

Evaluating Export Expansion Strategy for Economic Development: Selected LDC's

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INTRODUCTION—EXPORT EXPANSION AND ECONOMIC GROWTH

Export promotion strategy¹ and an outward orientation has been embraced by the World Bank for a number of years. The 1987 World Development Report examined the role of foreign trade in the industrialization of LDC's and the general theme throughout the report is that the liberalization of trade and expansion of exports are central to the dynamic growth of developing nations. During the past fifteen years there have been numerous empirical investigations and articles which have confirmed the positive relationship between export expansion and economic growth.² While this view is shared by most of the industrialized nations, many developing countries believe that other factors are more critical and will dwell more on the importance of preferential trade arrangements, commodity agreements and compensatory financing and substantial increases in grants and low interest rate loans, particularly for the very poor countries. The more radical opinion, that international trade is not desirable because the resulting domination by the industrial nations has caused many of the Third World problems, is perhaps less defensible now considering the remarkable growth of the East Asian nations.

The strong correlation between export growth and economic growth has led to the following "prevailing wisdom" concerning export promotion strategy and economic development in developing countries.

1. Export expansion is an effective strategy for developing nations. There is a positive and significant correlation between export growth and economic growth for Third World nations at all levels of development.³
2. Export promotion strategy is, however, more effective for middle income LDC's than low income LDC's. This is verified by larger coefficients and t statistics and higher rank correlations in the empirical studies.
3. A larger share of manufactured goods in exports increases the effectiveness of export promotion strategy.⁴
4. Export expansion appears to have had more effect on economic growth in the 1970's than in the 1960's.⁵

The rationale for the effectiveness of export expansion strategy is that exports and trade enable a country to exploit its comparative advantage, with the result that resources are allocated more efficiently and there is an increase in capital formation and an improvement in factor productivity. One of the reasons for the productivity improvement is 'economies of scale.' The domestic markets in many developing countries are often too small to support plants of efficient size. The international market enables the export firms to expand and realize economies of scale, with the result that there will be a reduction in unit production costs. Nonexported products may also be produced more efficiently. The increased activity often promotes the growth of supporting firms and other industries within the country. Scale effects resulting from the increased demand are transmitted to other sectors of the

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economy. The presence of a reasonably well developed or developing capital goods sector provides an even larger multiplying effect because of the strong backward linkages.⁶ The greater competition also creates greater efficiencies—there is usually more innovation, more incentive for technological improvements, a better use of resources and a quicker response when opportunities are perceived. All of this activity encourages investment, increases capital formation and attracts entrepreneurs.

The increased exports provide additional foreign exchange, which permits the purchase of more competitively priced intermediate goods, raw materials and machinery and equipment which become available at world prices. Not only does the imported machinery usually become available at a lower cost than that of domestic machinery, but also it often embodies a higher level of technology.

This rationale also suggests the importance of an increase in capital formation for sustained economic growth. The empirical studies cited in Footnote 2 which confirm the correlation between export growth and economic growth, also confirm a strong and significant correlation between capital formation and income. Actually the correlations are much higher between gross domestic product (GDP) and gross domestic investment (GDI) growth than between GDP and Export growth.⁷

On the other hand, in support of the view that other factors may be more significant in economic development than an outward trade orientation, there are a number of countries which experienced high export growth over a long period of time, with only average to poor GDP growth during the same period. A review of the 1986 World Development Report reveals that 21 countries, or less than 15% of the nations in the world, had export growth greater than 7% during the 11-year period from 1973 through 1984. However, eight nations from this group of twenty-one, listed in Table 1, experienced below average economic growth for their category (middle income nations, low income nations, etc.). Eight out of 21 nations represents a large percentage of exceptions, particularly when considering the number of economists and organizations that support the position that an outward orientation is pivotal to the growth of the poor countries.

The primary purpose of the analysis is to critically evaluate the effectiveness of export expansion strategy in light of the fact that a number of countries experiencing high export growth are not enjoying satisfactory GDP growth. In addition to extending the statistical analysis into the eighties and expanding the analysis to include industrialized countries, an effort is made to understand the reasons why export expansion in some countries does not promote economic growth.

ANALYSIS⁸

Intercountry statistical comparisons are made to ascertain the relationship between export expansion and economic growth for the period from 1973 to 1984. Two samples are analyzed; the first

TABLE 1
Average Annual Growth Rate 1973-1984 (Percentage)

	Exports	GDP	Avg. GDP Growth by Country Group
Brazil	8.1	4.4	4.5 UMI
Chile	8.8	2.7	4.5 UMI
Israel	7.9	3.1	4.5 UMI
Peru	9.3	1.5	4.2 LMI
South Africa	7.9	2.7	4.5 UMI
Spain	9.4	1.6	2.4 IND
Turkey	11.4	4.1	4.2 LMI
Uruguay	8.0	2.0	4.5 UMI

Data: 1986 World Development Report, Tables 2 and 9.
Country Groups: UMI = Upper Middle Income Country, LMI = Lower Middle Income Country, IND = Industrial Market Economies.

consists of 73 low and middle income market economies, while the second sample with a total of 93 nations adds industrial nations to the sample of 73. Essentially all undeveloped and developed nations for which data are available are included. Spearman and Pearson correlations are determined for export growth (\dot{X}) and GDP growth (\dot{Y}), as well as for Y and the growth of the labor force (\dot{L}) and gross domestic investment (\dot{I}). All of the data were obtained from the 1986 World Development Report.

As was the case with the studies by Tyler, Kavoussi, Ram and others, a more rigorous method of analysis is also used. The effect of export growth on factor productivity is determined, using the simple generalized production function:

$$(1) \quad Y = f(L, K, X)$$

where

Y = real output
 L = labor force
 K = capital
 X = exports

The X serves as a proxy for the technology factor since export growth normally improves factor productivity because of economies of scale, increased incentives for technological innovation, increased competition, a better use of resources and the transmission of these effects throughout the economy. By total differentiation of the production function, the following equation is derived with the coefficients b , c and d representing the output elasticities with respect to L , K and X with the dot over the variable representing the variables rate of growth.

$$(2) \quad \dot{Y} = a + b\dot{L} + c\dot{K} + d\dot{X}$$

In the regression equation, the average annual growth rate for the period from 1973-1984 for gross domestic product, labor force, gross domestic investment and merchandise exports are used for \dot{Y} , \dot{L} , \dot{K} and \dot{X} respectively. Because investment is used in place of capital, \dot{I} is inserted in place of \dot{K} .

$$(3) \quad \dot{Y} = a + b\dot{L} + c\dot{I} + d\dot{X}$$

Multilinear regressions are run for both the sample of 73 nations and 93 nations. Then the analysis focuses on the nations with the most rapid export growth where there are a number of countries that experience below average GDP growth. Twenty-one nations with average annual export growth in excess of 7% from 1973 to 1984 were identified from the countries listed in the 1986 World Development Report.⁹ Spearman and Pearson coefficients are obtained, and following the logic described above in the development of equation (3), statistical data are provided from a multilinear regression analysis.

Also intracountry analyses were conducted to learn more about why some nations do not realize substantial economic growth when they experience rapid export expansion. The countries chosen for the intracountry analysis were determined by selecting from the group of 21 nations with average annual export growth in excess of 7%, four countries with high average annual growth rates and four countries with low average annual growth rates. All the twenty-one countries were not included partly because annual data for some nations was unreliable or was not available. The countries selected were:

High GDP Growth Nations	Low GDP Growth Nations
Hong Kong	Chile
Korea	Peru
Malaysia	Spain
Thailand	Uruguay

Correlation data were obtained by calculating Spearman and Pearson coefficients, and the effect of

exports on factor productivity are determined by running the following regression analysis for each of the countries for the period 1974–1983.

$$(4) \quad \dot{Y} = a + b\dot{X} + c\dot{K} + d\dot{L}$$

Gross capital formation rather than gross domestic investment was used as the proxy for capital. All data were obtained from IMF statistics.

Finally, an investigation is made in an attempt to locate some of the clues which will help us understand why export expansion in some countries does not lead to self-sustaining growth. Our search looks for similarities or patterns of economic activity which perhaps can be used to develop a meaningful general hypothesis. Areas explored include the debt service burden, net transfers (gross capital inflows less principal and interest payments,) export of primary products vs manufactured products, terms of trade and the capital goods sector. It is hypothesized that each of these factors modifies the effectiveness of exports in increasing factor productivity.

RESULTS OF THE ANALYSIS¹⁰

Updating the data—73 and 93 nation statistical analyses

In both of the large samples (the 73 and the 93 nations) the Spearman rank correlations between GDP growth rates and export growth rates for the period 1973–1984 are slightly lower than those reported by other researchers for earlier periods. The Spearman correlation was 0.416 for the 73 LDC's, and 0.310 for the 93 LDC's and industrial nations. Kavoussi, Michaely and Tyler's rank correlations vary between 0.380 and 0.537. The Spearman Rank correlation between GDP and GDI was the highest of all the relationships, which supports the earlier discussion about the importance of capital formation in economic development: 0.797 for the 73-nation sample, and 0.787 for the 93-nation sample. Tyler's data support this strong association.

The regression analyses which are summarized in Table 2 indicate coefficients for the export variable to be similar to those reported by others for earlier periods. The output elasticities with respect to a percentage change in exports were .133 and .130 for the two samples, which was very close to Ram's results for two earlier periods. Kavoussi's data varied from .077 for the low income LDC's to .163 for the middle income LDC's. However, the statistical significance is substantially higher for the 1973–84 analyses, as the t-values for the export coefficient are 3.86 and 4.35. Also, the explanatory power of the equations is greater as the r^2 's are .622 and .634 for the 73 and 93 nation samples respectively.

TABLE 2
Regression Analysis for the Period 1973–1984
 $\dot{Y} = a + b\dot{L} + c\dot{I} + d\dot{X}$
(t-statistics in parentheses)

	73 Developing Countries		93 Developing and Industrial Nations	
Constant: "a"	2.111	(3.45)	1.708	(4.11)
Coefficients of Independent Variables				
L: "b" value	0.161	(0.67)	0.325	(1.93)
I: "c" value	0.252	(8.10)	0.257	(8.98)
X: "d" value	0.133	(3.86)	0.130	(4.35)
Step-wise Analysis	r	r ²	r	r ²
Step 1—Enter I	.735	.540	.745	.554
Step 2—Enter X	.787	.619	.787	.619
Step 3—Enter L	.788	.622	.796	.634

Intercountry analyses of nations experiencing high export growth—21 nations

The results of the intercountry analyses for the countries which averaged export growth in excess of 7% per year for the period from 1973 to 1984 were substantially different. For the Equation (3) regression analysis, the coefficient for the export variable is negative and not statistically significant. However, the coefficient for the investment variable is 0.337 and is highly significant (t-statistic is 6.02). Table 3 illustrates these results.

Intracountry time-series regression analyses

Table 4 summarizes some of the more relevant data obtained from the regression of Equation (4) for each of the eight countries. For the high-growth nations selected, the associations were strong. The Spearman Rank correlations between export growth and GDP growth averaged 0.627. With the regression analyses, the coefficient for the export variable averaged 0.235 and was highly significant for all countries except Korea. With the low-growth nations, the Spearman rank correlations between export growth and income growth were much lower and averaged only 0.139. The coefficients for the export variable averaged 0.143, considerably lower than average for the high growth nations. These results were expected, since they conform with the criteria for selecting the group.

REASONS FOR THE SLOW GROWTH

In all of the intercountry and intracountry statistical analyses there was a large, highly significant correlation between investment growth and income growth. Unfortunately however, gross capital formation was below average for the slow growth nations which helps to explain the economic stagnation. The annual gross domestic investment for Brazil, Chile, Israel, Peru and Spain, for the period 1973–1984, averaged only 0, 1.0, -1.5, -2.7 and -2.3 respectively. The very high export growth obviously did not create waves of activity throughout the rest of the economy, which increased the demand for investment. The reasons for the reduction in gross capital formation for the low-growth nations vary to some degree, depending on each nation's circumstances. However, there is an interesting similarity; all of the slow growth nations with the exception of Spain have a large external debt burden.

Debt Service Burden

GDP growth rate is regressed against the ratio of debt service (interest payments and repayments of principal) to exports and the ratio of debt service to GDP for the 21 nation sample, and the statistics as reported in Table 5 clearly indicate a strong inverse relationship between debt service and GDP growth. The debt data, which is from the World Bank Debt Reporting Service, is based primarily on statistics from the debtor countries where the quality varies significantly from country to country and from year to year. This is particularly true of the private non-guaranteed debt where the information is

TABLE 3
Regression Analysis for the 21 Nations with Annual Export Growth in Excess of 7%—Period 1973–1984 (t-statistic in parentheses)

Equation Number	Coefficients of Independent Variables					
	Constant	L	I	X	R	F Ratio
3	2.493 (2.47)	0.601 (1.75)	0.337 (6.02)	-0.054 (-0.68)	.761	18.032

TABLE 4

Summary of Intra-country Regression Analyses, Period 1973-1984

$$\hat{Y} = a + b\hat{X} + c\hat{K} + d\hat{L}$$

High-Growth Countries	Spearman Coefficients			Regression and Analysis Coefficients				R ²	F-Ratio
	X&Y	K&Y	X&K	X	(t-statistic)	K	(t-statistic)		
Hong Kong	0.742	0.802	0.515	0.343	(5.26)	0.286	(3.36)	.923	23.810
Korea	0.661	0.818	0.612	0.072	(0.91)	0.241	(2.99)	.692	4.486
Malaysia	0.616	0.323	-0.164	0.253	(3.42)	0.098	(1.67)	.789	.473
Taiwan	0.491	0.321	0.855	0.272	(3.61)	-0.193	(-2.18)	.702	4.714
AVERAGE	0.627	0.566		0.235		0.108			
Low-Growth Countries									
Chile	0.285	0.596	0.505	0.067	(0.87)	0.297	(5.55)	.916	21.868
Peru	-0.091	0.867	-0.236	0.171	(2.37)	0.247	(6.10)	.869	13.260
Spain	0.30	0.503	0.006	0.261	(2.02)	0.334	(2.89)	.719	5.117
Uruguay	0.055	0.697	0.503	0.072	(0.43)	0.220	(2.65)	.689	4.441
AVERAGE	0.139	0.666		0.143		0.274			

currently provided by less than half of the member countries, although the number of countries reporting has been increasing in recent years.

The regression analysis with the public and guaranteed private debt service ratio as the independent variable and GDP growth as the dependent variable provides a statistically significant (>99%) coefficient of -.152. Even when the less reliable non-guaranteed private debt data is added to the debt service ratio, the coefficient of -.090 is highly significant. When debt service as a percent of GDP as the independent variable is regressed against GDP growth, there is also a strong inverse relationship with a T value of -3.077. As would be expected, there was also a significant inverse relationship between debt service ratio and investment growth.

TABLE 5

Summary of Debt Service Regression Analysis Nations with Annual Export Growth in Excess of 7% (1973-1984)

Dependent Variables	Coefficients of Independent Variables (t statistics in parentheses)		
	Debt Service Exports		Debt Service GNP Public ³
	Public ¹	Private ²	
GDP Growth Rate	-.152 (-3.796)	-.090 (-2.889)	-.830 (-3.007)
Investment Growth Rate	-.358 (-2.982)		

1. The obligations of public debtors or private debt where a public unit is the guarantor.

2. Public debt plus unguaranteed private debt.

Note: Debt service data are from various issues of the World Bank's World Debt Tables.

The debt service burden clearly appears to be an important factor restricting investment and capital formation and hence slowing economic growth. Apparently the oppressive requirements of servicing the debt, along with the greater need for foreign currency for energy requirements during the late seventies and early eighties, made it difficult to expand infrastructure, start new projects and continue old projects, and provide the economy with needed capital goods and raw materials from other countries. Per capita income growth declined and development stalled.¹¹

Capital Inflows

The debt service ratio tells only part of the story in regard to the availability of external capital for economic development. If commercial loans and disbursements by official lenders increased, development efforts could continue even with a substantial debt service burden. In general, from 1981 on, reduced confidence in the countries' ability to reestablish their credit worthiness resulted in a decline in net transfers (disbursements minus principal repayments and interest payments) to developing nations. However, there tended to be regional differences with the greatest declines occurring with Latin American countries. Net transfer data, obtained from the World Bank's World Debt Tables, unfortunately were available for only 14 of the 21 nations for the period from 1973 through 1984. The average ratio of net transfers to GNP regressed against the GNP growth rate revealed a simple correlation of 0.686 with a .95 statistical significance for the fourteen countries.

Exports of Primary Products

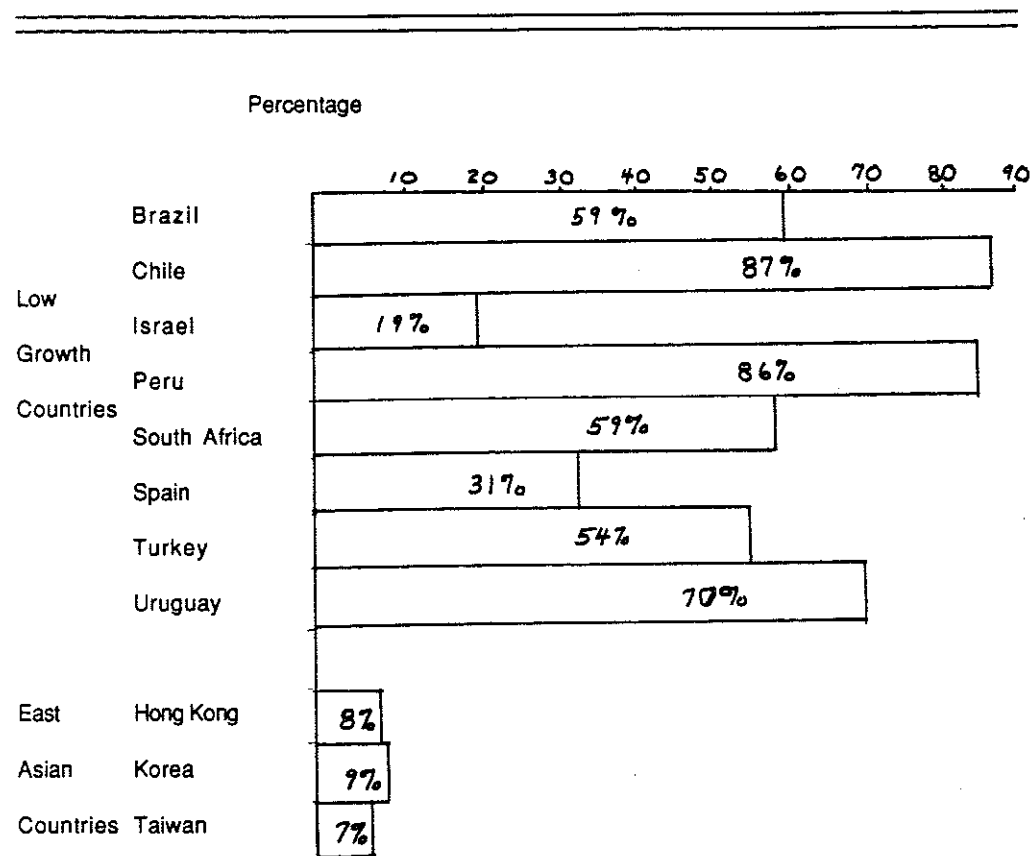
The "prevailing wisdom" discussed in the first section mentioned that a larger share of manufactured goods in exports increases the effectiveness of export promotion strategy. While this relationship was confirmed by Kavoussi's, Tyler's and Balassa's data, the simple correlation between primary products as a percent of total exports to GDP growth was only statistically significant at the 90% level for our 21 nation sample. However, approximately 60% of the exports of the slow growth nations are primary commodities. Figure 1 illustrates the comparison between the slow-growth nations and the Southeast Asian countries. Also most of the rapidly growing countries were either exporting a high percentage of manufactured products or like Ireland, Jordan, Malaysia, Pakistan and Thailand, they were shifting from the export of primary commodities to manufactured products. Characteristic of the many high-growth countries successfully promoting exports was the large percentage of textile and clothing exports. However, other labor intensive manufactured products were becoming increasingly important. For example, Hong Kong, Korea, Taiwan and Singapore exported a large portion of other products such as television sets, computer games, digital watches, transistor radios, etc. In time, the firms producing these products provided a source of trained workers and entrepreneurs for new firms. The increased activity promotes the growth of supporting firms and other industries within the country and surrounding countries. On the other hand, the backward linkages for most primary products, particularly agricultural and mining products, are generally weak—fertilizers and insecticides are needed, and also machinery and equipment—but often, much of the machinery and equipment is imported. Forward linkage effects tend also to be small for primary products, with much of the output destined for export, unless these products are processed within the country, and many of the industrialized nations discourage processing within the LDC's by the use of tariffs and other trade barriers.

Terms of Trade

Also, although 1987 and 1988 are an exception, world market prices for non-oil commodities have tended to fall during the eighties, particularly during the later years included in this analysis. The 1986 World Development Report shows the 1984 terms of trade for Peru, Chile and Uruguay to be 84, 80 and 85 respectively (1980 = 100), compared with 93 for Malaysia, 100 for Korea and 109 for Hong Kong.¹²

Figure 1

Primary Commodities as a Percent of Total Exports



Data: Primary commodities exported in 1983 from the 1986 World Development Report, Table 10, pages 198 and 199 and from the 1984 Taiwan Statistical Data Book, page 199. Singapore data is not included as the figures are misleading because of re-exports of products imported from Malaysia.

Figure 1

Chile had a particularly difficult problem with a 25 percent decline in world copper prices in 1981, since over half of her foreign exchange earnings come from this one commodity. Similarly, the prices of Peru's most important exports, copper and petroleum, fell sharply. Declining prices of wool and meat contributed largely to Uruguay's terms of trade problems. Prices for non-fuel primary commodities continued to fall in 1985 and 1986, and at the end of 1986 were at their lowest level in real terms since before the Second World War.¹³ Regressing the average change in the terms on trade over the eleven

year period against GDP growth rate indicated a highly significant positive correlation of 0.678 (t value 3.397).

Capital Goods Sector

Another factor which may be important in determining whether a country with an expanding export sector will also experience rapid GDP growth is the status of the capital goods sector. Casar and Ros make the point that the lack of a well-developed capital goods sector reduces the multiplier effect, because expanded productive capacity does not create additional demand for domestic production, but rather increases the demand for capital goods imports.¹⁴ To evaluate Casar and Ros' conclusions, the value added in the machinery and transport equipment sector as a percent of total manufacturing was selected as a proxy for the capital goods sector (Table 7, 1986 World Development Report.) The Pearson correlation between this sector and GDP growth was statistically significant at the 90% level. The value added in the machinery and transport sector as a percent of total manufacturing averaged 23.3 for the high growth nations, and the percentage increased between 1970 and 1983 for all of these countries. On the other hand, the 1983 value added percentage in the machinery and transport equipment sector was 15.1 for the low growth countries and had declined in five of the eight countries during the thirteen year period.

A review of a few of high growth East Asian countries is informative. Although World Bank value added data are not available for Taiwan, this country has not only been producing machinery and equipment to meet her needs, but also in 1979, textile machinery accounted for over 50% of her plant exports, and these primarily to Southeast Asian nations.¹⁵ In Korea there has been a large growth of plant export projects with Asian countries, particularly in the textile, plywood, lumber, cement and metalworking industries.¹⁶ While Hong Kong's capital goods industry is small, there is a transfer of used machinery to textile firms in Indonesia, Malaysia, Thailand, etc. as the plants in Hong Kong upgrade to more sophisticated, fully automated machinery. There is some technology embodied in these machines, and there is additional technology transferred to the other countries, as workers are trained in the new plants, and the managers learn new management and marketing skills. The investment, the forward and backward linkages to other industries and the technology transfer all contribute to growth in all the countries.¹⁷ Also, the increased competition creates greater efficiencies, and the additional foreign exchange facilitates the purchase of more competitively priced supplies and intermediate goods.

The statistical analysis of the capital goods sector is weak and the results are fair at best. However, considering the above discussion, there is sufficient reason to suggest a more extensive statistical analysis to better understand the impact of the capital goods sector on the efficacy of export promotion strategy.

CONCLUSION—AN EVALUATION OF THE EFFECTIVENESS OF EXPORT EXPANSION

The intercountry statistical analyses of the 73 nations and the 93 nations for the period 1973–1984 generally confirm the work of the earlier researchers. The rank correlations between export growth and GDP growth were lower, but the statistical significance of the export growth coefficient in the regression analyses was much stronger. The inclusion of industrialized countries did not significantly change the results. On the other hand, the intercountry statistical analyses of the 21 nations indicated a very small, not statistically significant, negative coefficient for the export growth variable. In other words, there was essentially no correlation between export growth and the economic growth for the twenty-one nations which experienced unusually high export performance from 1973 through 1983. The subsequent investigation indicated that there were a number of factors which appeared to modify the effectiveness of an export promotion strategy. Specifically, a large debt service burden, reduced capital inflows, a high percentage of primary product exports, declining terms of trade and a small capital goods sector tended to reduce the growth rate.

The analysis provides reason to question whether the effectiveness of export expansion strategy may be overestimated, particularly for the very poor countries where there is inadequate infrastructure and insufficient human capital. There is a need for caution—the prevailing wisdom obviously does not have uniform applicability. The theoretical basis for making outward orientation and export expansion the central component of a development strategy for the LDC's is appealing but the danger is that this emphasis may cause governments to underestimate the many other factors that influence the ability of a nation to industrialize and grow. The dynamic effects of exports and trade probably can be negated to a large degree if the forward and backward linkages are weak because of inadequate infrastructure or because of the nature of the product, or if there is substantial capital flight, or little investor confidence, or excessive corruption, or a lack of coordination of trade policies with other macro policies, or inept monetary, fiscal and exchange rate policies. The incorporation of these effects along with the factors covered in this article are probably beyond the scope of any single analysis unfortunately.

Another factor to consider when evaluating the efficacy of export expansion strategy is the vulnerability of export markets to protectionism and worldwide recessions. There is pressure for additional protection legislation in the United States because of the continuation of an extremely high trade deficit, and a plethora of non-tariff trade barriers continue to exist throughout the world in spite of the efforts of GATT. We cannot be certain that export demand will be sufficient under normal conditions to ensure the success of an outward oriented trade philosophy. A high level of demand is even more important now to permit the world economy to absorb increased debtor country exports and generate economic development but it is certainly not assured.

NOTES

1. Actually the expression 'export promotion strategy' can be misleading. In recent years the emphasis has been on the elimination or at least the reduction of trade distortions which are so common in developing countries—e.g. reduction in tariffs, quotas, NTBs and overvalued exchanged rates—rather than the creation of export subsidies which is implied with 'export promotion strategy.' With the focus now centering on non-intervention, the expressions 'export expansion strategy' or 'outward trade orientation' are more appropriate than the term 'export promotion strategy'.
2. These empirical studies include Balassa 1978, 1980, 1984, 1985; Feder 1982; Kavoussi 1984, 1985; Krueger 1978, 1980, 1983, 1985; Michaely 1977; Nishimizu and Robinson 1984; Ram 1985. A summary of the results of many of these empirical studies are available upon request of the author.
3. Michaely's empirical work which covers the period from 1950 through 1970 reveals that export promotion strategy is ineffective with poor LDC's. However, the analyses of later periods with larger samples do indicate a positive and significant correlation between export growth and economic growth for the low-income LDC's.
4. Confirmed by Kavoussi, Tyler and Balassa, although Kavoussi found that the growth of factor productivity was not necessarily sensitive to the share of manufactured goods in exports in the very low income countries.
5. Confirmed by Balassa and Ram.
6. See Casar's excellent article about the importance of the capital goods sector. He discusses an import substitution case, but his comments are equally applicable for a nation employing an export expansion strategy.
7. The causality is frequently difficult to discern. Export expansion will, at some point in time, require additional investment. On the other hand, additional investment will improve the ability of the company to export more competitively.
8. The SYSTAT and ISP statistical packages were used for the analyses.
9. These nations are Brazil, Chile, China, Hong Kong, Ireland, Israel, Japan, Jordan, Korea, Malaysia, Mexico, Niger, Pakistan, Peru, Singapore, South Africa, Spain, Taiwan, Thailand, Turkey and Uruguay. The reasons for the high average annual export growth are not considered in this study. The substantial growth may be the result of an active export promotion strategy, as in the cases of Korea and Taiwan, or it may simply be the result of an increase in world demand for the products exported by the country.
10. Data used in the analysis is available upon request.
11. Spain was unique in that she did not have extreme debt service problems during this period. The slow growth of capital was primarily the result of the structure of her industry. See the June 30, 1986 issue of the *IMF Survey* for a brief but excellent review of Spain's problems and her efforts to find a solution.
12. 1986 WDR, Table 2.7, p 25; Table 9, pp 196 & 197. Information is not available for Taiwan.
13. *IMF Survey* Volume 16, Number 14, July 13, 1987, pp 209, 218 & 219.

14. Casar and Ros (1983), p 258.
15. See Amsden (1984).
16. *World Bank Staff Working Paper No. 629*, 1984.
17. See Chen's 1984 article in *World Development*.

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