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Thomas K. Morrison

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I. INTRODUCTION

In the 1960s there was a significant change in many developing countries from inward-looking, import substitution policies to outward-looking, export promotion policies. This change in government policies occurred both from a dissatisfaction with the results of import substitution and a realization of the inadequacy of most primary exports as bases of long-run economic growth. The brief experience of the countries which have decided to promote manufactured exports has illustrated in some cases the remarkable potential of this strategy, but in most cases has tended to reveal the considerable obstacles which must be hurdled before an expansion of manufactured exports can make a significant contribution to economic development.

The purpose of this book is to put into perspective the importance of manufactured exports to developing countries in light of recent experience and realistic future prospects which are constrained by both demand and supply factors. Most of the literature on manufactured exports from developing countries has concentrated

either on the demand or on the supply constraints, with the supply constraints really only recognized in the late 1960s.

Chapter II describes how, whereas exports in general have long been emphasized by development planners, the limitations of primary exports and import substitution have recently led to more stress being put on manufactured exports. It is concluded that manufactured exports can be expected to have a favorable impact on economic growth, but that an expansion of manufactured exports will not automatically improve the income distribution and employment situation without proper government policies.

Chapter III surveys the recent experience of developing countries in exporting manufactures and illustrates the great concentration of this trade by origin, product, and destination. Part of this concentration is probably due to the fact that the experience of developing countries with manufactured exports is still very recent. Nevertheless, some general patterns are discernible with respect to manufactured export performance and stages of development.

Chapter IV presents an overview of the various demand constraints facing the manufactured exports of developing countries. Since the developed countries account for approximately 84 per cent of the manufactured exports of the developing countries, the chapter is primarily concerned with how the actions of the rich nations affect the manufactured exports of the poor nations. The main forum of discussion of these issues is the current Tokyo Round of multilateral trade negotiations in Geneva where the topics of tariff and non-tariff barriers, tariff preferences, subsidies and countervailing duties, and adjustment assistance are the highlights. There have also been increasing demands for an international code of conduct for multinational corporations which are substantially involved in the manufactured export trade of many developing countries.

Developing countries have displayed a considerable diversity of experience with manufactured exports. This diversity indicates that supply constraints may also play a significant role in determining manufactured export performance. A lowering of import restrictions in developed countries will merely constitute a

permissive influence on the manufactured exports of developing countries. The response of developing countries to this opportunity would depend on their ability to produce manufactures which are competitive on the world market.

Trade theory has traditionally identified various factor endowments as the primary determinants of comparative advantage. Chapter V discusses how a country's endowments with respect to domestic market size, level of economic development, natural resources, and labor skills influence its ability to export effectively manufactured goods

Comparative advantage depends not only on static relative factor endowments, but also on more dynamic and consciously planned phenomena such as the level of protection, the valuation of the exchange rate, and export promotion policies. Chapter VI discusses how these policy instruments can be employed by developing countries to enhance their manufactured export prospects. The relationship between inflation and manufactured export performance is also discussed.

Chapter VII provides an empirical testing of the hypotheses put forward in Chapter V and VI. Manufactured export performance is shown to be positively associated with domestic market size, level of economic development, and open trade policies, and negatively associated with natural resource endowment, level of protection, and inflation. Chapter VII also discusses other factors which are thought to be relevant to manufactured export performance but are less quantifiable -- export promotion, tariff preferences, multinational firms, labor costs, and proximity to a large market. The chapter concludes with an analysis of the residuals of the cross-country regressions and discusses the countries whose performance was least explained by the model.

The book thus ends where individual developing countries must begin, in attempting to identify their relative strengths and weaknesses and developing active policies to promote industries with the most dynamic prospects.

II. IMPORTANCE OF MANUFACTURED EXPORTS

International discussions of the problems of developing countries typically focus on topics such as food, health, education, population, employment, and income distribution. How does the topic of manufactured exports relate to these problems and why have many developing countries decided to shift their industrialization strategies toward a vigorous promotion of manufactured exports? After discussing why exports in general are important to developing countries, this chapter shows how the inadequacy of alternative strategies has led many countries to look to manufactured exports as a basis for sustained high rates of economic growth.

Importance of Exports in General

Economic vulnerability has always been a characteristic of the low income countries. Recent events have served to reveal the extent of this vulnerability and the inflexibility of most of these countries in their attempts to adapt to external shocks. The most serious recent shock, of course, has been the substantial rise in the price of petroleum and its effect on the price of other critical imports such as fertilizer. In addition, a more general acceleration of world inflation,

especially in foodgrains, has accentuated the rapidly increasing import bills of the developing countries. The exports of the developing countries, although experiencing a brief spurt due to the commodity boom of 1973-74, have not kept pace with the increased costs of imports. These problems have been compounded by the world recession in recent years which has caused demand for many of the exports of the developing countries to decline dramatically. Unfortunately, the more standard types of disasters continue to afflict the most vulnerable developing countries -- drought in the Sahel, floods in Bangladesh, earthquakes in Nicaragua, Guatemala, and Honduras.

As a result of these recent adverse developments, the total current account deficit of the oil-importing developing countries approximately trebled in 1974 from $9.4 billion to $30.6 billion.[1] Of this increase in the current account deficit of $21.2 billion, $11.0 billion was attributable to the oil price increase, $3.5 billion to food and fertilizer price increases, and $6.7 billion to other trade. The deficit was financed by heavy external borrowing and record levels of foreign assistance.

There is still no long-run solution for the oil crisis and the perennial vulnerability of developing countries to other external shocks. Developed countries which are not importers of oil have found that a large share of oil expenditures are naturally recycled back to them through the investment and import expenditures of the oil-exporting countries. The low-income countries, however, are not able to attract significant shares of the recycled funds. Hardest hit by the oil crisis have been the so called "most seriously affected" countries (MSA's) whose numbers have grown from 33 to 42 since they were first identified in late 1974.

The only feasible long-run solution to the current financial crisis in developing countries lies in the expansion and stabilization of their export earnings. This would require a reversal of the trend which has shown the developing countries' share of world trade decline from 35 per cent in 1950 to 22 per cent in 1970. It will also require for many countries diversification into export products with greater long-run growth potential.

Exports have, in fact, been identified historically as critical to the development process. Chenery and Strout's development of gap analysis has highlighted the foreign exchange constraint on economic growth and has led to the proliferation of planning models designed to close this gap.[2] Foreign exchange is primarily used to purchase the capital and intermediate-good imports necessary for industrial growth and to meet debt service obligations which promise to be particularly heavy in the next decade.

It is debatable whether export expansion or import substitution is the more effective strategy in the short-run for earning foreign exchange. It is claimed that import substitution saves foreign exchange, but various studies have shown that often an import substitution industry once established will spend more foreign exchange on imported imputs than it saved in the initial domestic product substitution, so that there is little or no foreign exchange savings.[3] On the other hand, the extent to which exports can be increased in the short run is limited by the amount of resources which can be allocated to the appropriate industries. There is no way to say definitely which strategy is preferable for closing the foreign exchange gap. Indeed, the strategies are not mutually exclusive and can be used simultaneously.[4]

It so happens, however, that countries do tend to emphasize one or the other depending on their overall approaches to industrialization.

With respect to effects on industrial growth, the arguments seem to be more strongly in favor of export expansion. Historical studies have shown that import substitution did play a role in the growth of the now developed countries, but as Chenery points out, this was not planned import substitution behind high tariff walls.[5] In the short run, import substitution can provide for sharp increases in growth, but this growth is limited by the size of the domestic market. Import substituting industries are generally not immediately adaptable to the export market, since the world markets are too competitive for the high costs and ineffeciency that often breed behind protection. Hirschman thinks that the domestic market exhaustion argument can be overcome because of the linkages that the import substituting industry may create, but he points out that there will probably be built-in resistances to some of these linkages, such as an industry objecting to domestic takeover of the production of an input because it is of lower quality and higher cost than the previously imported input.[6]

There is no lack of historical evidence that sharp increases in economic growth are usually accompanied by sharp increases in exports.[7] The outstanding example in the nineteenth century was Great Britain, first because exports of textiles, iron, and coal stimulated economic growth in Britain itself, and second because Britain's increasing demands for imports spread growth to other countries.[8] The United States felt this demand early because of its abundance of cotton. Then Britain turned to the "areas of recent settlement," as Hilgerdt called them, for wheat, wool, meat, timber, and minerals.[9] The Netherlands were a source of meat and cheese, Denmark supplied butter, eggs, and bacon, and Sweden felt Britain's demand for timber, wood pulp, and iron ore. Several tropical countries also benefited from Britain's demand for tea, spices, tin, and rubber.

It has been argued that cotton exports were the leading sector of economic growth in the United States during the first half of the nineteenth century.[10] The West depended on the South as the major market for its foodstuffs. The Northeast supplied the South with finance, transportation, and manufactured goods. All three sectors were able to grow because of the South's rapid expansion of cotton exports.

The experience of Germany, Italy, and Japan during the 1950's provides more recent evidence of the positive association of exports and economic growth. Exports contributed to the economic growth of these countries through beneficial effects on investment and technological change.[11]

Recent econometric studies have confirmed the export-growth relationship for large samples of countries.[12] With a sample of 50 countries, Emery found a high statistical association between exports and economic growth, with a 2.5 per cent increase in exports associated on the average with a 1 per cent increase in per capita GNP. Michalopoulos and Jay found that the "residual" of income growth not explained by the growth of primary inputs (and usually attributed to technological change or human resources development) is significantly associated with export growth.

The historical evidence, of course, does not prove that increases in exports cause increases in national income. There is a large quantity of literature on this subject, with some arguing that exports are a leading sector, others that exports are a lagging sector, and still others that exports are merely a "balancing" sector.[13] The present study takes the position that exports can be any of the above three,

but that they can be encouraged to be a leading sector by means of policies favorable to their expansion.

The most simple explanation for exports' favorable effect on economic growth has its origin in Adam Smith, who thought of foreign trade as an extension of the domestic market.[14] Foreign trade not only expands the demand for products which a country is already producing for the home market, but also makes possible the production of other products primarily to satisfy foreign demand. The obvious effect of such an extension of the market is that it enables a country to achieve important economies of scale.

The modern discussion of the "vent for surplus" theory emphasizes the fact that exports may help to utilize resources that do not have any alternative economic value or use. The plentiful resources in developing countries that have near zero opportunity costs are usually natural resources and surplus labor. It is a matter of fact that the large majority of the exports of developing countries are primary products, processed primary products, or products intensive in unskilled labor.

Numerous efforts have been made to reduce the process of "export-led growth" to workable economic models capable of demonstrating the various interactions between the export sector and the rest of the economy. These models add to the historical evidence a certain degree of

generalization which cannot be reliably inferred from individual country cases. The generalization made possible by the models, however, is limited by the fact that most of the models are based on individual countries' experiences.

There have been two types of models that have depicted export-led growth in developing countries, multiplier-accelerator and linkage models. A good example of a multiplier-accelerator model of export-led growth is Thorbecke and Condos' study of Peru.[15] This type of model is normally complex with regard to the number and type of equations involved, but ultimately reduces to the simple Keynesian multiplier with exports acting as a spending injection into the economy.

The linkage model is an input-output type of analysis and is well described by Baldwin.[16] In this model, exports induce growth through the growing export industry's linkages to various sectors of the domestic economy, such as the hiring and training of domestic workers, locally produced inputs used, and technology and managerial skills transfer.

Besides the classical static benefits of trade from producing according to comparative advantage, Haberler stresses that there are important dynamic ways by which

trade stimulates economic development, such as increased efficiency due to the effects of world competition. It has also been suggested that countries adapt outward-looking policies very early in the development process not because of the absolute magnitude of benefits to be derived, but because of the quality and direction of the development thereby initiated.[18] High costs and inefficiency that often develop behind protection are difficult to change once in place. Keesing stresses the learning effects and improvement in human resources, besides the technology and knowledge transfer, which are stimulated by an early exposure to external competition.

Limitations of Primary Exports

During the 1950 s and early 1960 s, it was debated whether a developing country could rely on an expansion of exports as a basis for sustained economic growth. In this debate, the exports under consideration were primary products, with apparently very little thought given to the possiblity of developing manufactured exports. The fact that many developing countries were export economies and were simultaneously stagnating economies led some economists (e.g., Raul Prebisch) to devise various theories supporting the view that primary exports are detrimental in the long run to the economic growth of developing countries.

Nurkse discouraged heavy reliance on export-led growth because of the poor outlook of world demand for primary products.[19] He distinguished between the developing countries of today and the developing countries of the 19th century, saying that growth was transmitted from the center in the 19th century because of Britain's dependence on a large volume of primary product imports. Today the demand situation is different, with developed countries including a low raw-material import content in total output, displaying low income elasticities of demand for many primary products, and developing synthetics whenever possible. Cairncross took issue with Nurkse, arguing that supply inelasticity of developing country exports has been the major problem, these supply problems stemming mainly from the industrialization policies followed in developing countries.[20]

Another argument put forward to explain why primary exports have not acted as an "engine of growth" in developing countries is that the industries involved were foreign-owned "enclaves," developing very few linkages to the rest of the economy.[21] Baldwin calls this the "carry-over problem," which involves a firm's activities regarding technology transfer, training of native

management and labor, and including locally-produced inputs in the production process. Although the "carry-over problem" still exists, many developing countries are now more aware of their bargaining power in dealing with foreign-owned firms about the conditions under which they are allowed to operate.

Primary products are also subject to a considerable degree of instability with respect to prices and output. Although the subject has been debated in the literature, recent studies have tended to support the fact that developing countries experience greater export instability than developed countries.[22] The instability of prices and output makes most primary products unsuitable bases for long-run economic growth. Instability of export earnings leads to serious disruptions of import capacity and investment planning. A wide variety of commodity agreements, buffer stocks, and compensatory financing schemes have been devised to deal with the export instability problem, but none of these have been able to improve the rather bleak long-run growth prospects of most primary products. In fact, it has been extremely difficult even to reach agreement on operating rules between participants, much less to implement the schemes effectively with each participant having its own distinct interests. Compensatory financing

schemes are easier to set up and implement, but the limitations imposed by compensation provisions of existing schemes have proved to be quite restrictive in operation.

An unprecedented degree of instability has characterized the performance of primary exports during the 1970's. Mainly as a result of the simultaneous economic expansion of most of the developed countries, the aggregate index of commodity prices (excluding petroleum prices) rose by 119 per cent from mid-1972 to the beginning of 1974. Crop failure in some parts of the world and oil-induced price increases added to the general upward pressure on commodity prices. The record-high levels of commodity prices plus the remarkable success of the oil-exporting countries led many Third World specialists to speculate that a new era had arrived in which the low-income countries would finally possess significant economic bargaining power related to their control of supply of various raw materials.[23] Developing countries have varying degrees of control over raw materials such as copper, tin, bauxite, and manganese, and tropical products such as coffee, cocoa, and sugar.

The optimistic hopes for a "New International Economic Order" were short-lived, however, as it soon became clear that the developing countries were generally the most severely affected by the oil price boom and, in addition, the prices of other commodities declined sharply toward the end of 1974 and by June 1975 were only 10 per cent above 1973 levels.[23] Countries heavily dependent on one or more of these commodities, such as Zaire and Zambia with copper, are suffering severe financial crises as a result of the drop in prices.

This recent experience with the erratic behavior of primary exports should leave the developing countries more skeptical than ever about relying on primary commodities for long-run economic growth. Nevertheless, commodities promise to be the dominant agenda item for the 1976 UNCTAD IV meetings in Nairobi. Commodity trade has also been the subject of recent initiatives of the developed countries, with the EEC's new compensatory financing scheme (STABEX) initiated in February 1975 and the United States proposal at the UN Seventh Special Session in late 1975 to significantly liberalize the IMF compensatory financing facility. The fact that primary products account for approximately 80 per cent of the total exports of developing countries requires

some emphasis in international fora, but it should also be emphasized that mechanisms to improve the primary export performance of developing countries should be viewed as part of a general strategy of transition to more stable and dynamic bases for long-run economic growth.

The United Nations has projected that world demand for manufactures in the next decade will grow by two to three times the demand for primary products. Prospects for the primary exports of the poorest of the developing countries which depend on agricultural exports are even more pessimistic. During the 1950's, agricultural exports grew by only 2.8 per cent per year, compared to 8.5 per cent for minerals and fuels and 14 per cent for manufactures. Since the vast majority of developing countries depend on agricultural exports rather than on minerals, fuels, or manufactures, diversification must be one of the main development objectives for most countries. Even those few developing countries that are fortunate enough to be endowed with one or more scarce resources must worry about the exhaustion of their supplies and the development of synthetics.

Limitations of Import Substitution

In the late 1950s, Nurkse was recommending a "balanced growth" approach to industrialization based on developing domestic markets and paying little attention to exports.[25] This type of growth implies a certain amount of central planning, as industries can develop only if a proper market exists so that bottlenecks are avoided. In practice, countries that have concentrated on domestic markets have employed more an import substitution than a balanced growth approach to markets, probably because the latter is more a long-run strategy, whereas the results of import substitution can be realized in the short-run. A major problem with this strategy, however, is that the extent of the market in most developing countries is exhausted also in the short-run.

If import substitution is a gradual process as occurred in most industrialized countries at earlier stages of their development, it can be accompanied by a healthy expansion of exports. The import substitution strategies used more recently in developing countries, however, have attempted to achieve more significant results in the short-run behind high import barriers.

This type of strategy discriminates against exports and thereby limits the long-run potential of import-substitution based industrialization.

During the 1950s there was a significant change in numerous developing countries from inward-looking, import substitution policies to outward-looking, export promotion policies. This change was also evident in the United Nations' orientation toward industrial development. For example, a United Nations report in 1950 written by Raul Prébisch strongly advocated the use of import substitution and protection, while in 1954 a similar United Nations report also written by Prébisch warned of the disadvantages of too much import substitution and protection, and recommended export expansion and especially the promotion of manufactured exports.[26]

Manufactured Exports and Economic Growth

The earlier discussion in this chapter of the favorable influence of exports on economic growth did not differentiate between product categories. Obviously, all export product categories will not have the same effects on economic growth. It is the hypothesis of this study that, in general, manufactured exports have a more favorable impact than primary exports on economic growth.

Syron and Walsh expanded Emery's study by showing that while total exports in developing countries are positively related economic growth, agricultural exports do not show a significant relationship.[27] Johnson further disaggregated exports and showed that manufactured exports more often are leading sectors of economic growth than primary exports.[28]

A recent UNCTAD publication presents data which indicate that the only two groups of developing countries which had high rates of economic growth during the 1960s were the petroleum exporters and fast-growing exporters of manufactures. The more recent growth rates of these two groups have been even more differentiated, as Table I shows annual average growth rates of 3.8 and 5.4 per cent respectively of *per capita* real product between 1968 and 1971.

The fact that manufactured exports are more significantly related to economic growth than primary exports should come as no surprise, given the figures cited earlier in this chapter concerning the recent world growth performance and growth prospects of manufactures *vis-a-vis* primary products. There are also reasons to presume that manufacturing industries may contribute more to economic growth than primary industries through

TABLE I

Growth rates of total and *per capita* real product, 1960–1972

Category	Population 1970 (millions)	GNP 1970 (billions of dollars)	Total real product: Annual percentage change 1960–1970	1968–1971	1970–1971	1971–1972[b]	Per capita GNP 1970[a] (dollars)	Per capita real product: Annual percentage change 1960–1970	1968–1971	1970–1971	1971–1972[b]
Developed market-economy countries	757	2 112	4.9	3.7	3.6	5.4	2 790	3.7	2.5	2.5	4.3
Socialist countries of Eastern Europe[c]	346	500[d]	6.7	6.5	6.4	4.9	1 440[d]	5.5	5.6	5.6	4.1
Developing countries	1 674	354	5.1	6.0	5.3	5.7	210	2.5	3.3	2.7	3.1
	(Percentage of total developing countries)										
Developing petroleum exporters[e]	15.0	15.6	5.3	6.8	7.1	6.7	220	2.4	3.8	4.1	3.7
Major developing exporters of manufactures[e]											
(a) fast-growing	10.9	24.3	6.9	8.5	8.0	8.5	470	3.9	5.4	5.0	5.4
(b) other	43.4	29.0	4.0	4.0	1.9	3.2	140	1.7	1.7	−0.4	0.9
Other developing countries	30.7	31.1	4.9	5.4	5.2	4.8	215	2.3	2.7	2.5	2.1
of which:											
Hard-core least developed[e]	8.7	3.6	3.5	4.0	2.9	3.1	90	1.1	1.5	0.4	0.6

Source: UNCTAD secretariat (figures based on data from the Statistical Office of the United Nations and other international and national sources).

[a] Rounded to nearest $5.

[b] Tentative estimates.

[c] Excluding Albania.

[d] At 1965 "average" prices (see Explanatory notes, p. vi above).

[e] For definitions, see Explanatory notes, p. vi above.

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more dynamic forward linkages such as developing better human skills and technology transfer.

The high rates of growth that are possible with manufactured exports were amply demonstrated by several developing countries during the 1960s. Korea's average annual growth rate of manufactured exports from 1962 to 1970 was over 70 per cent, and Taiwan's was almost 40 per cent for the same time period. Average annual growth rates of 20 per cent or more have been maintained by Brazil, Hong Kong, Israel, Pakistan, and Singapore. Mexico's average annual growth of manufactured exports reached 29 per cent from 1967 to 1969. Several of the poorer developing countries also had high growth rates starting from small bases, such as Iran (40%), Ghana (33%), Thailand and Ecuador (32%), Ivory Coast, Malaysia, and Nicaragua (23%).

Manufactured Exports and Employment

It is important to analyze the impact of manufactured exports not only on economic growth, but also on income distribution. Keesing has discussed the relationship between outward-looking policies and income distribution with respect to influences working through prices, savings, technology, education, employment, and public finance.

He concluded that "except in a few relatively advanced, small countries, income redistribution in favor of the poor will not occur automatically, even in the long run, as a side effect of (outward-looking policies)."[29] With a conscious effort by governments, however, a more equitable income distribution can accompany an expansion of manufactured exports, primarily through the vehicle of employment.

Ranis presented a stages-of-development model in which he showed that manufactured exports can be expected to provide the best long-run opportunity for industrial labor absorption for developing countries.[30] He depicts countries at early stages of development having to choose technologies from more developed countries which are generally too capital intensive given the factor endowments of most poor countries. Ranis implies the fact that many countries are still at this stage is why industrial sector annual growth rates of 8 to 10 per cent have been accompanied by labor absorption rates of only 2 to 3 per cent in the 1960s. As countries move from an import-substitution stage to an export-substitution stage with factor prices approaching their scarcity values, entrepreneurs are encouraged to adapt the borrowed technologies more

to the country's endowments. In most cases, this adaptation will take the form of labor-using innovations, or "capital stretching," such as increases in the number of shifts and machine speedups.

The examples which Ranis cites of successful labor absorption in the export-substitution stage are of post-Restoration Japan (after 1868) and of contemporary Korea and Taiwan. A variety of examples of capital stretching were cited, such as Japan's cotton spinning industry substituting substandard yarn in the production process and upgrading it through the use of extra labor.

Korea began its conscious export-substitution phase in 1964 by introducing a widevariety of export incentives plus a 50 per cent devaluation of the won. Monetary and fiscal policies were used to reduce the rate of inflation and import barriers were liberalized. From 1964 to 1970, the average annual rate of growth of manufactured exports was over 70 per cent, which was accompanied by a rise of nonfarm employment of 1.6 million and a decline in unemployment from 7.7 per cent to 4.5 per cent. Korea's manufactured exports have been almost exclusively in labor-intensive industries.

Taiwan introduced outward-looking policies earlier than Korea in 1960 and experienced a spectacular growth in manufactured exports which by the end of the decade accounted for 80 per cent of total exports. The industrial labor absorption rate doubled in the 1960s to over 6 per cent annually from 3 per cent in the 1950s. By the early 1970s, Taiwan's surplus labor supply had disappeared as unemployment dropped from 5.3 per cent in 1963 to 1.7 per cent.

It is doubtful to what extent other developing countries can copy Korea and Taiwan's experiences. These two countries are similar in that both had poor natural resource endowments and large supplies of skilled labor and entrepreneurs with which to begin their export-substitution phases. Not only do many other countries not possess these characteristics, but the extent of the world market for labor-intensive manufactured goods such as textiles, clothing, footwear, leather products, toys, and sporting goods is certainly not large enough to accomodate substantial increases in the exports of these products by many more countries. It is true, however, that increases which are substantial relative to the economies of some developing countries may not be substantial in terms of the world market.

Tyler recently estimated that approximately $1000 of manufactured exports must be generated in order to create one job in developing countries.[31] With this estimate he calculates that developing countries would need to more than double their present level of manufactured exports to achieve instantaneous full employment. He further calculates that, assuming a 3 per cent annual growth of the labor force and manufactured exports creating half of the required new jobs, a 52 per cent increase in manufactured exports would have been needed from 1970 to 1971 just to maintain a 10 per cent unemployment rate in developing countries. Although these figures appear to be quite pessimistic, they are not too surprising when one remembers the small shares which manufactured exports represent in most developing countries. Tyler's calculations support an argument that very large increases would be necessary in manufactured exports in order to solve the employment problem in developing countries, but the calculations do not support an argument that manufactured exports are ineffective in creating jobs.

Lydall supports the argument that manufactured exports are effective in creating jobs in developing countries by examining the employment effects of increased

manufactured exports due to trade liberalization in the developed countries.[32] He showed that one displaced worker in the EEC in 1975 would result in two additional workers in countries with per capita output of $500 and 4.6 additional workers in countries with per capita output of $100. Comparable figures for one displaced United States worker are 2.8 and 6.5 respectively. Adding indirect "multiplier" and "expenditure" effects leads to increases of between two and five times the above factors.

The employment problems of developing countries cannot be solved by manufactured exports alone. In the absence of better alternatives, however, manufactured exports can provide significant marginal employment benefits to many countries in the short run and probably serve as the major source of additional employment in the long run.

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Chapter III - Recent Trends of Manufactured Exports in Developing Countries

The General Situation

The manufactured exports of developing countries increased at an average annual rate of 15.5 percent between 1962 and 1971. Yearly performances varied from this average primarily with the business cycles of the developed countries. For example, the growth rate rose from the 1971 recession of 10 percent to 15 percent in 1972 and to 25 percent in 1973 when virtually the whole developed world was in an expansionary phase of the economic cycle. In spite of the developing countries' high growth rates during the last decade their share in world exports of manufactures increased only from 4.1 percent in 1962 to 5.2 percent in 1971. The increase of Latin America's share in world manufactured exports from 0.4 percent in 1960 to 0.7 percent in 1969 indicates how poorly represented many developing countries are in world manufactures trade.

Many developing countries have succeeded in effecting a considerable change in the composition of their exports. Manufactured exports have risen from representing 7 percent of the total exports of developing countries to slightly more than 20 percent in 1972.

The impressive growth of the manufactured exports of developing countries contrasts with their growth of primary exports. The developed countries increased their imports from developing countries

of primary products (excluding petroleum) by only 3.8 percent per year during the 1960's. Fish was the only primary product which exhibited an annual growth rate as large as the average for all manufactured exports, although imports from developing countries of wood, tin, and copper grew by more than 10 percent per year. Imports from developing countries actually declined in value during the 1960's for dairy products, wheat, beverages, tea, rubber, wool, hides, oilseeds, and tobacco. It is interesting to note that the developed countries' imports of primary products from the world declined for only five products (tea, tin, rubber, cotton, and wool). Exports from the developing countries of each of these five commodities accounted for more than 65 percent of imports by the developed countries. These facts all serve to support the arguments of Chapter II which discourage a heavy reliance on primary exports for future economic growth.

The Major Exporters of Manufactures

All developing countries have not taken part in the recent growth of manufactured exports, as Table II indicates. Mainly responsible are a relatively few countries which have demonstrated spectacular growth rates during the 1960's, such as Korea with 77 percent, Taiwan with 37 percent, Singapore with 28 percent, Pakistan with 24 percent, and Mexico and Hong Kong with 20 percent. In

several of these countries, manufactured exports have increased to the point where they represent the major share of total exports, such as Korea (74 percent) and Taiwan (66 percent). With reference to Table II, in 1969 Hong Kong's manufactured exports accounted for 38.7 percent of total manufactured exports of the 82 countries represented. If the manufactured exports of India, Taiwan, Korea, and Yugoslavia are added to those of Hong Kong, 72.8 percent of total manufactured exports are represented. The top eleven countries account for more than 90 percent of total manufactured exports. Another aspect of the concentration of origin is that almost 60 percent of total manufactured exports form developing countries come from the East Asian countries.

Hong Kong's major manufactured exports are clothing, miscellaneous light manufactures, engineering and metal products, textiles, and footwear. Since Hong Kong has been exporting manufactures longer than the other developing countries, it has not had to greatly diversify its exports in recent years. At the three digit SITC level, Hong Kong exported 57 products in 1971 compared to 56 in 1965. It has been able to maintain an annual average growth rate of approximately 20 percent in these established product lines. The United States, United Kingdom, and Germany are the largest markets for Hong Kong's manufactured exports in 1973, but the fastest recent growth has been to Austrialia, Japan, Singapore, and several other East Asian countries.

TABLE II

Ranking of [redacted] Exporters of Manufactures, 1969

Country	Manufactured Exports (1,000 U.S.$)			
1. Hong Kong	1,387,570	42.	Zaire	2,567
2. India	366,595	43.	Costa Rica	2,477
3. Taiwan	346,833	44.	Liberia	2,214
4. Korea	273,428	45.	Angola	1,735
5. Yugoslavia	239,644	46.	Cyprus	1,727
6. Mexico	205,051	47.	Bahrain	1,664
7. Pakistan	130,104	48.	Libya	1,655
8. Iran	118,760	49.	Syria	1,340
9. Israel	78,528	50.	Peru	1,175
10. Greece	54,841	51.	Cuba	1,160
11. Philippines	48,388	52.	Honduras	1,019
12. Singapore	33,771	53.	Ghana	986
13. Brazil	31,075	54.	Ecuador	830
14. Egypt	25,517	55.	Gibraltar	748
15. Argentina	21,651	56.	El Salvador	722
16. Jamaica	15,141	57.	Guatemala	700
17. Turkey	14,619	58.	Chile	686
18. Malta	14,358	59.	Ethiopia	629
19. Indonesia	13,198	60.	Ivory Coast	624
20 Colombia	11,828	61	Senegal	608
21. Morocco	10,202	62.	Ceylon	559
22. Malaysia	10,029	63.	Dominican Rep.	391
23. Panama	9,931	64.	Cameroon	386
24. Algeria	9,645	65.	Jordan	328
25. Haiti	8,241	66.	Bolivia	300
26. Lebanon	7,945	67.	Sudan	297
27. Afghanistan	7,775	68.	Uganda	289
28. Netherlands Ant.	6,766	69.	Madagascar	237
29. Thailand	6,614	70.	Nicaragua	221
30. Kenya	4,672	71.	Guinea(Eq.)	210
31. Tunisia	4,652	72.	Guiana	182
32. Trinidad/Tobago	4,318	73.	Sierra Leone	171
33. Tanzania	3,614	74.	South Yemen	168
34. Zambia	3,363	75.	S. Vietnam	164
35. Venezuela	3,342	76.	Somalia	137
36. Kuwait	3,164	77.	Burma	123
37. Uruguay	2,967	78.	Paraguay	55
38. Nigeria	2,952	79.	Cambodia	60
39. Iraq	2,744	80.	Rhodesia	45
40. Mozambique	2,653	81.	Togo	41
41. Saudi Arabia	2,603	82.	Mauritania	27

Source: The above figures represent imports of manufactures of the OECD countries from LDC's, less certain resource-based produc as specified in Appendix A.

India's total volume of manufactured exports are impressive, but are mainly due to the large size of its economy and industrial sector and not to a recent dynamic growth period. In fact, from 1965 to 1971, Indian manufactured exports grew at an annual average rate of only 2.3 percent. India's major manufactured exports are textiles, leather and footwear, and engineering and metal products.

Taiwan has been able to maintain a high rate of growth of manufactured exports during the 1960s by relying to a great extent on exports of processed imported materials. The major export products of Taiwan are engineering and metal products, clothing, and miscellaneous light manufactures. Among the factors responsible for Taiwan's impressive export performance, the most important has probably been the government's adoption of an extensive export promotion program in the early 1960s.

Korea's annual average rate of growth of manufactured exports during the 1960s of 77 percent was spectacular. In contrast to Hong Kong, Korea's growth was accompanied by a considerable degree of diversification, illustrated by the fact that 29 products (three-digit SITC) were exported in 1965 compared to 61 in 1971. The major export products of Korea are clothing, textiles, miscellaneous light manufactures, and engineering and metal products. Japan replaced the United States in 1973 as the largest market for Korea's manufactured exports, and together these two countries account for approximately 75 percent of the market.

The manufactured exports of the other leading countries are similar to those of the top four. Yugoslavia's major products are engineering and metal products, clothing and textiles. The largest manufactured exports of Mexico are engineering and metal products, chemicals , and miscellaneous light manufactures. The dominant share of both Pakistan's and Iran's manufactured exports is textiles. For Israel, clothing, textiles, enginnering and metal products are most important.

Some interesting regional differences in manufactured export performance emerged during the 1960's. The manufactured exports of Asia snd and Latin America grew at approximately the same rate between 1965 and 1971 as world manufactured exports, as they roughly doubled for both. Africa's manufactued exports in 1971, however, were only 44 percent greater than they were in 1965.

Major Products

Of the manufactured exports from developing countries to the developed countries at the end of the 1960s, clothing represented the largest product group, accounting for 25 percent of the total manufactured exports from developing countries. Exports of clothing from developing countries increased in value more than fourfold during the 1960s, reaching $1,087 million in 1969. The rate of increase of these exports at the end of the decade was 36.5 percent for developing countries ,

compared to 33.3 percent for the world. The developing country share of total clothing exports to the developed countries has grown from 19.1 percent in 1962 to 26.0 percent in 1972. The main increases in these exports during the 1960s were to the United States (an increase of $432.9 million), Germany (an increase of $143.6 million), and the United Kingdom (an increase of $80.0 million). In 1969, the United States took more than 50 percent of all developing country clothing exports to the developed countries. The developing countries' share of the total clothing import market in 1969 was highest in the United States (49.4 percent), followed by the United Kingdom (47.7 percent) and Japan (41.8 percent). Germany was the only member of the European Economic Community (EEC) with a substantial share (21.6 per cent) of its total clothing imports coming from the developing countries.

The next largest group of manufactured exports from developing countries at the end of the 1960s was textiles, with a total value of $1,028 million and accounting for 24 percent of total manufactured exports. These exports grew at only 9.1 percent per annum from 1962 to 1969, slightly lower than the growth rate of these exports from the world so that the share of developing countries in world textiles exports fell from 13.3 percent in 1962 to 12.9 percent in 1969. The largest increases of textile exports from 1962 to 1969 were to the United States (an increase of $169.5 million), Germany (an increase of $80.8

million), and Japan (an increase of $49.3 million). In 1969 the United States took 38 percent of textile exports to the dev loped countries, the United Kingdom took 14.1 percent, and Germany took 13.2 percent. The developing countries share of the import market was highest i the United States (36.3 percent), followed by Japan (31.7 percent), New Zealand (26.2 percent), and the United Kingdom (23.7 percent). A significant fact is that developing country textile exports to the United Kingdom grew at only 1.6 percent per annum from 1962 to 1969, and even declined in 1969.

The next largest group of developing country manufactured exports at the end of the 1960s was engineering and metal products, with a total value of $734.4 million and accounting for 17 per cent of total developing country manufactured exports. These exports increased in value sevenfold between 1962 and 1969, with an average annual rate of growth of 32.1 percent, and 53.0 percent in 1969. These rates of growth were more than double the corresponding growth rates for world exports of these products, so that the developing country share of the total market was rising. In 1969, however, this share was still only 1.4 percent. The largest increases of engineering and metal product exports between 1962 and 1969 were to the United States (an increase of $448.9 million), Germany (an increase of $41.6 million), and the United Kingdom (an increase of $30.8 million). In 1969, the United States took the predominant share of these exports (64.8 percent) which were mostly electronic products. The developing

country share of the United Stares total import market of these products was 4.3 percent, while the developing country share of other developed countries' imports of these products was almost always less than 1 percent. There is obviously still a considerable growth potential for exports of engineering and metal products to the developed countries.

An acceleration of the growth of engineering products during the early 1970s has enabled this product category to overtake textiles as the second largest product group of manufactured exports. In 1972, almost 50 percent of the trade in this product category was accounted for by United States imports from Hong Kong, Mexico, and Singapore. The major export products in this category have been items such as electronic components, radio and televison sets, parts for office machines, cameras, watches, and various metal manufactures.

The next largest group of developing country manufactured epxorts at the end of the 1960s was miscellaneous light manufactures, of which the more important items were travel goods and handbags, printed matter, plastic products, toys and games, basketwork, artificial flowers and wigs. The total value of these exports in 1969 was $651.4 million, more than five times the amount in 1962. The average annual rate of increase of these imports from 1962 to 1969 was 26.6 percent, and in 1969 was 32.7 percent. These growth rates were substantially

higher than the growth rates for world exports of these products, so that the developing countries' share in world exports of miscellaneous light manufactues increased from 5.2 percent in 1962 to 9.6 percent in 1969. Of the total increase of developing country exports of these products from 1962 to 1969, $352.5 million went to the United States, $43.3 million to the United Kingdom, and $34.6 million to Germany. The United States again is the major market for those exports, accounting for 63.5 percent in 1969. The developing countries' share of the total import market of these products was highest in the United States (23.1 percent), followed by the United Kingdom (12.8 per cent), Australia (8.9 percent), Japan (7.7 percent), and Germany (6.4 per cent). In most other Western European countries the corresponding shares are less than 3 percent, indicating that there is considerable scope for expansion of these exports. These are mostly labor-intensive products in which developing countries have a comparative advantage because of their abundance of cheap labor.

Hong Kong has been the largest exporter of miscellaneous light manufactures, accounting for 36 percent of total developing country exports in this product category in 1972. Hong Kong exported 61 percent of these exports to the United States, and 59 percent of United States imports of these products from developing countries came from Hong Kong.

Miscellaneous light manufactured exports from developing countries are more concentrated by their destination to developed countries than any other product category.

The product categories which have just been identified as being the fastest growing manufactured exports of developing countries also tend to fall under the heading of labor-intensive goods. Of course, the sample is somewhat biased since resource-based products were excluded from the manufactured exports considered. Nevertheless, the absence of capital-intensive manufactured exports is still conspicuous.

Destination of Manufactured Exports

The major market for the manufactured exports of developing countries at the end of the 1960s was the United States, accounting for 42.5 percent followed by the European Economic Community (26.6 percent), the United Kingdom (13.5 percent), and Japan (5.1 percent). Among the EEC countries, the largest importers were Germany (11.5 percent) and France (7.1 percent). Other major markets for manufactured exports from developing countries were Italy, Canada, the Netherlands, Austrialia, and Sweden.

The most rapidly growing market for manufactured exports from the developing countries during the 1960s was Japan, followed by Iceland, Ireland, the Netherlands, Portugal, and Finland. All of these markets, however, were relatively small in the early 1960s. If only

countries are considered which represented important markets in the early 1960s (taking at least 3 percent of total manufactured imports from developing countries), the most rapidly growing market was the United States, followed by Germany and Italy.

As is apparent from the above data, the developed countries represent the major market for manufactured exports from developing countries, accounting for 68 percent at the end of the 1960s. This share has increased from 59 percent in the early 1960s. Manufactured exports to other developing countries increased at an average annual rate of 10.3 percent during the 1960s, considerably lower than the 26.1 percent growth rate to developed countries. Latin America is the only exception to this trend, with intraregional trade in manufactures having grown at an average annual rate of 31.9 percent. The Latin American countries also export a large share of their total manufactured exports to other developing countries than do other developing regions. This share is 49 percent for Latin America, compared with 32 percent for South and East Asia, 31 percent for Africa, and 29 percent for Western Asia. The trend in many of the Latin American countries seems to be moving towards greater dependence on intraregional trade in manufactures, while developing countries in other regions seem to be moving towards greater dependence on markets in developed countries. Economic integration has undoubtedly

played a role in forming this trend in Latin America.

Observable Patterns

The above aggregate figures disguise a wide variety of individual country experiences at different stages of development. Chenery and Hughes have attempted to depict patterns of manufactured export growth of countries at different stages of economic development.[1/] They show that the patterns differ according to the size and natural resource endowments of developing countries.

Countries at very low levels of per capita income invariably specialize heavily in primary production. Simple manufacturing tends to develop in products such as processed foods, textiles, and clothing as *per capita* income approaches $100, and countries with $100 *per capita* income will have an industrial sector which produces mainly for the domestic market and on the average produces 20 percent of national output.

As countries develop beyond the $100 *per capita* income level, the manufactured export patterns vary primarily according to country size and natural resource endowment. On the average, Chenery and Hughes have shown that industrial output tends to equal primary output at approximately $400 *per capita* income whereas manufactured exports tend

not to equal primary exports until approximately $900 per capita income. There is a wide variance around this figure $900, however, with small industrial countries poor in natural resources, such as Korea and Taiwan, having reached the stage at much lower levels of per capita income, while countries better endowed with natural resources, like Venezuela may never have manufactured exports equal their primary exports.

Chenery and Hughes further show that a country of average size (10 million population) will reach $10 per capita manufactured exports at approximately $250 per capita income, at which stage manufactured exports account for a little more than 20 percent of total exports. They then show how this average pattern varies according to whether a country is a small primary exporting country (eg., Jamaica, Malaysia, and Ivory Coast), a small industrial exporting country (e.g., Singapore, Taiwan, and Tunisia), or a large country (e.g., Brazil and Colombia). The small primary exporting countries tend to reach $10 per capita manufactured exports at an income level of $350 per capita, small industiral exporting countries at $200 income per capita, and most large developing countries also reach $10 per capita manufactured exports at approximately $200 income per capita.

Chenery and Hughes' study has also shown that there is discernible pattern to the product composition of manufactured exports

in developing countries. The first manufactured goods to be exported are usually light consumer goods and construction materials which often are naturally protected by distance costs. The second stage ordinarily consists of some consumer durables and producer goods. Only after the domestic market has been developed can basic and intermediate goods be produced and exported on a large scale.

There has also tended to be an increasing sophistication of manufactured exports as countries gain experience and develop economically. Korea and Taiwan are the outstanding examples of developing countries which have begun to export manufactures with higher degrees of technological sophistication. Some of the larger countries, such as Brazil and India, have also begun to export more sophisticated manufactures, especially engineering goods.

The above observable patterns of manufactured export performance in developing countries shed some light on the composition of the aggregate figures which are normally cited.

NOTES

1/ H. Chenery and H. Hughes, "Industrialization and Trade Trends: Some Issues for the 1970s", in H. Hughes (eds), Prospects for Partnership (Johns Hopkins University Press: Baltimore, 1973), pp. 3-39.

IV. RELATIONS WITH THE DEVELOPED COUNTRIES

The last several years have witnessed an unprecendented degree of confrontation between the developed and the developing countries. This spirit of confrontation reached its peak at the United Nations Sixth Special Session in April 1974 which ended with a resolution proclaiming a "new international economic order" which would redress the inequities of the world economic system.

The United Nations Seventh Special Session which met in fall 1975 fortunately was characterized by a greater spirit of cooperation. U.S. Secretary of State Kissinger's speech on "Global Consensus and Economic Development" set the tone for a more constructive dialogue by suggesting a wide variety of initiatives by the developed countries. Since the Seventh Special Session occurred at a time when commodity prices were plummeting from their record high levels in 1974, attention tended to be focused on the problems of raw material exports of developing countries. Several issues were addressed and proposals made, however, related to problems in manufactures trade, such as an expansion of the Generalized System of Preferences and a reduction of non-tariff barriers and tariff escalation in developed countries.

The overall prospects for the developing countries increasing their manufactured exports depends to a significant degree on actions taken in developed countries. The developed market-economy countries account for approximately 84 per cent of the manufactured exports of developing countries. This chapter will survey and briefly analyze the main issues regarding the trade relations between developed and developing countries.

The current international forum for discussing these issues is the Tokyo Round of multilateral trade negotiations in Geneva. Developing countries are playing a much more active role at the Tokyo Round than in previous trade negotiations. The main issues discussed in this chapter are the interests of the developing countries in MFN tariff reductions, quantitative restrictions and other non-tariff barriers, the Generalized System of Preferences, countervailing duties, adjustment assistance, and the activities of multinational corporations.

Multilateral Trade Negotiations -- The Tokyo Round

The Tokyo Round of multilateral trade negotiations (MTN) began in September 1973, but substantive negotiations have only been in process since early 1975 with the passage of the U.S. Trade Reform Act which authorized negotiations by the United States. Developing countries in general

contend that their interests were ignored in past trade negotiations, including the Kennedy Round and are pressing for ground rules to be established at the Tokyo Round which provide for their differential treatment.

There are sound reasons for establishing differential treatment for developing countries at the MTN. The MTN would naturally reduce to negotiations between the major trading countries unless special provisions are made for the participation of countries which represent small shares of world trade. Moreover, the developing countries have unique trade problems which on equity grounds should be addressed at the MTN.

The industrialized countries also have an interest in the full participation of developing countries in the MTN. For example, developing countries as a group account for approximately one third of the total exports of the United States. A lowering of the trade barriers in developing countries, which often are quite high, could yield substantial benefits for the developed countries.

Tariffs have been the major item of past trade negotiations. The present world structure of tariff protection discriminates against the manufactured exports of developing countries. First, since tariffs generally tend to escalate with the stages of production, developing countries are

encouraged to export their locally produced raw materials in an unprocessed form. Second, tariffs in developed countries tend to be highest on goods intensive in unskilled labor. These are precisely the goods in which many developing countries have comparative advantages. The result is that the average tariff on the imports of manufactured goods into industrialized countries is 5.5 per cent for the developed countries and 11.8 per cent for the developing countries.

Most of the developed countries are participating in the Generalized System of Preferences (GSP), including very recently the United States, whereby preferential tariff rates are granted to the developing countries. The developing countries are approaching the MTN with concern that their gains from GSP not be eroded by MFN tariff cuts on the same products which are granted to all countries. Erosion of the preference margin could be avoided either by agreeing not to lower MFN rates on GSP products or by agreeing to lower both MFN and GSP rates. Since MFN tariff cuts are binding (i.e., cannot be raised), they are in a sense preferable to GSP tariff cuts which are not binding. To the extent that the exports of developing countries compete with the exports of developed countries, however,

the concern with preference margin erosion is legitimate. On the other hand, when the main benefit of a GSP rate is to make developing countries' exports more competitive with domestic production in the protected markets, a binding MFN cut might be preferable.

There are other areas in the tariff negotiations where developing countries are requesting special treatment. For example, they would like deeper-than-formula tariff cuts on products not covered by the GSP. It is probably safe to assume, however,

that the reasons why a product was excluded from GSP will also be cause for a country not to grant significant tariff concessions with respect to that product in the MTN.

Developing countries have also asked for advance staging of MFN tariff cuts for products in which they have a special interest. Such a provision would in effect provide temporary preferential tariff rates on the affected products.

Whereas previous trade negotiations have concentrated on tariff reductions, indications are that non-tariff barriers will also be on the table at the Tokyo Round. Since non-tariff barriers are not included in the GSP, developing countries should be especially interested in this aspect of the MTN. The non-tariff barriers of the developed countries present significant obstacles to the exports of the developing countries. A recent UNCTAD report documents that $1.7 billion of the developing countries' exports in 1968 were subject to one or more of the following non-tariff barriers: discretionary and unspecified licensing, quotas, state-trading practices, variable levies, export restraints, and prohibition of certain imports.[11] In the same report, estimates are calculated for the effect on exports of certain product categories of non-tariff barriers. For example, it was shown that non-tariff barriers

reduced developing countries' exports of woven cotton fabrics in 1969 by 17.8 per cent to Germany, by 18.5 per cent to Sweden, and by 21.6 per cent to the United Kingdom.

Other non-tariff barriers which may be negotiated at the MTN include customs valuation and classification, safeguards, and standards related to packaging, health, and industry specifications. It may be difficult to devise techniques of differential treatment for developing countries with respect to some of these non-tariff barriers. For example, it is difficult to imagine how preferential treatment might be granted to one group of exporters with respect to customs practices or standards.

It is probable that the developing countries can hope to gain much more from the MTN if they are prepared to offer some degree of reciprocity. Full reciprocity is not expected, but partial concessions granted by the developing countries may in some cases be the difference between failure or success to achieve significant gains in the MTN. Chapter VI will suggest that a reduction of protection levels may be healthy for some developing countries.

Tariff Preferences and the GSP

There is a history of preferential tariff arrangements for developing countries. The Commonwealth Preference Scheme was the first to be established in 1932. After World War II, the United States agreed to a preferential arrangement with the Philippines. The Yaounde agreement in 1963 instituted a preferential trading arrangement between the European Economic Community (EEC) and 18 developing countries which was preceded in some cases by preferential bilateral arrangements.

The United States arrangement with the Philippines expired in 1974 and was not renewed. The Commonwealth Preference Scheme has substantially eroded with many of the African countries having ceased to grant reverse-preferences. The EEC scheme, however, expanded after its inception to include more African countries plus some Mediterranean and Caribbean countries. All of these schemes have been superceded by the Generalized System of Preferences (GSP) which is gradually being implemented by most of the developed countries.

GSP was proposed at the first United Nations Conference on Trade and Development (UNCTAD) at Geneva in 1964. It was not until the 1970s that the developed countries began to actually implement GSP schemes. The EEC countries

were the first to agree to GSP in 1971 followed in the same year by Japan and Norway. Austria, Denmark, Finland, Ireland, New Zealand, Sweden, Switzerland, and the United Kingdom implemented GSP schemes in 1972, followed by Canada in 1974. The United States introduced its GSP scheme in early 1975.

GSP was first proposed as a scheme whereby all manufactured exports of developing countries would be granted preferential access to the markets of the developed countries. In practice, developed countries have designed their own individual GSP schemes with each having its own provisions with respect to product coverage, safeguard measures, rules of origin, preference margins, and beneficiary countries.

GSP is primarily for manufactured exports, although a few primary and agricultural products are covered in various schemes. Even the coverage of manufactures is quite limited, however, as demonstrated by the fact that approximately 52 per cent of dutiable manufactured imports by GSP donors were excluded from their schemes. Examples of import-sensitive products which have been excluded from GSP are textiles, footwear, and leather products, all of which are products in which many developing countries are likely

to have a comparative advantage because of their intensity in unskilled labor. The developing countries have expressed the desire to negotiate at the MTN for better product coverage in GSP schemes, but the developed countries are likely to be hesitant to discuss preferential and non-binding tariff cuts in a forum where MFN cuts are the rule.

It is possible that the GSP product list may become even more restrictive if developed countries choose to apply the various safeguard provisions in their schemes. The most common of these provisions are escape clauses whereby preferences can be withdrawn when covered imports cause or threaten serious injury to domestic producers. In most cases serious injury is not precisely defined. An exception is the United States which applies a "competitive need" formula which states that a country can lose its preferential access if it supplies more than 50 per cent of the imports of a particular product or if the imported product exceeds $25 million in one year.

The exports of developing countries which qualify for GSP are also limited by rules of origin provisions which differ among the various schemes. These provisions are in general meant to insure that the exports covered by GSP are substantially produced in the beneficiary country and are not "re-exports" or exports with a low value-added

component. Two basic criteria are used by preference-granting countries to determine rules of origin. Austria, the EEC countries, Japan, the Nordic countries, and Switzerland insist that the transformation of imported inputs must be sufficient to change the Brussels Tariff Nomenclature (BTN) classification of the product. Australia, Canada, New Zealand, and the United States require a minimum share of value-added by the exporting country which is generally 50 per cent.

The rate of preference margin granted varies according to product and donor country. Preference margins are generally higher on manufactured goods and lower on raw materials and processed products close to the primary stage of production. The EEC. Japan, Nordic countries, and United States grant duty-free treatment on GSP manufactured items, except that Japan only grants a 50 per cent reduction of the MFN rate on some textile items, clothing, and footwear. Australia, Austria, Canada, Switzerland, and New Zealand offer varying rates of partial reductions on manufactured products.

The United States is the only developed country which systematically excluded certain groups of developing countries from its GSP scheme. Excluded countries include most communist countries, members of the Organization of

Petroleum Exporting Countries (OPEC), any other countries which withhold vital commodity resources from international trade or raise the price of such commodities to unreasonable levels, countries granting reverse preferences to other developed countries, countries which have expropriated United States property without fair compensation, and countries which do not cooperate to prevent narcotic drugs from entering the United States unlawfully. The United States can exercise discretion in applying these provisions, but their presence in the scheme represents a serious discrepancy with the basic philosophy of GSP as it was originally proposed.

The experience with GSP is too recent to judge the economic benefits to recipient countries. It is doubtful however, that the benefits will be very significant given the exclusions and exceptions described above and the fact that quantitative restrictions such as quotas still apply to some important GSP products. It has been estimated that the trade creation effect of GSP (increase in exports of beneficiary countries minus the decrease in exports of developed countries) using 1971 data is $1,005 million, or about four per cent of the developed countries.[2] The estimate of the increase in exports of the developing countries was $1,385 million.

If the above estimate of trade creation takes into account the quantitative import restrictions of develped countries, the estimate declines to $233 million, which is less than one per cent of developed countries' imports covered by GSP and less than five per cent of their total foreign assistance. GSP in its present form will obviously have to be liberalized if it is to have a significant impact on the exports of developing countries. In the meantime, developing countries may find the MTN a useful forum in which to press for binding reductions of both tariff and non-tariff barriers.

Subsidies and Countervailing Duties

In recent years many developing countries have begun to use a variety of export promotion devices. The role of export promotion in the context of government policy for manufactured exports will be discussed in Chapter VI. This section will discuss why and how export promotion by the developing countries will probably be discussed at the MTN.

Developing countries will be seeking to achieve an agreement for differential treatment with respect to export subsidies. At present, GATT rules discourage export subsidies on manufactured goods without any mention of the special problems of developing countries. Moreover, countries

may impose countervailing duties if they can demonstrate that imports which were subsidized by foreign exporters are causing or threatening injury to domestic industry.

The United States is the only developed country which has applied countervailing duties to developing countries. Recent complaints against developing countries have been received by the U.S. Department of Treasury concerning footwear imports from Argentina, Korea, and Taiwan, steel and processed asparagus imports from Mexico, leather imports from Brazil, and cotton textiles and man-made fibers from India. The United States has indicated, however, that it desires to negotiate an international code on subsidies and countervailing duties and, in this context, would be willing to consider the possibility of differential treatment for developing countries.

There are sound reasons for differential treatment of developing countries with respect to export subsidies.[3] Theoretical arguments have been advanced that subsidies are the optimum policy instrument to correct for domestic distortions or externalities which affect international trade, rather than tariff instruments.[4] The bases for these arguments are that maximum economic welfare can thereby be achieved and that subsidies can be applied to the cause of the distortions and not to the effects. Although these

theoretical arguments do not differentiate between developed and developing countries, it can probably be safely assumed that more economic distortions exist in developing countries.

The outstanding example of a distortion which is more common in developing countries is an overvalued exchange rate. Exporters are discriminated against by an overvalued exchange rate in several ways. First, imported inputs will often have to be purchased at above world prices because of high protection levels. Second, exporters receive less domestic currency for a given volume of exports than they would under free trade. Moreover, domestic prices will often be above world prices which by itself encourages production for the domestic market rather than for export. The bias against exports of an overvalued exchange rate can be reduced or completely offset by export subsidies.

Developing countries have other market imperfections which can cause their manufactured exports not to be competitive. For example, an underdeveloped infrastructure can raise the costs of transportation, communication, marketing, and utilities to prohibitive levels. The high cost and limited availability of financing restricts the flexibility of firms in developing countries besides raising

their costs. Labor training costs are also often higher in developing countries. The most common rationale for subsidies has probably been the "infant industry" case which presumably occurs more frequently in developing countries. In order for a firm to overcome the above obstacles, subsidies can be used which often will probably only succeed in bringing them up to a minimum acceptable level of competitiveness.

Although the case for differential treatment with respect to subsidies can be made fairly clearly in the abstract, it is difficult to envision the exact form such differential treatment might take in terms of actual provisions accepted by the developed countries at the MTN. Perhaps certain kinds of export subsidies by developing countries could be sanctioned, or export subsidies on goods which are not extremely import-sensitive. Product lists and escape clauses may well be reduced in a manner similar to those in the GSP schemes which have been implemented. Hopefully the MTN will preclude the necessity of countervailing actions against the developing countries in the future.

Preferential treatment in the area of export subsidies should, as in the case of tariff preferences, be on a temporary basis since it is meant to help countries eventually to reach a level of competitiveness in world trade where subsidies are no longer necessary.

Adjustment Assistance

Although the economics literature has produced a long list of arguments in favor of free trade and opposing protection, there still exist many and varied trade barriers in the developed countries. The primary reason for the persistence of these barriers to free trade is the pressure exerted by labor and business groups which are injured or threatened by increased imports. There may in the short run be a conflict between the goals of free trade and full-employment. Increased imports can cause injury to a firm which may have to lay off workers and keep capital idle. In the longer run, these displaced workers find other employment and business capital moves into more efficient lines of production. It is in the adjustment period where costs to workers and businessmen occur.

These adjustment costs are the basic rationale for keeping existing trade barriers or erecting new ones. An alternative to trade barriers which makes possible even in the short-run the simultaneous achievement of free trade and full-employment is adjustment assistance. Adjustment assistance broadly defined is any action taken by a government to assist workers or firms in adjusting to increased import competition. Its purpose is to help to reallocate affected labor and capital on the basis of economic efficiency and comparative advantage.

The concept of adjustment assistance is of particular importance when considering the prospects for increased manufactured exports from developing countries. This is because the most import-sensitive and highly protected industries in the developed countries tend to be those in which the developing countries have a comparative advantage (e.g., industries intensive in the use of unskilled labor).

Studies which have estimated import sensitivities and labor displacement from increased import competition have tended to verify the fact that imports from the developing countries are particularly troublesome to certain labor and business groups in developed countries. The most commonly identified import-sensitive industries are leather products and, to a lesser extent, electrical machinery and basic metal manufacturing. Little, Scitovsky, and Scott showed the leather and clothing industries to be the most import sensitive.[5] In their study, a $744 million increase in imports from the developing countries caused a 2.1 per cent labor displacement in the leather industry in the United States, a one per cent labor displacement in clothing, and a less than one per cent labor displacement in all other industries.

A recent UNCTAD study improves on the estimation of labor displacement caused by imports from developing countries by estimating an adjustment period of several years rather than a once-and-for-all impact.[6] Doubling the increases and halving the decline in manufactured imports from developing countries over four-year periods typically resulted in yearly rates of labor displacement of less than one per cent in West Germany, the United Kingdom, and the United States. The footwear and clothing industries again showed the highest rates of labor displacement, with 4.2 per cent and 2.4 per cent respectively.

Adjustment assistance to workers displaced because of increased imports can serve two distinct purposes. First, there is often a need for income support over and above that covered by unemployment compensation programs. Second, since displaced workers will normally be from declining industries, they will usually have to learn new skills if they are to find other employment. Rather than providing training facilities for displaced workers, which would be rather difficult to implement, adjustment assistance can be used to finance training costs in already established institutions. There are, unfortunately, psychological and social costs related to labor displacement which adjustment assistance cannot alleviate.

Although labor displacement is the major adjustment cost, business firms may experience declining sales and profits and sometimes be forced out of business by increased imports. There are two forms of adjustment assistance for firms. First, firms that are forced out of business can be assisted or even subsidized in disposing of their assets. In the 1930s, the United Kingdom established a realization company to purchase the assets of the declining cotton industry so that these assets could be sold over time rather than depressing the market with a large amount of sales at one time.

Second, some firms may be capable of competing with increased imports, but only if they are subsidized to some extent. This type of assistance can be justified economically but is difficult to implement in practice. Even within a very narrowly defined industry, the competiveness of firms can differ greatly. The determinants of competitiveness are often intangibles and difficult characteristics to measure such as management skills. Overuse of this type of adjustment assistance could result in a very expensive program which is subsidizing inefficient firms and merely postponing the costs of adjustment.

Experience with adjustment assistance programs has been quite varied. A recent OECD publication surveys the experience of a number of countries and industries.[6] The United States and Canada are the only countries which have development assistance programs which are directly associated with trade liberalization. Moreover, adjustment assistance programs in all the developed countries are more for the purpose of protection of domestic industry and labor from imports, and not for the purpose of facilitating increased exports from the developing countries.

Two basic problems have frequently plagued the operation of adjustment assistance programs. First, the application procedure for adjustment assistance is often quite complicated and the qualification criteria quite strict. The adjustment assistance criteria in the United States have been quite restrictive in the past for both workers and firms, but recently these criteria have been liberalized. The second most common problem with adjustment assistance programs has been the tendency for them to be administered in a haphazard and piecemeal manner. A centrally coordianted program is preferable to the programs which now often divide responsibilities between different agencies within the government and between national and local governments.

It is important for the developing countries that adjustment assistance programs not only prove to be adequate within the existing structures of protection in developed countries, but that they also prove adequate to soften somewhat the future pressure of labor and business groups to keep or raise the existing levels of protection. In the latter case, adjustment assistance becomes a true trade concession to developing countries by in effect replacing the safeguard and escape clauses which often accompany preferential treatment with respect to protection.

Multinational Corporations and International Subcontracting

Discussions of the trade relations between developed and developing countries tend to be related to government policies. It has become quite apparent in recent times, however, that another actor on the international scene has assumed a significant role. Multinational corporations (MNC's), for the most part independant of governments and national boundaries, were responsible by the end of 1970 for over $5.5 billion of investment in the developing countries, by far the largest source of investment for these countries. This section will examine how the actions of MNC's influence the manufactured exports of developing countries, and also how government policies in developed countries can affect the actions of MNC's.

During the 1960s the rapid growth of overseas investment by MNC's made them a dominant factor in world trade. Since approximately one-third of the book value of total foreign investment by MNC's is in developing countries, there is undoubtedly a significant impact on the manufactured exports of these countries. Although no comprehensive source of information exists concerning the manufactured exports of MNC's from developing countries, scattered facts suggest that these firms account for large shares in at least a few of these countries.

In Latin America, subsidiaries of U.S. firms accounted for 65 per cent of the increase ($804 million) of manufactured exports between 1957 and 1966. By 1968, exports of manufactured goods by U.S. owned susidiaries in Latin America rose above $750 million, more than 40 per cent of all Latin American exports of manufactures in that year.[7] In 1966, United States affiliates accounted for 87 per cent of the manufactured exports of Mexico and 42 per cent of Brazil.[8] International Business Machines is said to be the largest single exporter of manufactures from both Brazil and Argentina.[9] In East Asia, it is estimated that in 1971 foreign firms accounted for at least 15 per cent of Korea's manufactured exports, at least 20 per cent of Taiwan's, and over 50 per cent of Singapore's.[10]

These facts indicate that the impact of MNC's on manufactured exports is substantial in at least a few countries. Whether this impact is favorable to the overall development interests of these countries is a debatable question. It is probable that the absolute level of manufactured exports in these countries is higher as a result of the presence of MNC's. Achieving higher levels of manufactured exports, however, must be measured against the opportunity costs of other possible development paths and the direct costs which some economists have attributed to the activities of MNC's in developing countries.

A recent phenomenon that has already yielded significant manufactured export dividends for developing countries such as Hong Kong, Singapore, Korea, Taiwan, and Mexico, is the location of specialized labor-intensive activities or processes which are vertically integrated in the international production systems of MNC's.[11] Since the second half of the 1960s, this type of trade has grown remarkably. This rapid growth is partly due to the fact that subcontracting with MNC's often offers the opportunity to avoid the high tariff barriers in some developed countries.

Items 806.30 and 807.00 of the U.S. Tariff Schedules permit import duties to be levied only upon the value added abroad where inputs originated in the United States. Imports of this type from the developing countries to the

U.S. have risen from $61 million in 1966 and $539 million in 1970 to $1.4 billion in 1973. The share of U.S. subcontracted imports in total U.S. manufactured imports from developing countries rose from 6.4 per cent in 1966 to 22 per cent in 1972. J.M. Finger has recently shown that in 1972 U.S. imports from developing countries under items 806.30 and 807.00 increased export earnings in developing countries by approximately the same amount ($107 million) as did the European Economic Community's Generalized System of Preferences, and that given current trends U.S. subcontracted imports by now are probably significantly greater.[12]

There are several factors responsible for the recent rapid growth of international subcontracting to the developing countries. Probably the most important factor has been the increasing awareness among MNC's of the opportunities in the international integration of production and marketing operations. For the most part these opportunities, such as substantial labor cost differentials, existed for years before the recent boom in international subcontracting. Changes in tariff legislation favorable to international subcontracting have been more recent.

It is interesting to note that the location decisions of multinational firms with respect to international subcontracting do not appear to discriminate in favor of the larger or more wealthy developing countries.[13] In fact, the opposite may often be the case. The special subsidies and more open policies in many small countries discussed above is one example. In addition, the very reasons why firms decide to subcontract in a developing rather than a developed country may cause them to discriminate in favor of the poorest developing countries. The ratio of unit labor costs in developing countries to that in the United States averages 27 percent and ranges from 7 percent (baseballs) to 46 percent (scientific instruments).[14] This wide range has enabled a country like Haiti, one of the U.N. 25 "least developed countries," to capture through subcontracting arrangements approximately half of the U.S. import market in baseballs.[15]

Labor cost differential is probably the major factor in most location decisions for international subcontracting. Because of their significantly lower wages, many of the poorest developing countries should have an advantage with respect to this factor. The low labor skills content of many subcontracted processes also suits the endowments of the poorest countries. For example, by far

the most important item subcontracted to developing countries, the assembly of semiconductors (see Table III), is quite intensive in its use of low-skilled labor. Most of the other major subcontracted items listed in Table III are also intensive in low-skilled labor.

Mexico, a relatively large and wealthy developing country, is the leading subcontracting country for the United States. Mexico has relatively high wages, in some subcontracting industries 2 to 3 times that in other developing countries, but has the advantages of practically zero distance costs to the U.S. market and a government-sponsored Border Industrialization Program which provides subsidies to subcontracting firms. Neither of these two advantages, however, are peculiar to large or wealthy developing countries. There are many small developing countries which enjoy proximity to a large market and all developing countries can offer a variety of incentive packages to subcontracting multinational firms. Even a small developing country which is not near a large market should be able to attract its share of international subcontracting since many items which are assembled for re-export have high value-to-weight ratios (e.g., semiconductors) which result in minimal freight costs. For example, the largest subcontracting market for Hong Kong, Korea, and Taiwan is the United States, hardly a neighbor to any of them.

If it is true that developing countries may have somewhat of an advantage in attracting international subcontracting, why are these operations still concentrated in so few countries? One possible explanation is that the multinational firms have tended to locate first in successful exporting countries with whom they already have strong trade ties. Another is that the remarkable increase in international subcontracting has been very recent and that its further development will certainly include a wider assortment of countries. In addition, many of the developing countries have barely had time to assess the subcontracting phenomenon and integrate its implications into their development programs. At present it is appropriate not so much to recount past successes as to indicate an area of potential for countries which have been largely unsuccessful exporters of manufactures in the past.

Even if a good case can be made that developing countries can compete effectively in international subcontracting, the extent and quality of the development thereby engendered still must be scrutinized. International subcontracting can provide a means of diversification for small, commodity-producing countries and thereby aid in stabilizing their export earnings. In addition, subcon-

tacting in a given country can increase dramatically in a very short time since MNC's often provide the required capital, technology, and marketing network. Furthermore, once a few firms are successfully operating in a country, there seems to be a demonstration effect in attracting more firms.

The employment effects of international subcontracting can also be substantial. Unemployment is an especially critical problem in the very poor developing countries, and the low-skill labor intensity of most international subcontracting processes corresponds well with the factor endowments in these countries.[16] Although the technology and skills transfer from international subcontracting are normally not at a very sophisticated level, they may provide part of a transition stage in the industrial development of a very poor country. Chenery and Hughes' study of the patterns of export growth in developing countries shows that the first stage in exporting manufactures is generally in products intensive in low-skilled labor and simple technology.[17]

There have been several objections to international subcontracting based on the quality of development it engenders. Examples of the possible disadvantages of international subcontracting have been related to such issues as the reliability of demand, excessive competition for contracts, dependence on foreign interests, accentuation

of urban concentration, and the fear that subcontracting firms will merely be another foreign enclave. An issue which has recently gained increased attention concerns the existence of restraints by MNC's on the export activities of their subsidiaries and affiliates.[13] These restraints relate in particular to the allocation of export markets within the MNC and, in certain cases, between MNC's. They also relate to the prices for exports within the structure of the MNC which are set according to the interests of the firm's profitability as a whole. Other restrictive business practices which can affect the manufactured exports of developing countries pertain to the use of patents and trademarks by MNC's which may contain inherent export restrictions.

Restrictive business practices are of great concern to developing countries who can point to the fact that the proportion of total sales which is exported by U.S. manufacturing affiliates in developing countries is significantly smaller than the proportion exported by affiliates in the developed countries. For example, U.S. manufacturing affiliates in Latin America and several other selected developing countries exported only about 10 percent of their total sales in 1968 compared to 25 to 30 percent for affiliates in Canada and Europe. This

difference is not necessarily due to export restrictions, however, and may be attributable to the fact that one of the main reasons why MNC's locate in some developing countries is to avoid the high import barriers in selling to the domestic markets. It is also possible that the manfactured exports of affiliates in developing countries would be less competitive on the world markets because of higher costs caused by factors such as inadequate ancillary services and a lack of skilled labor.

With the above reservations in mind, the prevalent view certainly is that MNC's and international subcontracting represent a favorable opportunity for developing countries. These firms can provide the necessary capital, tehnology, and marketing expertise that are so often lacking. Although several studies have concluded that the potential benefits from international subcontracting outweigh the potential dangers (e.g., see Sharpston), it must be admitted that the rapid growth of this sector has been too recent and experienced by too few countries to make a final judgement. It must also be admitted, however, that many developing countries do not have the alternatives in exporting manufactures to permit the luxury of a wide range of options.

FOOTNOTES

1/

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12/

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14/

U.S. Tariff Commission, Economic Factors Affecting the Use of Items 807.00 and 806.30 of the Tariff Schedules of the United States (Washington, D.C., 1970), p. 175.

15/

For a further discussion of Haiti's experience, see T. Morrison, "Case Study of a 'Least Developed Country' Successfully Exporting Manufactures," Inter-American Economic Affairs (Summer 1975), pp. 21-51.

16/

For a more complete discussion of the employment effects of international subcontracting, see S. Watanabe, "International Subcontracting, Employment and Skill Promotion," International Labor Review (May 1972), pp. 425-449.

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H. Chenery and H. Hughes, "Industrialization and Trade Trends: Some Issues for the 1970's, in H. Hughes, ed. Prospects for Partnership. Baltimore-Johns Hopkins University Press, 1973, see p. 10.

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UNCTAD, Proceedings, Third Session, Vol. II, Merchandise Trade, see pp. 203-203, 220-235.

V. Comparative Advantage in Manufactured Exports

Most of the literature on the manufactured exports of developing countries has, with a few exceptions, followed the arguments of the previous chapter and emphasized demand of the developed countries as the critical factor in determing success or failure. There has been, however, a considerable diversity of experience among developing countries in exporting manufactures. In 1972, the value of manufactured exports to the developed countries ranged from $2.4 billion in Hong Kong and $1.1 billion in Korea to practically zero in some predominantly agricultural countries with very low manufacturing capabilities. This wide range of experience in developing countries indicates that supply factors also play an important role in determining manufactured export performance. A lowering of import restrictions in developed countries will merely constitute a permissive influence for the expansion of manufactured exports. The response of developing countries to this opportunity would still depend on their own abilities and efforts to produce manufactures which are competitive on the world markets.

Supply considerations relate to the principle of comparative advantage and its relevance for developing countries trying to develop manufactured exports. How is it determined which products a developing country is best equipped to manufacture for export?

Trade theory has traditionally identified the relative factor endowments of land, labor and capital as the primary determinants of the composition of trade. Recognizing the growing importance of manufactures in world trade, more recent theories have emphasized criteria such as economies of scale, skill intensities, and technical innovation.[1/] These various theories on the determinants of comparative costs and the commodity composition of trade contain certain implications regarding which developing countries are likely to have a comparative advantage in exporting manufactures.

This chapter will discuss the following country characteristics which various trade theories have stated are favorable to increasing manufactured exports: market size, level of economic development, abundance of natural resources, and labor skills. It should be remembered that traditional trade theory is static by nature and that, therefore, the country characteristics considered are given endowments unchangeable in the short run. Chapter VI discusses the dynamic determinants of manufactured export performance over which developing countries have some control in the short run.

Domestic Market Size

The underlying theory of the market size hypothesis is that economies of scale give a country a comparative advantage in exporting

manufactured goods with increasing returns to scale.[2/] Linder took this argument to the extreme, stating that a country cannot successfully export manufactures without a large domestic market.[3/] Keesing and Sherk have provided empirical support for the market size hypothesis.[4/]

The market size hypothesis of the present study is not that a large domestic market is a precondition for successful performance in exporting manufactured goods. Besides constituting a pessimistic forecast since most developing countries have small domestic markets, a precondition hypothesis would contradict the evidence that some small countries have provided for increasing significantly their manufactured exports (e.g., Israel, Singapore, Hong Kong, Jamaica, Malta, Panama, and Haiti). Indeed, manufactured exports are in a way even more important for small countries, since foreign trade is a means by which they can effectively increase the size of their markets and obtain the important scale and competitive benefits.

There are several ways in which small countries can overcome their size handicap in exporting manufactures. One solution is to concentrate on manufactured goods with constant returns to scale. A good example which has yielded substantial returns in recent years for some developing countries is the assembly and processing operations subcontracted from multinational corporations. The major

subcontracting developing countries for the United States are Mexico, Taiwan, Hong Kong, Singapore, Korea, Jamaica, Philippines, and Haiti. Most of these countries have small domestic markets.[5/] The main determinants of comparative advantage in international subcontracting, low labor costs and proximity to a large market, do not discriminate in favor of large countries.

A policy recommendation emanating from this part of the study might be to encourage small countries to consider regional integration. Through regional integration they can increase the size of their "domestic markets" and be more capable of exporting manufactured goods which exhibit scale economies. Unfortunately, efforts at regional integration in developing countries have not been very successful, making impossible an empirical confirmation of this policy recommendation. Perhaps the most successful effort at regional integration of developing countries to date is the Central American Common Market (comprising El Salvador, Costa Rica, Honduras, Guatemala, and Nicaragua). Manufactures trade between these five countries has increased greatly during the late 1960s and early 1970s making their recent growth rates of manufactured exports to all countries (as reported by the United Nations Commodity Trade Statistics) very impressive. Their exports of manufactures to the OECD countries, however, have not yet reflected

the beneficial scale effects of the market integration.

Another consideration is that the size of the domestic markets in some of the larger countries has encouraged import substitution strategies of industrialization which discriminate against exports. The cases of Brazil, Chile, India, and Pakistan have been documented.[6/] On the other hand, small countries are normally more dependent on foreign trade and have more open policies.

The hypothesis of this study is that, other things equal, a large domestic market will be helpful in increasing manufactured exports which exhibit increasing returns to scale. A large domestic market is not a precondition for increasing manufactured exports, however, and indeed may in some cases encourage policies which discriminate against exports.

Level of Economic Development

The higher the level of economic development of a country, other things equal, the greater should be its capability of producing manufactured products that are competitive on the world market. The degree of industrialization, technology, efficient infrastructure, and levels of skills and organization combine to give a more developed country a comparative advantage in producing products with the

quality and economy necessary to be competitive in world trade.

Just as with the market size factor, however, a high level of economic development is not a precondition for success in exporting manufactures. The relationship between level of econmic development and manufactured export performance is not categorically positive. In their study of the pattern of export growth in developing countries, Chenery and Hughes have shown that the first stages in exporting manufactures is generally in products intensive in low-skilled labor and simple technology.[7/] Later stages normally exhibit increased sophistocation in manufactured goods. This pattern is consistent with Vernon's "product cycle hypothesis" which predicts that developing countries will begin to export a manufactured product only after the technology of that product has over time become standardized.[8/]

Although most of the developing countries which have substantially increased their manufactured exports are the relatively more developed, there are a few examples which demonstrate that there are also possibilities for the poorer countries. A brief consideration of Haiti's recent experience will illustrate this point.[9/] Haiti, one of the United nations 25 "least developed" countries, mainly through subcontracting arrangements with U.S. firms has sustained a remarkable growth in manufactured exports since the later 1960's. From a level

of $3.8 million in 1967, Haitian light manufactured exports increased to $16.5 million in 1971, $24.3 million in 1972, and $38.7 million in 1973. Employment in these manufactured export industries increased from 10,000 in 1971 to almost 25,000 in 1973.

The manufactured exports sector consists mainly of assembly or processing of imported components (usually from the U.S.). Although a wide variety of products are assembled in Haiti, the major items are textiles and baseballs. Unfortunately, further expansion of the textile industry is limited by a new U.S.-Haitian agreement. Electronic and mechanical assembly is another area of recent rapid growth. This area is particularly promising because of recent growth in the assembly of more complex electronic components, including semiconductor devices and integrated circuits, which require larger fixed investment and greater technology tranfer.

The future prospects of light manufactured exports in Haiti are very encouraging. With the exception of baseballs the products exported represent small shares in the U.S. markets. Even in the case of softballs, with Haiti supplying approximately half of the U.S. import market, the share in the total U.S. baseball market is very small. Another favorable fact for future growth is that there is an almost perfectly elastic supply of the factors of production.

Unskilled labor is available in virtually unlimited supply, while capital and many physical inputs can be imported. Moreover, Haiti's recent experience encourages further similar investment through a "demonstration effect." Rotberg and Clague also point out that the larger the light manufactures sector becomes, the more favorable are investment prospects in the sector due to the lower cost of ancillary services, the larger pool of skilled labor, and other economies of agglomeration.[10/]

There are several factors which have helped Haiti to overcome the obstacles to exporting manufactures resulting from its low level of economic development. Its proximity to the U.S. market has been helpful in attracting subcontracting activities which fall under the U.S. tariff item 807 whereby import duties are levied only upon the value added abroad where inputs originated in the U.S. Haiti also has an advantage in labor costs, with the average daily wage of a production worker ranging from $1.80 to $2.00. With respect to Haiti's single largest manufactured export item, baseballs, the ratio of the Haitian to the U.S. unit labor costs is seven percent. Haiti's labor costs are low even in comparison to many other developing countries.[11/]

A final factor involved in Haiti's recent performance has been the fact that ~~the government's recent performance has been the fact that~~ the government's policies have been quite favorable to the establishment of new manufacturing industries for export. Import tax exemptions are granted for building materials and capital goods required for production. There is also an exemption from export taxes for manufactured goods. For the first five years of its operation, a manufacturing concern is not required to pay any income tax, and there is only a gradual elimination of this exemption during the second five years. The Haitian government also provides plant sites, including land and/or buildings, on favorable terms.

Another general policy orientation of the Haitian government which is favorable to manufactured exports is its outward-looking strategy of industrialization. In contrast to an inward-looking strategy based on import substitution, Haiti's industrialization program does not require high levels of protection. High import barriers are associated with overvalued exchange rates which are direct disincentives to export. In general Haiti's tariff rates are not high compared to rates in other Latin American countries. A common and representative rate which is applied to a wide variety

of products is 27.72 per cent. There has been a decline in recent years in the ratio of import duties to imports. The issue of how inward-looking policies discriminate against manufactured exports is analyzed in more detail in Chapter VI.

Haiti's experience illustrates that a very poor country can be successful in exporting manufactured goods. The range of manufactured products in which a very poor country can have a comparative advantage, however, is much smaller than the range for a relatively more developed country such as Taiwan, Israel, Mexico, or Brazil.

Natural Resources Endowment

There are several ways in which a developing country's endowment of natural resources can affect its performance in exporting manufactures. This study proposes that the dominant effect of a large endowment of natural resources is to discourage manufactured exports. Following directly from the Heckscher-Ohlin factor endowment theory of comparative advantage, it is expected that a country rich in natural resources will tend to specialize in producing primary products or goods intensive in primary factors. On the other hand, a country poor in natural resources is expected to specialize in manufactured products. A cursory look at the leading developing

country exporters of manufactures (see Table I) shows very few countries rich in natural resources.

The fact that a country is poor in natural resources does not, however, by itself confer a comparative advantage in manufactures. Since the country is poor in natural resources, it must concentrate its efforts on manufactures if it wishes to export. Comparative advantage is not a static phenomenon and dependent only on given endowments. As the next chapter discusses, a country can develop a comparative advantage in manufactures by working to develop certain factors which can be changed over the short and medium-run.

Just as a lack of natural resources does not by itself constitute a comparative advantage in manufactures, an abundance of natural resources does not necessarily mean that a country will never be a successful exporter of manufactures. To the extent that industrialization and diversification are synonomous with economic develpment, this assertion would imply that countries rich in natural resources are thereby handicapped in their efforts to develop their economies. The experience of some of the developed countries obviously refutes this assertion.

When discussing only the developing countries, however, it is valid to apply the Heckscher-Ohlin theory to extent that countries are expected to depend at least in the first stages of development on their abundant natural resources for export. When a country rich in natural resources reaches a certain level of development, it must begin to industrialize and depend more on manufactured exports if it wishes to progress further. Mexico is a good example which, while possessing a variety of agricultural and mineral products, has in recent years also developed an impressive array of manufactured products for export.

Abundance of natural resources can, in fact, provide a basis for the expansion of manufactured exports in developing countries through the further processing of the locally produced raw materials. For a variety of reasons, this avenue for increasing manufactured exports has not been extensively used in developing countries. The processing industries, particularly the extractive industries, often require large capital investments and a skilled labor force. In addition, the escalation of tariffs by stages of production in developed countries discriminates against the processing for export of locally produced raw materials in developing countries. Even if the developing countries offset the tariff obstacle through export subsidies to their processing industries, they still risk (and have,

in fact, experienced) retaliation in the form of countervailing duties by the developed countries. An example of this type of retaliation was the United States reaction to increased instant coffee exports from Brazil. There are cases of processing industries, however, where the obstacles are related to ignorance of technologies and marketing techniques, which can be overcome.

An hypothesis of this study is that the above obstacles have proved to be effective constraints on the ability of developing countries to successfully process for export locally produced raw materials, thus reenforcing the prediction of the Heckscher-Ohlin theory that countries rich in natural resources will not be successful exporters of manufactures.

Labor Skills

Several empirical studies have shown that differences in labor skills play a major role in determining comparative advantage and trade patterns.[12/] Countries well-endowed with skilled labor will have a comparative advantage in skill-intensive goods, and countries with a scarcity of skilled labor will tend to produce goods intensive in unskilled labor. The empirical tests for the labor skills hypothesis have shown that trade patterns can be explained when industries are ranked according to their relative

skill intensities. In order to measure the different skill intensities of industries, Kenen, Kravis, Waehrer, and Yudin used differences in average wage rates as proxies. Keesing used the actual share requirements of skilled labor man years by industry. Baldwin's variable for skilled intensity measured the differences in the education of labor in various industries.

It seems reasonable to assume that developing countries as a whole should have a comparative advantage in products intensive in the use of unskilled labor. The "product cycle" theory of Vernon provides a theory in support of this proposition.[13/] Lary devises a list of "labor-intensiv manufactues" and finds that in 1965 developing country exports of such items represented less than 10 percent of their total exports and about 30 percent of total manufactured exports.[14/] Most of the remaining 70 percent of manufactured exports consists of natural resource-based products.

Since most developing countries have more than enough unskilled labor, this particular resource should not be very helpful in explaining relative performance in exporting manufactures. It would be a mistake, however, to categorize the labor forces of all developing countries under the same label "unskilled," implying no cross-country differences. There are significant degrees of

differences in the quality of labor existing in the various developing countries, and there are even sizable pools of skilled labor in some of these countries. For example, some of the East Asian countries, notably Korea, Taiwan, and Hong Kong, undoubtedly owe significant parts of their successful manufactured export performance to the relatively high quality of their labor forces.

Empirical support has been presented for the argument that labor skills are a major determinant of the direction and composition of trade.[15/] Based on a factor endowment theory of trade, the hypothesis is that a country with a skilled labor force will have a comparative advantage in manufactured goods whose production is intensive in skilled labor.

This study hypothesizes that a skilled labor force should be positively related to manufactured export performance in develping countries. Skilled labor enables a country to produce a greater variety of products with the quality necessary to be competitive on the world market. Countries such as Taiwan, India, Korea, Hong Kong, Brazil, and Mexico are able to achieve levels of diversification in their manufactured exports which arenot possible for countries lacking in skilled labor. For example, there are some developing countries lacking in skilled labor which have been able to achieve reasonably

high levels of manufactured exports, but these exports are heavily concentrated in a product like textiles with unfavorable growth prospects.[16/] For example, countries such as Egypt, India, Iran, and Pakistan rank fairly high in their levels of total manufactured exports, and yet they have literacy rates of 20, 13, 15 and 13 respectively. Textiles and clothing represent 91, 90, 97, and 92 percent respectively of the total manufactured exports of these countries. Other leading developing country exporters of manufactures generally show much less concentration of product composition and significantly higher rates of literary. It is desirable to have a wide base of export products both for reasons of stability and because the growth prospects for textiles and clothing exports are not nearly as bright as they were in the 1960s. These two product categories certainly cannot provide the road to success in manufactured exports for many more countries.

Conclusion

The four determinants of performance in manufactured exports discussed in this chapter have been presented as given endowments for a country not changeable in the short run. It has also been emphasized, however, that none of the determinants are preconditions of successful performance in exporting manufactures. There are examples of small countries, very poor countries, countries rich

in natural resources, and countries lacking in skilled labor which have achieved significant levels of manufactured exports.

FOOTNOTES

1/ For a discussion and empirical testing of these various trade theories see G. Hufbauer, "The Impact of National Characteristics and Technology on the Commodity Composition of Trade in Manufactured Goods," in R. Vernon (eds.), The Technology Factor in International Trade, (New York, Columbia University Press, 1970).

2/ See B. Ohlin, Interregional and International Trade, rev. ed., (Cambridge, 1967), Chapter 3.

3/ S. Linder, An Essay on Trade and Transformation (New York: John Wiley and Sons, Inc. 1961)

4/ D. Keesing, "Population and Industrial Development: Some Evidence from Trade Patterns," American Economic Review (June 1968); D. Keesing and D. Sherk, "Population Density in Patterns of Trade and Development," American Economic Review (December 1971)

5/ See T. Morrison, "International Subcontracting: Improved Prospects in Manufactured Exports for the Samll and Very Poor Developing Countries." World Development, (April 1976)

6/ b. Balassa, The Structure of Protection in Developing Countries (Baltimore: John Hopkins Press, 1971); I. Little, T. Scitovsky, M. Scott, Industry and Trade in Some Developing Countries: A Comparative Study (London: Oxford University Press, 1970).

7/ H. Chenery and H. Hughes, "Industrialization and Trade Trends: Some Issues for the 1970s," in H. Hughes (ed.), Prospects for Partnership (Baltimore: Johns Hopkins University Press, 1973), pp. 3-39.

8/ R. Vernon, "International Investment and International Trade in the Product Cycle," Quarterly Journal of Economics, (May 1966).

9/ For a more complete discussion of Haiti's experience, see T. Morrison "Case Study of a 'Least Developed Country' Successfully Exporting Manufactures - Haiti," Inter-American Economic Affairs (Summer 1975), pp. 21-31.

10/ R. Rotberg with C. Clague, Haiti: The Politics of Squalor (Boston: Houghton Mifflin Co., 1971), p. 300.

11/ See U.S. Tariff Commission, Economic Factors Affecting the Use of Items 807.00 and 806.30 of the Tariff Schedules of the United States (Washington, D.C., 1970)

12/ D. Keesing, "Labor Skills and International Trade: Measuring Many Trade Flows with a Single Measuring Device", Review of Economics and Statistics (August 1965); R.E. Baldwin, Determinants of the Commodity Structure of U.S. Trade, Social Systems Research Institute, University of Wisconsin, 1969 (mimeo); P.B. Kenen, "Nature, Capital, and Trade," Journal of Political Economy (October 1965); I. Kravis, "Wage and Foreign Trade," Review of Economics and Statistics (February 1959); H. Waehrer, "Wage Rates, Labor Skills, and United States Foreign Trade," in P.B. Kenen and R. Lawrence (eds.) The Open Economy: Essays on International Trade and Finance (New York: Columbia University Press, 1968), pp. 19-40; P.B. Kenen and E. Yudin, Skills, Human Capital and the U.S. Foreign Trade (New York: Columbia University Press, 1965).

13/ See R. Vernon (1966).

14/ H. Lary, Imports of Manufactures from Less Developed Countries (New York: Colombia University Press, 1968), pp. 189-273.

15/ D. Keesing, "Labor Skills and Comparative Advantage," American Economic Review (May 1966).

16/ A. Maizels, Exports and Economic Growth of Developing Countries (Cambridge: Cambridge Univeristy Press, 1968). An appendix on manufactured exports by Ann Morgan outlines the reasons for the poor long-run outlook for textiles and clothing exports.

VI. Trade Policies of the Developing Countries

Even if the Tokyo Round produces substantial trade concessions for the developing countries, this will still merely constitute a permissive influence for the expansion of manufactured exports. Improved performance in manufactured exports will in the final analysis depend on the strength of efforts of the developing countries themselves and on their willingness to adopt more outward-looking trade policies. While acknowledging the fact that the demand obstacles are significant, it must also be recognized that there are serious supply constraints to increasing manufactured exports in many developing countries.

This chapter will analyze some of the more serious supply obstacles and attempt to determine how government policies are involved. Three areas are identified where government actions may have some impact on the ability of countries to produce manufactured goods which are competitive on the world markets. First, many developing countries have chosen import substitution strategies of industrialization which are characterized by high levels of protection and overvalued exchange rates which discriminate against exports. Second, and often at the basis of the first point, inflationary fiscal and monetary policies often result in a bias against exports by overvaluing the exchange rate. Third, a variety of export promotion devices are available.

Level of Protection

Most developing countries after World War II embarked on industrialization programs based on import substitution. High levels of protection were employed to enable domestic production to replace imports of certain products for which there already existed a demonstrated demand. In most cases, consumer goods were the imports which were limited in favor of domestic production.

Another reason why developing countries have imposed import barriers is to correct for overvalued exchange rates. Governments have turned to protection in such circumstances because they consider devaluation to be undesirable with exports for which there is an inelastic demand and also because devaluation is often considered a political defeat. The most common cause of a currency becoming overvalued is that the inflation which plagues so many developing countries is not counteracted by appropriate devaluations of the exchange rate. Another possible cause of currency overvaluation is that a country's export growth does not keep up with its demand for imports, a situation that is common in countries which are embarking on ambitious development investment plans.

A third reason why developing countries have imposed high levels of protection has been simply to improve or protect their balance of

payments positions. There is a tendency in poor countries which do not produce a large variety of goods to import more than they can afford given their ability to earn and attract foreign exchange. Import barriers have been employed to limit the adverse effects of increasing import propensities on the balance of payments.

Regardless of the reasons for employing import restrictions, high levels of protection are invariably associated with overvalued exchange rates. The exchange rate is overvalued relative to what it would be under free trade. An overvalued exchange rate discourages exports in several ways. First, imported inputs or domestically produced import-competing inputs must be purchased by the export industries at above world prices, while the prices of the exports are still determined by world prices. The export industries are thus at a disadvantage with respect to foreign competitors who do not have to pay such high import duties on inputs.

A second adverse effect of protection on the competitiveness of exporting industries is that their costs may be higher due to inefficiencies which develop behind high import barriers. Industries which are highly protected are not necessarily inefficient but are more likely to be since they do not have to compete with imports.

Another aspect of an overvalued exchange rate is that exporters obtain less domestic currency for the same volume of exports than they

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would under free trade. This aspect combined with the other disincentives mentioned above serve to place exporters at a serious disadvantage compared to foreign competitors with exchange rates closer to free-trade rates.

There have been other criticisms of ~~export~~ import substitution besides the fact that it discriminates against exports. For example, it has been stated that import substitution has been characterized by excessive discrimination against agriculture and other non-industrial activities, that it encourages capital-intensive industry to the detriment of higher employment, and that it causes distortions and misallocations of resources in the domestic economy.

A number of empirical studies have been completed which show the effects of import substitution policies and overvalued exchange rates in individual developing countries. For example, Sheahan has shown that the degree of overvaluation of the exchange rate does have an important impact on the export earnings (exports other than coffee and oil) of Colombia.[1/]

Bela Balassa and his associates have analyzed the systems of protection existing in the mid-1960s in seven developing countries (Brazil, Chile, Mexico, Pakistan, Philippines, and West Malaysia).[2] These studies demonstrated that tariffs on inputs increased production costs of export industries in all seven countries. Overvalued exchange rates were shown to discriminate against exports in all the countries except Pakistan. Exporters of manufactures in Pakistan receive special

treatment under the Export Bonus Scheme. Brazil, Chile, and the Philippines were also shown to exhibit substantial biases against exports, while the bias was less in Mexico and West Malaysia due to offsetting incentives for exporters. Balassa states that the "bias exceeds 100 percent in most manufacturing industries of these countries; i.e., to compete on export markets, producers would have to operate with a value added of less than one-half of that obtainable in producing for domestic markets. There are also cases where protection raises the cost of inputs to such an extent that exporting at world market prices would require negative value added domestically." 3/

Little, Scitovsky, and Scott, and Associates completed a series of studies similar to Balassa's on Argentina, Brazil, India, Mexico, Pakistan, Philippines, and Taiwan, except that these studies were not focused only on the protection structures but on the overall industrialization policies of the countries.[4] They did reach very similar conclusions to Balassa's, however, with respect to the bias against exports of import substitution policies and overvalued exchange rates. All the countries were shown to have a substantial bias against exports until the late 1950's and early 1960s when India, Pakistan, Taiwan, and to a lesser extent, the Philippines, adopted export incentive measures to reduce the bias. Brazil and Argentina did not adopt export promotion measures until 1967.

An important aspect of both Balassa's and Little, Scitovsky, and Scott's studies is that effective rates of protection where estimated for all of the countries. The calculation of effective protection indicates what effect protection has on the value added of an industry, whereas nominal protection indicates merely the effect on the price of the protected product. Effective protection, therefore, can estimate the effects of protection on the allocation of resources and production patterns in exporting industries.

A variety of protection devices have been employed by developing countries. Examples of devices which affect prices are tariffs, import surcharges multiple exchange rates, export taxes and subsidies, and advance deposits for imports. Developing countries have also used a variety of devices which restrict the quantity of imports rather than affecting the price, such as import licensing, quotas, and exchange control. All of these devices, both price and quantitative, have the effect of overvaluing the exchange rate and thereby discriminating against exports.

Maizel has produced some figures on the manufactured exports of several European countries (plus Japan) at early stages of their development (circa 1900) which show a much higher share of manufactured exports in total exports than most developing countries show today. The share of manufactures in total exports were 46 per cent for France, 70 percent for Germany, 41 percent for Italy, 30 percent for Sweden,

75 percent for Switzerland, and 42 percent for Japan. The overall share of manufactured exports in total exports in developing countries has risen from approximately seven percent in 1953 to slightly over 20 percent today.

Various reasons can be given for the difference in manufactured export performance between the newly industrialized countries of today and those of 1900. Some developing countries undoubtedly have perceived their comparative advantage to be in raw materials and hence have not made efforts to develop manufactured exports. There are, however, many developing countries not well endowed with natural resources. Some countries, of course, have not yet reached the levels of industrialization that the European countries and Japan had reached by 1900. The countries which are more difficult to explain are today's semi-industrialized countries, such as Argentina, Brazil, Chile, Colombia, and Turkey. These countries are technically capable of producing a much larger volume of manufactures for export. There are today, however, many more industialized countries with which to compete in world manufactures trade. In 1900, the European countries had to worry about only a few more advanced countries. Moreover, the technological gap between the less developed and more developed countries was much smaller in 1900 than today.

Perhaps a more significant reason why today's developing countries are less successful exporters of manufacturees is their trade policy

orientation toward import substitution and high levels of protection. The European countries in their early stages of development employed import substitution with much lower protection levels. Little, Scitovsky, and Scott give average nominal tariff data for 17 of todays developed countries for the years 1902, 1913, and 1925.[6] Average tariff data are provided for the following countries, with 1902 data in parentheses: Spain (76), United States (73), Portugal (71), France (34), Italy (27), Germany (25), Sweden (23), Denmark (18), Canada (17), Belgium (13), Norway (12), New Zealand (9), Japan (9), Switzerland (7), Australia (6), and the Netherlands (3). When these figures are compared to the protection levels of 18 of today's developing countries (see Table IV), it becomes clear that most of today's developed countries have never employed the levels of protection now employed in developing countries.

Even if it is finally agreed that the high levels of protection prevalent in developing countries do indeed discriminate against exports, no single straightforward policy prescription emerges from this conclusion. The developing countries have a valid point when they state that it is not easy for them to lower tariff barriers. Not only do they have the same political difficulties with domestic industry as do developed countries, but many also depend on import taxes for large shares of their public revenues. Many developing countries also have administrative problems in collecting tax revenues, and import taxes are the easiest to collect.

Table IV

Average Nominal Rates of Protection

Argentina	.74
Bolivia	.26
Brazil	.96
Chile	1.60
Colombia	.49
Ecuador	.81
Israel	.32
Korea	.35
Malaysia	.10
Mexico	.24
Pakistan	.85
Peru	.63
Philippines	.25
Taiwan	.30
Tanzania	.26
Turkey	.44
Uruguay	1.84
Venezuela	.45

Sources:

--B. Balassa, The Structure of Protection in Developing Countries, Baltimore, 1971, (for Brazil, Mexico, Pakistan, and the Philippines);
--I. Little, T. Scitovsky, and M. Scott, Industry and Trade in Some Developing Countries, London, 1970, (for Taiwan);
--H. Bell, Tariff Profiles in Latin America, 1971, (for Argentina, Bolivia, Chile, Colombia, Ecuador, Peru, Uruguay, and Venezuela);
-- B. Cohen, "The Use of Effective Tariffs," Journal of Political Economy, (January/February, 1971), (for Israel and Malaysia);
--Korean Development Association, Effective Protective Rates of Korean Industries, 1967, (for Korea);
--D. Kessel, "Effective Protection of Industry in Tanzania," Eastern Africa Economic Review, July, 1968, (for Tanzania)
--A. Krueger, "Some Economic Costs of Exchange Control: The Turkish Case," Journal of Political Economy, October, 1966, (for Turkey).

Given these constraints, developing countries can still begin to move toward more liberal trade policies. Many countries have already indicated awareness of their trade policy problems by instituting export promotion programs. The more difficult tasks of lowering protective barriers and realigning exchange rates lies ahead for most of these countries. Hopefully, some progress in these areas can be achieved at the Tokyo Round of multilateral trade negotiations accompanied by concessions of the developed countries.

Policy prescriptions on how import barriers might reasonably be lowered in developing countries have been advanced by many economists. Since most of the economic arguments for protection have been related to temporary protection (e.g., the "infant industry" argument), economists have suggested that there be a gradual phasing down of protection levels in developing countries. This allows industries in these countries to adjust to the changes in import competition which occur over time. Tariff reductions in the MTN are staged over time even for the developed countries, and one area of differential treatment of developing countries which has been discussed is the staging of tariff reductions.

If the lowering of tariff barriers puts a strain on public revenues, governments might consider taxing traditional or primary exports for which there is an inelastic demand. In addition, as countries develop, the domestic tax base generally becomes larger in relation to the trade

sector tax base so that dependence on the trade sector for public revenues should gradually shift toward the domestic tax base. In order to offset possible detrimental effects of trade liberalization on the balance of trade, governments can follow the example of some of the developing countries which have initiated effective export promotion programs.

Inflation

Inflation has been a problem in many developing countries which have made efforts to grow qickly and invest heavily, especially when the central government has played a major role in investment. Besiues its undesirable redistributive effects and the uncertainty it causes with respect to investment, inflation also discourages exports in several ways.

Inflation is intimately related to protection and exchange rate issues in developing countries. When inflation occurs and is accompanied only by infrequent large devaluations, the exchange rate invariably becomes overvalued. For reasons mentioned earlier, governments are generally reluctant to devalue frequently. In order to offset the adverse effect of the overvalued exchange rate on the balance of trade, governments instead tend to impose import restrictions. Inflation, therefore, is often the cause of the high levels of protection and overvalued exchange rates which discriminate against exports.

Inflation also often causes serious problems within the export industries. If significant shares of the inputs are domestic, the export industries in an inflationary economy must contend with the situation where production costs are increasing at a faster rate than the sales price which is determined by the world market. Inflation also creates problems for exporters with respect to medium and long-term contracts and credit arrangements. These problems could be solved if the government would consider more frequent devaluations.

Countries with high rates of inflation will also hesitate to participate in regional integration. A high rate of inflation, if it is not compensated for by frequent devaluations, will make a country very vulnerable to the competition of other countries in the regional group.[7/]

Infrequent and large devaluations cause serious adjustment problems for both exporters and importers. Countries experiencing high rates of inflation should consider the experiences of Brazil and Colombia with the "crawling peg" exchange rate system (sometimes referred to as a "trotting peg" or a "sliding peg").[8] Chile also employed this technique from 1962 to 1970, but its experience is difficult to analyze because of the frequent political disturbances during the 1960's. A "trotting peg" system consists of frequent and

anticipated small downward adjustments in the exchange rate to compensate for rising domestic costs.

Brazil has devalued the Cruzeiro on the average of every 45 days by 1.62 percent since August 27, 1968, which has meant a cumulative devaluation of 36.1 per cent from 1968 to the end of 1970. This technique has provided the exporter with the prospect of a relatively firm relationship between internal production costs and world market prices, and is probably responsible in part for the 54.3 percent average annual growth rate of manufactured exports from 1968 to 1970. The share of manufactures in total exports in Brazil rose from 9.8 percent in 1968 to 12 percent in 1969 and 18 percent in 1970.

Colombia began early in the 1960's to gradually develop a system of export promotion for manufactures based on exchange rate policy and fiscal incentives. This gradual development culminated in the passage of Decree-Law No. 444 in March, 1967, which established the legal basis for a "trotting peg" exchange rate system and a variety of other export incentives. During the period 1967-1971, the Colombian peso was devalued (often at daily intervals) at an average annual rate of 7.3 percent. Since the early 1960's, Colombia's manufactured exports have grown at an average annual rate of 15 percent, and at a slightly higher rate since the establishment of the "trotting peg" in 1967. The share of manufactures in total exports has grown from 11 percent in 1960 to nearly

35 percent in 1971. The experiences of both Brazil and Colombia can be used to encourage more frequent use of exchange rate adjustment and export promotion as preferable ways to deal with the effects of inflation on a country's balance of payments.

Export Promotion

Rather than lower import barriers and/or more frequently adjust their exchange rates, most of the developing countries which have faced the problem of anti-export bias have done so with a variety of export promotion devices. Although this solution does not attack the problem at its roots, it does at least partially compensate for overvalued exchange rates and it also appeals to planners in developing countries since export promotion devices can be directed to specific sectors and industries in the economy.

Export promotion devices are, in effect, subsidies to exporters, although some devices are more direct subsidies than others. For example, devices which reduce exporters' production or tax costs are more direct subsidies than devices which provide marketing information or export credits.

The choice of particular promotion devices should be determined by the needs of the individual countries concerned and in view of what are considered to be acceptable trading practices by the international community. The GATT rules do not prohibit export subsidies, but they

do enjoin countries employing export subsides to so inform the GATT and to discuss the subsidies with trading partners. According to GATT rules, importing countries can retaliate with countervailing duties if actual or threatened injury can be demonstrated. The GATT does however, encourage developed countries not to apply countervailing duties on the imports of developing countries.

Export promotion devices are used not only to compensate for overvalued exchange rates, but also to stimulate the exports of industries that are not yet competitive for other reasons. Successful exporters can also be encouraged to increase their exports through various promotion techniques.

Luc de Wulf has recently provided a useful categorization of fiscal export promotion devices:[9]

(1) devices that increase gross receipts from exports;

(2) devices that reduce tax or production costs;

(3) devices that reduce the profit tax liability.

Devices that directly increase gross export receipts include exemptions from export taxes and direct export subsides. Many developing countries allow exporters of industrial products not to pay export taxes. The most commonly cited example of a direct export subsidy program is the Pakistan Export Bonus Scheme in which certain exporters receive negotiable bonus vouchers equal to a certain percentage of their export sales which they can use to purchase imported inputs.[10]

There are also a variety of devices that reduce exporters' tax and production costs. The most common tax measure that is granted by developing countries to exporters is a total or partial drawback of import taxes on inputs. Examples of measures which have been used to reduce production input costs include interest rate subsidies, investment allowances, payroll tax exemptions, and subsidized freight and public utilities.

The income taxes of exporters can be reduced by granting tax holidays, income tax rebates, and income tax deductions related to specified expenditures. Examples of the latter measure include the granting of income tax deductions for export promotional expenditures and domestically produced inputs. Accelerated depreciation and investment allowances are also very common in developing countries.

Besides fiscal incentives for exporters, government funds can also be used to help close the information gap by organizing the collection and dissemination of foreign market information and surveys. Export publicity and exhibitions might likewise be sponsored by the government.

There is ample evidence of how the more successful exporters of manufactures have used various export incentive schemes. Various types of tax exemptions are popular ways to encourage exports. Mexico grants rebates of up to 50 percent of the tax on income derived from exports, while Taiwan and India grant similar rebates of a smaller amount. In both Mexico and India, there is widespread

exemption for manufacturers from export taxes. In India, Iran, Mexico, Taiwan, and Yugoslavia, export-oriented industries may apply for duty drawbacks on all imported raw materials subsequently used in goods exported. Tax holidays are used to encourage export-oriented industries in Taiwan and Jamaica. Free trade zones and free ports also encourage exports and exist in Panama, Mexico, Taiwan, and India. India and Mexico both help directly in the financing of promotional costs for exports abroad. These two countries, and also Taiwan, have official organizations to collect and disseminate foreign market information to export industries.

A proper appraisal of export promotion programs must be carried out in specific contexts. The benefits from export promotion are not easily measured. Besides the obvious benefits to the exporting firms, often cited are the balance of payments effects and employment creation. There are substantial costs associated with most export promotion programs, however, which must be compared to the alleged benefits. Many export promotion devices result in tax revenue foregone or increased fiscal expenditures. In addition, there may be a misallocation of resources due to the manipulation of market forces. There are certainly more direct costs associated with export promotion programs than with the alternative of lowering import barriers and more frequent exchange rate adjustments.

FOOTNOTES

1/ John B. Sheahan, "Imports, Investment, and Growth: Colombian Experience Since 1950," in G.F. Papanek, ed. Development Policy-Theory and Practice (Harvard University Press, 1968).

2/ B. Balassa and Associates, The Structure of Protection in Developing Countries (Baltimore: Johns Hopkins Press, 1971).

3/ Ibid., p. 63.

4/ I. Little, T. Scitovsky, and M. Scott, Industry and Trade in Some Developing Countries (London: Oxford University Press, 1970).

5/ A. Maizels, Industrial Growth and World Trade (Cambridge: Cambridge University Press, 1963), pp. 56-57.

6/ Little, Scitovsky, and Scott, pp. 162-168.

7/ F. Pazos, "Regional Integration of Trade among Less Developed Countries," in P. Streeten. ed., Trade Strategies for Development (London: Macmillan Press, 1973), pp. 172-173, discusses the problems created in the Latin American Free Trade Association by the differences in rates of inflation of member countries.

8/ For a more complete analysis of Brazil's experience, see J. Donges, Brazil's Trotting Peg: A New Approach to Greater Exchange Rate Flexibility in Less Developed Countries (Washington, D.C.: American Enterprise Institute, 1971); and H. Hesse, "Promotion of Manufactured Exports as Development Strategy of Semi-Industrialized Countries: The Brazilian Case "Weltwirtschaftliches Archives (1972). For an analysis of Colombia's experience, see J. Teigeiro and R. Elson, "The Export Promotion System and the Growth of Minor Exports in Colombia", International Monetary Fund, Staff Papers (July 1973).

9/ Luc de Wulf, "Fiscal Incentives for Industrial Exports in Developing Countries," IMF Staff Working Paper, January, 1976.

10/ A. Gerakis, "Pakistan's Export Bonus Scheme, "Finance and Development (June 1974), pp. 10-13.

VII. CROSS-COUNTRY ANALYSIS

Definition of Manufactured Export Performance

The object of the cross-country analysis is to test empirically the hypotheses put forward in chapters V and VI regarding why some developing countries have been more successful than others in exporting manufactured goods. Two different variables are used to represent performance in exporting manufactures: manufactured exports per capita (X_c) and manufactured exports as a share of manufactured output (X_s).

The level of manufactured exports is measured in per capita terms in order to eliminate the influence of the large differences in the sizes of developing countries. The analysis can thereby focus on factors influencing the propensity to export manufactures. Adjusting manufactured exports for population also makes possible the inclusion of population as an independent variable intended to represent the influence of economies of scale.

Although per capita manufactured exports is the more common performance criterion, the share of manufactured exports in manufactured output should reflect more directly factors which influence manufacturers' decisions concerning whether or not to export. Unfortunately, it is probably less

reliable statistically than per capita manufactured exports. The ideal measure would be exports of manufactured value-added output. Value-added data, however, are not available for manufactured exports. Since the numerator (manufactured exports) is in gross terms and the denominator (manufactured output) is in value-added terms, there is a bias against countries that have larger value-added components in total manufactured output. Furthermore, the share of manufactured exports in manufactured output is available for a smaller sample of countries than manufactured exports per capita.

Several cross-country studies have used as the dependent variable the share of manufactured exports in total exports.[1] These studies were primarily concerned with why some countries have more of a comparative advantage in manufactures than others, and therefore a composition of trade measure was appropriate. The purpose of the present study, however, is not to identify comparative advantages. Although comparative advantage has its effect on the two dependent variables defined above, variables such as protection levels and inflation are also significant. Since these variables often affect both primary and manufactured exports, a composition

of trade measure is not appropriate as the dependent variable.

A number of products not far from the primary production stage have been excluded from the two measures of manufactured export performance. A list of these resource-based products and the full criteria used for their exclusion are given in Appendix A. There are two reasons for excluding these products. First, a measure of manufactured export performance should ideally include only value-added data. Since these data are not available, an effort will at least be made to exclude those products whose value largely consists of raw materials. The second reason for excluding resource-based products is that policy variables are a major focus of this study, whereas exports of resource-based products are largely a function of the availability of a scarce raw material. The exclusion of resource-based products from this analysis in no way implies disapproval of the further processing of a country's raw materials as one way of expanding manufactured exports.

The definition of manufactured exports ordinarily used in studies of this type consists of commodity classes 5 to 8 of the Standard International Trade Classification(SITC).[2] Table V shows how the ranking of 51 countries by manufactured

exports is affected when resource-based products are excluded from SITC 5-8 according to the criteria developed in Appendix A. The Spearman coefficient of rank correlation is .664. Mainly responsible for this somewhat low rank correlation are the countries which drop in rank. Out of 51 countries, only 14 drop in rank, indicating that the average drop in rank is significantly larger than the average increase. Of the countries exhibiting a notable drop in rank, SITC product category 68 (unworked non-ferrous metals) is primarily responsible in the cases of Zambia, Chile, Zaire, Malaysia, Peru, Nigeria, and Uganda, whereas SITC 63 and 82 (wood products and furniture) are responsible in the cases of Burma and Ghana. The significant differences in the levels of manufactured exports of these countries when resource-based products are excluded indicate that the determinants of success in these products are not the same as the determinants of success in products that are not resource-based. It is the availability of a scarce raw material that contributes most to a country's comparative advantage in a resource-based product. It is appropriate, therefore, that resource-based products be excluded from the present study.

TABLE V

Rank Correlation Analysis on Basis of Manufactured Exports

Country	Rank With SITC 5-8	Less Resource-Based Products	Change in Rank
Zambia	1	28	-27
Chile	2	44	-42
Zaire	3	34	-31
India	4	1	3
Yugoslavia	5	4	1
Taiwan	6	2	4
Mexico	7	5	2
Korea	8	3	5
Malaysia	9	20	-11
Israel	10	8	2
Peru	11	38	-27
Pakistan	12	6	6
Greece	13	9	4
Brazil	14	12	2
Iran	15	7	8
Philippines	16	10	6
Thailand	17	24	-7
Argentina	18	14	4
Ghana	19	40	-21
Jamaica	20	15	5
Singapore	21	11	10
Nigeria	22	31	-9
Colombia	23	18	5
Egypt	24	13	11
Tanzania	25	27	-2
Turkey	26	16	10
Morocco	27	19	8
Uganda	28	50	-22
Algeria	29	22	7
Malta	30	17	13
Tunisia	31	26	5
Uruguay	32	30	2
Mozambique	33	33	0
Venezuela	34	29	5
Kenya	35	25	10
Panama	36	21	15
Haiti	37	23	14
Cyprus	38	35	3
Ceylon	39	46	-7
Burma	40	51	-11
Iraq	41	32	9
Guatemala	42	43	-1
Libya	43	36	7
Dominican Rep.	44	47	-3

TABLE V (continued)

Country	SITC 5-8	Less Resource-Based Products	Change in Rank
Ethiopia	45	45	0
Syria	46	37	9
Honduras	47	39	8
Ecuador	48	41	7
Bolivia	49	49	0
El Salvador	50	42	8
Jordan	51	48	3

Due to the incomplete availability of data, there are five different sets of regressions corresponding to five different country samples. The largest set employs data from 73 countries, and as variables are added to the analysis the country sample declines from 73 to 62, 45, 40, and 18. The only country excluded from the analysis for reasons other than data availability is Hong Kong, because its manufactured exports are exceptionally large and would dominate the regression estimates. Although Hong Kong is excluded from the cross-country analysis, its experience in manufactured exports is an interesting case and can be explained in terms of the factors used in the regression equations (i.e. low natural resource base, skilled labor force, and low levels of protection and inflation).

The manufactured export data represent exports of individual developing countries to the countries belonging to the Organization for Economic Cooperation and Development (OECD).[3] Data including manufactured exports to all countries is available in the United Nations Commodity Trade Statistics, but for a smaller sample of countries and with more than a few significant exporters of manufactures missing (i.e., Algeria, Colombia, Iran, Jamaica, Kenya, Malaysia, Morocco, Pakistan, Panama, Peru, Uruguay, and Zaire). Since there are only a few countries whose exports of manufactures to non-OECD countries represent a significant share of their total manufactured exports (e.g., the Central American Common Market countries), this study must be content to point out these instances where appropriate in the analysis.

The Model

In order to test the hypotheses of chapters V and VI, cross-country data were assembled for six different variables alleged to explain manufactured export performance:

(1) domestic market size

(2) level of economic development

(3) natural resource endowment

(4) labor skills

(5) level of protection

(6) inflation

The first three vaiables can be considered as given endowments which are suited to the traditional static approach of comparative advantage, whereas the latter three variables are subject to some degree of control and manipulation by policy-makers. It should be pointed out, however, that inflation is normally less controllable in developing countries than in developed countries, and levels of protection are often difficult to change in the short run because of the large share of government revenues that import taxes represent. It has also been pointed out that even if inflation and protection cannot be controlled in the short run, there are other means available to policy-makers to offset at least in part the discouraging effects on manufactured exports. With regard to labor skills, it has been demonstrated that an organized program of educational investment and vocational training can produce results in the short run.

Table VI defines the variables used in the regression analysis. The variables N and C are used alternately to represent market

TABLE VI

Definition of Regression Variables

Dependent Variables

X_c = manufactured exports per capita, 1968-1970

X_s = share of manufactured exports in manufactured value-added output, 1968-1970

Independent Variables

Y = Gross Domestic Product per capita, 1969

N = total population, 1969

C = consumption of manufactured goods (1969), calculated by adjusting manufactured output (value-added) for exports and imports

D = population density (population divided by total land area) to be used as a proxy for natural resources per head (inverse)

R = index of abundance of natural resources (Adelman and Morris)

P = consumer price index for 1970 (1963 = 100)

L = per cent of the population that is literate, to be used as a proxy for labor skills

O = openness index (share in the increase of consumption of finished manufactured goods from 1963 to 1969 that is imported)

T = average nominal tariff level

size, and similarly D and R for natural resource endowment, and T and O for level of protection. In order to estimate the separate effects of each of the independent variables on manufactured export performance, the following two equations were formulated:

$$\ln X_c = a_o + a_1 \ln N + a_2 \ln Y + a_3 \ln D + a_4 \ln T + a_5 \ln P + a_6 \ln L + u$$

$$\ln X_s = b_o + b_1 \ln N + b_2 \ln Y + b_3 \ln D + b_4 \ln T + b_5 \ln P + b_6 \ln L + u$$

The number of vaiables included in an equation as well as their definitions vary according to data availability for a given sample size.

The log linear form of regression equation (with both dependent and independent variables in log form) has historically provided the best fits for a variety of cross-country studies.[4] Preliminary tests indicated that in this study also the double log linear (or constant elasticity) form is preferable. It seems more reasonable that the elasticities would be constant than that the slopes would be constant. One would not expect variables such as market size, level of economic development, and natural resource endowment to be linearly related to manufactured export performance.

The Country Samples

Due to the incomplete availability of data for many developing countries, five different sets of regressions were run with different sample sizes. The set having the largest sample of countries (73) used X_c (manufactured exports per capita, 1968-1970) as the dependent variable and N (population), Y (per capita gross domestic product), and D (population density) as independent variables. Set I includes the following 73 countries:

Afghanistan	Ethiopia	Liberia	Sierra Leone
Algeria	Ghana	Libya	Singapore
Angola	Greece	Madagascar	Somalia
Argentina	Guatemala	Malaysia	S. Yemen
Bolivia	Haiti	Malta	Sudan
Brazil	Honduras	Mexico	Syria
Burma	India	Morocco	Taiwan
Cameroon	Indonesia	Mozambique	Tanzania
Ceylon	Iran	Netherlands Ant.	Thailand
Chile	Iraq	Nicaragua	Togo
Colombia	Israel	Nigeria	Trinidad/Tobago
Costa Rica	Ivory Coast	Pakistan	Tunisia
Cuba	Jamaica	Panama	Turkey
Cyprus	Jordan	Paraguay	Uganda
Dominican Rep.	Kenya	Peru	Uruguay
Ecuador	Korea	Philippines	Venezuela
Egypt	Kuwait	Saudi Arabia	Yugoslavia
El Salvador	Lebanon	Senegal	Zaire
			Zambia

If eleven of the above countries are excluded, the independent variables P (inflation) and L (labor skills) can be added to the analysis. The eleven countries excluded are Afghanistan, Angola, Burma, Cuba, Indonesia, Kuwait, Saudi Arabia, Senegal, Somalia, Togo, and Zaire. Set II therefore includes 62 countries.

If 17 more countries are excluded, the dependent variable X_3 (manufactured exports as a share of manufactured value-added output) and the independent variables C (consumption of manufactures) and O (openness index) can be added to the analysis. The 17 countries thus excluded are Bolivia, Cameroon, Costa Rica, Guatemala, Haiti, Ivory Coast, Lebanon, Liberia, Madagascar, Netherlands Antilles, Nicaragua, Paraguay, Sierra Leone, S. Yemen, Sudan, Tanzania, and Trinidad/Tobago. The exclusion of these countries leaves Set III with 45 countries.

If Adelman and Morris' natural resource index (R) is to be used, five more countries have to be excluded (Malaysia, Malta, Mozambique, Singapore, and Yugoslavia), leaving a sample of 40 countries comprising Set IV.

Set V contains the 18 countries for which average nominal tariff levels are available (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Israel, Korea, Malaysia, Mexico, Pakistan, Peru, Philippines, Taiwan, Tanzania, Turkey, Uruguay, and Venezuela).

Regression Results

Table VI summarizes the main findings of the regression analysis. In most of the equations, regardless of sample size, the manufactured export performance variables are positively and significantly related to market size (population), level of development (per capita income), population density (the inverse of natural resources per head), and degree of openness. Manufactured export performance is negatively associated with inflation in all equations except those with a sample of 18 countries, but in only three equations is the negative relationship significant at the 5 per cent probability level. Labor skills (literacy) surprisingly exhibits a negative coefficient in most of the equations, significantly

TABLE VII

Cross-Country Regression Results

No.	Sample Size	Independent Variable	Coefficients of: N	Y	D	R	O	T	P	L	Constant Term	R^2
1.	73	X_c	.09 (.71)	1.4 (5.6)	.59 (5.3)						-3.9 (-2.9)	.56
2.	62	X_c	.19 (1.3)	1.9 (5.7)	.77 (5.7)				-.13 (-.38)	-.31 (-1.4)	-2.3 (-1.3)	.60
3.	45	X_c	.41 (2.3)	2.2 (5.9)	.72 (4.3)		1.1 (2.3)		-.05 (-.15)	-.42 (-1.6)	-15 (-2.6)	.64
4.	45	X_s	.37 (2.1)	1.0 (2.7)	.44 (2.6)		1.3 (2.5)		-.62 (-1.7)	-.48 (-1.8)	-7.0 (-1.2)	.44
5.	40	X_c	.48 (2.5)	2.4 (5.8)	.76 (3.3)		1.3 (2.4)		-.10 (-.28)	-.47 (-1.4)	-17 (-2.8)	.60
6.	40	X_c	.57 (2.7)	2.0 (4.5)		-.83 (-1.5)	1.2 (1.9)		-.47 (-1.2)	.11 (.39)	-11 (-1.4)	.50
7.	40	X_s	.45 (2.4)	1.2 (2.3)	.46 (2.0)		1.7 (3.0)		-.62 (-1.7)	-.62 (-1.9)	-11 (-1.7)	.45
8.	40	X_s	.51 (2.5)	1.0 (2.4)		-.71 (-1.4)	1.5 (2.5)		-.34 (-2.3)	-.27 (-1.0)	-5.5 (-.74)	.42
9.	18	X_c	.17 (.53)	1.3 (2.3)	1.1 (4.9)			-.94 (-1.7)	.70 (1.5)	-.49 (-.75)	-2.9 (-.92)	.79
10.	18	X_s	.17 (.51)	.52 (.72)	1.1 (3.5)			-.99 (-1.4)	.35 (.59)	-.99 (-1.2)	5.7 (1.4)	.69

All of the equations above are in double-logarithmic form. The figures in parentheses are the t-statistics.

negative at the 5 per cent probability level in two equations. Average level of nominal protection is negatively associated with manufactured export performance in the two equations in which it appears, significant at the 5 per cent probability level in equation 9 and at the 10 per cent level in equation 10. The index of natural resource endowment (R) is negatively related to manufactured export performance in the two equations in which it appears, in both cases significant at the 10 per cent probability level, but not at the 5 per cent level.

Before analyzing each of the independent variables, one further item is worthy of note regarding the dependent variables. In order to determine the effect of the detailed exclusion of resource-based products from the measures of manufactured export performance, the variable X_c was readjusted to represent product categories SITC 5-8 less 68 (unworked non ferrous metals). This is the more common measure of manufactured exports when an effort is made to exclude primary products.[5] Equation 3 (see Table V) was run again with XC_1 defined as the adjusted dependent variable.

$$XC_1 = \underset{(1.8)}{.44N} + \underset{(2.3)}{1.3Y} + \underset{(3.9)}{.93D} + \underset{(1.9)}{1.4O} + \underset{(.43)}{.22P} + \underset{(.32)}{.12L} - \underset{(-2.5)}{21}$$

The independent variables in the equation above explain 51 per cent of the variation in manufactured export performance, compared to 54 per cent in equation 3 when a more detailed exclusion of resource-based products was conducted. The inferior fit obtained with the use of XC_1 as the dependent variable is accounted for by a lessening in the significance of all six coefficients. This result was expected, since one of the reasons for the detailed exclusion of resource-based products was to eliminate those products whose performance is not thought to be influenced significantly by the explanatory variables of the present study.

← 1. Domestic Market Size

Population is used as the primary variable for domestic market size. An alternate variable, domestic consumption of manufactures, was calculated by adding imports to and subtracting exports from manufactured output. The data for this latter variable, however, are available only for a significantly smaller sample of countries. Hufbauer used

output of manufactures as his variable for country size in trying to explain the composition of trade across countries. Adjusting this variable for exports and imports more directly reflects the size of the domestic market. Both population and consumption of manufactures are used in the cross-country analysis in order to conduct a more complete test of the market size hypothesis.

In order to compute consumption of manufactured goods, imports of manufactures (SITC 5-8 less 68) were added to and exports of manufactures (SITC 5-8 less 68) were subtracted from manufactured output. Data limitations required that the manufactured imports and exports consist only of trade data with OECD countries. The manufactured output data were obtained from various editions of the United Nations Growth of World Industry and are in value-added form. Value-added data, besides being available for a larger sample of countries, are preferable to gross manufactured output because many products are inputs to other products in the sample. Value-added data thereby eliminate the possibility of a significant amount of double counting. Since imports and exports are both from the year 1969, the value-added output data were also taken from

1969, or the closest year available. The products included in the manufactured output data are roughly similar to categories 5-8 less 68 of the Standard International Trade Classification.

Population (N) is positively and significantly related to manufactured export performance in the equations where the sample size is 40 or 45. These equations contained the maximum sample sizes while still including all the important explanatory variables. With sample sizes of 73, 62, and 18, the coefficient of population is positive but not significant. Since equations 3 to 8 of Table VII are the most complete in terms of sample size and explanatory variables included, the regression results can be said to give some support to the hypothesis that the size of the domestic market, reflecting the benefits of economies of scale and the extent of competition, is an important factor in the development of manufactured exports.

Domestic consumption of manufactures was tried as an alternate variable for population as an indicator of market size in the regressions. In most of the equations, the coefficients were not as significant. There also was not a notable effect on the other coefficients of an equation

when consumption of manufactures was used as the market size variable. A simple regression of population (N) on consumption of manufactures (C) yields an R^2 of .41 with the coefficient of C positive and significant at the 1 per cent level of probability. The equation is in double log linear form and is for 45 observations.

The fact that population yielded better statistical results does not necessarily mean that it is a better indicator of market size than consumption of manufactures. There are numerous examples of countries with large populations which do not provide significant markets for manufactured goods (e.g., Indonesia, Nigeria, Egypt, Burma, Ethiopia, and Zaire). These are countries which have also had poor records with manufactured exports. The inclusion of these countries in the regression analysis decreases the significance of the N coefficient, but the main hypothesis is still supported when it is noted that the markets for manufactures in these countries are actually small, even though their populations are relatively large.

2. Level of Economic Development

Other things equal, the higher the level of economic

development of a country, the greater should be its capability of producing manufactured products that are competitive on the world market. The degree of industrialization, an efficient infrastructure, and skills of management and the labor force combine to give a more developed country a comparative advantage in producing products with the quality and economy necessary to be competitive in world trade. In the present study, per capita income (gross domestic product) is used as the variable representing level of development and it is expected to be positively related to manufactured export performance.

The coefficients of per capita GDP (Y) are positive and significant at the 5 per cent probability level in all equations except number 10 in Table XII. In the equations where X_s is used, the coefficients of Y are less significant. The inferior relationship of Y with X_s can be explained by the fact that as Y increases, absolute magnitudes such as X_c tend to increase, but of course not all shares (e.g., X_s) can increase.

The regression results support the hypothesis that level of economic development is an important determinant of

manufactured export performance. Level of development reflects many factors -- industrialization, infrastructure skills, organization --- all of which are favorable to the development of manufactured exports. Here again, however, this study does not wish to imply that this determinant is a necessary precondition. There are countries with low *per capita* incomes that have developed significant manufactured exports, such as India and Pakistan. These two countries, however, have had the favorable influence of large domestic markets. Moreover, the predominant shares of both countries' manufactured exports consist of products intensive in the use of unskilled labor (textiles and clothing).

Summarizing the effects of level of development (*per capita* income) on manufactured export performance, the statistical results support the hypothesis that there is a strong positive relationship between the two variables across countries. The experience of several countries indicates, however, that a low level of development does not

prevent the production of competitive manufactured exports. Factors such as products intensive in unskilled labor and investment by multinational firms make feasible the development of manufactured exports in low-income countries.

3. Natural Resource Endowment

As Keesing and Sherk have pointed out in their study of the determinants of the composition of exports, population not only reflects the effects of market size, but also of population density (population divided by total land area). Postulating that population density is a proxy for the inverse of natural resources per head since it is "highly correlated (negatively) with the combined availability of mineral wealth, arable land, and other economically useful endowments from nature," Keesing and Sherk expect densely populated countries to specialize in manufactures and lightly populated countries in primary products according to the land-labor version of the Heckscher-Ohlin theory. In order to distinguish the two positive influences of population on manufactured exports, both population and population density should be included in the regression

equation and both are expected to have positive coefficients.

The postulate of Keesing and Sherk that there is a high negative correlation between population density and natural resources is debatable. An alternate variable for natural resources can be used in order to test its relationship with manufactured exports. Adelman and Morris have constructed an index of "abundance of natural resources."[7] This index is defined "primarily in terms of three broad classes of resources: agricultural land, fuel, and mineral resources other than fuel." Countries are placed on the following simple linear scale: 97,90,83,67,50,54,41, 35.29,16,10, and 4. Such a scale measure is appropriate rather than a more detailed index since Adelman's measuring techniques are not designed for precise differentiation.

Both variables representing natural resources, D and E, indicate a significantly negative relationship between natural resource endowment and manufactured export

performance, thus supporting the hypothesis of this study. The coefficients are more significant when X_g is used as the dependent variable than when X_s is used. This result is reasonable considering the fact that abundance of natural resources should have a negative effect on both the numerator (manufactured exports) and the denominator (output of manufactures) of the X_s ratio.

The coefficients of the variable D are in all cases significant at the 5 per cent level of probability, whereas the coefficients of R are significant only at the 10 per cent level. This result is difficult to explain, because R is a more sophisticated measure of natural resources than D and was expected to perform better. In order to determine how closely D and R are correlated, a simple regression was run with these two variables.

$$R = \underset{(-4.6)}{-.24D} + \underset{(24.4)}{4.8}$$

The R^2 ratio of this equation is .35, which is not very high considering that the two variables are meant to be close substitutes. The sign of the coefficient and its significance at the 1 per cent level indicate that the relationship between the variables is as expected. This study is left with the tentative and tenuous conclusion that, assuming both D and R are valid measures of a country's natural resource endowment, D seems to be a slightly better

measure, at least for the purposes of the present study. Both variables support the hypothesis that an abundance of natural resources normally acts as a discouraging factor with regard to manufactured exports.

This negative relationship between natural resources and manufactured exports follows straightforwardly from the Heckscher-Ohlin theory of comparative advantage. If this study recommends that it is a good general policy for all developing countries to develop manufactured exports, would it not thereby be recommending that some countries act contrary to their comparative advantage? The answer to this question is that dynamic, rather than static, comparative advantage is the proper decision criterion. Expanding manufactured exports often necessitates developing a comparative advantage in those products. Various reasons were given in Chapter II why the long-run growth potential of manufactures is much greater than for raw materials. For these reasons, it would be shortsighted policy to rely on a temporary comparative advantage in natural resources and ignore manufactures.

4. Labor Skills

There are a variety of measures that have been computed to indicate relative quality of the labor force in developing countries. Although most of these draw heavily on educational data, Hufbauer and Waehrer both use data on the composition of the labor force.[8] For a labor skills index, they used category "0" of the International Labor Organization statistics (professional, technical, and related workers) as a percentage of the total labor force. Hufbauer himself criticizes these data for being "internationally inconsistent" and the categories for not capturing exactly the relevant information.

Harbison and Myers constructed a "composite index of levels of human resource development" from school enrollment data.[9] An extent of literacy variable is also available for a large sample of countries.[10] Although these two measures are very highly correlated, the literacy rate measure will be used in the present study because of its availability for a larger sample of countries and also because it may measure a relevant quality of the population over and above what formal education statistics indicate.[11]

Table VI shows that literacy is not statistically significant in support of the labor skills hypothesis, and in fact displays negative coefficients in most of the equations. There are several reasons why an empirical test of the relationship between labor skills and manufactured export performance is difficult. Literacy is an admittedly imperfect proxy for labor skills. It is very closely associated with school enrollments, and neither of these may be correlated with how well-trained is an industrial labor force.[12] An example is Korea which, although having a relatively high rate of literacy and a large supply of liberally educated college graduates, may well have a shortage of properly trained skilled labor. The methods of collecting and computing literacy data also vary from country to country, and these data are only available for a variety of sample years.

Another statistical problem with the variable L is the probable presence of multicollinearity. Several cross-country studies have yielded consistent evidence of a positive relationship between level of economic development and the rate of additions to the stock of educated people (measured by school enrollment ratios).[13] In the present study, L was found to be positively related to Y (per capita GDP), D (population density), and P (inflation), with all

three coefficients significant at the 5 per cent level of probability.

$$L = .58Y + .27D + .39P - .25$$
$$(5.0) \quad (3.9) \quad (2.1) \quad (-.25)$$

The above equation was calculated with a sample of 61 countries and resulted in an R^2 ratio of .47. If the variables Y, D, and P are excluded from equation 2 of Table III, the coefficient of L becomes positive and significant at the 1 per cent probability level. The variables Y, D, and P were also excluded from the other equations of Table III with the similar result that the coefficients of L became significantly positive. These results do not support a positive relationship between manufactured export performance and literacy, but merely point to the possibility of multicollinearity and thereby cast doubt on the negative coefficients of L in Table III.

5. Level of Protection

In order to examine empirically the effects of these inward-looking policies on the manufactured export performance

of developing countries, a variable must be constructed which indicates for each country the extent of protection given to domestic industry. The most obvious variable would be an average tariff level for each country. Unfortunately, the considerable effort needed to compute such averages and the variety of empirical methods create difficulty in collecting an adequate sample of countries with comparable data. Roughly comparable average nominal tariff levels are available (from various sources) for only 18 countries. In the regressions, this protection variable is expected to be negatively related to manufactured export performance.

Appendix B lists the various sources used for obtaining the average nominal protection levels for the 18 countries: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Israel, Korea, Malaysia, Mexico, Pakistan, Peru, Philippines, Taiwan, Tanzania, Turkey, Uruguay, and Venezuela. Average nominal tariff levels were available for all 18 countries, whereas average effective tariff levels were available for only 12 of the countries. Although effective tariffs are more appropriate for measuring allocation effects between export and import-competing industries, it has been shown that

average nominal and average effective rates of protection are highly correlated across countries.[14] For this reason, along with the larger sample size available, average nominal rates will be used in the present study.

A problem in using this sample of 18 countries from different sources is that there were a variety of averaging, weighting, and sampling techniques used. Tarlin and Till have shown that the methods used do make a difference.[15] Although the measures are not comparable in a precise enough manner to predict changes in the pattern of trade or domestic allocations between industries, perhaps the ranking of countries will still give a reasonable estimate of the relative degrees of protection in the countries involved. Cohen has made a similar assumption in a study involving rates of protection taken from different sources.[16]

The various estimates of protection are also made for different years, although all are for the early or middle 1950's. This fact should not pose much of a problem, since structures of protection normally do not change significantly over short periods of time.

The small sample of countries together with the questionable comparability of the protection data encourage a

search for an alternate variable to represent protection levels. In another cross-country study, Iyoha used an import/income ratio as a measure of openness, but this variable is affected by too many factors besides the degree of protection for the purposes of this study.[17] For example, some very protectionist countries may have relatively high import/income ratios because of the necessity to import large amounts of food, critical raw materials, or capital goods. Furthermore, foreign exchange availabilities and stage of industrialization influence the import/income ratio.

In the present study, an incremental import/consumption ratio is constructed as an openness variable using only manufactured consumer goods. Besides avoiding the problem of large necessity imports, concentrating on manufactured consumer goods differentiates countries more clearly with respect to openness since protection tends to escalate with the stages of processing of a product. Moreover, since the ratio is incremental, the effects of foreign exchange availabilities and levels of industrialization are minimized.

The openness variable was constructed for the years

1963 to 1969 for 45 countries. It is an improvement over the tariff variable not only because of the larger sample size and more comparable data, but because non-tariff barriers should also be reflected in the measure. The manufactured consumer goods in the openness variable consist of the following products: textiles, clothing, footwear, wood products, furniture, and rubber products. Consumption of these products was computed by adjusting domestic production for imports and exports.

In calculating the openness variable, domestic consumption

of finished manufactures was computed by adding finished manufactured imports to and subtracting finished manufactured exports from final output of finished manufactures. Final output of finished manufactures was calculated by adding together the value-added figures for the product categories concerned. Value-added data are more appropriate than gross value because the variable being computed is final consumption and hence double counting of inputs should be avoided. In most of the product categories of finished manufactures (see Table VIII), inputs would be counted twice or more if gross value were used.

Table VIII is not meant to include a complete list of finished consumer manufactured goods. A representative sample of such products should be sufficient in order to calculate the measure of concern. Since the International Standard Industrial Classification (ISIC) is used in calculating output of finished manufactures, while the Standard International Trade Classification (SITC) is used in calculating imports and exports of finished manufactures, a concordance of the products used from the two classification systems is given in Table VIII.

The import and export data for the openness variable are taken from the years 1963 and 1969, and the production data from 1963 and 1969, or the closest year available. The trade data comprise only imports from and exports to the

TABLE VII

Concordance of Product Categories Used in Calculating Openness Variable

ISIC		SITC	
321	Textiles	65	Textile yarn, fabrics, made-up articles and related products
322	Wearing apparel, except footwear	84	Clothing
324	Footwear	85	Footwear
331	Wood products, except furniture	63	Wood and cork manufactures (excluding furniture)
332	Furniture and fixtures, except metal	82	Furniture
355	Rubber products	62	Rubber manufactures, n.e.s.

OECD countries, which makes the measure of domestic consumption less accurate than if imports from and exports to the world were used. These world data, however, as explained earlier, are available for fewer countries (in United Nations Commodity Trade Statistics) and would exclude a number of important countries.

For a smaller sample of countries (29), the openness variable could be calculated for the years 1958 to 1969. The seven year span used for the sample of 45 countries, however, should be long enough to reflect to what extent imports were restricted over time.

The regression equations of the present study are in

log linear form. Since the openness variable is negative for six of the 45 countries, 1.0 is added to each country's measure before the log is taken.[18]

In all equations in which it appears, the index of openness (O) is positively related to manufactured export performance and significant in all cases at the 5 per cent level of probability. The variable representing average nominal protection (T) is negatively associated with manufactured export performance in the two equations in which it appears, significant at the 5 per cent level in equation 9 and at the 10 per cent level in equation 10. The results of these two sets of regressions strongly support the hypothesis that inward-looking policies, in particular high tariff levels, have discouraged the development of manufactured exports in developing countries.

Since the equations are in double-log form, the coefficients represent partial elasticities. The openness coefficient is greater than one in all six of the equations in which it appears. In a policy context, this result should be interpreted carefully since the openness variable reflects the consequences of policy actions, and not the actions themselves. With this caveat in mind, the regression results

indicate that across a sample of 45 countries a 10 per cent increase in the openness variable is associated with an 11 per cent increase in X_c and a 15 per cent increase in X_s. The only other variable with a partial elasticity greater than one is Y.

The hypothesis concerning the relationship between protection and manufactured exports should be regarded with caution since it is possible that the causation of this relationship is reversible. Countries

which have difficulty exporting may turn to protection for balance of payments reasons. Likewise, countries which are more successful exporters can import more and afford to be more open in their policies. When the variable T is used, the direction of causation cannot be distinguished. The variable O, however, using only a small sample of finished consumer goods, should avoid the problem of reflecting merely that successful exporters will import more, since this particular sample of goods is likely to be heavily protected even by an inward-looking country with a large amount of total imports.

The coefficients of the openness variable (C) are more significant when X_3 is used as the dependent variable than when X_2 is used. This result is reasonable because X_3 should more directly reflect the influence of O on manufacturers' decisions about whether to produce for export or the home market. The variable X_3 is, in fact, a measure of how much is produced for export relative to how much is produced for the home market. The level of protection clearly affects this decision because the relative prices of goods produced for export to goods produced for the home market are affected.

The coefficients of T are less significant than those of O, probably because of the data limitations and calculation complications of the former. The number of

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observations for T are 13 compared to 45 for O, and O reflects both tariff and non-tariff restrictions. The variable C is also calculated from the same sets of data for all countries, whereas T is obtained from a variety of sources. Contrary to the variable O, the coefficient of T is slightly less significant when $\dot{X}_c$ is used as the dependent variable than when $\dot{X}_c$ is used. This result may also be due to the data limitations of T.

There are sixteen countries with data for both O and T. A regression of O on T (in double log-linear form) yields the following equation:

$$O = -.44T + 5.7$$
$$(-3.0) \quad (11.4)$$

The fit as measured by the R^2 ratio is .31, not very close considering the two variables are supposed to be substitutes, but not bad considering the data limitations and the actual differences in the two measures. As expected, the relationship between the two variables is negative, and the coefficient of T is significant at the 1 per cent level of probability

Since the statistical results support the hypothesis that openness has a favorable influence on manufactured exports, the next logical question concerns what type of country tends to be open in its trade policies. Countries which have problems with inflation often turn to more

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protection rather than devalue their currencies. A large domestic market provides the temptation to pursue import substitution policies via higher protection. A small endowment of natural resources encourages a country toward open trade policies, since a large amount of raw materials and natural resource-based products must be imported. The above three factors can be related to openness in a regression equation using variables already defined in this chapter, with inflation (P), market size (H), and natural resources (D) as the independent variables.

$$O = \underset{(-1.5)}{-.07H} + \underset{(1.5)}{.07D} - \underset{(-1.3)}{.14P} + \underset{(17.0)}{10.5}$$

The signs of the three coefficients are as predicted by the three hypotheses above. The coefficients of all three independent variables are significant at the 10 per cent level of probability, with the coefficients of H and D very close to being significant at the 5 per cent level. The R^2 ratio is .19, which is reasonable considering that probably the main determinant of whether a country pursues open trade policies is the economic philosophy of the country.

Policy recommendations following the above results would, of course, encourage a reduction of protectionism in developing countries. An alternative is to offset some of the negative effects of protectionism by means of various export promotion schemes, which are basically subsidies to exporters,

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thus offsetting the "tax" which an overvalued exchange rate associated with protection places on these exporters.

If protectionism is employed primarily because of an espousal of the import-substitution strategy of industrialization, the results of this study should encourage a reappraisal of the alleged benefits of import substitution as opposed to the negative effects on exports through an overvalued exchange rate. Although import substitution may produce noticeable results in the short run, it may have a lasting harmful effect on the competitiveness of a country's manufactured exports. Not only does an overvalued exchange rate discourage exports, but protection from foreign competition may encourage inefficiency and a high cost structure which is difficult to change once in place.[19] Since the composition of trade depends on relative costs, a high cost structure will not necessarily result in a smaller share of manufactured exports in total exports. Protection in developing countries, however, is normally heaviest in the industrial sector and therefore the high costs resulting from protection are likely to occur more in the industrial than other sectors, thus making the relative cost structure of an economy biased against industrial exports.

6. Inflation

The variable for inflation used in the present study is the consumer price index for 1970 (1963 = 100). DeVries used a similar

inflation variable in a cross-country study explaining export performance finding a significantly negative coefficient.[20] The dependent variable, however, was "minor exports," which excluded any product accounting for more than five percent of merchandise exports of any one country. The variable, therefore, excludes in many cases such important manufactures as textiles and clothing, and includes many non-manufactured goods. When DeVries excludes non-manufactures from minor exports, the coefficient of inflation is still negative and almost significant at the 5 per cent probability level.

A "trotting peg" exchange rate system might mitigate some of the problems caused by inflation, especially with regard to the uncertainty of exporters about the relationship between internal production costs and world export prices. The effects of the experience of countries with the "trotting peg" on their manufactured exports was not reflected in the DeVries study but should be reflected in the present cross-country study. Various other types of incentives for exporters have come into more frequent use since the period of the DeVries study which also may mitigate the adverse effects of inflation as reflected in the more recent data of the present study.

Manufactured export performance in negatively associated with inflation in all equations except in those with a sample of 18 countries.

The negative coefficient of P is significant at the 5 percent level of probability only in equations 4, 7, and 8 in which X_s is used as the dependent variable. The variable X_s is influenced to a greater extent than X_c by inflation, just as it was also influenced to a greater extent by the index of openness. Inflation and openness affect more directly the share of manufactured output that is exported. Inflation, if it is higher than the world market inflation, will encourage domestic manufacturers to sell more at home because of the higher price. On the demand side, inflation obviously makes a country's products less competitive. The uncertainty effects of inflation also discourage exports on both the demand and supply sides.

The predominance of negative coefficients for P does give some support to the hypothesis that inflation discourages manufactured exports. The fact that the negative relationship is not stronger calls for some explanation. One possibility is that there is a correlation between inflation and the openness and protection variables which results in multicollinearity and consequent unreliability of the coefficients of the correlated variables. There is a negative relationship between P and O as revealed by the regression equation in the previous section. A regression of P on T results in a much closer relationship.

$$P = \underset{(4.5)}{.87}T + \underset{(2.6)}{2.0}$$

With an R^2 ratio of .55, this close correlation indicates that multicollinearity is a problem.

The positive coefficients of P is equations 9 and 10 may be accounted for by the fact that deviant cases can significantly affect a regression with only 18 observations. Four of the six countries ranked highest in inflation (Argentina, Brazil, Colombia, and Korea) also have relatively high levels of manufactured exports. Brazil and Colombia have, as mentioned earlier, offset to some degree the effects of inflation on exports with their "trotting peg" exchange rate systems. In addition, these four countries have the advantages of large domestic markets and relatively high levels of economic development.

The experiences of Brazil and Colombia suggest another reason why inflation does not show a stronger negative relationship with manufactured exports in the present study. Since the time of the DeVries study, which did show a stronger negative coefficient for inflation, countries have begun to make more frequent use of various exchange rate and incentive schemes which offset to some degree the adverse effects of inflation on exporters.

In the previous section on the openness variable, the hypothesis was proposed and empirically tested that developing countries with

high inflation often turn to higher levels of protection rather than devalue their exchange rates. This section on inflation proposes that the direction of causation between inflation and protection may be reversed. Countries with high levels of protection so insulate their domestic industries from world competition that inefficiency and high costs prevail. Another argument supporting the same direction of causation is that openness is a kind of safety valve allowing domestic inflationary pressure to spill over into the balance of payments.[21]

The case is strong, therefore, for there being a significantly positive relationship between protection and inflation. If it is agreed that both discourage manufactured exports, the remedies employed to lessen one problem may also serve to lessen the other. Bringing inflation under control may eliminate one of the main reasons for high tariffs, and on the other hand, a reduction of tariff barriers may relieve some of the inflationary pressures of an economy. It should be noted, however, that success in manufactured exports does not require that inflation be brought under control, as indicated by the examples of Argentina, Brazil, Colombia, and Korea. All four of these countries had multiple devaluations during the 1960 s, with Brazil and Colombia initiating "trotting peg" exchange rate systems in the late 1960 s. These countries also used a variety of

export incentive schemes to compensate for the effects of inflation.

Other Relevant Factors

This section will analyze some of the relevant factors affecting manufactured export performance that were not included in the regression analysis. One reason for not including these factors in the regression analysis is that they are not easily quantified. Another reason is that these factors (except possibly export promotion) tend not to have a general effect across countries, but to affect only a few countries significantly. Five factors will be analyzed--export promotion, tariff preferences, the presence of multinational firms, labor costs, and proximity to a large market. The section will conclude with an analysis of the countries whose manufactured exports were least explained by the regression analysis.

1. Export Promotion

Although the difficulties encountered in trying to construct an export promotion index for a large sample of countries prevented this factor from being included in the regression analysis, there is no doubt that it can be an important determinant of the manufactured export performance of developing countries. Evidence can be cited

that virtually all of the successful exporters of manufactures actively promote exports in a variety of ways.[22]

An attempt was made to construct a cross-country export promotion index from recent United Nations data that shows which developing countries employ which of 18 different export promotion devices.[23] This index merely reflects the variety of devices used by countries. Its coefficient was positive but not significant when used as a dummy variable in equation five of Table III. The variety of devices employed at the time of the survey misses such important information as the length of time each has been in use and the differences in intensity with which each device was employed. For example, whereas two countries giving income tax exemptions to new exporters would get the same weight in the above index, one may only be giving partial exemptions for one or two years while the other may give total exemptions for 10 or 15 years.

If a better cross-country measure of export promotion could be constructed, it should be positively and significantly related to manufactured export performance. This follows logically from the fact that export incentives do have the opposite effect of inward-looking policies and overvalued

exchange rates which have been shown to be negatively associated with manufactured export performance.

2. Tariff Preferences

There is a great amount of literature analyzing the extent to which import barriers in the developed countries have contributed to the poor performance of developing countries in exporting manufactures.[24] Although recognizing the importance of this issue, the present study does not include this fact in the formal analysis because these import barriers affect all developing countries similarly, whereas this analysis is concerned with explaining relative export performance among developing countries. It may be argued that since developing countries have comparative advantages in different products, tariffs will affect developing countries differently. The products included in the present study, however, are not resource-based and therefore could be produced by most developing countries.

There are two selective tariff preference systems which are relevant to the present study. Of the countries included in the present study, the Commonwealth preference system contains Cyprus, Ceylon, Ghana, India, Jamaica, Kenya,

Malaysia, Malta, Nigeria, Pakistan, Singapore, Uganda, and Zambia. The European Economic Community (EEC) grants special tariff preferences to Algeria, Morocco, Nigeria, and Tunisia. A dummy variable for membership in each of these systems was included in the equation with a country sample of 73 in Table VII. A dummy variable for the Commonwealth system only was used in the equations with 45 countries. The coefficients were negative, but not significant, in all of the equations in which the dummy variables were included.

This result in no way proves the ineffectiveness of tariff preferences.[25] Preferential access to the Commonwealth markets has almost certainly played a positive role in the manufactured export successes of Malta, Jamaica, and India. The advantages of the EEC system are more doubtful, with limited product coverage and liberal escapte clauses having caused uncertainty in application.

It is not advisable to generalize from the effects of these two preference systems about the effectiveness of all possible tariff preference systems. There are a variety of systems that have been proposed, and each should be analyzed and judged with respect to the terms and coverage of the

preferences in each case.[26] There is ample theoretical literature dealing with the issue of the effectiveness of tariff preferences which can be referred to in analyzing individual cases.[27]

3. Multinational Firms

The variables in the regression analysis of the previous chapter generally should explain the manufactured exports of foreign owned firms as well as of domestically owned firms. The basic reason for treating multinational firms as a special case is that they can decide in which countries to locate export-oriented manufacturing plants, whereas the decision for domestically owned firms in developing countries is almost always whether or not to build a plant in the home country. The location decision, therefore, takes on primary importance for a multinational firm, while a domestically owned firm normally accepts country location as a given constraint.

As a result of a multinational firm's flexibility with respect to location, instead of determining whether the given combination of factors in a single country can provide the climate for profitable industrial exports, it can scan

the globe seeking the optimal set of factors for a prospective plant location.[28] Political stability and a government's attitude toward direct foreign investment will obviously affect multinational firms to a greater extent than domestically owned firms. A result of this search for the optimal set of factors is that only a relatively few developing countries have attracted substantial amounts of direct foreign investment in export-oriented manufacturing industries, although many more could support such industries competitively. Moreover, the fact that once established, multinational firms can often expand manufactured exports greatly without substantially raising costs is another factor indicating that these firms may have contributed to the unevenness (across countries) in the development of these exports.

What can developing countries do to attract more export-oriented subsidiaries of multinational firms? Among the more successful countries, Hong Kong, Korea, Singapore, and Taiwan offer the advantage of very low labor costs, and the influence of distance costs can be seen in the capacity of Mexico to attract export-oriented industry despite relatively high labor costs.[29] Although distance

costs must be accepted as given constaints, countries can make an effort to keep labor costs competitive by keeping the pressure of trade unions and minimum wage legislation in line with productivity increases. The practice of "taxing" foreign firms by making them pay higher-than-average wages can penalize manufactured exports by discouraging firms from locating in a given country. There is a long list of export incentives that can be employed to attract subsidiaries of multinational firms, although the high costs of these incentives may in many cases not be worth the benefits of the additional investment attracted.

4. Labor Costs

If the comparative advantage of developing countries is in manufactured products intensive in unskilled labor, it seems reasonable that labor costs should be an important factor determining relative success in exporting these products. There is evidence that wage differentials between developing countries are not merely due to productivity differences, but also to market imperfections and institutional pressures from trade unions and minimum wage

legislation. There is also evidence that the wage differential between skilled and unskilled labor has been narrowing in recent years in the more industrialized developing countries.[30] Lary thinks that these non-market pressures on wages "may help explain why it is that some of the less developed countries, notably those with an earlier start on industrializtion, have fared so poorly in exporting manufactures and why, in constrast, some others, particularly some of the countries of Southeast Asia, have made such rapid headway."[31]

A labor costs variable is not included in the regression analysis of the present study because data are not available on average wage rates in manufacturing, much less adjusted for productivity differences. Adelman and Morris have constructed a "strength of labor movement" variable for a large number of countries which may capture some of the non-market pressure on wages. This variable is a "primarily qualitative composite that combines several aspects of labor-union strength: the extent of their political power, their freedom from political restrictions, their independence of government influence, and the extent of their popular support." [32] The variable is constructed in the form of an index identical to the "abundance of natural resources" index of Adelman and Morris, ranging from 97 to 4. This variable was added to the regression equations with samples of 40 countries in Table VII and yielded coefficients with close to zero significance. This result could be due to the fact that there are other non-market pressures on wages besides trade unions, such as minimum wage legislation. Moreover, Adelman and Morris' variable of "labor union strength" reflects more aspects of trade unions than merely their effects on wages.

Government policy toward wages should not, of course,

be determined solely by their effect on manufactured export performance, but neither should this aspect of trade policy be ignored if a country is serious about developing manufactured exports.

5. Proximity to a Large Market

The importance of proximity to the United States market can be cited as a positive factor in Mexico's success in manufactured exports. It is obvious from numerous other countries' experiences, however, that proximity to a large market is by no means a necessary or sufficient precondition for success in manufactured exports. The Central American and Caribbean countries, while all near the United States market, contain only three relatively successful exporters of manufactures --- Jamaica, Haiti, and Panama --- two of which, Jamaica and Panama, export significant amounts of manufactures to the United Kingdom. Furthermore, the United States has played an important role in the success of the Far East Asian countries of Hong Kong, Korea, Taiwan, and the Philippines, taking more than half of each country's manufactured exports.

The extent of influence of distance costs on manufactured exports depends on the nature of the product. Products which have a high value relative to their bulk, and hence have transport costs which represent a small share of their total value, are the most suitable for producing

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at greater distances from the final market. Kravis and Lipsey have recently investigated the influence of distance costs on manufactured exports.[33] They found that on the average freight and insurance charges account for about 9 to 10 per cent of the import value of manufactures. The range, however, was from 1 per cent on watches and precious metals to 30 to 40 per cent for aircraft and pleasure boats. Some of the other products for which transport costs were low include tools (2 per cent), office machines (4 per cent), photographic equipment and supplies (3 per cent), and other machinery of various types.

A country close to a large market, therefore, can export a wider variety of products than a distant country. The East Asian countries have shown, however, that a sufficiently wide variety of products with low transport costs exists for a distant country to reach a high level of manufactured exports.

6. Analysis of residuals

The set of regressions with 45 countries was the maximum sample size including all the relevant explanatory

variables. In equations 3 and 4 of Table VII the estimated equations account for 54 and 44 per cent respectively of the variation of the observed data. The variation not accounted for by the variables included in the equation must be attributed to other factors. In order to examine which countries were least explained by the regression equations, it is useful to analyze the differences between the actual values of the dependent variables and the values predicted by the estimated equations. These "residuals" are listed in Table VI. The ranking of residuals according to both dependent variables, X_8 and X_5, is fairly similar.

Malta's large positive residual may be partly due to its somewhat special relationship with Great Britain over the years. Malta has taken advantage of its preferential access to the Commonwealth, with 47 per cent of its manufactured exports going to Great Britain in 1969. Its next largest markets are Italy, Germany, and France. Malta has been Britain's chief Mediterranean naval base. After granting Malta independence in 1964, Britain agreed to give $140 million in aid from 1964 to 1974 in return for retaining military bases on the island. The infrastructure is highly developed, with good airports and an excellent road system. Located 60 miles south of Sicily, Malta is an important intercontinental routeway and a strategic

TABLE IX

Countries Ranked According To
Residuals of Equations 3 and 4 of Table IV

	X2		X3
Malta	370	Taiwan	65
Taiwan	124	Malta	47
Iran	115	Morocco	31
Mexico	105	Algeria	28
Yugoslavia	83	Jamaica	23
Israel	55	Korea	19
Korea	63	Mexico	18
Panama	60	Panama	15
Jamaica	49	India	13
Cyprus	18	Iran	8
Uruguay	9	Kenya	7
Greece	5	Yugoslavia	5
Tunisia	5	Libya	4
India	4	Cyprus	4
Egypt	4	Egypt	2
Algeria	4	Tunisia	2
Kenya	4	Argentina	1
Colombia	3	Pakistan	1
Morocco	3	Philippines	1
Honduras	2	Uruguay	1
Brazil	1	Honduras	1
Mozambique	1	Colombia	0
Ecuador	0	Ecuador	0
Ethiopia	0	Iraq	0
Syria	0	Brazil	0
Uganda	0	Ethiopia	0
Jordan	-1	Ceylon	-1
Nigeria	-1	Chile	-1
Pakistan	-1	Jordan	-1
Peru	-1	Peru	-1
Zambia	-1	Syria	-1
Iraq	-2	Uganda	-1
Ceylon	-3	Ghana	-2
Ghana	-3	Nigeria	-2
El Salvador	-4	Dominican Republic	-3
Dominican Republic	-5	El Salvador	-3
Argentina	-6	Greece	-3
Chile	-7	Venezuela	-3
Turkey	-7	Zambia	-3
Thailand	-8	Turkey	-3
Philippines	-11	Israel	-4
Libya	-18	Mozambique	-4
Venezuela	-19	Thailand	-10
Malaysia	-23	Malaysia	-21
Singapore	-814	Singapore	-51

point for the central Mediterranean. The capital, Valletta, possesses a good deepwater harbor, which are infrequent in the Mediterranean.

Taiwan's actual performance is also much better than predicted by the regression equation. In the later 1950's, the Vietnam war increased the demand for some of Taiwan's manufactured exports, such as machinery and building materials.[34] Also, the large amounts of aid received in the 1950's and early 1960's strengthened Taiwan's infrastructure. The most important factor not included in the regression analysis which favored Taiwan, however, was probably the government's early adoption of export promotion policies. In the latter half of the 1950's and early 1960's, the government began rebating import duties and other indirect taxes on imported materials, reformed the system of allocating import licenses so as to favor exporters, made more frequent use of devaluation and simplified the exchange rate system, improved the terms and availability of export finance and insurance, and disseminated foreign market information.

Iran's unpredicted success in manufactured exports is due to the fact that it has been able to exploit a comparative advantage in a traditional product, textiles.

which accounts for 97 per cent of its manufactured exports. Almost all of these textiles are rugs which are produced by traditional methods. The regression equation of the present study is not designed to explain the exports of such a product.

Mexico's main advantage that is not taken into account in the regression equation is probably its proximity to the United States market. Distance costs are minimal for may of Mexico's exports. Moreover, the government's policies have been very favorable to export-oriented industries and in particular to foreign direct investment, so that in 1976 United States manufacturing affiliates accounted for 87 per cent of Mexico's manufactured exports.[35]

Singapore is the only country that has a significantly large negative residual.[36] A possible reason for this result is the fact that only 18 per cent of Singapore's manufactured exports go to the OECD countries, so that 82 per cent were not included in the regression analysis. The major markets for these exports are Malaysia and a wide variety of Asian, African, and Middle Eastern countries. Another possible reason for Singapore's large negative

residual is the fact that its traditional entrepot function of shipping the raw materials of the region gives it a comparative advantage in these products, even though Singapore itself is endowed with very few natural resources (its population density is 3471). For example, although it produces practically no rubber itself, Singapore is the world's largest rubber market and exporter. Singapore also has good refining capacity for petroleum, which it exports in large amounts. Rubber and petroleum together account for over 30 per cent of total exports. Singapore's entrepot function has developed to such a great extent because of its strategic location and excellent port which is the largest in Southeast Asia.

NOTES

1/ B. Balassa, "Country Size and Trade Patterns: Comment," American Economic Review (March 1969); D. Keesing and D. Sherk, "Population Density in Patterns of Trade and Development," American Economic Review (December 1971); R. Banerji, "Major Determinants of the Share of Manufactures in Exports: A Cross-Country Analysis and Case Study on India," Weltwirtschaftliches Archives (1972).

2/ Ibid., all three references in the previous footnote employ this measure, besides G. Hufbauer, "Factor Endowments, National Size and Changing Technology: Their Impact on the Commodity Composition of Trade in Manufactured Goods," in The Technology Factor in International Trade, ed. R. Vernon (New York: Colombia University Press, 1970). The SITC product categories are defined in United Nations, Department of Economic and Social Affairs, Standard International Trade Classification, Revised, (ST/STAT/Ser. M/34), 1961.

3/ The data are taken from OECD, Foreign Trade, Series C, Trade by Commodities (Imports), 1965-1970 issues.

4/ The following seven cross-country studies all used the double logarithmic form of equation: H. Houthakker, "An International Comparison of Household Expenditure Patterns, Commemorating the Centenary of Engel's Law," Econometrica (October 1957); H. Chenery, "Patterns of Industrial Growth," American Economic Review (September 1960); H. Chenery and L. Taylor, "Development Patterns: Among Countries and Over-Time," Review of Economic Statistics (November 1968); D. Keesing, "Population and Industrial Development: Some Evidence from Trade Patterns," American Economic Review (June 1968); Balassa (1969); Keesing and Sherk (1971); Banerji (1972).

5/ The numerous United Nations publications dealing with manufactured exports often exclude SITC 68.

6/ Keesing and Sherk, pp. 956-957. Another reason given why population density should be positively related to manufactured export performance is that densely populated countries "might be expected as a matter of statistical likelihood --- to enjoy advantages in manufacturing compared to lightly settled countries in terms of costs of (and access to) transportation, communication, distribution systems, and the like."

7/ I. Adelman and C. Morris, Society, Politics, and Economic Development (Baltimore: John Hopkins Press, 1967), pp. 90-93.

8/ Hufbauer; H. Wachrer, "Inter-Industry Skill Differences, Labor Earnings and United States Foreign Trade" (Ph.D. dissertation, Columbia University, 1966).

9/ F. Harbison and C. Myers, Education, Manpower, and Economic Growth: Strategies of Human Resource Development (New York: McGraw-Hill Book Company, 1964).

10/ B. Russett, et. al., World Handbook of Political and Social Indicators (New Haven, Conn.: Yale University Press, 1964) Table No. 64.

11/ H. Thomas, "Literacy Without Formal Education: A Case Study in Pakistan," Economic Development and Cultural Change (April 1974).

12/ T. Balogh, "Education Must Come Down to Earth." Ceres (FAO Review), (March-April 1968), pp. 15-18. Balogh thinks the classical western arts education is often harmful to economic development, with people learning to despise manual and technical jobs. He lays heavy emphasis on vocational and technical training.

13/ See for example, United Nations, Report on the World Social Situation, with Special Reference to the Problem of Balanced Social and Economic Development (New York 1961); Harbison and Myers; W. Galenson and C. Pyatt, The Quality of Labor and Economic Development in Certain Countries (Geneva: International Labor Office, 1964).

14/ S. Guisinger and D. Schydlowsky, "The Empirical Relationship Between Nominal and Effective Rates of Protection," in Effective Tariff Protection, eds. H. Grubel and H. Johnson (Geneva: GATT, 1971).

15/ J. Tumlir and L. Till, "Tariff Averaging in International Comparisons," in Effective Tariff Protection, eds. Grubel and Johnson.

16/ B. Cohen, "The Use of Effective Tariffs, "Journal of Political Economy (January/February 1971).

17/ M. Iyoha, "Inflation and 'Openness' in Less Developed Economies: A Cross-Country Analysis," Economic Development and Cultural Change (October 1973).

18/ The six countries for which O is negative are Colombia, India, Iraq, Peru, Turkey, and Uruguay.

19/ See Keesing (1967) on the effects of inward-looking and outward-looking policies.

20/ B. DeVries, The Export Experience of Developing Countries, World Bank Staff Ocassional Papers Number Three (Baltimore: John Hopkins Press, 1967), p. 36. This analysis covered the time period 1950-1963.

21/ Iyoha, pp. 31-37, tests and confirms this argument empirically.

22/ United Nations, Incentives for Industrial Exports (TD/B/C.2/89/Rev.1) 1970. See pp. 27-64 for a country-by-country description of the export promotion devices used by each.

23/ Ibid., see p. 28.

24/ The United nations Conference on Trade and Development has viewed this issue as the major obstacle to the expansion of the manufactured exports of developing countries.

25/ UNCTAD, Study on World Demand for and Supply of Manufactures and Semi-Manufactures of Export Interest to the Developing Countries. (TD/B/C.2/91), 1969. This study found significantly positive coefficients for the same two dummy variables when regressed on per capita manufactured exports of 53 countries. The other independent variables used in this study were arable land per capita, per cent of population engaged in manufacturing, and foreign aid per capita. The results of this study have been used to support UNCTAD's Generalized System of Preferences proposal.

26/ Lary, pp. 127-137. He gives a brief description of several proposed systems and an analysis of their differences.

27/ H. Johnson, Economic Policies Toward Less Developed Countries (New York: Frederick A. Praeger, 1967). See Chapter 6 for a concise survey of the arguments pro and con concerning tariff preferences.

28/ See G. K. Helleiner, "Manufactured Exports from Less Developed Countries and Multinational Firms, "Economic Journal (March 1973), pp. 35-36.

29/ Ibid, p. 45.

30/ K. Taira, "Wage Differentials in Developing Countries: A Survey of Findings, International Labor Reveiw, (March 1966).

31/ Lary, pp. 113.

32/ Adelman and Morris, pp. 69-71.

33/ I. Kravis and R. Lipsey, Price Competitiveness in World Trade National Bureau of Economic Research, New York, 1971, pp. 49-52.

34/ Little, Scitovsky, and Scott, pp. 254-255.

35/ United Nations, Multinational Corporations in World Development. Department of Economics and Social Affairs (ST/ECA/190), 1973, p.21.

36/ Equations 03 and 04 of Table VII were calculated again without Singapore in order to determine whether such a large residual would have a significant effect on the results. None of the coefficients or R^2 ratios were different when rounded to the decimal places as given in Table VII.

VIII. Conclusion

Although there are serious demand constraints to expanding manufactured exports in developing countries as pointed out in Chapter IV, the main focus of this book has been on the supply constraints and explaining why some countries have been more successful than others in exporting manufactures. It may be useful to review the main conclusions of the discussion and cross-country analysis of the determinants of manufactured exports performance. When these determinants are more clearly understood, policy-makers in developing countries will be better equipped to make decisions which affect manufactured exports.

The statistical analysis supported the hypothesis that market size (represented by either population or consumption of manufactures) is an advantage for a country wanting to develop manufactured exports. Countries such as India, Pakistan, Thailand, Korea, Mexico, and the Philippines have undoubtedly benefitted from the economies of scale made possible by large domestic markets. On the other hand, other countries such as Hong Kong, Israel, Malta, Singapore, and Jamaica have successfully developed manufactured exports without large domestic markets. If a country does not have a large domestic market, it can export manufactures for which economies of scale are not important. It is also possible

to use exports as a means to broaden the domestic market, provided that immediate successful entry into the market is possible. Multinational firms can be a positive factor in this area. A third alternative for a small country would be to increase its effective market size through regional integration, although efforts to regionally integrate developing countries have thus far been somewhat disappointing.

Level of economic development (per capita income) was also tested and found to be positively associated with manufactured export performance. This factor reflects items such as degree of industrialization, efficiency of infrastructure, and management and labor skills. It should be pointed out, however, that a relatively high level of economic development is not a necessary precondition for the successful development of manufactured exports. The example of Haiti cited in Chapter V is a case in point. Such a country can compete in products intensive in unskilled labor, especially if government policies are favorable to exports. Foreign-owned firms can also play a positive role in low-income countries, especially with regard to the provision of the necessary capital, technology, and access to markets. Low-income countries can attract these firms by being the source of a raw material input, by being strategically located for export, by providing low-wage

labor, and by offering various fiscal and promotional incentives for exporters of manufactures.

The regression results showed abundance of natural resources to be negatively associated with manufactured export performance. This result should be considered descriptively correct, without implying a recommendation that countries rich in natural resources ignore manufactured exports. Even though a country has a comparative advantage in natural resource products, the future growth potential and instability of many of these products should encourage such countries to investigate the possibilities for developing non-resource-based manufactured exports.

The cross-country study gave some support (although admittedly, not very convincing support) to the hypothesis that inflation discourages manufactured exports. Some countries have learned better how to deal with the adverse effects of inflation on exports by means of various exchange rate and incentive schemes. It was tested and confirmed that protection (and openness) is negatively (positively) associated with manufactured export performance. The effects of inflation and protection on manufactured exports and their policy implications are best discussed together because of the close interrelationship between these two variables. Countries experiencing high rates of inflation often turn to higher

protection as a means to save foreign exchange.

The first and obvious policy implications are to better control inflation and to lower import restrictions. Each of these recommendations is difficult to implement in practice. Even the developed countries are frequently not able to control inflation satisfactorily, and they do not have the supply inelasticity and public finance problems common in developing countries. Assuming that inflation cannot be adequately controlled in developing countries, the adverse effects on manufactured exports can be partly offset through greater exchange rate flexibility (i.e., more frequent devaluations or a "trotting peg" arrangement such as employed by Chile, Brazil, and Colombia) and by various export incentives. Lowering tariff barriers is also difficult to accomplish since import taxes are by far the easiest taxes to collect and many governments of developing countries depend on these taxes for substantial shares of their revenues. Until a country is able to lower its tariffs, greater exchange rate flexibility and export promotion policies can be used to partly offset the adverse effects of overvalued exchange rates associated with high protection levels.

Various other factors were analyzed on the basis of more qualitative evidence and were found to have some degree of influence on manufactured export performance. It is reasonable

to believe that government-sponsored export promotion policies encourage export activity. Tariff preferences should also encourage manufactured exports, but much depends on the particular terms (e.g., product coverage) of a given system. Multinational firms, a controversial subject even with respect to manufactured exports, should on balance be a favorable factor especially with regard to the recent surge in plant locations in developing countries for the manufacture of special components and processes within vertically integrated international production systems. A factor that has undoubtedly helped the manufactured exports of some countries (i.e., Korea, Taiwan, and Hong Kong) has been the fact that urban wages have been kept from being pushed above what productivity increases warrant. A final factor that was identified as influencing manufactured exports was geographical location. Proximity to a large market has been an advantage for some countries (e.g., Mexico), but is not enough by itself to stimulate manufactured export activity, as evidenced by many of the Caribbean countries. Moreover, the East Asian countries have demonstrated that distance costs are a barrier that can be overcome.

The diversity of factors discussed above makes it clear that there is no one "type" of developing country that has been successful in exporting manufactures. Among the list of successful exporters of manufactures there are large countries (e.g., India Pakistan, and Mexico) and small countries (e.g., Hong Kong, Singapore, and Israel), more developed countries (e.g., Mexico

and Yugoslavia) and relatively less developed countries (e.g., Pakistan and Haiti), countries with open economies (e.g., Taiwan and Korea) and countries employing relatively high levels of protection (e.g., Pakistan and India), countries with inflation problems (e.g., Korea and India) and countries with relatively stable prices (e.g., Mexico and Taiwan), countries with relatively skilled labor forces (e.g., Hong Kong and Taiwan) and countries with relatively unskilled labor (e.g., Pakistan with low labor costs (e.g., Korea and Taiwan) and countries with high labor costs (e.g., Mexico and Israel), countries belonging to a tariff preference system (e.g., India and Malta) and countries not belonging (e.g., Taiwan and Korea), and countries located close to a large market (e.g., Mexico and Jamaica) and countries distant from a large market (e.g., Korea and Taiwan). The only generalization that seems to be without exception is that no developing countries abundant in natural resources are large exporters of manufactures. A possible exception is Mexico which is a special case because of its border with the United States. This is not to say that it is impossible for countries rich in natural resources to develop manufactured exports. The obvious direction for these countries, however, has been in the further processing of their raw materials, which products are not

included in the sample of the present study.

It is possible, therefore, to conclude on an optimistic note. It has been shown that most developing countries are capable of successfully exporting manufactures. Each developing country must identify its own comparative advantage in manufactured exports and plan for how an expansion of manufactured exports can contribute to economic growth and increased employment.

APPENDIX A

Products Excluded from Measure of Manufactured Exports

For the reasons listed in Chapter VII, an effort is made in the present study to exclude products which are not far from the primary stage of production. There is, unfortunately, no prepared list of these natural resource-based products. In order to construct such a list, two separate criteria were used.

First, there is a list prepared by George Parazich which categorizes products according to the ratio of transport costs to the value of the product.[1] Products with relatively high transport costs should be significantly influenced as to location of production by the source of the base raw material. Because of their high transport costs, these products are also not likely to be imported for processing and re-exported by countries other than those very close to the final market. Although admittedly imperfect, this transport costs component measure should reflect roughly the degree to which products are influenced by sources of base raw materials. On the basis of this reasoning, the following SITC categories are excluded from the analysis because their ratio of transport costs to

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[1] G. Parazich, The Measurement of Industrial Capacity, (Washington, D.C.: Economic Associates, Inc., 1955).

the value of the product is greater than 3 per cent (according to G. Parazieh).

51 Chemical elements and compounds
52 Mineral tar and crude chemicals from coal, petroleum, and natural gas
53 Dyeing, tanning and colouring materials
55 Essential oils and perfume materials; toilet, polishing and cleansing preparations
56 Fertilizers, manufactured
57 Explosives and pyrotechnic products
59 Chemical materials and products, n.e.s.
67 Iron and steel
68 Non-ferrous metals
82 Furniture

Even after excluding these SITC groups, there are obviously still some products remaining which are significantly influenced by whether a country is endowed with a particular natural resource. In order to help identify these, a United Nations study, Classification of Commodities by Industrial Origin (1971), was used. This study links a product (SITC) with its corresponding industry of origin (ISIC). On this basis, several more product groups were eliminated from the analysis.

611 Leather
613 Fur skins, tanned or dressed (including dyed)
62 Rubber manufactures, n.e.s.
63 Wood and cork manufactures (excluding furniture)
64 Paper, paperboard, and manufactures thereof
66 Non-metallic mineral manufactures, n.e.s.
EXCEPT:
665 Glassware
666 Pottery
693 Wire products (excluding electric) and fencing grills
694 Nails, screws, nuts, bolts, rivets, and similar articles of iron, steel or of copper

The following two groups are excluded because they are largely second-hand items being returned for repair, resale, or scrapping.

711 Power generating machinery, other than electric
735 Ships and boats

These exclusions leave the following SITC groups to be included in the study.

54 Medicinal and pharmaceutical products
58 Plastic materials, regenerated cellulose and artificial resins
612 Manufactures of leather or of artificial or reconstituted leather, n.e.s.
65 Textile yarn, fabrics, made-up articles and related products
665 Glassware
666 Pottery
691 Finished structural parts and structures, n.e.s.
692 Metal containers for storage and transport
695 Tools for use in the hand or in machines
696 Cutlery
697 Household equipment of base metals
698 Manufactures of metal, n.e.s.
712 Agricultural machinery and implements
714 Office machines
715 Metalworking machinery
717 Textile and leather machinery
719 Machines for special industries
719. Machinery and appliances (other than electrical) and machine parts, n.e.s.
72 Electrical machinery, apparatus and appliances
731 Railway vehicles
732 Road motor vehicles
733 Road vehicles, other than motor vehicles
734 Aircraft
81 Sanitary, plumbing, heating and lighting fixtures and fittings
83 Travel goods, handbags, and similar articles
84 Clothing
85 Footwear
86 Professional, scientific and controlling instruments; photographic and optical goods, watches and clocks
89 Miscellaneous manufactured articles, n.e.s.

APPENDIX B

Sources of Data

Gross Domestic Product
---U.N., Yearbook of National Accounts Statistics, 1970, New York.

Population and Area
---U.N., Demographic Yearbook, 1970, New York.

Exports and Imports of Manufactured Goods
---O.E.C.D., Foreign Trade, Series C, Trade by Commodities, various issues.

Exchange Rates
---U.N., Monthly Bulletin of Statistics, New York, various issues; I.M.F., International Financial Statistics, various issues.

Value Added in Manufacturing
---U.N., Growth of World Industry, New York, various editions.

Index of Abundance of Natural Resources
---I. Adelman and C. Morris, Society, Politics, and Economic Development, Baltimore, 1967.

Level of Skill of Labor Force
---literacy rates obtained from B. Russett et al., World Handbook of Political and Social Indicators, New Haven, Conn., 1964.

Consumer Price Index
---U.N., Statistical Yearbook, 1971, New York.

Average Nominal Tariff Level
---B. Balassa, The Structure of Protection in Developing Countries, Baltimore, 1971, (for Brazil, Mexico, Pakistan, and the Philippines);
---I. Little, T. Scitovsky, and M. Scott, Industry and Trade in Some Developing Countries, London, 1970, (for Taiwan);
---H. Bell, Tariff Profiles in Latin America, 1971, (for Argentina, Bolivia, Chile, Colombia, Ecuador, Peru, Uruguay, and Venezuela);
---B. Cohen, "The Use of Effective Tariffs," Journal of Political Economy (January/February, 1971), (for Israel and Malaysia);

Average Nominal Tariff Level (continued)

---Korean Development Association, Effective Protective Rates of Korean Industries, 1967, (for Korea);

---D. Kessel, "Effective Protection of Industry in Tanzania," Eastern Africa Economic Review, July, 1968, (for Tanzania)

---A. Krueger, "Some Economic Costs of Exchange Control: The Turkish Case," Journal of Political Economy, October, 1966, (for Turkey).

APPENDIX C

Basic Data for Cross-Country Analysis

Country	X	X_c	X_s	N	Y	D	R	O	T	P	L
Afghanistan	8511	516		16.70	52	26					
Algeria	8323	634	31.3	13.91	248	5	83	71.8		104	19.0
Angola	1750	322		5.43	156	4					
Argentina	23126	1012	3.3	22.85	861	9	90	2.8	74	380	86.4
Bolivia	261	54		4.80	179	4			26	151	32.1
Brazil	39643	427	0.5	92.78	293	11	97	2.3	95	1047	49.4
Burma	160	5		25.98	75	40					
Cameroon	621	108		5.74	172	12				107	7.0
Ceylon	761	62	1.7	12.25	145	187	29	39.3		187	63.0
Chile	745	84	0.04	8.85	619	13	90	14.2	166	508	80.1
Colombia	12368	604	1.7	20.48	329	18	67	-15.6	49	187	62.0
Costa Rica	2240	1325		1.69	452	33				116	70.4
Cuba	1163	141		8.21	280	72					
Cyprus	2269	3601	7.8	0.63	682	68	54	53.9		109	50.5
Dominican Republic	404	102	0.7	3.95	300	85	35	30.4		165	50.9
Ecuador	845	143	1.3	5.89	229	21	54	17.7	81	186	55.7
Egypt	23855	700	5.2	32.50	191	32	35	2.8		112	10.9
El Salvador	806	233	0.5	3.39	271	158	35	5.4		109	33.4
Ethiopia	751	30	1.8	24.77	50	20	29	25.8		149	2.5
Ghana	805	93	1.4	8.54	234	35	60	43.1		172	22.5
Greece	58075	6522	5.0	8.77	859	57	60	21.9		115	60.0
Guatemala	759	151		5.01	320	45				107	29.4
Haiti	8933	1872		4.77	89	172				181	10.5
Honduras	857	344	2.0	2.49	257	22	60	24.7		109	44.0
India	336304	542	15.4	523.98	84	154	35	-50.5		1.4	10.3
Indonesia	7095	68		117.51	79	73					
Iran	346712	12431	15.9	27.89	320	17	83	34.8		114	15.0
Iraq	2570	281	3.3	9.15	323	20	67	-15.5		117	10.0
Israel	81[illegible]54	28053	9.5	2.82	1435	105	35	42.8	32	135	43.7
Ivory Coast	601	142		4.21	314	23				139	4.0

APPENDIX C (continued)

Country	X	X_c	X_s	N	Y	D	R	O	T	P	L
Jamaica	14255	7747	28.7	1.84	566	179	41	34.7		124	77.0
Jordan	211	95	1.0	2.23	235	22	35	47.3		115	17.5
Kenya	5046	463	9.0	10.88	122	18	41	60.9		113	22.5
Korea	235659	8931	34.5	31.92	176	315	41	225.0	35	178	77.0
Kuwait	3618	5243		0.69	3861	36					
Lebanon	7703	2852		2.70	501	254				109	47.5
Liberia	1953	1598		1.15	305	10				124	7.5
Libya	1569	839	10.6	1.87	1552	1	60	102.3		134	13.0
Madagascar	569	86		6.60	128	11				117	33.5
Malaysia	10502	1159	5.7	8.98	313	69		352.8	10	105	34.4
Malta	15225	47578	61.4	0.32	534	1022		144.7		114	57.5
Mexico	544044	13581	26.9	47.42	572	25	90	21.7	24	126	50.0
Morocco	11840	735	36.4	15.05	201	34	83	45.3		111	12.5
Mozambique	2456	334	4.6	7.36	141	9		105.1		124	1.0
Netherlands Antilles	7387	12311		0.60	442	227				111	72.5
Nicaragua	230	120		1.91	392	15				113	38.4
Nigeria	2056	38	1.4	53.70	87	59	67	1.9		140	10.0
Pakistan	132477	1184	15.8	111.83	137	118	10	66.6	85	137	13.0
Panama	9717	6990	18.4	1.39	619	19	60	77.1		116	65.7
Paraguay	217	94		2.31	224	6				112	35.0
Peru	1545	125	0.2	13.17	321	10	90	-3.4	63	147	47.5
Philippines	4[illegible]93	1392	10.7	35.77	312	124	41	64.8	25	132	75.0
Saudi Arabia	5200	693		7.52	474	3					
Senegal	751	201		3.78	220	19					
Sierra Leone	250	103		2.51	154	35				144	7.5
Singapore	44003	21785	24.3	2.02	727	3471		139.9		108	50.0
Somalia	86	31		2.73	62	4					
S. Yemen	116	83		1.40	179	4				109	2.5
Sudan	371	24		15.31	109	6				116	0.0
Syria	1179	195	1.3	6.05	250	32	54	8.9		121	27.5
Taiwan	382289	27243	102.5	14.03	871	354	16	300.0	30	124	54.0

APPENDIX C (continued)

Country	X	Xc	Xs	N	Y	D	R	O	T	P	L
Tanzania	3520	280		12.93	86	14			26	125	7.5
Thailand	5055	175	3.0	34.38	164	68	35	278.8		117	68.0
Togo	52	31		1.97	109	32					
Trinidad/Tobago	4788	4548		1.03	799	203				124	73.8
Tunisia	4958	986	7.6	5.03	221	31	60	143.8		128	17.5
Turkey	16850	493	1.2	34.38	379	44	90	-4.5	44	151	58.0
Uganda	251	26	1.0	9.55	106	40	35	49.4		152	27.5
Uruguay	3038	1381	1.6	2.85	674	15	41	-0.7	184	2321	80.0
Venezuela	3370	337	1.6	10.04	913	11	97	10.0	45	112	52.2
Yugoslavia	233987	11577	10.6	20.21	490	80		44.3		248	77.0
Zaire	2448	118		20.70	70	7					
Zambia	1904	430	3.2	4.15	334	6	60	54.2		146	2.0

The sources of the above variables are listed in Appendix B. The definitions of the above variables are listed in Table 5-1. The variables X and X_c are given in 1,000 U.S. dollars, and N (population) is given in millions. The openness variable (O) given here represents the measure calculated before 1.0 was added in order to remove the negative values before taking logs. All the variables given here are in unlogged form. The variable X in the table is total manufactured exports, not adjusted for population. This variable is not used in the regression analysis, but is given here for the reader's information.

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