External Demand and Internal Supply Factors in LDC Export Performance (*)

One of the interesting and important issues in the trade-development area arises out of the failure of the exports of less developed countries (LDCs) to keep pace with the expansion of world trade since the end of World War II. The question is to what extent this failure can be attributed to factors that are internal to the economies of the LDC and to what degree external demand conditions are responsible. In this paper we try to bring together the available evidence on this question and to explore some possible further avenues that may provide answers. Since exports are hardly an end in themselves we shall also examine the relation of exports to economic growth.

As concerns country coverage, a special effort was made to gather data for South and East Asian LDCs because in its original conception this paper was to form part of a series of studies on that area. Fortunately for our purpose, a variety of trade and development policies and diverse experience with respect to growth and export performance can be found among these countries. For LDCs elsewhere, the criterion of readily available data on trade, real gross product, manufacturing output, and gross capital formation was allowed to govern. Altogether 21 LCDs were included in the sample, although they are not, of course, identical with those included in other studies to which references are made.

I. The Record of Postwar Export Performance

The years since the end of World War II have been, it is widely appreciated, a period of unprecedented expansion in world trade. It is well-known, also, that the less developed countries have not fully shared in this growth. The most frequently offered explanations for this lag of LDC exports relate largely to unfavorable external demand conditions — low income elasticities of demand for LDC primary product exports, synthetic substitutes, restrictive commercial policies by the development countries (DCs), and, consequently, declining terms of trade for LDC exports. An alternative hypothesis, less frequently advanced but now being given more attention, is that the major part of the explanation is to be found in the internal economic conditions in the LDCs, particularly as they have been affected by government policies relating to trade and development. An examination of the comparative export records of different LDCs should help sort these influences out.

In Table 1 we have set out the export records of the LDCs in our sample against the background of the export growth of regional groups of LDCs, the LDCs as a whole, selected industrial countries, and the aggregates for industrial countries and the world. The periods were chosen to correspond to the three upswings in world exports between 1948 and 1966 (1), the last one having been arbitrarily divided into two subperiods.

The gap between the export growth of the LDCs and DCs is clear enough from the table. But the table also gives evidence of diversity within each group. Among the DCs there is the marked difference between the U.S. and U.K. on the one hand and the EEC and Japan on the other hand. Among the Asian LDCs, Taiwan and Korea increased their exports more rapidly than did the industrial countries as a whole, Thailand and the Philippines did not keep pace with the industrial countries but did do better than the

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(1) Trade expanded by more than a third (12.0 per cent per annum) between 1948 and 1951, declined by about 3 per cent in 1952 and began another but slower upswing (6.5 per cent per annum) which reached a peak in 1957 and also resulted in a one-third expansion of the world total. From a 1958 level about 4.5 per cent below 1957, trade continued to grow without interruption through 1966 and at a faster rate (7.7 per cent) than before. Within the 1958-66 period, growth was much faster in 1963-66 (9.7 per cent per annum) than in 1958-62 (6.8 per cent per annum). The great bulk of this growth was in real terms; this is suggested by the fact that between 1953 and 1966 unit values increased by only 5 per cent (GATT, *International Trade*, 1966, p. 1).

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average for all LDCs, while the others fell well below the LDC average. In most cases the relative performance of the Asian countries was rather consistent during the various parts of the entire period, but there were some exceptions. A notable one was the strong export performance of Pakistan between 1958-62 and 1963-66 after actual declines in the absolute level of exports in the two prior intervals. A similar diversity of export performance can be found in the other groups of LDCs; in Latin America, in Africa and in the Middle East, there are a few countries — and not solely the oil exporters — that have enjoyed an export expansion that is comparable with that of the industrial countries.

II. Relation Between Export Performance and Growth

Before attempting to probe the reasons for these differences in export performance, it may be well to consider the relation between export performance and growth. There is by now a very large literature on this subject in which almost all conceivable hypotheses can be found (2). Exports have been regarded by some writers as a stimulus to growth and by others as a drag on growth. Increases in exports have sometimes been viewed as a cause of growth and other times as a consequence of growth. There is much variation also within these general categories. The beneficial effects of exports upon growth have been variously attributed to the stimulation of demand via the multiplier and accelerator, industrialization engendered by forward or backward linkages from exports, the creation of an investment boom through changes in expectations, increases in static efficiency through resource reallocation to conform to comparative advantage or through the stimulation of competition, the achievement of economies of scale, or increases in the level of investment as a result of raising domestic savings through the profitability of exports. Some have stressed the idea that higher exports and/or foreign capital imports make it possible to acquire physical capital available only abroad, others the notion that contact with other countries through trade and investment may lead to the import of new techniques or even the stimulation of their development at home. On the other side, trade has been viewed as a retarding or even

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(2) See, for example, the survey by Charles Kindleberger, *Foreign Trade and the National Economy*, Yale University Press (1962), Chapters 11 and 12.

impoverishing factor because imports prevent the development of home manufactures or more frequently because export proceeds will not expand fast enough to finance the imports necessary to sustain a rate of growth otherwise feasible.

An increase in exports may be a consequence of growth if growth results in cost reduction or in the development of new lines of production which conform better than the old ones to the growth points in world demand.

It is possible, of course, that more than one of these conflicting interpretations may be correct, each in a different time or place. Also, not all of the interpretations are contradictory and more than one cause or line of causation may be at work in a given situation. Nurkse, for example, saw a cumulative interaction in the 19th century between the center's demand for exports of the periphery countries and flows of capital from the former to the latter.

An attempt to sort out the extent to which these various possible relationships have characterized the LDCs in the period since the end of World War II would be a very large undertaking. However, we can narrow down the possibilities to some extent.

One important fact, observed in several earlier studies (3), is that the growth of gross domestic product is positively correlated with export growth. Rather consistently throughout the years following World War II, countries ranking high in the growth rate league have also ranked high in export expansion. Coefficients of rank correlation between growth in real product and growth in exports for 1950-65 and for three five-year subperiods for all LDCs (non-European) for which data were available and for industrial countries (4) are as follows:

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(3) Cf., for example, R. F. EMERY, " Relation of Exports and Economic Growth ", *Kyklos*, Vol. 20 (1967).

(4) The industrial countries include the U.S., U.K., EEC and Scandinavian countries, Canada, Japan, Switzerland and Austria. (Japan was excluded from the 1950-65 and 1950-55 comparisons because 1950 GNP data were not available). Exports from *International Financial Statistics*, 1965-66 Supplement and January 1968; and from *Yearbook of International Trade Statistics*, 1965. Real GDP from OECD, *National Accounts of Less Developed Countries* (Feb. 1967). The exports were annual averages centered approximately on the reference years in the following way:

Reference Year		Years for exports
1950	.	1948-51
1955	.	1952-57
1960	.	1958-62
1965	.	1963-66

	LDCs		Industrial Countries	
	No. Countries	Coefficient of Rank Correlation	No. Countries	Coefficient of Rank Correlation
1950-65	44	.64	13	.84
1950-55	44	.54	13	.70
1955-60	51	.51	14	.90
1960-65	55	.37	14	.47

The correlations are all significant at least at the five per cent level, though not so large as to suggest that one factor is a dominant determinant of the other, whatever the lines of causation. Our main interest, however, is in assessing the direction rather than the extent of the relationships. Does the line of causation flow primarily from favorable internal conditions which bring about real product growth and thus enable a country to take advantage of world market opportunities or is the sequence mainly from favorable external market opportunities which make possible a growth in exports that in turn stimulate domestic product?

III. Supply vs. Demand Hypotheses of Export Growth

A number of existing studies throw some light on this question. For the main industrial countries, A. Maizels studied the time to time movements of production and exports of manufactured goods for a 60 year period (1899-1959). He found for each country, including the U.S., the U.K., France, Germany and Japan, " a remarkably close " relationship between changes in the shares in world production and in world exports. The association was as marked for the U.S., a country which only exported 4 to 6 per cent of its manufactures, as it was for the others. While recognizing that there was an interaction between domestic growth and exports, he concluded that the rate of growth was a major determinant of changes in shares of world exports of manufactures (5).

There are also several studies relating to LDCs although some bear more upon the reasons for the lag in exports than upon the relationship between exports and growth. In one of these studies,

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(5) ALFRED MAIZELS, *Industrial Growth and World Trade*, Cambridge University Press, 1963, pp. 217-224.

Benjamin I. Cohen found that the LDCs lost shares between 1952-54 and 1962-64, in the primary product imports of the U.S. and Canada and of Western Europe (6). While the LDCs increased their shares for a few products, including feeding stuffs and mineral fuels, there were declines in a larger number, including livestock, dairy products, corn, sugar, hides, and oilseeds. Had they maintained their 1952-54 shares in each of the 24 commodity groups, LDC exports in 1962-64 to the U.S. and Canada would have been 9 percent and to Western Europe 8 percent larger than they actually were; on a annual basis the shortfall came to $898 million.

Another analysis, by Seiji Naya, concentrated on changes in the shares of LDCs of the South and East Asian region in imports of the developed countries between 1956-57 and 1964-65 (7). The eight included LDCs taken together had an expansion of exports that was 16 percentage points less than it would have been had they maintained their 1956-57 shares in each of the nine commodity classes (SITC sections) in each of the developed countries. However, of the total shortfall of 48 percentage points of their exports as compared with world exports to these rich markets, two-thirds was due to shifts in the commodity composition of the developed countries' imports towards commodities other than the specialties of the Asian LDCs. The results may be summarized as follows:

	Percent
Actual growth of developed countries imports:	
1. From all areas	75.81
2. From South and East Asian LDCs	27.74
3. Difference (line 2 - line 1)	−48.07
4. Hypothetical growth with constant Asian LDC shares in each commodity class and area . . .	43.81
5. Difference due to share loss (line 2 - line 4) . . .	−16.07
6. Difference due to compositional changes (line 4 - line 1 or line 3 - line 5)	−32.00

However, these regional aggregates conceal a considerable diversity of experience. Three countries with rapid growth in exports, Taiwan, Thailand, and the Philippines, gained in shares, although

(6) " The Less-Developed Countries' Exports of Primary Products ", *Economic Journal*, Vol. 78 (June 1968), pp. 334-343.

(7) " Variations in Export Growth Among Developing Asian Countries ", (June 1968) (processed).

the compositional changes were adverse for two of them; the others (Burma, Ceylon, India, Indonesia, and Pakistan), with little or no increase in exports to the developed countries, lost in shares as well as on compositional grounds.

Finally, attention may be called also to a GATT analysis of the export performance of 58 LDCs from 1959-61 to 1964-65 (8). The results of this study overall and for 18 LDCs included both in the GATT study and in our sample of 21 are summarized in Table 2, the countries being arrayed according to their increases in export earnings (Col. 1).

The column which we have labelled the " world market factor " (Col. 2) shows what would have happened to each country's exports had it maintained its 1959-61 share in the world market for each of its traditional exports. If external demand is the dominating influence on LDC export performance, the countries with large increases in exports, at the top of the list, should have been favored by booming markets; that is, the world market factor (Col. 2) should be closely correlated with the index of export earnings (Col. 1). If, on the other hand, favorable domestic factors are mainly responsible for good export performance, the successful countries should be characterized by gains in market shares for their traditional exports (Col. 3) and by shifts into new exports (Col. 4). When these alternative expectations are put to the test with the aid of Spearman's rank correlation technique, the results are as follows:

	Spearman Coefficients	
	All 58 Countries	18 Countries in Table 2
Export earnings and		
World market factor	.11	.28
Competitiveness	.65	.59
Diversification	.25	.70
Own performance	.84	.88

Neither in the full list nor in our sample countries is there evidence of a strong association between increases in export earnings and favorable world markets for traditional exports. The data in-

(8) *International Trade*, 1965, pp. 23-32. The GATT study included 62 countries but Vietnam and three countries for which it provided incomplete information are excluded from our analysis.

dicate rather that the successful were characterized by gains in trade shares or by above-average diversification, the former factor showing up more clearly in the full list of the GATT study LDCs and the latter being more prominent in the 18 LDCs in our sample.

Furthermore, if we take the product of the competitive and diversification factors as a measure of each country's export success other than that attributable to favorable or unfavorable markets for its traditional exports, we find an association between this " own performance " indicator and growth in real domestic product. The Spearman coefficient is 0.51 for the 39 out of the 58 countries for which we could readily find growth rates (9) and 0.78 for the 18 countries in Table 2. The coefficients for the rank relationships between the world market factor and growth are —0.06 and 0.13, respectively, for the two sets of countries.

The GATT study covers a relatively short period of time, and it would be interesting to have the results of a similar analysis for a longer period so as to exclude cyclical factors and to allow more time for the effects of structural changes in the LDCs to manifest themselves. The data problems in extending the GATT study are formidable, but it has been possible to assemble materials for our sample of 21 LDCs that throw some further light on the diversification factor.

The data cover the period 1952-1965 and the Hirschman index of concentration (the square root of the sum of the squared percentage shares of each export category in total exports) has been computed for the terminal years (10). We have taken as our index of

(9) The growth rates, which were for the period 1960-65 were taken from the OECD Development Center, *National Accounts of Less Developed Countries*, 1950-66 (July 1968).

(10) Cf. A. O. HIRSCHMAN, *National Power and the Structure of Foreign Trade* (1945), pp. 158-159. The formula is

$$\sqrt{\left(\sum_{i}^{N} \frac{x_i}{\Sigma x} \times 100\right)^2}$$

where $x_i \ldots \ldots x_n$ are three-digit SITC export categories. Actually, the sources from which most of the data were taken, various issues of the U.N. *Yearbook of International Trade Statistics*, did not consistently account for each country's total exports in terms of the three-digit categories. The sources often gave only a four-digit category where that comprised the bulk of a three digit class and only two- or one- digit classes for categories in which exports were not large; these four-, two-, or one- digit categories sometimes had to be used in place of the three-digit categories. An alternative index of diversification based on the share of the ten most important exports in 1952 as a percentage of the share of the same groups in 1965 gave very similar results to the measures actually used. It has the disadvantage that in correlations with export performance, the change in exports appears on both sides of the equation.

diversification the 1952 concentration index as a percentage of the 1965 index; the higher our index the more concentration has declined and diversification increased. The values of the diversification index ranged from 77 for Panama to 259 for Taiwan (see Table 3). The relationship between export performance (E), taken as 1963-66 annual average exports as a percentage of the annual average in 1952-57 (see Table 1), and diversification (D) was:

$$E = 5.56 + 1.47D \qquad \overline{r}^2 = .22$$
$$(0.1) \quad (2.6)$$
$$S.E./\overline{E} = 115.2/200.4 = 0.57$$

Obviously, this formulation of the relationship is a crude one, even apart from the fact that the dates of reference for E and D do not match precisely. For one thing, D is a measure of the change in diversification and it is possible that the level of diversification at the starting point may explain the ensuing export performance. It turns out, indeed, that, while there is no significant correlation between the initial level of concentration and export performance, when C, the 1952 concentration index, is added to D, a significantly higher proportion of the variation in export performance is explained:

$$E = 134.45 + 1.97D - 3.54C \qquad \overline{R}^2 = .37$$
$$(1.5) \quad (3.5) \quad (2.4)$$
$$S.E./\overline{E} = 103.3/200.4 = 0.52$$

Thus both a relatively high initial level of diversification (or, what is the same thing, a low initial concentration level) and increased diversification during the period were positively associated with export success.

Many factors other than D and C affect E. Some, such as high world demand for traditional exports or expansionary conditions in traditional geographical markets may also have contributed to increased exports; but to the extent that these factors are uncorrelated with diversification, their operation will reduce the correlation coefficient. Others, such as good external demand conditions for products that were significant in the country's exports, but not previously important, will raise both the export and diversification indexes and increase the correlation.

In general, however, it seems unlikely that external demand conditions can systematically account for the association between export performance and diversification. As far as the *external* opportunities are concerned, it is difficult to see why they were greater, for example, for Taiwan (E=356, D=259) than for the Philippines (E=190, D=111), for Thailand (E=176, D=170) than Burma (E=97, D=115), or for Israel (E=470, D=119) than for Syria (E=130, D=90). It seems more likely that the reasons for the differences must be sought in differences in the internal factors that determine the mobility of resources and that therefore promote growth in general.

It is true, of course, that there has been a slow rate of expansion of primary products in world trade, and there is no doubt that LDCs would be better off if markets were booming for their traditional primary product exports. However, world trade consists of a changing bundle of goods, and the failure of a country to shift to commodities the demand for which is increasing, cannot be ascribed simply to bad luck. Rich countries, it must be said, on balance have done more to block such a shift through unfavorable commercial policies than to encourage it, but the fact remains that there are some LDCs that have been successful in expanding their exports. Given the association of successful export performance with increased competitiveness in traditional exports (gains in shares) and with greater diversification, lagging export expansion cannot be ascribed entirely to external demand conditions. Poor export performance appears to be related as much or more to declining shares in established lines of export than to stagnant or closed world markets, and declining shares suggest that the domestic conditions in the economy are such as to make the country unable to take advantage of whatever trade opportunities that there are.

IV. Export Growth and Economic Policy

One question that arises immediately relates to the extent to which these differences in growth and in export performance can be ascribed to differences in government policies. In some LDC's there have been intensive efforts to foster industrialization and in view of the correlation between export success and diversification, it might be thought that these efforts have been paying off in the form

of higher exports. In a few LDC's, notably Korea and Pakistan, industrialization has been aimed not only at the home market, but also at export markets.

Generally, however, the impact of development strategies has been unfavorable to export expansion. The reasons have been frequently analysed and do not require extended treatment here (11). The central factor is the closing off of the economy from world markets, partly deliberately to foster industrialization through import substitution and partly as a by-product of inflationary pressures resulting from development needs. High domestic prices and overvalued exchange rates not only require government control of imports but also result in control over the commodity composition of exports since subsidies are usually required. Import controls and import substitution policies raise input prices for potential export industries beyond what they would be simply due to the overvalued rate, and thus would create a case for differential subsidies as between various exports even in the absence of other reasons for discriminating among exports. In fact, smaller (or even negative) subsidies are usually given to traditional primary products than to exports of new industries, particularly manufactured goods. Thus government decisions partially replace the role of the market in identifying new export possibilities and in determining the extent to which old exports will be pushed. Opportunities to increase primary product exports are especially likely to be overlooked owing to the identification of primary exports with colonialism and to pessimistic expectations about export prospects, the latter fostered by memories of the collapse of export proceeds in the 1930's and analytical support given by the writings of Nurkse, Prebisch, Myrdal and others. In some instances, such as Brazil, exports were directly discouraged in favor of maintaining domestic supplies at low prices; export licensing, maximum limits and exchange rates for export earnings far below the rate used for imports were among the methods used (12).

There is, of course, considerable variation among the LDCs in the extent to which the domestic economy has been insulated from the influence of world markets. This provides an opportunity to

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(11) See, for example, CHARLES P. KINDLEBERGER, "Liberal Policies vs Controls in the Foreign Trade of Developing Countries ", A.I.D. Discussion Papers No. 4, April 1967.

(12) See A.I.D. 1966 summer research project papers by ANNE O. KRUEGER, " Brazilian Exports: Policies and Potential " and NATHANIEL H. LEFF, "Export Stagnation and Autarkic Development in Brazil, 1947-1962 ", *Quarterly Journal of Economics*, May 1967.

test the impact of varying degrees of insulation on a country's export performance and on its growth rate.

With regard to the Southeast Asian LDCs, for example, Professor Myint recently placed Malaya, Thailand and the Philippines in the category of countries following an "outward-looking" type of development policy and found that "Burma and Indonesia, after some vacillations, have followed an increasingly inward-looking path of development" (13). Myint then cited the following data comparing the performance of these countries:

	1958-60 export volumes as per cent of 1937 level	1960 aggregate real national product as per cent of pre-war level
Philippines	163	201
Thailand	149	191
Malaya	167	164
Indonesia	121	111
Burma	48	111

After considerating the special factors affecting each country's record, he concludes:

> But even when we have made allowances for the special circumstances, it is difficult to avoid the conclusion that a large part of the explanation for the poor economic performance of Burma and Indonesia must be found in the economic policies they pursued, in particular the inward looking attitude which failed to appreciate the vital importance of export expansion for economic growth and preferred centralized economic planning and controls based on the direct state activity to the use of positive economic incentives to encourage both the foreign and indigenous producers to expand economic activity (14).

Even if Myint's conclusions are accepted, the question arises as to how generally applicable his findings are. Would a similar generalization apply to the LDCs of Latin America? Africa? Futhermore,

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(13) HLA MYINT, "The Inward and Outward Looking Countries of Southeast Asia and the Future of the Region" Research paper No. 7, London School of Economics, February 1966 (processed).

(14) Op cit., pp. 7-8.

an unfriendly or skeptical critic might also raise doubts about Myint's classification of countries between "outward-looking" and "inward-looking"; after all, where judgmental classifications are involved, experts may disagree. The possibility of such differences in judgment may make it awkward, in view of the limited number of LDCs likely to be within the purview of a single expert, to bring a large number of LDCs into a single set of comparisons.

Thus while judgmental classifications of countries by authoritative observers may well turn out to be the best way to study the effects upon exports and growth of varying degrees of economic insulation, there are rather obvious reasons for looking for more objective means of classification.

An objective measure of openness might be sought in either the universe of prices, or in the relationship of exports to production. In the price area an effort might be made to relate the behavior of domestic prices, adjusted for exchange rate changes, to world price movements. A relatively rising domestic price level in an LDC would betoken increasing insulation of its economy. There might, of course, be special circumstances in which increasing relative prices did not have this significance in a particular case, but in general it may be expected that rising prices will usually require stricter import controls, larger and more extensive export subsidies, etc. The main practical obstacle to this approach proved to be the fact that even where satisfactory measures of domestic prices were available it was often difficult to find the appropriate exchange rates that were needed so that the relative domestic price increase of the various LDCs, viewed from the standpoint of world markets, could be correctly calibrated.

The approach involving the use of export and production relationships is based on the notion that a country's inward or outward orientation can be inferred from an examination of the changes over time in its exports and production data. One simple measure of openness that suggests itself is the ratio of the increment in exports to the increment in output. The implicit hypothesis is that the rate of growth is more closely correlated with the share of exports in the increment in output than with the increase in exports. Even if this were true, however, the incremental export-output ratios has the disadvantage for our purpose that it might be high owing either to favorable external demand for a country's traditional exports or to internal policies favorable to exports and growth.

A more discriminating criterion of openness may be based on the hypothesis that import substitution in the manufacturing sector provides the key to the measurement of the degree to which the economy has been closed off from world markets. The more development efforts rely upon a closed economy, the more likely it will be that such increases in manufacturing production as do occur will be mainly or only import substituting — that is, little or none of the increment in manufacturing output will be exported. In an open economy, on the other hand, increases in manufacturing output may be expected to a greater extent to find external as well as internal outlets. The ratio of the increase in exports of manufactured goods to the increase in manufacturing production may therefore provide an " index of openness ".

We were able to obtain the data necessary for the computation of this index of openness for a period between the early 1950's and the mid 1960's for 21 countries. (The diversification indexes, reported upon above, were subsequently computed for the same LDCs). The indexes of openness (15) are given in Table 3 along with data relating to growth and capital formation.

For all 21 LDCs, not only export performance (E) but also the growth rate in real domestic product (G) is positively associated with openness (O):

$$E = 137.13 + 6.92\ O \qquad \bar{r}^2 = .38$$
$$\quad (4.9) \quad (3.7) \qquad S.E./\bar{E} = 102.2/200.4 = .51$$

$$G = 4.30 + .095\ O \qquad \bar{r}^2 = .48$$
$$\quad (13.3) \quad (4.4) \qquad S.E./\bar{G} = 1.18/5.17 = .23$$

(15) In calculating the indexes of openness no adjustment was made for the exclusion of synthetic fiber producton from manufactures by the SITC. (Synthetic fibers are classified as crude materials in the SITC). However, an effort was made to deduct primary metals included as manufactures by the SITC, for Kenya, Mexico, Nigeria, and Peru. These were the only countries in the sample of 21 for which primary metal exports were significant in at least several of the years observed (Peru 1950-63; Mexico 1950-65; Nigeria 1962-64; Kenya 1952-53; 1957-65). In these cases primary metals (ores, concentrates, and unwrought metals) were subtracted from exports of manufactures and manufacturing output. Since, for those years for which primary metal production data were available, Kenya, Nigeria and Peru exported most of their primary metal production, exports of primary metals served as an estimate of primary metal production for all of the years under consideration. This was not true of Mexico, but lack of readily available data on primary metal production precluded a more precise alternative estimate.

The data underlying these regressions are arranged by region below:

ASIA				LATIN AMERICA			
	G	E	O		G	E	O
Taiwan . . .	8.0	356	44	Panama . . .	6.1	247	0
Thailand . . .	6.0	176	6	Mexico	6.0	155	4
Korea . . .	5.4	608	19	Brazil	5.5	105	2
Burma	5.4	97	4	Peru	5.3	248	0
Philippines . .	4.9	190	8	Dom. Rep. . .	5.0	127	4
India	3.9	133	4	Colombia . . .	4.5	89	3
Pakistan . . .	3.6	129	19	Honduras . . .	3.7	181	3
Ceylon	3.6	106	2	Argentina . . .	3.0	154	2
MIDDLE EAST				AFRICA			
Israel	10.1	470	40	Nigeria . . .	4.2	180	3
UAR	5.6	132	10	Kenya	3.5	196	5
Syria	5.3	130	10				

For the Asian countries, the rank correlation coefficient between E and O is 0.73, and between G and O is 0.46, the former being significant at the 0.5 level. For the Latin American countries, the increment in manufacturing output was apparently so universally for local use that there was no opportunity to observe the effect of varying degrees of openness on growth; in no country was the increment in manufactures more than 4 per cent of the increment in manufacturing output (16).

Even where, as among the Asian countries, experience has been more varied, there are some notable deviations from the general relationship. Part of the explanation lies with the special circumstances in which our time period, made as uniform as possible, catches each country. In the case of Burma, for example, the first

(16) It is possible that the size and composition of the sample of Latin American countries, dictated by the ready availability of the data necessary to compute the openness index, may also affect the result adversely. For the period 1950-65, the rank correlation between export performance and growth for the eight countries in the sample was 0.55 while that for all 21 Latin American countries for which E and G could be obtained was 0.72.

few years (up to 1957), Myint has pointed out, find the country still not having recovered prewar output levels and therefore able to achieve high growth rates just by resuming old production patterns with pre-existing land and labor (17).

The high openness index for Pakistan reflects two different periods in the country's economic history. In the early 1950's the gap left by the termination of the pre-partition exchange of agricultural products for Indian manufactures led to the expansion of manufacturing product and to the export of manufactures in place of raw materials, especially for jute in which Pakistan had a monopolistic position. In the latter half of the 1950's Pakistan began a vigorous program of export promotion for manufactures which also contributed to its high openness index. The growth rate in GDP was very low during the initial period of adjustment, but improved substantially.

The explanation for Thailand may be related to the country's unusual expansion of primary output and to her reliance on primary products such as rice, maize, and kenaf for her strong export performance. It is possible that the untoward effects of import substitution were simply swamped by favorable developments elsewhere in the economy (18).

These cases suggest that many factors affect the incremental ratio between manufacturing exports and production. Perhaps the explanatory power of the openness ratio could be improved if account were taken of the more obvious of these influences such as the cyclical and structural positions of the individual countries (19). Our

(17) *Op. cit.*, p. 7. OECD estimates for GDP growth rates (per cent per annum) for successive five year periods beginning 1950 are 7.0, 5.7, and 2.7.

(18) The manufacturing sector accounted for 11 to 12 per cent of GDP without any trend during the period. (UN *Yearbook of National Accounts Statistics, 1966*, p. 700). It has also been suggested that import substitution was not extensive; although some manufacturing industries were encouraged by tariffs and quantitative restrictions, many were said to be merely assembly and packaging plants. The same source reported that a survey of 20 new industries indicated that import savings between 1962 and 1964 amounted to less than two to three per cent of total imports. See SUPARB YOSSUNDARA and YUNE HUNTRAKOON, "Some Salient Aspects of Thailand's Trade, 1955-64", AID/University of Wisconsin Research Project on "Economic Interdependence in Southeast Asia", Conference Paper November 1966 (mimeo), p. 8.

(19) A way might be sought to estimate the "normal" proportion of a country's incremental manufacturing output that it might be expected to export taking account of such factors as its population, per capita income, GDP, distance from markets, etc. See S. KUZNETS, "Quantitative Aspects of the Economic Growth of Nations: IX Level and structure of Foreign Trade: Comparisons in Recent Years", *Economic Development and*

purpose, however, is not so much to provide a basis for the accurate categorization of each country with respect to its trade policies as to show the nature of the association between growth and trade policies. Unless, from the standpoint of the whole group of LDCs, there are forces other than trade policy that have a systematic across-the-board effect on the openness ratio, we may expect the relationship, if it is a significant one, to show through the interferences as it has done for our group of 21 countries. A further test would be to treat openness as one of a number of explanatory variables including others affecting GNP growth such as domestic savings, foreign capital inflows and population. A modest effort along this line, the inclusion of domestic capital formation and population growth, produced the following results for the 21 LDCs:

$$G = \begin{array}{lll} 1.38 + .072\,O + .18K & \bar{R}^2 = .62 \\ (1.3) \quad (3.6) \quad\;\; (2.8) & S.E./\bar{G} = 1.01/5.17 = .20 \end{array}$$

$$P = -1.08 + .052\,O + .17K \quad\; \bar{R}^2 = .60$$
$$(1.2) \quad (3.1) \quad\;\; (3.1) \quad\quad S.E./\bar{P} = .84/2.26 = .37$$

where G is the annual average percentage rate of growth in GDP, P is the per capita GDP growth rate, O is the index of openness and K is annual average percentage of GDP represented by gross domestic capital formation (20).

It seems fair to claim that the hypothesis that the rapidly growing LDCs have tended to be outward oriented is supported by the data we have examined. It remains to be seen, however, whether the openness ratio will retain explanatory power when the sample of countries is extended and when it is placed within the broader framework of an economic model of LDC growth and export performance.

Cultural Change, Vol. XIII, No. 1, Part. II, October 1964; H. CHENERY, "Patterns of Industrial Growth", *American Economic Review*, Vol. 1, No. 4, Sept. 1960, pp. 624-654; and H. LINNEMANN, *An Econometric Study of International Trade Flows*, Amsterdam (1966).

(20) We added the diversification index to the relationships, regarding it as a proxy for the mobility of the factors of production and the openness index as a measure of the exposure of the economy to world competition, but the coefficient of the diversification index was not significant. The fact that the dates for the growth rates were aligned with the reference dates for openness rather than the slightly different ones for diversification may have had a little to do with this result.

Questions of a different kind may be raised by the fact that the countries with high openness ratios, such as Pakistan, Korea, Israel, appear to use fiscal tools and direct intervention to stimulate exports in contrast to most Latin American and other LDC's where these techniques are used to make home markets safe for import-substituting industries. Without detailed comparative studies, it is impossible to know whether the role of governmental decision making in determining or influencing the composition of production and exports is any smaller and the role of the market any larger in countries with high openness ratios than in those with small ones. If there are no differences in this, the possibility arises that some or many of the incremental exports have been sold for foreign exchange that brings back imports whose value is less than their marginal social cost to the economy. However, in the case of the Pakistan economy at least, Lewis and Guisinger concluded that heavy export subsidies involved, in the main, large profits for exporters rather than a waste of resources (21). In Israel there apparently has been increasing attention to the problem of optimal resource allocation in an expanding open economy (22). Also, where there has been rapid growth in real product concomitantly with export growth, as has been the case during the past decade in Pakistan, Israel, Taiwan and Korea, there is some presumption that the export expansion was not based on a program of give-aways; such a program would, of course, tend to retard growth rather than to enhance it.

V. Summary and Conclusions

The failure of the less developed countries (LDCs) to share fully in the unprecedented expansion of world trade in the years since the end of World War II has most frequently been ascribed to unfavorable external demand conditions rather than to internal conditions that militate against exports. Actually there has been a con-

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(21) STEPHEN R. LEWIS, jr. and STEPHEN E. GUISINGER, " Measuring Protection in a Developing Country: The Case of Pakistan ", *Journal of Political Economy*, April 1968. Some notion of the difference between domestic prices and probable export prices may be obtained from their finding that the (arithmetic) average price level for 32 industries was 118 per cent and the median price level 81 per cent above the world level in 1963-64.

(22) For a discussion of the methodological problems with illustrations based on the Israeli economy, see MICHAEL BRUNO, " Optimal Patterns of Trade and Development ", *Review of Economics and Statistics*, Nov. 1967, pp. 545-554.

siderable diversity in the export experience of the LDCs. The fact that a few have enjoyed export expansions that compare favorably to those of the industrial countries, while others have lagged well behind the LDC average, provides an opportunity to investigate the relative roles of external and internal factors in accounting for export performance.

It seems pretty clear that economic growth and export expansion are positively correlated, and there are indications that the line of causation has tended to run from growth to exports rather than vice versa.

There is little doubt that world trade in primary products, in which LDCs tend to specialize, has not expanded as rapidly as trade in manufactures. However, if unfavorable external demand conditions were at the root of the export difficulties of the LDCs, individual LDCs specializing in products with growing world markets should have been successful in expanding their exports, while those with stagnant specialities should have been poor performers. Or, put another way, the inadequate-external-demand explanation would be more plausible if LDCs had tended to maintain at least constant shares in world markets for the kinds of goods they have been exporting. Declining shares in such products, on the other hand, point to internal rather than external obstacles to export growth. In fact, the evidence not only indicates declining shares but also the absence of a general dependence of export performances of individual LDCs on the behavior of the world markets for their traditional products.

Among the important internal factors often discouraging exports in LDCs are government policies that promote industrialization for the home market and insulate the domestic economy from the world price structure. Myint concluded that three Asian LDCs that followed outward-looking policies outperformed two that were inward oriented. Perhaps such expert evaluations are the best way to assess the results of these alternative emphases in trade and development policy, but an effort is made in the final section of the present paper to find an objective criterion for classifying LDCs according to the degree of openness, so that assessments of these matters may turn less upon individual judgment. It is suggested that the ratio of the increment of manufactured exports to the increment of manufacturing production may provide an " index of openness ". The rationale is that a development strategy based on a closed economy will lead to the local marketing of increases in manufacturing pro-

duction to a greater degree than a development strategy based on an open economy. Export performance and, even more, the growth rate are obviously affected by many influences other than openness, and the openness ratio is on its side also subject to many factors other than trade policy. It turns out, nevertheless, that both GDP growth rates and export performance are positively correlated for the sample of 21 LDCs.

Openness and the share of GDP devoted to gross domestic capital formation explain over sixty percent of the variation in growth rates for these countries. However, it remains to be seen whether the openness measure will retain its explanatory power when the sample of countries is extended and when it is placed in a fuller model of growth and export performance. Account should be taken of the cyclical and structural factors that might affect the relationship between openness and growth.

All the evidence in this paper, old and new, supports the empirical generalization that the lines of causation generally run from domestic growth to export success. Differences in market conditions for particular commodities have sometimes helped or hurt individual LDCs, but the more important influences affecting export performance have been internal rather than external. Some evidence has also been adduced to support the further hypothesis that an open or outward oriented development strategy leads not only to higher exports but to faster growth.

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TABLE I

COMPARATIVE EXPORT PERFORMANCE OF SOUTH
AND EAST ASIAN DEVELOPING COUNTRIES

Exports of	Annual Average Value of Exports				
	1952-57 as per cent of 1948-51	1958-62 as per cent of 1952-57	1963-66 as per cent of		
			1958-62	1952-57	1948-51
World (a)	140	133	144	191	267
Industrial countries (b)	150	140	148	206	309
U.S.	135	117	137	159	216
U.K.	121	123	127	156	189
Industrial Europe (c)	174	160	155	249	433
Japan	261	203	194	394	1,031
Less developed areas	122	118	133	158	192
Latin America	122	109	127	139	170
Argentina	76	111	139	154	117
Brazil	109	87	120	105	115
Colombia	155	81	111	89	139
Dominican Republic	133	123	103	127	169
Honduras	107	114	158	181	193
Mexico	135	113	138	155	210
Panama	125	167	211	247	308
Peru	144	154	160	248	356
Middle East	141	150	143	214	302
Israel	180	241	195	470	845
Syria	— (d)	93	139	130	— (d)
UAR	76	112	118	132	101
Other Asia	101	112	128	144	146
Burma	120	95	102	97	116
Ceylon	108	104	103	106	115
India	93	106	125	132	123
Korea	157 (e)	127	479	608	— (e)
Pakistan	74	91	142	129	95
Philippines	123	130	146	190	234
Taiwan	137	145	246	356	487
Thailand	116	119	148	176	203
Other Africa	140	119	146	174	243
Kenya	126	141	139	196	247
Nigeria	130	122	147	180	234

(a) Excluding Sino Soviet bloc, Cuba and Indonesia.   (b) U.S., Canada, U.K., Japan, Austria, Switzerland, Scandinavian and Common Market countries.   (c) Common Market countries and Scandinavian countries, U.K., Austria and Switzerland.   (d) Data for Syria not available for period 1948-51   (e) Base period 1948-49.

SOURCE: *International Financial Statistics*, Supplement to 1966-67 Issues and January 1968; *Yearbook of International Trade Statistics*, 1965.

TABLE 2

EXPORT PERFORMANCE OF SELECTED LDC's AND ALL LDC's, 1959-61 TO 1964-65

	(1) Total export earnings	(2) World market factor	(3) Competitive factor	(4) Diversi- fication factor	(5) Own performance indicator
Taiwan	255	122	134	156	209
Panama	235	114	139	148	206
Peru	159	130	106	115	122
Honduras	157	121	117	111	130
Thailand	148	125	106	111	118
Nigeria	145	107	108	125	135
Argentina	143	141	108	94	102
Pakistan	142	122	105	111	116
Philippines	142	121	117	101	117
Mexico	141	123	90	127	114
Kenya	136	117	120	97	116
India	126	120	95	111	105
Colombia	118	120	92	107	98
Brazil	115	117	91	108	98
UAR	113	104	110	99	109
Ceylon	107	101	107	99	106
Burma	104	144	68	106	72
Dominican Republic . . .	102	120	96	89	85
All LDC's	130	124	98	107	105

Col. 1: Index of export earnings.

Col. 2: Index of change in world markets for each country's traditional exports.

Col. 3: Index of each country's share in world markets for its traditional exports.

Col. 4: Share of traditional exports in country's 1959-61 exports as per cent of share in its 1964-65 exports.

Col. 5: Products of Cols. (3) and (4) divided by 100 or Col. (1) × 100 ÷ Col. (2).

SOURCE: GATT. *International Trade*, 1965, p. 27.

TABLE 3

DIVERSIFICATION, OPENNESS, GROWTH, AND CAPITAL FORMATION, 21 LDCs

	Diversification				Openness			
	Concentration index (a)		Index of diversifi- cation (b)	Annual growth of GDP (c)	Period (d)	Index of open- ness (e)	Annual growth of GDP (f)	Gross domestic capital formation as per cent of GNP (g)
	1952	1965						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Argentina . . .	28.7	35.1	82	3.9	1951-64	2	3.0	19.6
Brazil	74.0	45.9	161	5.2	1951-63	2	5.5	14.4
Burma	74.7	65.0 (h)	115	4.3 (i)	1951-61	4	5.4	19.0
Ceylon	59.0	65.8	90	3.7	1951-64	2	3.6	13.8
Colombia . . .	81.7	66.1	124	4.5	1952-64	3	4.5	18.2
Dominican Rep. . .	56.4	55.0	102	3.2	1951-63	4	5.0	15.5
Honduras . . .	68.0	47.1	144	4.0	1951-64	3	3.7	14.2
India	32.0	30.6	105	3.5	1951-63	4	3.9	15.4
Israel	48.5	40.9	119	9.6	1953-64	40	10.1	28.0
Kenya	51.0	36.3	140	3.2	1953-64	5	3.5	16.0
Korea	51.7	23.4	221	5.7 (i)	1954-64	19	5.4	13.3
Mexico . . .	32.3	24.9	130	6.1	1951-64	14	6.0	15.1
Nigeria . . .	45.5	41.6	109	4.3	1951-63	3	4.2	11.7
Pakistan . . .	61.0	38.8	157	4.0	1951-63	19	3.6	12.7
Panama . . .	46.6	60.2	77	6.5	1951-63	0	6.1	16.6
Peru	40.5	34.4 (j)	118	4.9	1951-62	0	5.3	22.2
Philippines . . .	41.2	37.1	111	4.7	1951-64	8	4.9	14.5
Syria	42.2	47.0	90	5.2 (i)	1954-64	10	5.3	14.6
Taiwan . . .	61.6	23.8	259	8.3	1953-64 (k)	44	8.0	18.5
Thailand . . .	69.1	40.6	170	6.1	1953-64 (l)	6	6.0	18.0
UAR	88.5	58.4	152	5.6	1951-63	10	5.6	17.9

Notes: (a) Square root of squared percentage shares of each export category in total exports. See text note for further explanation. (b) Col. (1)÷Col. (a), times 100. (c) 1952 to 1965 except as otherwise noted. (d) Three year averages centered on years given, except as otherwise noted. (e) Ratio of increment in manufactured exports to increment in manufactured production times 100. See text note for further explanation. (f) Corresponds to years in Col. (5). (g) For period 1952-65 as whole, all data in current prices. Estimates had to be made in some cases of components such as capital consumption allowances. (h) 1964. (i) 1953-65. (j) 1963. (k)1952-53 to 1964-65. (l) 1951-52 to 1964-65.

SOURCES: Cols (1) and (2): Calculated from U.N. *Yearbook of International Trade Statistics*, 1953, 1954, 1955, 1965, 1966.

Except for:

    Burma 1964 - *Bulletin of Export Trade (1964)*, Central Statistical and Economic Department, New Secretariat, Rangoon, Burma.

    India 1952 - *Accounts Relating to the Foreign Trade and Navigation of India*, Ministry of Commerce and Industry, March 1954.

    Philippines 1952 - *Foreign Trade and Navigation of the Philippines 1952-1953*, Bureau of Census and Statistics.

    Thailand 1965 - *Annual Statement of Foreign Trade of Thailand (1965)*, Thailand Dept. of Customs, pp. 6-9.

    Taiwan 1952 - *The Trade of China (1952)*, Statistical Dept., Inspectorate General of Customs, Taipei.

Cols (4) and (7): OECD Development Center, *National Accounts of Less Developed Countries, 1950-66*, July 1968.

Col. (6): U.N. *Growth of World Industry, 1938-61; ibid.*, 1953-65; and sources given above.

Col. (8): U.N. *Yearbook of National Accounts*, 1966; and source given for cols. (4) and (7).

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