making; and for Japan, silk.

Some economists believe that the case of developing countries in the 20th century is different from the one outlined in the previous paragraph. Ragnar Nurkse, for example, has drawn a distinction between growth in the 19th century which, was on the whole led by exports, and that in the twentieth century, which with the exception of the oil producing and developed countries, is not.[3] Some economists even go to the extent of asserting that foreign trade, instead of boosting development, has practically inhibited growth in less developed countries. To quote Gunnar Myrdal, "A quite normal result of unhampered trade between two countries, of which one is industrial and the other under-developed, is the initiation of a cumulative process towards the impoverishment and stagnation of the latter".[4] The hypothesis of secular deterioration of LDC's terms of trade put forward by Raul Prebisch and Hans Singer, is in the same line of thought.[5]

The Prebisch-Singer hypothesis has not been confirmed by empirical analysis. Professor Nurkse's observations must also be qualified. There can be little doubt about the fact that free

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trade increases productivity of the resources of a country. But to what extent this increased productivity can promote economic development depends upon the spill-over that it provides for other industries. For, although the initial expansion of the export sector is potentially favourable for development, the actual scale of this stimulus and the rapidity with which it is transmitted to other sectors will depend not only on the rate of export growth, but also on the degree of domestic market imperfections. Unfortunately, in the case of less developed countries the "linkage-effects" of increased productivity have been weak, so that the export stimulus did not have such penetrative power to induce more significant secondary changes elsewhere in the economy. Thus, I would tend to conclude that the export growth does have a potentially favourable effect on economic growth but it must be accompanied by structural changes within the economy.

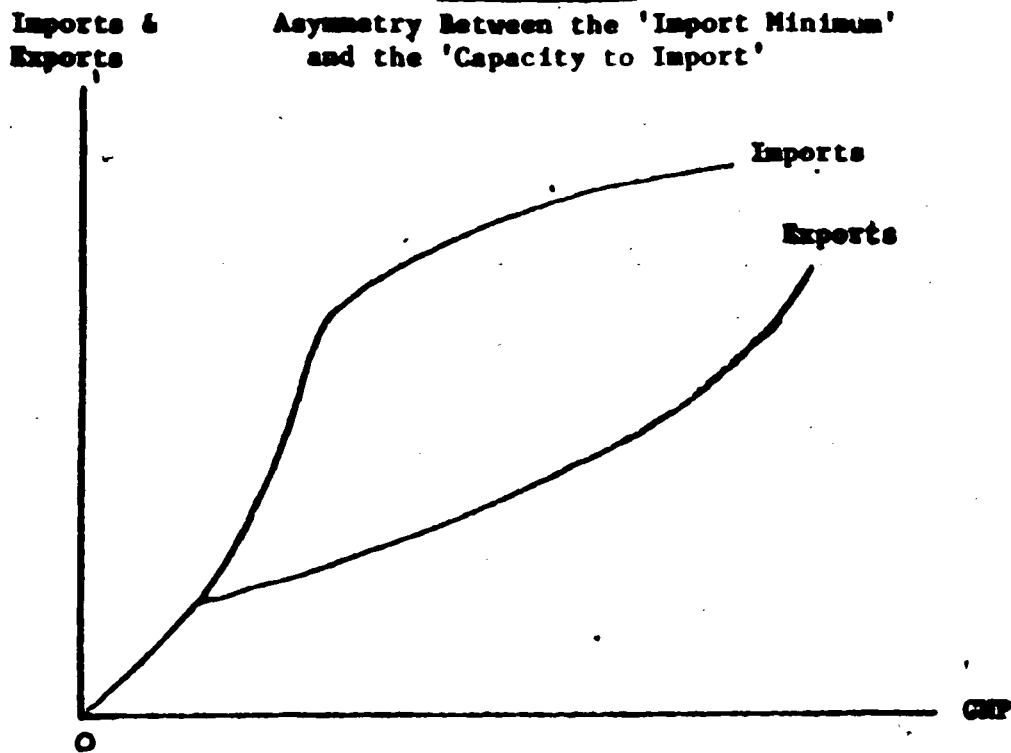
Another aspect of international trade which has important implications for development strategy is what is known as the "balance of payments constraint". The economies of less developed countries typically have high marginal propensities to import. This is a combined result of the inevitability of capital imports required for growth and the demonstration effect in consumption in open economies. The underdeveloped countries cannot help importing capital goods which are vital for growth to take place but cannot be produced domestically. These imports are termed as "input-

imports" and constitute the "import minimum" for an economy. For a country committed to the objective of growth this minimum tends to be quite high.

The fulfillment of this import minimum over a long period of time necessitates a symmetry between the growth of import needs and the capacity to import. But the tragedy is that this symmetry is utterly lacking. The demand for basic foodstuffs and agricultural raw materials, which are the conventional exports of the LDCs, rises at a slower rate than the real income in industrial countries. Some of the factors responsible for this trend are: (1) structural shifts favouring products with low raw material content in the industries of advanced countries, (2) the rising share of services in the total output of industrial economies, (3) the low income elasticity of consumer demand for a number of agricultural commodities, (4) the discovery and development of new synthetic substitutes for raw materials. (5) the adverse effects of agricultural protectionism on the imports of primary products in industrial countries, especially the EEC.

Thus, the increase in the exports of LDCs is slower mainly due to factors emanating from industrial countries. At the same time the demand for imports in the LDCs tends to rise faster than real incomes. This asymmetry between "import minimum" and "export maximum" gives rise to a foreign exchange gap. The situation is depicted in the following diagram.

Figure 5.1



We start off with a zero balance of payments as the country prepares for development. In the initial stages, imports grow at an increasing rate because of the input imports, but as the country moves to higher stages of development, some of these imports can be produced domestically so that the rate of growth of imports starts decreasing. On the other hand exports in the early stages of development mainly consist of agricultural products and rise at a decreasing rate for reasons outlined above. In later stages, however, the share of manufactured exports rises and the rate of growth of total exports increases. *df*

It is seen that the balance of payments gap increases as the country prepares to "take off". It eventually closes down, but in the initial stage requires a "big push" in the form of foreign exchange transfers and/or earnings.

Because of the highly needed imports, the problem of economic growth in initial stages boils down to a consistent softening of the foreign exchange constraint. This can be achieved by increasing foreign exchange earnings and/or foreign exchange transfers. The foreign exchange transfers can take the form of private foreign investment and foreign economic assistance. Now, it is well known that the developed countries have failed to fulfill the aid requirements of developing countries. The aid that did flow to LDCs has mostly been tied. The terms have become much more tight and the "grant element" of loans has decreased.[6] As regards private foreign investment, the politico-economic conditions obtaining in LDCs limit its scope in spite of the lucrative inducements offered by some of these countries.

The gloomy prospects for foreign exchange transfers, the predominance of bilateralism, the political strings attached to foreign loans, and the feeling of self-respect on the part of LDCs have all combined to result in the slogan, "trade not aid". In the last two decades, the less developed countries have placed much more importance on obtaining more favourable trade openings than

on aid. If the developed countries are serious in their intention to help the less developed countries to grow, then they have to ensure better export prospects for the LDCs. Increased export earnings will help to reduce the balance of payments gap of LDCs, encourage them to avoid the costly path of import substitution and will set the development process in motion.

Western Europe has a significant role to play in this regard since the area is of prime importance as an export market to most of the less developed developed countries. Let us review this in greater detail.

Section 3

Importance of Western Europe in World Trade

The importance of Western Europe in world trade can hardly be exaggerated. Because of its central location, its leading role in the industrial revolution, its comprehensive transportation network and perhaps most important, because of the colonial ties with a large number of countries which accommodate a large percentage of world population, Europe has been the pivot of trade and commerce for centuries. For less developed countries its importance is overwhelming, both as the origin of their imports and as the destination of their exports.

Western Europe is in general more dependent on foreign trade than other industrial countries. The four big West European countries--France, West Germany, Italy and the United Kingdom--all depend on foreign trade to the extent of between 13 and 17 per cent of their gross domestic products. The smaller countries are even more dependent on foreign trade. In both Belgium-Luxemburg and the Netherlands, foreign trade is equal to around 40 per cent of the GDP. In the Scandinavian countries the proportion is roughly 25 per cent. As compared to these, the proportion for the United States and Japan are 4 and 10 per cent respectively. (See Appendix Table A5.3).

The total foreign trade (average of exports and imports) of West European countries accounts for nearly half of the total world trade. Table 5.1 presents the regional distribution of West European trade in 1970.




Table 5.1

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a)
Regional Distribution of West European Trade (1970)
(Value in Million \$)

Exports to	World		Western Europe							
	Value	b) %	Total		EEC		EFTA		U.K.	
Value			%	Value	%	Value	%	Value	%	Value
World	312070	100.0	132610	42.5	85270	27.3	47340	15.2	19680	6.3
Western Europe Total	131620	100.0	81970	62.3	54490	41.4	27480	20.9	6720	5.1
EEC	88510	100.0	58820	66.5	43300	48.9	15520	17.5	3670	4.1
EFTA Total	43110	100.0	23150	53.7	11190	26.0	11960	27.7	3050	7.1
U.K.	19350	100.0	7110	36.7	4110	21.2	3000	15.5	-	-
U.S.	42590	100.0	12730	29.9	8330	19.6	4400	10.3	2480	5.8
Canada	16180	100.0	2890	17.9	1150	7.1	1740	10.8	1440	8.9
Japan	19320	100.0	2410	12.5	1300	6.7	1118	5.8	480	2.5
Developing Countries	54980	100.0	20760	37.8	13950	25.4	6810	12.4	4930	9.0

Source: Handbook of International Trade and Development Statistics
1976 UNCTAD.

a) Sum of the EEC and the EFTA.

b) Percentage by origin.

The total imports of the area in current prices were 132.6 billion dollars which accounted for 42.5 per cent of total world exports. It is notable that even though the region takes a considerable proportion of the exports of industrial countries outside the region, as a market it is much more important to developing countries. In 1970 the developing countries exported 37.7 per cent of their total exports to Western Europe as compared to 26.5 per cent for North America and 12.5 per cent for Japan. However, the most significant links exist within the two trading circuits i.e., the EEC and the EFTA. The intra-trade of these blocs was 48.9 and 27.7 per cent of their respective trade. Viewed as one region, the intra-trade of Western Europe accounted for 62.3 per cent of region's trade.

It may be more revealing to analyse the trade data at a disaggregated level. Table 5.2 presents figures for West European imports in five major product categories. It is seen that in all of these classes West European imports constitute about 45 per cent of world exports. As for the developing countries, in four out of five categories Western Europe imports more than one third of their exports. If we group by primary products and manufactures, the figures come out to be about 41 and 22 per cent respectively. As we know, the major exports for most of the developing countries fall in the former class.

Table 5.2

Percentage of Exports Going to Western Europe, 1970
(Shares by Origin)

Categories	Food, Beverages and Tobacco	Agricultural Raw Materials	Ores & Metals	Fuels	Manufactured Goods 5 to 8 Less (67+68)
SITC	0+1+22+4	2-22-27-28	27+28+67+68	3	
Origin					
World	46.3	44.4	47.9	45.7	44.5
W. Europe Total	71.1	76.5	70.9	78.8	62.1
EEC	77.1	76.4	72.6	78.5	66.6
EFTA Total	56.3	76.5	67.0	80.5	53.4
U.K.	27.8	52.8	47.3	72.7	37.5
U.S.	33.5	28.7	39.0	24.5	32.0
Canada	26.9	19.5	37.7	0.3	14.4
Japan	20.6	20.6	9.5	4.2	12.1
Developing Countries	38.2	33.8	44.7	44.9	21.8

Source: Appendix Table A5.2

The importance of the West European market will obviously be different for different countries. It is not possible to discuss all developing countries separately. Here I will analyse the case of Pakistan.

Table 5.3 gives the principal exports of Pakistan to its major trading partners. A number of points are worth mentioning. First, it may be noted that both the EEC and the EFTA are important markets for Pakistan's exports, jointly accounting for more than 25 per cent of its exports. The EEC is the single largest market, followed by the U.K. and the U.S.A. Second, in six out of the eleven categories, Western Europe imports more than 30 per cent of Pakistan's exports; in two of them--Leather and Floor coverings & tapestry--about 70 per cent, and in another--sporting goods--more than one-half. Third, interestingly the commodities for which the area is more important fall in the manufactures and semi-manufactures class. This distinguishes Pakistan from most other developing countries. Fourth, within the EFTA, the U.K. imports more than 70 per cent of the EFTA's total imports from Pakistan. If we exclude leather, the percentage is higher than 80%. The other countries of the EFTA are not of major importance to Pakistan.

Table 5.3

Major Exports of Pakistan to Selected Areas, 1970
(Value in U.S. thousand dollars)

Commodities SITC	Destination	World	Western Europe Total	EEC	EFTA Total	U.K.	U.S.	Canada	Japan
Fish 031		19049	1609	321	1288	1253	5422	-	5416
Fresh, %		100.0	8.5	1.7	6.8	6.6	28.5	-	28.4
Simply Provd.									
Rice 042		26712	1168	83	1085	1085	6	2	1
%		100.0	4.4	0.3	4.1	4.1	0.02	0.0	0.0
Cotton 263		53351	4233	2999	1234	352	472	39	10282
%		100.0	7.9	5.6	2.3	0.6	0.9	0.07	19.3
Leather 611		31055	22000	16426	5574	2592	286	-	3988
%		100.0	70.8	52.9	17.9	8.3	1.0	-	12.8
Text. 651		64783	4357	3354	1003	888	98	2.2	6356
Yarn & Thread %		100.0	6.7	5.2	1.5	1.4	0.2	0.03	9.8
Cotton 652		58705	20435	8581	11854	11634	6957	1447	44
Fabrics %		100.0	34.8	14.6	20.2	19.8	11.8	2.5	0.07
Woven									
Text. 656		60450	9191	7614	1577	780	689	33	2
etc. %		100.0	15.2	12.6	2.6	1.3	1.1	0.05	0.0
Prod. NES									
Floor 657		13493	9360	4341	5019	3513	1167	48	18
Cov. %		100.0	69.4	32.3	37.2	26.0	8.6	0.4	0.1
Tapes. etc									
Cloth. 841		5292	1556	661	895	525	1614	389	82
not Fur %		100.0	29.4	12.5	16.9	9.9	20.5	7.4	1.5
Foot- 851		5561	1823	823	1000	606	90	6	9
wear %		100.0	32.8	14.8	18.0	10.9	1.6	0.1	0.2
Toys, 894		6664	3588	1828	1760	1250	1248	148	20
Sport. %		100.0	53.8	27.4	26.4	18.8	18.7	2.2	0.3
Goods etc.									
All 0-9		723400	187383	95435	91948	75312	85105	9537	42348
Prod. %		100.0	25.9	13.2	12.7	10.4	11.7	1.3	5.8

Source: OECD Trade Statistics Series C. 1970.

Section 4Import Performance of the EEC and the EFTA

The total foreign trade of Western Europe increased in current values at 9.2% a year between 1955 and 1970, which compares favourably with an 8.6 per cent increase for the United States and 7.1 per cent for Canada and is also higher than the increase in total World trade (8.4 per cent). However, as the figures presented in Table 5.4 below indicate, the trade among West European countries rose much faster than the trade with rest of the world. The intra-trade increased at a rate of 11.4 per cent annually in current values while imports from rest of the world increased at only 6.6 per cent. The implication is that Western Europe's trade dependence on the rest of the world has been decreasing since the mid-1950s and Western Europe has been turning inward. In 1970, for example, 61.8 per cent of its imports came from other countries in the region as compared to 45.3 per cent in 1955.

If we look at the figures more carefully, it becomes evident that by far the biggest increases in West European trade have been the expansions of trade within the two trading blocs--the EEC and the EFTA--and especially the expansion of trade within the EEC. In the mid-1950s, the intra-trade of the six member countries of the EEC was only about one-sixth of Western Europe's total trade; by 1970 it had increased to one-third.

Table 5.4
Network of World Imports 1955, 70: Shares of Importing Area by Origin,
And Rates of Growth 1955-70

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Destination Origin	World		Western Europe Total		EEC		EFTA Total		U.K.		U.S.		Canada		Japan		Developing Countries		
	Rate of Growth	% Share	Rate of Growth	% Share	Rate of Growth	% Share	Rate of Growth	% Share	Rate of Growth	% Share	Rate of Growth	% Share	Rate of Growth	% Share	Rate of Growth	% Share	Rate of Growth	% Share	
World	1955	8.4	100.0	9.2	100.0	10.4	100.0	7.4	100.0	5.0	100.0	8.6	100.0	7.1	100.0	13.8	100.0	6.2	100.0
	1970		100.0		100.0		100.0		100.0		100.0		100.0		100.0		100.0		100.0
West. Europe Total	1955	9.7	35.2	11.4	45.3	12.5	48.2	9.8	41.9	7.7	23.2	10.9	19.1	7.2	13.4	17.3	6.9	4.9	37.7
	1970		42.2		61.8		63.9		58.0		34.1		26.5		13.5		10.8		31.0
EEC	1955	10.9	20.2	12.1	29.4	13.8	32.3	9.1	26.0	7.4	13.1	12.3	10.2	11.4	3.3	17.2	4.2	5.6	21.7
	1970		28.4		44.4		50.8		32.8		18.6		17.0		5.9		6.5		19.8
EFTA Total	1955	7.8	15.0	9.9	15.9	9.0	16.0	10.7	15.9	8.0	10.0	9.0	8.9	5.3	10.0	17.3	2.7	3.8	16.0
	1970		13.8		17.4		13.1		25.3		15.5		9.5		7.6		4.3		11.2
U.K.	1955	5.8	8.9	8.8	5.7	8.8	6.0	8.8	5.2	-	-	9.1	5.1	3.5	9.0	15.8	1.8	2.2	12.2
	1970		6.2		5.4		4.8		6.3		-		5.5		5.3		2.3		6.8
U.S.	1955	7.0	16.5	7.5	12.0	8.1	13.5	6.6	10.4	6.2	10.5	-	-	7.4	69.0	13.6	31.3	5.4	24.8
	1970		13.6		9.6		9.8		9.3		12.6		-		70.9		30.4		21.7
Canada	1955	9.1	4.7	6.4	3.2	10.2	1.4	4.6	5.4	4.1	8.2	9.7	23.3	-	-	15.1	4.2	9.1	1.4
	1970		5.2		2.2		1.3		3.7		7.3		27.1		-		5.0		2.1
Japan	1955	16.2	2.1	19.3	0.5	20.3	0.4	18.3	0.6	14.7	0.6	18.8	4.0	18.1	1.0	-	-	13.5	5.0
	1970		6.2		1.8		1.5		2.4		2.4		15.4		4.5		-		13.3
Devel. Count.	1955	5.8	25.4	5.6	25.7	6.8	27.0	3.8	24.1	3.0	33.3	4.1	48.6	6.9	8.3	12.5	44.7	4.4	24.9
	1970		17.6		15.6		16.4		14.4		25.0		26.0		8.0		37.8		18.8

Source: Handbook of International Trade and Development Statistics 1976, UNCTAD.

The intra-trade of the EFTA was much less and also increased at a slower rate. The expansion of trade between the two blocs was smaller as compared to the expansion of trade within each bloc. The EEC imports from members increased at 13.8 per cent per year as compared to 9 per cent for imports from the EFTA. Similarly the imports of the EFTA from its members rose by 10.7 per cent per year while those from the EEC increased at 9.1 per cent. The result has been that the members of each of the two blocs have tended to trade more and more within their circuit. This has been due to the preferential treatment given to the members viz-a- viz non-members. In 1955, before the preferential tariff margins began to bite, the six EEC countries did about one-third of their total trade with one another. By 1970 the proportion of intra- trade had come to more than one-half. The intra-trade of the EFTA over the same period of time increased from less than one- sixth to more than one-quarter of the region's total trade. If we compare the two blocs, it turns out that the import performance of the EEC has been better than that of the EFTA for intra- trade as well as for the extra-trade.

These increases obviously have been at the cost of non-member countries. It is interesting to note that the industrial countries did not suffer as much as the less developed countries. However, because the amount of exports of the industrial countries is very large, the loss has been substantial in absolute terms. At the same time the share of developing countries in the EEC's total

Table 5.5


Exports of Western Europe by Selected Commodity Classes (Shares by Origin)		Food Beverages & Tobacco	Agricultural Raw Materials	Ores & Metals	Fuels	Manufactured Goods
World	1955 1970					
Western Europe	1955 1970	26.5 42.5	24.9 46.4	49.3 56.5	38.9 26.7	75.4 77.7
EEC	1955 1970	17.0 32.6	10.1 19.7	35.7 40.5	31.9 21.7	50.2 55.1
EFTA	1955	9.5	14.8	13.5	6.9	25.2
Total	1970	9.9	26.7	16.0	5.0	22.5
U.K.	1955 1970	0.8 1.6	1.5 2.9	3.5 4.6	6.4 2.7	10.7 6.8
U.S.	1955 1970	11.1 10.7	6.7 7.4	11.4 7.1	8.8 3.0	8.1 8.0
Canada	1955 1970	4.5 2.5	2.6 4.0	8.0 7.4	- -	2.1 1.0
Japan	1955 1970	0.4 0.7	0.5 0.8	0.6 1.6	- -	1.1 2.3
Devel. Count.	1955 1970	38.5 26.2	36.4 23.1	22.9 17.4	47.2 62.1	6.0 4.5

Source: Appendix Table A5.2

imports has declined from 27 per cent in 1955 to only 16.4 per cent in 1970.

The increasing share of the West European Market held by the countries within the area is marked in every major product group except one: fuels. Table 5.5 shows these shares for five product groups in 1955 and 1970. The effect of relative diversion from outside sources is particularly significant in agricultural products. The share of West European countries in the region's market for "food, beverages and tobacco" more than tripled from 1955 to 1970, reaching 42.5 per cent of total imports. In this group, and also in "agricultural raw materials", the relative expansion of intra-trade was almost wholly at the expense of imports from developing countries. Their share of West Europe's imports of these two groups, the only groups (apart from oil) in which the third world holds a substantial footing, fell from 37.7 per cent to 25.3 per cent.

Finally, let us briefly examine the import performance of these countries for Pakistan's exports. For this purpose I present the time series of Pakistan's total exports to the EEC, the EFTA and the United States for the period 1960-70 in the following table. The figures are also plotted in the accompanying graph.



It is observed that the rate of growth for exports to the United States has been the fastest with the result that the U.S. share in Pakistan's exports has increased while the share of both the EEC and the EFTA has decreased. However, the EEC was still the biggest market for Pakistan.

Table 5.6

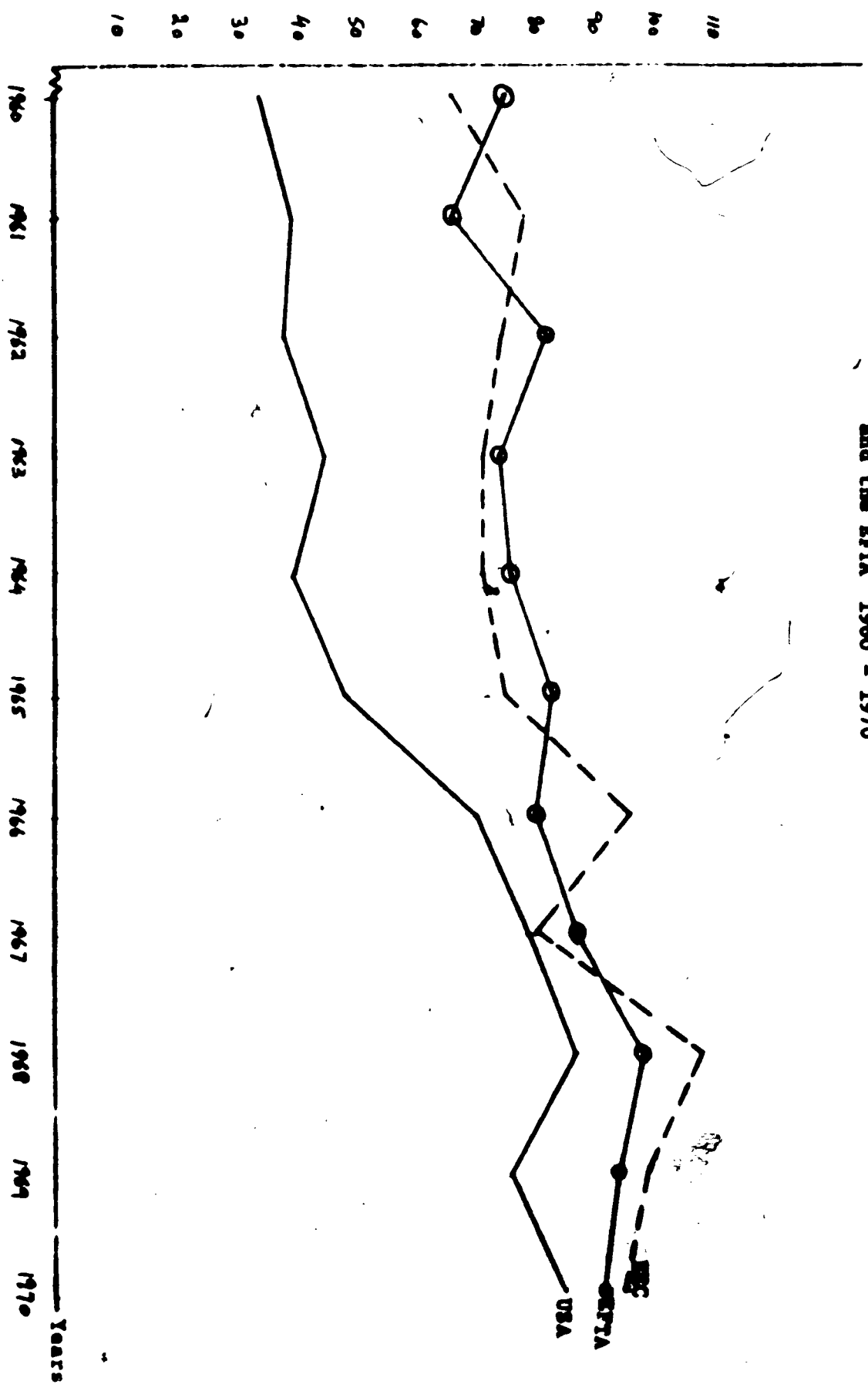
Time Series of Pakistan's Exports to the EEC, the EFTA and the United States. (Value in million U.S. dollars)

Year	U.S.		EEC		EFTA		U.K.		World Value
	Value	%	Value	%	Value	%	Value	%	
1960	34.2	8.7	66.3	16.8	74.7	19.0	68.3	17.4	393.3
1961	39.5	9.9	77.8	19.5	65.9	16.5	57.1	14.3	398.5
1962	37.9	9.0	74.5	17.6	82.0	19.4	73.7	17.4	422.4
1963	45.3	9.8	71.5	14.5	73.4	15.8	62.5	13.5	463.1
1964	39.6	8.0	71.5	14.5	75.9	15.4	66.1	13.4	493.3
1965	48.5	9.2	75.0	14.2	83.4	15.8	72.1	13.6	529.1
1966	70.2	11.7	96.4	16.1	79.8	13.3	69.6	11.6	600.0
1967	79.2	12.6	77.8	12.4	87.4	14.0	75.2	12.0	625.8
1968	87.2	12.1	108.4	15.0	97.8	13.6	83.7	11.6	720.2
1969	75.6	11.1	99.2	14.6	93.6	13.7	78.1	11.5	680.9
1970	85.0	11.7	95.4	13.2	91.9	12.7	75.0	10.4	723.4
Growth Rate	9.5		3.7		2.1		1.0		

Source; Direction of International Trade U.N. Statistical office, various issues.

Value of Exports
(Million \$)

Graph 5.1
Exports of Pakistan to the U.S. the EEC
and the EFTA 1960 - 1970



To summarize, Western Europe has been and still is of prime importance in world trade not only at an aggregate level but also for almost all the major product categories. The rate of growth of its imports (especially of the EEC) from countries outside the region compares quite favourably with those of the other industrial economies. However, it lags far behind the rate of growth of the intra-area trade which is a direct result of the preferential trading arrangements in the region. The result has been that the non-members have lost ground to the member countries of the trading blocs.

Footnotes -- Chapter Five

1. For a detailed discussion of these factors see Meier, G., International Trade and Development, New York: Harper & Row, 1963.
2. Grubel, H., "International Economics" 1978, op. cit., p. 112.
3. Nurkse, R., Patterns of Trade and Development, Wicksell Lectures, Oxford: Blackwell, 1959.
4. Myrdal, G., An International Economy, New York: Harper & Bros., 1956, p. 55.
5. Prebisch, R., "Towards a New Trade Policy for Development" UNCTAD: A Report by the Secretary-General of the Conference, 1964. Linder, S.B., Trade and Trade Policy for Development, 1967.
6. The "grant element" of a loan is intended to measure the extent to which its terms are "softer" than those for normal commercial transactions.

Chapter Six

Summary and Conclusions

There have been many attempts at measuring the trade creation and trade diversion effects of a customs union, particularly of the European Economic Community and the European Free Trade Area. But unfortunately none of them can be regarded as entirely satisfactory. All estimates of trade creation and trade diversion are affected by ceteris paribus assumptions, by the choice of the bench-mark years, by the method of isolating the effects of integration from the other variables, by the choice of the pre- and post- integration periods, and so on.

Chapter two of this thesis provides a survey of the existing techniques of measuring the integration effects highlighting their shortcomings. In the next chapter I have developed an alternative technique for arriving at the trade creation and trade diversion effects. It is based on a model developed by Hans Linnemann in a different context. Essentially it is a gravitational model of trade flows.

In the empirical part of chapter three, the parameter values have been estimated for each year of the 1960-70 period, in a cross-sectional framework using the multiple regression equation.

developed earlier. The effect of trade preferences was estimated by introducing dummy variables into the regression equation along with other independent variables. In this way I was able to overcome the common problem faced by earlier studies, namely isolating the effects of integration on trade from the effects of other variables which normally affect international trading patterns. By estimating the preference effect as an independent variable in a multiple regression equation, one is able to hold constant other major variables which affect trade.

An important feature of the model is the annual estimation of the equation made possible by the use of cross-sectional data, which permits comparing the values taken in individual years by the coefficient of dummy variables, without the need to specify beforehand when the first integration effects might have taken place. Rather the model itself provides information concerning the timing of the first integration effects. Also, the model provides a series of independent parameter estimates which can then be considered as a whole in terms of whether or not they indicate the expected pattern.

The analysis of the coefficient estimates of the dummy variables leads to the following conclusions: (1) The formation of the EEC had significant trade creation as well as trade diversion effect. (2) The first impact of the EEC was felt as early as 1959 and took the form of trade diversion. The trade

creation effect followed with a lag. (3) The main effect of the EFTA was trade diversion. It was not confirmed that the EFTA had any significant trade creation effect. (4) A comparison of the effects of the EEC and the EFTA indicates that the EEC had a much more pronounced effect on all trade flows.

An attempt has also been made to arrive at some qualitative judgement as to the effects of these blocs on the world welfare. Formation of a customs union can be viewed either as a movement towards free trade (i.e. abolition of tariffs on intra-community trade) or as a slide towards protectionism (i.e. discrimination against non-members). Both of these changes occur simultaneously. However, it makes a considerable difference for the world welfare whether the first or the second has a more pronounced effect. In this context, I have developed the concepts of "neutral", "pro-trade" and "anti-trade" customs unions. If a union creates more trade than it diverts or erodes, it can be termed a "pro-trade union"; an "anti-trade union" if the reverse is true, and "neutral" if the two effects are balanced. According to my definitions the EEC turns out to be "neutral" and the EFTA an "anti-trade union."

Next, the effects the EEC and EFTA on different groups of countries were evaluated. With slight modification my model lends itself to this task. I split my sample into five

regional groups (i) EEC (ii) EFTA (iii) Greece, Ireland, Spain, Turkey (iv) Canada, U.S. Japan and (v) Australia, New Zealand. Separate dummies were introduced for each one of these and the regression equations were re-estimated. The results from this set of regressions led to the following conclusions:

(1) ~~All~~ groups of countries except one suffered trade diversion effect of both the EEC and the EFTA. Countries comprising the third group did not suffer from trade diversion of either of the two blocs. In case of the EEC it was because Greece, Spain, and Turkey have negotiated Associate Member status with the EEC and for the EFTA it was because of the preferential trade links between Ireland and the United Kingdom.

(2) The most significant trade diversion effect of each bloc was against the other. This was due perhaps to the atmosphere of rivalry created between the two groups, or to the fact that before the formation of these groups they had a substantial portion of their trade with each other and hence more chances of trade diversion. However, I think the economic structure and the trade patterns of the two groups are more important in explaining this result. About three quarters of the exports of EFTA consist of items in which one partner (usually the U.K.) had a clear comparative advantage. Thus the formation of the EFTA did not seriously enhance the amount of

competition within the area. On the other hand, about two thirds of the EEC trade and two thirds of the EFTA trade consists of items in which countries of both groups have a comparative advantage and in which they are highly competitive.

Thus the high degree to which the EFTA economies complement one another and on the other hand the high degree to which they are substitutable for and competitive with those of the EEC presented greater likelihood of trade diversion for both blocs against each other and less possibility of trade creation in the EFTA countries.

In chapter four, the question of whether or not the incidence of the Common External Tariff is higher than the national tariffs it replaced was explored. The evidence on this point was found to be inconclusive.

Another aspect of the Common External Tariff is what Jan Tinbergen called the "rate of discrimination" which is the difference between the import duties levied on imports from outsider countries and the duties imposed as an average on all imports. I undertook to calculate the rate of discrimination against Pakistan using 1970 data and found it to be 3.2 per cent, whereas Tinbergen found it to be zero for 1955.

However, I have argued that the "rate of discrimination" is not a good indicator of the degree of protectiveness, since it only considers tariff protection. A number of other protective devices employed by the EEC, especially the Common Agricultural Policy were, discussed. Then I developed an alternative measure of discrimination against non-members. I approached it from the other side, i.e. the "degree of preference" for members versus non-members created by these trading blocs. I have defined the "degree of preference" as the factor by which trade among members increased as a result of the union, compared to all sources of supply. The model developed in chapter three was easily adapted to give a measure of the sum total of all discriminatory factors.

In case of the EEC, the evidence indicated a cumulative pattern in the degree of preference, as expected. By 1970 it had reached a level of 0.76. At the same time, the analysis indicated that the formation of the EFTA failed to create a significant preference in favour of the members.

Chapter five documents the importance of the EEC and the EFTA in world trade, especially for the developing countries and reviews the import performance of these blocs. Total foreign trade of these countries accounts for nearly one-half of world trade, and for 38 per cent of the exports of developing countries

For developing countries it is a larger market than North America.

As compared to other industrial countries, the import performance of Western Europe has been quite satisfactory. However, the trade among West European countries rose much faster than trade with the rest of the world. The implication is that Western Europe has been turning inward. In 1970, for example, 62 per cent of its imports came from other countries in the region as compared to 45 per cent in 1955. In case of Pakistan, the rate of growth of exports to the U.S. was higher than either to the EEC and the EFTA with the result that the United States' share in Pakistan's exports increased while the share of both the EEC and the EFTA decreased. However, the EEC was still the biggest market for Pakistan.

My study has thus provided important results for both theory and policy. Existing concepts have been tested and some new concepts have been formulated. At the same time important empirical conclusions have been reached. Like any study, however, it is by no means exhaustive. It has, nevertheless, provided substantial groundwork for further research in the area.

APPENDIX A

Data and the Sources

The numerical values of the trade flows between the countries included in the sample are in million of U.S. dollars. The figures have been obtained from "Direction of International Trade, Annual", United Nations Statistical Office, various issues.

The figures for Gross National Product are in millions of U.S. dollars, and are in current prices. These have been taken from "International Financial Statistics", May 1976 which reports the time series since 1950. The figures are reported in country pages and are in local currencies. These were converted to U.S. dollars using the exchange rates reported in the same publication. In a few cases, the figures were not reported for some countries in some years. Those figures were taken from United Nations Statistical Yearbook for the relevant year.

The population figures are in millions and are mid-year estimates reported in IPS quoted above. Again in a few cases figures have been taken from U.N. Statistical Yearbook.

The distance variable was calculated as follows: sea distances were obtained from "Distance between ports", 1965, published by U.S. Naval Oceanographic Office, Washington, D.C. Overland distances to the main commercial centers were added to these. In some cases an average of two or more main commercial centres was used. Table A3.1 gives the values given to the distance variable (DST).

Table A3.1

Values Given to the Distance Variable (DST)

	Belg- Lux	Fran- ce	Ger- many	Italy	Neth- er- land	Aus- tria	Den- mark	Nor- way	Por- tugal	Swe- den	Swit- zer- land	U.K.	Gree- ce	Ire- land	Spain	Turk- ey	Can- ada	Japan	U.S.	Aust- ral- ia	New Ze- land	
Belg-Lux	-																					
France	200	-																				
Germany	300	450	-																			
Italy	1000	650	750	-																		
Nether- land	97	300	225	850	-																	
Austria	700	725	500	400	680	-																
Denmark	500	750	425	1300	500	700	-															
Norway	900	1100	950	2200	850	950	500	-														
Portugal	1107	1100	1400	1150	1110	1750	1550	1900	-													
Sweden	1100	1135	950	2200	1000	1650	500	300	1950	-												
Switzer- land	400	400	400	300	500	375	750	1350	1500	1500	-											
U. K.	350	300	900	1600	334	980	860	950	1175	1100	675											
Greece	1890	1500	1650	900	2350	1150	2500	3300	1825	3200	1150	2950	-									
Ireland	682	600	1050	1950	900	1550	1050	900	940	1150	1400	350	2650	-								
Spain	1000	700	1250	650	990	1640	1437	1790	400	1600	1100	1100	1650	800	-							
Turkey	3380	1950	2200	1450	3383	1600	3800	4000	2300	3775	1500	3350	564	3200	2050	-						
Canada	3806	3743	4305	5367	3830	4480	3950	4171	3453	4342	4330	3730	5223	3484	4000	5676	-					
Japan	14850	14758	15472	14620	14860	15510	15293	15659	14037	15790	15360	15022	15300	14615	14079	15050	6462	-				
U. S.	3971	3963	4567	4663	4054	4704	4390	4575	4084	4750	4554	4100	5350	3784	5128	5800	2000	7023	-			
Aust- ralia	12825	12727	13337	13253	12828	13478	13260	13650	12035	13760	13325	12950	14050	13250	12080	13575	11400	5030	10290	-		
New Zealand	11611	11513	12123	12040	11615	12265	12050	12435	10825	12545	12115	11735	12820	12050	10860	12350	10450	5240	9125	1235	-	

Table A3.2

Results of the test for change in the coefficients in the post-integration period using pooled cross-section time-series data.

Periods Variables (b)	Pre-Integration Periods Considered (a)		
	1951-58	1951-59	1951-60
ΔD	0.25	0.20	0.22
1	(2.1)	(1.8)	(1.9)
ΔD	-0.24	-0.25	-0.25
2	(3.8)	(4.0)	(4.0)
ΔD	0.06	0.04	0.06
3	(0.7)	(0.5)	(0.7)
ΔD	-0.05	-0.08	-0.06
4	(0.8)	(1.4)	(1.0)
D	0.61	0.65	0.64
1	(6.7)	(7.5)	(7.4)
D	0.50	0.43	0.43
2	(10.2)	(10.6)	(10.6)
D	0.74	0.75	0.74
3	(11.4)	(12.2)	(12.1)
D	0.17	0.19	0.18
4	(3.7)	(4.3)	(4.0)
D	-0.72	-0.68	-0.68
5	(3.8)	(3.6)	(3.6)
DST	-0.54	-0.54	-0.54
	(33.6)	(35.5)	(35.6)
Y	1.35	1.34	1.34
Y	(54.6)	(57.0)	(57.6)
N	-0.56	-0.54	-0.54
1	(19.6)	(20.1)	(20.1)
Y	0.90	0.89	0.90
J	(36.0)	(37.7)	(38.1)
N	-0.25	-0.24	-0.25
J	(8.7)	(8.7)	(9.0)
ΔY	-0.15	-0.13	-0.13
1	(4.7)	(4.1)	(4.1)
ΔN	0.18	0.17	0.16
1	(4.9)	(4.5)	(4.3)
ΔY	-0.06	-0.04	-0.04
J	(1.7)	(1.3)	(1.4)
ΔN	0.12	0.10	0.11
J	(3.1)	(2.7)	(2.3)
ΔDST	-0.01	-0.01	-0.01
	(0.5)	(0.7)	(0.7)

(Values in parenthesis are t-values)

Notes

(a) The corresponding post-integration periods are 1959-70, 1960-70, 1961-70 respectively.

(b) Variables with Δ are the relevant variables times D where D is

a dummy variable with values = 0 for pre-integration period and = 1 for post-integration period, e.g., $\Delta D = D - D$

1 1 5

Appendix Table A5.1

Network of World Exports 1955, 1970
(value in million U.S. dollars)

Destination		World	Western Europe Total	EEC	EFTA Total	U.K.	U.S.	Canada	Japan	Devel- oping Coun- tries
Origin										
World	1955	93540	35420	19240	16180	9510	11390	4390	2170	23240
	1970	312070	132610	85270	47340	19680	39050	12420	15140	58080
Western Europe	1955	32950	16060	9280	6780	2210	2180	590	150	8770
Total	1970	131620	81970	54490	27480	6720	10360	1680	1640	18020
EEC	1955	18920	10420	6210	4210	1250	1160	145	91	5050
	1970	88510	58820	43300	15520	3670	6630	730	990	11530
EFTA	1955	14030	5640	3070	2570	960	1020	440	59	3720
Total	1970	43110	23150	11190	11960	3050	3730	950	650	6490
U.K.	1955	8300	2010	1160	850	-	580	395	38	2840
	1970	19350	7110	4110	3000	-	2150	660	345	3950
U.S.	1955	15430	4270	2590	1680	1000	-	3030	680	5760
	1970	42590	12730	8330	4400	2480	-	8810	4510	12600
Canada	1955	4390	1150	270	880	780	2650	-	92	325
	1970	16180	2890	1150	1740	1440	10580	-	760	1200
Japan	1955	2010	170	81	90	61	455	46	-	1160
	1970	19320	2410	1300	1118	480	6020	560	-	7730
Devel. Count.	1955	23730	9090	5190	3900	3170	5540	365	970	5790
	1970	54980	20760	13950	6810	4930	10140	1000	5720	10970

Source: Handbook of International Trade and Development Statistics
1976, UNCTAD.

Appendix Table A5.2

Imports of Western Europe and World by Selected Commodity Classes
(Value in Million U.S. Dollars)

Categories	SITC	Food, Beverages & Tobacco 0+1+22+4		Agricultural Raw 2-22-27-28		Ores and Metals 27+28+67+68		Fuels 3		Manufactured Goods 5 to 8 less (67+68)		All Products 0-9	
		World	West Europe	World	West Europe	World	West Europe	World	West Europe	World	West Europe	World	West Europe
Imports From													
World	1955	20430	9490	12030	5820	11410	5210	10270	3730	20930	6070	93540	35420
	1970	45830	21210	18140	8060	39770	19040	28670	13100	83400	37150	312070	132610
Western Europe Total	1955	4150	2520	2060	1450	4400	2570	2010	1450	11160	4580	32950	16060
	1970	12680	9020	4890	3740	15160	10750	4440	3500	46440	28860	131620	81970
EEC	1955	2530	1610	840	590	2965	1860	1590	1190	6350	3050	18920	10420
	1970	8970	6920	2080	1590	10620	7710	3620	2840	20770	20490	88510	58820
EFTA Total	1955	1620	900	1220	860	1430	705	420	255	4810	1530	14030	5640
	1970	3710	2090	2810	2150	4540	3040	820	660	15670	8370	43110	23150
U.K.	1955	500	80	250	86	733	182	390	240	3000	650	8300	2010
	1970	1260	350	445	235	1850	875	495	360	6750	2530	19350	7110
U.S.	1955	2540	1050	960	390	1310	595	1130	330	3410	490	15430	4270
	1970	6810	2280	2090	600	3490	1360	1500	390	9260	3960	42590	12730
Canada	1955	950	430	840	150	1128	418	59	-	1125	128	4390	1150
	1970	1970	530	1640	320	3710	1400	980	3	2530	365	16180	2890
Japan	1955	155	38	97	30	328	31	7	-	1174	65	2010	170
	1970	680	140	305	63	3101	296	48	2	7190	870	19320	2410
Devel. Count.	1955	8700	3650	4860	2120	2391	1192	5900	1760	1670	362	23730	9090
	1970	14570	5560	5500	1860	7400	3310	18100	8230	7750	1690	54980	20760

Source: Handbook of International Trade and Development Statics 1976, UNCTAD.

Table A5.3

a
Foreign Trade As Percentage of GDP

	1955	1970
Austria	19.2	22.0
Australia	18.2	14.7
Belgium/Luxemburg	30.9	44.7
Canada	16.3	18.7
Denmark	26.7	24.9
France	9.9	12.8
Germany F.R.	13.8	17.0
Greece	11.9	13.6
Ireland	30.5	34.8
Italy	9.5	15.2
Japan	9.4	9.7
Netherlands	37.6	41.6
New Zealand	27.6	19.6
Norway	25.4	27.5
Portugal	18.4	20.3
Spain	7.0 b	11.0
Sweden	20.5	20.9
Switzerland	22.3	27.5
Turkey	5.4	5.8
United Kingdom	18.0	16.8
United States	3.5	4.4

Source: International Financial Statistics, May 1976.

- a) Average of exports and imports.
b) 1960

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