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Exports, Policy Choices, and Economic Growth in Developing Countries after the 1973 Oil Shock

EXPORTS, POLICY CHOICES, AND ECONOMIC GROWTH IN DEVELOPING COUNTRIES AFTER THE 1973 OIL SHOCK

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In a study of 43 developing countries in the 1973–78 period of external shocks, the author has shown that intercountry differences in the rate of economic growth are affected by differences in investment rates and by the rate of growth of the labor force, by the initial trade policy stance and by the adjustment policies applied, as well as by the level of economic development and the product composition of exports. The results show that the policies adopted have importantly influenced the rate of economic growth in developing countries. In particular, an outward-oriented policy stance at the beginning of the period and reliance on export promotion in response to these shocks, appear to have favorably affected growth performance. The results further indicate the possibilities for low-income countries to accelerate their economic growth through the application of modern technology in an appropriate policy framework as well as the advantages of relying on manufactured exports.

1. Introduction

Following Michalopoulos and Jay (1973), the author estimated the effects of exports on economic growth in a production function-type framework for a sample of semi-industrial countries in the 1960–73 period (1978). The method applied involved introducing exports, in addition to capital and labor, in a cross-section equation used to explain intercountry differences in rates of economic growth. The same procedure was subsequently applied by Tyler (1981) to a larger group of middle-income countries for the period 1960–77.

The purpose of the inclusion of exports, together with capital and labor, in a production function-type framework was to test the hypothesis that export orientation raises total factor productivity through its favorable effects on the efficiency of resource allocation, capacity utilization, economies of scale, and

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technological change. The results obtained in all three studies show that exports significantly contributed to the rate of economic growth in an intercountry relationship while raising the explanatory power of the estimating equations to a considerable extent.

Subsequently, Feder (1983) used an alternative formulation of the export variable and further separated the effects of exports on economic growth into two parts: productivity differentials due to differences between exports and non-exports and externalities generated by exports. Making estimates for broader as well as for narrower groups of semi-industrial countries for the 1964–73 period, Feder obtained highly significant results for both variables.

The above studies investigated the relationship between exports and economic growth in the period preceding the quadrupling of oil prices of 1973–74 and the world recession of 1974–75.¹ It has been suggested, however, that while export orientation brought benefits during the period of rapid world economic growth, such would not be the case once the world economic environment deteriorated as higher export (and import) shares magnify the effects of external shocks.

This paper has set out to examine the export–economic growth relationship in the period of external shocks after 1973. For this purpose, the equations utilized earlier have been re-estimated for the 1973–79 period. Furthermore, estimates made by the author on policy responses to external shocks (1981, 1984a, b, c) have been used to analyse the effects of alternative policies on economic growth. Finally, the procedures applied have been combined in a single estimating equation.

In contradistinction with the earlier studies, the present investigation covers the entire spectrum of developing countries from the least developed countries to the newly-industrializing countries. In order to allow for the effects of the level of development on economic growth, per capita incomes in the initial year have been introduced as an additional variable in the estimating equations. The equations further include the share of manufactured goods in total exports as an indicator of the product composition of exports. The study covers 43 developing countries, all of which were adversely affected by external shocks after 1973.

2. Exports and economic growth, 1973–79

As in the author's earlier study, it has been attempted to explain intercountry differences in GNP growth rates in terms of differences in domestic and foreign saving shares, the growth of the labor force, and the growth of exports. Estimates have been made by combining domestic and

¹Tyler provides a partial exception, but the post-1973 years included in his investigation represent less than one-fifth of the period covered.

foreign savings, that equal domestic investment, as well as by taking these sources of savings separately.² The results are reported in table 1.

A comparison of eqs. (1) and (2) shows that the introduction of the export variable increases the explanatory power of the regression equation to a considerable extent. The export variable is statistically significant at the 1 percent level in a one-tail test; at the same time, its introduction reduces the level of significance of the capital (investment) and labor variables, although the former remains significant at the 2 percent level.

As shown in eq. (3), adding the per capita income variable to represent the level of economic development further increases the explanatory power of the regression equation. The variable has a negative sign and it is statistically significant at the 5 percent level. This result indicates that, for given

Table 1
Savings, labor, exports and economic growth, 1973-79.^a

Eq.	Constant	S_d/Y^b	S_f/Y^b	L/L	X/X	Y/P	X_m/X	R^2
(1)	-10.067 (-0.721)	0.181 (3.458)	0.181 (3.458)	1.128 (1.625)				0.213
(2)	-2.094 (-0.154)	0.114 (2.013)	0.114 (2.013)	0.920 (1.394)	0.182 (2.457)			0.304
(3)	8.005 (0.553)	0.100 (1.788)	0.100 (1.788)	0.683 (1.038)	0.216 (2.888)	-9.191 (-1.723)		0.338
(4)	4.148 (0.241)	0.117 (2.130)	0.117 (2.130)	0.614 (0.958)	0.161 (2.035)	-12.662 (-2.289)	0.256 (1.800)	0.375
(5)	-14.020 (-1.058)	0.176 (3.573)	0.069 (1.042)	1.157 (1.771)				0.307
(6)	-6.843 (-5.165)	0.123 (2.251)	0.036 (0.537)	0.984 (1.548)	0.147 (2.009)			0.357
(7)	5.075 (0.374)	0.106 (2.046)	0.070 (0.011)	0.694 (1.129)	0.184 (2.586)	-11.783 (2.321)		0.424
(8)	1.180 (0.089)	0.124 (2.437)	0.018 (0.287)	0.624 (1.052)	0.128 (1.721)	-15.288 (-2.935)	0.258 (1.959)	0.465

^aSources: World Bank economic and social data bank. Symbols: dependent variable: change in GNP between 1973 and 1979 as a percentage of 1973 GNP. Independent variables: L/L =change in labor force between 1973 and 1978 as a percentage of the 1973 value, X/X =change in merchandise exports between 1973 and 1978 as a percentage of the 1973 value, S_d/Y =sum of gross domestic investments less current account balances from 1973 to 1978 as a percentage of 1973 GNP, S_f/Y =sum of current account balances from 1973 to 1978 as a percentage of 1973 GNP, Y/P =1973 GNP per capita, X_m/X =1973 share of manufactured goods in total exports. All value data is in constant dollar terms.

^bThe coefficients for S_d/Y and S_f/Y are constrained to be equal in eqs. (1) to (4).

²As noted in the author's earlier paper (1978), the export growth variable is taken to reflect alternative uses of resources as between exports and import substitution. It is further assumed that domestic saving shares are invariant with respect to rates of economic growth in an intercountry context.

increments of capital, labor and exports, the rate of economic growth will be higher the lower is the level of development. It thus conflicts with the oft-expressed view, according to which countries at lower levels of development have more limited possibilities for economic growth than middle income countries.

Introducing the share of manufactured exports in total exports in eq. (4) further increases the explanatory power of the regression equation while raising the statistical significance of the per capita income variable. At the same time, the introduction of these two variables raises the level of significance of the capital variable but reduces that of the export and in particular the labor variable.

In fact, the *t*-value of the labor variable does not exceed 1. This result may be explained by the use of labor force rather than employment data and by the inclusion in the sample of developing countries with, as well as without, surplus labor. For lack of available information, adjustment could not be made on this count, however.

Disaggregating investment according to the sources of savings as in the author's earlier study provides statistically significant results for domestic savings but not for foreign savings. In fact, the *t*-value of the foreign savings variable approaches zero if per capita incomes and the share of manufactured exports are included in the regression equation. At the same time, the separation of domestic and foreign savings increases the explanatory power of the regression equation as well as the statistical significance of the per capita income and manufactured export share variables while reducing that of the export variable. The relevant results are shown in eqs. (5) to (8).

Apart from its low level of significance, the regression coefficient of the foreign savings variable is considerably smaller than that of the domestic savings variable. This result contrasts with the author's findings for the earlier period that showed the regression coefficient to be higher for foreign savings than for domestic savings, with both being highly significant statistically.

A possible explanation for the results is that in the 1973-79 period foreign savings were 'gap-filling', i.e., they were used to finance a balance-of-payments deficit generated by external shocks. This explanation, however, leaves out of account the policy element. As the author has shown in the papers on policy responses to external shocks cited above, in the 1973-79 period reliance on foreign borrowing was associated with inward-oriented policies, entailing relatively low capital productivity.³

³As Gershon Feder noted in discussions with the author, attempting to explain differences in the regression coefficients for domestic and for foreign savings in terms of policy differences introduces an extraneous element in the estimation as, in a production function-type relationship, the expected coefficient of investment is the same irrespective of whether it is financed from domestic or from foreign savings. It should further be added that while the regression coefficients for the two variables show a similar pattern in all the estimating equations, the differences between them are not significant statistically.

Finally, the regression coefficients of the export growth variable are considerably higher in the present estimates (0.15 to 0.22) than in those for the earlier period (0.04), the difference being statistically significant at the 1 percent level. This result contrasts with the view according to which exports would have had less of an effect on economic growth after 1973.

It appears, then, that a 1 percentage point increase in the rate of growth of exports is associated with a 0.15–0.22 percentage point increase in the rate of growth of GNP. Comparing a country at the upper quartile of the distribution in terms of export growth rates (6.7 percent) with the median country (3.8 percent), there is a gain in GNP growth rates of 0.6–0.8 percentage points; in turn, a shortfall in GNP growth rates of 0.7–1.0 percentage points is shown if the lower quartile (–4.0 percent) is compared to the median (the results are not fully symmetrical because of the lack of symmetry in the distribution of the data).

Instead of export growth, Feder (1983) employed the product of export growth and the ratio of exports to GNP to estimate the effects of exports on economic growth. This alternative has also been utilized in the present study. The results reported in table 2 show a higher explanatory power of the regression equation and higher levels of significance for the capital (investment), export, per capita income, and manufactured export share variables, and lower significance levels for the labor variable, than in the comparable equations of table 1.

Following Feder, his export variable has further been disaggregated into variables representing productivity differentials between export and non-

Table 2
Savings, labor, exports, export shares and economic growth, 1973–79.^a

Eq.	Constant	S_d/T^b	S_f/Y^b	L/L	$(X/X) \cdot (X/Y)$	X/X	Y/P	X_m/X	R^2
(9)	–4.138 (–0.334)	0.151 (3.076)	0.151 (3.076)	0.775 (1.197)	0.691 (2.950)				0.343
(10)	7.800 (0.577)	0.142 (3.015)	0.142 (3.015)	0.440 (0.692)	0.866 (3.652)		–11.416 (–2.203)		0.402
(11)	5.272 (0.402)	0.145 (3.191)	0.145 (3.191)	0.379 (0.617)	0.073 (3.039)		–14.872 (–2.804)	0.253 (1.954)	0.444
(12)	–2.856 (–0.215)	0.135 (2.369)	0.135 (2.369)	0.778 (1.192)	0.550 (1.612)	0.060 (0.575)			0.332
(13)	9.626 (0.694)	0.123 (2.261)	0.123 (2.261)	0.440 (0.687)	0.707 (2.126)	0.069 (0.690)	–11.559 (–2.213)		0.394
(14)	5.880 (0.431)	0.139 (2.598)	0.139 (2.598)	0.381 (0.612)	0.007 (2.122)	0.020 (0.201)	–14.814 (–2.752)	0.246 (1.804)	0.429

^aSources: World Bank economic and social data bank. Symbols: as in table 1; X/Y = the ratio of merchandise exports to GNP in 1973. All value data is in constant dollar terms.

^bThe coefficients for S_d/Y and S_f/Y are constrained to be equal in all equations.

export sectors and externalities associated with exports. The separation has failed to improve the results, however. While the intersectoral shift variable is significantly different from zero at the 2 percent level, the level of significance of the externalities variable is low, and the adjusted R^2 is slightly lower than in the previous case.⁴

It is apparent that, irrespective of the procedure applied, exports importantly contributed to economic growth in developing countries during the period of external shocks. At the same time, the results underestimate the effects of exports on economic growth as the method applied does not allow for the positive impact of exports on savings that has been shown by Weisskopf (1972).

The overall explanatory power of the regression equations estimated for the 1973–79 period is, however, lower than that of the estimates for the earlier period. Possible explanations are the greater heterogeneity of the country sample, the shortness of the time period, and the effects of external shocks on economic growth. Interest attaches, therefore, to the results obtained when external shocks are explicitly introduced in the analysis. It is of further interest to introduce policy orientation directly rather than indirectly through the use of the export growth variable.

3. Policy choices and economic growth

In the papers referred to earlier, the author estimated the balance-of-payments effects of external shocks due to the deterioration of the terms of trade, associated with the quadrupling of oil prices in 1973–74, and to the export shortfall, associated with the world recession of 1974–75 and the subsequent slow recovery. He also estimated the balance-of-payments effects of policy responses to external shocks in the form of additional net external financing, export promotion, import substitution, and deflationary measures.

The statistical results were subsequently utilized to examine the relationship between development strategies and alternative policy responses to external shocks and to indicate the economic effects of the policies applied. This was done by distinguishing between outward-oriented and inward-oriented development strategies, classifying newly industrializing as well as less developed countries into two groups according to the strategy pursued, and comparing the character of policy responses expressed in the form of averages for these groups [Balassa (1984b)].

A broader classification scheme, based on the extent of market distortions, was used in a study of sub-Saharan Africa [Balassa (1984c)]. In this study, regression analysis was used to examine the relationship between the choice of development strategies and policy responses to external shocks on the one

⁴In conformity with the procedure applied by Feder, however, domestic investment has not been disaggregated into domestic and foreign savings.

hand, and the rate of economic growth on the other, in an intercountry relationship.

The classification of countries into groups according to the development strategy pursued necessarily involves a certain degree of arbitrariness. At the same time, the criteria used in establishing the classification scheme being largely qualitative, it would be difficult to further subdivide these categories for purposes of a statistical investigation.

In order to overcome these difficulties, quantitative criteria have been introduced in defining policy orientation in the present study. This has been done in respect to the trade orientation of the national economy, corresponding to the distinction made earlier between outward- and inward-orientation that was also the major element in defining market distortions in sub-Saharan African countries.

Trade orientation has been defined in terms of deviations of actual from hypothetical values of per capita exports. Hypothetical values have been derived from a regression equation that, in addition to the per capita income and population variables utilized in early work by Chenery (1960), includes a variable representing the availability of mineral resources. This is because of the expectation that, *ceteris paribus*, the availability of mineral resources will raise the amount a country exports.⁵

Mineral resource availability has been represented by the ratio of mineral exports to the gross domestic product,⁶ which may be taken to provide an indication of the relative importance of mineral resources in the national economy. The results reported in eq. (15) show that this variable, as well as the per capita income and population variables, has a high degree of statistical significance.⁷

$$X/P = 1.540 + 0.924Y/P - 0.236P + 0.026X_m/Y, \quad R^2 = 0.837. \quad (15)$$

(10.007) (12.576) (4.511) (2.410)

Table 3 presents the statistical results obtained by utilizing the trade orientation variable, together with indicators of policy responses to external shocks, to explain intercountry differences in GNP growth rates in the 1973–78 period. Additional explanatory variables have been introduced to indicate the magnitude of external shocks, the level of economic development, and the extent of reliance on manufactured exports.

⁵Consideration has further been given to including agricultural resources in the calculations, but no reliable index of agricultural resources could be established. At any rate, while mineral products are generally exported by developing countries, the availability of agricultural resources may lead to exports as well as to import substitution.

⁶Data is for 1973; mineral exports are defined as the sum of exports for SITC classes 27, 283, 3, 51365 and 68.

⁷While population appears in the terms shown on the two sides of the equation, just as in Chenery's early formulation, this should not affect the appropriateness of using deviations from hypothetical values as an indication of trade orientation.

Table 3
Trade orientation, policy responses to external shocks, and economic growth.^a

Eq.	Constant	TO	EP/ES	IS/ES	ANEF/ES	ES/Y	Y/P	X _m /X	R ²
(16)	2.350 (3.165)	2.270 (3.548)	0.050 (5.816)	0.019 (2.908)	0.024 (3.541)				0.499
(17)	3.007 (3.164)	2.611 (3.683)	0.052 (5.931)	0.020 (2.924)	0.024 (3.542)	-0.085 (-1.103)			0.501
(18)	3.109 (2.834)	2.604 (3.622)	0.051 (5.607)	0.019 (2.809)	0.023 (3.272)	-0.084 (-1.080)	-0.119 (-0.194)		0.488
(19)	2.047 (1.935)	2.079 (3.075)	0.050 (6.046)	0.023 (3.655)	0.027 (4.075)	-0.068 (-0.958)	-0.811 (-1.348)	0.044 (2.959)	0.579

^aSources: Balassa (1981, 1984a, b, c). Symbols: dependent variable: GNP growth rate for the period. Independent variables: as in table 1; ES=balance of payments effects of external shocks, averages for 1974 to 1978, TO=trade orientation, EP=balance of payments effects of export promotion, averages for 1974 to 1978, IS=balance of payments effects of import substitution, averages for 1974 to 1978, ANEF=balance of payments effects of additional net external financing, averages for 1974 to 1978. All value data is in constant dollar terms.

As described in detail in the author's papers referred to earlier, external shocks have been defined to include changes in the terms of trade and the impact of the slowdown of the growth of world trade, calculated on the assumption of unchanged export market shares for the country concerned. In turn, the policy responses to external shocks introduced in the present estimates include additional net external financing, involving a net capital inflow over and above its trend value, as well as domestic adjustment policies in the form of export promotion, represented by increases in export market shares, and import substitution, represented by a decrease in the income elasticity of import demand.

For the purposes of the estimation, the balance-of-payments effects of policy responses to external shocks have been expressed as a percentage of the balance-of-payments effects of these shocks, thus indicating the relative importance of alternative policies. In turn, the balance-of-payments effects of external shocks have been expressed as a percentage of the gross national product; the level of development has been represented by per capita incomes in the initial year; and the share of manufactured goods in total exports has been used to reflect reliance on manufactured exports.

The results reported in table 3 show that trade orientation has significantly influenced the rate of economic growth in the 43 countries studied during the

1973–79 period. The export promotion, import substitution, and additional net external financing variables exhibit a high degree of statistical significance and all regression coefficients have a positive sign.

It is noteworthy that both the trade orientation and the export promotion variables are highly significant statistically. Thus, economic growth in the 1973–79 period was favorably affected by the country's trade orientation in the initial year, represented by differences between actual and hypothetical values of per capita exports in 1973, as well as by export promotion in response to external shocks, represented by the relative importance of increases in export market shares in response to external shocks after 1973.

The impact of trade orientation on economic growth may be indicated by estimating differences in GNP growth rates between a country in the upper quartile of the distribution in terms of trade orientation, representing the median among outward-oriented countries, and the neutral case where the trade orientation variable takes a zero value. The results derived from eq. (8) show a gain of 0.5 percentage points for the country concerned. In turn, a country in the lower quartile of the distribution, representing the median among inward-oriented countries, is shown to experience a shortfall of 0.5 percentage points in its GNP growth rate. *Ceteris paribus*, there is thus a difference in GNP growth rates of 1.0 percentage points between the median outward-oriented and the median inward-oriented country.

Furthermore, the regression coefficient of the export promotion variable exceeds that of the import substitution and the additional net external financing variables two to two-and-a-half times, indicating that greater reliance on export promotion in response to external shocks permits reaching higher GNP growth rates. From eq. (17), increasing export promotion by 10 percentage points at the expense of import substitution and additional net external financing would add 0.3 percentage points to the rate of economic growth. The gain is 0.7 percentage points if comparison is made between the upper quartile and the median in terms of reliance on export promotion, and a loss of 0.4 percentage points in GNP growth is shown if a country at the lower quartile of the distribution is compared to the median. Comparing the two quartiles, then, a gain of 1.2 percentage points is obtained that is additional to the gains associated with outward orientation at the beginning of the period.

It appears, then, that initial trade orientation and reliance on export promotion in response to external shocks explain a large proportion of intercountry differences in GNP growth rates; these growth rates averaged 5.0 percent in the 43 developing countries under consideration during the 1973–79 period, with an upper quartile of 6.5 percent and a lower quartile of 3.3 percent. At the same time, the level of significance of the per capita GNP variable is lower, and that of the share of manufactured goods in total exports higher, than in the production function framework.

Finally, the two approaches have been combined by introducing, in the same estimating equation, the variables from the production function and the variables representing initial trade orientation and policy responses to external shocks. This formulation is superior to the previous ones. For one thing, it separates the effects of the country's initial policy stance from those of policy responses to external shocks, and the variables in question are not subject to simultaneity bias. For another thing, it adjusts for the effects of changes in capital and labor on output growth.

The results reported in table 4 confirm the conclusions obtained earlier. The combination of the two approaches does not materially affect the statistical significance of the individual variables, and the coefficient of the export promotion variable continues to be substantially higher than the additional net external financing and the import substitution variables. In fact, the estimated gains of outward orientation and export promotion are practically the same as those derived from eq. (19).

4. Conclusions

Having earlier shown the favorable effects of exports on economic growth in semi-industrial countries during the 1960-73 period of rapid economic growth, the author has re-examined the validity of this proposition in the 1973-79 period of external shocks. Utilizing the same framework, and extending the scope of the investigation to countries at lower levels of development, he has found that the rate of growth of exports importantly affected the rate of economic growth and that the numerical magnitude of this effect increased compared to the earlier period.

The rate of economic growth is further influenced by increases in the labor force and by domestic savings while, in contradistinction with the earlier results, foreign savings do not appear to have affected the outcome. At the same time, *ceteris paribus*, developing countries at lower levels of development have been better able to increase total factor productivity than countries at higher levels and a high share of manufactured exports was also positively associated with economic growth.

Estimates made by utilizing the product of export growth and the share of exports in GDP, instead of export growth alone, modify the results but little. Disaggregating the export variable into variables representing productivity differentials between export and non-export sectors and externalities associated with exports failed to improve the results, however.

The introduction of an export variable in the production function-type framework aims at capturing the effects of exports on economic growth through improved resource allocation capacity utilization, economies of scale, and technical change. Under the formulation utilized, intercountry differences in export growth rates, and in the share of exports to GDP, are considered to be a manifestation of the trade policies followed.

Table 4
Savings, labor, trade orientation, policy response to external shocks, and economic growth.^a

Eq.	Constant	S_d/Y	S_r/Y	L/L	TO	EP/ES	IS/ES	$ANEF/ES$	ES/Y	Y/P	X_m/X	R^2
(20)	-6.286 (-0.550)	0.079 (1.938)	0.079 (1.938)	0.308 (0.613)	12.348 (2.719)	0.366 (5.553)	0.194 (4.009)	0.205 (4.252)		-5.288 (-1.212)	0.331 (3.081)	0.646
(21)	-7.131 (-0.643)	0.082 (2.069)	0.022 (0.435)	0.389 (0.796)	10.317 (2.268)	0.330 (4.930)	0.185 (3.915)	0.185 (3.863)		-7.838 (-1.755)	0.334 (3.198)	0.667
(22)	-4.764 (-0.362)	0.078 (1.868)	0.078 (1.868)	0.284 (0.549)	12.941 (2.490)	0.369 (5.415)	0.195 (3.958)	0.205 (4.197)	-0.130 (-0.246)	-5.234 (-1.182)	0.329 (3.014)	0.636
(23)	1.583 (0.124)	0.076 (1.927)	-0.010 (-0.175)	0.285 (0.582)	12.971 (2.641)	0.334 (5.050)	0.183 (3.915)	0.179 (3.744)	-0.776 (-1.342)	-8.619 (-1.936)	0.323 (3.129)	0.675

^aSources: see tables 1 and 3. Symbols: dependent variable: changes in GNP between 1973 and 1979 as a percentage of 1973 GNP. Independent variables as in tables 1 and 3. All value data is in constant dollar terms.

This approach introduces policy orientation only indirectly; it fails to adjust for the impact of the availability of natural resources on export shares; and it does not allow for the effects of external shocks on export growth. The described deficiencies have been remedied by introducing a trade orientation variable that adjusts for natural resource availabilities and by separating the effects of external shocks and of policy responses to external shocks on exports.

The results indicate the effects of trade orientation and those of policy responses to external shocks on economic growth. It is shown that the rate of GNP growth is the higher the greater the extent of outward orientation at the beginning of the period under consideration and the greater the extent of reliance on export promotion in response to the external shocks of the period. The results are cumulative and policy choices appear to account for a large proportion of intercountry differences in GNP growth rates during the 1973-79 period.

Combining the two approaches further reinforces the results of each. Thus, intercountry differences in the rate of economic growth appear to be affected by differences in investment rates and by the rate of growth of the labor force, by the initial trade policy stance and by the adjustment policies applied, as well as by the level of economic development and by the product composition of exports.

The results show that the policies adopted have importantly influenced the rate of economic growth in developing countries. In particular, an outward-oriented policy stance at the beginning of the period of external shocks, as well as reliance on export promotion in response to these shocks, appear to have favorably affected growth performance. The results further indicate the possibilities for low-income countries to accelerate their economic growth through the application of modern technology in an appropriate policy framework as well as the advantages of relying on manufactured exports.

Appendix

The countries included in this study, listed by their 1973 per capita incomes, are: Israel, Singapore, Argentina, Portugal, Yugoslavia, Jamaica, Uruguay, Mexico, Brazil, Chile, Costa Rica, Taiwan, Peru, Turkey, Guatemala, Tunisia, Zambia, Mauritius, Korea, Honduras, Morocco, Ghana, Senegal, Philippines, Thailand, Cameroon, Egypt, Bolivia, Botswana, Togo, Kenya, Madagascar, Zaire, Sudan, Tanzania, Sri Lanka, India, Pakistan, Benin, Malawi, Bangladesh, Upper Volta and Mali.

References

- Balassa, Bela, 1978, Exports and economic growth: Further evidence, *Journal of Development Economics*, June, 181-189.

- Balassa, Bela, 1981, The newly-industrializing developing countries after the oil crisis, *Weltwirtschaftliches Archiv*, Band 117, Heft 1, 142-194. Reprint no. 190 (World Bank, Washington, DC).
- Balassa, Bela, 1984a, The policy experience of twelve less developed countries, 1973-1978, in: G. Ranis, R.L. West, M. Leierson and C. C. Morris, eds., *Comparative development perspectives. Essays in honor of Lloyd G. Reynolds* (Westview, Boulder, CO).
- Balassa, Bela, 1984b, Adjustment to external shocks in developing countries, in: B. Csikós-Nagy, D. Hague and G. Hall, eds., *Economics of relative prices* (Macmillan, London).
- Balassa, Bela, 1984c, Adjustment policies and development strategies in sub-Saharan Africa, 1973-78, in: M. Syrquin, L. Taylor and L.W. Westphal, eds., *Economic structure and performance. Essays in honor of Hollis B. Chenery* (Macmillan, New York).
- Chenery, Hollis B., 1960, Patterns of industrial growth, *American Economic Review*, Sept., 624-654.
- Feder, Gershon, 1983, On exports and economic growth, *Journal of Development Economics*, Feb.-April, 59-74.
- Michalopoulos, Constantine and Keith Jay, 1973, Growth of exports and income in the developing world: A neoclassical view, Discussion paper no. 28 (Agency for International Development, Washington, DC).
- Tyler, William G., 1981, Growth and export expansion in developing countries: Some empirical evidence, *Journal of Development Economics*, Aug., 121-130.
- Weisskopf, Thomas E., 1972, The impact of foreign capital inflow on domestic savings in underdeveloped countries, *Journal of International Economics*, Feb., 25-38.