AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D. C. 20523

BIBLIOGRAPHIC INPUT SHEET

FOR AID USE ONLY
Batch 67

1. SUBJECT CLASSIFICATION
A. PRIMARY: TEMPORARY
B. SECONDARY:

2. TITLE AND SUBTITLE
Alternative patterns of development

3. AUTHOR(S)
Chenery,H.B.

4. DOCUMENT DATE
1970

5. NUMBER OF PAGES
70p.

6. ARC NUMBER
ARC

7. REFERENCE ORGANIZATION NAME AND ADDRESS
Harvard

8. SUPPLEMENTARY NOTES (Sponsoring Organization, Publishers, Availability)
(In Economic development rpt.no.163)

9. ABSTRACT
(ECONOMICS R&D)

(DEVELOPMENT R&D)

10. CONTROL NUMBER
PN-AAE-185

11. PRICE OF DOCUMENT

12. DESCRIPTORS

13. PROJECT NUMBER

14. CONTRACT NUMBER
CSD-1543 Res.

15. TYPE OF DOCUMENT

AID 590-1 (4-74)

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PN-AAC-185

ALTERNATIVE PATTERNS OF DEVELOPMENT

by

Hollis B. Chenery

Economic Development Report No. 163

September 1970.

(This paper will constitute Chapter III in a forthcoming book entitled: The Developing Economy. A chapter outline is included for reference)

PROJECT FOR QUANTITATIVE RESEARCH
IN ECONOMIC DEVELOPMENT,
Center for International Affairs,
Harvard University,
Cambridge, Massachusetts.

Portions of this research were supported by the Project for Quantitative Research in Economic Development through funds provided by Contract CSD-1543 from the Agency for International Development; and Grant 1914 from the National Science Foundation. However, the views expressed in this paper do not necessarily reflect the views of these agencies.

September 1970

THE DEVELOPING ECONOMY

(outline)
Hollis B. Chenery

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Background Studies:

For Chapter 2: "Uniform Analysis of Development Patterns", with H. Elkington and C. Sims, Harvard U. Ec. Dev. Rep. No.148 (1970)

For Chapter 3: "Development Patterns: Among Countries and Over Time," with Lance Taylor, Harvard U. Ec. Dev. Rep. No. 15 (1968).
"Land: The Effects of REsources on Economic Growth," in K. Berrill, ed., Economic Development with Special Reference to East Asia, (1964).

For Chapter 5: "Patterns of Industrial Growth," AER (1960).

For Chapter 6: "Resource Allocation for Economic Development," with Kretschmer, Econometrica, 1956.

For Chapter 8: "Foreign Assistance and Economic Development," with Strout AER (1966).
"Foreign Aid and Economic Development: The Case of Greece, with Adelman, Rev. Econ. Stat. (1966).
"Optimal Patterns of Growth & Aid: The Case of Pakistan," with MacEwan, in Adelman and Thorbecke, eds. The Theory & Practice of Economic Development (1966).

"Development Alternatives for Latin America," with Eckstein, (1966) JPE (forthcoming).

Preliminary Draft
September 1970

THE DEVELOPING ECONOMY

CHAPTER III

ALTERNATIVE PATTERNS OF DEVELOPMENT

A large body of economic theory is based on the premise that different types of country require different models of development. Country types are distinguished by characteristics such as the level of income, the role of international trade, and the extent of surplus labor. So far, only ideal types have been defined for analytical convenience and there has been no comprehensive attempt to identify them with particular sets of countries.

The preceding study of the uniformities in development processes provides an empirical basis for investigating this problem. In this chapter I will try to determine whether the distinctive characteristics suggested by existing theories of trade and development can be identified in variations from the normal patterns of structural change. This approach leads to a typology of developing countries that combines the main features of several theories.

My starting point is the Rodan-Nurkse-Lewis theory of balanced growth, which assumes a relatively closed economy in which the scope for specialization is limited. The conceptual framework of this theory will be used to analyze the normal relations between trade, demand, and production. In large countries, the observed range of

variation due to trade is shown to be sufficiently limited for the assumptions of balanced growth to have considerable validity. Even here, however, the theory needs to be expanded to allow for the effects of trade and comparative advantage.

In smaller countries, trade is normally such a large share of GNP that the assumption of balanced growth does not provide even a good first approximation to the observed patterns. Among small countries it is possible to distinguish three main patterns of resource allocation that affect both production and trade: (i) an open economy with high primary exports; (ii) an open economy with high dependence on an inflow of resources in place of primary exports; (iii) a relatively closed economy with stress on import substitution and industry.

To describe these (or other) development patterns and to test their usefulness for theory and policy, we have to supplement the multiple regression procedures that have been used up to now. If there were sufficient observations for each type of country, it would be feasible to describe development processes for each group by a separate set of regression equations and to test the statistical significance of the classification for each one. This procedure was followed in the preceding chapter to decide whether the equations describing the sources of growth in underdeveloped countries were significantly different from the corresponding equations for advanced countries. A similar

procedure will be applied here to test the proposed country groups. It will be supplemented by less formal analyses of individual countries in order to distinguish the principal variants of each pattern.

One of the main reasons for studying alternative patterns is to establish a conceptual framework for development theory. On this question there are several possible outcomes. At one extreme, it may turn out that all observed growth paths can be encompassed within a single theory and derived from a single model by varying the parameter values. At the other extreme, each pattern may reflect a different set of forces that require a different kind of model. In between are a number of possible combinations of processes, such as universal consumption and savings theories combined with specialized production and trade models. It seems preferable to maintain the more universal hypothesis until the need for special models for different types of economy is clearly demonstrated.

A. VARIATION IN RESOURCE ALLOCATION

The average or "normal" processes of development were described in the preceding chapter by measuring a number of separate changes in the economic structure. The principal interrelations among these processes are demonstrated in chapter 6, in which an interindustry model is used to simulate patterns of output from independent estimates of final demand, input requirements, and several alternative patterns of trade.[1] These experiments show that the separate cross-country estimates of individual processes can be assembled into development patterns that are generally consistent with the observed patterns of production. The model also suggests some of the types of variation that will now be subject to statistical investigation.

The theory of balanced growth provides a basis for classifying factors affecting resource allocation according to whether their primary impact is on domestic demand or on external trade. The preceding analysis of separate processes suggests that a country's participation in the international economy -- reflecting differences in natural resources, size, capital inflow, and policy orientation -- is the largest source of variation in development patterns. In order to concentrate on these external effects,

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1. Since this model provides the theoretical framework for the statistical analysis of the present chapter, the reader may prefer to read it first.

I will assume initially an extreme form of the balanced growth hypothesis in which the composition of domestic consumption is determined only by the level of per capita income.[1] On this assumption, variations in resource allocation result only from differences in imports and exports and their repercussions on intermediate demand, investment, and factor use.

Within this simplified framework, the study of development patterns becomes an analysis of different forms of specialization over time. At one extreme, we are led to the Nurkse (1959) model of balanced growth in which expansion of trade is unprofitable and increases in demand have to be matched quite closely by increases in domestic supply.[2] At the other extreme is the possibility of extensive specialization with little connection between the pattern of output growth and the (predetermined) pattern of demand growth. The average pattern of specialization and industrial growth that I have described as normal lies somewhere inbetween.

The extent to which specialization affects the allocation of resources between primary production and industry in the normal pattern is shown in Table 1, which gives an approximate resource

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1. Rodan, Nurkse, and other exponents of balanced growth only make this assumption for single countries. The assumption of a common demand pattern for all countries is a more extreme assumption that will later be modified.

2. Nurkse tends to overlook the possibilities for reallocating the existing supply of foreign exchange earnings, which is quite important to the analysis of individual sectors (as shown in Chapter 10).

balance for each major sector based on the regression equations of Table 2.4 above. The calculation is for a middle-sized country of 10 million, in which total imports and exports are each about 20% of GNP. Since production is measured in terms of value added, I have made an approximate conversion from net imports to get an indication of their effect on value added in primary production and industry.[1]

The normal variation in specialization and its effect on production is brought out by comparing the calculations for the three income levels shown. Taking domestic demand (line 6) as given,[2] the composition of output is determined by the net specialization in imports and exports. At an income level of $100, domestic demand consists of about 65% primary and 35%

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1. An accurate calculation of the effects of trade on the value added in each sector requires the solution of an input-output model for each country. Since this is not feasible, I have utilized the results of the simulation of alternative trade patterns in the input-output model of chapter 6, which show that a composite increase of 1 unit in primary exports produces an increase of value added in primary production of .5. The calculations in table 1 (lines 5 and 6) and figure 1 are made on this basis.

2. To test the hypothesis of constant domestic demand, the implied values of D were computed from the four different patterns described in the regressions of tables 2 and 3. In the middle income range, the demand determined on the basis of a conversion factor of .5 was within a few percent in all cases.

industrial products. Production is more heavily biased toward primary production. The degree of specialization, which amounts to 30% of GNP (or 15% net), is made up of a bias of imports toward industrial goods (13%) and a bias of exports toward primary products (17%).[1] At low income levels, therefore, the normal degree of specialization is quite large and permits production to be determined by comparative advantage to a great extent.

The normal variation in the commodity composition of production, demand, exports and imports with rising income is shown in the remainder of Table 1 and in Figures 1 and 2. The graphs are derived from the normal shares of these elements in GDP at each income level and are designed for comparison to the alternative patterns that are measured below. They are plotted on a double logarithmic scale to facilitate the comparison of historical patterns of individual countries to the cross-section norms.[2]

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1. With this volume of trade, complete specialization in both imports and exports would permit a total difference between production and demand of 20% of GNP. The actual degree of specialization can be described by the ratio between the two (15/20) or .75.

2. For fixed intervals of time, the historical rate of growth of industry and primary production is indicated by the horizontal and vertical components of the vector connecting the terminal points.

Figure 1 shows a steady decline in the extent of specialization as the level of income rises, indicated by the fact that the production curve approaches the domestic demand curve. The sources of this decline are shown in Figure 2 and Table 1. In the average pattern, the primary bias of exports is eliminated at an income level of about $800, but industrial imports continue to exceed primary imports throughout the range of observation. For this reason, relatively few countries have a net bias toward industry in their total trade.[1]

This summary of the nature of specialization in the normal pattern provides a basis for a more detailed statistical analysis of alternative patterns of development. The level and composition of exports reflects resource endowments, economies of scale, and other aspects of comparative advantage. To a large extent, the level of imports adapts to the availability of foreign exchange although import composition also reflects comparative advantage. If the assumption of fixed final demand at each income level is approximately correct, alternative development patterns must reflect compensating changes in the other elements of Table 1. They produce alternative growth paths that can be identified by the nature of their deviations from the average pattern.

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1. Examples are shown in figures 4 and 8. Austria, Japan, Israel, Puerto Rico, Hong Kong, Portugal, and Yugoslavia are the principal examples under $1000 per capita income.

While the analysis is complicated by the interacting effects of scale, resource endowments, and capital inflow, some of the characteristics of these alternatives can be predicted on a priori grounds.[1] For example, a relatively favorable endowment of exportable natural resources will lead to high primary exports, a low cost of earning foreign exchange, and a consequent increase in both total exports and total imports. These expectations are indicated by the signs in the first column of the following table. Of the elements in Table 1, only the change in import bias is not predictable from the assumption of relatively high primary exports.

Expected Patterns of Deviation in Resource Allocation

	P (Primary Orientation)	B (Balanced or normal)	M (Manufacturing Orientation)	F (High Capital Inflow)
(1) Primary Exports	+	0	-	- or 0
(2) Other Exports	-	0	+ or 0	- or 0
(3) Total Exports	+	0	- or 0	-
(4) Total Imports	+	0	- or 0	+
(5) Primary Production	+	0	-	- or 0
(6) Industry Production	-	0	+	- or 0

1. This discussion is based largely on the simulation experiments in chapter 6.

An unfavorable resource endowment that results in low primary exports may be compensated for in several ways: by expansion of manufactured exports, by import substitution, or by an inflow of external capital. The first two possibilities result in a bias of production toward manufacturing, although their effects on the other elements of trade vary. An inflow of capital may substitute for either primary or industrial production or both. The typical relation has been shown to be a reduction in total exports, increase in total imports, and reduction in primary production.[1]

The amplitude of the deviations from the normal patterns produced through international trade is greatest for small countries and for the transitional income range from $200 to $800 per capita. The following analysis is aimed at delineating the alternative ways of carrying out the transition based on the experience of the past two decades.

B. MEASUREMENT OF SCALE AND RESOURCE EFFECTS

Previous discussion suggests that scale and resources will affect growth patterns quite differently at different levels of income. Therefore, the interaction between scale, income level, and resources cannot be adequately represented by adding variables in a regression analysis for all countries. It will

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1. These results were derived in Table 2.4 above.

be more fruitful to subdivide the sample into more homogeneous groups in order to estimate separate resource effects for each.

Although we have observations on some 90 countries for parts of the period 1950-1965, subdivision cannot be pushed very far. An iterative procedure has been followed to arrive at a breakdown into three principal subgroups which are considerably more homogeneous than the total sample. The general procedure followed has been to divide the sample on a trial basis by indicators of scale, trade bias, and production bias, following the rationale of the previous section. The subdivision between large and small countries is shown to produce the greatest differences in the regression equations, which also extend to a number of other development processes. Once this distinction by size has been made, resource effects can be measured fairly well by introducing an index of the export bias in the regression equations.

This procedure is explained further in discussing the three basic patterns that have been identified so far. They are a large country pattern (L), a small, primary-oriented pattern (SP), and a small, industry-oriented pattern (SM). Separate regressions for allocation and accumulation processes are given in Tables 2-5 for each of these major groups and for several alternative groupings. A more detailed typology and the countries included in each group are given in Table 6.

The Large Country Pattern.

The principal effect of a large population on resource allocation is to increase the size of the domestic market. In the export sectors this reduces the proportion of output that is sold abroad, while in import sectors it increases the proportion of domestic production if there are significant economies of scale.[1] The initial impact of large scale is therefore to reduce the proportion of trade in GNP. It also reduces the capital inflow (which is related to the volume of trade) and produces a more inward-looking orientation of policy.[2]

Table 6 lists 32 large countries that have sufficient data to be classified by their trade characteristics. Their mean population is about 40 million.[3] Size is virtually uncorrelated with income level, and the group includes some of the world's richest countries as well as some of the poorest. Although only 26 of the less developed countries are in this group, they include three-quarters of the total population covered.

Separate trade regressions for large countries are shown

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1. As will be shown in Chapter 5, this is true to some extent of all branches of manufacturing except food processing.

2. This difference in policy orientation between large and small countries is often quite striking, as is brought out in Chapter 11.

3. Large countries are defined here as having a population of over 15 million, based on the tests reported in Chenery and Taylor (1968). A somewhat higher cut-off could be used without affecting the results.

in Table 3. As indicated, most of these are significantly different from the pooled regressions, even though the latter include scale as an independent variable, because the scale effect is most pronounced at lower income levels. The combined effect of lower levels of trade and the change in its composition is shown in the large-country trade patterns of Figure 4.

Although the volume of trade of the average (40 million) large country is about half the norm for a country of 10 million, the reduction is concentrated in primary exports and industrial imports. At all income levels, comparative advantage is therefore shifted toward industry in large countries. This shift shows up in the greater industry bias of both exports and imports in Figure 4.

Both because of the lower volume of trade and its greater industry bias, the production pattern of large countries deviates less from the demand pattern. There are only a few moderate-sized countries, such as South Africa, the Congo, Iran and Canada, in which the degree of specialization strongly reflects their natural resource endowments. They are the only large countries that fit the primary oriented patterns of production and trade described below.

The differences between large and small countries carry over into the estimates of savings, investment, and tax revenue, although here the nature of causation is less clear. The regressions in Table 5 indicate highly significant differences in the estimates for the two groups of countries, even though size was allowed for in the pooled regression. The early industrialization of

the large countries is reflected in an increase in investment, savings, and taxes at low income levels. As indicated below, however, the higher trade levels and capital inflow of small countries may more than offset the effects of early industrialization on accumulation.

Primary Orientation. Primary exports have played an important part in the early development of virtually all of the poorer countries as well as in some of the advanced countries with favorable resource endowments (the United States, Canada, Australia, New Zealand, Sweden, Denmark). A number of authors have described the mechanism of export-led growth, in which the expansion of foreign trade both stimulates demand and leads to an increase in supplies of foreign exchange, external investment, and domestic savings through which it can be sustained.[1] There is widespread skepticism, however, as to whether this pattern of resource allocation can take a country beyond the initial stages of development and whether it may not inhibit the structural changes that are necessary if growth is to continue.

Although the more obvious current examples of this pattern, such as Venezuela and Malaysia, are well known, we need an index

1. The discussion of export-led growth is summarized in Kindleberger (1965, Chapter 16) and Hagen (1968, Chapter 7).

of the effects of natural resource endowments on the patterns of trade and production in order to classify other countries. For this purpose I will measure the effects of producing and exporting primary products rather than trying to estimate the underlying resource endowment that made this result possible.[1] The best available index of the effect of natural resources on development is therefore the bias of exports and imports that was described above. Although statistical tests have been made using all four trade elements separately, the export bias is shown to be more closely related to resource endowments.

To test the effect of natural resource endowments, separate export regressions were computed for large and small countries as shown in Table 3. These were used to measure the deviation of each country's primary and manufacturing exports from levels predicted for its income and size. The primary export bias is defined above as $(E_p - E_m)$. A country's deviation from the normal export bias is therefore $(\delta E_p - \delta E_m)$, where δE_p is the deviation from the predicted value of primary exports. This index will be used to measure the resource orientation of trade.[2]

With this index, we can classify all countries according to the resource orientation of their exports, which is done in

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1. If data were available to compare production costs of mineral resources, it would be useful to establish the link between trade and resource endowments, but it is not necessary for the present purpose.

2. The same measure was used by Chenery and Taylor (1968) except that they found it more convenient to weight the two components by their effects on production. Since these weights are comparable in size, I have used the unweighted form.

Table 6 below. We can then measure resource effects on production in one of two ways: either by inserting E_p and E_m in the regression equations or by subdividing the sample according to the index of trade orientation. Regressions for primary and industry output using both methods and several country groupings are shown in Table 2.[1]

These experiments show (i) that the trade orientation has an important effect on the levels of commodity production for reasons already indicated; and (ii) that these effects are measured more accurately when the sample is divided according to the trade pattern than by a single regression equation. A two-way split into SP (small, primary-oriented) and SM (Small, industry-oriented) is sufficient to describe the main features of the two basic patterns. In subsequent analysis of individual countries, it will be useful to distinguish an additional small balanced (SB) group in which the index of export orientation is in the

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1.The inclusions of primary and manufactured imports in these regressions did not improve the results appreciably, although in extreme cases of import-substitution (Argentina, Turkey, Chile) manufactured imports do become an important indicator. F tests on the division of the small-country group into SP and SM show that the results are significantly different at a 1% confidence level for both primary production and industry.

range of ± 5% of zero.

Figure 6 shows the average trade patterns of all SP countries as well as the actual patterns for 20 countries in this group. The main difference from the normal pattern (Figure 2) is in the much greater primary bias of exports, with only a small increase in the industry bias of imports. A comparison of the average SP pattern to the normal pattern for the same sized country (Table 1) indicates that total exports are increased by some 20%. Table 7 below also contains a number of examples of much greater increases in primary and total exports, such as Rhodesia, Malaysia, Iraq and Zambia. These are typically small countries with high mineral exports and very specialized economies. They will be treated as an extreme form of the SP pattern in the country discussion below.

Industry Orientation. The earliest modern development pattern was that of the United Kingdom, Germany, and other leaders of the industrial revolution, in which the export of industrial products acted as a stimulus to growth and a source of foreign exchange from the initial stages onward. In the first half of this century, several of the lagging European countries such as Italy and the Netherlands followed a similar route. However, Japan is the first non-European country that has developed an industrial bias in its trade at a low level of income and has continued to grow on this basis.[1] This lends unusual interest

1. Others are Hong Kong and Singapore.

to the Japanese pattern, which is analyzed in detail in the next chapter.

In the past thirty years a number of less-developed countries have attempted to follow a policy of deliberate industrialization as a means to more rapid growth. The disruption of trade in 1940-1945 stimulated some of these efforts, most notably in Latin America and other areas where considerable growth had already taken place. The postwar wave of political change produced two additional approaches to development via rapid industrialization: the communist pattern of Eastern Europe and the aid-supported pattern of Israel, Taiwan, Pakistan, and Korea. Table 6 below lists sixteen countries in these three groups that now have an appreciable industrial bias to their exports, in addition to nine advanced European countries and Japan.

Because of the diverse conditions that have led countries to stress industry in their development, the theoretical background for the statistical analysis of this phenomenon needs to be more complex. Although a straightforward application of the theory of comparative advantage explains the main features of the primary-oriented pattern, the same type of argument only applies to the more advanced industry-oriented countries such as Switzerland, Austria and Japan. Here there is a clear basis in skills and technology for a net exchange of industrial exports for primary imports. However, the orientation of production toward industry in the less-developed countries is more

often the result of deliberate policy aimed at establishing a future basis for comparative advantage. Virtually all of the developing countries in this group--with the exception of Hong Kong and Singapore--would have been classified as primary exporters twenty years ago.

There are several variants of the basic pattern of industry-oriented development. They can be described as alternative responses to market limits to the expansion of primary exports. This phenomenon is discussed at length by Nurkse (1959) in his argument for balanced growth. Its effect is to produce a widening gap between marginal and average comparative advantage, since expansion of traditional exports in excess of a given rate is not profitable.[1] The optimal response--implicit in neo-classical trade theory--requires that the decline in export prospects be anticipated and resources redirected to import-substitutes or exports of manufactured goods or other primary products. There are very few countries in which a substantial change in the orientation of trade has been brought about without producing a trade gap that has interferred with the process of growth. More common is the case of countries like Argentina or Chile in which the transformation slowed down after the initial phase of import substitution without producing a trade

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1. As noted above, the exceptions in the postwar period are mainly mineral exporters. The countries worst affected by limited export markets are exporters of the major agricultural commodities, such as coffee.

structure that would sustain rapid growth. This phenomenon is discussed in the next section.

Foreign loans or foreign private investment have provided an alternative response to the limitation on primary exports that gives a country more time to transform its productive structure and develop new exports. Successful examples include Israel, Taiwan, Puerto Rico, and Korea. In these countries the growth of industrial exports has increasingly replaced the capital inflow as a source of foreign exchange.

Socialist countries of Eastern Europe illustrate a third type of industrial orientation in which the interval of disequilibrium between domestic demand and supply is offset by controls on consumption and trade. These countries show large positive deviations from normal in their industrial structure because of their emphasis on high investment as well as import substitution.[1]

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1. Table 7 shows that Yugoslavia, Poland and Hungary have positive deviations in industrial output in the order of 10% of GNP (after converting from the material product to GNP accounting basis). A more detaled analysis is given in Gregory (1969).

In summary, countries have been classified as "industry oriented" because they have either relatively high manufactured exports, relatively low primary exports (and high import substitutio or a combination of the two. Since the cases of low primary exports predominate, the group as a whole tends to have lower than normal exports. The resulting tendency to foreign exchange shortages makes external capital particularly important.

The same form of regression equations have been applied to the industry-oriented group of countries in tables 2-4 as to the other principal groups. Among the small countries, there are highly significant differences in all the regressions for production and trade between the SM and SP groups. The extent of this difference is brought out in figure 1, which shows the predicted values of primary and industry output per capita over the range of the transition. The variation in the ratio of the two from the all-country normal is about 15% in the middle income range, and individual countries vary much more than this. The corresponding analysis of trade patterns in figure 2 shows that the main source of this difference lies in the composition of exports, since there is much less variation in the composition of imports.

Although the heterogeneity of the small industry oriented countries is confirmed by their larger standard errors, the regressions equations of table 2 still explain

75% of the variance in the share of industry (compared to 91% and 89% for the SP and L groups). There are two notable differences in the partial effects of individual variables. The scale effect is quite significant for industry oriented countries (and negligible for primary oriented ones) reflecting the economies of scale in industry. Secondly, the resource inflow has a substantial positive effect on industrial output, for reasons that are discussed in the next section. Taken as a whole, the differences in the regression equations for production between the SP and SM countries are highly significant.

The difference in the role of external resources between the SP and SM countries is brought out in the trade regressions of tables 3 and 4. In primary oriented countries, a high degree of substitution is shown between the resource inflow and primary exports but no significant effect on imports. In industry oriented countries, the prevalence of a trade limitation to growth is indicated by the fact that a higher capital inflow is associated with higher exports and very substantial increases in both primary and industrial imports.

The differences in production attributed to trade orientation are equally strong when the distinction between large and small countries is dropped and countries are grouped instead into Primary oriented (P), Balanced (B), and Industry oriented (M). While the statistical results shown for this breakdown in table 2 are quite good, the effects of scale are better represented by treating the large countries as a separate group.

Repercussions of Trade Patterns.

Differences in natural resources, trade and production that have been discussed above carry over to other development processes, such as urbanization, savings, investment, and government revenue. The most pervasive effects are those associated with size, which have been included in the basic regression equation and already discussed. Separate regressions were computed for the three principal groups of countries to determine the effects of the other variables. The breakdown between large and small countries proved to be highly significant and is given in table 5 for savings, investment, taxation and government revenue. The effects of exports and capital inflow are adequately captured in a single equation for all small countries, however, and a further breakdown by resource pattern adds little to the explanation.

These results show that the increase in accumulation processes associated with large size can be easily offset by increased exports. The addition of exports adds significantly to the explanation of all four processes, particularly in the case of savings. In most cases, however, the composition of exports has little effect.

C. THE MAJOR DEVELOPMENT PATTERNS

To make the notion of alternative routes to development more concrete, it is necessary to go beyond the average relations that have been estimated and identify the countries to which they apply. This is essential if we are to combine the analysis of sources of growth from the previous chapter with the present analysis of trade and production patterns. Once we have identified a group of countries as representative of a particular pattern, we can also examine other economic and political factors that may be associated with it.

The results of the preceding section show that the level and composition of trade are systematically related to the composition of output and also have some effect on the processes of accumulation. Since trade data are available for almost all countries, they can be used to construct an initial classification of development patterns. This analysis suggests several variants of the idealized types that have been discussed up to now and provides a basis for judging the prevalence of each pattern. Thereafter I will narrow the focus to the countries that have shown significant growth over the past twenty years and try to characterize the major routes to development.

The following indices will be used to define trade patterns that reflect differences in economic structure:

(1) Country size (N)

(2) Level of per capita income (y)

(3) Deviation from the level of exports predicted by a country's income and size (δE)

(4) The bias of exports toward primary products (T)

(5) The capital inflow as a percentage of GNP (J/Y).

This procedure adds the degree of openness of the economy to the pattern of specialization that has already been discussed. Openness is measured by the export deviation and specialization by the export bias. After some experimentation, it proved convenient to define a variation in each index of up to 5% of GNP as normal. The three types of specialization are therefore defined as Primary oriented (T less than -.05), Balanced, and Industry oriented (T greater than +.05). The export level is similarly defined as High (δE greater than +.05), Normal, and Low (δE less than -.05). The existence of a number of countries with a substantial excess of imports over exports introduces a fourth category, defined by a capital inflow in excess of 3% of GDP. Combining these measures of specialization and openness gives the twelve trade patterns shown in Table 6.

To secure a comprehensive view of development patterns, I have tried to classify all the countries in the world above a minimum level of income by these criteria. For this purpose I start with the ninety-five countries having total GNP greater

than $500 million in 1960. Sufficient information is available to classify all but four of these. To this list

I have added six smaller countries in which development is underway in order to secure maximum coverage of the transitional group.[1] The data available for these ninety-seven countries in 1960 (or 1965) and the resulting classification are shown in Table 6.[2]

This tabulation shows that there are several examples of each of the twelve possible trade patterns with the exception of the balanced trade, high export combination. The breakdown by trade level shows 24 countries with high exports, 36 in the normal range, 17 with substantial capital inflow,[3] and 20 with low values of both exports and imports.

Subsequent discussion will concentrate on the alternative patterns that have been followed by transitional countries. As a basis for this analysis, Table 7 gives a set of deviations

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1. Countries that could not be classified for lack of income or trade data are North Korea, North Vietnam, Mainland China, and Nepal. The small countries added are Panama, Nicaragua, Jordan, Paraguay, Honduras, and Malawi.

2. Since the regressions are not reliable for extreme values of y and N, the indices for the United States, the U.S.S.R., and perhaps other high income countries have relatively little significance.

3. Three countries with both high exports and capital inflow are classed in the former group (Malawi, Trinidad, Hong Kong).

from the values of production, trade, and investment predicted by the standard regressions for large and small countries. It covers 46 countries, including almost all the trans-itional countries having the required data plus a selection of lower income countries in which development is well started.

A good description of the alternative patterns of resource allocation can be achieved by combining the regression results for the three main country groups from the preceding section with examples of the countries that illustrate them. This is done graphically in Figures 3-8 by plotting growth curves of trade and production for each of the three main types. Individual country patterns for 1950-1965 are plotted in accordance with the basic three-way split used in the regression analysis,[1] along with the normal patterns for each group.

For purposes of discussion, I will consolidate the eleven observed patterns under the following five headings which focus on the main differences among the developing countries:

(1) Primary orientation (P1 and P2)

(2) Balanced trade (B2)

(3) Industry orientation (M1 and M2)

(4) High capital inflow (P3, B3, M3)

(5) Low trade (P4, B4, M4)

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1. Exceptions are South Africa and Iran, which are close to the margin of 15 million and have a strong primary orientation to their trade, so that they are shown on the SP charts.

There are 15-25 countries in each of these groups in Table 6. For transitional countries, the importance of the trade-aid choice is indicated by their concentration in groups (1) and (4).

Primary Oriented Development. Thirty less-developed countries and three developed ones are classified in Table 6 as having more than a normal primary bias in their exports. All but six have at least normal levels of exports, and some have very high positive deviations. Despite efforts of countries to industrialize and diversify their trade, more examples of rapid growth are found in this pattern than in any other.

The dozen or so countries in group P1 whose primary exports exceed the norm by 10% of GNP constitute the most extreme cases of specialized development. All except Saudi Arabia are recent colonies, and their past development policy can best be described as colonial. The most typical features of this pattern are its dependence on private foreign investment for mineral exploitation and the large capital outflow that results subsequently.[1] Even with this drain on foreign exchange, however, imports tend to be well above normal.

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1. Of the 17 high primary exporters in Table 6 only Malawi and Trinidad show a net inflow of capital in the 1960's. Except for Tanzania, the Ivory Coast, Malaysia, and Panama, the group consists of countries that export mostly minerals.

Most developing countries have to abandon this pattern as their income rises above $300 per capita because they lack either the natural resources or the markets to sustain continued growth on this basis. The main exceptions have been Australia, New Zealand, Venezuela, Denmark, Canada, Sweden, Finland, and Ireland. Of these only the first four have maintained a high degree of primary specialization after they passed income level of $800 per capita which requires primary exports of more than $200 per capita. The others have moved toward more balanced production and trade in order to continue to grow. From this experience, we can conclude that primary production normally reaches a ceiling of between $250 and $300 per capita even in the extreme SP pattern,[1] and primary exports rarely exceed $150 per capita. The main policy questions for countries following a pattern of primary specialization are therefore how long to maintain it and how to bring about the transition to a more balanced structure of production.

Balanced Trade Patterns. In the balanced trade pattern, the composition of exports approaches the composition of domestic demand by the middle of the transition. This implies that by the time a country reaches an income level of $400 per capita, the growth of industrial exports should exceed the growth of

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1. We observe the United States, Canada, Sweden, and Denmark declining from this level of primary output in recent years and only Venezuela increasing above it.

primary exports, as shown in the comparison of trade patterns in figure 2.[1] By contrast, this shift in the marginal composition of exports occurs in the SM pattern at less than $200 per capita and in the SP pattern it is delayed to over $1000. The most successful postwar examples of the balanced trade pattern in transitional countries are Mexico, Spain and Peru, each of which has expanded its exports satisfactorily while shifting their composition away from primary products.

At lower income levels, the balanced trade pattern requires that countries develop a basis for industrial exports so that they can expand to $5-$10 per capita by the time income reaches $200 per capita. The underdeveloped countries in the balanced trade group have not followed this strategy. More typically, they are stagnant economies such as Indonesia and Burma, in which a resumption of growth is more likely to be achieved through the expansion of either primary exports or external assistance and a shift to a different trade pattern.

A number of middle income countries have tried to reduce their dependence on primary exports through import substitution without also developing alternative sources of foreign exchange. Typical of this group are Argentina, Brazil, Colombia, Turkey, Chile and Uruguay, none of which has yet attained a level of industrial exports of $10 per capita. Their growth has been periodically retarded by foreign exchange shortages and the resulting structural imbalance. Most of them now fall into the low trade pattern, which is discussed below.

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1. Only the expansion line for all countries and for large countries are shown in the figure, since the small-country curve is close to that for all countries. For large countries, the shift takes place at $300 per capita.

<u>High Capital Inflow</u>. The least developed countries (under $150 per capita) have managed to achieve fairly rapid growth in the postwar years by one of two patterns: high primary exports or a high inflow of capital (usually public assistance). Relatively successful examples of the latter pattern in 1960-1965 include Korea, Taiwan, Jordan, Pakistan, and the U.A.R.[1]

The typical effects of an inflow of resources on the structure of trade and production were discussed above. Taken together, they show that external assistance makes possible a pattern of development that is notably different from those in which exports must balance imports. In most of the successful cases, aid replaces primary exports as a source of foreign exchange and enables the country to develop a pattern of specialization based on industry. Examples of this sequence are shown in the production and trade patterns for Israel, Jordan, Taiwan, Korea, the U.A.R., and Pakistan in figures 3-8. In almost all successful cases, both production and trade converge toward the normal pattern for the country group over a period of ten years or so.

The high aid pattern is like the primary export pattern in that it relieves the requirements of balanced growth and permits greater specialization. Their main difference is that private investment has so far been available mainly for primary production and exports, so that public capital has been needed to support the early stages of industry-oriented development. There has been a shift to private sources after rapid growth has been attained in countries like Israel, Greece, Puerto Rico, Hong Kong and Taiwan.

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1. In the 1950s this group included Greece, Israel, Puerto Rico, Turkey, and the Phillipines, all of which developed quite

(continued)

Import Substitution and Low Trade. Twenty countries are shown in table 6 as having significantly low levels of exports not offset by substantial capital inflows. For countries in the transitional income range, low trade usually results from a policy of import substitution at the expense of the promotion of exports. This causal relation is clearest in countries such as Argentina, Uruguay, Chile, and Turkey, where detailed studies of trade policy have shown much greater incentives for import substitution than for export expansion.[1] Most of the countries showing these characteristics are in South America, where import substitution and high protection have been the main instruments of development policy for much of the past 20 years.

Low trade also characterizes the development patterns of the socialist countries of Eastern Europe, but here it has been replaced in recent years by an emphasis on industrial exports as industrial capacity has been developed. As a result, Yugoslavia, Romania, Poland and East Germany have increased

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(continued) rapidly. Growth has been slower in some other aid recipients, notably India, Tunisia, and Bolivia.

1. See Balassa (1970) for a survey of effective protection in a variety of developing countries.

their industrial exports sufficiently to be classed as normal exporters, leaving Bulgaria, Hungary and Czechoslovakia in the low trade group in 1965.

In summary, for most of the countries in this category, low trade is a sign of a failure to complete the economic transformation that is needed to permit growth to continue. Almost all of the low trade countries have suffered from periodic shortages of foreign exchange and only the Eastern European Group have avoided serious effects on growth. At best, autarky has been a temporary phase in the socialist strategy of drastic change in the economic structure, but it has not proved to be a route to sustained growth in less rigidly controlled economies.

Industry Orientation. High or normal levels of exports oriented toward industry are characteristic of the advanced countries of Western Europe, which constitute half of the 14 examples of patterns M1 and M2 in table 6. Developing countries are likely to arrive at this pattern by either the socialist or the aid-assisted routes that have been described above. So far, the industry oriented pattern has been achieved only after countries have reached an income level of $250 per capita, with industrial exports in excess of $20 per capita.[1]

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1. Taiwan qualified for this group in 1965, following the precedents of Japan, Hong Kong and Singapore.

The only exception to these generalizations is Japan, which developed a pattern of industrial specialization at a level of income of less than $200 per capita and has grown quite successfully on this basis for the past forty years. South Korea seems likely to follow this pattern as its capital inflow declines. It is attractive to countries that lack primary resources and have acquired the requisite human skills, but the needed transformation of the industrial structure has not yet been achieved in poor countries without external assistance.

D. SUMMARY: THE NATURE OF THE TRANSITION

In this chapter I have tried in various ways to extend the hypothesis of a universal development pattern and to identify sources of systematic variation that could be associated with different types of country. In a statistical sense, this effort appears to have been quite successful. The formalization of the Clark-Kuznets procedure in Chapter 2 showed that the level of per capita income alone explains some 60% of the total variation in the shares of primary production and industry and in GNP. Adding general indices of a country's role in the international economy -- its size, export pattern, and capital inflow -- raises the proportion of variation explained by a single regression equation for all countries to about 80%, and subdividing the sample into the main types of development pattern further improves the results.

Of greater interest than the statistical fit of alternative regression equations is their indication of different routes by which countries can develop. The patterns shown in figures 1 and 2 suggest some of the turnpike properties of optimal growth theory. Roughly speaking, the transition from a $50 economy to a $1000 economy requires an increase in the supply of primary products for domestic use from $25 per capita to $150 per capita and of industrial goods from $10 per capita to $350. Relatively little variation is possible in the structure of the $50 economy, which typically produces $5 per capita of industrial products and obtains the remainder in trade for primary exports.

Once the transition gets under way, quite large differences in structure may develop before countries reach $250 per capita. In the extreme examples of primary orientation (South Africa, Zambia, Ivory Coast), more than 80% of commodity production still comes from the primary sector at this point, while in the opposite cases (Korea, Taiwan, Yugoslavia) industrial output is already approach 50% of total commodity production at that income level.

Once a country has reached its maximum divergence from the average route, the turnpike analogy suggests that the optimal pattern will run parallel to it for a while and then start to converge toward the more uniform structure of the mature economy. This speculation is consistent with the behavior of many rapidly growing economies, but it can only be tested in more detailed planning models.

The qualitative differences that have been uncovered in the statistical comparisons of the past two chapters do not provide a very strong case for constructing different theoretical models for different types of countries. Instead, they suggest a building block approach in which each process is modelled in a fairly similar way. The most important differences stem from the size of the country or the effective market area. Of the theoretical distinctions that have been suggested, that between more open and relatively closed economies appears to have the greatest empirical significance. The effects of differences in openness and scale will be investigated in the programming models of part II.

The comparative study of countries following different routes to development also suggests the possibility of conceiving

of long term development strategy in terms of a sequence of such patterns. For example, the recipients of large capital inflows have a wide range of options in restructuring their economies and may choose either to increase or to decrease their degree of specialization. Both sequences are illustrated in figures 3-8. A different type of choice is faced by high primary exporters, which can either run the risks of continued specialization or try to industrialize before the exhaustion of export supplies or markets forces them to do so. Several such sequences are analysed in detail in subsequent chapters.[1]

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1. The sequences for aid recipients are analysed in chapters 7 (Israel) and 8 (Pakistan) and 13 (Southern Italy); several variants of balanced growth sequences are analysed in chapters 4 (Japan), 9 (Chile), and 10.

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TABLE 1.

NORMAL CHANGE IN SPECIALIZATION DURING THE TRANSITION[a]

			Primary Sector (1)	Industrial Sector (2)	Total (3)	Primary Bias[b] (4)	Bias as % of GNI (5)
		Income Level $100					
1)	Imports	M_i	4.2	17.5	21.7	-13.3	-13.3
2)	Exports	E_i	17.8	1.3	19.1	16.5	16.5
3)	Net Imports	$M_i - E_i$	-13.6	16.2	2.6	-29.8	-29.8
4)	Value Added	V_i	45.6	13.8	59.4	31.8	31.8
5)	Resource Content of Net Imports	$.5(M_i - E_i)$	-6.8	8.1		-14.9	-14.9
6)	Domestic Demand	$D_i = (4) + (5)$	38.8	21.9	60.7	16.9	16.9
		Income Level $400					
1)	Imports	M_i	24.7	64.0	88.7	-39.3	-9.8
2)	Exports	E_i	56.0	27.3	83.3	28.7	7.2
3)	Net Imports	$M_i - E_i$	-31.3	36.7	5.4	-68.0	-17.0
4)	Value Added	V_i	107.2	103.9	211.1	3.3	0.8
5)	Resource Content of Net Imports	$.5(M_i - E_i)$	-15.7	18.3		-34.0	-8.5
6)	Domestic Demand	$D_i = (4) + (5)$	91.5	122.2	213.7	-30.7	-7.7
		Income Level $800					
1)	Imports	M_i	54.8	133.8	188.6	-79.0	-9.8
2)	Exports	E_i	93.7	83.9	177.6	9.8	1.2
3)	Net Imports	$M_i - E_i$	-37.9	49.9	12.0	-87.8	-11.0
4)	Value Added	V_i	150.2	254.1	404.3	-103.9	-13.0
5)	Resource Content of Net Imports	$.5(M_i - E_i)$	-19.0	25.0	6.0	-44.0	-5.5
6)	Domestic Demand	$D_i = (4) + (5)$	131.2	279.1	410.3	-147.9	-18.5

[a] Source: Normal values for a country of 10 million from Table 2.2. (Chapter 2).

[b] The primary bias is defined as $(M_p - M_m)$, $(E_p - E_m)$, $(V_p - V_m)$, or $(D_p - D_m)$.

TABLE 2A

PRIMARY PRODUCTION BY TYPE OF COUNTRY

Eqn. No.	Form	Group	# Obs.	Constant	ℓn Y	$(\ell n\ Y)^2$	ℓn N	F	E_p	E_m	R^2	SEE
4PRI 117	BF	ALL	271	1.459	-0.265	0.012	-0.009	-0.013			.691	.08
				(7.897)	(4.192)	(2.154)	(2.065)	(0.547)				
4PRI 200	BFR		192	1.316	-0.239	0.011	-0.007	-0.537	0.184	-0.226	.774	.07
				(6.981)	(3.819)	(2.069)	(1.205)	(5.562)	(2.288)	(3.603)		
4PRI 101	BF	L	88	0.884	-0.101	-0.001	0.009	0.118			.858	.06
				(4.228)	(1.441)	(0.242)	(0.943)	(4.044)				
4PRI 196	BFR		63	1.362	-0.187	0.006	-0.035	-0.118	-0.708	-0.550	.867	.06
				(5.270)	(2.491)	(0.968)	(2.001)	(0.322)	(3.386)	(2.962)		
4PRI 113	BF	S	183	1.747	-0.358	0.019	-0.011	-0.081			.633	.09
				(6.512)	(3.901)	(2.441)	(1.071)	(2.665)				
4PRI 199	BFR		129	1.568	-0.342	0.020	0.006	-0.546	0.329	-0.197	.785	.07
				(6.022)	(3.937)	(2.689)	(0.591)	(5.600)	(3.987)	(3.066)		
4PRI 125	BF	SP	101	1.230	-0.175	0.004	-0.002	-0.059			.673	.08
				(4.146)	(1.732)	(0.483)	(0.134)	(1.637)				
4PRI 202	BFR		71	1.070	-0.163	0.005	0.017	-0.511	0.229	-0.322	.781	.07
				(2.859)	(1.337)	(0.471)	(1.130)	(3.724)	(1.980)	(1.426)		
4PRI 129	BF	SM	82	2.294	-0.559	0.036	-0.004	-0.107			.738	.07
				(5.548)	(3.902)	(2.880)	(0.281)	(2.633)				
4PRI 203	BFR		58	2.151	-0.522	0.034	-0.009	-0.465	-0.033	-0.112	.824	.06
				(6.217)	(4.379)	(3.326)	(0.603)	(3.761)	(0.189)	(1.735)		
4PRI 133	BF	P	80	1.743	-0.347	0.019	-0.019	0.011			.713	.08
				(5.869)	(3.291)	(2.036)	(2.088)	(0.303)				
4PRI 204	BFR		52	1.669	-0.315	0.016	-0.028	-0.656	0.076	-0.526	.786	.07
				(4.472)	(2.554)	(1.542)	(1.490)	(2.599)	(0.395)	(1.791)		
4PRI 137	BF	B	118	0.588	0.006	-0.009	-0.002	0.042			.644	.07
				(2.304)	(0.069)	(1.277)	(0.377)	(1.333)				
4PRI 205	BFR		93	0.908	-0.082	-0.002	-0.014	-0.567	-0.189	-0.069	.694	.07
				(3.006)	(0.872)	(0.271)	(1.323)	(4.127)	(0.972)	(0.278)		
4PRI 141	BF	M	73	2.401	-0.589	0.038	-0.005	-0.227			.862	.06
				(7.110)	(4.995)	(3.703)	(0.888)	(5.081)				
4PRI 206	BFR		47	2.324	-0.575	0.038	-0.008	-0.435	-0.002	-0.122	.891	.06
				(6.483)	(4.639)	(3.555)	(0.747)	(2.855)	(0.012)	(1.701)		

TABLE 2B

INDUSTRY PRODUCTION BY TYPE OF COUNTRY

Eqn. No.	Form	# Obs.	Constant	ℓn Y	$(\ell n\ Y)^2$	ℓn N	F	E_p	E_m	R^2	SEE
	ALL COUNTRIES	267	-0.393 (3.606)	0.116 (3.111)	-0.003 (0.792)	0.020 (7.521)	0.002 (0.175)			.754	.053
		191	-0.360 (2.979)	0.118 (2.928)	-0.004 (1.116)	0.020 (5.188)	0.144 (2.363)	-0.104 (2.046)	0.237 (5.846)	.810	.047
	LARGE	86	-0.568 (4.109)	0.192 (4.155)	-0.010 (2.447)	0.017 (2.520)	-0.051 (2.626)			.859	.044
		63	-0.286 (1.738)	0.141 (2.951)	-0.007 (1.834)	-0.001 (0.118)	-0.540 (2.306)	-0.222 (1.670)	0.461 (3.902)	.886	.038
	SMALL	181	-0.182 (1.193)	0.034 (0.644)	0.005 (1.105)	0.026 (4.756)	0.037 (2.134)			.709	.054
		128	-0.238 (1.344)	0.068 (1.150)	0.001 (0.185)	0.024 (3.457)	0.176 (2.716)	-0.115 (2.045)	0.201 (4.511)	.784	.048
	SMALL PRIMARY ORIENTED	100	0.141 (1.096)	-0.071 (1.632)	0.014 (3.620)	0.011 (2.202)	0.033 (2.049)			.831	.038
		70	0.177 (1.194)	-0.049 (0.997)	0.010 (2.496)	-0.004 (0.718)	0.126 (2.420)	-0.202 (4.361)	0.291 (2.971)	.907	.029
		81	-0.523 (1.571)	0.141 (1.224)	-0.004 (0.409)	0.056 (4.867)	0.031 (0.937)			.679	.062
		56	-0.513 (1.511)	0.144 (1.233)	-0.006 (0.586)	0.065 (4.637)	0.278 (2.298)	-0.080 (0.472)	0.193 (3.058)	.753	.059
	PRIMARY ORIENTED	83	-0.203 (1.395)	0.046 (0.894)	0.003 (0.714)	0.020 (4.671)	0.006 (0.337)			.774	.043
		54	-0.087 (0.472)	0.035 (0.556)	0.004 (0.676)	0.013 (1.509)	0.143 (1.383)	-0.237 (2.700)	0.097 (0.640)	.842	.037
	BALANCED	114	-0.183 (1.468)	0.060 (1.428)	0.001 (0.335)	0.012 (3.870)	-0.029 (1.857)			.806	.038
		90	-0.229 (1.561)	0.084 (1.872)	-0.002 (0.655)	0.013 (2.533)	0.052 (0.768)	-0.001 (0.009)	0.629 (5.104)	.841	.034
	INDUSTRY ORIENTED	70	-0.991 (3.061)	0.322 (2.846)	-0.020 (2.017)	0.034 (5.378)	0.068 (1.590)			.767	.064
		47	-0.964 (2.582)	0.306 (2.370)	-0.020 (1.830)	0.053 (4.637)	0.270 (1.700)	0.123 (0.618)	0.203 (2.725)	.815	.063

TABLE 3.

EXPORT TRADE BY TYPE OF COUNTRY

		No. of Observations	Constant	ℓn Y	(ℓn Y)^2	ℓn N	F	T	R^2	SEE
(a)	TOTAL EXPORTS (B-8)									
1)	All Countries	228	0.373	-.047	.005	-.051	-.734	.018	.390	.093
			(1.739)	(0.663)	(0.871)	(9.935)	(6.625)	(2.360)		
2)	Large Countries	79	.649	-0.125	.011	-.049	-0.975	0.007	.480	.048
			(3.976)	(2.324)	(2.319)	(7.020)	(4.504)	(1.100)		
3)	Small Countries	149	-.035	.065	-.003	-.027	-.686	.025	.205	.108
			(0.099)	(0.558)	(0.345)	(2.025)	(5.070)	(2.154)		
4)	Small Primary Countries	87	0.142	0.032	-0.002	-0.052	-0.904	0.033	.393	.092
			(0.361)	(0.247)	(0.227)	(3.452)	(6.308)	(2.607)		
5)	Small Manufacturing Countries	62	0.142	-0.078	0.012	0.027	0.401	0.016	.284	.108
			(0.243)	(0.404)	(0.756)	(1.140)	(1.140)	(0.828)		
(b)	PRIMARY EXPORTS (B-9)									
1)	All Countries	228	0.473	-0.046	0.001	-0.050	-0.872	0.010	.558	.072
			(2.878)	(0.848)	(0.222)	(12.579)	(10.261)	(1.749)		
2)	Large Countries	79	0.722	-0.136	0.009	-0.047	0.970	0.007	.642	.042
			(5.077)	(2.912)	(2.210)	(7.837)	(5.146)	(1.275)		
3)	Small Countries	149	0.236	0.036	-0.006	-0.053	-0.870	0.013	.429	.083
			(0.869)	(0.400)	(0.797)	(5.126)	(8.342)	(1.444)		
4)	Small Primary Countries	87	0.082	0.079	-0.009	-0.052	-0.870	0.022	.467	.082
			(0.235)	(0.691)	(0.909)	(3.877)	(6.838)	(1.979)		
5)	Small Manufacturing Countries	62	0.335	0.039	0.008	-0.020	-0.116	0.003	.401	.042
			(1.503)	(0.523)	(0.121)	(2.162)	(1.055)	(0.433)		

TABLE 3 (continued)

		No. of Observations	Constant	ℓn Y	$(\ell n\ Y)^2$	ℓn N	F	T	R^2	SEE
(c)	MANUFACTURING EXPORTS (B-10)									
1)	All Countries	228	-0.100	-.001	.004	-0.001	0.138	.008	.310	.076
			(0.575)	(0.016)	(0.862)	(0.358)	(1.527)	(1.253)		
2)	Large Countries	79	-0.073	0.013	0.002	-0.001	-0.005	-0.000	.452	.042
			(0.508)	(0.241)	(0.450)	(0.224)	(0.026)	(0.011)		
3)	Small Countries	149	-0.271	0.029	0.003	0.026	0.184	0.012	.344	.085
			(0.973)	(0.317)	(0.342)	(2.439)	(1.723)	(1.319)		
4)	Small Primary Countries	87	0.060	-0.047	0.006	-0.000	-0.034	0.011	.315	.041
			(0.345)	(0.828)	(1.312)	(0.021)	(0.535)	(1.922)		
5)	Small Manufacturing Countries	62	-0.194	-0.039	0.012	0.047	0.517	0.012	.522	.096
			(0.376)	(0.229)	(0.802)	(2.224)	(2.039)	(0.747)		

TABLE 4.

IMPORT TRADE BY TYPE OF COUNTRY

		No. of Observations	Constant	ℓn Y	$(\ell n\ Y)^2$	ℓn N	F	T	R^2	SE
(a)	TOTAL IMPORTS (B-11)									
1)	All Countries	228	0.396	-0.050	0.006	-0.053	0.016	0.225	.404	.091
			(1.905)	(0.726)	(0.945)	(10.510)	(2.035)	(2.223)		
2)	Large Countries	79	0.651	-0.125	0.011	-0.048	0.007	-0.056	.4354	.047
			(4.139)	(2.405)	(2.422)	(7.449)	(1.016)	(0.271)		
3)	Small Countries	149	0.010	0.057	-0.003	-0.029	0.021	0.298	.136	.105
			(0.028	(0.508)	(0.293)	(2.183)	(1.814)	(2.209)		
4)	Small Primary Countries	86	0.218	0.012	-0.001	-0.048	0.078	0.097	.211	.083
			(0.612)	(0.104)	(0.099)	(3.560)	(2.494)	(0.723)		
5)	Small Manufacturing Countries	62	0.164	-0.090	0.013	0.027	0.021	1.430	.370	.111
			(0.275)	(0.455)	(0.799)	(1.085)	(1.062)	(4.860)		
(b)	PRIMARY IMPORTS (B-12)									
1)	All Countries	228	-0.100	0.045	-0.003	-0.006	0.002	0.148	.1520	.044
			(0.988)	(1.320)	(0.941)	(2.566)	(0.427)	(2.750)		
2)	Large Countries	79	-0.010	0.012	-0.000	-0.004	-0.001	0.058	.179	.030
			(0.100)	(0.372)	(0.010)	(0.878)	(0.332)	(0.432)		
3)	Small Countries	149	-0.224	0.083	-0.006	0.001	0.003	0.165	.102	.050
			(1.368)	(1.531)	(1.297)	(0.213)	(0.483)	(2.562)		
4)	Small Primary Countries	86	-0.084	0.041	-0.003	-0.007	0.008	0.040	.041	.05
			(0.376)	(0.556)	(0.511)	(0.846)	(1.167)	(0.479)		
5)	Small Manufacturing Countries	62	-0.233	0.061	-0.003	0.019	-0.002	0.586	.441	.04
			(1.067)	(0.839)	(0.441)	(2.101)	(0.343)	(5.439)		

TABLE 4 (continued)

		No. of Observations	Constant	ℓn Y	$(\ell n\ Y)^2$	ℓn N	T	F	R^2	SEE
(c)	MANUFACTURING IMPORTS (B-13)									
1)	All Countries	228	0.496	-0.095	0.008	-0.047	0.014	0.097	.487	.064
			(3.411)	(1.958)	(2.007)	(13.228)	(2.609)	(1.258)		
2)	Large Countries	79	0.661	-0.137	0.011	-0.046	0.008	0.115	.583	.035
			(5.616)	(3.533)	(3.244)	(9.196)	(1.643)	(0.734)		
3)	Small Countries	149	0.234	-0.025	0.003	-0.030	0.018	0.133	.145	.073
			(0.989)	(0.326)	(0.474)	(3.307)	(2.291)	(1.422)		
4)	Small Primary Countries	86	0.302	-0.029	0.002	-0.041	0.020	0.056	.260	.051
			(1.237)	(0.356)	(0.323)	(4.423)	(2.574)	(0.617)		
5)	Small Manufacturing Countries	62	0.398	-0.151	0.016	0.008	0.023	0.844	.316	.079
			(0.934)	(1.069)	(1.347)	(0.443)	(1.665)	(4.020)		

TABLE 5.

EFFECTS OF TRADE PATTERNS ON ACCUMULATION PROCESSES BY COUNTRY SIZE

		No. of Observations	Constant	ℓn Y	$(\ell n\ Y)^2$	ℓn N	F	E_p	E_m	R^2	SEE
(a)	GROSS DOMESTIC INVESTMENT AS A PER CENT OF GDP (A-2)										
1)	All Countries	186	-0.048	0.042	-0.001	0.003	0.138	0.067	0.162	.432	.044
			(0.411)	(1.109)	(0.349)	(0.862)	(2.023)	(1.485)	(2.956)		
2)	Large Countries	66	-0.273	0.126	-0.009	0.002	0.187	0.215)	0.390	.428	.045
			(1.498)	(2.297)	(1.964)	(0.232)	(0.745)	(1.497)	(2.674)		
3)	Small Countries	120	0.173	-0.041	0.007	0.001	0.141	0.056	0.082	.509	.042
			(1.052)	(0.748)	(1.457)	(0.107)	(2.083)	(1.283)	(1.321)		
(b)	GROSS NATIONAL SAVINGS AS A PER CENT OF GNP (A-1)										
1)	All Countries	186	-0.175	0.057	-0.002	0.013	-0.351	0.167	0.246	.668	.041
			(1.612)	(1.599)	(0.579)	(3.984)	(5.446)	(3.913)	(4.762)		
2)	Large Countries	66	-0.271	0.119	-0.008	0.003	-0.495	0.145	0.388	.564	.047
			(1.420)	(2.071)	(1.682)	(0.271)	(1.881)	(0.965)	(2.535)		
3)	Small Countries	120	-0.0100	-0.011	0.005	0.013	-0.328	0.175	0.169	.764	.036
			(0.070)	(0.233)	(1.255)	(2.434)	(5.613)	(4.448)	(3.157)		
(c)	CURRENT GOVERNMENT REVENUE AS A PER CENT OF GDP (A-4)										
1)	All Countries	186	0.202	-0.060	0.009	0.003	-0.093	0.128	0.317	.603	.054
			(1.425)	(1.292)	(2.257)	(0.593)	(1.113)	(2.312)	(4.715)		
2)	Large Countries	66	0.269	-0.100	0.011	0.015	-0.111	0.218	1.005	.698	.054
			(1.223)	(1.518)	(1.940)	(1.218)	(0.365)	(1.256)	(5.706)		
3)	Small Countries	120	0.115	-0.042	0.008	0.024	-0.075	0.107	0.119	.639	.047
			(0.618)	(0.688)	(1.563)	(3.337)	(0.970)	(2.071)	(1.704)		
(d)	TAX REVENUE AS A PER CENT OF NATIONAL INCOME (A-5)										
1)	All Countries	186	0.163	-0.052	0.010	0.003	-0.174	0.100	0.402	.644	.066
			(0.939)	(1.021)	(2.071)	(0.639)	(1.693)	(1.480)	(4.888)		
2)	Large Countries	66	0.431	-0.166	0.018	0.013	-0.209	0.136	1.132	.756	.064
			(1.664)	(2.132)	(2.720)	(0.861)	(0.585)	(0.666)	(5.457)		
3)	Small Countries	120	-0.079	0.019	0.004	0.020	-0.156	0.089	0.251	.630	.062
			(0.323)	(0.239)	(0.544)	(2.143)	(1.554)	(1.321)	(2.734)		

TABLE 6: A CLASSIFICATION OF TRADE PATTERNS

A. PRIMARY-ORIENTED COUNTRIES

Small Countries					Large Countries				
Country	1960 GNPPC	Export Bias (T)	Total Exports (E)	Capital Inflow (J)	Country	1960 GNPPC	Export Bias (T)	Total Exports (E)	Capital Inflow (J)
			(P1)	HIGH EXPORT LEVELS					
Malawi	42*	-.05*	.11*	.067	Congo Rep.	58	-.06*	.10*	-.008*
Tanzania	67*	-.12*	.11*	-.053*					
					Iran	178	-.15	.09	-.026
Kenya	79*	-.15*	.21*	-.023*					
Ceylon	134	-.12	.05	-.028	S.Africa	426	-.10	.09	-.001
Zambia	155	-.40*	.40*	-.157					
Ivory Coast	181	-.12	.08	-.062					
Saudi Arabia	202*	-.85*	.66*						
Iraq	204	-.27	.17	-.045					
Rhodesia	206	-.11*	.41*	-.071					
Malaysia	226	-.06	.19	-.051					
Panama	363	-.06	.07	-.011					
Jamaica	382	-.12	.09	-.010					
Libya	534*	-.89*	.65*	-.389*					
Trinidad	510	-.41*	.37*						
			(P2)	NORMAL EXPORT LEVELS					
Mozambique	90*	-.08*	-.03*						
Sudan	77	-.05	.01	-.016	Thailand	97	-.05	.03	-.011
Syria	140	-.06	.04		Philippines	135	-.05	.02	.015
Nicaragua	237	-.05	.02	-.005	Brazil	210	-.06	-.01	-.012
Algeria	299	-.13	.02	-.016					
Venezuela	753	-.29	.04	-.060					
Denmark	1399	-.10	.02	-.017					
			(P3)	HIGH CAPITAL INFLOW					
Ghana	222	-.03	-.06	.049	Nigeria	67	-.05	.05	.032
Cuba	323	-.14*	.03*	.084*					
		(P4)		LOW TRADE: IMPORT SUBSTITUTION					
					Argentina	691	-.07	-.07	-.009
New Zealand	1558	-.23	-.07	-.010					
Australia	1566	-.20	-.12	.007					

TABLE 6: A CLASSIFICATION OF TRADE PATTERNS

B. BALANCED COUNTRIES

Small Countries					Large Countries				
Country	1960 GNPPC	(T)	(E)	(J)	Country	1960 GNPPC	(T)	(E)	(J)
				(B2) NORMAL EXPORT LEVELS					
Uganda	87	-.03*	.05*	-.055	Burma	59	.004	.005	-.032
Malagasy	89	.05*	-.05*	.011*	Indonesia	89	.02	-.03	.010
Cameroon	109	.06	.01	-.039	Colombia	246	-.03*	-.04*	-.009
Angola	151	-.01	-.03		Mexico	376	-.04	-.02	.014
Morocco	165	-.04	-.01	-.037	Spain	378	.01	-.02	.021
Honduras	189	-.01	-.02	-.034	France	1322	.03	.001	-.004
					U.S.S.R	628	(a)	-.04	
El Salvador	209	-.01	.003	-.025	Canada	1724	-.03	.005	.006
Peru	258	.05	-.04	-.006					
Ireland	683	-.02	.04	.013					
Sweden	1734	-.03	-.03	-.017					
				(B3) HIGH CAPITAL INFLOW					
Costa Rica	339	.003	-.04	.039	Pakistan	73	.06	-.03	.036
Greece	472	-.02	-.16	.077	India	85	.003	.03	.041
					UAR	111	-.02	.06	.036
				(B4) LOW TRADE: IMPORT SUBSTITUTION					
Cambodia	114	.05	-.07	-.016					
Ecuador	179	.01	-.06	-.026	Turkey	224	-.01	-.05	.007
Senegal	218	.01	-.07	-.008	U.S.A.	2716	(a)	-.06	
Dominican Republic	252	.01	-.07	-.028					
Guatemala	266	.03	-.10	-.005					
Bulgaria	407	.02	-.08	-.007					
Chile	414	-.04	-.07	-.010					
Uruguay	553	.03	-.15	-.032					
Finland	1208	-.01	-.07	-.013					

(a) Trade indices are not reliable for the U.S.A. and U.S.S.R. because of extreme values of N.

TABLE 6: A CLASSIFICATION OF TRADE PATTERNS

C. INDUSTRY-ORIENTED COUNTRIES

Small Countries					Large Countries				
Country	1960 GNPPC	(T)	(E)	(J)	Country	1960 GNPPC	(T)	(E)	(J)
(M1) HIGH EXPORT LEVELS									
Portugal	277	.18	.06	.026					
Hong Kong	349	.61	.41	.083					
Netherlds.	1126	.09	.19	-.018	Germany R.	1343	.11	.06	.002
Belgium	1224	.19	.07	-.024	U.K.	1348	.10	.05	.006
Norway	1276	.10	.11	-.017					
(M2) NORMAL EXPORT LEVELS									
					Yugoslavia	335	.07	-.01	
					Romania	382	.06*	-.03*	
					Poland	454	.08	-.03	
					Japan	500	.04	.02	.009
Austria	888	.14	-.02	-.017	Italy	763	.07	.04	-.013
Switzerld.	1820	.16	-.01	-.030	E. Germany	931		-.05	
(M3) HIGH CAPITAL INFLOW									
S. Vietnam	97	.07	-.13	.063	Korea R.	106	.10	-.07	.051
Bolivia	122	.06	-.03	.025#					
China R.	149	.08	-.06	.021#					
Jordan	159	.08	-.08	.103					
Tunisia	172	.09	-.04	.091					
Lebanon	440	.15*	-.0004*	.052*					
Puerto Rico	742			.181					
Israel	849	.11	-.10	.102					
(M4) LOW TRADE: IMPORT SUBSTITUTION									
					Ethiopia	49	.07	-.06	-.025
Paraguay	184	.13#	-.11#	-.041	Afghanistan	65	.12*	-.10*	.03*
Singapore	452	.12*	-.12*	-.034					
Hungary	580	.06	-.08						
Czecho-slovakia	826	.12	-.07						

* Data for 1965 only
\# 1955-60 average

FOOTNOTES TO TABLE 6:

1. The following countries included in Table 6 were not included in the primary and industry production regressions summarized in Table 2:

Afghanistan	Malagasy
Bulgaria	Mozambique
Cuba	Poland
Czechoslovakia	Romania
East Germany	Saudi Arabia
Hungary	Switzerland
India	U.S.S.R.
Iran	Yugoslavia
Libya	

The following countries were included in the BF production regressions but not in the BFR regressions:

India; Nigeria; Puerto Rico

2. The following countries included in Table 6 were not included in the trade regressions summarized in Tables 3 and 4:

Afghanistan	Puerto Rico
East Germany	Romania
Libya	Saudi Arabia

3. The following countries were included in the trade and production regressions but excluded from Table 6:

Dahomey	Sierra Leone
Mali	Togo

4. The following countries with primary trade biases in Table 6 had been classified as manufacturing countries on the basis of their primary and industry production:

Angola	Rhodesia
Chile	Zambia
Kenya	

The following countries with industry trade biases in Table 6 had been classified as primary countries on the basis of their primary and industry production:

Costa Rica; Dominican Republic; Ecuador

TABLE 7. EXAMPLES OF DEVELOPMENT PATTERNS. DEVIATIONS FROM PREDICTED VALUES

TABLE 7.A		Export Bias T	Capital Inflow J	Exports E	Primary Exports E_p	Other Exports E_m	Total Imports M	Primary Imports M_p	Other Imports M_m	Primary Output V_p	Industry Output V_m	Production Bias $V_m - V_p$	Investment I	Growth Rate (Total GDP) % G.R.
PRIMARY-ORIENTED TRADE: HIGH EXPORT														
1. Iran	55		-.001										-.028	7.0
Y/N = $178	60	-.137	-.031	.086	.112	-.025	-.024	-.018	-.006				-.027	
N = 21.5 m	65	-.159	-.021	.107	.133	-.026	-.012	-.014	.002					
2. South Africa	55	-.143	-.007	.122	.132	-.010	.086	-.023	.109	.020	-.066	-.086	.020	3.8
Y/N = $426	60	-.109	-.031	.110	.109	.000	.065	-.021	.085	.016	-.074	-.089	.021	5.9
N = 16.4 m	65	-.099	.033	.076	.087	-.012	.096	-.017	.113	.004	-.049	-.052	.077	
3. Tanzania	55									.114	.0102	-.1035	.0357	
Y/N = $67	60		-.057							.094	-.0586	-.1530	-.0109	2.9
N = 10 m	65	-.118	-.048	.113	.114	-.004	.077	-.003	.080	.032	-.0460	-.0783	.0252	
4. Zambia	55		-.099							.253	-.027	-.2805	.1067	6.0
Y/N = $155	60		-.141							.221	-.059	-.2797	.0378	6.4
N = 3.2 m	65	-.403	-.174	.403	.040	.000	.134	-.021	.155	.101	-.021	-.1215	.0599	
5. Ivory Coast	60	-.120	-.073	.074	.097	-.023	-.002	-.020	.018	.162	-.035	-.1971	-.0133	19.7
Y/N = $181	65	-.118	-.050	.080	.099	-.019	.018	-.012	.030	.081	.047	-.0340	.0098	
N = 3.3 m														
6. Iraq	55	-.401	-.102	.330	.365	-.035	.067	.017	.050	.201	-.046	-.2471	.0391	5.8
Y/N = $204	60	-.192	-.041	.098	.145	-.047	.073	.014	.059	.182	-.052	-.2345	.0047	7.7
N = 6.9 m	65	-.356	-.050	.251	.303	-.053	.043	.004	.039	.207	-.071	-.2780	-.0393	
7. Rhodesia	55		.095							-.090	.069	.159	.144	6.7
Y/N = $206	60		-.046							-.111	.060	.171	-.012	7.2
N = 3.6 m	65	-.109	-.096	.415	.262	.153	.168	-.011	.179	-.100	.050	.150	-.052	
8. Malaysia	55		-.130										-.070	2.6
Y/N = $226	60	-.100	-.056	.169	.134	.035				.077	-.085	-.162	-.002	6.8
N = 8.1 m	65	-.027	-.045	.206	.117	.090	.160	.092	.068	.049	-.070	-.112	-.004	
9. Jamaica	55	-.032	.031	.006	.019	-.013	.033	.012	.021	-.081	.047	.128	-.012	8.3
Y/N = $382	60	-.132	-.015	.090	.111	-.021	.057	.014	.044	-.069	.047	.117	-.002	4.9
N = 1.6 m	65	-.106	-.006	.086	.096	-.010	.066	.043	.023	-.055	.034	.088	-.010	
PRIMARY-ORIENTED TRADE: NORMAL EXPORTS														
10. Thailand	55	-.047	-.013	.023	.040	-.007	.032	-.005	.037	-.015	.015	.031	.008	6.9
Y/N = $97	60	-.046	-.014	.029	.037	-.009	.027	-.010	.037	-.038	-.014	.024	.053	7.4
N = 26.4 m	65	-.059	-.008	.048	.054	-.005	.049	-.007	.056	-.068	-.003	.065	.077	
11. Philippines	50									-.012	-.045	-.033		
Y/N = $135	55	.0167	-.0399	-.0501	-.0334	-.0167	-.0115	-.0032	-.009	.010	-.030	-.040	-.041	6.1
N = 27.4 m	60	-.0396	.0326	.0896	.0246	-.0150	.0424	.0048	.038	-.063	-.002	.061	.030	5.0
	65	-.0600	-.0033	-.0440	.0520	-.0080	.0431	.0230	.020	-.049	.022	.072	.050	

TABLE 7 (Continued)

(7.A)

		T	J	E	E_p	E_m	M_p	M_p	M_n	V_p	V_m	V_m-V_p	I	G.R.
(PRIMARY-ORIENTED TRADE: NORMAL EXPORTS)														
12. Brazil	50									-.0635	.004	.0677		
Y/N = $210	55	-.038	.006	-.019	.010	-.027	-.021	-.015	-.006	-.0493	.008	.0573	-.0157	5.9
N = 69.7 m	60	-.054	.008	-.008	.023	-.031	-.012	-.013	.004	-.0583	.035	.0932	-.0147	6.4
	65	-.081	-.016	.016	.049	-.033	-.018	-.007	-.011	-.0689	.048	.1169	-.0738	
13. Sudan	55	-.051	-.052	.034	.043	-.008	.032	.031	-.007	.072	-.016	-.089	-.041	4.3
Y/N = $77	60	-.056	-.022	.024	.040	-.016	.018	.051	-.033	.056	-.014	-.070	.005	7.2
N = 11.8 m	65	-.045	-.011	-.007	.019	-.026	-.023	-.003	-.020	.059	-.030	-.088	-.004	
14. Syria	55									-.094	.044	.137		3.1
Y/N = $146	60									-.130	.053	.183		7.9
N = 4.6 m	65	-.062		.044	.053	-.009	.018	.035	-.017	-.008	-.005	.002	.013	
15. Nicaragua	50									.037	-.009	-.046		
Y/N = $237	55	-.000	-.025	-.037	-.018	-.019	-.074	-.043	-.032	.034	-.012	-.047	-.041	5.7
N = 1.4 m	60	-.031	-.023	.016	.024	-.008	-.070	-.040	.024	.021	-.003	-.024	-.007	7.9
	65	-.071	.014	.020	.046	-.025	.003	-.029	.034	.072	-.054	-.125	-.008	
16. Venezuela	50									.143	-.102	-.245		
Y/N = $753	55	-.281	-.038	.055	.168	-.113	-.036	-.054	.018	.155	-.105	-.260	.050	8.3
N = 7.3 m	60	-.292	-.083	.045	.168	-.124	-.081	-.040	-.041	.162	-.121	-.283	-.035	4.5
	65	-.299	-.039	.031	.165	-.134	-.059	-.043	-.016	.158	-.130	-.289	-.017	
PRIMARY-ORIENTED TRADE: HIGH CAPITAL INFLOW														
17. Nigeria	50									.149	-.046	-.195		3.5
Y/N = $67	55	.006	-.003	-.002	-.033	-.017	-.021	-.008	-.014	.156	-.048	-.204		5.1
N = 52 m	60	-.022	.028	.027	.025	-.015	.039	-.001	.040	.126	-.026	-.152		
	65	-.070	.037	.068	.052	-.008	.078	-.001	.077	.107	-.032	-.140		
18. Ghana	55	-.0803	-.0331	.0373	.0588	-.0215	.0224	-.0159	.038	.227	-.011	-.237	-.015	
Y/N = $222	60	-.0314	.0241	-.0340	-.0013	-.0327	.0067	-.0188	.026	.206	.022	-.184	-.001	3.8
N = 6.8 m	65	-.0196	.0753	-.0832	-.0318	-.0514	-.0141	-.0264	.012	.193	.035	-.157	-.014	
19. Cuba	65	-.1445	.0843	.0285	.0865	-.0580	.0976	-.0215	.119				.033	3.8*
Y/N = $323														
N = 6.8														
PRIMARY-ORIENTED TRADE: IMPORT SUBSTITUTION														
20. Argentina	50									-.045	.038	.083		
Y/N = $691	55	-.054	-.000	-.082	-.014	-.068	-.078	-.028	-.050	-.016	.027	.044	-.029	2.5
N = 20.7	60	-.079	-.001	-.064	.007	-.071	-.063	-.038	-.025	.000	.035	.035	-.017	4.2
	65	-.071	-.018	-.075	-.002	-.073	-.091	-.036	-.055	.006	.041	.035	-.033	

*1960-65

TABLE 7.B

			T	J	E	E_p	E_m	M
BALANCED TRADE: NORMAL EXPORTS								
1.	Colombia	50						
	Y/N = $246	55	-.051	-.026	-.023	.014	-.037	-.041
	N = 15.4	60		-.003				
		65	-.026	-.016	-.039	-.007	-.033	-.057
2.	Mexico	50						
	Y/N = $376	55	-.012	.005	.010	.011	-.001	.008
	N = 36.0	60	-.031	.012	-.023	.004	-.027	-.021
		65	-.048	.015	-.021	.013	-.034	-.019
3.	Spain	55	.012	.004	-.079	-.045	-.034	-.072
	Y/N = $378	60	.008	.007	-.023	-.015	-.007	-.015
	N = 30.3	65	.006	.037	-.023	-.017	-.011	.008
4.	El Salvador	55		-.046				
	Y/N = $209	60	-.017	-.032	-.012	.003	-.014	-.030
	N = 2.5	65	.006	-.017	.012	.003	-.009	.005
5.	Peru	50						
	Y/N = $258	55	.052	.006	-.037	-.044	.008	-.017
	N = 10.0	60	.037	-.016	-.024	-.031	.006	-.030
		65	.071	.003	-.066	-.068	.003	-.045
6.	Ireland	50						
	Y/N = $683	55	-.059	.002	.025	.042	-.017	.070
	N = 2.8	60	-.014	.002	.048	.031	.017	.086
		65	-.020	.024	.041	.030	.010	.097
BALANCED TRADE: HIGH CAPITAL INFLOW								
7.	Pakistan	50						
	Y/N = $73	55						
	N = 92.7	60	.066	.024	-.031	-.049	.018	-.012
		65	.057	.048	-.024	-.041	.017	.020
8.	India	50						
	Y/N = $85	55	.022		.032	.005	.027	.016
	N = 429	60	.004	.036	.027	.012	.016	-.005
		65	.002	.047	.032	.015	.017	.009
9.	United Arab Rep.	50						
	Y/N = $111	60	-.026	.041	-.054	.040	.014	.095
	N = 25.8	65	-.012	.031	.063	.037	.026	.087
10.	Costa Rica	50						
	Y/N = $339	55	.046	-.025	-.023	.009	-.031	-.056
	N = 1.3	60	-.015	.009	-.044	-.015	-.030	-.041
		65	.021	.068	-.044	-.032	-.011	.015
11.	Greece	50						
	Y/N = $472	55	.016	.051	-.158	-.087	-.071	-.059
	N = 8.3	60	-.003	.071	-.161	-.079	-.082	-.048
		65	-.031	.086	-.170	-.070	-.101	-.047
BALANCED TRADE: IMPORT SUBSTITUTION								
12.	Turkey	50						
	Y/N = $224	55	-.001	.000	-.057	-.028	-.029	-.040
	N = 27.5	60	.001	.013	-.067	-.034	-.033	-.061
		65	-.018	.001	-.049	-.016	-.034	-.055
13.	Chile	50						
	Y/N = $414	55	-.000	-.024	-.149	-.074	-.075	-.163
	N = 7.7	60	-.034	.010	-.128	-.047	-.081	-.058
		65	-.053	-.013	-.118	-.085	-.085	-.128

b	E_m	M	M_p	M_m	V_p	V_m	$V_m - V_p$	I	G.R.
					.081	-.034	-.115		
014	-.037	-.041	-.025	-.016	.078	-.043	-.121	-.012	4.7
					.074	-.035	-.110		4.4
007	-.033	-.057	-.026	-.031	.043	-.035	-.078	-.008	
					-.015	-.027	-.013		
011	-.001	.008	-.024	.031	-.005	-.036	-.031	-.053	6.0
004	-.027	-.021	-.031	.010	-.022	-.028	-.005	-.051	6.4
013	-.034	-.019	-.026	.007	-.031	-.016	.015	-.046	
045	-.034	-.072	-.015	-.058	-.000	.003	.003	-.015	5.1
015	-.007	-.015	.018	-.033	.024	-.007	-.030	.027	8.7
017	-.011	.008	.007	.001	-.018	-.009	.009	.050	
					.000	.000	-.000		4.2
003	-.014	-.030	-.021	-.009	-.039	.008	.047	-.038	6.6
003	-.009	.005	-.017	.022	-.038	.012	.049	-.034	
					.022	-.003	-.025		
044	.008	-.017	-.010	-.008	.021	-.011	-.033	.049	4.7
031	.006	-.030	-.034	.003	-.008	-.005	.003	.022	6.8
068	.003	-.045	-.045	-.001	-.036	-.029	.007	.012	
					.058	-.014	-.072		
042	-.017	.070	.034	.036	.075	.003	-.072	-.058	0.8
031	.017	.086	.042	.044	.038	.011	-.027	-.030	3.9
030	.010	.097	.036	.061	.015	.020	.005	.002	
					.086	-.044	-.130		
					.019	-.023	-.042		2.9
049	.018	-.012	.002	-.014	.043	-.026	-.070	.016	6.0
041	.017	.020	.007	.013	.009	-.001	-.010	.033	
					.011				
005	.027	.016	-.009	.025	-.034				3.3
012	.016	-.005	-.009	.004	-.026	.004	-.024	-.005	3.7
015	.017	.009	-.006	.015	-.006	.013	.019	.007	
					-.051	-.026	.024		6.2 (1955)
040	.014	.095	.060	.035	-.080	.015	.095	.033	6.3
037	.026	.087	.070	.017	-.055	.033	.088	.021	
					.100	-.013	-.113		
009	-.031	-.056	-.032	-.024	.081	-.040	-.120	-.015	5.0
015	-.030	-.041	-.037	-.004	-.031	.022	.053	.020	4.6
032	-.011	.015	-.042	.055	-.022	.016	.032	.086	
					-.008	-.013	-.006		
087	-.071	-.059	-.005	-.054	.022	-.031	-.053	-.018	6.2
079	-.082	-.048	-.021	-.027	-.007	-.016	-.009	.049	7.2
070	-.101	-.047	-.014	-.030	.039	-.055	-.098	.063	
					.132	-.062	-.195		
028	-.029	-.040	-.021	-.019	.071	-.031	-.102	-.040	6.8
034	-.033	-.061	-.030	-.031	.100	-.030	-.130	-.027	4.3
016	-.034	-.055	-.033	-.032	.055	-.024	-.079	-.030	
					-.096	-.038	.052		
074	-.075	-.163	-.047	-.110	-.099	-.023	.076	-.105	3.3
047	-.081	-.058	-.035	-.078	-.040	.043	.083	-.029	4.7
085	-.085	-.128	-.047	-.081	-.040	.054	.094	-.028	

TABLE 7.C

		T	J	E	E_p	E_m	M
INDUSTRY-ORIENTED TRADE: HIGH EXPORTS							
1. Portugal	50						
Y/N = $277	55	.131	.017	.039	-.098	.033	-.019
N = 8.8 m	60	.166	.033	.050	-.107	.059	.013
	65	.187	.019	.077	-.090	.097	.058
INDUSTRY-ORIENTED TRADE: NORMAL EXPORTS							
2. Yugoslavia	55	.064		-.078	-.071	-.007	-.043
Y/N = $335	60	.060		-.042	-.051	.009	-.015
N = 18.4 m	65	.087		.013	-.037	.050	.003
3. Poland	55	.079		-.044	-.061	.018	-.048
Y/N = $454	60	.090		-.039	-.065	.025	-.031
N = 29.7 m	65	.075		-.030	-.052	.023	-.032
4. Japan	55	.073	.009	.027	-.023	.050	.028
Y/N = $500	60	.046	.015	.016	-.015	.031	.017
N = 93.2	65	.040	.003	.021	-.009	.031	.009
5. Italy	50						
Y/N = $763	55	.040	.014	-.001	-.020	.019	.009
N = 49.6	60	.069	.004	.034	-.018	.051	.035
	65	.085	-.024	.047	-.019	.066	.022
INDUSTRY-ORIENTED TRADE: HIGH CAPITAL INFLOW							
6. Korea	55	.117	.046	-.138	-.138	.117	-.064
Y/N = $106	60	.086	.059	-.092	-.092	.086	-.012
N = 28.4 m	65	.120	.043	-.054	-.054	.120	.008
7. Bolivia	55		.036				
Y/N = $122	60	.061	.013	-.048	-.054	.007	-.019
N = 3.5 m	65	.060	.003	-.023	-.041	.019	.041
8. China Republic	50						
Y/N = $149	55	.077	.036	-.126	-.102	-.025	-.077
N = 10.6 m	60	.084	.006	-.071	-.077	.006	-.037
	65	.081	.008	-.049	-.065	.016	-.013
9. Jordan	55		.179				
Y/N = $159	60	.096	.128	-.091	-.093	.003	.127
N = 1.7 m	65	.073	.077	-.083	-.078	-.005	.083
10. Tunisia	60	.097	.068	-.040	-.068	.028	.037
Y/N = $172	65	.076	.121	-.043	-.060	.017	.076
N = 3.9 m							
11. Puerto Rico	50						
Y/N = $742	55		.1248				
N = 2.4 m	60		.1557				
	65		.2066				
12. Israel	50						
Y/N = $849	55	.117	.155	-.050	-.153	-.036	-.034
N = 2.1 m	60	.124	.109	-.004	-.115	.009	.001
	65	.100	.095	-.025	-.100	.001	-.003
INDUSTRY-ORIENTED TRADE: IMPORT SUBSTITUTION							
13 Hungary	60	.054		-.109	-.081	-.028	-.089
Y/N = $580	65	.073		-.055	-.064	.009	-.050
N = 10 m							

	E_m	M	M_p	M_m	V_p	V_m	V_m-V_p	I	G.R.
					-.021				
98	.033	-.019	.015	-.034	-.036	.099	.135	-.033	4.0
07	.059	.013	.023	-.010	-.063	.122	.185	-.006	6.4
90	.097	.058	.037	.021	-.065	.138	.203	-.012	
					(1950) -.069	.068	.137		
71	-.007	-.043	.015	-.058	-.017	.065	.082	.156	8.9
51	.009	-.015	-.008	-.007	-.009	.084	.093	.214	7.4
37	.050	.003	.005	-.003	-.023	.206	.229	.197	
					(1950) .059	.013	-.046		
61	.018	-.048	-.007	-.042	.043	.057	.014	.030	8.1
65	.025	-.031	-.008	-.023	.043	.081	.038	.038	5.8
52	.023	-.032	-.037	.004	.050	.090	.040	.040	
23	.050	.028	.054	-.026	-.040	-.030	.009	.081	8.1
15	.031	.017	.029	-.012	-.071	.017	.088	.155	10.6
09	.031	.009	.020	-.011	-.061	-.012	.049	.111	
					.012	.023	.012		
20	.019	.009	.028	-.019	.009	.004	-.004	-.008	5.4
18	.051	.035	.036	-.001	-.020	.010	.030	.012	5.3
19	.066	.022	.028	-.006	-.015	-.003	.012	-.032	
38	.117	-.064	-.014	-.050	.044	-.023	-.067	-.024	5.4
92	.086	-.012	.014	-.025	-.005	-.009	-.004	-.011	5.8
54	.120	.008	.032	-.024	.027	.023	-.004	-.012	
54	.007	-.019	-.014	-.005	-.070			-.009	4.8
41	.019	.041	-.008	-.049	-.060			.001	
					-.099	.032	.131		
02	-.025	-.077	.009	-.087	-.090	.025	.115	.008	8.2
77	.006	-.037	.006	-.043	-.061	.036	.097	.028	9.5
55	.016	-.013	.021	-.034	-.068	.021	.089	.046	
									8.8
93	.003	.127	.091	.036	-.244	-.008	.236	-.005	9.4
78	-.005	.083	.075	.008	-.133	-.006	.127	-.017	
58	.028	.037	.010	.027	-.120	.050	.170	.038	5.3
50	.017	.076	.024	.052	-.112	.056	.168	.100	
					-.034	-.014	.021		
					-.054	-.009	.045	-.011	5.5
					-.080	-.002	.078	.026	8.3
					-.098	-.003	.095	.061	
					-.136	.077	.214		
63	-.036	-.034	.025	-.058	.006	-.162	-.168	.075	11.5
5	.009	.001	.026	-.025	-.075	.018	.094	.063	9.5
00	.001	-.003	.013	-.017	-.079	-.006	.073	.041	
					(1950) -.033	.092	.125		
1	-.028	-.089	.008	-.097	55) -.024	.108	.132	.	5.8
4	.009	-.050	-.013	-.037	-.017	.102	.119	.040	5.2
					-.026	.121	.147	-.024	

Figure 1. COMPARISON OF PRODUCTION PATTERNS

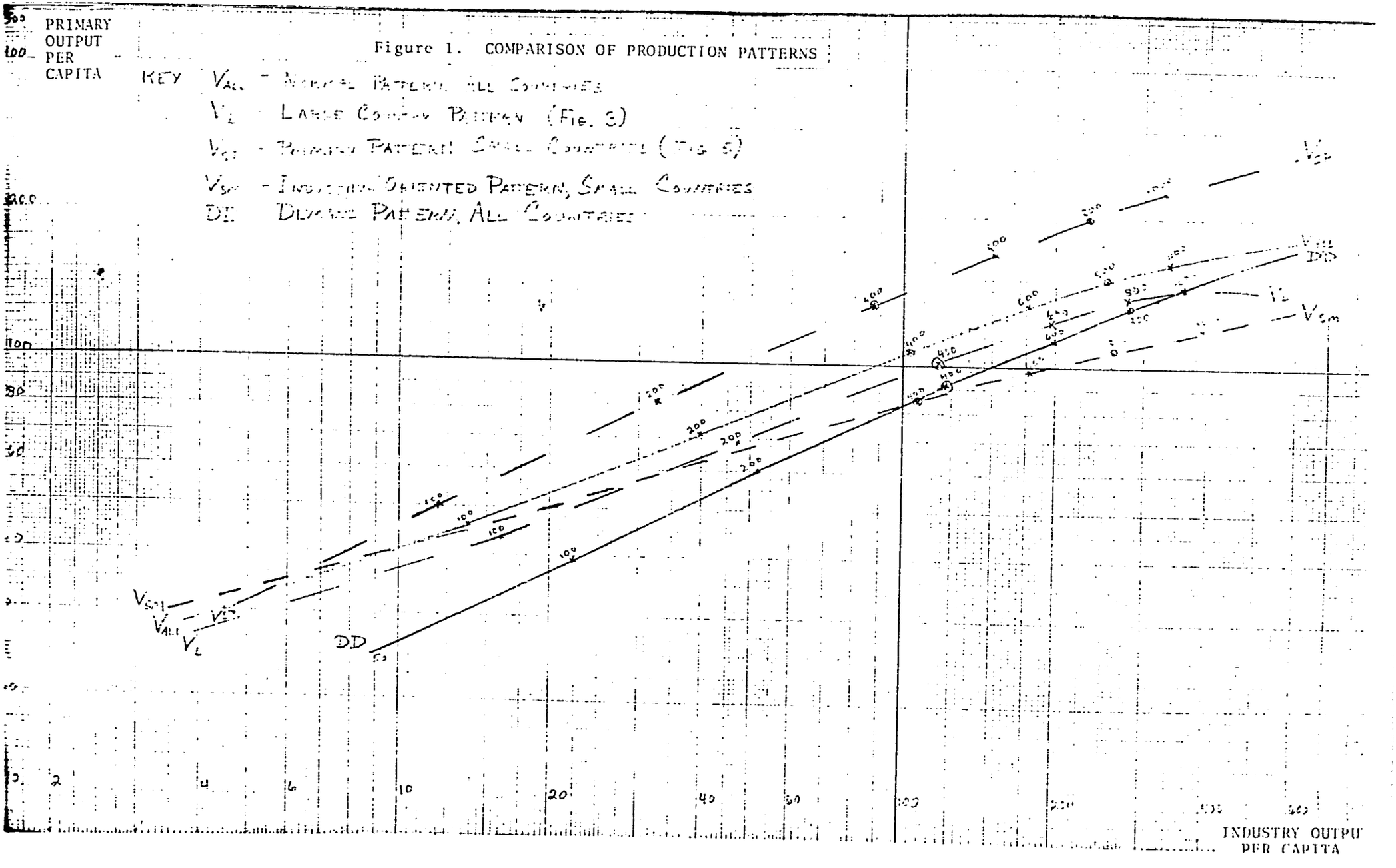
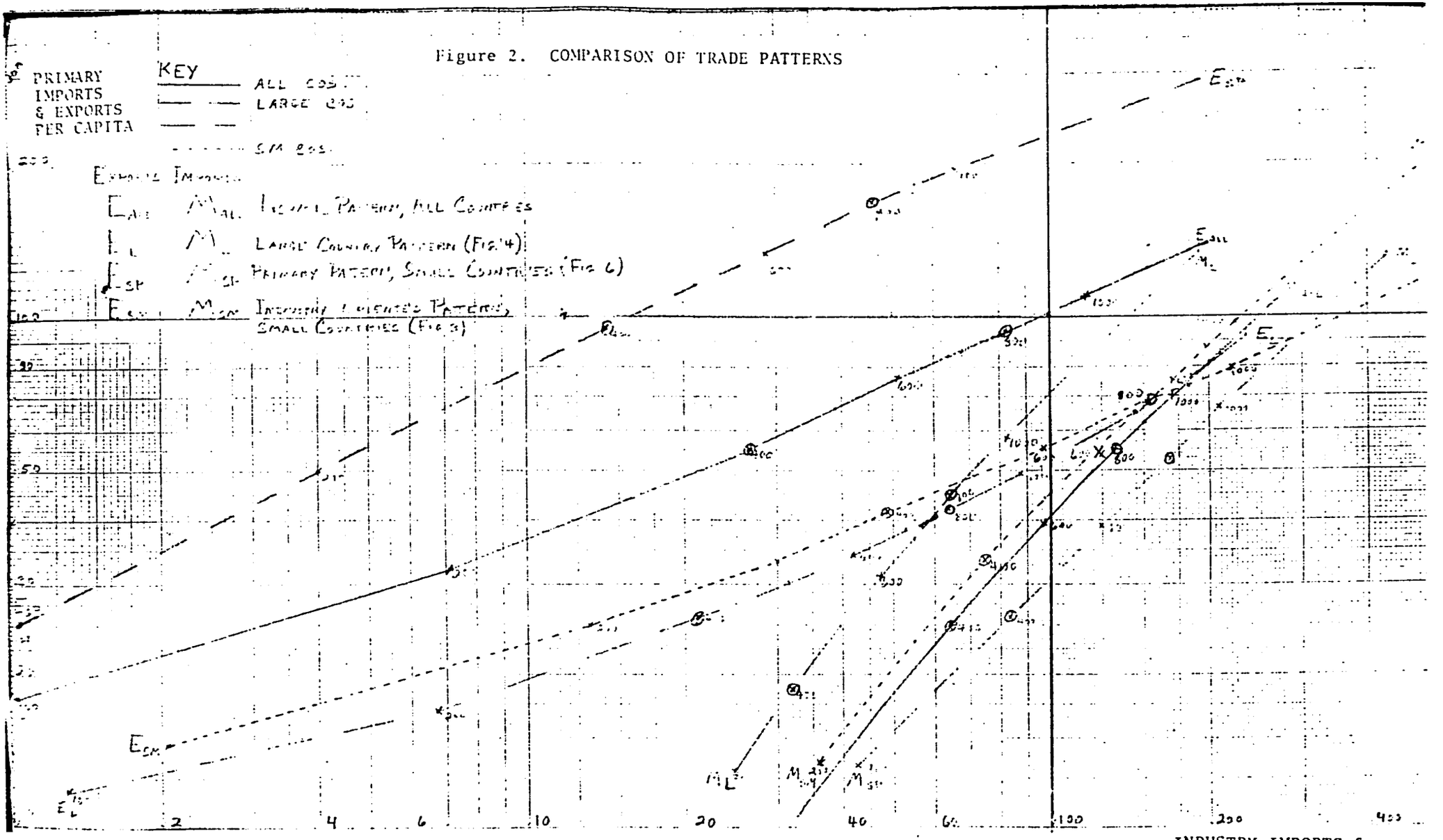


Figure 2. COMPARISON OF TRADE PATTERNS



INDUSTRY IMPORTS & EXPORTS PER CAPITA

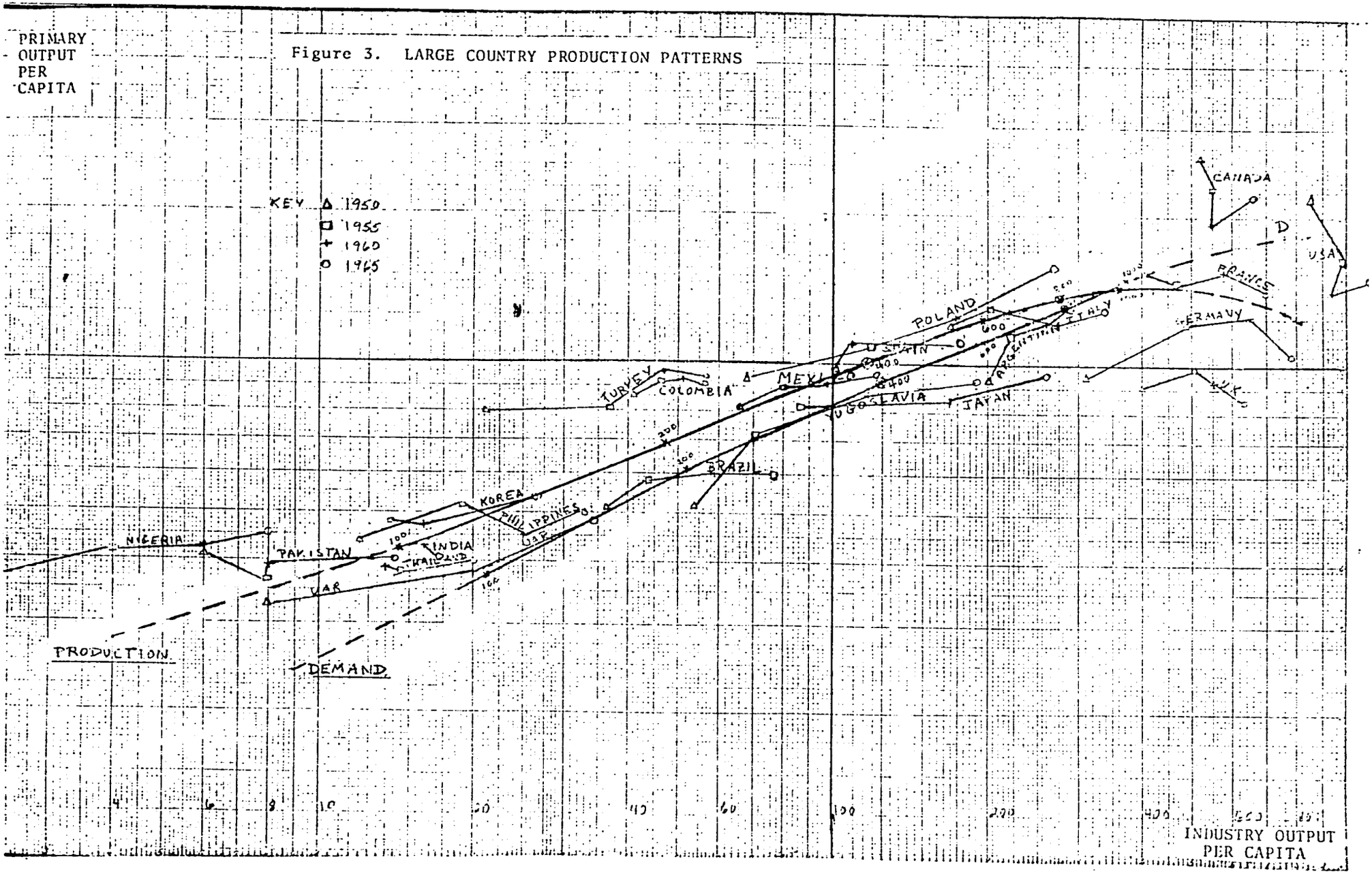


Figure 3. LARGE COUNTRY PRODUCTION PATTERNS

Figure 5. PRIMARY ORIENTED PRODUCTION PATTERNS
(Small Countries)

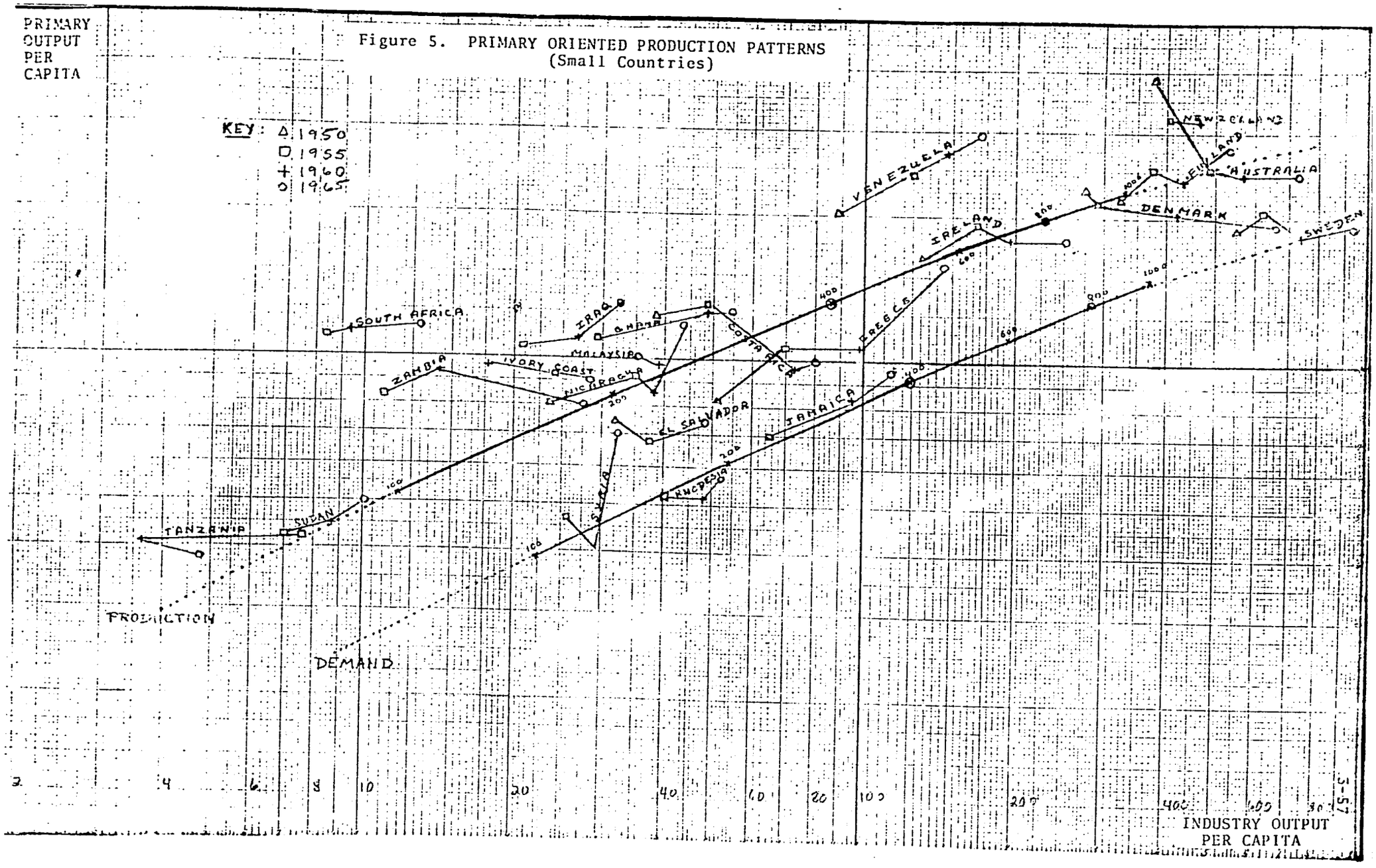
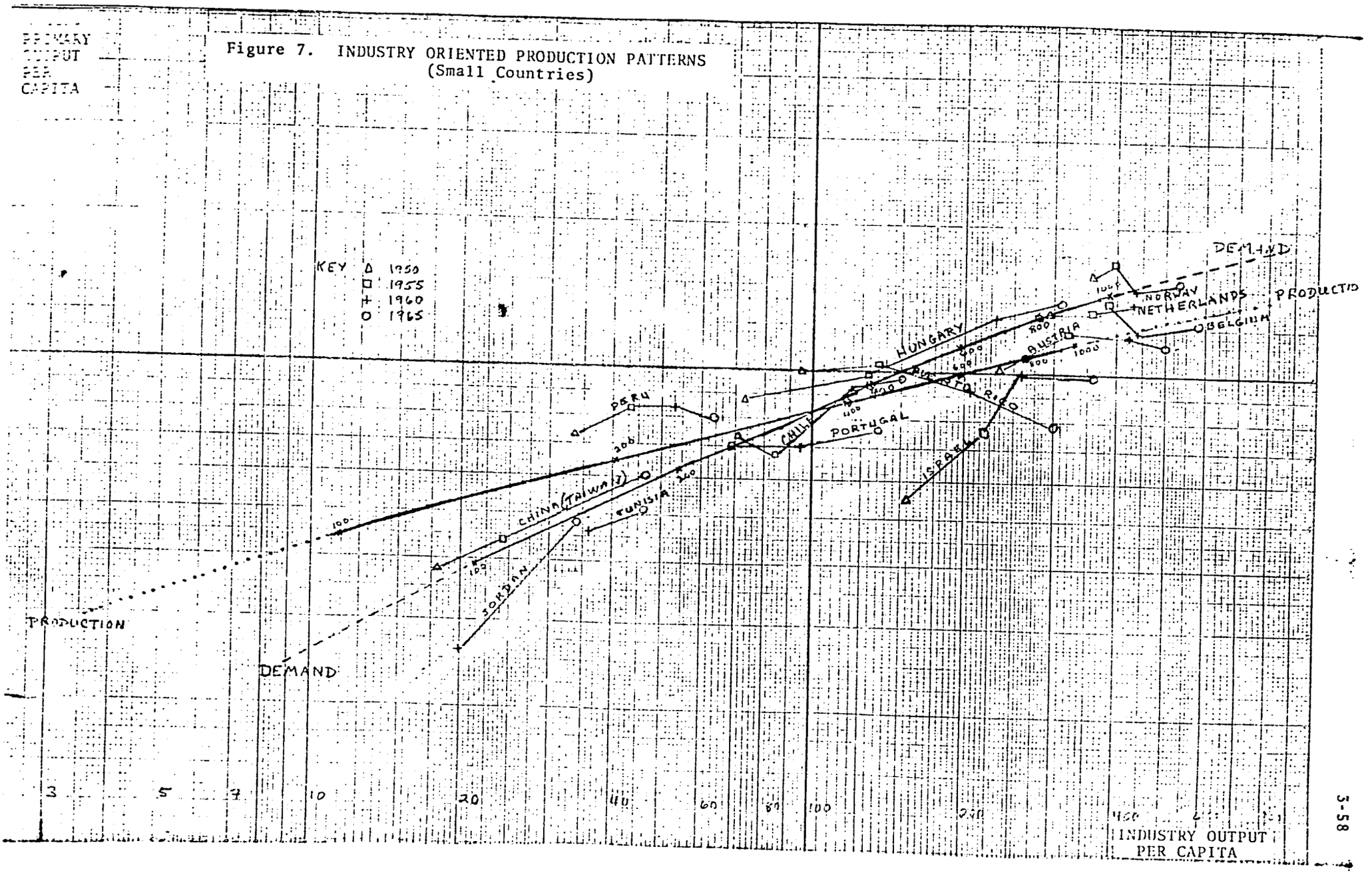


Figure 7. INDUSTRY ORIENTED PRODUCTION PATTERNS
(Small Countries)



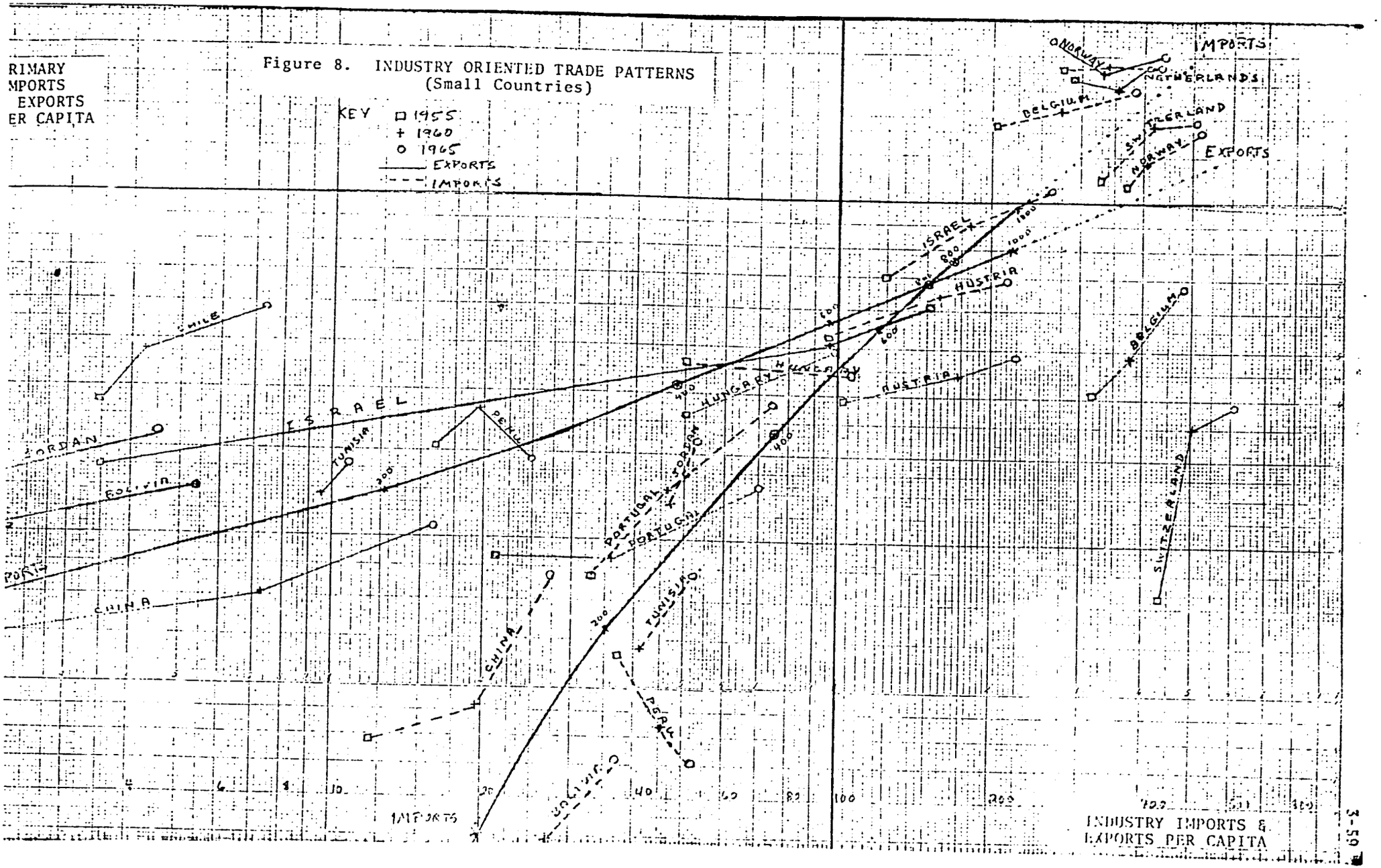


Figure 8. INDUSTRY ORIENTED TRADE PATTERNS
(Small Countries)

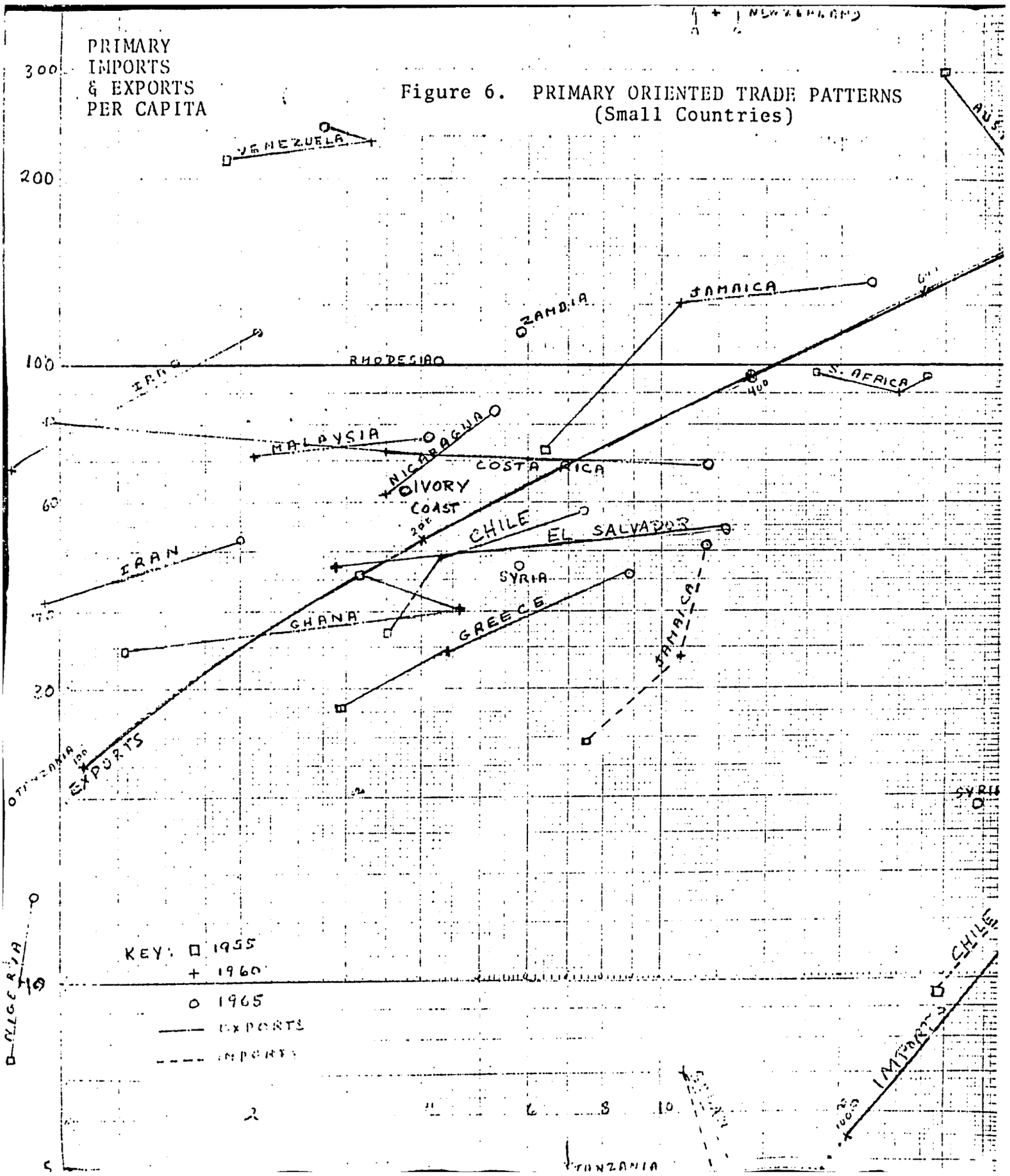


Figure 6. PRIMARY ORIENTED TRADE PATTERNS
(Small Countries)

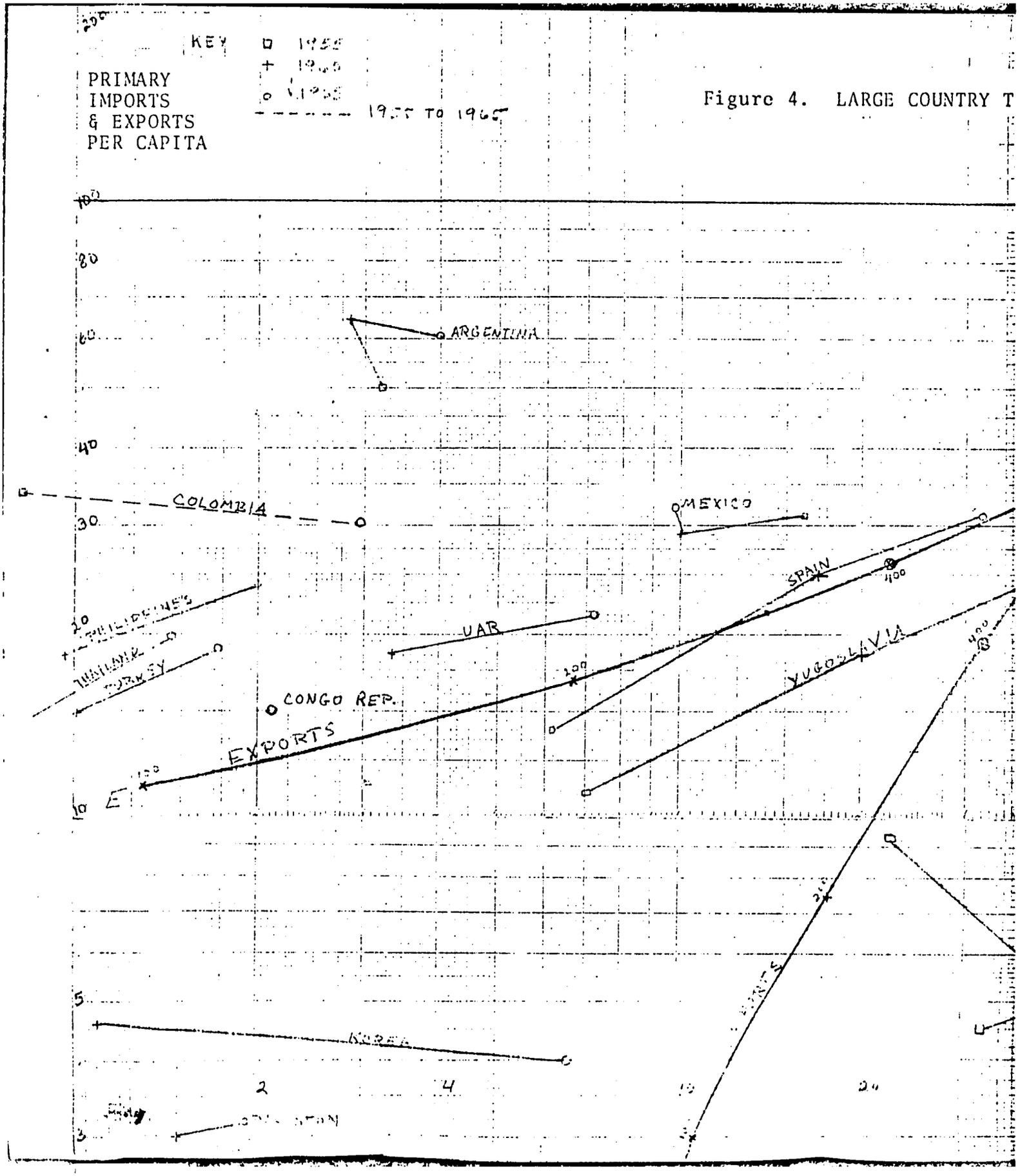
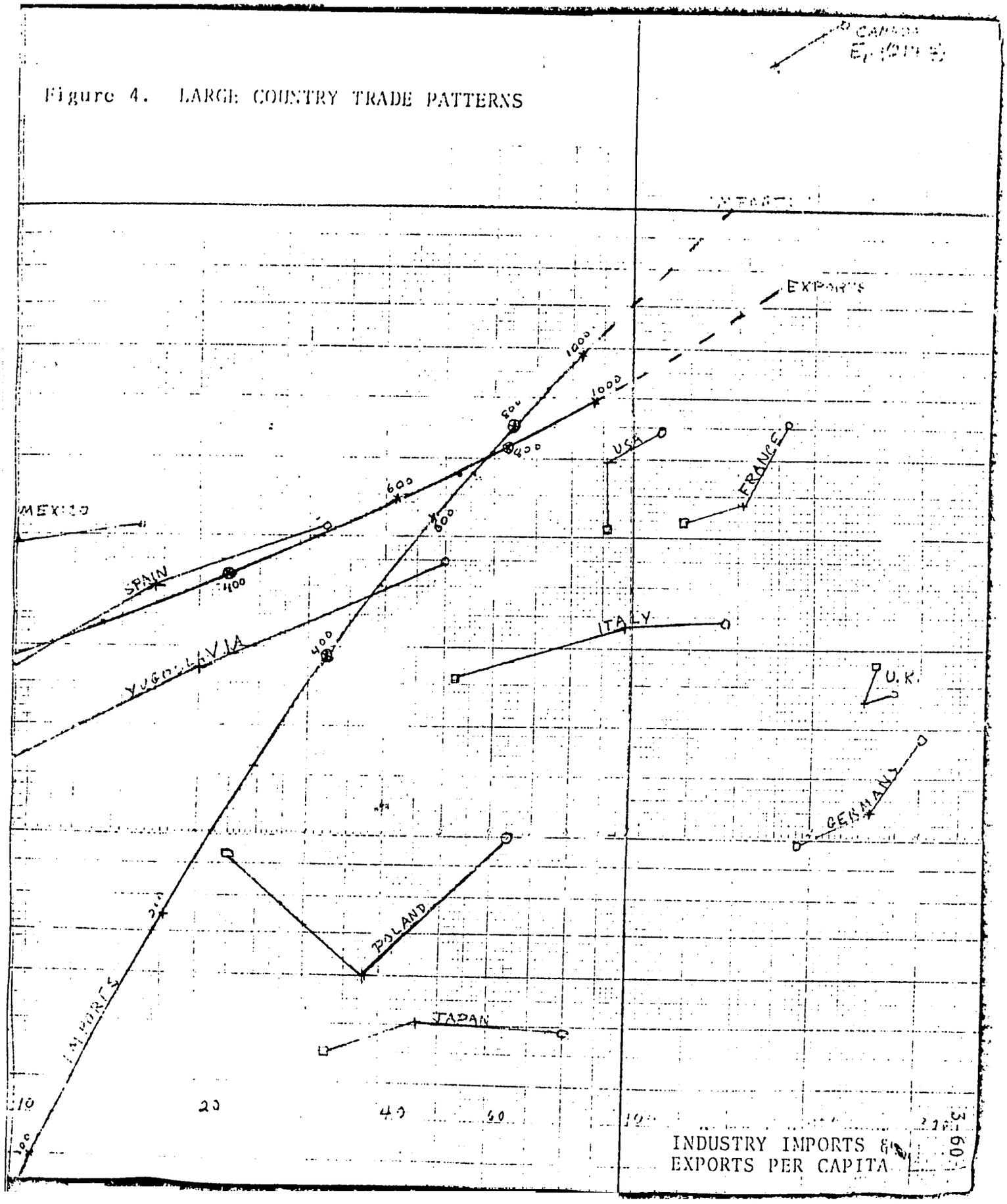
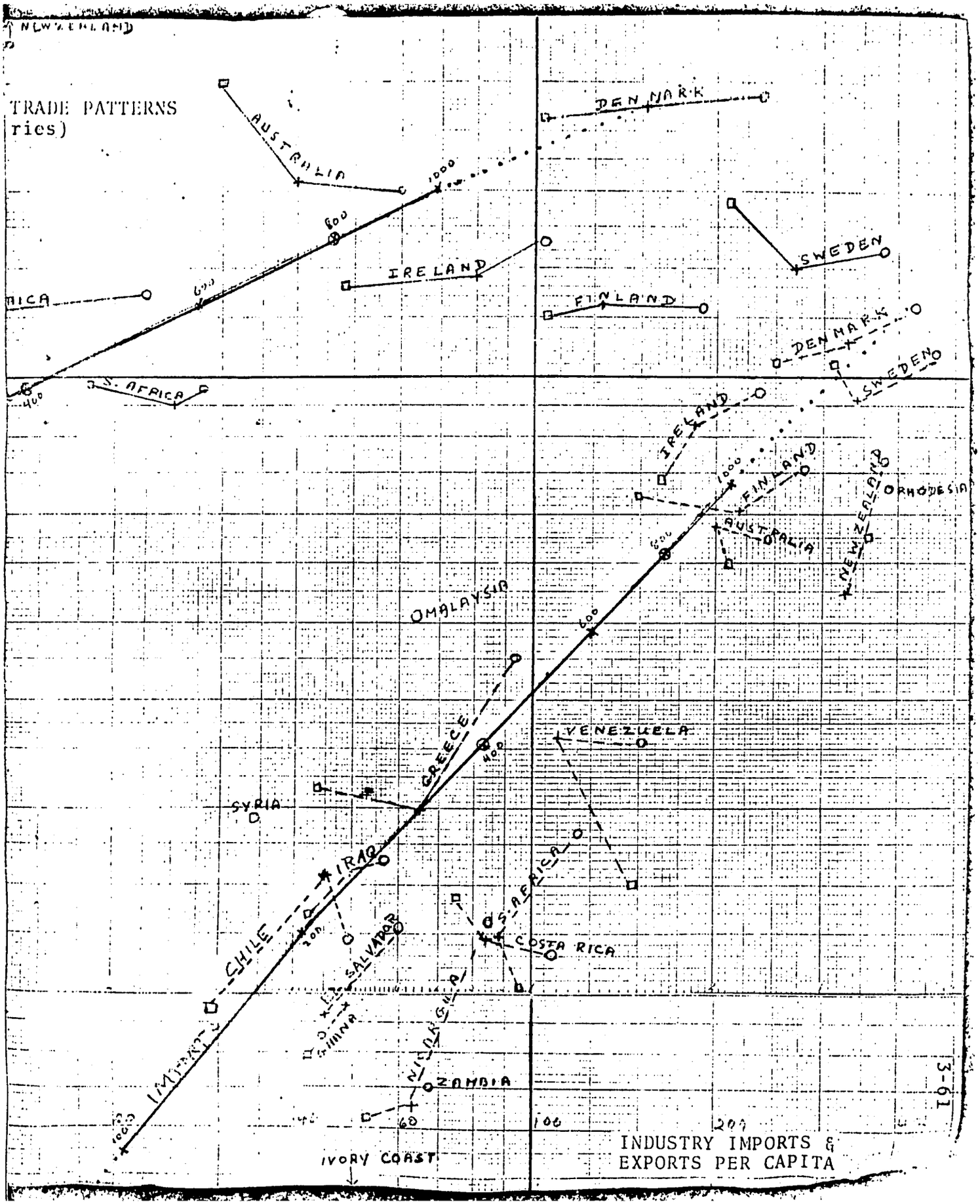


Figure 4. LARGE COUNTRY T

Figure 4. LARGE COUNTRY TRADE PATTERNS





INDUSTRY IMPORTS &
EXPORTS PER CAPITA