

THE IMPACT OF EUROPEAN AND LATIN AMERICAN
ECONOMIC INTEGRATIONS ON TRADE
AMONG MEMBERS AND WITH
THE UNITED STATES

By

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TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION	1
The Problem	2
Objectives	4
Organization of the Study	5
II. A CONCEPTUAL MODEL OF INTERNATIONAL TRADE	6
Price Analysis	7
Flow Analysis	9
Differences and Similarities Between Price and Flow Analyses	10
Macroeconomic Forces Affecting the Trade Flows	12
Quantity Supplied and Demanded	12
Resistance Forces	13
Natural Trade Obstacles	13
Artificial Impediments	13
Trade Preferences	14
Neighboring Countries	14
Trade Preference Agreements	14
Theoretical Aspects of Economic Integrations	15
Trade Creation and Trade Diversion	15
Gross Trade Creation	17
Trade Expansion	18
Review of Preference Group Literature	18
Development of the Conceptual Model	21
Flow of Trade Between Two Countries	21
Integration Impact	21
III. SPECIFICATION OF THE TRADE FLOW MODEL AND SOURCES OF DATA	26
A Conceptual Model for the Flow of Trade Between Two Countries	26
Data Sources	29
Dependent Variable	29
Explanatory Variables	30
Economic Size	30
Distance	30
Neighboring Countries	30
Preference Variables	31

Chapter	Page
The Sample Countries	31
The Study Period	33
IV. EMPIRICAL ANALYSIS OF TRADE FLOWS	34
Basic Trade Flow Model	34
Empirical Trade Flow Models	35
Estimation Procedures	37
Empirical Results of the Trade Flow Model	38
Income Elasticities	39
The Effect of Distance	39
The Effect of Neighbors	45
Preference Variables	45
V. EMPIRICAL ANALYSIS OF THE IMPACT OF ECONOMIC INTEGRATION	47
Estimating the Net Change in the Preference Model	47
The Net Impact of Economic Integrations	51
Estimates of Gross Trade Creation, Trade Diversion, Trade Expansion, by Preference Groups	54
European Economic Community	54
European Free Trade Association	57
Central American Common Market	57
Latin American Free Trade Area	59
The Effects of Preference Groups on Trade of the U. S. and Canada	59
Trade with EEC and EFTA	59
Trade with CACM and LAFTA	62
Internal Trade Between U. S. and Canada	62
Comparisons With Other Studies	63
VI. EVALUATION OF THE IMPACTS OF PREFERENCE GROUPS	65
Estimated Change in Merchandise Trade Balances Caused by the Preference Groups	65
General Expectations	65
Empirical Results	66
United States and Canada	66
EEC	69
EFTA	69
CACM and LAFTA	69
Impact of Integration on U. S. Agricultural Exports	70
General Expectations	71
Empirical Results	71
EEC	71
EFTA	72
CACM	72
LAFTA	74

Chapter	Page
VII. SUMMARY AND CONCLUSIONS	75
Objectives	75
Procedures	76
Findings and Conclusions	78
Impact of Economic Integrations	78
Other Conclusions	83
Limitations of the Study	84
Need for Further Research	86
A SELECTED BIBLIOGRAPHY	88
APPENDIX A	92
APPENDIX B - GROSS NATIONAL PRODUCT, POPULATION AND EXCHANGE RATES FOR SAMPLE COUNTRIES	97
APPENDIX C - DISTANCE BETWEEN SAMPLE COUNTRIES	119
APPENDIX D	130
APPENDIX E	133
APPENDIX F	138
APPENDIX G	141
APPENDIX H	146
APPENDIX I	148
APPENDIX J	154

LIST OF TABLES

Table	Page
I. Hypothetical Money Prices of a Single Commodity (X) in Three Countries	16
II. Countries Included in the Sample by Preference Group . . .	32
III. Estimated Impact of Economic and Preference Forces on Trade Flow: 1951-69	40
IV. Estimated Trade Elasticities with Respect to Income and Distance	46
V. Estimated Coefficients of the Model Used to Measure the Net Impact of the Preference Variables	49
VI. Estimated Net Change in Trade Flows Associated with the Formation of Preference Groups: 1961, 1965 and 1969 . .	55
VII. Actual Trade Flows with Integration as a Percent of Estimated Trade Flows Without Integration	56
VIII. Estimated Total Net Trade Diversion and Total Net Trade Creation	58
IX. Estimated Trade Diversion of Preference Groups from the U. S. and Canada	61
X. Estimated Net Change in Merchandise Trade Balances Caused by Preference Group Formation: 1965	67
XI. Estimated Net Change in Merchandise Trade Balances Caused by Preference Group Formation: 1969	68
XII. U. S. Agricultural Exports as a Percentage of Total U. S. Exports	73
XIII. Trade Creation and Trade Diversion Resulting from Preference Group Formation: 1969	79
XIV. Estimated Trade Expansion, Trade Diversion and Change in Trade Balance of Preference Groups with Respect to the U. S. and Canada: 1969	81
XV. Agricultural Exports of the United States as a Percent of Total Exports, by Importing Group	82

Table	Page
XVI. List of Neighboring Countries	131
XVII. Impact of Economic and Preference Forces on Trade Flow Estimated by Model (4.3): 1951-69	139
XVIII. Impact of Economic and Preference Forces on Trade Flow Estimated by Model (4.4): 1951-69	142
XIX. Number of Sample Observations and Sample Size as a Percent of Total Possible, by Years	147
XX. Actual Trade Flows Among Preference Groups and the U. S. and Canada: 1951-69	149
XXI. Estimated Trade Flows Among Preference Groups and the U. S. and Canada Assuming No Integrations: 1961-1969	155

LIST OF FIGURES

Figure	Page
1. Trade Relations Between a Preference Group and Non-Members	22
2. Trade Relations Among Two Preference Groups and Non-Members	24

CHAPTER I

INTRODUCTION

Since the late 1940's, problems associated with the economic development of the materially less-advanced countries have received a good deal of attention from economists all over the world. Economic development has been rediscovered as both an academic and a practical subject of paramount importance. The study of development problems has had a stimulating influence on several related economic fields. A clear example of such a refreshing and stimulating effect of development questions on other areas is the increased attention given to international trade.

In the last thirty years, a substantial number of publications devoted to international trade matters in the context of both developed and developing countries bears witness to a revived interest in this field of economics. Trade is often viewed not only as an exchange of commodities and/or services, but also as a means to stabilize political relations among nations and to increase world security. This effort to achieve the two goals of economic and political stability through international trade has resulted in a new concept of mutual cooperation known as economic integration. Balassa (5, p. 1) defines economic integration as a process and a state of affairs. Regarded as a process, it encompasses measures designed to abolish discrimination between economic units belonging to differing national states. Viewed as a state of

affairs, it can be represented by the absence of various forms of discrimination between national economies.

Most of the economic analyses of economic integration have been of a qualitative rather than a quantitative nature. Some of the most recent studies analyze how economic growth and development might affect the future growth of world trade, or how the development of a country's exports might determine its rate of economic growth.

The Problem

Economic integration is an instrument for achieving goals that may be economic, political, social, or some combination of these. It is generally presumed that the greatest economic gains from integration accrue to regions with highly developed trade and economic relations; to unions where the partner's industries are at similar levels of development and are well diversified; and to groups in which financial intermediaries are well established. These conditions were all present in Europe before the European Economic Community was formed. In 1948 Belgium, Luxembourg, and the Netherlands signed a treaty that formed The Benelux Customs Union and in 1951 the European Coal and Steel Company was created by France, Germany, Italy and the three Benelux countries (Appendix A).

Those conditions were not present in Latin America at the end of the 1950's: differences in income levels were considerable; productive structures varied greatly; and trade within the area was a small proportion of the region's total international trade. In a less developed region like Latin America where the small size of national markets limit domestic production, the possibilities of gains from the economies

of scale associated with integration appear to be great. The larger markets of a preference group should lead to lower manufacturing costs, higher rates of investment, and more efficient allocation to resources within the region. In addition, existing idle industrial capacity may be put to use to increase production. If a Latin American common market could produce such results, it probably would have a direct and important influence on accelerating the economic growth in the region.

Advocates of economic integration argue that unions increase the welfare of the region and cause gains to the world as a whole. For the member country there are various economic consequences of joining a preference group. As an importer, the costs and benefits for a member country include production, consumption and tariff effects.

a) The elimination of tariffs reduces this source of public revenue to the importing country. If in the past these revenues were used by the government to build or improve public services then the community as a whole may lose by the elimination of tariffs. b) Importer countries lose a portion of the domestic production of relatively inefficient industries causing employment reductions and a loss of producer's surplus in those industries. c) The reduction in domestic production in inefficient industries releases factors of production which can be shifted to more efficient employment resulting in a benefit to the importing country. d) Tariff removal cuts domestic prices of imported goods, increasing consumer's surplus.

The possible gains and/or losses to member countries as exporters may be summarized as: a) an increase in the volume of exports causing a reallocation of resource towards export based industries; b) an

increase in the producer's surplus; and c) higher prices to the domestic consumer of exportables causing a fall in the consumer's surplus.

The net gains or losses to member and non-member countries after the formation of preference groups are not easily determined a priori. They depend upon the economic forces which predominate in each particular case, and vary from commodity to commodity depending on the relevant price elasticities.

The formation of a preference groups also has positive and negative effects on non-member countries. Some of the negative aspects come from the losses in exports to the integrated area due to discrimination in tariffs. The possible benefits to non-members result from the income effect within the market which might lead to an increase in non-member exports to the group.

The formation of preference groups in Europe and Latin America are a possible cause of the deterioration of the merchandise trade balance of the U. S. which culminated in negative trade balances in 1972, 1974, and 1976. The literature on the net expected impact of preference groups is ample, particularly with regards to the European Economic Community. However, little work has been done with regards to the combined and interactive effects of the nearly simultaneous formation of two or more preference groups.

Objectives

The overall objective of this study is to evaluate the economic impact that preference groups in Europe and Latin America have had on one another and on the U. S. trade position.

The specific objectives include:

1. To develop an econometric model capable of evaluating the flow of trade between any pair of countries and/or preference groups; and to estimate the parameters of the model.

2. To estimate the benefits and/or costs of economic integrations to the member countries.

3. To estimate the net impact on the trade position of the U. S. as a consequence of the formation of preference groups in Europe and Latin America.

4. To examine the net impact of economic integrations on the agricultural trade of U. S. with member countries.

Organization of the Study

The remainder of this study is divided into six chapters. Chapter II contains a discussion of the main factors that determine the size of international trade flow between any pair of countries. A conceptual model is developed to a) estimate the forces that determine the flow of trade and b) quantify the impact of the preference groups. The sources of data, countries chosen, period selected for empirical research, and a description of variables are presented in Chapter III. Empirical findings are developed in Chapters IV, V, and VI. Chapter IV contains a description of the statistical procedure used to estimate international trade flows. Chapter V presents estimates of the net impact of economic integrations on member and non-member countries. Chapter VI examines some ramifications of the empirical results. Finally, Chapter VII contains a summary of the study. Limitations, implications and suggestions for further research are also included in Chapter VII.

CHAPTER II

A CONCEPTUAL MODEL OF INTERNATIONAL TRADE

The commercial relations between any two countries are determined by a combination of economic, political, and cultural factors. A conceptual model will be developed in this chapter to indicate how these factors affect trade. Special emphasis will be given to the impact of preference groups on the pattern of international trade.

In the development of the conceptual model emphasis will be given to the relationships between international merchandise trade and changes in the factors which affect that trade. The focus of the study will be on trade between countries or among groups of countries. It is relevant at this stage to ask why countries engage in international trade. This question has been answered by Kreinin (23):

Nations trade with each other for fundamentally the same reasons that individuals or regions engage in exchange of goods and services: to obtain the benefits of specialization. Since nations, like individuals, are not equally suited to produce all goods, either because they are differently endowed or for other reasons, all would benefit if each specialized in what it can do best and obtained its other needs through exchange. The point is self-evident, for in a free society communities would not engage in trade if it did not benefit them (p. 217).

Within the context of international trade theory two basic conceptual approaches have been used to identify and explain the factors which affect international trade between any pair of countries or among groups of countries. These two approaches may be classified as price analysis and flow analysis. A brief description of each

approach with its advantages and disadvantages should suggest the approach to follow in the remainder of this study.

Price Analysis

Many empirical studies in international trade have stressed the importance of price and income elasticities of demand and supply for exports and imports among countries as determinants of trade patterns. The effectiveness of tariff and exchange rate policies are highly dependent on the size of import and export price and income elasticities. While there is general agreement that trade patterns are sensitive to changes in relative prices, there has been a controversy within the literature concerning the form of prices in international trade models, the functional form of the models and the responsiveness to price changes among the different countries (12).

All the studies which have included prices as a determinant of trade between countries, or among countries, have tried to estimate and evaluate import demand and/or export supply as a function of world prices, relative prices and/or relative price levels. Some of the more recent studies dealing with this topic include: Adler (1); Kreinin (22); Magee and Houthakker (27); Orcutt (29); Richardson (31); Takayama and Judge (33); and Maizels (28).

One of the problems of international trade models which explicitly include prices is the frequent omission of monetary and speculative factors such as monetary policy, inflation, and exchange rates. The exclusion of these factors increases in importance in periods of uncertainty. The accepted procedure for incorporating the influence of inflation in a commodity model has been to deflate the data according

to movements in the general price level. Elliott (14) argued that international trade models which respond to prices should designate all prices in a common currency. In their communication on estimating national supply and demand equations in a common currency, Bjarnason, McGarry, and Schmitz (10) presume that the price series must be converted to a common currency prior to the estimation of supply and demand equations. Another concern is whether to convert the price series to a common currency based on yearly exchange rates or to convert the price series to dollars at a base exchange rate. They found that the base exchange rate is better for conversion than the yearly exchange rate.

Another method which was developed by Elliott (14) estimates national supply and demand equations in national currencies and then converts the equations to a common currency by multiplying the price parameters times the assumed exchange rate. For example, British supply or demand for a commodity may be estimated as a function of its price in British pounds. To convert to dollars, the price parameter in the supply equation and the price parameter in the demand equation are each multiplied by the exchange rate. The price series in national currency may be adjusted for inflation prior to estimating national supply and demand equations (14, p. 538). This method has an advantage over the methods considered by Bjarnason, McGarry, and Schmitz (10), in that it permits consideration of different exchange rate situations in successive runs of the model.

Flow Analysis

An alternative approach to explaining international trade patterns is based on the presumption of equilibrium world prices over the long-run. With prices in equilibrium, the factors affecting the trade flow among countries are those forces which shift the relevant supply and demand curves. The main factors that contribute to a quantitative explanation of the size of trade flow between any pair of countries, assuming price equilibrium in world markets, may be classified under three headings:

1. Factors affecting total potential export supply of the exporting country;
2. Factors affecting total potential import demand of the importing country; and,
3. Factors representing the resistance to a trade flows between the two countries concerned.

The classical works using the trade flow approach include those of Timbergen (35); Linnemman (25); Aitken (2); Aitken and Lowry (3); and Ovattara (30). In each of these studies it was assumed that the potential supply and/or demand of each country on world markets is directly related to the economic size of the country. The resistance forces identified by these authors fall into two categories:

1. Natural trade obstacles;
2. Artificial impediments.

In a situation of price equilibrium, total quantity demanded and total quantity supplied in the world market are equal (demand includes the demand for stocks). Equality of quantity supplied and quantity

demand in the world market implies that over the long-run no country has a price level that is "too high" or "too low," since in both cases relative prices would not reflect relative factor costs. Adjustment through a change in the exchange rate will usually take place such that over the long-run, the general price level has little influence on the aggregate quantity supplied or demanded by any given country.

There is another way in which prices may have an impact on potential quantity supplied, namely in the case of substantial differences in productivity and price levels between export industries and import-competing activities. A higher-than average productivity level in the export industries would lead to a higher-than usual export supply and a higher-than usual import demand to compensate for the relatively unproductive import competing industries. The greater these productivity differences, the greater the role of foreign trade in the economy, *ceteris paribus*. However, the movement of resources would tend to equalize productivity and price levels in the relevant sector, so that this trade-fostering situation is likely to be a temporary one. Moreover, it would be difficult to measure such a difference between export price levels and import-competing price levels for all countries concerned (e.g. in view of quality differences and product differentiation). Therefore, in the long-run this price effect may also be disregarded in the determination of international trade flows.

Differences and Similarities Between Price and Flow Analyses

The basic difference between the flow and price approaches is that flow models assume a situation of equilibrium in the international

market with prices determined by the market, whereas in price models prices are an important element in the determination of international trade flow between any pair of countries. Both approaches have been supported by numerous empirical studies, and a priori it is difficult to accept one as better than the other. However, where the scope of analysis is very aggregative, then equilibrium prices may be assumed and flow models used. But where the study deals with a single commodity or a group of commodities, or the purpose of the analysis is to estimate equations of supply and demand, then prices must be included.

One distinguishing difference between the two approaches in an empirical context is the dependent variable. In flow models, the estimating equation measures the value of trade between countries. By contrast, in price models the dependent variable is frequently the quantity of imports and/or exports which is treated as a function of income, prices, etc., following the traditional estimation procedures for supply and demand.

The flow and price approaches are really two main branches coming from the same analytical tree. The flow approach is preferred for evaluating long-run structural impacts. Consequently, the flow approach is followed in the remainder of this study assuming a continual convergence to price equilibrium in world markets. It should be strongly emphasized that the exclusion of price variables in no way implies that prices are not effective in allocating resources. On the contrary, prices are assumed to adjust supply and demand quickly to establish new equilibria.

Macroeconomic Forces Affecting the Trade Flows

The factors that contribute to a quantitative explanation of the size of trade flow between any pair of countries may be classified under three headings:

- a) Potential export supply of the exporting country;
- b) Potential import demand of the importing country; and,
- c) Resistance forces to trade.

In this study a fourth element will be added to these three broad factors:

- d) Trade preferences.

The latter group of factors will receive a great deal of attention in this study. Each of the four will be examined in greater detail in the following sections.

Quantity Supplied and Demanded

The authors that have used the flow approach argue that the amount of trade flow originating in a country is closely related to the economic size of that country. Therefore, the size of the gross national product of the exporting country may be considered as one of the forces that plays a part in explaining trade flows. In addition, the gross national product of the importing country is relevant as well. The factors that determine the quantity of imports demanded for any country are considered to be of the same nature as for supply. As Tinbergen says: "The amount that can be sold to a particular country will vary with the size of that country's market" (35, p. 263).

Resistance Forces

Two factors which impede the commercial flow among nations are frequently cited: a) natural obstacles, and b) artificial impediments.

Natural Trade Obstacles. The most obvious element among the natural obstacles to international trade is the cost of transportation. Other things being equal, the higher the cost of transportation between two countries, the smaller the trade flow. Transport costs are of a complex nature, and their relative magnitude is different for each type of commodity. Kindleberger (21) says:

The cost of shipping an article from one country to another may be said to depend on a number of considerations: its weight, bulk, value, physical characteristics, the distance to be traversed, the mode and speed of transport, the character of the route, the existence of other cargoes going between the same points, especially in the same opposite direction, and so on (p. 11).

Transport time is another element that falls in the category of natural obstacles to trade. Any transportation process requires time, and in many cases time implies a very high opportunity cost.

Artificial Impediments. Artificial obstacles to trade arise where goods are not allowed to pass freely across national frontiers. Usually these obstacles are particularly important for goods entering the country, although sometimes there are substantial barriers for exports. The artificial trade impediments are created, maintained, or removed, by government action only. The most common artificial impediments are tariffs and quotas. Others include health restrictions, exchange control and domestic purchase programs.

Trade Preferences

Apart from purely economic variables it is likely that institutional factors play the most significant role in determining the volume of trade between countries. These factors may be grouped under two categories:

- a) Physical proximity of countries; and,
- b) Existence of special trade preference agreements.

Neighboring Countries. The degree of political and socio-economic affinity between neighboring countries has an effect on the level of trade between them, ceteris paribus. Close political cooperation, and a thorough knowledge of each others' culture, language, and institutional arrangements will have a stimulating effect on trade relative to non-neighbors. The sharing of a border presents the following advantages:

- a) The distances to be traversed are shorter;
- b) Tastes and preferences are more likely to be similar;
- c) Distribution channels can be more easily established in adjacent economies; and
- d) Neighboring countries may have a greater awareness of common interests and hence be more willing to coordinate policies (7, p. 40).

Trade Preference Agreements. Trade preference agreements to reduce or eliminate barriers to trade among the group and discriminate with respect to third countries should affect the pattern of trade flows. A frequent objective of trade preference agreements is economic integration. The meaning of this concept is not restricted to total

integration but encompasses various forms of integration such as free trade areas, customs unions, common markets, and economic unions. Each one of these forms of integration has its own characteristics. The impact that one particular group has on the trade among members and with the outside world, is associated with the type of integration.

Balassa (5) defines them as:

In a Free Trade Area, tariffs and quantitative restrictions between the participating countries are abolished, but each country retains its own tariff against non-members. The establishment of a customs union involves, besides the suppression of discrimination in the field of commodity movements within the union, the creation of a common tariff wall against non-member countries. In a common market, not only trade restrictions but also restrictions on factor movements with a degree of harmonization of economic, monetary, fiscal, social, and countercyclical policies. Finally, total economic integration presupposes the unification of economic policies, and requires the setting up of a supranational authority whose decisions are binding for the member states (p. 2).

Theoretical Aspects of Economic Integrations

Trade Creation and Trade Diversion

Since the time of David Ricardo, a pioneer of international trade theory, there was a belief that movements toward freer trade among countries improved world welfare. Since trade preference groups reduce tariffs among the group causing a movement towards free trade, it was argued that they should increase world welfare.

Viner (43) showed that this argument is not necessarily correct. He introduced the concept of trade creation (TC) within a trade preference group or area. Trade creation is the rise of intra-area imports as a proportion of the total (intra- and extra-area) imports of any preference group (7). A second concept is that of trade

diversion (TD) which is the replacement of imports from the outside world by more expensive imports from integrated partners under the shelter of tariff preferences and/or other mutual concessions. The difference between the price at which comparable imports could be obtained from third countries and the intra-area price represents a cost for the importing country. This loss may be outweighed by the benefits of integration. Both TC and TD probably are best understood in terms of an example.

Assume a three country world with the United Kingdom (U.K.), Germany and France; that all of them are endowed with a limited supply of resources; and, that they are using those resources in the most efficient form. There are differences in production costs of at least one commodity X. Also assume that there are no transportation costs and that with trade, the supplier country of X can cover its own domestic demand and the foreign demand. For simplicity consider the figures in Table I.

TABLE I
HYPOTHETICAL MONEY PRICES OF A SINGLE COMMODITY
(X) IN THREE COUNTRIES

Country	Price [*] /unit of X
France	175
Germany	130
United Kingdom	100

* The numbers are of an arbitrary nature, but they are assumed to correspond to the same monetary unit.

A tariff of 80 percent levied by France will be sufficient to protect France's domestic industry producing commodity X. If France joins a customs union with either Germany or U.K. it will be better off. If the union is with Germany, it will get a unit of commodity X at an opportunity cost of 130 instead of producing that unit domestically at a cost of 175. This argument presumes that relative prices in each country reflect real rates of transformation and constant costs. It follows that the resources used to produce a unit of X in France could produce any other good with a value of 175. Since France can import a unit of X from Germany by exchanging goods with a value of only 130, there will be a surplus of goods valued at 45 accruing to France from the transfer of resources out of X when trade is opened with Germany. This is an example of trade creation.

Now assume that before integration France had been levying a tariff of 50 percent on imports of X. If the tariff is nondiscriminatory, then France would buy X from the lowest cost source, in this case the U.K. If France and Germany form a customs union with a total elimination of tariffs, then France will buy X from Germany which is protected by the tariff discrimination. This is a case of trade diversion, and since it entails a movement from lower to higher real cost sources of supply, it represents a movement to a less efficient allocation of resources.

Gross Trade Creation

Gross Trade Creation (GTC) is the change in member country imports from other member countries. Within a static world, GTC measures the combined effect of: a) the replacement of previously protected domestic

production with more efficient production from member countries; b) the expansion of domestic consumption due to price and income effects caused by a); and, c) the substitution of member imports for non-member imports (trade diversion).

Trade Expansion

The increment in exports from the preference area to the rest of the world due to the increased production efficiencies associated with the expanded market within the area is defined as trade expansion (TE). The relative price changes causing trade expansion are the consequence of production efficiencies rather than changes in tariff levels as in the case of trade creation and trade diversion. The combined effect of trade diversion and trade expansion is expected to improve the terms of trade and the merchandise trade balance (MTB) of member countries relative to non-members.

Review of Preference Group Literature

Since Jacob Viner's pioneering analysis of customs unions (43), most contributors to the theory of customs unions have evaluated the impacts of preference groups with reference to the trade-creating and trade-diverting effects of the groups. While a number of criteria have been put forward for appraising the chances of (TC) and (TD) in a union, it seems to be generally agreed that an a priori judgment regarding the net effect of a customs union on trade flows cannot be made (5, 7, 26). Jan Tinbergen (35) has suggested an empirical methodology to indicate the effects of preference groups. He attempted to explain trade flows between member countries and the rest of the

world, and among member countries by a regression equation with gross national products, geographical distance, and dummy variables for preferential effects as the explanatory variables.

The exports of country x to country m may be estimated by:

$$F_{mx} = a_0 Y_m^{a_1} Y_x^{a_2} D_{mx}^{a_3} P_{mx}^{a_4} \quad (2.1)$$

where:

F_{mx} = imports of country m from country x ;

Y_m = GNP of m ;

Y_x = GNP of x ;

D_{mx} = distance between x and m ;

P_{mx} = 1 if m and x belong to the same preference group, and zero otherwise.

With this model, and using the British Commonwealth and Benelux as sample preference groups, Tinbergen estimated the coefficients of (2.1). Changes in the coefficients of the dummy variables over time were examined to see if there was a change in the trade flow associated with preferential trade agreements. His hypothesis was that these coefficients should increase following formation of the group. With this method it is only possible to determine whether or not these special agreements on trade had stimulated trade among the members, but there is no way to separate and measure trade creation or trade diversion.

Balassa (7) developed an alternative procedure to estimate the net impact of preference groups which started with the Tinbergen model without the dummy variable for preferential treatment among countries. The estimated coefficients for a_1 and a_2 are the income elasticities of

the importing country m , and the exporting country x . Assuming that income elasticities of import demand would have remained unchanged in the absence of integration, a rise in the income elasticity of demand for intra-area imports would indicate gross trade creation, while an increase in the income elasticity of demand for imports from all sources of supply would suggest trade creation. In turn, a fall in the income elasticity of demand for extra-area imports would provide evidence of trade-diverting effects of the union. Thus, comparisons of ex post income elasticities of import demand provide estimates of GTC, TC, and TD.

Wilford (45), using Balassa's method, found evidence of net trade creation for the Central American Common Market since the ex post elasticities of demand for both total imports and intraregional imports exceeded the respective pre-integration elasticities. The problem with this method is that it implicitly assumes that all the changes in the income elasticities are caused by the formation of the preference group to the exclusion of any other economic factors that may have affected those elasticities.

In general, empirical studies which have attempted to measure integration effects have been faced with the common problem of isolating the effect of income growth and changes in other variables which normally affect international trading patterns from the effect of the integration. The major approaches to this problem have been to either examine changes in the market share of imports (or apparent consumption), or to incorporate income directly into the statistical analysis by calculating import elasticities of import demand for the pre- and post-integration periods, or to use income as an independent variable

in a trade flow model. Each of these approaches attempts to measure the effect of integration indirectly as a residual. In all cases estimates are made of what trade would have been in the absence of economic integration. These estimates are then compared to actual trade flows to obtain the net trade preference effect.

Development of the Conceptual Model

Flow of Trade Between Two Countries

The main factors that determine the size of trade flow between any pair of countries have been mentioned earlier. If F_{mx_t} is flow of trade from x to m in year t, then:

$$F_{mx_t} = f_o (E_{x_t}, M_{m_t}, R_{mx}, P_{mx}) \quad (2.2)$$

where:

$$E_{x_t} = f_1 \text{ (of the economic size of the exporting country x);}$$

$$M_{m_t} = f_2 \text{ (of the economic size of the importing country m);}$$

$$R_{mx} = f_3 \text{ (trade resistance forces between m and x);}$$

$$P_{mx} = f_4 \text{ (trade preference forces between m and x).}$$

Integration Impact

An evaluation of the temporal behavior of the coefficients of (2.2) may be used to identify trade creation, trade diversion, trade expansion associated with the formation of a preference group. These trade flows are shown in Figure 1, which depicts the usual case found in most textbooks. Assume that countries a and b combine to form the European Economic Community (EEC). Gross trade creation of a (GTC_a)

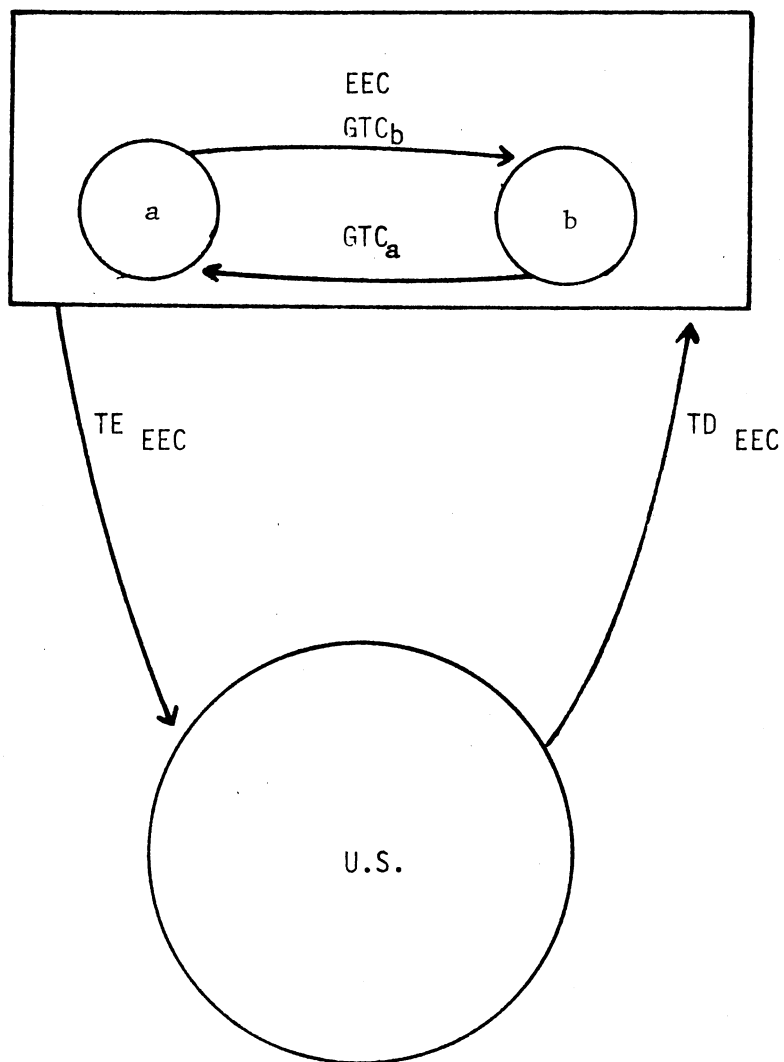


Figure 1. Trade Relations Between a Preference Group and Non-Members

is the additional flow of imports from all other member countries associated with the formation of the community. Total GTC_{EEC} is equal the sum of GTC_a plus GTC_b . In the normal case, GTC_{EEC} and TE_{EEC} should both be positive, and TD_{EEC} should be negative (a gain for the member countries). The change in the merchandise trade balance (ΔMTB_{EEC}) of the EEC is equal to TE_{EEC} minus TD_{EEC} . In this simple model with only one preference group, changes in observed trade flows may be used to estimate directly GTC , TD , TE , and ΔMTB .

The relationships shown in Figure 1 become more complex when there are two (or more) preference groups. Such a situation is shown in Figure 2, which is identical to the first figure except that a second preference group has been added. The trade relations between the U. S. and the Latin American Free Trade Association (LAFTA) are similar to those for the U. S. and EEC shown in Figure 1 and can be measured directly by evaluating changes in the ex post trade flows between the two. However, the TD and TE between the two preference groups are confounded. An increase in the trade flow from LAFTA to the EEC could be interpreted as either TD_{EEC} or TE_{LAFTA} or as a combination of both. Moreover, the expected sign of TD_{EEC} is negative while that of TE_{LAFTA} is positive, so the two impacts will tend to cancel one another. Ex post statistical analysis of the LAFTA to EEC trade flow will measure only the net impact of the two forces. This combined effect is called net trade diversion (NTD). The NTD of the EEC is equal to the sum of TD_{EEC} and TE_{LAFTA} . Consequently, the ΔMTB_{EEC} is equal to the NTD_{LAFTA} (net increase in EEC exports) minus NTD_{EEC} (net increase in EEC imports).

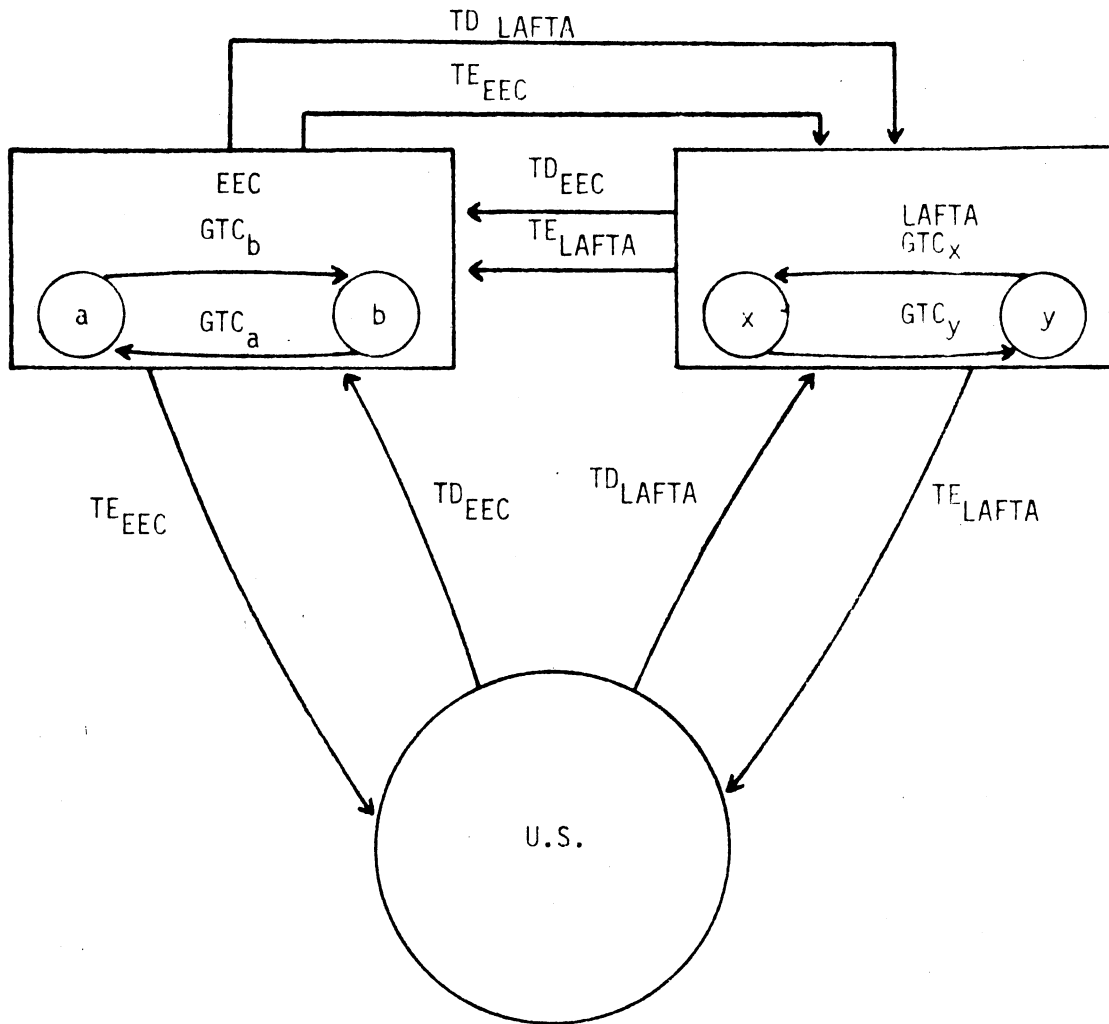


Figure 2. Trade Relations Among Two Preference Groups and Non-Members

The member countries of a preference group gain from its formation when MTB is positive. Non-member countries (such as the U. S. in Figure 2) are expected to experience a deterioration in their external position as exports decline (TD_{EEC} for example) and imports increase (TE_{EEC}). The direction and magnitude of these impacts will be estimated using statistical procedures and data described in the following chapters.

CHAPTER III

SPECIFICATION OF THE TRADE FLOW MODEL AND SOURCES OF DATA

This chapter contains a description of the data used for the empirical analysis and describes the variables which may be included in an equation of the flow of trade.

A Conceptual Model for the Flow of Trade Between Two Countries

In the previous chapter the factors which may contribute to a quantitative explanation of the trade flow between any pair of countries were classified under four headings:

1. Factors indicating total quantity supplied by the exporting country to the world market;
2. Factors indicating total quantity demanded by the importing country;
3. Factors representing resistance forces; and,
4. Trade preference factors.

These factors may be grouped in a single conceptual expression:

$$F_{mx_t} = f(E_{x_t}, Q_{m_t}, R_{mx}, P_{mx}) \quad (3.1)$$

where:

$$F_{mx_t} = \text{flow of trade from country } x \text{ to country } m \text{ in year } t;$$

E_{x_t} = total supply of the exporting country;

Q_{m_t} = total demand of importing country;

R_{mx} = resistance forces to trade between m and x; and,

P_{mx} = preference factors for trade between the countries.

These conceptual factors which explain the flow of trade between countries can be measured by proxy variables.

Both the total supply of the exporting country and the total demand of the importing country depend on relative economic size which may be represented by gross national product or population:

$$E_{x_t} = \phi(\text{GNP}_{x_t}, N_{x_t}) \quad (3.2)$$

$$Q_{m_t} = \gamma(\text{GNP}_{m_t}, N_{m_t}) \quad (3.3)$$

where:

GNP = gross national product; and

N = population.

Resistance factors include natural and artificial obstacles to trade which affect transport costs and time. These forces may be accounted for by including distance between countries m and x as a proxy variable. It is expected that greater distances imply more transportation time and higher costs which have a negative effect on the volume of trade between the countries concerned.

Then:

$$R_{mx} = \phi(\text{DIST}_{mx}) \quad (3.4)$$

where:

DIST_{mx} = distance between m and x.

While the concept behind the inclusion of preference factors in (3.1) is clear, it is somewhat difficult to perceive an appropriate

proxy variable for alternative levels of preference. This problem may be resolved through the use of dummy preference variables:

$$P_{mx} = \gamma(DNEIGH_{mx}, D_{ij}) \quad (3.5)$$

where:

$DNEIGH_{mx}$ = dummy variable which is equal to one if m and x are neighbors and zero otherwise; and,

D_{ij} = dummy variable which takes a value of one if m is a member of the i^{th} preference group and x is a member of the j^{th} preference group, and zero otherwise.

Ignoring the time subscript for simplicity, expression (3.1) may be rewritten as:

$$F_{mx} = f(GNP_m, N_m, GNP_x, N_x, DIST_{mx}, DNEIGH_{mx}, D_{ij}) \quad (3.6)$$

Assuming constant elasticities in a log-log format, (3.6) may be rewritten as:

$$\begin{aligned} \log F_{mx} = & \log \beta_0 + \beta_1 \log GNP_m + \beta_2 \log N_m + \beta_3 \log GNP_x + \beta_4 \log N_x \\ & + \beta_5 \log DIST_{mx} + \beta_6 DNEIGH_{mx} + \beta_7 D_{ij} + \log E. \end{aligned} \quad (3.7)$$

where:

E is an error term.

The coefficients estimated for the continuous variables in equation (3.7) are the elasticities of the respective variables. Equation (3.7) may be estimated by ordinary least squares proceeding along the usual lines. Two points are worth mentioning. First, the disturbance $\log E_t$ (not E_t) is normally distributed with mean 0 and variance σ^2 . In this case, the distribution of $\log E$ itself might be called log normal.

Second, the conditional variance of $\log F_{mx_t}$, given by $\log GNP_m$, $\log N_m$, $\log GNP_x$, $\log N_x$, $\log DIST_{mx}$, $DNEIGH$, D_{ij} is a constant and is equal to

σ^2 , where σ^2 is an unknown parameter. This variance measures the extent to which the flow of trade is affected by any neglected variables (34, p. 107).

Data Sources

Dependent Variable

The value of the flow of merchandise trade between any two countries is the dependent variable. Trade flows in United States dollars for each pair of countries in the sample were obtained directly from the Direction of International Trade (18), and Direction of Trade (19), which are joint publications of the United Nations, the International Monetary Fund, and the International Bank for Reconstruction and Development. Some data were missing or unpublished so it was impossible to collect data for all 1722 possible observations from the 42 countries included in the sample. Trade flow data are either reported as f.o.b. (free on board) or c.i.f. (cost, insurance, and freight) according to the country's practice. Generally import data are found on a c.i.f. basis. In the few cases where it was reported on an f.o.b. basis, it was converted to c.i.f. by an arbitrary upward adjustment of 10 percent to account for freight and insurance. The size of a trade flow between two countries can be measured at either the point of export or the point of import. Apart from the above mentioned differences in valuation, and minor differences due to time displacement during the transportation period, the two measures should give the same result. Actually, their correspondence is usually far from perfect for a number of practical reasons such as inaccuracies or

conceptual differences in foreign trade data collection procedures, or changes in the destination of sailing cargoes. The data obtained from export statistics sometimes differs substantially from that given in import statistics; however, when the primary interest of a study deals with the effects of trade on production and consumption, import statistics are on the whole more reliable than the export (or consignment) statistics (13, pp. 123-124; 25, p. 62). Consequently, trade flows are measured with import data whenever possible.

Explanatory Variables

Economic Size. Several measures of economic size of the importing and exporting countries were collected: gross national product, gross domestic product, national income, and population. All of these data were taken from International Financial Statistics (20). When data were given in national currencies rather than U. S. dollars, they were transformed to dollars using average annual exchange rates (19). These data are reproduced in Appendix B.

Distance. In previous studies the distance between countries was measured as the shortest navigable distance between the main ports of the respective countries, plus the overland distances from the ports to the economic "gravity points" of the countries concerned (25). A gravity point is that region in which the greatest commercial and industrial activity of the country is concentrated. Appendix C shows the distances which were computed between all countries in the sample.

Neighboring Countries. If two countries are neighbors, it usually presents an extra incentive to trade which may be measured by the use of

a dummy variable. If the importing and exporting countries are neighbors then this variable is assigned a value of 1. Otherwise, it has a value of zero. Appendix D lists all sample countries which are neighbors.

Preference Variables. Member countries of an economic integration should exhibit definite preferences for trade within the group due to the elimination of trade barriers, etc. Dummy variables may be used to measure the shift in trade flows which is coincident with the establishment of a preference group. Assuming that there is no correlation between the dummy variables and the error term, the coefficients of the dummy variables may be used to compute the trade impact of the preference groups.

The Sample Countries

The objective of this study is to quantify the impact that economic integrations in Europe and Latin America have had on the trade among the members of those groups and with the outside world. Consequently, the sample countries included members of the European Economic Community (EEC), European Free Trade Association (EFTA), Central American Common Market (CACM), Latin American Free Trade Area (LAFTA), and the United States and Canada (U. S. & C.). In addition, as many non-member countries as possible from the European and Latin American regions were included to assure a basis for comparison.

Belgium and Luxembourg were treated as one country, as were Trinidad and Tobago. The reason for this is because in general the statistical data are presented in a combined form. The 42 countries which constitute the sample are listed in Table II.

TABLE II
COUNTRIES INCLUDED IN THE SAMPLE BY PREFERENCE GROUP*

I. United States and Canada (U. S. & C.)	
United States	
Canada	
II. European Economic Community (EEC)	
Belgium and Luxembourg	Italy
France	Netherlands
Germany, F.R.	
III. European Free Trade Association (EFTA)	
Austria	Sweden
Denmark	Switzerland
Norway	United Kingdom
Portugal	
IV. Central American Common Market (CACM)	
Cost Rica	Honduras
El Salvador	Nicaragua
Guatemala	
V. Latin American Free Trade Association (LAFTA)	
Argentina	Mexico
Bolivia	Paraguay
Brazil	Peru
Chile	Uruguay
Colombia	Venezuela
Ecuador	
VI. Non-Associated	
Finland	British Guina
Greece	Dominican Republic
Turkey	Haiti
Iceland	Jamaica
Ireland	Panama
Spain	Trinidad and Tobago

* Countries in groups I and VI are not members of preference groups.

The Study Period

The period chosen for this study (from 1951 to 1969) is the longest period possible given the limited availability of data. This period is sufficiently long to permit the evaluation of the trend of trade flows in both the pre-integration and post-integration period for the four preference groups.

The EEC was formed in 1958, and the other three groups were officially created in 1960. Thus, the 19 year period from 1951 to 1969 is sufficiently long to accurately establish trade flow patterns before and after the groups were formed. By 1951 the dislocations and distortions of World War II had probably disappeared, or at least the affected countries were starting a period of recovery from the war. The last full year of relative stability with fixed exchange rates was 1969. Hence, the world monetary system probably had little net impact on trade flows during the study period.

The following chapter deals with the statistical analysis of several empirical models based on the conceptual model. Empirical estimates of the model parameters will be used to estimate the net impact that economic integrations have had on the international trade among countries and/or groups of countries.

CHAPTER IV

EMPIRICAL ANALYSIS OF TRADE FLOWS

Three forms of the trade flow model will be estimated, each representing a different level of disaggregation of the dummy preference variables. The structural form of all three is similar.

Basic Trade Flow Model

As shown in the previous chapter, trade flows are affected by market, resistance and preference forces:

$$F_{mx} = \gamma_{mx} + P_{mx} + \epsilon \quad (4.1)$$

where:

F_{mx} = trade flow from exporting country x to importing country m;

γ_{mx} = portion of total flow attributed to market and resistance forces;

P_{mx} = portion of total flow attributed to preference factors; and,

ϵ = unexplained residual.

The general form of γ_{mx} used in all estimations is:

$$\gamma_{mx} = \gamma_0 + \gamma_1 \text{GNP}_m + \gamma_2 \text{GNP}_x + \gamma_3 \text{DIST}_{mx} + \gamma_4 \text{DNEIGH}_{mx} \quad (4.2)$$

where:

GNP_m = Gross National Product of importing country m;

GNP_x = Gross National Product of exporting country x;

DIST_{mx} = distance between m and x; and

$DNEIGH_{mx}$ = dummy variable which is equal to one if m and x are neighbors and zero otherwise.

Expression (4.2) is included in the estimating equations in log-log form (except for the dummy variable). In the conceptual model both gross national product and population were included as proxy variables for the size of the economy. However, preliminary estimates showed a high degree of correlation (greater than 0.90) between GNP and population so the non-economic variable (population) was eliminated in order to avoid multicollinearity.

Empirical Trade Flow Models

The P_{mx} portion of (4.1) shows the extent to which trade among member countries differs from what would be expected based on the other independent variables. Three different forms of the P_{mx} term will be examined, each representing different levels of disaggregation. At the most basic level, assume that only gross trade creation (GTC) among member countries results from the formation of preference groups. Then the impact of the groups on trade flows may be measured by:

$$F_{mx} = [\gamma_{mx}] + \sum_{i=2}^5 a_i D_{ii} \quad (4.3)$$

where:

D_{ii} = dummy preference variable equal to 1 when m and x are both members of group i; and equal to zero otherwise; and

i = preference group identification number:

1 = United States and Canada,

2 = European Economic Community,

3 = European Free Trade Association,

4 = Central American Common Market, and

5 = Latin American Free Trade Association.

Changes in the estimated value of the coefficients a_i over time provide the basis for measuring the gross trade creation achieved by each group.

A more disaggregated model may be proposed to estimate not only GTC effects, but also the repercussions of integration on trade with non-members. The trade diversion and trade creation of each group relative to all other countries in the sample may be estimated by:

$$F_{mx} = [\gamma_{mx}] + \sum_{i=2}^5 b_i D_{ii} + \sum_{j=2}^5 c_j E_j + \sum_{k=2}^5 d_k H_k \quad (4.4)$$

where:

$E_j = 1$ if m belongs to the j^{th} preference group and x does not belong to j and zero otherwise;

$H_k = 1$ if x belongs to the k^{th} preference group and m does not belong to k and zero otherwise; and,

$i, j, k =$ preference group identification numbers.

The estimated coefficients c_j measure the trade diversion (TD) effects of group j and the d_k measure the trade expansion (TE) with non-members by members of preference group k .

Even greater detail is given by:

$$F_{mx} = [\gamma_{mx}] + \sum_{i=1}^5 \sum_{j=1}^5 \beta_{ij} P_{ij} \quad (4.5)$$

where:

$P_{ij} = 1$ if m belongs to i and x belongs to j and zero otherwise.

The estimates of β_{ij} will show GTC, TD and TE by the specific source of each. In (4.5) there are five preference groups and a total of 25 preference variables. The inclusion in the sample of six European

countries and six Latin American countries which are not members of any group eliminates the risk of falling into a dummy variable trap.*

As the models (4.3)-(4.5) represent little more than different levels of disaggregation, the estimates of the coefficients for D_{ii} in equations (4.3) and (4.4) and P_{ij} in equation (4.5) where $i = j$ should be equal i and $j = 2, \dots, 5$. The estimated coefficients were different in some cases, but as shown in Appendix E, they were not different at the 0.01 level of statistical significance. Thus, it appears that disaggregation is not detrimental to the statistical results.

Estimation Procedures

The model in (4.3) is conceptually similar to those developed by Tinbergen (35), Linnemman (25), Aitken (2), and Aitken and Lowry (3) among others. With the use of dummy variables as specified in (4.3) only the estimation of gross trade creation is possible, there being no way to estimate the external impacts of a particular preference group.

Since the models (4.3) and (4.4) are really subsets of model (4.5), the empirical results of these two models are not presented in the text but instead are presented in Appendices F and G respectively. The coefficients of each model were estimated 19 times--once for each of the years in the 1951-69 study period--based on cross-sectional data

* A situation in which the inclusion of dummy variables in an equation, causes the $(X'X)$ matrix to be singular. For a more complete discussion of this topic see Suits (32, pp. 548-551).

from approximately 1,100 trade flows among the 42 countries in sample. Appendix H has the number of observations per year for the 19 years.

Each β_{ij} dummy variable coefficient in model (4.5) estimates the amount by which trade from group j countries to group i countries differs from what would be expected based on the other independent variables. Changes in the estimated coefficients for any given P_{ij} over the period 1951-69 may be attributed to either secular factors or changes in trade relations resulting from the formation of a preference group. Prior to the formation of the preference group, the coefficient of the dummy variable measures the net trade preference that existed among members of a particular group or among members of two groups. In the post-integration period the value of the coefficient for each preference dummy may be either greater than or less than the pre-integration value indicating that there has been an increase or decrease in trade flows between m and x . Thus, the net impact of the preference group in trade flow is, *ceteris paribus*, appropriately measured by the difference between the value of the preference dummy coefficients prior to and following the formation of the group. To assume that the dummy variables are measuring preference group effects requires the strong *ceteris paribus* assumption that other factors are explicitly included in (4.5) are not correlated with P_{ij} . All of the P_{ij} shift in 1959 or 1961. Other events that may correlate with these time periods are the Vietnam conflict and a period of extended economic growth in the U. S.

Empirical Results of the Trade Flow Model

The estimated coefficients of model (4.5), t statistics, and the coefficient of determination for each equation are presented in

Table III. The coefficients of determination have an average value of 72 percent which appears to be quite acceptable relative to other studies. The average for the study of Tinbergen was 81 percent (35). The average value of the coefficient of determination in the study of Linnemman (25), is 79.70 percent, or 7 percentage points above the result obtained in this study. Since neither of these studies has a group of sample countries as heterogeneous as the sample used here, the slightly lower R^2 is easily justified.

Income Elasticities

An interesting aspect for the results obtained for the coefficients of GNP_m and GNP_x is that their values were almost the same in all years and lower than 1.0. This may indicate that with increasing GNP in both the exporting and the importing countries, the flow of trade between them declines relatively because of more variation in domestic consumption patterns in the exporting country and/or more diffused domestic production in the importing country, ceteris paribus. A 1 percent increase in the GNP of either m or x will cause an average increase in trade between them of 0.73 percent.

The Effect of Distance

The distance variable was used as a proxy for resistance forces to international trade. The negative sign of the estimated coefficients is consistent with expectations. The direct economic implication of the distance variable is that the greater the distance between potential trade partners, the lower the level of trade, ceteris paribus.

TABLE III
 ESTIMATED IMPACT OF ECONOMIC AND PREFERENCE
 FORCES ON TRADE FLOW = 1959-60

Variable or Statistic	Year					
	1951	1952	1953	1954	1955	1956
Constant	5.60	4.85	6.42	4.41	5.59	6.07
log GNP _m	0.82 (21.87)	0.78 (20.57)	0.75 (22.61)	0.76 (22.26)	0.72 (21.86)	0.73 (22.04)
log GNP _x	0.77 (20.71)	0.74 (19.50)	0.70 (21.61)	0.71 (21.12)	0.66 (20.21)	0.69 (20.68)
log DIST _{mx}	-0.79 (-6.86)	-0.82 (-6.36)	-0.89 (-9.24)	-0.67 (-7.02)	-0.81 (-8.89)	-0.87 (09.32)
DNEIGH _{mx}	0.44 (1.99)	0.43 (1.91)	0.32 (1.62)	0.44 (2.25)	0.21 (1.08)	0.10 (0.51)
P ₁₁	0.99	1.38	1.60	1.59	2.17	2.07
P ₁₂	-0.79	-0.61	-0.18	-0.20	0.15	0.15
P ₁₃	-0.88	-0.66	-0.49	-0.51	-0.24	-0.27
P ₁₄	0.53	0.60	0.37	0.37	0.57	0.27
P ₁₅	0.15	0.39	0.34	0.22	0.25	0.41
P ₂₁	0.16	0.57	0.50	0.45	0.93	0.85
P ₂₂	-0.52	-0.20	-0.19	0.32	0.37	0.19
P ₂₃	-0.43	-0.09	-0.30	0.09	0.15	0.02
P ₂₄	-1.09	-0.42	-0.03	-0.01	-0.01	-0.18
P ₂₅	0.33	0.26	0.40	0.50	0.82	0.96
P ₃₁	-0.01	0.30	-0.05	-0.01	0.52	0.38
P ₃₂	-0.06	0.17	0.04	0.53	0.59	0.36
P ₃₃	-0.08	0.07	-0.19	0.18	0.23	0.07
P ₃₄	-0.37	-0.73	-0.33	0.07	0.21	0.01
P ₃₅	0.02	-0.21	-0.24	-0.13	0.18	0.03

TABLE III (Continued)

Variable or Statistic	Year					
	1951	1952	1953	1954	1955	1956
P ₄₁	0.33	0.47	0.22	0.47	0.73	0.50
P ₄₂	-0.10	-0.15	0.05	0.23	0.31	0.29
P ₄₃	-0.54	-0.34	-0.36	-0.38	-0.14	-0.41
P ₄₄	-0.97	-0.34	-1.10	-0.20	-0.66	-0.87
P ₄₅	-1.21	-1.09	-1.43	-1.09	-1.11	-0.86
P ₅₁	0.13	0.47	0.63	0.64	0.84	0.68
P ₅₂	0.26	0.29	0.44	0.61	0.86	0.60
P ₅₃	0.17	-0.02	-0.10	0.01	0.25	0.17
P ₅₄	-2.38	-1.37	-0.86	-0.25	-1.49	-1.54
P ₅₅	-1.06	-1.37	-1.28	-1.30	-0.74	-0.78
Coef. of Det.*	0.73	0.71	0.73	0.71	0.70	0.70
Variable or Statistic	Year					
	1957	1958	1959	1960	1961	1962
Constant	5.50	5.64	5.89	6.86	6.05	6.24
log GNP _m	0.74 (22.04)	0.72 (22.84)	0.65 (19.71)	0.66 (20.44)	0.65 (19.24)	0.66 (21.21)
log GNP _x	0.69 (20.42)	0.67 (21.84)	0.68 (20.98)	0.65 (20.68)	0.66 (20.44)	0.66 (21.41)
log DIST _{mx}	-0.79 (-8.56)	-0.82 (-9.10)	-0.80 (-8.60)	-0.90 (-9.47)	-0.83 (-8.60)	-0.84 (-9.43)
DNEIGH _{mx}	0.19 (0.96)	0.30 (1.58)	0.28 (1.52)	0.20 (1.12)	0.35 (1.92)	0.20 (1.17)
P ₁₁	1.88	1.81	1.82	1.69	1.81	1.79
P ₁₂	0.09	0.25	0.39	0.16	0.34	0.12
P ₁₃	-0.37	-0.22	-0.17	-0.40	-0.12	-0.25

TABLE III (Continued)

Variable or Statistic	Year					
	1957	1958	1959	1960	1961	1962
P ₁₄	0.23	0.45	0.04	-0.45	-0.05	0.13
P ₁₅	0.27	0.20	0.38	0.16	0.23	0.11
P ₂₁	0.87	0.79	0.38	0.61	0.77	0.57
P ₂₂	0.25	0.18	0.31	0.19	0.48	0.43
P ₂₃	0.02	-0.01	-0.20	-0.43	-0.18	-0.34
P ₂₄	0.14	0.11	0.19	-0.19	-0.20	-0.23
P ₂₅	0.79	0.72	0.58	0.49	0.49	0.52
P ₃₁	0.35	0.31	-0.01	0.12	0.19	0.01
P ₃₂	0.43	0.43	0.24	0.03	0.28	0.10
P ₃₃	0.07	0.09	-0.13	-0.31	0.02	-0.16
P ₃₄	-0.02	-0.01	-0.11	-0.24	-0.27	-0.40
P ₃₅	-0.06	0.02	0.03	-0.05	-0.11	-0.13
P ₄₁	0.50	0.65	-0.02	-0.01	0.04	0.09
P ₄₂	0.55	0.41	0.12	0.20	0.24	0.23
P ₄₃	-0.22	-0.35	-0.23	-0.14	-0.34	-0.14
P ₄₄	-0.73	-0.87	-0.60	-0.89	-0.57	-0.35
P ₄₅	-1.12	-1.17	-1.02	-1.24	-1.10	-1.06
P ₅₁	0.63	0.70	0.37	0.49	0.47	0.47
P ₅₂	0.67	0.83	0.54	0.62	0.57	0.58
P ₅₃	0.14	0.21	0.11	0.11	0.15	0.06
P ₅₄	-1.14	-0.90	-1.66	-1.89	-1.50	-1.25
P ₅₅	-0.85	-0.74	-1.10	-1.34	-1.40	-1.04
Coef. of Det.*	0.70	0.71	0.69	0.69	0.69	0.71

TABLE III (Continued)

Variable or Statistic	Year						
	1963	1964	1965	1966	1967	1968	1969
Constant	5.70	5.97	5.95	6.33	6.03	4.55	5.28
log GNP _m	0.69 (22.79)	0.69 (23.91)	0.64 (22.05)	0.63 (22.21)	0.60 (21.24)	0.76 (24.54)	0.83 (25.13)
log GNP _x	0.73 (24.46)	0.70 (24.41)	0.69 (23.83)	0.68 (24.37)	0.70 (24.79)	0.77 (24.87)	0.87 (26.75)
log DIST _{mx}	-0.83 (-9.74)	-0.85 (-10.43)	-0.86 (-9.97)	-0.89 (-10.86)	-0.87 (-10.24)	-0.81 (-9.44)	-0.98 (-11.27)
DNEIGH _{mx}	0.14 (0.82)	0.15 (0.94)	0.10 (0.60)	0.02 (0.10)	0.08 (0.48)	0.28 (1.55)	0.16 (0.77)
P ₁₁	1.83	1.86	2.32	2.53	2.62	2.26	2.06
P ₁₂	0.15	0.14	0.59	0.67	0.81	0.67	0.48
P ₁₃	-0.05	-0.11	0.30	0.43	0.53	0.45	0.42
P ₁₄	0.31	0.22	0.41	0.39	0.71	0.86	1.07
P ₁₅	0.27	0.19	0.60	0.45	0.50	0.48	0.51
P ₂₁	0.54	0.56	0.85	0.89	0.86	0.83	0.65
P ₂₂	0.65	0.58	0.89	0.95	1.04	1.15	0.93
P ₂₃	-0.12	-0.25	-0.05	-0.08	-0.01	0.16	0.01
P ₂₄	0.08	0.11	0.38	0.38	0.17	0.62	1.12
P ₂₅	0.75	0.69	1.02	1.07	1.18	1.10	1.34
P ₃₁	-0.01	0.02	0.25	0.29	0.30	0.30	0.19
P ₃₂	0.17	0.11	0.34	0.29	0.34	0.55	0.34
P ₃₃	0.06	0.04	0.27	0.27	0.43	0.75	0.74
P ₃₄	-0.19	-0.08	-0.14	0.08	0.14	0.47	0.70
P ₃₅	-0.03	-0.12	0.07	0.09	0.29	0.35	0.45
P ₄₁	0.18	0.21	0.33	0.17	0.18	0.52	0.55

TABLE III (Continued)

Variable or Statistic	Year						
	1963	1964	1965	1966	1967	1968	1969
P ₄₂	0.34	0.31	0.48	0.35	0.30	0.78	1.08
P ₄₃	-0.19	-0.19	-0.12	-0.28	-0.25	0.16	0.04
P ₄₄	0.13	0.68	0.98	1.10	1.36	2.46	2.75
P ₄₅	-0.44	-0.33	-0.20	-0.25	-0.45	0.06	-1.01
P ₅₁	0.39	0.45	0.62	0.60	0.63	0.80	0.76
P ₅₂	0.48	0.37	0.54	0.62	0.72	0.90	1.06
P ₅₃	0.16	-0.05	0.11	0.11	0.24	0.28	0.59
P ₅₄	-2.82	-3.17	-2.83	-2.13	-2.33	-2.89	-2.88
P ₅₅	-0.60	-0.55	-0.23	-0.09	0.03	0.10	0.39
Coef. of Det.*	0.73	0.74	0.73	0.73	0.73	0.73	0.74

* Coefficient of Determination.

The estimated coefficients of the trade flow model are not inconsistent with those found in earlier studies. Table IV presents the average income elasticities for the three different models of this study and the coefficient for the distance variable compared with those obtained by Tinbergen (35) and Linnemman (25). As can be observed, the estimates for models (4.3)-(4.5) are in line with those previous analyses.

The Effect of Neighbors

The estimated coefficients of DNEIGH exhibit an unstable variable trend over the 19 years of the study. The average value of the coefficient for the overall period is 0.23, but from 1951 to 1961 the average was 0.30 and from 1962-69, it was 0.14. The fact that the neighbors coefficient fell in the decade of the 1960's may be associated with the formation of economic unions. That is, the establishment of preference groups may have reduced the previous propensity for trade with neighbors.

Preference Variables

The results from the trade flow model with respect to the dummy preference variables will be used in the next chapter to quantify the effect that these economic integrations had on member countries and with the outside world. Since there is no null hypothesis with regards to the expected value of these coefficients, no tests of statistical significance were performed.

TABLE IV
 ESTIMATED TRADE ELASTICITIES WITH RESPECT
 TO INCOME AND DISTANCE

	Estimated Elasticities		
	GNP of importing country	GNP of exporting country	Distance
Tinbergen (35)			
42 countries, 1959	0.91	1.00	-0.78
18 countries, 1958	0.62	0.74	-0.56
Linnemman (25)			
80 countries, 1958/60	0.82	0.96	-0.77
This study (average 1951-69)			
42 countries			
Model (4.3)	0.76	0.76	-0.65
Model (4.4)	0.73	0.76	-0.63
Model (4.5)	0.73	0.73	-0.84

CHAPTER V
EMPIRICAL ANALYSIS OF THE IMPACT
OF ECONOMIC INTEGRATION

This chapter details the procedure used to calculate the economic impact of the four preference groups described in the previous chapters. The empirical analysis was performed for each post-integration year from 1961 to 1969. Since there was little deviation from the trend of the estimates, the results from only three years are included here: 1961, 1965 and 1969.

Estimating the Net Change in the
Preference Variables

The net trade impact of the preference groups on one another and on the U. S. and Canada is shown by a change in the estimated coefficients of the preference dummy variables of equation (4.5). The difference between pre-integration and post-integration values of these coefficients is equal to the percentage change in trade flow associated with the preference dummy variable. To accurately measure the net difference between pre- and post-integration coefficients, the estimates over the 19 year study period are "normalized."*

*The term "normalize" as used in this study has a specific meaning and should not be confused with the same term frequently used in statistics. In this study "normalize" is used to identify a technique to estimate average values of the preference variables coefficients and to calculate the difference of the estimated values with integration and without integration.

The procedure followed was to regress the estimated value of the coefficients for each preference variable on time using a dummy variable approach to measure shifts in either the intercept and/or slope associated with the formation of the preference groups (15, 16, 32).

There are 25 separate equations to be normalized corresponding to the number of preference variables in equation (4.5). The dependent variable is the estimated coefficient for each preference dummy:

$$\hat{\beta}_{ij_t} = b_0 + b_1D + b_2t + b_3tD \quad (5.1)$$

where:

$\hat{\beta}_{ij_t}$ = the estimated coefficients of preference variable for trade from the j^{th} exporting group to the i^{th} importing group in time period t where $t = 1, \dots, 19$; and,

D = dummy variable for integration equal to zero prior to integration and one thereafter.

The coefficients b_1 and b_3 of (5.1) measure the integration induced shift in the intercept and slope respectively. The estimated coefficients of (5.1) are presented in Table V.

The coefficients of (5.1) were estimated for the period 1951-69 for 22 of the 25 preference variables. The three exceptions were β_{12} (imports of U. S. & C. from EEC), β_{21} (imports of EEC from U. S. & C.), and β_{22} (trade among EEC countries). Each of these fluctuated so greatly during the 1951-53 period that it was difficult to get meaningful results if these years were included in the normalization. A possible reason for the instability in those three years might be the consequences of the World War II and the Marshall Plan (8, pp. 158-62).

TABLE V
ESTIMATED COEFFICIENTS OF THE MODEL USED TO
MEASURE THE NET IMPACT OF THE
PREFERENCE VARIABLES*

Dependent Variable	Estimated Coefficients				R ²
	\hat{b}_0	\hat{b}_1	\hat{b}_2	\hat{b}_3	%
$\hat{\beta}_{11}$	1.3296 (7.0287)	-0.3707 (-0.6436)	0.0673 (2.2106)	0.0100 (0.2148)	57.78
$\hat{\beta}_{12}$	-0.1680 (-0.8694)	0.0314 (0.1126)	0.0857 (1.4714)	-0.0360 (-0.5929)	63.12
$\hat{\beta}_{13}$	-0.7368 (-7.3911)	-0.5727 (-1.8866)	0.0572 (3.5626)	0.0419 (1.6948)	88.93
$\hat{\beta}_{14}$	0.7350 (6.2653)	-2.1909 (-6.1321)	-0.0795 (-4.2064)	0.2065 (7.0890)	78.33
$\hat{\beta}_{15}$	0.2873 (3.8435)	-0.6557 (-2.8802)	-0.0018 (-0.1509)	0.0510 (2.7499)	50.95
$\hat{\beta}_{21}$	0.5952 (3.7209)	-0.2566 (-1.1116)	0.0612 (1.2688)	-0.0298 (-0.5923)	38.77
$\hat{\beta}_{22}$	0.3787 (3.3584)	-0.6803 (-4.1806)	-0.0382 (-1.1243)	0.1283 (3.6135)	91.68
$\hat{\beta}_{23}$	-0.3170 (-3.0999)	-0.3991 (-1.9310)	0.0550 (2.7181)	-0.0136 (-0.5748)	56.58
$\hat{\beta}_{24}$	-0.7584 (-3.6560)	-0.3684 (-0.8787)	0.1272 (3.0984)	-0.0310 (-0.6427)	69.85
$\hat{\beta}_{25}$	0.2015 (1.9926)	-0.5940 (-2.9055)	0.0880 (4.3962)	-0.0001 (-0.0007)	85.15
$\hat{\beta}_{31}$	0.1324 (1.1293)	-0.3705 (-1.0371)	0.0105 (0.5601)	0.0161 (0.5558)	11.20
$\hat{\beta}_{32}$	0.1837 (1.4373)	-0.4291 (-1.1022)	0.0166 (0.8073)	0.0183 (0.5778)	15.49
$\hat{\beta}_{33}$	0.0854 (0.8276)	-1.4621 (-4.6494)	-0.0154 (-0.9305)	0.1252 (4.8823)	75.99
$\hat{\beta}_{34}$	-0.3731 (-2.5959)	-1.4321 (-3.2716)	0.0402 (1.7375)	0.0824 (2.3079)	64.38

TABLE V (Continued)

Dependent Variable	Estimated Coefficients				R ²
	\hat{b}_0	\hat{b}_1	\hat{b}_2	\hat{b}_3	%
$\hat{\beta}_{35}$	-0.1241 (-1.7106)	-0.9169 (-4.1480)	0.0151 (1.2911)	0.0605 (3.3583)	72.57
$\hat{\beta}_{41}$	0.5374 (4.1470)	-1.1086 (-2.8088)	-0.0298 (-1.4272)	0.0846 (2.6286)	37.55
$\hat{\beta}_{42}$	-0.0529 (-0.4158)	-0.7380 (-1.9017)	0.0442 (2.1548)	0.0389 (1.2306)	63.64
$\hat{\beta}_{43}$	-0.4642 (5.8956)	-0.2356 (0.9825)	0.0280 (2.2121)	0.0088 (0.4505)	57.99
$\hat{\beta}_{44}$	-0.6643 (-3.6023)	-4.5322 (-8.0697)	-0.0106 (-0.3573)	0.4202 (9.1739)	95.51
$\hat{\beta}_{45}$	-1.1893 (-5.7258)	-0.2724 (-0.4306)	0.0095 (0.2854)	0.0523 (1.0142)	58.57
$\hat{\beta}_{51}$	0.4683 (4.3563)	-0.5888 (-1.7985)	0.0163 (0.9418)	0.0302 (1.1325)	29.29
$\hat{\beta}_{52}$	0.3467 (3.2847)	-0.6128 (-1.9061)	0.0410 (2.4123)	0.0200 (0.7663)	52.27
$\hat{\beta}_{53}$	0.0284 (0.3369)	-0.5306 (-2.0648)	0.0140 (1.0360)	0.0315 (1.5068)	42.56
$\hat{\beta}_{54}$	-1.3293 (-3.1753)	1.0107 (0.7927)	-0.0033 (-0.0501)	-0.1368 (-1.3163)	54.13
$\hat{\beta}_{55}$	-1.1695 (-7.8413)	-2.3245 (-5.1177)	0.0207 (0.8643)	0.1867 (5.0410)	86.96

* t-values are in parentheses.

Secretary of State George C. Marshall presented a plan for the reconstruction of Europe in a speech at Harvard University on June 5, 1947. Any further American assistance, he declared, "should provide a cure rather than a mere palliative" (44). Under the Marshall Plan, shipments of food, steel, coal, cotton, petroleum, farm machinery, mining machinery, electrical equipment, and motor trucks, were sent to Europe. These shipments were in form of aid such that statistics on commercial trade between U. S. and Europe were distorted throughout the period of the Marshall Plan. By 1954 trade was dictated primarily by market forces so the period (1954-69) was used to normalize the preference coefficients for trade between U. S. and Canada and Europe.

The Net Impact of Economic Integrations

In the absence of any a priori expectations with regard to the behavior of the preference dummy coefficients, the net change in these coefficients was measured by equation (5.1). The coefficients of (5.1) measure both intercept shifts and slope shifts of the preference dummy coefficients. The estimated coefficients of (5.1) may be used to determine the average net impact of the formation of the preference group in each of the post-integration years realizing that the net impact may change over time as measured by the b_3 coefficient in equation (5.1).

Estimation of the net integration impact requires the conversion of the b_1 and b_3 coefficients in (5.1) into dollar values for each β_{ij} . In any post-integration year, the impact of integration is the difference between estimates of (5.1) when $D = 1$ and when $D = 0$. This difference gives the magnitude (in log terms because the dependent

variable in (4.5) is in logs) by which normal trade between the two groups has been modified.

If t is any post-integration time period and F_{o_t} is the observed trade flow between any two groups (ignoring the subscripts for the importing and exporting blocks for simplicity), and F_{e_t} is expected trade flow assuming no integration, then by (4.5):

$$\log F_{o_t} = \gamma + \beta_t D$$

and by (5.1):

$$\hat{\beta}_t = b_o + b_1 D + b_2 t + b_3 D t$$

Substituting $\hat{\beta}_t$ in (4.5) by its estimated value and giving the value of 1 to D for trade between the two groups, then:

$$\log F_{o_t} = \gamma + b_o + b_1 D + b_2 t + b_3 D t. \quad (5.2)$$

If integration had not occurred, the value of D would be zero and the trade flow in t would be estimated by:

$$\log F_{e_t} = \gamma + b_o + b_2 t. \quad (5.3)$$

The net impact of the integration is the difference between the observed trade flow and the expected trade flow:

$$\log F_{o_t} - \log F_{e_t} = \hat{b}_1 + \hat{b}_3 t. \quad (5.4)$$

Taking antilogs:

$$\frac{F_{o_t}}{F_{e_t}} = \text{antilog} (\hat{b}_1 + \hat{b}_3 t) \quad (5.5)$$

$$\text{If } a = \text{antilog} (\hat{b}_1 + \hat{b}_3 t), \text{ then:} \quad (5.6)$$

$$F_{e_t} = \frac{F_{o_t}}{a} \quad (5.7)$$

Then in any post-integration year, the change in trade between two preference groups is estimated by:

$$\Delta T_t = F_{o_t} - F_{e_t} = F_{o_t} - \frac{F_{o_t}}{a} \quad (5.8)$$

where ΔT measures either GTC, TD or TE depending on the preference groups considered.

As explained in Chapter II, shifts in trade between two preference groups (excluding U. S. & C.) might be caused by TD of one block or TE of the other or a combination of both effects. Unfortunately, ex post statistical analyses measure only the net impact of the two forces. This combined effect is net trade diversion (NTD) which may be expressed as:

$$NTD_{ij} = TD_{ij} + TE_{ij} \quad (5.9)$$

when i and $j = 2, \dots, 5$ and $i \neq j$.

There is no a priori expectation about the sign of NTD since it depends on which force is greater: substitution of imports or expansion of exports.

Once NTD is known, it is possible to compute the change in the merchandise trade valance (ΔMTB) of one block with respect to another:

$$\Delta MTB_{ij} = NTD_{ji} - NTD_{ij} \quad (5.10)$$

where i and $j = 2, \dots, 5$; and $i \neq j$.

The change in the merchandise trade balance (ΔMTB) of any of the four preference groups with respect to the U. S. and C. is simply:

$$\Delta MTB_{il} = TE_{lj} - TD_{il} \quad (5.11)$$

where j and $i = 2, \dots, 5$ and $j = i$.

Estimates of Gross Trade Creation, Trade
 Diversion, Trade Expansion, by
 Preference Groups

The observed trade flow $F_o(ij)$ of trade among the different blocks of countries are presented in Appendix I for the period 1951-69 and the estimated flow of trade $F_e(ij)$ if integrations had not occurred are given in Appendix J for the post-integration period (1961-69). These data are summarized in Table VI which shows the net change estimated for each trade flow. Table VII shows the observed trade flows as a percentage of what was estimated without integration. The diagonal elements of Table 5.3 show the gross trade creation caused by each of the four preference groups. It is expected that integration will result in positive GTC; i.e., that the diagonal elements of Table VII will be greater than 100 percent. Of the four groups, CACM had the greatest relative gain with intra-group trade expanding more than 31-fold in 1969. GTC for EFTA and LAFTA were below 100 percent level in 1961 the first complete year of integration, but by 1965 and 1969 both blocks had increased GTC considerably.

European Economic Community

As expected GTC_{EEC} was positive and increased over the years from almost \$6.1 billion in 1961 to nearly \$30.1 billion in 1969. More than 83 percent of the intra-EEC trade in 1969 may be attributed to gross trade creation resulting from formation of the group.

As expected, TD_{EEC} (with the U. S. & C.) and NTD_{EEC} (with the other three groups) were all negative. The total net trade diversion of the

TABLE VI

ESTIMATED NET CHANGE IN TRADE FLOWS ASSOCIATED WITH THE FORMATION
OF PREFERENCE GROUPS: 1961, 1965 AND 1969

Year	Importing Group	Exporting Group				
		U. S. & C.	EEC	EFTA	CACM	LAFTA
-----millions of dollars-----						
1961	U. S. & C.	-2,135	-1,999	-415	19	-328
	EEC	-2,020	6,070	-5,163	-102	-1,252
	EFTA	-471	-1,266	-359	-22	-242
	CACM	-42	-44	-4	3	2
	LAFTA	-1,084	-791	-221	-9	-181
1965	U. S. & C.	-2,739	-4,163	251	227	366
	EEC	-4,177	14,547	-8,156	-198	-1,188
	EFTA	-456	-1,161	2,121	-13	-7
	CACM	49	-33	-5	110	1
	LAFTA	-559	-852	-76	-71	371
1969	U. S. & C.	-4,144	-7,511	1,157	326	1,216
	EEC	-8,837	30,050	-11,977	-253	-1,731
	EFTA	-321	-820	5,377	9	227
	CACM	165	*	-4	246	2
	LAFTA	-65	-734	93	-231	922

* Less than 0.5.

TABLE VII

ACTUAL TRADE FLOWS WITH INTEGRATION AS A PERCENT OF
ESTIMATED TRADE FLOWS WITHOUT INTEGRATION

Year	Importing Group	Exporting Group				
		U. S. & C.	EEC	EFTA	CACM	LAFTA
-----percent-----						
1961	U. S. & C.	77.1	69.5	89.5	108.4	91.0
	EEC	55.8	207.8	58.2	49.2	55.2
	EFTA	82.5	79.7	91.9	59.2	77.8
	CADM	83.7	73.4	87.1	109.5	143.8
	LAFTA	77.4	67.6	83.2	61.1	76.3
1965	U. S. & C.	80.2	60.2	105.8	247.6	111.6
	EEC	49.5	347.1	55.1	43.5	55.2
	EFTA	87.9	85.7	151.6	82.2	99.1
	CACM	117.4	85.7	90.2	587.6	177.2
	LAFTA	87.4	73.2	94.4	35.4	161.0
1969	U. S. & C.	83.5	52.1	125.1	565.6	136.8
	EEC	44.0	579.8	52.2	38.4	55.2
	EFTA	93.8	92.2	250.2	114.3	126.2
	CACM	164.7	100.2	93.4	3155.1	218.5
	LAFTA	98.6	79.3	107.1	20.5	339.7

EEC relative to all other countries included in preference groups and U. S. & C grew from \$8.6 billion in 1961 to \$22.8 billion in 1969, as shown in Table VIII. The total NTC_{EEC} increased from \$-2.5 billion in 1961 to \$7.3 billion in 1969 which indicates that the EEC has sustained a relatively strong net trade creation effect within the group and also has shown a considerable trade diversion effect with other trading partners.

European Free Trade Association

The results obtained for EFTA show that TD_{EFTA} (with U. S. & C.) and NTD_{EFTA} (with the other three groups) were negative as expected in 1961 and 1965, but in 1969 they were positive with respect to CACM and LAFTA. Since many of the exports of EFTA from Latin America are primary products, the demand for them is very inelastic and they generally are free of duties or pay a relatively low tariff upon entering EFTA countries. Since many of these goods are not produced within EFTA, the TD effect of EFTA on Latin American countries has been minimal.

Central American Common Market

The countries in CACM presented a relatively strong NTC increasing from \$-84 million in 1961 to \$410 million in 1969. There is, however no evidence of TD_{CACM} (with U. S. & C.) or NTD_{CACM} with the other three groups. These results for CACM are consistent with a priori expectations. The level of industrialization of the members of the market and the relatively low income and population size of the market suggest that it would be difficult for CACM to compete either in price or quality with goods produced in U. S. & C., Europe, and other more

TABLE VIII

ESTIMATED TOTAL NET TRADE DIVERSION AND TOTAL
NET TRADE CREATION

Preference Group	1961		1965		1969	
	Total Net Trade Diversion	Total Net Trade Creation	Total Net Trade Diversion	Total Net Trade Creation	Total Net Trade Diversion	Total Net Trade Creation
-----millions of dollars-----						
EEC	-8,534	-2,465	-13,718	+829	-22,797	+7,253
EFTA	-2,001	-2,360	-1,638	+484	-905	+4,471
CACM	-87	-84	11	+121	+163	+410
LAFTA	-2,104	-2,285	-1,558	-1,187	-936	-41

advanced Latin American countries. Moreover, the possibilities of substituting many imported products with domestic production is not too great due to the small size of the total market. Consequently, the primary effect of CACM appears to have been a better allocation of resources within the area which has caused considerable gross trade creation among the members.

Latin American Free Trade Area

As expected TD_{LAFTA} (with U. S. & C.) and NTD_{LAFTA} (with the other three groups) were negative in all years except NTD_{LAFTA} with respect to EFTA in 1969.

The LAFTA countries have gained at the partial expense of the CACM countries. As the trade between CACM and LAFTA generally consists of agricultural products, raw materials and semi-manufactured goods which are relatively abundant in the LAFTA countries, the discrimination in tariffs put CACM at a comparative disadvantage with respect to LAFTA countries. This is reflected in the increase in NTD_{LAFTA} with respect to CACM. In 1969 exports of CACM to LAFTA accounted for almost \$60 million which is only 20 percent of what estimated trade between both groups would have been if they had not formed competing preference groups.

The Effects of Preference Groups on Trade of the U. S. and Canada

Trade with EEC and EFTA

Those who are concerned about possible adverse effects of European integration on the U. S. and Canada have focused mainly on the

effects of tariff preferences. When members of the EEC lower tariff barriers to one another but maintain an average of existing tariff rates against outsiders, this will obviously provide competition advantages to producers within the EEC. The same sort of discrimination against U. S. and Canada exports will occur within the EFTA, even though each EFTA country is free to retain its present tariff rates against outsiders.

Without any empirical analysis, Emile Benoit (9, p. 173) argued that the formation of a second trade block in Europe, (EFTA), would have an additional adverse impact on U. S. trade. But so long as EFTA remains independent of the EEC, the effect on U. S. trade should be smaller than that of the EEC. The reasons that Benoit gave were: first, the volume of U. S. exports to EFTA is about a third less than to the EEC. Second, EFTA confines itself to tariff reductions on nonagricultural items. Third, for most of the country's tariffs (with the exception of the U.K.) were already relatively low so the degree of tariff discrimination in those markets would be limited. Fourth, the smaller countries in the EFTA will, in many cases, be unable to displace U. S. exports even when favored by a tariff differential, because they lack the industrial capacity. As expected, TD_{EEC} and TD_{EFTA} (with respect to U. S. & C.) were negative. These results (which are summarized in Table IX) are in line with the predictions of Benoit. The EEC presented a substantial trade diversion effect relative to the U. S. & Canada, increasing from \$-2.0 billion in 1961 to almost \$-8.9 billion in 1969. The formation of EFTA did not greatly affect the exports of the U. S. & C. to them as Benoit predicted. TD_{EFTA} (with respect to the U. S. & C.) fell from \$-47 million in 1961 to \$-321 million in 1969.

TABLE IX
ESTIMATED TRADE DIVERSION OF PREFERENCE GROUPS
FROM THE U. S. AND CANADA

Year	Preference Group			
	EEC	EFTA	CACM	LAFTA
	-----millions of dollars-----			
1961	-2,020	-471	-42	-1,084
1965	-4,177	-456	49	-559
1969	-8,837	-321	165	-65

Trade with CACM and LAFTA

The empirical results suggest that neither CACM nor LAFTA have diverted imports from the U. S. and Canada. This is shown by the decrease in TD_{CACM} and TD_{LAFTA} over the period from 1961 to 1969. In fact, in 1965 and 1969 TD_{CACM} was positive with respect to the U. S. & C. as shown in Table IX. The potential gain in exports of U. S. and C. to CACM accounted for almost \$165 million in 1969 compared to potential losses of exports to LAFTA countries of almost \$65 million.

Internal Trade Between U. S. and Canada

Internal trade between U. S. and Canada increased by 292 percent for the period 1961-69 from a total of slightly more than \$7 billion in 1961 to \$21 billion in 1969. The total trade of U. S. and Canada with the four preference groups plus trade with one another accounted for \$18.7 billion in 1961 with 38.2 percent of that total accounted for by trade between the U. S. & C. By 1969 total trade amounted to \$39.8 billion with 52.6 percent of it corresponding to commerce between U. S. and Canada. Thus, there has been an increase in trade between these two countries in absolute and relative terms. However, as shown in Table VI this increment in trade has been less than expected resulting in a negative GTC between the two countries as a consequence of the formation of EEC, EFTA, CACM and LAFTA.

A significant share of the increase in trade that did occur between U. S. & Canada may be attributed to the United States-Canadian Automotive Agreement since most of the increase in U.S.-Canada trade came after 1965 when the agreement was signed. Essentially this

agreement adopts some features of Bladen's duty-free scheme together with built-in safeguards that ensure a specified level of Canadian automotive production in the future. It also includes some protection features for the American producers (17, p. 17).

Comparisons With Other Studies

In general the empirical results obtained are consistent with the expectations based on customs union theory. The results were also in line with those of Aitken and Lowry (3). They found that GTC of CACM and LAFTA has increased progressively through the post-integration period and that neither CACM nor LAFTA have had a significant TD effect on trade of other Latin American countries. However, the results of this study do show a significant NTD_{LAFTA} with respect to CACM.

The results of this study were also in accord with those of Aitken (2) with respect to the impact of EEC on trade with EFTA countries. He found an increasing TD_{EEC} effect (with respect to EFTA) between 1961 and 1967. The results of this study also showed an increasing NTD_{EEC} effect over the period 1961-69. Aitken also found a cumulative growth in GTC_{EEC} and GTC_{EFTA} over the respective integration periods. Aitken's results gave a GTC_{EEC} of \$4.2 billion in 1961 and \$11.2 billion in 1967. This study presents a GTC_{EEC} of \$6.1 billion in 1961 and \$18.9 billion in 1967. GTC_{EFTA} for Aitken grew from \$126 million in 1961 to \$2.5 billion in 1967 compared with \$-359 million in 1961 and \$3.6 billion in 1967 found in this study. Thus, both studies agree on the trend for GTC estimates, but there are differences in the magnitudes of the estimates.

To a large extent, these differences might be due to differences in the methodologies used. Aitken, for instance, measures the post-integration preference effect as being the absolute value of the preference dummy coefficient. This study uses the estimated difference in the value of the preference coefficients if integration had occurred and if integration had not occurred. Other differences include the data base, sample composition, and period of analysis.

The results for CACM found in this study were similar to those obtained by Wilford (45), although the methodologies are completely different. He worked with comparisons of ex post income elasticities of import demand for extra- and intra-area trade before and after the formation of the customs union, assuming that the income elasticities would have remained unchanged in the absence of the common market.

The results for the EEC in this study also compare favorably with those of Kreinin (24). He found NTC for the EEC of \$8.9 billion in 1969-70 compared to the 1969 estimate of \$7.3 billion shown in Table VIII. The difference may be explained by: a) Kreinin's exclusion of any consumption effect or TE effect; b) Kreinin's estimates are based only on trade of manufacturers; and, c) differences in methodology and composition of the sample.

CHAPTER VI

EVALUATION OF THE IMPACTS OF PREFERENCE GROUPS

This chapter examines the position of each block with respect to the others in terms of changes in merchandise trade balances (Δ MTB). A second section provides a brief analysis of the effect of economic integration on the agricultural trade of the United States.

Estimated Change in Merchandise Trade Balances Caused by the Preference Groups

The change in merchandise trade balance (Δ MTB) of a particular group of countries with respect to another block of countries is the difference between net trade expansion of one and net trade diversion of the other. Since Δ MTB measures the net difference between the increment in the exports and the reduction in imports caused by integration, the member countries of a preference group should improve their external position with respect to other blocks. Thus, the expected sign for Δ MTB is positive for a successful integration.

General Expectations

One of the main purposes of economic integrations is to organize the economics of the member countries in a way that will permit them

to compete more effectively in world markets. If this competitiveness is achieved, then the change in the merchandise trade balance (Δ MTB) of the group with respect to other countries should improve. This means that the group has a net benefit on the foreign account of member countries which is one of the primary objectives of economic integrations.

Given the characteristics of the four preference groups in this study, it can be expected that:

a) All groups should have a positive Δ MTB with respect to the U. S. & C.

b) The two European groups should present positive Δ MTB with respect to the two Latin American groups because the more developed European countries are in a better position to capture the gains from integration.

c) Within continents, larger groups should dominate smaller groups.

Empirical Results

The estimated change in merchandise trade balances for each group relative to all others are shown in Table X for 1965 and Table XI for 1969.

United States and Canada. As expected, the U. S. & C. position with EEC, EFTA and LAFTA deteriorated due to a substantial decline in U. S. & C. exports (TD of the preference groups) and the small increase in imports from the groups. The deterioration of the merchandise trade balance of the U. S. and Canada with respect to the four groups

TABLE X
ESTIMATED NET CHANGE IN MERCHANDISE TRADE BALANCES
CAUSED BY PREFERENCE GROUP FORMATION: 1965

Importing Group	Exporting Group				
	U. S. & C.	EEC	EFTA	CACM	LAFTA
-----millions of dollars-----					
U. S. & C.	0	+14	+708	+179	+926
EEC	-14	0	-6,996	-165	-335
EFTA	-708	+6,995	0	-8	+68
CACM	-179	+165	+8	0	+71
LAFTA	-926	+335	-68	-71	0
All Preference Groups	-1,827	+7,490	-7,050	-244	-196
All Preference Groups plus U. S. & C.	-1,827	+7,504	-6,342	-65	+730

TABLE XI
ESTIMATED NET CHANGE IN MERCHANDISE TRADE BALANCES
CAUSED BY PREFERENCE GROUP FORMATION: 1969

Importing Group	Exporting Group				
	U. S. & C.	EEC	EFTA	CACM	LAFTA
-----millions of dollars-----					
U. S. & C.	0	+1,326	+1,478	+162	+1,281
EEC	-1,326	0	-11,157	-253	-997
EFTA	-1,478	+11,157	0	+13	+134
CACM	-162	+253	-13	0	+233
LAFTA	-1,281	+997	-134	-233	0
All Preference Groups	-4,247	+12,407	-11,304	-473	-496
All Preference Groups plus U. S. & C.	-4,247	+13,733	-9,326	-311	+785

was \$-1.8 billion in 1965, falling to \$-4.3 billion in 1969. Although this figure is only 0.4 percent of the 1969 GNP, it represents a substantial decline in the relative bargaining position in the international markets of U. S. & C.

EEC. This was the only group to improve its external position relative to the other three preference groups. This means that the formation of the EEC has produced the desired results: it has resulted in gross trade creation (as shown in the previous chapter); and, its relative position with respect to other preference groups and the U. S. & C. has improved.

EFTA. This group improved its Δ MTB only with U. S. & C. The most negative effect was caused by the EEC which is not unexpected given the characteristics of the countries in both groups and the differences in forms of integration.

As indicated before, EFTA was expected to gain relative to the two Latin American groups. However, the results obtained in this study show a deterioration in the Δ MTB of EFTA with each of them which shows that the gains from integration do not automatically accrue to the more developed economies.

CACM and LAFTA. The net increase in LAFTA exports to CACM was greater than the net increase in LAFTA imports. Consequently, the Δ MTB of LAFTA with respect to the CACM countries was positive. CACM improved its MTB only with respect to EFTA reinforcing the finding in the previous chapter that CACM had not produced the anticipated external effect. Wionczek (46, p. 102) has argued that "CACM represents the

most successful example of regional integration in the entire underdeveloped sector of the world." In light of the results of this study, his argument can be accepted only if it refers to the creation of trade within the area.

Impact of Integration on U. S.

Agricultural Exports

In the remainder of this chapter the emphasis will be on the effect of preference groups on the agricultural trade of the U. S. This section embodies two departures from the previous analyses: first, agricultural trade (rather than total) will be evaluated; and second, only the U. S. (without Canada) will be considered. U. S. and Canada were separated for this section as a matter of convenience. There is no a priori expectation that integration has affected U. S. and Canadian agricultural trade differently. The criterion for evaluating the impact of integration on U. S. agricultural exports will be the share of total U. S. exports to each group which is accounted for by agricultural products.

By looking at the trend over time of U. S. agricultural exports as a percentage of total, it is possible to infer what happened to the trade flow of agricultural products as a consequence of each preference group. If, for example, the share is constant then agricultural products were just as affected by trade diversion as non-agricultural products. If the share of agricultural exports of U. S. with respect to total exports increases after the formation of the preference group, then agricultural exports were more affected by the TD effect than non-agricultural commodities.

General Expectations

Due to the characteristics of the EEC and EFTA the agricultural exports of the U. S. might be more affected (negatively) by the formation of EEC than EFTA. There are three basic reasons to expect this. (1) EFTA is a free trade area in industrial products only since agricultural products were excluded from the treaty. (2) Some of the members of EEC are food surplus countries while EFTA includes several of the highest per capita importers of agricultural commodities in the world. (3) The EEC has implemented a relatively strong common agricultural policy which encourages production and restricts imports from non-members. Both the EEC and EFTA caused trade diversion with the U. S. & C. Hence, the share of exports from the U. S. which are agricultural should increase if there were no TD of agricultural goods; and, the share for EFTA should increase more rapidly than for the EEC.

The agricultural exports of the U. S. to CACM are not expected to be affected negatively by the formation of CACM since most U. S. agricultural exports are temperate climate products that cannot be produced within the region. The agricultural exports of U. S. to LAFTA may not be affected by the formation of LAFTA since agricultural products are not covered by the treaty and agreements. Moreover, since LAFTA didn't cause strong trade diversion with respect to the U. S. and Canada, the post-integration share of U. S. agricultural exports to LAFTA may be equal to or higher than the share before integration.

Empirical Results

EEC. Contrary to expectations, the share of agricultural exports from the U. S. to the EEC fell considerably from the pre-integration to

the post-integration period. Before the formation of the EEC the agricultural share of exports was 41 percent (Table XII). In the post-integration period (1959-69) the share of U. S. agricultural exports to EEC averaged 35 percent or six percentage points lower than in the previous period. Since total U. S. exports to the EEC showed a relatively strong trade diversion effect, these results seem to indicate that the agricultural exporters to the EEC have suffered more than other sectors as a consequence of the preference group.

EFTA. The share of U. S. agricultural exports to the members of EFTA fell from 47 percent in the pre-integration period to 32.5 percent in the post-integration period. This result is contrary to expectations on two counts. First, it was expected that the share would probably increase showing that U. S. agricultural exports were not adversely affected by EFTA. The fact that the share did decline means agricultural trade suffered a greater loss than other sectors. Secondly, it was expected that the impact of the EEC would be more adverse than for EFTA. In fact, EFTA seems to have been the more disruptive of the two.

A possible reason for the reduction in agricultural exports of U. S. to EFTA may be stagnation in the total agricultural imports of the United Kingdom. Possible reasons for this include preferences for trade with commonwealth countries, the devaluation of the pound, and rising domestic production.

CACM. Contrary to the expectations, the agricultural share of U. S. exports to CACM declined after the formation of CACM. The pre-integration average share was 30 percent of total exports compared to 22 percent after the formation of the group.

TABLE XII
 U. S. AGRICULTURAL EXPORTS AS A PERCENTAGE
 OF TOTAL U. S. EXPORTS

YEAR	IMPORTING GROUP				WORLD
	EEC	EFTA	CACM	LAFTA	
1951	56.70	55.21	32.19	16.55	27.15%
1952	53.90	44.22	33.48	20.88	22.80
1953	49.14	49.55	33.97	16.94	18.19
1954	49.72	50.42	32.17	15.25	20.39
1955	40.33	42.53	32.08	14.73	20.75
1956	43.07	46.74	27.08	15.96	22.02
1957	39.44	45.29	25.90	13.65	21.80
1958	40.16	47.87	27.66	13.94	21.72
1959	47.59	48.38	28.29	15.45	22.66
1960	40.14	40.29	26.93	15.71	23.72
1961	40.16	41.81	26.31	18.06	24.21
1962	39.06	41.82	23.47	16.27	23.49
1963	36.56	39.55	21.06	19.85	24.21
1964	38.27	36.49	20.41	18.64	24.27
1965	36.29	30.84	19.96	15.48	22.96
1966	35.94	33.74	21.16	15.35	23.03
1967	31.65	27.19	21.43	15.22	20.49
1968	27.86	21.49	22.51	13.79	18.21
1969	22.47	19.51	19.22	11.87	15.85
Pre-integration average	41.38	47.05	29.97	15.90	22.12
Post-integration average	34.84	32.49	21.72	16.05	21.85

Sources: First four columns (39, 40, 41); last column (38).

LAFTA. As expected the agricultural exports of U. S. to LAFTA have remained stable over the integration period. Since there has been some mild TD_{LAFTA} with respect to the U. S., the agricultural sector has fared relatively well in the LAFTA countries.

CHAPTER VII

SUMMARY AND CONCLUSIONS

Since World War II one of the distinguishing characteristics of international commercial relations has been the presence of bilateral and/or multilateral agreements among governments which encourage freer movement of goods across their borders. Among the purposes of economic integration are: the reduction and/or elimination of tariffs and other barriers to trade between member countries; and, the regulation of trade with non-member countries. By forming preference groups, members hope to protect the integrated markets, expand production, reallocate resources in a more efficient manner, and be more powerful (more competitive) in the international markets.

The literature on the economics of preference groups is ample. Many studies have analyzed the possible impacts that integration could have on international trade flows. However, little work has been done with regard to the combined effects of two or more preference groups. This study is a quantitative evaluation of the effects that economic integrations in Europe and Latin America have had on member countries and the outside world, with a strong emphasis on the effects on U. S. trade.

Objectives

The primary objective of this study is to estimate the impact that the European Economic Community, the European Free Trade Association,

the Central American Common Market, and the Latin American Free Trade Area have had on trade within the groups and with the rest of the world. The specific objectives are to: 1) estimate the coefficients of an econometric model which permits the determination of the forces that influence the flow of trade between any two countries; 2) estimate the net trade gains associated with the preference groups; 3) estimate the impact on the trade position of the U. S. and Canada as a consequence of the integrations; and, 4) examine the impact that these economic integrations have had on the agricultural exports of U. S.

Procedures

Cross-sectional trade flow equations were estimated relating the total flow trade between any two countries to the economic size of the countries (gross national product), resistance factors to trade (the distance between countries), and a dummy variable for neighboring countries. Dummy variables were added to the estimating equations to measure the shift in trade flows which are coincident with the establishment of the preference groups. Based on the assumption that there is no correlation between the dummy variables and the error term, the coefficients of the dummy variables for integration were used to compute the trade impact of the preference groups.

Since there were five groups, a total of 25 dummy variables were estimated based on cross-sectional data from approximately 1,100 trade flows among 42 countries. The trade flow equation was estimated in log-log form for each year in the 1951-69 period.

Each preference variable coefficient estimates the amount by which trade from one group of countries to another group of countries differs

from what would be expected based solely on the other independent variables. Changes in the estimated coefficients over the period 1951-69 were attributed to either secular factors or changes in trade relations resulting from the formation of a preference group. Prior to the formation of the preferential trading blocks, the coefficients of the dummy variables measure the net trade preference that existed among members of the two groups. In the post-integration period the value of the coefficient for each preference variable may be either greater than or less than the pre-integration value indicating an increase or decrease in trade flows between the groups following integration. Thus, the net impact of the preference groups on trade flows was measured by the difference between the value of the preference dummy coefficients prior to and following the formation of the groups.

The preference group related changes in trade flows were estimated using a regression procedure in which the estimated coefficients of preferential variables were regressed on time (to eliminate secular shifts), and dummy variables to measure shifts in the intercept and slope associated with the formation of the preference groups. The results of this procedure were transformed to dollar value estimates of what trade would have been in the absence of integration. The net impact of the integrations is then measured by the difference between the flow of trade with and without integration.

The estimated differences between trade flows with and without integration show gross trade creation (GTC), trade diversion (TD), trade expansion (TE), and net trade diversion (NTD). Aggregation of these gives total net trade diversion (TNTD), total net trade creation

(TNTC), and the change in the merchandise trade balance (Δ MTB), caused by the formation of the preference groups.

Findings and Conclusions

Impact of Economic Integrations

Each of the four preference groups (EEC, EFTA, CACM and LAFTA) presented evidence of gross trade creation (GTC) among member countries which is consistent with prior expectations. Of the four groups, CACM had the greatest relative gain with intra-group trade expanding more than 31-fold in 1969 as shown in Table XIII. The only group that increased its total net trade diversion with respect to the other three preferential groups plus U. S. and Canada was the EEC. The $TNTD_{EEC}$ with respect to the other four groups grew from almost \$14 billion in 1965 to almost \$23 billion in 1969.

The results indicate that the EEC has been the group which has captured the greatest gains from integration. These six countries presented a relatively strong net trade creation effect within the group, and showed a substantial trade diversion with respect to the imports from non-member countries.

The other common market (CACM) produced the desired results with respect to trade creation among the five members. Apparently protected industries within CACM could not fully substitute the imports from outsiders, which is reflected in the lack of trade diversion with the U. S. and Canada and the three other preference groups. However, as mentioned before this was the group which presented the greatest rate of increase of GTC among its members.

TABLE XIII

TRADE CREATION AND TRADE DIVERSION RESULTING FROM
PREFERENCE GROUP FORMATION: 1969

Preference Group	Gross Trade Creation		Total Net Trade Diversion	Total Net Trade Creation
	Amount	% of estimated intra-group trade w/o integration		
	(\$ million)	(%)	(\$ million)	(\$ million)
EEC	30,050	580	-22,797	+7,253
EFTA	5,377	250	-905	+4,471
CACM	246	3155	+163	+410
LAFTA	922	340	-936	-14

Theoretically it is expected that each group will experience a negative trade diversion and a positive trade expansion with the U. S. and Canada since they are unprotected. The effect of each of these changes is to improve the merchandise trade balance of the preference groups, *ceteris paribus*. As shown in Table XIV, the impacts relative to U. S. & C. were as expected except for the negative TE_{EEC} and positive TD_{CACM} . Nonetheless, the merchandise trade balance of U. S & C. was adversely affected in 1969 by each of the preference groups.

As expected the EEC improved its external position relative to the other three preference groups increasing from a positive ΔMTB with respect to them of almost \$7.5 billion in 1965 to \$12.4 billion in 1969. The ΔMTB of EFTA with respect to the other three preferential groups deteriorated from \$-7 billion in 1965 to \$-11.3 billion in 1969. A high proportion of this deterioration was caused by trade with the six EEC countries. The commercial relations between CACM and LAFTA after the formation of the two blocks has been relatively more favorable to LAFTA, which has improved its ΔMTB with respect to CACM from \$71 million in 1965 to \$233 million in 1969.

The results of this study show that all groups (except CACM) experienced trade diversion with respect to the exports of the U. S. to them. But these results do not indicate which sectors of the U. S. economy have suffered the greatest displacement as a consequence of trade diversion. If it is expected that U. S. agricultural exports were not affected as much by preference groups as non-agricultural exports, then the percentage of U. S. exports which are agricultural should increase. The summary data in Table XV may be used to test this hypothesis.

TABLE XIV
 ESTIMATED TRADE EXPANSION, TRADE DIVERSION AND CHANGE
 IN TRADE BALANCE OF PREFERENCE GROUPS WITH
 RESPECT TO THE U. S. AND CANADA: 1969

Preference Group	Trade Expansion of Group to U. S. & C.	Trade Diversion of Group to U. S. & C.	Change in Merchandise Trade Balance of Group with U. S. & C.
	-----millions of dollars-----		
EEC	-7,511	-8,837	+1,326
EFTA	1,157	-321	+1,478
CACM	326	165	+162
LAFTA	1,216	-65	+1,281

TABLE XV
 AGRICULTURAL EXPORTS OF THE UNITED STATES
 AS A PERCENT OF TOTAL EXPORTS, BY
 IMPORTING GROUP

U.S. Exports to:	YEAR		
	1955	1965	1969
	----- million of dollars -----		
EEC	40%	36%	22%
EFTA	43%	31%	19%
CACM	32%	20%	16%
LAFTA	15%	15%	12%
ALL COUNTRIES	21%	23%	17%

The percentage of U. S. exports which are agricultural fell for the EEC, EFTA and CACM. For LAFTA, however, there was no change relative to the agricultural share of exports to all countries.

Several conclusions may be derived with respect to the U. S. agricultural exports to these four preferential groups: 1) the TD impact of EEC and EFTA on U. S. agricultural exports was more severe than on non-agricultural items; and, 2) since there was no trade diversion by CACM with respect to the exports of U. S. and the ratio of U. S. agricultural to total exports to CACM fell, there must have been a substantial net increase in non-agricultural exports from the U. S. associated with the formation of CACM, ceteris paribus.

Other Conclusions

The results of this study have shown that the formation of economic preference groups has had a considerable positive impact on the trade flows among the member countries. This impact has been greater for the two groups formed along the lines of a common market than for the free trade areas.

The results also suggest that a portion of the deterioration of the United States trade performance in the last decade may have been caused by the formation of various trading blocks or preference groups. The U. S. merchandise trade balance with respect to the four preferential groups was almost \$1.83 billion less in 1965 and \$4.25 billion less in 1969 than it would have been if the preference groups had not been formed. The actual MTB of the U. S. in 1969 was \$1.6 billion which is \$4.0 billion less than the 1955-65 average MTB. Thus, nearly all of the deterioration of the 1955-65 MTB levels in the U. S. can be

"explained" by the estimated impact of the four preference groups included in this study. Since Δ MTB is estimated for the U. S. and Canada combined, this conclusion is overstated to some extent.

The impact of the MTB on the average American was higher prices paid for imported goods relative to domestic products and a possible reduction in the level of potential employment due to losses in foreign markets for domestic products. The increase in prices for imported goods combined with the cheapening of U. S. exports will likely affect the real wage negatively if nominal wages don't adjust at the same rate.

Limitations of the Study

The results of this study are contingent on the validity of two critical assumptions: 1) that equilibria between supply and demand forces exist in all international markets; and, 2) that changes in the coefficients of the preference variables in the post-integration years are entirely caused by the formation of the preference groups. The bases for these assumptions and the implication of their possible violation will be briefly discussed below.

The exclusion of price variables from the flow equations stems directly from the assumption of long-run equilibrium in international markets. This assumption in no way implies that prices are not effective in allocating resources. On the contrary, prices are assumed to adjust quickly, and supply and demand are assumed to be sufficiently responsive to these price changes to maintain or continually approach equilibrium over time. It is the level of this equilibrium rather than the process of achieving it that is the focus of this study.

The assumption of equilibrium of demand and supply forces in this study has possibly contributed to some bias in the estimates. The data were assumed to have been generated under general equilibrium conditions. Frequently, countries which are experiencing rapid inflation increase imports and reduce exports resulting in an external disequilibrium. A possible way to reduce any errors caused by periods of inflation or deflation is to use three or four year average data instead of the annual data as used in this study.

Another basic assumption is that all change (other than secular change) in the coefficients for the preference variables following the formation of the preference groups is entirely caused by the formation of the respective groups. Implicitly, this assumes that there are no other factors which may be correlated with the preference variables. In the earlier 1960's when the preference groups were formed several other important events occurred in the world which could also be correlated with the preference dummy variables such as: the Vietnam conflict; a period of extended economic growth in the U. S.; the improvement in the political and economic relations between the U. S. and Latin America; plus many other factors which could affect the flow of trade among countries.

The findings of this study are restricted to the period 1951-69. The extent to which the empirical results can be expected to be valid for years to come depends on the behavior of a number of external factors underlying the analysis. The results for the EEC and EFTA could certainly be different for a similar study which extended the analysis to the decade of the 1970's due to the inclusion of the United Kingdom, Ireland, and Denmark as full members of the European Economic

Community. On the other hand, the impact of EFTA as a group has probably declined considerably with regards to both member and non-member countries.

In 1969, five members of LAFTA (Bolivia, Chile, Colombia, Ecuador, and Peru) formed the Andean Group and later Venezuela joined as a regular member. This new sub-group may well change the pattern of inter-LAFTA trade due to a new set of regulations among the members of the sub-group.

Need for Further Research

The results in this study were obtained from a very aggregative data. The flow of trade between any two countries in any particular year is the total flow of goods between the two countries in the respective year. Research which separates trade flows into at least two parts: a) non-agricultural trade, and b) agricultural trade is warranted to examine which sector of the economy is more affected by the formation of preference groups. Additional research which estimates the effect that economic integrations have on the individual country economies rather than the whole group is suggested. The results of such a study could show which countries within a preference group receive the greatest benefits and which suffer as a consequence of integration. Studies with a longer post-integration period could be of great value. A longer post-integration period would include such important events as the devaluation of the dollar, the end of the Vietnam War, the Arab-Israeli War, the oil embargo, the addition of three new member countries to the EEC, and the conflict between

Honduras and El Salvador which probably affected the commercial relations among the CACM members. The inclusion of these factors might change the empirical results found in this study.

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APPENDIX A

HISTORICAL BACKGROUND OF
PREFERENCE GROUPS

European Economic Community

In 1947 the United States announced the Marshall Plan as a means of assisting European recovery from the ravages of war. In 1948 the organization for European Economic Cooperation (OEEC) was created to help carry out the Marshall Plan through joint estimates of requirements and coordination in the distribution of Marshall Plan aid among the affected countries. In 1948 the first concrete step toward country integration in western Europe occurred when the Benelux Customs Union was established covering Belgium, the Netherlands, and Luxembourg. In 1951 the European Coal and Steel Community was organized including the Benelux Countries plus France, Germany and Italy. The six members of the European Coal and Steel Community signed the Rome Treaty in 1957 which laid the foundation of the European Economic Community. The treaty became effective on January 1, 1958.

The treaty says that the purpose of the EEC is to establish an ever closer union among the peoples of Europe. Although the Rome Treaty itself deals with economic affairs, it has been rather generally understood that countries whose economies are closely integrated will tend to develop common views on political matters. Indeed, measures leading to closer political union among the EEC countries are still under active consideration (37, p. 2).

Matters included in the treaty cover all major segments of economic life such as free movement of capital and labor, harmonization of wage rates, conditions of employment, health and retirement benefits, the right of free business establishment, agricultural policy, coordination of fiscal and monetary policies and common commercial policies for trade in both agricultural and nonagricultural products. Both an investment bank for the member countries and a development fund to aid associated overseas countries and territories are also included in the treaty.

European Free Trade Association

The European Free Trade Association (EFTA) was formed in January of 1960 by Austria, Denmark, Norway, Portugal, Sweden, Switzerland, and the United Kingdom. The EFTA members agreed to eliminate trade restrictions on industrial products moving between member countries. Tariff reductions on most industrial goods began in July, 1960 and all tariffs were eliminated by December 31, 1966 (36, p. i).

In contrast to a Customs Union Arrangement such as the EEC, EFTA members maintain their own external trade policies. Domestic policies on agricultural production also vary widely among EFTA members from direct government payments to limited price supports. Agricultural trade has been influenced through preferences as in the U.K.-Commonwealth Agreement and Portuguese-African ties. Bilateral agreements between Denmark and the other EFTA members also affect agricultural trade patterns.

Central American Common Market

The first attempts to bring about some degree of economic cooperation among the Central American republics goes back to the beginning of the 1950's. The idea of Central American economic integration belongs to the United Nations Economic Commission for Latin America, upon whose initiative a Central American Economic Cooperation Committee was formed in 1952.

The first formal multilateral cooperation mechanism in the region was the Multilateral Treaty on Free Trade and Central American Economic Integration signed by El Salvador, Guatemala, and Honduras in 1958. The treaty provided for the establishment of a common market through the gradual addition of products to the free trade list by interested parties over a period of ten years.

A new and broader treaty, signed in December, 1960 in Managua, Nicaragua, by El Salvador, Guatemala, Honduras and Nicaragua (with Cost Rica delaying its formal entry until July, 1962) for the purpose of superseding the 1958 treaty, committed the contracting parties to free all regional trade and establish a common market by mid-1966 (46, p. 102-104).

Latin American Free Trade Area

In February, 1960, seven Latin American countries (Argentina, Brazil, Chile, Mexico, Paraguay, Peru and Uruguay) signed the Monterideo Treaty which formed the Latin American Free Trade Area (LAFTA). Later on, other countries were added to the group. Colombia (1961), Ecuador (1961), Venezuela (1966) and Bolivia (1967). The first negotiations realized under LAFTA were held in July of 1961.

The Montevideo Treaty countries had a population of 210 million of inhabitants in 1968 which represented more than 90 percent of the population of Latin America and more than 93 percent of its gross national product. The estimated population for the year 2000 is 600 million for the LAFTA countries, which is twice the 2000 estimate for U. S. (4, p. 16).

APPENDIX B

GROSS NATIONAL PRODUCT, POPULATION AND
EXCHANGE RATES FOR SAMPLE COUNTRIES

-----UNITED STATES-----

YEAR	GNP IN		POPULATION (MILLIONS)	EXCHANGE RATE (\$/UNIT)
	DOMESTIC CURRENCY (BILLIONS)	GNP IN DOLLARS (BILLIONS)		
1951	328.40	328.40	154.88	1.0000
1952	345.50	345.50	157.55	1.0000
1953	364.60	364.60	160.12	1.0000
1954	364.80	364.80	163.03	1.0000
1955	398.00	398.00	165.93	1.0000
1956	419.20	419.20	168.90	1.0000
1957	441.10	441.10	171.99	1.0000
1958	447.30	447.30	174.83	1.0000
1959	483.70	483.70	177.81	1.0000
1960	503.70	503.70	180.62	1.0000
1961	520.10	520.10	183.76	1.0000
1962	560.30	560.30	188.54	1.0000
1963	590.50	590.50	189.24	1.0000
1964	632.40	632.40	191.89	1.0000
1965	648.90	648.90	194.30	1.0000
1966	749.90	749.90	196.56	1.0000
1967	793.90	793.90	198.71	1.0000
1968	865.00	865.00	200.71	1.0000
1969	929.10	929.10	202.68	1.0000
1970	976.40	976.40	204.88	1.0000
1971	1050.40	1050.40	207.05	1.0000

-----CANADA-----

YEAR	GNP IN		POPULATION (MILLIONS)	EXCHANGE RATE (\$/UNIT)
	DOMESTIC CURRENCY (BILLIONS)	GNP IN DOLLARS (BILLIONS)		
1951	21.17	20.11	14.05	0.9498
1952	24.00	24.52	14.50	1.0216
1953	25.82	25.44	14.89	1.0169
1954	24.37	25.55	15.33	1.0275
1955	27.13	27.51	15.74	1.0139
1956	30.58	31.08	16.12	1.0162
1957	31.91	33.28	16.68	1.0430
1958	32.89	33.89	17.12	1.0303
1959	34.92	36.41	17.52	1.0426
1960	36.29	37.44	17.91	1.0316
1961	37.47	37.01	18.27	0.9876
1962	40.58	37.93	18.60	0.9347
1963	45.46	42.05	18.92	0.9250
1964	49.78	46.05	19.27	0.9250
1965	54.90	50.78	19.60	0.9250
1966	61.42	56.81	20.05	0.9250
1967	65.72	60.79	20.44	0.9250
1968	71.43	66.07	20.77	0.9250
1969	78.54	72.05	21.09	0.9250
1970	85.66	81.82	21.30	0.9552
1971	93.31	92.08	21.00	0.9933

-----BELGIUM-----

YEAR	GNP IN	GNP IN	POPU-	EXCHANGE
	DOMESTIC	GNP IN	POPULATION	RATE
	CURRENCY	DOLLARS	(MILLIONS)	(\$/UNIT)
	(BILLIONS)	(BILLIONS)		
1951	N.A.	N.A.	8.98	0.0200
1952	N.A.	N.A.	9.03	0.0200
1953	431.55	8.63	8.81	0.0200
1954	449.98	9.00	8.85	0.0200
1955	478.44	9.57	9.17	0.0200
1956	510.30	10.21	9.23	0.0200
1957	540.94	10.82	9.30	0.0200
1958	544.82	10.90	9.36	0.0200
1959	560.49	11.21	9.41	0.0200
1960	596.69	11.93	9.46	0.0200
1961	631.34	12.63	9.50	0.0200
1962	673.80	13.48	9.54	0.0200
1963	723.50	14.47	9.61	0.0200
1964	809.60	16.19	9.71	0.0200
1965	882.13	17.64	9.79	0.0200
1966	948.66	18.97	9.86	0.0200
1967	1013.42	20.27	9.91	0.0200
1968	1077.73	21.55	9.96	0.0200
1969	1196.52	23.93	9.99	0.0200
1970	1336.05	26.72	10.02	0.0200
1971	1470.88	36.62	10.07	0.0249

-----FRANCE-----

YEAR	GNP IN	GNP IN	POPU-	EXCHANGE
	DOMESTIC	GNP IN	POPULATION	RATE
	CURRENCY	DOLLARS	(MILLIONS)	(\$/UNIT)
	(BILLIONS)	(BILLIONS)		
1951	123.00	35.14	42.06	0.2857
1952	145.60	41.60	42.36	0.2857
1953	151.90	43.40	42.65	0.2857
1954	160.80	45.94	43.06	0.2857
1955	172.20	49.20	43.43	0.2857
1956	191.30	54.65	43.84	0.2857
1957	213.00	58.19	44.31	0.2732
1958	244.70	58.26	44.79	0.2381
1959	272.60	55.23	45.24	0.2026
1960	301.60	61.10	45.68	0.2026
1961	328.40	66.53	46.16	0.2026
1962	367.20	74.39	47.00	0.2026
1963	412.00	83.47	47.82	0.2026
1964	456.70	92.53	48.31	0.2026
1965	480.80	99.23	48.76	0.2026
1966	532.60	107.90	49.16	0.2026
1967	574.80	116.45	49.55	0.2026
1968	630.00	127.64	49.91	0.2026
1969	734.00	143.20	50.32	0.1951
1970	820.20	147.64	50.77	0.1800
1971	904.20	162.76	51.25	0.1800

-----GERMANY, F. R.-----

<u>YEAR</u>	<u>GNP IN DOMESTIC CURRENCY (BILLIONS)</u>	<u>GNP IN DOLLARS (BILLIONS)</u>	<u>POPULATION (MILLIONS)</u>	<u>EXCHANGE RATE (\$/UNIT)</u>
1951	119.50	28.45	48.37	0.2381
1952	136.60	32.52	48.68	0.2381
1953	147.10	35.02	49.13	0.2381
1954	157.90	37.60	49.68	0.2381
1955	180.40	42.95	50.17	0.2381
1956	198.80	47.33	50.78	0.2381
1957	216.30	51.50	51.43	0.2381
1958	231.50	55.12	52.06	0.2381
1959	250.90	59.74	52.67	0.2381
1960	296.80	70.67	53.22	0.2381
1961	326.20	80.57	54.03	0.2470
1962	354.60	88.65	54.77	0.2500
1963	377.60	94.40	55.43	0.2500
1964	413.80	103.45	56.10	0.2500
1965	460.40	115.10	56.84	0.2500
1966	490.70	122.67	57.48	0.2500
1967	494.60	123.65	57.72	0.2500
1968	538.50	134.63	58.02	0.2500
1969	602.20	152.90	58.71	0.2539
1970	685.70	187.33	60.65	0.2732
1971	761.80	218.03	61.29	0.2862

-----ITALY-----

<u>YEAR</u>	<u>GNP IN DOMESTIC CURRENCY (BILLIONS)</u>	<u>GNP IN DOLLARS (BILLIONS)</u>	<u>POPULATION (MILLIONS)</u>	<u>EXCHANGE RATE (\$/UNIT)</u>
1951	10499.00	16.80	47.09	0.0016
1952	11289.00	18.06	47.35	0.0016
1953	12486.00	19.98	47.67	0.0016
1954	13324.00	21.32	47.91	0.0016
1955	14641.00	23.43	48.22	0.0016
1956	15908.00	25.45	48.47	0.0016
1957	17081.00	27.33	48.74	0.0016
1958	18340.00	29.34	49.04	0.0016
1959	19437.00	31.10	49.36	0.0016
1960	21071.00	33.71	49.64	0.0016
1961	23363.00	37.38	49.90	0.0016
1962	26330.00	42.13	50.24	0.0016
1963	31261.00	50.02	50.64	0.0016
1964	34179.00	54.69	51.12	0.0016
1965	36818.00	58.91	51.58	0.0016
1966	39829.00	63.73	51.97	0.0016
1967	43553.00	69.68	52.38	0.0016
1968	47134.00	75.41	52.78	0.0016
1969	51456.00	82.33	53.17	0.0016
1970	58261.00	93.22	53.66	0.0016
1971	63127.00	101.82	54.01	0.0016

-----NETHERLANDS-----

YEAR	GNP IN DOMESTIC CURRENCY (BILLIONS)	GNP IN DOLLARS (BILLIONS)	POPULATION (MILLIONS)	EXCHANGE RATE (\$/UNIT)
1951	21.73	5.72	10.26	0.2632
1952	22.69	5.97	10.38	0.2632
1953	24.20	6.37	10.51	0.2632
1954	27.05	7.11	10.61	0.2632
1955	30.28	7.97	10.75	0.2632
1956	32.57	8.57	10.89	0.2632
1957	35.36	9.31	11.02	0.2632
1958	35.93	9.46	11.19	0.2632
1959	38.44	10.12	11.35	0.2632
1960	42.73	11.25	11.48	0.2632
1961	45.29	12.36	11.64	0.2728
1962	48.52	13.40	11.81	0.2762
1963	52.86	14.60	11.97	0.2762
1964	62.15	17.17	12.13	0.2762
1965	69.37	19.16	12.29	0.2762
1966	75.41	20.83	12.46	0.2762
1967	84.00	23.20	12.60	0.2762
1968	91.37	25.37	12.74	0.2762
1969	102.34	28.27	12.87	0.2762
1970	114.98	31.76	13.03	0.2762
1971	129.55	36.97	13.19	0.2854

-----AUSTRIA-----

YEAR	GNP IN DOMESTIC CURRENCY (BILLIONS)	GNP IN DOLLARS (BILLIONS)	POPULATION (MILLIONS)	EXCHANGE RATE (\$/UNIT)
1951	69.60	3.26	6.93	0.0468
1952	80.60	3.77	6.93	0.0468
1953	83.00	3.40	6.93	0.0410
1954	93.20	3.58	6.94	0.0385
1955	107.60	4.14	6.95	0.0385
1956	118.00	4.54	6.95	0.0385
1957	130.80	5.03	6.97	0.0385
1958	136.70	5.26	6.99	0.0385
1959	143.30	5.51	7.01	0.0385
1960	163.20	6.28	7.05	0.0385
1961	180.80	6.95	7.09	0.0385
1962	192.30	7.40	7.13	0.0385
1963	207.30	7.97	7.17	0.0385
1964	227.10	8.73	7.22	0.0385
1965	247.40	9.52	7.25	0.0385
1966	267.60	10.29	7.29	0.0385
1967	284.90	10.96	7.32	0.0385
1968	302.80	11.65	7.35	0.0385
1969	332.10	12.77	7.37	0.0385
1970	373.90	14.38	7.39	0.0385
1971	415.70	16.67	7.46	0.0401

-----DENMARK-----

YEAR	GNP IN	GNP IN	POPU-	EXCHANGE
	DOMESTIC CURRENCY (BILLIONS)	DOLLARS (BILLIONS)	LATION (MILLIONS)	RATE (\$/UNIT)
1951	23.07	3.34	4.30	0.1448
1952	24.60	3.56	4.32	0.1448
1953	26.38	3.82	4.37	0.1448
1954	27.63	4.00	4.41	0.1448
1955	28.85	4.18	4.44	0.1448
1956	30.88	4.47	4.47	0.1448
1957	32.82	4.75	4.49	0.1448
1958	34.33	4.97	4.51	0.1448
1959	38.11	5.52	4.55	0.1448
1960	41.13	5.96	4.58	0.1448
1961	45.58	6.60	4.61	0.1448
1962	51.37	7.44	4.65	0.1448
1963	54.55	7.91	4.68	0.1448
1964	62.46	9.04	4.72	0.1448
1965	70.16	10.16	4.76	0.1448
1966	76.72	11.11	4.80	0.1448
1967	84.33	12.21	4.84	0.1448
1968	92.06	12.27	4.86	0.1333
1969	104.64	13.74	4.89	0.1313
1970	115.63	15.41	4.93	0.1333
1971	127.34	17.18	4.96	0.1349

-----NORWAY-----

YEAR	GNP IN	GNP IN	POPU-	EXCHANGE
	DOMESTIC CURRENCY (BILLIONS)	DOLLARS (BILLIONS)	LATION (MILLIONS)	RATE (\$/UNIT)
1951	18.68	2.62	3.30	0.1400
1952	20.64	2.89	3.33	0.1400
1953	20.87	2.92	3.35	0.1400
1954	22.58	3.16	3.39	0.1400
1955	23.99	3.36	3.43	0.1400
1956	27.09	3.79	3.46	0.1400
1957	28.79	4.03	3.49	0.1400
1958	28.66	4.01	3.52	0.1400
1959	30.42	4.26	3.55	0.1400
1960	32.34	4.53	3.58	0.1400
1961	35.24	4.93	3.61	0.1400
1962	37.99	5.32	3.64	0.1400
1963	40.97	5.74	3.67	0.1400
1964	45.30	6.34	3.69	0.1400
1965	50.21	7.03	3.72	0.1400
1966	54.68	7.66	3.75	0.1400
1967	60.13	8.42	3.79	0.1400
1968	64.17	8.98	3.82	0.1400
1969	69.63	9.75	3.85	0.1400
1970	80.46	11.26	3.88	0.1400
1971	90.18	12.31	3.90	0.1420

-----PORTUGAL-----

YEAR	GNP IN	GNP IN	POPULATION	EXCHANGE
	DOMESTIC CURRENCY (BILLIONS)	DOLLARS (BILLIONS)	(MILLIONS)	RATE (\$/UNIT)
1951	43.62	15.17	8.46	0.3478
1952	44.52	15.48	8.50	0.3478
1953	49.30	17.15	8.53	0.3478
1954	54.60	17.60	8.57	0.3478
1955	53.50	18.61	8.61	0.3478
1956	57.40	19.96	8.65	0.3478
1957	60.20	20.94	8.58	0.3478
1958	61.90	21.53	8.72	0.3478
1959	66.10	22.99	8.78	0.3478
1960	72.40	25.18	8.83	0.3478
1961	77.20	26.85	8.89	0.3478
1962	82.90	28.83	8.97	0.3478
1963	89.20	31.02	9.04	0.3478
1964	97.40	33.88	9.11	0.3478
1965	107.80	37.49	9.21	0.3478
1966	117.80	40.97	9.31	0.3478
1967	132.10	45.94	9.38	0.3478
1968	149.10	51.86	9.46	0.3478
1969	163.00	55.69	9.55	0.3478
1970	183.50	63.82	8.95	0.3478
1971	200.10	69.59	8.53	0.3478

-----SWEDEN-----

YEAR	GNP IN	GNP IN	POPULATION	EXCHANGE
	DOMESTIC CURRENCY (BILLIONS)	DOLLARS (BILLIONS)	(MILLIONS)	RATE (\$/UNIT)
1951	36.62	7.08	7.10	0.1933
1952	40.35	7.80	7.15	0.1933
1953	41.37	8.00	7.19	0.1933
1954	44.08	8.52	7.23	0.1933
1955	47.37	9.16	7.26	0.1933
1956	51.48	9.95	7.38	0.1933
1957	55.46	10.72	7.37	0.1933
1958	58.25	11.26	7.42	0.1933
1959	62.02	11.99	7.45	0.1933
1960	67.60	13.07	7.48	0.1933
1961	73.70	14.25	7.52	0.1933
1962	80.40	15.54	7.56	0.1933
1963	87.20	16.86	7.61	0.1933
1964	97.60	18.87	7.66	0.1933
1965	108.00	20.88	7.73	0.1933
1966	117.40	22.69	7.81	0.1933
1967	126.40	24.43	7.87	0.1933
1968	139.60	26.98	7.91	0.1933
1969	151.46	29.28	7.97	0.1933
1970	168.98	32.66	8.04	0.1933
1971	181.77	35.54	8.11	0.1955

-----SWITZERLAND-----

<u>YEAR</u>	<u>GNP IN DOMESTIC CURRENCY (BILLIONS)</u>	<u>GNP IN DOLLARS (BILLIONS)</u>	<u>POPUL- ATION (MILLIONS)</u>	<u>EXCHANGE RATE (\$/UNIT)</u>
1951	21.90	5.10	4.75	0.2327
1952	23.00	5.35	4.81	0.2327
1953	24.10	5.61	4.88	0.2327
1954	25.00	5.90	4.92	0.2327
1955	27.30	6.35	4.98	0.2327
1956	29.30	6.82	5.04	0.2327
1957	30.90	7.19	5.13	0.2327
1958	31.50	7.33	5.21	0.2327
1959	33.80	7.87	5.26	0.2327
1960	37.10	8.63	5.36	0.2327
1961	41.50	9.66	5.50	0.2327
1962	46.00	10.70	5.66	0.2327
1963	50.40	11.73	5.77	0.2327
1964	55.50	12.91	5.87	0.2327
1965	60.00	13.96	5.94	0.2327
1966	64.60	15.03	6.00	0.2327
1967	68.80	16.01	6.07	0.2327
1968	74.20	17.27	6.15	0.2327
1969	80.70	18.78	6.23	0.2327
1970	88.80	20.60	6.19	0.2327
1971	100.80	24.53	6.23	0.2434

-----UNITED KINGDOM-----

<u>YEAR</u>	<u>GNP IN DOMESTIC CURRENCY (BILLIONS)</u>	<u>GNP IN DOLLARS (BILLIONS)</u>	<u>POPUL- ATION (MILLIONS)</u>	<u>EXCHANGE RATE (\$/UNIT)</u>
1951	14.76	41.33	50.56	2.8000
1952	15.88	44.46	50.72	2.8000
1953	17.06	47.77	50.86	2.8000
1954	18.01	50.43	51.05	2.8000
1955	19.28	53.98	51.20	2.8000
1956	20.89	58.49	51.41	2.8000
1957	22.11	61.91	51.63	2.8000
1958	23.06	64.57	51.84	2.8000
1959	24.24	67.87	52.13	2.8000
1960	25.72	72.02	52.35	2.8000
1961	27.47	76.92	52.82	2.8000
1962	28.86	80.81	53.34	2.8000
1963	30.68	85.90	53.64	2.8000
1964	33.32	93.30	54.01	2.8000
1965	35.83	100.32	54.37	2.8000
1966	38.18	106.90	54.66	2.8000
1967	40.20	111.23	54.99	2.7677
1968	43.16	103.58	55.30	2.4000
1969	46.32	111.17	55.55	2.4000
1970	50.67	121.61	55.73	2.4000
1971	55.99	136.17	55.57	2.4320

-----COSTA RICA-----

<u>YEAR</u>	<u>GNP IN DOMESTIC CURRENCY</u> (BILLIONS)	<u>GNP IN DOLLARS</u> (BILLIONS)	<u>POPULATION</u> (MILLIONS)	<u>EXCHANGE RATE</u> (\$/UNIT)
1951	1.42	0.25	0.89	0.1786
1952	1.57	0.28	0.92	0.1786
1953	1.76	0.31	0.95	0.1786
1954	1.92	0.34	0.99	0.1786
1955	2.09	0.37	1.03	0.1786
1956	2.16	0.39	1.07	0.1786
1957	2.34	0.42	1.11	0.1786
1958	2.41	0.43	1.15	0.1786
1959	2.54	0.45	1.21	0.1786
1960	2.74	0.49	1.25	0.1786
1961	2.89	0.50	1.30	0.1717
1962	3.12	0.47	1.34	0.1509
1963	3.41	0.52	1.39	0.1509
1964	3.53	0.53	1.44	0.1509
1965	3.87	0.58	1.49	0.1509
1966	4.15	0.63	1.54	0.1509
1967	4.49	0.68	1.59	0.1509
1968	4.93	0.74	1.63	0.1509
1969	5.55	0.84	1.69	0.1509
1970	6.36	0.95	1.74	0.1509
1971	6.81	1.03	1.79	0.1509

-----EL SALVADOR-----

<u>YEAR</u>	<u>GNP IN DOMESTIC CURRENCY</u> (BILLIONS)	<u>GNP IN DOLLARS</u> (BILLIONS)	<u>POPULATION</u> (MILLIONS)	<u>EXCHANGE RATE</u> (\$/UNIT)
1951	1.06	0.42	1.91	0.4000
1952	1.09	0.44	1.97	0.4000
1953	1.16	0.46	2.02	0.4000
1954	1.25	0.50	2.08	0.4000
1955	1.29	0.52	2.14	0.4000
1956	1.34	0.54	2.21	0.4000
1957	1.40	0.56	2.26	0.4000
1958	1.38	0.55	2.32	0.4000
1959	1.34	0.54	2.39	0.4000
1960	1.41	0.57	2.45	0.4000
1961	1.44	0.57	2.53	0.4000
1962	1.59	0.64	2.63	0.4000
1963	1.68	0.67	2.72	0.4000
1964	1.85	0.74	2.82	0.4000
1965	1.97	0.79	2.93	0.4000
1966	2.09	0.84	3.04	0.4000
1967	2.20	0.88	3.15	0.4000
1968	2.27	0.91	3.27	0.4000
1969	2.36	0.94	3.39	0.4000
1970	2.54	1.02	3.53	0.4000
1971	2.66	1.06	3.65	0.4000

-----GUATEMALA-----

<u>YEAR</u>	<u>GNP IN DOMESTIC CURRENCY</u> (BILLIONS)	<u>GNP IN DOLLARS</u> (BILLIONS)	<u>POPULATION</u> (MILLIONS)	<u>EXCHANGE RATE</u> (\$/UNIT)
1951	0.68	0.68	2.97	1.0000
1952	0.69	0.69	2.98	1.0000
1953	0.73	0.73	3.06	1.0000
1954	0.77	0.77	3.15	1.0000
1955	0.81	0.81	3.26	1.0000
1956	0.90	0.90	3.35	1.0000
1957	0.93	0.93	3.45	1.0000
1958	0.97	0.97	3.55	1.0000
1959	1.03	1.03	3.65	1.0000
1960	1.03	1.03	3.76	1.0000
1961	1.06	1.06	3.93	1.0000
1962	1.13	1.13	4.05	1.0000
1963	1.25	1.25	4.19	1.0000
1964	1.28	1.28	4.30	1.0000
1965	1.31	1.31	4.44	1.0000
1966	1.36	1.36	4.58	1.0000
1967	1.42	1.42	4.72	1.0000
1968	1.57	1.57	4.86	1.0000
1969	1.68	1.68	5.01	1.0000
1970	1.86	1.86	5.19	1.0000
1971	1.90	1.90	5.35	1.0000

-----HONDURAS-----

<u>YEAR</u>	<u>GNP IN DOMESTIC CURRENCY</u> (BILLIONS)	<u>GNP IN DOLLARS</u> (BILLIONS)	<u>POPULATION</u> (MILLIONS)	<u>EXCHANGE RATE</u> (\$/UNIT)
1951	0.46	0.23	1.48	0.5000
1952	0.49	0.24	1.53	0.5000
1953	0.57	0.28	1.57	0.5000
1954	0.58	0.29	1.62	0.5000
1955	0.63	0.31	1.66	0.5000
1956	0.64	0.32	1.71	0.5000
1957	0.69	0.34	1.77	0.5000
1958	0.71	0.36	1.82	0.5000
1959	0.75	0.37	1.88	0.5000
1960	0.77	0.39	1.85	0.5000
1961	0.79	0.39	1.91	0.5000
1962	0.84	0.42	1.97	0.5000
1963	0.86	0.43	2.04	0.5000
1964	0.91	0.46	2.11	0.5000
1965	1.01	0.50	2.18	0.5000
1966	1.07	0.53	2.26	0.5000
1967	1.14	0.57	2.33	0.5000
1968	1.25	0.62	2.41	0.5000
1969	1.30	0.65	2.49	0.5000
1970	1.36	0.68	2.58	0.5000
1971	1.44	0.72	2.63	0.5000

-----NICARAGUA-----

<u>YEAR</u>	GNP IN DOMESTIC <u>CURRENCY</u> (BILLIONS)	GNP IN DOLLARS (BILLIONS)	POPULATION <u>LATION</u> (MILLIONS)	EXCHANGE RATE (\$/UNIT)
1951	N.A.	N.A.	1.09	0.1515
1952	N.A.	N.A.	1.13	0.1515
1953	1.95	0.30	1.16	0.1515
1954	2.02	0.31	1.20	0.1515
1955	2.14	0.32	1.22	0.1515
1956	2.17	0.33	1.26	0.1515
1957	2.38	0.35	1.29	0.1515
1958	2.38	0.35	1.33	0.1461
1959	2.42	0.35	1.37	0.1429
1960	2.61	0.37	1.41	0.1429
1961	2.80	0.40	1.45	0.1429
1962	3.07	0.44	1.50	0.1429
1963	3.28	0.47	1.54	0.1429
1964	3.81	0.54	1.60	0.1429
1965	4.10	0.59	1.66	0.1429
1966	4.28	0.61	1.72	0.1429
1967	4.60	0.66	1.78	0.1429
1968	5.17	0.74	1.84	0.1429
1969	5.48	0.78	1.91	0.1429
1970	5.90	0.84	1.98	0.1429
1971	6.36	0.91	1.89	0.1429

-----ARGENTINA-----

<u>YEAR</u>	GNP IN DOMESTIC <u>CURRENCY</u> (BILLIONS)	GNP IN DOLLARS (BILLIONS)	POPULATION <u>LATION</u> (MILLIONS)	EXCHANGE RATE (\$/UNIT)
1951	0.95	13.40	17.53	14.1085
1952	1.12	15.80	17.87	14.1049
1953	1.29	18.10	18.22	14.0390
1954	1.45	19.95	18.58	13.7581
1955	1.71	22.52	18.91	13.1684
1956	2.17	13.40	19.29	6.1765
1957	2.71	11.52	19.69	4.2502
1958	3.85	13.94	20.09	3.6210
1959	7.37	11.25	19.57	1.5266
1960	10.02	12.12	19.92	1.2095
1961	11.91	14.38	20.24	1.2073
1962	14.77	13.55	20.54	0.9177
1963	18.45	13.35	20.85	0.7237
1964	25.66	17.95	21.17	0.6996
1965	36.04	21.51	21.49	0.5968
1966	44.91	21.84	21.82	0.4864
1967	58.71	17.04	22.16	0.2902
1968	68.32	19.52	22.50	0.2857
1969	79.59	22.74	22.85	0.2857
1970	93.76	24.75	23.21	0.2640
1971	114.27	25.82	23.55	0.2260

-----BOLIVIA-----

YEAR	GNP IN DOMESTIC CURRENCY (BILLIONS)	GNP IN DOLLARS (BILLIONS)	POPULATION (MILLIONS)	EXCHANGE RATE (\$/UNIT)
1951	N.A.	N.A.	3.00	N.A.
1952	N.A.	N.A.	3.10	N.A.
1953	N.A.	N.A.	3.10	N.A.
1954	N.A.	N.A.	3.20	N.A.
1955	N.A.	N.A.	3.20	N.A.
1956	N.A.	N.A.	3.30	N.A.
1957	N.A.	N.A.	3.31	N.A.
1958	3.36	0.28	3.36	0.0842
1959	3.86	0.33	3.41	0.0842
1960	4.48	0.38	3.45	0.0842
1961	4.87	0.41	3.50	0.0842
1962	5.33	0.45	4.02	0.0842
1963	5.74	0.48	4.12	0.0842
1964	6.46	0.54	4.23	0.0842
1965	7.18	0.60	4.33	0.0842
1966	7.95	0.67	4.45	0.0842
1967	8.98	0.76	4.56	0.0842
1968	10.19	0.86	4.68	0.0842
1969	11.07	0.93	4.80	0.0842
1970	11.81	0.99	4.93	0.0842
1971	12.97	1.09	5.06	0.0842

-----BRAZIL-----

YEAR	GNP IN DOMESTIC CURRENCY (BILLIONS)	GNP IN DOLLARS (BILLIONS)	POPULATION (MILLIONS)	EXCHANGE RATE (\$/UNIT)
1951	0.30	16.22	53.50	54.0591
1952	0.40	21.61	55.10	54.0323
1953	0.50	26.17	56.74	52.3413
1954	0.60	17.72	58.44	29.5290
1955	0.80	17.36	60.18	21.6944
1956	1.00	17.23	61.98	17.2346
1957	1.20	20.65	63.83	17.2077
1958	1.30	20.65	65.74	13.7694
1959	2.00	17.03	67.70	8.5132
1960	2.74	20.12	69.73	7.3416
1961	4.04	20.97	71.81	5.1896
1962	6.55	19.31	74.10	2.9488
1963	11.86	23.06	76.22	1.9445
1964	22.91	25.98	78.81	1.1341
1965	36.43	20.88	81.30	0.5732
1966	53.23	24.52	83.89	0.4606
1967	70.70	27.78	86.56	0.3930
1968	98.96	31.23	89.38	0.3150
1969	131.88	32.96	92.28	0.2499
1970	204.70	45.61	92.78	0.2228
1971	271.80	51.34	95.41	0.1889

-----CHILE-----

<u>YEAR</u>	<u>GNP IN DOMESTIC CURRENCY (BILLIONS)</u>	<u>GNP IN DOLLARS (BILLIONS)</u>	<u>POPULATION (MILLIONS)</u>	<u>EXCHANGE RATE (\$/UNIT)</u>
1951	0.20	3.50	6.18	17.7568
1952	0.26	4.22	6.29	16.2237
1953	0.35	4.95	6.44	14.1822
1954	0.58	6.39	6.60	10.9177
1955	1.03	6.33	6.79	6.1689
1956	1.63	4.85	6.96	2.9747
1957	2.27	4.40	7.14	1.9335
1958	2.96	4.22	7.32	1.4277
1959	4.14	4.40	7.50	1.0616
1960	4.08	3.89	7.69	0.9532
1961	4.63	4.41	7.86	0.9524
1962	5.57	3.27	8.03	0.9457
1963	8.24	5.11	8.02	0.6197
1964	12.49	5.47	8.50	0.4375
1965	17.55	5.58	8.71	0.3179
1966	24.31	6.34	8.92	0.2607
1967	31.81	6.32	9.14	0.1987
1968	42.88	6.27	9.35	0.1463
1969	62.46	6.91	9.57	0.1106
1970	90.32	7.77	9.80	0.0860
1971	123.22	10.08	8.96	0.0818

-----COLOMBIA-----

<u>YEAR</u>	<u>GNP IN DOMESTIC CURRENCY (BILLIONS)</u>	<u>GNP IN DOLLARS (BILLIONS)</u>	<u>POPULATION (MILLIONS)</u>	<u>EXCHANGE RATE (\$/UNIT)</u>
1951	8.85	3.75	11.62	0.4237
1952	9.57	3.83	11.99	0.4002
1953	10.65	4.26	12.37	0.3999
1954	12.68	5.07	12.77	0.4001
1955	13.18	5.27	13.17	0.4000
1956	14.77	5.91	13.59	0.4000
1957	17.59	5.25	14.03	0.2982
1958	20.29	3.19	14.48	0.1572
1959	23.34	4.17	14.94	0.1785
1960	26.45	4.11	15.40	0.1554
1961	30.03	4.56	15.89	0.1520
1962	33.70	5.44	16.42	0.1615
1963	42.71	4.76	16.94	0.1115
1964	52.96	5.92	17.48	0.1117
1965	59.90	6.17	18.04	0.1030
1966	72.37	5.60	18.62	0.0774
1967	81.61	5.80	19.22	0.0711
1968	94.42	5.91	19.83	0.0625
1969	108.28	6.29	20.46	0.0581
1970	127.00	6.93	21.12	0.0545
1971	150.08	7.47	21.77	0.0498

-----ECUADOR-----

<u>YEAR</u>	GNP IN DOMESTIC <u>CURRENCY</u> (BILLIONS)	GNP IN DOLLARS (BILLIONS)	POPULATION (MILLIONS)	EXCHANGE RATE (\$/UNIT)
1951	7.61	0.50	3.33	0.0660
1952	8.55	0.56	3.43	0.0660
1953	9.06	0.60	3.53	0.0660
1954	10.17	0.67	3.64	0.0660
1955	10.74	0.71	3.73	0.0660
1956	10.90	0.72	3.87	0.0660
1957	11.63	0.77	3.92	0.0660
1958	12.05	0.80	4.11	0.0660
1959	12.62	0.83	4.23	0.0660
1960	13.74	0.91	4.36	0.0660
1961	14.62	0.85	4.50	0.0551
1962	15.67	0.87	4.66	0.0556
1963	17.10	0.95	4.81	0.0556
1964	18.93	1.05	4.98	0.0556
1965	20.22	1.12	5.15	0.0556
1966	22.22	1.23	5.33	0.0556
1967	24.47	1.36	5.51	0.0556
1968	26.72	1.48	5.70	0.0556
1969	30.11	1.67	5.89	0.0556
1970	34.31	1.68	6.09	0.0491
1971	41.13	1.63	6.30	0.0396

-----MEXICO-----

<u>YEAR</u>	GNP IN DOMESTIC <u>CURRENCY</u> (BILLIONS)	GNP IN DOLLARS (BILLIONS)	POPULATION (MILLIONS)	EXCHANGE RATE (\$/UNIT)
1951	52.30	6.35	27.04	0.1156
1952	58.60	6.77	27.85	0.1156
1953	58.40	6.75	28.70	0.1156
1954	71.50	6.42	29.61	0.0898
1955	87.30	6.98	30.56	0.0800
1956	99.30	7.94	31.56	0.0800
1957	114.20	9.14	32.61	0.0800
1958	127.20	10.18	33.70	0.0800
1959	136.20	10.90	34.66	0.0800
1960	154.10	12.33	36.05	0.0800
1961	163.80	13.10	37.27	0.0500
1962	177.50	14.20	38.54	0.0300
1963	192.20	15.38	39.49	0.0300
1964	224.60	17.97	41.25	0.0300
1965	244.70	19.58	42.69	0.0300
1966	274.50	21.90	44.15	0.0300
1967	304.30	24.34	45.67	0.0300
1968	332.80	26.62	47.27	0.0300
1969	374.90	29.99	47.42	0.0300
1970	418.70	33.50	49.09	0.0300
1971	452.40	36.19	50.83	0.0300

-----PARAGUAY-----

<u>YEAR</u>	<u>GNP IN DOMESTIC CURRENCY (BILLIONS)</u>	<u>GNP IN DOLLARS (BILLIONS)</u>	<u>POPULATION (MILLIONS)</u>	<u>EXCHANGE RATE (\$/UNIT)</u>
1951	2.37	0.39	1.43	0.1663
1952	4.36	0.47	1.46	0.1076
1953	7.85	0.35	1.50	0.0446
1954	10.83	0.41	1.53	0.0374
1955	14.28	0.40	1.56	0.0284
1956	17.88	0.31	1.61	0.0172
1957	22.85	0.33	1.65	0.0142
1958	26.10	0.28	1.69	0.0109
1959	29.33	0.27	1.73	0.0092
1960	34.36	0.30	1.75	0.0087
1961	39.52	0.32	1.80	0.0082
1962	45.13	0.37	1.85	0.0082
1963	47.90	0.39	1.91	0.0082
1964	50.78	0.42	1.97	0.0082
1965	55.20	0.45	2.03	0.0082
1966	58.02	0.11	2.09	0.0020
1967	61.05	0.12	2.16	0.0020
1968	64.16	0.51	2.23	0.0080
1969	68.55	0.54	2.31	0.0079
1970	73.11	0.58	2.39	0.0079
1971	82.11	0.65	2.47	0.0079

-----PERU-----

<u>YEAR</u>	<u>GNP IN DOMESTIC CURRENCY (BILLIONS)</u>	<u>GNP IN DOLLARS (BILLIONS)</u>	<u>POPULATION (MILLIONS)</u>	<u>EXCHANGE RATE (\$/UNIT)</u>
1951	19.70	1.29	8.12	0.0654
1952	21.10	1.35	8.27	0.0641
1953	22.70	1.14	8.43	0.0502
1954	25.30	1.38	8.60	0.0526
1955	28.90	1.52	8.79	0.0526
1956	32.40	1.70	9.00	0.0526
1957	35.50	1.88	9.23	0.0529
1958	39.50	1.65	9.48	0.0417
1959	46.30	1.67	9.75	0.0361
1960	55.50	2.05	10.02	0.0370
1961	62.30	2.32	10.32	0.0373
1962	71.70	2.67	10.63	0.0373
1963	78.70	2.93	10.96	0.0373
1964	95.00	3.54	11.30	0.0373
1965	113.00	4.21	11.65	0.0373
1966	134.00	4.61	12.01	0.0344
1967	152.80	3.95	12.39	0.0253
1968	181.30	4.68	12.77	0.0258
1969	193.30	5.12	13.17	0.0258
1970	227.50	5.88	13.59	0.0258
1971	262.50	6.78	14.01	0.0258

-----URUGUAY-----

<u>YEAR</u>	<u>GNP IN DOMESTIC CURRENCY</u> (BILLIONS)	<u>GNP IN DOLLARS</u> (BILLIONS)	<u>POPUL- ATION</u> (MILLIONS)	<u>EXCHANGE RATE</u> (\$/UNIT)
1951	N.A.	N.A.	2.23	0.4167
1952	N.A.	N.A.	2.26	0.3636
1953	N.A.	N.A.	2.30	0.3289
1954	N.A.	N.A.	2.33	0.3145
1955	4.59	1.25	2.36	0.2725
1956	5.15	1.36	2.40	0.2632
1957	6.10	1.47	2.43	0.2412
1958	6.60	1.95	2.45	0.1437
1959	3.84	0.88	2.51	0.0996
1960	13.54	1.20	2.54	0.0885
1961	17.23	1.57	2.58	0.0908
1962	18.71	1.70	2.61	0.0911
1963	22.17	1.57	2.65	0.0708
1964	32.26	1.64	2.68	0.0507
1965	51.86	0.75	2.71	0.0145
1966	98.22	1.28	2.73	0.0131
1967	164.47	0.83	2.78	0.0050
1968	360.45	1.44	2.82	0.0040
1969	492.50	1.97	2.85	0.0040
1970	596.20	2.38	2.89	0.0040
1971	754.41	3.02	2.92	0.0040

-----VENEZUELA-----

<u>YEAR</u>	<u>GNP IN DOMESTIC CURRENCY</u> (BILLIONS)	<u>GNP IN DOLLARS</u> (BILLIONS)	<u>POPUL- ATION</u> (MILLIONS)	<u>EXCHANGE RATE</u> (\$/UNIT)
1951	11.63	3.47	5.17	0.2985
1952	12.53	3.74	5.39	0.2985
1953	13.35	3.98	5.62	0.2985
1954	14.77	4.41	5.85	0.2985
1955	15.99	4.77	6.09	0.2985
1956	17.93	5.35	6.33	0.2985
1957	20.60	6.15	6.57	0.2985
1958	22.49	6.71	6.83	0.2985
1959	23.67	7.07	7.09	0.2985
1960	23.57	7.04	7.35	0.2985
1961	24.68	7.37	7.61	0.2985
1962	26.80	8.00	7.87	0.2985
1963	29.33	8.75	8.14	0.2985
1964	32.41	7.20	8.43	0.2222
1965	34.43	7.65	8.72	0.2222
1966	36.12	8.03	9.03	0.2222
1967	38.35	8.52	9.35	0.2222
1968	38.78	8.62	9.69	0.2222
1969	40.54	9.01	10.04	0.2222
1970	44.15	9.81	10.40	0.2222
1971	49.15	10.92	10.62	0.2222

-----FINLAND-----

<u>YEAR</u>	<u>GNP IN DOMESTIC CURRENCY (BILLIONS)</u>	<u>GNP IN DOLLARS (BILLIONS)</u>	<u>POPULATION (MILLIONS)</u>	<u>EXCHANGE RATE (\$/UNIT)</u>
1951	7.88	3.42	4.04	0.4338
1952	8.15	3.54	4.09	0.4348
1953	8.05	3.50	4.13	0.4348
1954	8.94	3.89	4.18	0.4348
1955	9.90	4.30	4.23	0.4348
1956	11.01	4.79	4.28	0.4348
1957	12.00	4.85	4.32	0.4042
1958	12.92	4.04	4.36	0.3125
1959	14.06	4.39	4.39	0.3125
1960	15.81	4.94	4.43	0.3125
1961	17.59	5.50	4.47	0.3125
1962	18.81	5.88	4.50	0.3125
1963	20.47	6.40	4.54	0.3125
1964	23.45	7.33	4.58	0.3125
1965	25.70	8.03	4.61	0.3125
1966	27.63	8.63	4.64	0.3125
1967	29.90	8.97	4.67	0.3001
1968	33.87	8.06	4.69	0.2381
1969	38.38	9.14	4.70	0.2381
1970	43.19	10.28	4.61	0.2381
1971	47.21	11.24	4.62	0.2381

-----GREECE-----

<u>YEAR</u>	<u>GNP IN DOMESTIC CURRENCY (BILLIONS)</u>	<u>GNP IN DOLLARS (BILLIONS)</u>	<u>POPULATION (MILLIONS)</u>	<u>EXCHANGE RATE (\$/UNIT)</u>
1951	39.30	2.62	7.65	0.0667
1952	41.20	2.75	7.73	0.0667
1953	54.10	2.20	7.82	0.0406
1954	62.70	2.09	7.89	0.0333
1955	72.20	2.40	7.97	0.0333
1956	84.10	2.80	8.03	0.0333
1957	90.40	3.01	8.10	0.0333
1958	94.30	3.14	8.17	0.0333
1959	98.00	3.26	8.26	0.0333
1960	105.60	3.52	8.33	0.0333
1961	119.80	3.99	8.40	0.0333
1962	127.70	4.25	8.45	0.0333
1963	141.10	4.70	8.48	0.0333
1964	157.60	5.25	8.51	0.0333
1965	176.90	5.89	8.55	0.0333
1966	196.10	5.53	8.61	0.0333
1967	211.30	7.04	8.72	0.0333
1968	226.60	7.55	8.74	0.0333
1969	258.20	8.60	8.77	0.0333
1970	286.20	9.53	8.79	0.0333
1971	325.30	10.83	8.85	0.0333

-----TURKEY-----

YEAR	GNP IN DOMESTIC CURRENCY (BILLIONS)	GNP IN DOLLARS (BILLIONS)	POPULATION (MILLIONS)	EXCHANGE RATE (\$/UNIT)
1951	12.27	4.38	21.35	0.3571
1952	14.32	5.11	21.95	0.3571
1953	16.82	6.01	22.57	0.3571
1954	17.11	6.11	23.21	0.3571
1955	21.06	7.52	23.86	0.3571
1956	24.33	8.69	24.44	0.3571
1957	30.53	10.90	25.25	0.3571
1958	38.51	13.75	25.98	0.3571
1959	47.73	17.05	26.74	0.3571
1960	50.97	14.02	27.51	0.2751
1961	53.72	5.97	28.24	0.1111
1962	60.30	6.70	28.93	0.1111
1963	69.02	7.67	29.66	0.1111
1964	74.22	8.24	30.39	0.1111
1965	80.02	8.89	31.15	0.1111
1966	93.58	10.40	31.93	0.1111
1967	104.00	11.56	32.72	0.1111
1968	114.75	12.75	33.54	0.1111
1969	127.49	14.17	34.38	0.1111
1970	146.92	13.60	35.23	0.0926
1971	192.04	12.85	36.16	0.0667

-----ICELAND-----

YEAR	GNP IN DOMESTIC CURRENCY (BILLIONS)	GNP IN DOLLARS (BILLIONS)	POPULATION (MILLIONS)	EXCHANGE RATE (\$/UNIT)
1951	2.54	0.16	0.15	0.0612
1952	2.83	0.17	0.15	0.0612
1953	3.39	0.21	0.15	0.0612
1954	3.79	0.23	0.15	0.0612
1955	4.40	0.27	0.16	0.0612
1956	5.13	0.31	0.16	0.0612
1957	5.44	0.33	0.16	0.0612
1958	6.39	0.39	0.17	0.0612
1959	7.24	0.44	0.17	0.0612
1960	8.39	0.22	0.18	0.0262
1961	9.66	0.22	0.18	0.0232
1962	11.57	0.27	0.18	0.0232
1963	13.78	0.32	0.19	0.0232
1964	17.61	0.41	0.19	0.0232
1965	21.24	0.49	0.19	0.0232
1966	25.49	0.59	0.20	0.0232
1967	25.77	0.45	0.20	0.0175
1968	27.52	0.31	0.20	0.0113
1969	33.85	0.38	0.20	0.0113
1970	42.40	0.48	0.20	0.0113
1971	53.21	0.61	0.21	0.0114

----- IRELAND -----

<u>YEAR</u>	<u>GNP IN DOMESTIC CURRENCY</u> (BILLIONS)	<u>GNP IN DOLLARS</u> (BILLIONS)	<u>POPULATION</u> (MILLIONS)	<u>EXCHANGE RATE</u> (\$/UNIT)
1951	0.41	1.15	2.96	2.8000
1952	0.47	1.31	2.95	2.8000
1953	0.51	1.44	2.95	2.8000
1954	0.52	1.45	2.94	2.8000
1955	0.54	1.51	2.92	2.8000
1956	0.55	1.53	2.90	2.8000
1957	0.57	1.59	2.88	2.8000
1958	0.59	1.65	2.85	2.8000
1959	0.63	1.75	2.85	2.8000
1960	0.65	1.86	2.83	2.8000
1961	0.71	2.00	2.82	2.8000
1962	0.77	2.16	2.83	2.8000
1963	0.83	2.32	2.85	2.8000
1964	0.94	2.63	2.86	2.8000
1965	1.01	2.82	2.88	2.8000
1966	1.10	2.97	2.88	2.8000
1967	1.15	3.19	2.90	2.7570
1968	1.31	3.14	2.91	2.4000
1969	1.48	3.50	2.92	2.4000
1970	1.65	3.57	2.94	2.4000
1971	1.87	4.54	2.97	2.4310

----- SPAIN -----

<u>YEAR</u>	<u>GNP IN DOMESTIC CURRENCY</u> (BILLIONS)	<u>GNP IN DOLLARS</u> (BILLIONS)	<u>POPULATION</u> (MILLIONS)	<u>EXCHANGE RATE</u> (\$/UNIT)
1951	N.A.	N.A.	28.23	0.0252
1952	N.A.	N.A.	28.47	0.0252
1953	N.A.	N.A.	28.71	0.0252
1954	337.00	8.65	28.95	0.0257
1955	376.00	9.65	29.21	0.0257
1956	432.00	11.09	29.45	0.0257
1957	506.00	12.22	29.70	0.0242
1958	582.00	13.28	29.95	0.0225
1959	604.00	10.76	30.20	0.0178
1960	620.00	10.34	30.45	0.0167
1961	707.00	11.79	30.71	0.0167
1962	817.00	13.62	31.07	0.0167
1963	964.00	15.10	31.39	0.0167
1964	1088.00	18.17	31.72	0.0167
1965	1287.00	21.49	32.06	0.0167
1966	1477.00	24.67	32.39	0.0167
1967	1632.00	27.25	32.73	0.0167
1968	1805.00	25.79	33.08	0.0143
1969	2011.00	28.74	33.43	0.0143
1970	2258.00	32.27	33.78	0.0143
1971	2539.00	36.28	34.13	0.0143

-----BRITISH GUIANA-----

<u>YEAR</u>	<u>GNP IN DOMESTIC CURRENCY</u> (BILLIONS)	<u>GNP IN DOLLARS</u> (BILLIONS)	<u>POPULATION</u> (MILLIONS)	<u>EXCHANGE RATE</u> (\$/UNIT)
1951	N.A.	N.A.	0.43	0.5833
1952	0.17	0.10	0.45	0.5833
1953	0.18	0.11	0.46	0.5833
1954	0.20	0.12	0.47	0.5833
1955	0.21	0.12	0.49	0.5833
1956	0.22	0.13	0.50	0.5833
1957	0.23	0.13	0.51	0.5833
1958	0.22	0.13	0.53	0.5833
1959	0.23	0.13	0.54	0.5833
1960	0.27	0.16	0.56	0.5833
1961	0.30	0.17	0.58	0.5833
1962	0.30	0.17	0.60	0.5833
1963	0.28	0.16	0.61	0.5833
1964	0.31	0.18	0.64	0.5833
1965	0.34	0.20	0.65	0.5833
1966	0.36	0.21	0.68	0.5833
1967	0.40	0.23	0.70	0.5833
1968	0.44	0.22	0.70	0.5833
1969	0.46	0.23	0.74	0.5833
1970	0.49	0.25	0.72	0.5833
1971	0.53	0.26	0.74	0.5833

-----DOMINICAN REP.-----

<u>YEAR</u>	<u>GNP IN DOMESTIC CURRENCY</u> (BILLIONS)	<u>GNP IN DOLLARS</u> (BILLIONS)	<u>POPULATION</u> (MILLIONS)	<u>EXCHANGE RATE</u> (\$/UNIT)
1951	0.45	0.45	2.21	1.0000
1952	0.50	0.50	2.29	1.0000
1953	0.51	0.51	2.37	1.0000
1954	0.54	0.54	2.45	1.0000
1955	0.55	0.55	2.54	1.0000
1956	0.63	0.63	2.63	1.0000
1957	0.70	0.70	2.73	1.0000
1958	0.71	0.71	2.83	1.0000
1959	0.69	0.69	2.93	1.0000
1960	0.71	0.71	3.04	1.0000
1961	0.67	0.67	3.15	1.0000
1962	0.87	0.87	3.22	1.0000
1963	0.99	0.99	3.31	1.0000
1964	1.08	1.08	3.41	1.0000
1965	0.94	0.94	3.51	1.0000
1966	1.04	1.04	3.62	1.0000
1967	1.08	1.08	3.72	1.0000
1968	1.17	1.17	3.83	1.0000
1969	1.29	1.29	3.95	1.0000
1970	1.45	1.45	4.06	1.0000
1971	1.60	1.60	4.18	1.0000

-----HAITI-----

<u>YEAR</u>	<u>GNP IN DOMESTIC CURRENCY (BILLIONS)</u>	<u>GNP IN DOLLARS (BILLIONS)</u>	<u>POPULATION (MILLIONS)</u>	<u>EXCHANGE RATE (\$/UNIT)</u>
1951	1.66	0.33	3.41	0.2000
1952	1.75	0.35	3.46	0.2000
1953	1.69	0.34	3.52	0.2000
1954	1.83	0.37	3.58	0.2000
1955	1.76	0.35	3.65	0.2000
1956	1.91	0.38	3.71	0.2000
1957	1.80	0.36	3.78	0.2000
1958	1.94	0.39	3.85	0.2000
1959	1.85	0.37	3.92	0.2000
1960	1.90	0.38	3.99	0.2000
1961	1.85	0.37	4.07	0.2000
1962	2.01	0.40	4.15	0.2000
1963	1.95	0.39	4.23	0.2000
1964	1.92	0.38	4.31	0.2000
1965	1.96	0.39	4.40	0.2000
1966	1.95	0.39	4.49	0.2000
1967	1.91	0.38	4.58	0.2000
1968	1.97	0.39	4.67	0.2000
1969	2.04	0.41	4.77	0.2000
1970	2.05	0.41	4.87	0.2000
1971	2.19	0.44	4.97	0.2000

-----JAMAICA-----

<u>YEAR</u>	<u>GNP IN DOMESTIC CURRENCY (BILLIONS)</u>	<u>GNP IN DOLLARS (BILLIONS)</u>	<u>POPULATION (MILLIONS)</u>	<u>EXCHANGE RATE (\$/UNIT)</u>
1951	0.18	0.25	1.43	1.4000
1952	0.21	0.29	1.45	1.4000
1953	0.23	0.32	1.48	1.4000
1954	0.26	0.36	1.51	1.4000
1955	0.29	0.41	1.54	1.4000
1956	0.33	0.47	1.56	1.4000
1957	0.40	0.56	1.59	1.4000
1958	0.41	0.58	1.57	1.4000
1959	0.42	0.59	1.60	1.4000
1960	0.45	0.64	1.63	1.4000
1961	0.49	0.68	1.65	1.4000
1962	0.51	0.71	1.66	1.4000
1963	0.54	0.76	1.70	1.4000
1964	0.59	0.83	1.74	1.4000
1965	0.64	0.89	1.79	1.4000
1966	0.68	0.95	1.84	1.4000
1967	0.73	1.01	1.88	1.3750
1968	0.79	0.95	1.91	1.2000
1969	0.88	1.06	1.84	1.2000
1970	0.98	1.17	1.87	1.2000
1971	1.12	1.35	1.90	1.2000

-----PANAMA-----

YEAR	GNP IN	GNP IN	POPULATION	EXCHANGE
	DOMESTIC			
	CURRENCY	(BILLIONS)	(MILLIONS)	(\$/UNIT)
1951	0.26	0.26	0.83	1.0000
1952	0.28	0.28	0.85	1.0000
1953	0.29	0.29	0.83	1.0000
1954	0.30	0.30	0.90	1.0000
1955	0.31	0.31	0.93	1.0000
1956	0.33	0.33	0.95	1.0000
1957	0.36	0.36	0.98	1.0000
1958	0.37	0.37	1.00	1.0000
1959	0.39	0.39	1.03	1.0000
1960	0.40	0.40	1.06	1.0000
1961	0.45	0.45	1.09	1.0000
1962	0.50	0.50	1.13	1.0000
1963	0.55	0.55	1.17	1.0000
1964	0.60	0.60	1.21	1.0000
1965	0.64	0.64	1.23	1.0000
1966	0.70	0.70	1.27	1.0000
1967	0.78	0.78	1.31	1.0000
1968	0.84	0.84	1.35	1.0000
1969	0.92	0.92	1.39	1.0000
1970	1.02	1.02	1.43	1.0000
1971	1.13	1.13	1.48	1.0000

-----TRINIDAD-----

YEAR	GNP IN	GNP IN	POPULATION	EXCHANGE
	DOMESTIC			
	CURRENCY	(BILLIONS)	(MILLIONS)	(\$/UNIT)
1951	0.30	0.18	0.65	0.5833
1952	0.34	0.20	0.66	0.5833
1953	0.37	0.22	0.68	0.5833
1954	0.41	0.24	0.70	0.5833
1955	0.47	0.27	0.72	0.5833
1956	0.52	0.30	0.74	0.5833
1957	0.59	0.34	0.76	0.5833
1958	0.67	0.39	0.79	0.5833
1959	0.73	0.42	0.82	0.5833
1960	0.63	0.37	0.83	0.5833
1961	0.89	0.52	0.87	0.5833
1962	0.95	0.55	0.90	0.5833
1963	1.03	0.60	0.92	0.5833
1964	1.10	0.64	0.95	0.5833
1965	1.17	0.68	0.97	0.5833
1966	1.30	0.76	0.99	0.5833
1967	1.34	0.77	1.01	0.5764
1968	1.50	0.75	1.02	0.5000
1969	1.52	0.76	1.03	0.5000
1970	1.59	0.80	1.03	0.5000
1971	1.83	0.92	1.03	0.5000

Sources: Direction of International Trade (18), Direction of Trade (19), and International Financial Statistics (20), various issues.

APPENDIX C

DISTANCE BETWEEN SAMPLE COUNTRIES

	U.S.	CANADA	BELUX	FRANCE	GERMA- NY, F. R.	ITALY	NETH- ERLAND	AUS- TRIA	DEN- MARK
U.S.	0	2560	4006	3920	4374	4648	4234	4885	4776
CANADA	2560	0	3630	3544	3885	4531	3635	4285	4400
BELUX	4006	3630	0	344	632	821	131	550	560
FRANCE	3920	3544	344	0	360	554	350	1810	784
GERMANY	4374	3885	632	360	0	832	524	485	422
ITALY	4648	4531	821	554	832	0	1554	276	1470
NETHERLAND	4234	3635	131	350	524	1554	0	798	287
AUSTRIA	4885	4285	550	1810	485	276	798	0	937
DENMARK	4776	4400	560	784	422	1470	287	937	0
NORWAY	4504	4428	930	1152	1011	2026	854	1504	572
PORTUGAL	3591	3576	1159	1009	1613	1154	1164	2218	1398
SWEDEN	5387	4787	1101	1325	1044	2059	1853	1676	803
SWITZERLAND	4511	4135	621	285	493	535	1931	365	787
U.K.	4004	3628	343	455	825	2284	334	984	553
COSTA RICA	3067	3938	5071	5646	5326	5453	5076	5726	5310
SALVADOR	3666	4537	5670	6245	5925	6052	5675	6325	5909
GUATEMALA	2511	4527	5723	6298	5938	6105	5728	6378	5962
HONDURAS	2466	4630	5763	6338	5868	5995	5918	6268	5402
NICARAGUA	2662	3720	5126	5701	5381	5508	5131	5781	5365
ARGENTINA	7591	7275	6716	6661	6971	6468	6721	7371	6955
BOLIVIA	5273	6144	7277	7852	7532	7659	7282	7932	7516

	U.S.	CANADA	BELUX	FRANCE	GERMA- NY, F. R.	ITALY	NETH- ERLAND	AUS- TRIA	DEUT- MARK
BRAZIL	5170	6257	5695	5641	5950	5448	5700	6350	5934
CHILE	5449	6320	7453	8026	7708	7835	7458	8108	7692
COLOMBIA	5158	4061	5173	5376	5056	5183	4806	5456	5040
EQUADOR	3657	4528	5661	6236	5916	6043	5666	6316	5900
MEXICO	2389	3959	6300	6662	5538	5884	5288	5936	5522
PARAGUAY	7891	7575	6696	6641	6951	6448	6701	7351	6935
PERU	4183	5054	6187	6762	6442	6569	6192	6842	6426
URUGUAY	7153	6844	6283	6239	6538	6046	6288	6938	6522
VENEZUELA	3029	3431	4226	4895	4681	4702	4431	5081	4665
FINLAND	5626	5150	1123	1516	1066	2081	1048	1696	872
GREECE	5331	5214	1817	1438	1387	343	1569	1059	3109
TURKEY	5784	5667	2322	1892	1841	755	2023	1513	3661
ICELAND	3095	2630	1474	1586	1702	2773	1168	2115	1514
IRELAND	5437	3413	722	542	1199	2069	686	1336	920
SPAIN	5858	4717	987	839	1499	656	990	1863	1222
BR. GUIANA	4391	3577	4092	4019	4347	4226	4097	4747	4331
DOMINIC REP	3679	3079	4034	4610	4289	4417	4039	4669	5273
HAITI	5650	3732	4174	4816	4429	4625	4179	4829	4413
JAMAICA	3427	3833	4303	4952	4558	4759	4308	4958	4542
PANAMA	2833	3704	4837	5412	5092	5219	4842	5492	5076
TRINIDAD	4035	3401	4055	4691	4310	4298	4060	4710	4294

	NORWAY	PORTUGAL	SWEDEN	SWITZERLAND	U.K.	COSTA RICA	SALVADOR	GUATEMALA	HONDURAS
U.S.	4508	3591	5387	4511	4004	3067	3666	2511	2466
CANADA	5028	3576	4787	4135	3628	3938	4537	4527	4630
BELUX	930	1159	1101	621	343	5071	5670	5723	5763
FRANCE	1152	1009	1325	285	455	5646	6245	6298	6338
GERMANY	1011	1613	1044	493	825	5326	5925	5938	5868
ITALY	2026	1154	2059	535	2284	5453	6052	6105	5995
NETHERLAND	854	1164	1053	1031	334	5076	5675	5728	5618
AUSTRIA	1504	2218	1676	365	984	5726	6325	6378	6268
DENMARK	572	1398	803	787	553	5310	5909	5962	5402
NORWAY	0	1957	324	1354	1100	5869	6468	6521	6411
PORTUGAL	1957	0	2167	1354	1273	4871	5470	5523	5413
SWEDEN	324	2167	0	1553	1601	6052	6651	6704	6594
SWITZERLAND	1354	1354	1553	0	834	5653	6252	6305	6195
U.K.	1100	1273	1601	834	0	5069	5068	5721	5611
COSTA RICA	5869	4871	6052	5653	5069	0	636	794	773
SALVADOR	6468	5470	6651	6252	5668	636	0	158	150
GUATEMALA	6521	5523	6704	6305	5721	794	158	0	204
HONDURAS	6411	5413	6594	6195	5611	773	150	204	0
NICARAGUA	5924	4926	6107	5708	5124	284	352	238	222
ARGENTINA	7514	5659	7697	6668	6714	5939	6538	6591	6379
BOLIVIA	8075	7077	8258	7859	7275	2515	3273	2857	3366

	NORWAY	PORTUGAL	SWEDEN	SWITZERLAND	U.K.	COSTA RICA	SALVADOR	GUATEMALA	FINLAND
BRAZIL	6493	4619	6676	5648	5693	5246	5845	5898	5303
CHILE	8251	7253	8434	8035	7451	2690	3446	3024	3542
COLUMBIA	5599	4601	5782	5383	4799	270	1385	1438	1323
ECUADOR	6459	5461	6642	6243	5659	878	1057	1242	1750
MEXICO	6061	4615	5472	6084	5281	1538	1181	974	1298
PARAGUAY	7494	5639	7677	6646	6694	1421	3296	3349	3389
PERU	6985	5987	7168	6769	6185	1584	2183	1763	2276
URUGUAY	7081	5464	7264	6246	6281	5613	6212	6265	6305
VENEZUELA	5224	4120	5407	4902	4424	971	1570	1623	1644
FINLAND	1275	2162	539	1548	1314	6074	6673	6726	6766
GREECE	3767	1837	3977	1196	3083	6136	6735	6788	6828
TURKEY	4220	2290	4430	1650	3536	6589	7188	7241	7281
ICELAND	1473	1619	1832	1682	1089	6490	7089	7142	7182
IRELAND	1248	942	1689	1186	396	4854	5453	5506	5546
SPAIN	1792	398	1992	856	1093	4913	5512	5565	5605
FR. GUIANA	4690	3264	5073	4426	4090	1647	2391	2444	2683
DOMINIC REP	4832	3835	5015	4617	4032	1060	1679	1732	1772
HAITI	4972	4043	5155	4825	4172	1051	1650	1703	1743
JAMAICA	5101	3725	5284	4959	1894	605	1427	715	821
PANAMA	5635	4152	5818	5019	4835	533	1169	1327	883
TRINIDAD	4853	3287	5036	4498	4053	1313	2035	2088	1749

	NICA- RAGUA	ARGEN- TINA	BOLI- VIA	BRAZIL	CHILE	COLOM- BIA	ECUA- DOR	MEXICO	PARA- GUAY
U.S.	2662	7591	5273	6176	5449	3158	3657	2369	7891
CANADA	3720	7275	6144	6257	6320	4961	4528	3959	7575
HELUX	5126	6716	7277	5695	7453	5173	5661	6300	6696
FRANCE	5701	6661	7852	5641	8028	5376	6236	6062	6641
GERMANY	5381	6971	7532	5950	7703	5956	5916	5538	6951
ITALY	5508	6468	7659	5448	7835	5183	6943	5884	6448
NETHERLAND	5131	6721	7282	5709	7458	4806	5666	5286	6701
AUSTRIA	5781	7371	7932	6350	8108	5456	6316	5938	7351
DENMARK	5365	6955	7516	5934	7692	5040	5900	5522	6935
NORWAY	5924	7514	8975	6493	8251	5599	6459	6081	7494
PORTUGAL	4926	5659	7077	4619	7253	4601	5461	4815	5639
SWEDEN	6107	7697	8258	6676	8434	5762	6642	5472	7677
SWITZERLAND	5708	6668	7859	5648	8035	5383	6243	6084	6648
U.K.	5124	6714	7275	5693	7451	4799	5659	5281	6694
COSTA RICA	284	5939	2515	5246	2690	870	878	1538	1421
SALVADOR	352	6538	3273	5845	3446	1385	1657	1181	3296
GUATEMALA	238	6593	2657	5898	3024	1438	1242	974	3349
HONDURAS	222	6379	3366	5363	3542	1323	1756	1296	3389
NICARAGUA	0	5994	2700	5301	2875	925	1071	1192	2752
ARGENTINA	5994	0	1215	1726	2769	5926	5126	7368	450
BOLIVIA	2700	1215	0	964	876	2548	1770	3684	320

	PARAGUAY	ARGENTINA	BOLIVIA	BRAZIL	CHILE	COLOMBIA	ECUADOR	MEXICO	PARAGUAY
BRAZIL	5591	1726	964	0	4344	4831	5681	6347	491
CHILE	2875	2769	876	4344	0	3168	1980	3806	400
COLOMBIA	925	5926	2548	4831	3168	0	778	2025	2642
ECUADOR	1071	5120	1770	5681	1980	778	0	2108	1834
MEXICO	1192	7368	3684	6347	3806	2025	2108	0	7348
PARAGUAY	2752	450	320	491	400	2642	1834	7348	0
PERU	1606	4399	1013	5654	1306	1326	712	2598	1113
URUGUAY	5668	445	3645	1437	2740	5405	4800	7042	295
VENEZUELA	1226	5095	3451	3884	3353	1031	1501	2888	4948
FINLAND	6129	7719	8280	6898	8456	5804	6604	6286	7899
GREECE	6191	7151	8342	6131	8518	5866	6726	6507	7131
TURKEY	6944	7604	8795	6584	8971	6319	7179	7020	7584
ICELAND	6545	7505	8696	6485	8872	6220	7080	6921	7485
IRELAND	4909	6499	7060	5478	7236	4584	5444	5006	6674
SPAIN	4968	5863	7119	4908	7295	4643	5503	5344	5908
DR. GUAYANA	1647	4274	3998	3253	4174	1522	2382	3221	4256
DOMINIC REP	724	5201	3286	4184	3462	838	1676	1726	5181
HAITI	840	5578	3257	4557	3433	892	1641	2469	5056
JAMAICA	883	5544	3034	4524	3210	742	1418	1410	5524
PANAMA	289	5705	2340	4684	2616	552	824	1603	5684
TRINIDAD	1342	6907	3257	3576	3818	1838	2026	2382	6687

	PERU	URU- GUAY	VELE- ZUELA	FIN- LAND	GREECE	TURKEY	ICE- LAND	IRE- LAND	SPAIN
U.S.	4183	7153	3029	5626	5331	5784	3095	3437	3658
CANADA	5054	6844	3431	5150	5214	5667	2630	3413	4717
BELUX	6187	6283	4226	1123	1817	2322	1474	722	987
FRANCE	6762	6239	4895	1518	1438	1892	1586	642	839
GERMANY	6442	6538	4681	1066	1387	1841	1702	1199	1499
ITALY	6569	6046	4702	2081	343	755	2773	2069	656
NETHERLAND	6192	6288	4431	1046	1569	2023	1168	686	990
AUSTRIA	6842	6938	5081	1698	1059	1513	2115	1336	1863
DENMARK	6426	6522	4665	872	3109	3661	1514	920	1222
NORWAY	6985	7081	5224	1275	3767	4220	1473	1246	1792
PORTUGAL	5987	5464	4120	2162	1837	2290	1619	942	398
SWEDEN	7168	7264	5407	539	3977	4430	1832	1689	1992
SWITZERLAND	6769	6246	4902	1548	1196	1650	1682	1186	856
U.K.	6185	6281	4424	1314	3083	3536	1089	396	1093
COSTA RICA	1584	5613	971	6074	6136	6589	6490	4858	4913
SALVADOR	2183	6212	1570	6673	6735	7188	7089	5453	5512
GUATEMALA	1763	6265	1623	6726	6788	7241	7142	5506	5565
HONDURAS	2276	6305	1644	6766	6828	7281	7182	5546	5605
NICARAGUA	1606	5668	1226	6129	6191	6644	6545	4909	4968
ARGENTINA	4399	445	5095	7719	7151	7604	7505	6499	5863
BOLIVIA	1013	3645	3451	8280	8342	8795	8696	7060	7119

	PERU	GUATEMALA	VELEZ ZUELA	FINLAND	GREECE	TURKEY	ICELAND	IRELAND	SPAIN
BRAZIL	5654	1437	3060	6090	6131	6580	6085	5475	4998
CUBA	1506	2740	3555	8455	6518	8971	8072	7236	7295
COLUMBIA	1326	5405	1031	5804	5866	6319	6220	4580	4643
ECUADOR	712	4800	1561	6664	6726	7179	7080	5444	5503
MEXICO	2598	7042	2688	6286	6567	7020	6921	5066	5344
PARAGUAY	1115	295	4948	7699	7131	7584	7485	6479	5908
PERU	0	4079	2602	7190	7252	7705	7706	5970	6029
URUGUAY	4079	0	4975	7286	6729	7182	7083	6066	5506
VENEZUELA	2602	4975	0	5429	5385	5838	5739	4209	4162
FINLAND	7190	7286	5429	0	3972	4425	1977	1680	1987
GREECE	7252	6729	5385	3972	0	664	3055	2752	1491
TURKEY	7705	7182	5838	4425	664	0	3909	3205	1945
ICELAND	7706	7083	5739	1977	3455	3909	0	913	1824
IRELAND	5970	6066	4209	1684	2752	3205	913	0	916
SPAIN	6029	5506	4162	1987	1491	1945	1824	916	0
BR. GUIANA	2908	3840	821	5095	4090	5362	5263	3875	3686
DOMINIC REP	2196	6225	496	5037	5100	5553	5454	3817	4877
SAINT	2167	6196	1554	5177	5308	5761	5902	3957	4085
JAMAICA	1944	5975	1531	5306	5442	5895	5796	4066	5219
PANAMA	1350	5267	693	5840	5902	6355	4098	4620	4679
TRINIDAD	2552	6581	1939	5058	4981	5434	5335	3838	3758

	BRIT. GUIANA	DOMINIC REP.	HAITI	JAMAI- CA	PANAMA	TRINI- DAD
U.S.	4391	3679	3650	5427	2833	4035
CANADA	3577	3079	3732	5833	3704	3401
BELEX	4092	4034	4174	4303	4837	4055
FRANCE	4419	4610	4818	4952	5412	4491
GERMANY	4347	4289	4429	4558	5092	4310
ITALY	4226	4417	4625	4759	5219	4298
NETHERLAND	4097	4039	4172	4308	4842	4060
AUSTRIA	4747	4689	4829	4958	5492	4710
DENMARK	4331	4273	4413	4542	5076	4294
NORWAY	4890	4832	4972	5101	5635	4853
PORTUGAL	3264	3835	4043	3725	4152	3287
SWEDEN	5073	5015	5155	5284	5818	5036
SWITZERLAND	4426	4617	4825	4959	5419	4498
U.K.	4090	4052	4172	1894	4835	4053
COSTA RICA	1647	1080	1051	605	533	1313
SALVADOR	2391	1679	1650	1427	1169	2035
GUATEMALA	2444	1732	1703	715	1327	2088
HONDURAS	2083	1712	1743	821	883	1749
NICARAGUA	1847	924	840	883	289	1342
ARGENTINA	4278	5201	5578	5544	5705	6907
BOLIVIA	3998	3266	3257	3034	2340	3257

	BRIT. GUIANA	DOMINC REP.	HAITI	JAMAI- CA	PANAMA	TRINI- DAD
BRAZIL	3253	4180	4557	4524	4684	3578
CHILE	4174	3462	3433	3210	2616	3818
COLOMBIA	1522	838	892	742	552	1838
ECUADOR	2382	1670	1641	1418	824	2026
MEXICO	3221	1796	2480	1410	1663	2382
PARAGUAY	4254	5181	5558	5524	5685	6887
PERU	2908	2196	2167	1944	1350	2552
URUGUAY	3840	6225	6196	5973	5267	6581
VENEZUELA	821	496	1554	1331	693	1939
FINLAND	5095	5037	5177	5306	5840	5058
GREECE	4090	5100	5308	5442	5902	4981
TURKEY	5362	5553	5761	5895	6355	5434
ICELAND	5263	5454	5662	5796	4098	5335
IRELAND	3875	3817	3957	4086	4620	3838
SPAIN	3686	4877	4085	4219	4679	3758
BR. GUIANA	0	2404	2375	1334	1515	376
DOMINIC RP	2404	0	453	430	802	681
HAITI	2375	453	0	277	817	1053
JAMAICA	1334	430	277	0	551	1003
PANAMA	1515	802	817	551	0	1159
TRINIDAD	376	681	1053	1003	1159	0

Sources: Brown, Robert T., Transport and the Economic Integration of South America (11), and U. S. Department of the Navy, Distance Between Ports (42).

APPENDIX D

TABLE XVI
LIST OF NEIGHBORING COUNTRIES

Country	Neighbors
United States	Canada, Mexico
Canada	United States
Belgium	France, Germany, F.R., Luxembourg, Netherlands
France	Belgium, Germany, F.R., Italy, Luxembourg, Switzerland, Spain
Germany, F.R.	Belgium, France, Luxembourg, Austria, Netherlands, Denmark, Switzerland
Italy	France, Austria, Switzerland
Luxembourg	Belgium, France, Germany, F.R.
Netherlands	Belgium, Germany, F.R.
Austria	Germany, F.R., Italy, Switzerland
Denmark	Germany, F.R.
Norway	Sweden, Finland
Portugal	Spain
Sweden	Norway, Finland
Switzerland	France, Germany, F.R., Italy, Austria
United Kingdom	Ireland
Finland	Norway, Sweden
Greece	Turkey
Turkey	Greece
Iceland	
Ireland	United Kingdom
Spain	France, Portugal

TABLE XVI (Continued)

Country	Neighbors
Costa Rica	Nicaragua, Panama
El Salvador	Guatemala, Honduras, Nicaragua
Guatemala	El Salvador, Honduras, Mexico
Honduras	El Salvador, Guatemala, Nicaragua
Nicaragua	Cost Rica, El Salvador, Honduras
Argentina	Bolivia, Brazil, Chile, Paraguay, Uruguay
Bolivia	Argentina, Brazil, Chile, Paraguay, Peru
Brazil	Argentina, Bolivia, Colombia, Paraguay, Peru, Uruguay, Venezuela, British Guina
Chile	Argentina, Bolivia, Peru
Colombia	Brazil, Ecuador, Peru, Panama, Venezuela
Ecuador	Colombia, Peru
Mexico	United States, Guatemala
Paraguay	Argentina, Bolivia, Brazil
Peru	Bolivia, Brazil, Chile, Colombia, Ecuador
Uruguay	Argentina, Brazil
Venezuela	Brazil, Colombia, British Guina
British Guina	Brazil, Venezuela
Dominican Republic	
Haiti	
Jaimaica	
Panama	Costa Rica

APPENDIX E

DETERMINATION OF THE EQUALITY OF THE ESTIMATED
PREFERENCE DUMMY PARAMETERS IN
THE DIFFERENT MODELS

The three equations developed and estimated in Chapter IV have some elements in common: a) the dependent variable; b) the explanatory variables for gross national product of the importing and exporting countries, distance between the countries and the dummy variable for neighboring countries; and, c) the dummy variables for gross trade creation within the preference groups.

A procedure was developed to test the equality of the estimated coefficients for the preference dummy variables in the three different structural equations (4.3, 4.4 and 4.5). If the null hypothesis of equality cannot be statistically rejected, then it implies that the underlying structural relationships described in the more basic forms (4.3 and 4.4) are not affected by the addition of all the preference dummy variables in (4.5).

Rewrite (4.3):*

* In this appendix the subscripts one through four refer to the EEC, EFTA, CACM and LAFTA respectively. In (4.3-4.5) these preference variable subscripts were greater by one.

$$\begin{aligned} \log F_{mx_t} = & \log \beta_0 + \alpha_1 P_{11} + \alpha_2 P_{22} + \alpha_3 P_{33} + \alpha_4 P_{44} + \beta_1 \log GNP_{m_t} \\ & + \beta_2 \log GNP_{x_t} + \beta_3 \log DIST_{mx} + \beta_4 NEIGH_{mx} + \log E_t. \end{aligned} \quad (1)$$

The null hypothesis is:

$$H_0: \alpha_i = \alpha_{i0} \quad (i = 1, \dots, 4)$$

where:

α_{i0} = estimated coefficient for P_{ii} in (4.3).

The test statistic used to test the hypothesis is:

$$F_{\alpha, 4, n-k} = \frac{AC^{-1}A^1/4}{ESS/n-k}$$

where:

$$A = [(\hat{\alpha}_1 - \alpha_{10}), (\hat{\alpha}_2 - \alpha_{20}), (\hat{\alpha}_3 - \alpha_{30}), (\hat{\alpha}_4 - \alpha_{40})]$$

and C is a 4 x 4 matrix of the form:

$$C = \begin{bmatrix} C_{11} & C_{12} & C_{13} & C_{14} \\ C_{21} & C_{22} & C_{23} & C_{24} \\ C_{31} & C_{32} & C_{33} & C_{34} \\ C_{41} & C_{42} & C_{43} & C_{44} \end{bmatrix}$$

where:

C_{ij} is the ij^{th} element of $(X^1X)^{-1}$. Two sample years were arbitrarily selected for this test--one corresponding to the pre-integration period (1955) and the other falling in the post-integration period (1965), respectively.

The results for 1955 are shown below:

$$ESS = 1961.6320 \quad N - K = 1100$$

$$N = 1109 \quad ESS/n-k = 1.7833$$

$$K = 9$$

$$C = \begin{bmatrix} 0.0599 & 0.0043 & 0.0074 & 0.0038 \\ 0.0043 & 0.0271 & 0.0031 & 0.0009 \\ 0.0074 & 0.0031 & 0.0787 & 0.0052 \\ 0.0038 & 0.0009 & 0.0052 & 0.0195 \end{bmatrix}$$

	Equation (4.3)	Equation (4.4)	Equation (4.5)
P_{11}	0.3459	0.7155	0.3700
P_{22}	0.2774	0.5764	0.2298
P_{33}	-0.1731	-0.0710	-0.6648
P_{44}	-0.7837	-0.6041	-0.7364

$$A_2 = [0.3696 \quad 0.2990 \quad 0.1021 \quad 0.1796]$$

$$A_3 = [0.0241 \quad -0.0476 \quad -0.4917 \quad 0.0473]$$

where:

A_2 and A_3 correspond to the differences between the estimated coefficients of equations (4.3) and (4.4), and equations (4.3) and (4.5) respectively.

then:

$$A_2 C^{-1} A_2^1 = 6.2176$$

$$A_3 C^{-1} A_3^1 = 3.5044$$

Now, the F statistics calculated for A_2 and A_3 are:

$$F \text{ test of (4.4)} = \frac{6.2176/4}{1.7833} = 0.8716$$

$$F \text{ test of (4.5)} = \frac{3.5044/4}{1.7833} = 0.4913$$

Since $F_{(0.05, 4, 1100)} = 2.34$, the null hypothesis cannot be rejected, implying that the coefficients from the three equations come from the same population.

The same procedure was followed for 1965:

$$F \text{ test of (4.4)} = \frac{4.2204/4}{1.3951} = 0.7564$$

$$F \text{ test of (4.5)} = \frac{5.7520/4}{1.3951} = 1.0308$$

Again, it is impossible to reject the null hypothesis at the 95 percent level of statistical confidence. Hence, there is evidence that observed differences in the estimated value of the GTC coefficients correspond to random disturbances and that they came from the same population.

APPENDIX F

TABLE XVII

IMPACT OF ECONOMIC AND PREFERENCE FORCES ON TRADE FLOW
ESTIMATED BY MODEL (4.3): 1951-69*

Year	Constant	Variables								Coefficient of Determination
		log GNP _m	log GNP _x	log DIST _{mx}	DNEIGH _{mx}	D ₂₂	D ₃₃	D ₄₄	D ₅₅	
1951	4.3111	0.8024 (31.1191)	0.8102 (30.0166)	-0.6570 (-9.8223)	-0.5812 (2.8363)	-0.2184	0.2290	-0.4713	-0.8908	69.77%
1952	4.6310	0.7804 (30.8058)	0.8076 (29.7705)	-0.7146 (-10.6077)	0.4883 (2.3204)	-0.2309	0.1315	-0.1006	-1.2988	68.34%
1953	5.0028	0.7552 (33.7964)	0.7454 (31.5455)	-0.7430 (-12.9442)	0.5381 (2.8195)	0.0090	0.0523	-0.6605	-1.2235	70.57%
1954	3.8382	0.7685 (33.6900)	0.7660 (31.6790)	-0.6143 (-10.9369)	0.5655 (3.0200)	0.2817	0.2280	0.0436	-1.3017	68.49%
1955	4.1513	0.7584 (33.2546)	0.7422 (31.1518)	-0.6517 (-11.5658)	0.3856 (2.0472)	0.3459	0.2774	-0.1731	-0.7837	66.46%
1956	4.3143	0.7617 (33.2000)	0.7524 (31.4162)	-0.6767 (-11.9144)	0.3145 (1.6547)	0.3426	0.2647	-0.2921	-0.7129	66.74%
1957	3.7339	0.7532 (32.5558)	0.7446 (30.6534)	-0.6016 (-10.4632)	0.4207 (2.1988)	0.4422	0.2993	-0.1680	-0.7908	65.48%
1958	3.6029	0.7471 (30.9024)	0.7348 (31.9410)	-0.5892 (-10.5756)	0.5368 (2.9109)	0.3843	0.3220	-0.2233	-0.6371	66.86%
1959	3.5343	0.6730 (28.2956)	0.7172 (30.3181)	-0.5422 (-9.7289)	0.5541 (3.0868)	0.6980	0.2633	0.1432	-0.9101	63.87%

TABLE XVII (Continued)

Year	Constant	Variables								Coefficient of Determination
		log GNP _m	log GNP _x	log DIST _{mx}	DNEIGH _{mx}	D ₂₂	D ₃₃	D ₄₄	D ₅₅	
1960	3.9781	0.6669 (28.5713)	0.7136 (30.7268)	-0.5890 (-10.5244)	0.5166 (2.9170)	0.7117	0.1904	0.0289	-1.0914	65.12%
1961	4.2920	0.6758 (29.0805)	0.7399 (32.2040)	-0.6454 (-11.7274)	0.5452 (3.1651)	0.6216	0.2182	0.0931	-1.2853	66.90%
1962	4.2233	0.6797 (30.5756)	0.7192 (32.3701)	-0.6267 (-11.9769)	0.4291 (2.5759)	0.7269	0.1563	0.3818	-0.9244	67.75%
1963	3.8947	0.7110 (33.4262)	0.7856 (36.3366)	-0.6289 (-12.4074)	0.3335 (2.0679)	0.8181	0.2515	0.7108	-0.5250	70.16%
1964	4.1396	0.7105 (34.8199)	0.7475 (36.1845)	-0.6496 (-13.2945)	0.3379 (2.1628)	0.8219	0.2881	1.2909	-0.4252	70.84%
1965	4.0625	0.6985 (33.2665)	0.7647 (36.1845)	-0.6484 (-12.7461)	0.2976 (1.8532)	0.8846	0.3340	1.6054	-0.2244	69.75%
1966	4.3618	0.6803 (33.5381)	0.7391 (36.2362)	-0.6744 (-13.5880)	0.2342 (1.4763)	0.9669	0.3397	1.7058	-0.1042	69.82%
1967	3.7528	0.6744 (32.6438)	0.7677 (36.8707)	-0.6156 (-12.0274)	0.3405 (2.0712)	1.0291	0.4834	2.0473	-0.0091	69.52%
1968	3.3415	0.8167 (38.6702)	0.8449 (39.4024)	-0.6617 (-12.2253)	0.4058 (2.2583)	0.8312	0.5193	2.7855	-0.0827	70.90%
1969	3.2001	0.9186 (40.1671)	0.9601 (41.6049)	-0.7479 (-12.4107)	0.3564 (1.7126)	0.6920	0.6092	3.4000	0.2925	70.47%

* t-values in parenthesis.

APPENDIX G

TABLE XVIII

IMPACT OF ECONOMIC AND PREFERENCE FORCES ON TRADE
 FLOW ESTIMATED BY MODEL (4.4): 1951-69*

Variable or Statistic	Year				
	1951	1952	1953	1954	1955
Constant	4.55	4.56	4.83	3.42	3.62
log GNP _m	0.78 (26.59)	0.77 (26.37)	0.73 (28.26)	0.72 (27.75)	0.71 (27.15)
log GNP _x	0.80 (26.43)	0.80 (26.20)	0.75 (27.24)	0.75 (27.11)	0.71 (26.28)
log DIST _{mx}	-0.68 (-8.89)	-0.69 (-9.07)	-0.71 (-11.20)	-0.58 (-9.33)	-0.60 (-9.57)
DNEIGH _{mx}	0.56 (2.69)	0.53 (2.48)	0.59 (3.09)	0.61 (3.29)	0.45 (2.40)
D ₂₂	-0.16	-0.30	0.04	0.60	0.72
D ₃₃	0.26	0.04	0.05	0.50	0.58
D ₄₄	-0.58	-0.23	-0.76	0.16	-0.07
D ₅₅	-0.86	-1.44	-1.29	-1.11	-0.60
E ₂	0.03	0.00	0.17	0.38	0.42
E ₃	0.05	-0.15	-0.11	0.14	0.19
E ₄	-0.45	-0.37	-0.40	-0.25	-0.27
E ₅	0.22	-0.11	0.01	0.20	0.12
H ₂	0.09	0.01	0.19	0.49	0.53
H ₃	-0.03	-0.11	-0.12	0.01	0.06
H ₄	-0.17	-0.10	-0.04	0.17	-0.09
Coef. of Det.**	0.70	0.69	0.71	0.69	0.68

TABLE XVIII (Continued)

Variable or Statistic	Year				
	1956	1957	1958	1959	1960
Constant	3.98	3.17	3.27	3.21	3.60
log GNP _m	0.71 (26.87)	0.71 (26.78)	0.71 (27.61)	0.66 (24.78)	0.65 (24.90)
log GNP _x	0.72 (26.25)	0.71 (25.45)	0.70 (26.84)	0.69 (25.89)	0.68 (25.86)
log DIST _{mx}	-0.65 (-10.36)	-0.55 (-8.70)	-0.57 (-9.24)	-0.54 (-8.66)	-0.57 (-8.94)
DNEIGH _{mx}	0.36 (1.90)	0.48 (2.51)	0.57 (3.09)	0.56 (3.14)	0.55 (3.09)
D ₂₂	0.72	0.88	0.80	1.12	1.11
D ₃₃	0.58	0.67	0.68	0.66	0.55
D ₄₄	-0.50	0.01	-0.07	0.43	0.24
D ₅₅	-0.50	-0.54	-0.39	-0.56	-0.82
E ₂	0.48	0.57	0.47	0.35	0.44
E ₃	0.13	0.15	0.15	0.19	0.24
E ₄	-0.29	-0.13	-0.25	-0.01	0.02
E ₅	0.14	0.11	0.23	0.12	0.26
H ₂	0.53	0.62	0.65	0.65	0.54
H ₃	0.08	0.10	0.10	0.24	0.08
H ₄	-0.12	-0.01	0.08	0.06	-0.24
H ₅	0.21	0.03	0.10	0.30	0.07
Coef. of Det. **	0.68	0.67	0.68	0.65	0.66

TABLE XVIII (Continued)

Variable or Statistic	Year				
	1961	1962	1963	1964	1965
Constant	4.02	4.16	3.88	4.07	4.15
log GNP _m	0.66 (25.06)	0.68 (26.70)	0.70 (28.49)	0.69 (29.26)	0.68 (28.23)
log GNP _x	0.70 (26.96)	0.69 (27.06)	0.76 (30.32)	0.74 (30.67)	0.76 (31.07)
log DIST _{mx}	-0.62 (-9.80)	-0.63 (-10.64)	-0.64 (-11.07)	-0.65 (-11.66)	-0.68 (-11.72)
DNEIGH _{mx}	0.59 (3.38)	0.44 (2.62)	0.34 (2.07)	0.35 (2.21)	0.28 (1.74)
D ₂₂	0.87	0.96	1.07	1.03	1.09
D ₃₃	0.43	0.36	0.48	0.47	0.54
D ₄₄	0.16	0.40	0.79	1.37	1.71
D ₅₅	-1.15	-0.76	-0.34	-0.27	-0.02
E ₂	0.26	0.23	0.28	0.25	0.22
E ₃	0.05	0.03	-0.06	-0.06	-0.09
E ₄	-0.14	0.01	-0.03	-0.07	0.02
E ₅	0.09	0.21	0.07	-0.06	-0.05
H ₂	0.47	0.45	0.43	0.40	0.44
H ₃	0.01	0.01	0.12	0.05	0.09
H ₄	-0.23	-0.17	-0.09	0.06	0.18
H ₅	0.07	0.12	0.33	0.32	0.49
Coef. of Det.**	0.68	0.68	0.71	0.72	0.71

TABLE XVIII (Continued)

Variable or Statistic	Year			
	1966	1967	1968	1969
Constant	4.55	3.90	2.77	2.30
log GNP _m	0.66 (28.63)	0.65 (27.52)	0.81 (32.21)	0.84 (30.32)
log GNP _x	0.74 (31.42)	0.76 (31.38)	0.81 (31.67)	0.88 (31.94)
log DIST _{mx}	-0.72 (-12.89)	-0.66 (-11.47)	-0.60 (-10.18)	-0.61 (-0.73)
DNEIGH _{mx}	0.20 (1.26)	0.31 (1.91)	0.48 (2.65)	0.49 (2.39)
D ₂₂	1.19	1.30	1.30	1.31
D ₃₃	0.57	0.74	0.80	1.04
D ₄₄	1.82	2.15	3.41	3.41
D ₅₅	0.14	0.24	0.05	0.36
E ₂	0.23	0.25	0.23	0.49
E ₃	-0.11	-0.04	0.03	0.16
E ₄	-0.04	-0.17	0.06	-0.59
E ₅	0.03	0.05	-0.28	-0.60
H ₂	0.49	0.51	0.66	0.94
H ₃	0.12	0.15	0.21	0.50
H ₄	0.31	0.11	0.09	-0.09
H ₅	0.54	0.56	0.06	-0.04
Coef. of Det. **	0.71	0.71	0.72	0.72

* t statistics in parenthesis.

** Coefficient of Determination.

APPENDIX H

TABLE XIX.
NUMBER OF SAMPLE OBSERVATIONS AND SAMPLE SIZE AS A
PERCENT OF TOTAL POSSIBLE, BY YEAR

YEAR	OBSERVATIONS	PERCENT OF TOTAL*
1951	776	43.79
1952	820	46.28
1953	921	51.98
1954	1017	57.39
1955	1109	62.58
1956	1114	62.87
1957	1119	63.15
1958	1151	62.92
1959	1034	58.35
1960	1031	58.18
1961	1035	58.41
1962	1028	58.01
1963	1094	61.74
1964	1101	62.13
1965	1113	62.81
1966	1117	63.04
1967	1117	63.04
1968	1277	72.07
1969	1459	82.34

*Total possible is 1722 observations.

APPENDIX I

TABLE XX

ACTUAL TRADE FLOWS AMONG PREFERENCE GROUPS AND THE
U. S. AND CANADA: 1951-69

Year	Importing Group	Exporting Group				
		U.S. & C.	EEC	EFTA	CACM	LAFTA
----- millions of dollars -----						
1951	U.S. & C.	4969.10	2079.00	2685.30	173.00	2894.70
	EEC	836.90	1834.60	2849.10	19.80	784.00
	EFTA	1275.50	1789.50	2578.10	12.80	769.40
	CACM	204.70	10.80	10.80	6.00	0.80
	LAFTA	2701.50	867.00	928.90	8.20	511.20
1952	U.S. & C.	5452.60	2120.40	2431.90	182.20	2913.60
	EEC	767.70	1923.20	2517.30	23.90	723.70
	EFTA	1267.10	1935.30	2401.90	16.30	714.10
	CACM	200.10	18.60	8.70	6.80	2.00
	LAFTA	2819.30	696.00	580.80	7.70	469.50
1953	U.S. & C.	5763.10	1877.00	2160.90	212.50	2479.90
	EEC	1177.70	3937.00	3131.30	39.60	798.70
	EFTA	1496.90	2460.50	2438.70	19.70	479.90
	CACM	234.10	48.80	13.70	10.40	8.20
	LAFTA	2874.30	812.70	706.10	9.20	581.10
1954	U.S. & C.	5451.50	2443.30	2182.90	234.50	2673.10
	EEC	1068.70	4550.00	3706.30	52.20	965.00
	EFTA	1332.50	2632.00	2606.00	22.70	545.00
	CACM	234.20	71.90	23.90	13.30	4.90
	LAFTA	2775.40	1106.00	793.60	11.20	558.90

TABLE XX (Continued)

Year	Importing Group	Exporting Group				
		U.S. & C.	EEC	EFTA	CACM	LAFTA
----- millions of dollars -----						
1955	U.S. & C.	6180.80	2671.30	2948.50	265.00	2691.40
	EEC	1300.70	5110.69	4353.59	34.40	735.00
	EFTA	1483.60	3015.60	2779.10	25.10	619.00
	CACM	228.80	105.00	24.70	12.80	5.50
	LAFTA	2871.00	1141.90	904.80	13.60	743.80
1956	U.S. & C.	7150.80	3446.90	3121.60	278.30	2976.40
	EEC	1656.40	5896.48	4752.20	41.40	659.90
	EFTA	1819.20	3541.90	2984.90	28.30	639.50
	CACM	214.90	104.00	27.60	13.50	4.50
	LAFTA	3205.90	1435.40	1001.90	15.20	624.90
1957	U.S. & C.	7110.30	4240.60	3409.20	296.80	3773.80
	EEC	1796.80	6560.19	5526.28	64.70	1025.30
	EFTA	1881.30	3796.10	3187.20	31.00	781.40
	CACM	227.20	140.40	32.20	16.50	8.40
	LAFTA	3339.20	1515.50	1159.40	15.90	701.00
1958	U.S. & C.	6398.10	3230.20	2781.80	278.20	3201.80
	EEC	1930.00	6276.09	5207.49	68.80	1143.90
	EFTA	1983.80	3633.30	3036.10	35.60	702.20
	CACM	222.70	133.40	28.60	20.60	7.20
	LAFTA	3096.20	1355.60	1071.30	16.10	1287.00

TABLE XX (Continued)

Year	Importing Group	Exporting Group				
		U.S. & C.	EEC	EFTA	CACM	LAFTA
----- millions of dollars -----						
1959	U.S. & C.	7373.70	2984.30	2853.50	247.70	2978.70
	EEC	2713.80	8082.98	5620.88	83.00	1239.40
	EFTA	2499.70	3944.40	3242.00	29.90	690.70
	CACM	193.50	129.50	27.60	27.00	6.50
	LAFTA	2891.00	1440.80	1154.90	14.60	631.40
1960	U.S. & C.	6948.10	4276.60	3844.20	260.10	3166.40
	EEC	2563.10	10155.99	6575.39	101.00	1388.30
	EFTA	2277.10	4512.70	3732.30	32.70	761.20
	CACM	194.10	117.00	27.30	31.90	5.50
	LAFTA	3149.60	1609.40	1165.10	13.40	654.30
1961	U.S. & C.	7167.60	4543.10	3501.60	240.30	3303.70
	EEC	2543.90	11704.87	7163.18	97.90	1539.00
	EFTA	2207.50	4946.98	4050.10	31.60	847.70
	CACM	214.80	119.30	25.40	35.70	6.10
	LAFTA	3705.20	1643.90	1090.19	13.30	581.79
1962	U.S. & C.	7709.40	4929.89	3501.90	267.30	3139.30
	EEC	2767.40	13442.57	7637.77	105.80	1577.00
	EFTA	2349.40	5562.88	4340.09	36.30	770.20
	CACM	225.70	132.20	29.50	47.20	15.50
	LAFTA	3308.60	1939.20	1177.79	15.60	627.09

TABLE XX (Continued)

Year	Importing Group	Exporting Group				
		U.S. & C.	EEC	EFTA	CACM	LAFTA
----- millions of dollars -----						
1963	U.S. & C.	8534.97	5488.59	3684.20	303.10	3110.52
	EEC	3059.97	15713.37	8149.98	118.40	1400.57
	EFTA	2617.65	6174.78	4837.09	45.00	753.55
	CACM	258.94	138.70	38.60	64.50	1.44
	LAFTA	3658.10	1994.20	1183.50	27.10	719.68
1964	U.S. & C.	9664.95	5934.39	4496.60	349.70	3545.09
	EEC	3460.37	18044.87	9187.99	134.10	1417.07
	EFTA	2817.32	6610.57	5682.99	50.00	732.21
	CACM	280.63	176.10	50.90	104.00	1.00
	LAFTA	3753.76	2168.80	1240.90	34.90	841.63
1965	U.S. & C.	11091.09	6278.99	4622.50	381.30	3538.94
	EEC	4090.89	20435.58	9983.98	152.20	1458.77
	EFTA	3314.01	6944.68	6234.78	60.50	754.81
	CACM	328.65	197.10	48.90	132.50	1.30
	LAFTA	3845.08	2320.60	1264.10	38.70	979.76
1966	U.S. & C.	13512.32	6656.09	4781.90	400.00	3901.02
	EEC	4995.23	22933.77	10579.18	145.20	1656.96
	EFTA	4030.86	7302.38	6808.18	59.90	810.18
	CACM	355.00	212.90	62.10	170.00	4.34
	LAFTA	4073.73	2414.90	1274.50	42.70	994.76

TABLE XX (Continued)

Year	Importing Group	Exporting Group				
		U.S. & C.	EEC	EFTA	CACM	LAFTA
----- millions of dollars -----						
1967	U.S. & C.	15332.71	6506.20	5034.70	427.70	3899.53
	EEC	5366.57	24232.58	11009.38	152.20	1762.75
	EFTA	3960.30	7167.57	7403.48	68.90	894.28
	CACM	347.65	204.90	57.30	207.60	3.38
	LAFTA	3933.93	2432.70	1293.80	43.70	964.72
1968	U.S. & C.	18262.47	7159.49	5498.69	411.47	4349.59
	EEC	6890.27	28421.18	11712.98	143.32	1906.00
	EFTA	4571.77	7951.66	7736.48	60.49	1024.44
	CACM	391.66	229.10	59.70	251.27	2.87
	LAFTA	4377.77	2340.90	1256.50	54.13	1081.14
1969	U.S. & C.	20921.46	8159.49	5779.50	396.07	4520.79
	EEC	6920.73	36313.87	13040.94	157.13	2124.83
	EFTA	4805.67	9673.27	8958.48	70.60	1093.60
	CACM	419.42	235.90	58.28	254.55	4.00
	LAFTA	4271.39	2801.40	1422.97	59.23	1306.96

Sources: Direction of International Trade (18), and Direction of Trade (19), various issues.

APPENDIX J

TABLE XXI

ESTIMATED TRADE FLOWS AMONG PREFERENCE GROUPS AND THE U. S. AND
CANADA ASSUMING NO INTEGRATIONS: 1961-69

Year	Importing Group	Exporting Group				
		U.S. & C.	EEC	EFTA	CACM	LAFTA
		----- millions of dollars -----				
1961	U.S. & C.	9302.38	6541.77	3915.80	221.69	3631.85
	EEC	4563.53	5635.04	12325.30	199.04	2790.52
	EFTA	2678.50	6212.59	4408.96	53.45	1089.98
	CACM	256.64	162.67	29.18	32.62	4.24
	LAFTA	4789.07	2434.81	1310.56	21.79	762.74
1962	U.S. & C.	10005.55	7098.73	3916.13	246.60	3451.12
	EEC	4964.47	6471.62	13141.90	215.11	2859.42
	EFTA	2850.68	6986.05	4724.65	61.40	990.33
	CACM	269.67	180.26	33.89	43.13	10.78
	LAFTA	4276.45	2872.18	1415.86	25.56	822.12
1963	U.S. & C.	10857.67	8493.24	3788.81	185.02	3087.89
	EEC	5826.42	5852.75	14409.89	256.12	2540.03
	EFTA	3075.52	7475.80	4099.28	64.55	858.51
	CACM	261.23	174.97	43.57	25.43	0.90
	LAFTA	4451.06	2837.83	1335.85	58.39	649.50
1964	U.S. & C.	12295.16	9183.09	4624.28	213.46	3519.30
	EEC	6588.81	6721.17	16245.19	290.08	2569.96
	EFTA	3310.12	8003.42	4816.16	71.73	834.19
	CACM	283.10	222.15	57.45	41.01	0.62
	LAFTA	4567.46	3086.29	1400.64	75.20	759.56

TABLE XXI (Continued)

Year	Importing Group	Exporting Group				
		U.S. & C.	EEC	EFTA	CACM	LAFTA
----- millions of dollars -----						
1965	U.S. & C.	13830.02	10441.71	4371.62	154.00	3172.52
	EEC	8267.74	5888.95	18139.32	350.30	2646.12
	EFTA	3770.31	8105.76	4113.37	73.60	761.93
	CACM	279.94	230.03	54.23	22.55	0.73
	LAFTA	4404.35	3172.83	1339.71	109.63	608.69
1966	U.S. & C.	16849.18	11068.81	4522.37	161.55	3497.11
	EEC	10095.52	6608.86	19220.69	334.19	3005.61
	EFTA	4585.87	8523.27	4491.67	72.87	817.83
	CACM	302.39	248.47	68.87	28.93	2.44
	LAFTA	4666.25	3301.76	1350.73	120.96	618.00
1967	U.S. & C.	18740.55	11627.27	4378.71	114.30	3156.79
	EEC	11511.98	5402.70	20553.83	372.70	3198.16
	EFTA	4362.82	8065.25	3802.47	71.09	799.84
	CACM	250.03	221.23	62.44	15.24	1.72
	LAFTA	4242.02	3195.67	1287.47	162.75	412.58
1968	U.S. & C.	22321.48	12794.78	4782.24	109.96	3521.12
	EEC	14780.51	6336.55	21867.42	350.96	3458.05
	EFTA	5036.44	8947.56	3973.50	62.41	916.26
	CACM	281.68	247.36	65.06	18.45	1.45
	LAFTA	4720.61	3075.08	1250.35	201.61	462.37

TABLE XXI (Continued)

Year	Importing Group	millions of dollars				
		U.S. & C.	EEC	EFTA	CACM	LAFTA
1969	U.S. & C.	25065.10	15670.50	4622.41	70.03	3304.83
	EEC	15757.55	6263.88	25017.93	409.38	3855.86
	EFTA	5126.36	10493.60	3581.93	61.77	866.64
	CACM	254.69	235.64	62.40	8.06	1.83
	LAFTA	4335.93	3535.72	1329.55	290.03	384.77

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