Pakistan Journal of Applied Economics, (1986), Vol. V No. 2, (163 – 178)

EXPORTS AND ECONOMIC GROWTH:
Further Evidence from Asian LDCs

Pradumna B. RANA*

Fueled by the adverse conditions in the current international economic environment, the debate concerning the relative merits of development strategies based on import-substitution or export-oriented policies, is starting anew. This paper re-estimates Feder's (1982) model using data from fourteen Asian LDCs during 1965-1982 and finds that, although the social marginal factor productivities in the export sector declined significantly in the post-1973 period providing some support for the elasticity pessimism argument, they were, nevertheless, higher than in the non-export sector. This suggests that despite the deterioration of the international economy, reallocation of factors to the export sector from the non-export sector could have increased growth rates.

I. Introduction

In the latter half of the 1950s and the first half of the 1960s there was a considerable amount of debate among economists as to the relative merits of alternative development strategies involving either import-substitution or export-oriented policies. Although frequently presented as an either-or proposition, the choice of optimal strategy evolved into something of a "new orthodoxy" stressing the importance of export orientation. Since 1973, fueled in part by the renewed export pessimism (due to sluggish world economic activity), and in part by the increased awareness of the vulnerability to shocks arising in export markets and the liquidity and foreign exchange

* I am indebted to anonymous referees for helpful comments and suggestions. The views and interpretations in this paper are those of the author and not necessarily those of the Asian Development Bank.

constraints faced by developing countries, "the debate is now starting anew" [Adelman (1984)]. While Balassa (1984) has reaffirmed the virtues of export-oriented development strategies despite the deterioration of the international economy, Adelman (1984) has espoused a more import-substituting strategy.[1] Lewis (1980) essentially supports Balassa but argues that with the slowdown in growth of industrial countries an alternative source of fuel has to be found to drive the trade engine; he recommends increased South-South trade.

In this paper, we reestimate Feder's (1982) model[2] in order to examine the relationship between export performance and overall economic growth in the Asian region during the period 1965 to 1982.[3] Particular emphasis is attached to the relationship between the variables in the post-1973 (1974-82) period because the focus in the recent decade permits an evaluation of the export pessimism argument.[4]

The rest of the paper is organized as follows: Section II briefly surveys the available literature (both theoretical and empirical) on exports and economic growth. In section III, the relationship between export performance and economic growth in the Asian countries is explored by using Spearman rank correlations.

The obvious drawback of this partial correlation analysis is that it does not take into account the effects of other factors (e.g., capital and labor force accumulation) which affect growth. This is remedied in section IV where a production function based model *a la* Feder is specified. In section

[1] Actually Adelman's (1984), open agriculture-demand led development strategy is import-substituting only to the extent that emphasis on agriculture in most developing countries is import- substituting. It is not import-substituting in the traditional sense where incentives are biased heavily against exports.

[2] We adopt Feder's (1982) model for two reasons. First, unlike the earlier studies, he provides a complete formulation of the production function model, in which the export variable is an independent variable. Second, his approach permits a test of the implication of the various hypotheses through which trade affects growth. The implication being that the marginal factor productivities (of labor and capital) are significantly higher in the export as compared to the non-export sector (section II).

[3] Surprisingly all available evidence on the topic is dated. The most recent work, Feder (1982), covers only the period until 1973.

[4] Other attempts to evaluate the export pessimism arguments are Havrylyshyn and Alikhani (1982), and Riedel (1984). While the former study finds that the facts of the export performance in the seventies are not totally consistent with the export pessimism view, the latter finds the link between exports of developing countries and growth of the industrial countries to be unstable. Neither of these studies, however, focus on the relationship between exports of developing countries and the growth rate of output, which in some sense is the ultimate concern of the elasticity pessimists.

V the results of estimation are presented, and in section VI, several policy implications are outlined.

II. Development Strategies and Economic Growth

As Krueger (1980) notes ".... in its present state, trade theory provides little guidance as to the role of trade policy and trade strategy in promoting growth" (p. 288). Theory suggests that production of tradables should be undertaken to the point where the international and domestic rates of transformation are equal. It does not indicate how many production activities should be undertaken and how the relative importance of export and import-competing activities should change with growth. Finally, there is nothing in theory to indicate why a deviation from the equality of marginal rates of transformation should affect the *rate* of growth. Krueger further comments that "most growth models suggest that there are once-and-for-all losses arising from non-optimal policies with lower levels of income resulting from them but no change in growth rates" (p. 288).

Nevertheless, considerable statistical evidence has been presented to stress the importance of export promotion and export expansion. Among these are Michalopoulos and Jay (1973), Michaely (1977), Balassa (1978), Krueger (1978), Tyler (1981), and Feder (1982). All of these cross-country studies find a positive correlation between exports and the economic growth of developing countries. While Michaely's evidence is based on simple Spearman rank correlation, the other studies also use a multiple regression "production function" approach where growth rate of output is specified to depend upon factor supplies of labor and capital as well as exports. The latter type of studies have found that a one per cent increase in exports of developing countries leads to an increase in their real growth rate ranging from 0.04 to 0.11 per cent.

Three hypotheses have been advanced to explain why a difference in growth performance should be associated with export promotion contrasted with import-substitution. First, technological-economic factors such as minimum efficient size of plant, increasing returns to scale and technological innovation undertaken in response to foreign competition, imply the superiority of development through export expansion over import-substitution. Failure to take advantage of these factors through trade impairs the growth rate. The second hypothesis focuses on the cost of import substitution as in fact carried out (such as extreme currency overvaluation combined with quantitative restrictions, import licensing and detailed quantitative controls), and suggests that alternative means of achieving import substitution and export orientation might have avoided them. The third hypothesis argues

that growth would be optimal in the absence of intervention. A bias towards exports is therefore better than a bias towards import-substitution because export promotion policies are less distortive.

Direct testing of each of these hypotheses requires individual country studies and large amounts of data. This is beyond the scope of this paper. However, all of the three hypotheses imply that the export-oriented sectors of the economy are more efficient than inward-looking ones and so, in section IV a relatively simple regression approach is developed to test this implication using data that are readily available. In the next section some preliminary evidence on the relationship between export performance and economic growth are presented.

III. Export Performance and Economic Growth

As a first approximation to examining the relationship between export performance and economic growth in the Asian LDCs, in Tables 1 and 2, Spearman rank correlation[5] between the two variables using country-wide data are presented. While Table 1 examines the correlation between the growth of total exports and output; Table 2 does the same using disaggregated export data for manufactured and primary exports. In both tables, correlation between exports and output growth as well as the correlation between growth of exports and growth of output net of exports are considered. In an intercountry framework, the latter correlation measure reflects the indirect effect of export on input-output relations and real income, while the former correlation reflects the total (direct plus indirect) effect of exports on economic growth.

Table 1 indicates that during the period 1965-1982, the relationship between growth of exports and output was positive and significant in the Asian LDCs. The Spearman rank correlation was 0.42 when export data was expressed in nominal terms and 0.52 when expressed in real terms. The increase in correlation in the latter case was expected because, as compared to nominal data, real exports measure the purchasing power of exports. The Table also indicates that the correlation measures decline when direct effects are deducted by excluding exports from GDP. This again simply shows that the total effects of exports on GDP are higher than the indirect effects alone.

[5] Since exports are a part (albeit only a small part) of GDP, one expects a cardinal measure of correlation (e.g., the Pearson measure) to indicate a positive relationship between growth of exports and growth of output. This bias in favor of a positive relation may be less when the Spearman rank correlation is used [Balassa (1978)]. Actually, in the present case both the Spearman and Pearson measures yielded similar result.

TABLE 1

Asian LDCs: Spearman rank correlation between total exports and output.[a]

	1965-1982	1965-1973	1974-1982
Growth of exports (in nominal terms) vs. the growth of output.	0.4182 (0.0002)	0.4642 (0.0057)	0.4237 (0.0058)
Growth of exports (in nominal terms) vs. the growth of output net of exports.	0.1321 (0.0032)	0.1530 (0.0142)	0.1275 (0.0250)
Growth of exports (in real terms)* vs. the growth of output.	0.5153 (0.0001)	0.6198 (0.0001)	0.4728 (0.0164)
Growth of exports (in real terms) vs. the growth of output net of exports.	0.2361 (0.0005)	0.3176 (0.0003)	0.1854 (0.0267)

[a] Based on the three-year average data. Levels of significance are shown in parentheses.

* Exports in nominal terms were expressed in terms of their purchasing power by deflating current dollar values by an index of unit values of exports from industrial countries.

Table 2 shows that the correlation between growth of manufactured exports and growth of manufactured output is higher than that between growth of primary exports and growth of agricultural output.[6] This finding confirms that the relationship between exports and growth is not invariant to the composition of exports; and the possibilities of exploiting new technoligies, scale economies and increased capacity have relevance primarily for manufacturing industries. Agricultural output also depends upon the vagaries of nature.

The correlation coefficient between export growth and economic performance during 1965-1982 (0.42 in nominal terms and 0.52 in real terms) was found to be lower than that of Balassa [(1978), (0.85 during 1966-1973)]. One possible explanation for this is the decline in the relation-

[6] Because of the lack of appropriate deflators for manufactured and primary exports, real analysis was not attempted in Table 2.

ship between the two variables in the post-1973 period due to the terms of trade and volume effects of the external shocks. The plausibility of this explanation is borne out by the data in Table 1 and 2 which indicate that both the correlation coefficients as well as their statistical significance have declined considerably in the post-1973 period as compared to the pre-1973 period.

IV. The Model

The simple correlation measures presented in the previous section do not take into account the influence of factor accumulation in explaining the growth rate of the economy. In this section, we develop briefly the production function type sources of growth model *a la* Feder. In this formulization exports have two distinct advantages: higher factor productivity than non-

TABLE 2

Asian LDCs: Spearman rank correlation
between manufactured and primary exports and output[a]

	Manufacturing		Primary	
	1968-73	1974-82	1968-73	1974-82
Export growth vs. the growth of output.	0.857 (0.007)	0.762 (0.028)	0.690 (0.058)	0.309 (0.456)
Export growth vs. the growth of output net of exports.	0.595 (0.120)	0.405 (0.320)	0.286 (0.493)	0.114 (0.496)

[a] Notes

1. Only eight (Republic of China, India, Indonesia, Republic of Korea, Malaysia, Philippines, Singapore and Thailand) of the fourteen countries for which it was readily possible to disaggregate the total export data were included.
2. Point-to-point growth rates in the various export categories were related to point-to-point growth rates in output.
3. Manufactured exports were related to the output of the manufacturing sector and primary exports to the output of the agricultural sector. For lack of appropriate deflators, export data were expressed in nominal terms.
4. Levels of significance are shown in parentheses.

export production, and an externality effect on the latter due to a higher flow of innovations, training of labor, extension of better management etc. Thus, export and non-export supply can be written as

$$X = X\,(K_X,\ L_X) \tag{1}$$

$$N = N\,(K_N,\ L_N,\ X) \tag{2}$$

where X = (output of) export sector, N = (output of) non-export sector, K_X and K_N are the respective sector's capital stock and L_X and L_N are the respective sector's labor stock; while factor productivity differentials (assumed to be equal for both capital and labour) are

$$X_K/N_K = X_L/N_L = 1 + \delta \tag{3}$$

where the subscripts are partial derivatives.

The growth of GDP can be written as

$$\dot{Y}/Y = \alpha\,(I/Y) + \beta\,(\dot{L}/L) + \gamma\,(\dot{X}/X)\,(X/Y) \tag{4}$$

where α and β measure the marginal productivity of capital and labor respectively in the non-export sector, and $\gamma\,(\delta/1+\delta) + N_X$. The γ parameter measures the difference between the social marginal productivities of factors of production in the two sectors relative to their marginal productivity in the export sector or simply the relative efficiency of the export sector.

Equation (4) is the basic formulation of the growth equation used in this paper and it says that growth can be explained by factor accumulation and export performance. This equation reduces to the traditional neo-classical specification only if marginal productivities are equalized across sectors ($\delta = 0$) and if there are no inter-sectoral externalities ($N_X = 0$). In the most general case the term γ is likely to be non-zero.

In order to decompose the parameter into its two components – differential marginal productivities of factors in the two sectors, δ, and the intersectoral externality term, N_X – it is convenient to assume that the externality term has constant elasticity in which case the growth of GDP is

$$\dot{Y}/Y = \alpha\,(I/Y) + \beta\,(\dot{L}/L) + \left(\frac{\delta}{1+\delta} - \theta\right)(\dot{X}/X)\,(X/Y) + \theta\,(\dot{X}/X) \tag{5}$$

where θ is a parameter.

V. Estimation Results

The two variants of the export-augmented production function [equations (4) and (5)] and the simple neo-classical production function [which is the restricted version of equation (4)] were estimated using pooled data from 1965-1982 for fourteen Asian developing countries with readily available data[7] and the ordinary least squares technique (OLS). Also, three year averages were used[8] in order to account for random fluctuations in annual data.

The use of cross-section data and the OLS both raise a host of issues. Among others, a cross-section study assumes that the parameters being estimated are in some general way similar across countries. In the present context, the study assumes that production functions are similar across the fourteen countries. Also the parameters obtained by the OLS technique would be biased if both the explanatory and dependent variables were determined simultaneously. This probably occurs with the export variable which both influences, and is in turn influenced by the country's growth rate. Hence it is within these constraints that the results of the paper must be interpreted.

The regressions showed that the labor force term consistently had the wrong sign and was insignificant, suggesting that during the period under analysis Asian LDCs, on the whole, had a surplus of labor.[9] The results presented in Tables 3 and 4, therefore, exclude the labor force variable.[10]

Equation (4') which is the result of estimating the neo-classical production function shows that although it explains only about a quarter of the fluctuations in the growth rate, the contribution of capital formation in Asia's growth is statistically significant. Inclusion of the export variable

[7] Bangladesh, Burma, Republic of China, Hong Kong, India, Indonesia, Republic of Korea, Malaysia, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, and Thailand.

[8] The GDP, investment and labor force data were obtained from the Asian Development Bank, Key Indicators (various issues). Labor force data were not available for Nepal, instead, population data were used. The export data (in dollar terms) for all countries were obtained from IMF, International Financial Statistics (various issues); they were deflated by the export unit values from industrial countries from the same source to obtain purchasing power of exports.

[9] Balassa (1978) found a similar result.

[10] In estimating equation (5) it was assumed that the intercept and slope coefficients of the variables are the same across the fourteen countries included in our sample. In order to test for this assumption we estimated the correlation coefficients between the actual and estimated growth rates [using equation (5)] for each country. The results show that only in two cases (Republic of China and Thailand) could the simplifying assumption have contributed to serious in-sample prediction errors. In other cases the correlation coefficient was higher than 65 per cent and was significant at traditional levels.

TABLE 3

Intercountry regression analysis of GDP in the Asian LDCs[a]

Dependent variable $\frac{\dot{Y}}{Y}$		Explanatory variables (parameter)				$\bar{R}^2$	Number of observation
	Equation	Constant	$\frac{I}{Y}(\alpha)$	$\frac{\dot{X}}{X}\cdot\frac{X}{Y}(\gamma)$	$\frac{\dot{X}}{X}\cdot\frac{X}{Y}\cdot D$		
1965-1982	4′	2.30	0.19***			0.27	75
		(2.76)***	(5.35)***				
	4	3.60***	0.09**	0.40***		0.39	75
		(4.34)	(2.11)	(3.90)			
	4″	3.23***	0.11***	0.58***	−0.42***	0.46	75
		(4.10)	(2.82)	(5.24)	(−3.28)		
1965-1973	4′	−0.68	0.39***			0.60	34
		(−0.61)	(7.04)				
	4	0.64	0.28***	0.31**		0.63	34
		(0.50)	(3.76)	(1.94)			
1974-1982	4′	3.92***	0.09***			0.12	41
		(3.99)	(3.98)				
	4	4.84***	0.03	0.30		0.20	41
		(4.95)	(0.65)	(1.65)			

[a] t-values in parentheses. *** Significant at 1 per cent (two-tailed). ** Significant at 5 per cent (two-tailed).

TABLE 4

Intercountry regression analysis of GDP growth in Asian LDCs with intersectoral externalities[a]

Dependent variable $\frac{\dot{Y}}{Y}$	Equation	Explanatory variables (parameter)						$\bar{R}^2$	Number of observation
		Constant	$\frac{I}{Y}(\alpha)$	$\frac{\dot{X}}{X}\cdot\frac{X}{Y}\left(\frac{\delta}{1+\delta}-\theta\right)$	$\frac{\dot{X}}{X}(\theta)$	$\frac{\dot{X}}{X}\cdot\frac{X}{Y}\cdot D$	$\frac{\dot{X}}{X}\cdot D$		
1965-1982	5	3.19***	0.10**	0.27***	0.06**			0.42	75
		(3.98)	(2.31)	(2.89)	(2.03)				
	5′	3.09***	0.11***	0.42***	0.05	−0.25*	−0.54	0.47	75
		(3.90)	(2.87)	(2.82)	(1.58)	(−1.70)	(−0.93)		
	5″	3.07***	0.11***	0.48***	0.04*	−0.37***		0.47	75
		(3.88)	(2.87)	(3.56)	(1.68)	(−2.85)			
1965-1973	5	0.56	0.27***	0.19**	0.41			0.64	34
		(0.45)	(3.71)	(2.05)	(1.62)				
1974-1982	5	4.89***	0.03	0.31	0.81			0.02	41
		(4.78)	(0.62)	(1.32)	(0.18)				

[a] t–values in parentheses. ***Significant at 1 per cent (two-tailed). **Significant at 5 per cent (two-tailed). *Significant at 10 per cent (two-tailed).

[equation (4)] improves the goodness of fit considerably, and the positive sign, and statistical significance of the export variable lends strong support to the hypothesis that the export sector is relatively more efficient than the non-export sector. The coefficient of the export term suggests that the social productivity of factors in the export sector is approximately 40 per cent higher than that in the non-export sector.

Inclusion of the term to estimate intersectoral externality [see equation (5) in Table 4] improves the fit further.[11] The parameter θ is positive and significant and says that a 10 per cent increase in the output of the export sector without withdrawing resources from the non-export sector will lead to a slightly over one-half of one per cent increase in the output of the latter sector. The second component of the productivity differences between the two sectors, δ, can also be estimated from the coefficients of $(\dot{X}/X)\ X/Y)$ and $(\dot{X}/X)$ variables. Such calculations show that $\delta \approx 0.50$ which suggests that resources are approximately 50 per cent more productive in the export sector as compared to the non-export sector. These results show that a reallocation of existing resources from the less efficient non-export sector to the more efficient export sector can contribute significantly to the growth of the Asian region.

The constant term in the regression estimates can be interpreted as a catch-all term which measures the effect of all other variables – such as technological change, education and health – on economic growth. The estimates obtained show that this term was consistently significant in all of the regressions.

What comes as a surprise, however, is that estimates of the efficiency of the export sector in the Asian region are not higher than those estimated by Feder for a sample of semi-industrialized countries. Given that the sample taken is less restrictive and includes the cases of both successful performers (i.e., the NICs) as well as the relatively poor performers (i.e., the South Asian countries), in contrast to Feder's sample which includes only the successful performers, one would have expected a better fit not only in terms of $\bar{R}^2$ but also in terms of the parameter estimates. This discrepancy can, of course, be explained by a host of factors (e.g., inefficient management, technology etc.). The inclusion of the post-1973 data when the international trade environment deteriorated considerably is one of such factors.

In order to test whether the efficiency of the export sector has declined during the turbulent post-1973 period, two approaches were used. First, equation (4) was re-estimated by inserting a slope dummy for the export

[11] To the extent that the correlation between $(\dot{X}/X)\ (X/Y)$ and $(\dot{X}/X)$ is 0.60, some bias in the estimates cannot be ruled out.

variable letting it take a value of one in the post-1973 period and zero otherwise [see equation (4'')]. Second, equations (4), (4') and (5) were re-estimated separately, during the pre-1973 and post-1973 period (see bottom panels of Tables 3 and 4). Although the second approach is less restrictive, the results indicate a significant decline in the goodness of fit and parameter estimates in the post-1973 period suggesting that other crucial variables explaining growth have been left out from this simple model. In such a situation, therefore, the comparison of parameter values during the two periods is not very meaningful.

The dummy variable approach indicates that there was a significant decline (from approximately 60 per cent to 20 per cent) in the relative efficiency of the export sector in the post-1973 period [see equation (4'')] – i.e., the differences in sectoral productivities of factors has declined. Equations (5') and (5'') indicate that this decline was primarily due to a fall in the relative marginal productivity of factors in the two sectors; the intersectoral externality term remained unchanged during the two periods.

While the regressions in Tables 3 and 4 measure the impact of a given change in the explanatory variables on the growth rate, in order to measure the relative contribution of these variables the actual changes must also be considered. Using the results of equation (5) and (5'') the average growth of GDP of the Asian developing countries was decomposed during the pre-1973, post-1973 and the entire period (see Table 5). The results indicate that while the contribution of trade to developing Asia's growth averaged one and a half percentage points in the post-1973 period, it fell to one-half percentage point in the post 1973 period, averaging at one percentage point during the entire sample period. Of this, the contribution of the intersectoral term has remained more or less stable, but the contribution of the differential marginal productivity term has fallen significantly. The data indicate that the residual term (which includes technological progress and education) and capital formation have contributed the most to developing Asia's growth.

The regression estimates also permit a broad analysis to be made of the implications of inter-country differences in export performance for the rate of growth. For this purpose a comparison has been made of the predicted values derived from equation (5) in Table 5 calculated by using actual growth rates for individual countries with hypothetical values derived from the same equation on the assumption that each country had the average export performance for the group as a whole. The calculations were made for GDP growth during 1965-82 and the results are presented in Table 6.

The results indicate that Singapore's average annual growth rate during 1965-82 would have been two percentage points smaller had its export perfor-

TABLE 5

Sources of growth of Asian LDCs

	1965 – 1982			1965 – 1973			1974 – 1982		
Variable	Mean in sample	Parameter from equation (5)	Contribution to growth	Mean in sample	Parameter from equation (5'')	Contribution to growth	Mean in sample	parameter from equation (5'')	Contribution to growth
I/Y	21.72	0.10	2.17	18.89	0.11	2.08	24.17	0.11	2.66
$(\dot{X}/X) \cdot (X/Y)$	2.30	0.27	0.62	2.10	0.48	1.01	2.47	0.11	0.27
$(\dot{X}/X)$	7.67	0.06	0.46	9.00	0.04	0.36	6.66	0.04	0.26
Constant	–	3.19	3.19	–	3.07	3.07	–	3.07	3.07
GDP growth $(\dot{Y}/Y)$	6.44	–	–	6.52	–	–	6.26	–	–

mance equalled the average for the countries concerned. The corresponding figures are approximately one and a half percentage points for Hong Kong, China and Korea and one-quarter percentage points for Indonesia and Malaysia.

TABLE 6

Hypothetical gain or loss in average annual growth rate, 1965-82

Country	Gain (+)/Loss (−)
Bangladesh	+1.00
Burma	+1.30
China, Republic of	−1.49
Hong Kong	−1.62
India	+0.91
Indonesia	−0.27
Korea, Republic of	−1.47
Malaysia	−0.19
Nepal	+0.95
Pakistan	+0.61
Philippines	+0.51
Singapore	−1.91
Sri Lanka	+1.26
Thailand	+0.24

Note:
Hypothetical growth rates were calculated from equation (5) in Table 5 under the assumption that the economy in question had export performance calculated for the sample as a whole. The difference between these hypothetical growth rates and those predicted by the same equation for the country concerned are designated as gain (+) or loss (−) in the growth rate of GDP per annum.

The data also indicate that, on the other hand, Burma, Sri Lanka, Bangladesh, Nepal, and India would have gained one percentage point in their average annual growth rates had their exports grown as rapidly as that for the group as a whole. The figures for Pakistan and Philippines are one-half percentage points and for Thailand one-quarter percentage points.

VI. Conclusion

The basic objective of this study was to provide further empirical evidence on the merits of export-oriented strategies using inter-country data[12] from fourteen Asian LDCs with different development experience. For this purpose Feder's model was used and the relative efficiency of the export sector *vis a vis* the non-export sector estimated. This occurs because export orientation leads to a more efficient resource allocation, increased capacity utilization, exploitation of economies of scale, dimunition of distortion of market forces, etc. In order to test the export pessimism argument, particular attention was also paid to the relationship between export performance and economic growth during the post-1973 period.

The major findings of the study are: (1) social marginal productivities of factors are higher in the export sector of the economy as compared to the non-export sector with the difference explained in part by the externality effect of the export sector in the non-export sector and the remainder by the failure of entrepreneurs to equalize marginal productivities across sectors; (2) growth of exports have contributed partially but significantly to the growth of the Asian LDCs during 1965-82 – out of a total annual GDP growth of six and a half per cent, the contribution of trade was about one percentage point, the rest being accounted for by capital formation (approximately 2 percentage points) and the residual term which includes among other things technological progress and education (approximately 3 percentage points); (3) trade orientation has been an important factor in contribution to inter-country differences in growth. Average annual growth rates of the South Asian countries during 1965-82 would have been approximately one percentage point higher had their export performances matched the average performance of the Asian LDCs whereas a similar export performance by the Asian NICs would have reduced their annual growth rates by approximately one and a half percentage points; and, (4) the relative efficiency of the export sector and its relative contribution to growth have both declined significantly in the turbulent post-1973 period as a result of the more hostile international environment which is reflected in the slowdown of exports (in real terms) from most of the Asian LDCs. This suggests that trade policies should not be designed as if the state of the world economy does not matter. Nevertheless the social marginal productivity of factors is

[12] Although the inter-country analysis helps determine the important factors that determine the growth process in individual countries by summarizing their "average" experience, it should be supplemented by detailed country studies to examine country specific factors. This was beyond the scope of the present paper.

still significantly higher in the export as compared to the non-export sector.

Assuming that export performance reflects export-related policies, the major policy implication of the paper is that countries which neglect exports through discriminatory economic policies are likely to have to settle for lower rates of economic growth. Although some support for the export pessimism argument is found during the post-1973 period, the evidence presented still shows a strong preference for open development strategies emphasizing export-orientation rather than one emphasizing import substitution.

Asian Development Bank
Manila, Philippines

References

Adelman, I., 1984, Beyond export-led growth, World Development, 12(9): (937-949).

Balassa, B., 1978, Exports and economic growth: Further evidence, Journal of Development Economics, 15: 181-189.

Balassa, B., 1984, Adjustment policies in developing countries: A reassessment, World Development, 12(9): 955-972.

Feder, G., 1982, On exports and economic growth, Journal of Development Economics, 12: 59-73.

Havrylyshyn, O., and I. Alikhani, 1982, Is there cause for export optimism? An enquiry into the existence of second generation of successful exporters, Weltwirtschaftliches Archives, 118(4): 651-663.

Krueger, A.O., 1978, Foreign trade regimes and economic development: Liberalization attempts and consequences, Mass. Cambridge.

Krueger, A.O., 1980, Trade policy as an input to development, American Economic Review, 70(2): 288-292.

Lewis, W.A., 1980, The slowing down of the engine of growth, American Economic Review, 70(2): 555-564.

Michaely, M., 1977, Exports and economic growth: An empirical investigation, Journal of Development Economics, 4(1): 49-53.

Michalopoulos, C., and K. Jay, 1973, Growth of exports and income in the developing world: A neoclassical view, AID D.P. 28, Washington, D.C.

Riedel, J., 1984, Trade as the engine of growth in developing countries, revisited, Economic Journal, 94(March): 56-73.

Tyler, W., 1981, Growth and export expansion in developing countries: Some empirical evidence, Journal of Development Economics, 9(2): 121-130.