

Does Export Promotion Increase Economic Growth? Some Cross-Section Evidence

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This article is concerned with the empirical link between exports and economic growth. Its core objectives are to attempt control for structural features that determine 'export orientation' in order to derive an index of export promotion that captures policy effects only, and then to test whether or not this index is a determinant of growth. The empirical work presented casts doubt on the overall validity of the export-led development hypothesis. The analysis suggests that middle-income countries that are more export-oriented grow faster than relatively less export-oriented economies. For low- and high-income countries, however, export promotion does not have any significant impact on economic growth.

The 1980s and 1990s saw a remarkable increase in trade associated with an unprecedented wave of trade liberalisation, with most countries, developed and developing, increasing their trade relative to GDP. The relationship between trade and economic development, however, remains controversial. Although the benefits of free trade are endorsed by mainstream economics and exports are seen as an engine of growth, a large body of empirical literature regarding the impact of trade policies on economic performance has produced mixed results. And although the bulk of empirical work (Balassa, 1978, 1985; Dollar, 1991; Fajana, 1979; Feder, 1983, 1985; Heller and Porter, 1978; Kavoussi, 1984; Krueger, 1980, 1978; Matin, 1992; Michaely, 1977, 1978; Moschos, 1989; Ram, 1985, 1987; Salvatore and Hatcher, 1991; Tyler, 1981; Voivodas, 1973; and Williamson, 1978) has indeed been supportive of the export-led development hypothesis, some recent literature (Dodaro, 1991, 1993; Evans and Alizadeh, 1984; Helleiner, 1986; Jung and Marshall, 1985; Levine and Renelt, 1992; Pack, 1992, 1988; Schmitz, 1984; Sheehey, 1990; Timmer, 1988; Westphall, 1978; Yaghmanian, 1994) has contested these findings. In particular, time-series analysis, as opposed to cross-country analysis, has generally produced results contrary to the hypothesis.

A brief survey of the literature confirms that measuring trade orientation is complex and difficult. In regard to this literature, two important points should be made clear from the outset. First, that different measures are used to determine the various aspects of trade policy such as outward/inward orientation or liberal/interventionist trade regimes. For example, trade intensity is concerned with outward/inward orientation, and price-based measures are concerned with liberal/interventionist trade regimes. We find that, in the traditional two-sector model, import substitution (IS) and export promotion (EP) are

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seen as mutually exclusive, and therefore incompatible trade policies, the logic of which goes on to suggest that EP necessarily requires trade liberalisation. Recent literature, however, expands the discourse by invoking a three-sector model that offers a wider range of trade strategies for consideration. Freed from the restriction of the two-sector model, it is conceivable that outward orientation can be achieved by liberal and/or non-liberal trade policies.¹ In other words, there is no *direct* causal link between trade liberalisation and export performance and the two processes should be measured separately.

Secondly, the measures used can be roughly classified as either 'incidence-' or 'outcome-based'. While tariff and non-tariff barriers are the most commonly used incidence-based measures, outcome-based measures are more usually derived from a comparison of international price levels and trade flows.

This article, however, is concerned only with the empirical link between exports and economic growth (or export-led growth). Whether export orientation is achieved as a result of liberal or interventionist trade policies is not a matter of interest. The core objectives are to try and control for structural features that determine 'export orientation' in order to derive an index of export openness that captures policy effects only, and then to test whether or not this index is a determinant of growth.

Empirical studies of 'openness' and economic growth

Rather than seeking to measure trade orientation, earlier empirical work often regressed export growth rates on economic growth rates to determine whether they were correlated. Any correlation found was interpreted as evidence of the benefits of promoting exports. This method was criticised on the grounds that exports are a component of GDP, and therefore an autocorrelation between them would be expected, and other important determinants of economic growth were excluded (Michalopoulos and Jay, 1973; Michaely, 1977). Michaely (1977: 50) argued that '[s]ince exports are themselves part of the national product, an autocorrelation is present; and a positive correlation of the two variables is almost inevitable, whatever their true relationship to each other'. He suggested that a change in the trade ratio should be used instead of the change in exports.

This criticism was dismissed by proponents of the method who defended themselves by employing Balassa's argument that 'import-replacing domestic production, too, is part of the national product, so that in an inter-country framework export growth rates reflect alternative uses of resources' (Balassa, 1978: 182, footnote 3). In other words, exports and import-substituting production compete for limited resources, and a positive correlation demonstrates a positive efficiency gain by redirecting resources from an inefficient import-substituting sector to the export market.²

In response to the second criticism, exports were introduced into the production function.³ Following in particular the work of Balassa (1978) and Feder (1983), the

1. For a comprehensive discussion of alternative trade strategies see Liang (1992); Milner (1995); McKay and Milner (1997); Greenaway (1998); Greenaway et al. (1997, 1998); Milner and Morrissey (1999).

2. Insisting on employing the bivariate model, Kavoussi (1984: 243, footnote 9) made the same point.

3. Taking endogenous growth theory as a starting point, some later studies included exports in regressions

production function models in which exports are included with capital and labour became popular. The inclusion of exports in a Cobb-Douglas production function was based on the premise that the marginal productivities of labour and capital were higher in the export sector.

However, in the face of strong criticism of this model, proponents were forced to provide a justification for the inclusion of exports in the production function. Feder (1983) validated his argument by dividing the economy into export (X) and non-export (N) sectors and, based on the assumption that marginal productivity is higher in the export sector, introduced exports as an additional factor into the production of the non-export sector. A significant coefficient indicated that exports produced positive externalities for the non-export sector (see Feder, 1983: 62 for details).

Conversely, Sheehey (1990, 1993) argued that these empirical tests had no relevance for the export-promotion/import-substitution controversy. He reached this conclusion by applying the same test to each of the major sub-categories of GDP⁴ and demonstrating that all give similar results. Sheehey replaced exports with other components of GDP in the production function and found them all to be significant. He therefore concluded that '[s]ince it is true [...] that the link between sectoral growth and growth of GDP is common to all sectors, it clearly cannot be due to relative productivity differences and externality effects' (Sheehey, 1990: 115). In a later article, Sheehey (1993) used the same formula to test the non-export sector as a whole. He substituted the non-export sector for exports in the equation and obtained similar results, proving that Feder's test was inconsistent. Both export and non-export sectors could not concurrently be more productive than each other.

Another important facet in the relationship between export growth and economic growth is causality. A strong correlation proves neither the existence of causality between the two variables, nor, if there is causality, that it runs from exports to economic growth. Most empirical studies, explicitly or implicitly, assume that causality runs from exports to economic growth. As Jung and Marshall have pointed out, there are several reasons why one should expect export growth to stimulate economic growth:

First, export growth may represent an increase in demand for the country's output and thus serve to increase real GNP. Second, an increase in exports may loosen a binding foreign exchange constraint and allow increases in productive intermediate imports and hence result in the growth of output. Third, export growth may result in enhanced efficiency and thus may lead to greater output. (Jung and Marshall, 1985: 3)

Even though some recent studies have challenged the above view, few have shown an awareness of the importance of causality. Of those that do, Ram (1985: 416) states that 'it is evidently important to be able to make a reasonably satisfactory transition from statements about the correlation patterns to some judgement about the causal structure'. Dollar (1991: 536) recognises 'the possibility that the causation runs in the other direction: from poor growth performance to inward-orientation'. He argues that an external factor, such as a debt crisis, may cause both slow economic and export growth.

with some other variables such as: the domestic saving ratio, the budgetary share of expenditure on human capital and the cost of external borrowing in real terms, etc. See Otani and Villanueva (1990).

4 These are government consumption; private consumption; agriculture; manufacturing; construction; and electricity, gas and water services.

World Bank researchers are also aware that '[t]he links between trade strategy and macroeconomic performance are not entirely clear' and raise the question of whether 'outward orientation leads to better economic performance or [...] superior economic performance paves the way for outward orientation' (World Bank, 1987: 83). Nevertheless, the vast majority of the literature fails to establish the direction of causality.

Arguments for export-led development have been challenged empirically as well as theoretically. The 'stage of development' theory of comparative advantage, for example, argues that some minimum level of economic development is required prior to export-led development. Economic development tends to stimulate exports at the earlier stages of development, whereas exports tend to stimulate economic development after some degree of development is attained. It is argued that higher growth rates are not necessarily determined by exports, but by processes that are independent of trade policy (see Pack, 1992, 1988). The strong correspondence between levels of development and trade policy orientation suggests that export performance is related to the level of development. As development takes place the economy becomes stronger, markets become more efficient and fewer bottlenecks occur. This well-functioning economy facilitates greater penetration into world markets. Thus, Yaghmanian (1994) argues that both economic growth and successful export performance are determined by processes of development and structural change. Exports, and the growth rate of GDP, may, or may not, reinforce each other. But, as countries become more developed, they are more likely to 'get the prices right', and in so doing to follow a more neutral policy stance both with respect to exports and the domestic economy.

In this regard both Singer (1988) and Dodaro (1991) have criticised the 1987 *World Development Report*, which classifies 41 countries into four groups according to their trade policies. They argue that the fact that the categories of inward-oriented and strongly inward-oriented countries contain mostly poorer countries suggests that poorer countries find it more difficult to adopt outward-oriented trade policies and some degree of economic development is necessary before a country can make any significant inroads in the world market.

Jung and Marshall (1985: 5) contend that, even if it is true that export growth can cause economic growth, it is equally plausible that economic growth may in turn cause export growth. For example, in the case of unbalanced growth, it is highly unlikely that the domestic demand for goods from expanding industries will grow as rapidly as their production. Therefore producers will be forced to seek out foreign markets in which to sell their commodities. In this case the causality will be from output growth to export growth and the obvious causality between them cannot be interpreted as evidence of export-led development. Founded on this argument, they analyse the direction of causality between export growth and economic growth for 37 countries. The results in general do not support the export-led growth hypothesis. In only four countries⁵ do exports appear to promote economic growth. In three countries the reverse is true; economic growth led to higher export growth. And in five countries, the growth of the economy resulted in lower export growth.

Dodaro (1993) also obtained similar results in a study of 87 developing countries. Using the same methodology as Jung and Marshall but employing a different time

5. Indonesia, Egypt, Costa Rica, and Ecuador.

period and more countries, Dodaro also found no support for neo-classical theory in any of the countries known as the 'Newly Industrialising Countries'. Dodaro's results favoured the export-led growth hypothesis in only seven low-income countries and overall indicated only weak support for the contention that GDP growth promotes export growth.

In his research on African and other 'poor' countries, Helleiner (1986) also found no correlation between export performance and overall economic performance. Even the advocates of export-led development often admit that, at least for very low-income countries, such correlation is ambiguous and a certain minimum level of development is necessary to identify any meaningful correlation between exports and economic growth (see Michaely, 1977: 52; Heller and Porter, 1978: 192; Tyler, 1981: 192).

Using the Sims technique, Chow (1987) tested the causality between manufactured exports and manufacturing output for eight 'Newly Industrialising Countries'⁶ and found a bi-directional causal relationship. Only in Argentina, which is considered to be one of the most inward-oriented countries in the world, does there seem to be no correlation, while only for Mexico, an oil exporter, does causality run from exports to GDP growth.

In his study of 66 developing countries, Yaghmanian (1994) estimated cross-section and time-series regressions by including typical neo-classical variables: the share of investment in GDP, population growth rate (as a measure of the labour force) and the export growth rate. Other variables were included to take account of the impact of structural transformation and the process of development on the growth of output. Initially export growth was proved to be significant. But when he replaced population with employment (for 30 countries) to account for unemployment and underemployment – a common occurrence in developing countries – exports became insignificant. Consequently, he concluded that his final set of estimations failed to support the neo-classical export-led growth model.

Greenaway and Sapsford (1994) first estimated a production function-type growth model using time-series data for 14 countries and similarly found no evidence to support the export-led growth hypothesis. Then, in order to address the simultaneity between exports and output, and to separate the 'economic influence' of export growth on output growth, they estimated a similar regression by replacing GDP with 'GDP net of exports' (Y-X). As a result, they found not only that coefficients were not significant but also that many of them changed sign and became negative.

An alternative framework: Structurally Adjusted Export Intensity (SAEI)

The technical difficulties of measuring trade orientation are substantial. As Balassa (1985: 29) points out, '[t]he classification of countries into groups according to the development strategy pursued necessarily involves a certain degree of arbitrariness'. Measuring trade orientation is more problematical than it at first appears. It involves differentiating between actual results and policy orientation. A comparison of the trade intensity figures in different countries does not determine which country is more open in terms of trade policy. Structural factors need to be taken into account.

6. Argentina, Brazil, Hong Kong, Israel, Korea, Mexico, Singapore and Taiwan.

In this section an alternative measure of export intensity will be introduced.⁷ The index used is based on Balassa's Structurally Adjusted Trade Intensity (SATI) index. It aims to differentiate between actual trade figures and trade policy objectives and to test whether export promotion stimulates economic growth.

Earlier studies that employed trade intensity as a measure of trade orientation did not support the 'export-led development' hypothesis (see, for example, Choi, 1983). These studies, however, did not disprove the hypothesis, as they did not take into account other structural factors, such as the size of the economy and the availability of natural resources. There are also theoretical considerations. For example, the 'stage of development' theory argues that development level and trade intensity are closely related. Thus, the structural character of a country should be taken into account before export intensity can be used as a measure of trade orientation.

The work of Syrquin and Chenery (1989) inspires this line of research. It draws on time-series data to examine whether the patterns emerging from cross-country comparisons of the structure and level of development actually reflect the transformations that occur over time. A number of studies adopted SATI as a measure of openness. Heitger (1987), for example, adjusts trade intensity for market size by estimating a regression between trade intensity and GDP. He takes the residuals from this regression as the trade orientation, or the 'openness' index,⁸ and uses them in a simple growth equation in which the other components are: per capita income relative to the 'industrial leader' (the United States) as a measure of the technological gap between the countries; the adult literacy rate as a measure of human capital; the share of investment in GDP as a measure of capital formation; and the population growth rate as a proxy for the labour force.

The results of this regression indicate that no correlation exists between economic growth and openness. Heitger (1987) argues that since openness and investment rates (the investment rate was significant in the regression) were strongly correlated,⁹ 'the contribution of a high export share [is] insignificant only due to multicollinearity'. He concludes that 'a high export share favoured capital accumulation and this in turn promoted economic growth' (Heitger, 1987: 255). This explanation is unsatisfactory, since a positive correlation between the two variables does not establish causality. Causality may run from investment to openness through economic growth.

Balassa (1985) also adopts the SATI model in a more complex manner. He uses the deviation of actual from hypothetical per capita exports as a measure of trade orientation. The hypothetical values are derived from a regression that includes per capita income, population and the ratio of mineral exports to GDP, where the dependent variable is per capita exports. The residuals from this regression are interpreted as the trade orientation index and are used in another equation as one of the independent variables where the economic growth rate is the dependent variable. Other independent variables are assumed to capture other factors such as external shocks, the level of economic development, and the extent of reliance on manufactured exports.

7. Note that this article is not concerned with trade intensity as imports are excluded from the analysis.

8. Note that 'openness' is a broader concept and need not be highly correlated with trade orientation as it includes openness to technology, foreign direct investment, ideas, etc. See Rodrik (1999) for a discussion of the openness concept.

9. He estimated a regression between investment and openness and found them to be positively correlated.

In this section, a similar approach will be used, since this method allows one to 'separate the effects of the country's initial policy stance from those of policy responses to external shocks' (Balassa, 1985: 29-32). Unlike the other methods, this approach, if properly formulated, enables one to isolate other factors that may influence export intensity and to determine whether export orientation, as a result of conscious policy decisions, promotes faster economic growth. If the other factors that influence export intensity can be identified and controlled in this regression, the residuals can be assumed to measure policy. But export intensity is only one of a number of factors that can influence the economic performance of a country. Thus other policy variables such as the investment level and external shocks, incorporating external demand shocks, the impact of oil shocks and debt problems, must also be controlled.

Firstly, an accurate measure of export intensity must be constructed. This can be done by modifying the measure of actual export intensity by the structural characteristics of the economy, such as the size of the manufacturing sector and the availability of natural resources. When this is done, the residuals from the regression can be used as the export promotion policy index, for they will indicate whether a country is exporting more (or less) than predicted, given its structural characteristics. This index can then be used in a regression as an independent variable (with GDP growth as the independent variable) to determine whether or not export promotion stimulates economic growth. The other variables include those that are policy-related, as well as ones that are assumed to capture external shocks.

Step 1

Export intensity will be modified according to the structural characteristics of the countries by estimating the following regression.¹⁰ The residuals will be used as the modified 'export intensity' or SAEI index.

$$(X/GDP) = f(\text{Manufacture} + \text{Oil} + \text{Transport} + \text{Population})$$

where the components of the regression are as follows:

Manufacture This is the share of manufacturing value-added in total national value-added. This variable measures the structural change in an economy according to the 'stage of development' theory. This theory argues that a country's ability to export depends on its ability to produce commodities that are internationally competitive. Thus, one might expect a prosperous economy with a strong manufacturing sector to be relatively more open. Before the share of manufacturing in total value-added was selected as a variable in this regression, separate regressions were estimated for the share of agriculture and services in total value-added. They were negatively correlated with trade intensity, indicating that low-income agricultural commodity producers and

10. In order to capture the impact of world demand, an index of commodity prices and terms of trade was also tested and omitted since they were statistically insignificant and reduced the degree of freedom. Some researchers (such as Dollar, 1991) included population density as a measure of factor intensity, but since it was found to be insignificant it was excluded from our regression.

Table 1: Export intensity as a function of the manufacturing sector, oil and mineral trade, transport cost and population (five-year average, 1990-95; cross-country analysis)

Constant	Manufacture	Oil	Transport	Population	R-Bar-Sq	DW-test	DF	F-test
1.285** (2.223)	0.316* (3.999)	0.298* (8.470)	-0.103* (-2.894)	-0.195* (-10.010)	0.704	1.840	97	31.997*

Notes: * significant at 1% level; ** significant at 10% level. Dependent variable is export intensity. Variables are in logarithmic form. Figures in parentheses are t-statistics. DF: degree of freedom. 105 countries are included (see Appendix). Country dummies for Hong Kong, Singapore and Malta. The regression passes all diagnostic tests in Microfit (functional form, normality and heteroscedasticity).

Source: World Bank, *World Development Indicators*.

high-income countries¹¹ tend to have a lower trade intensity. However, in this case these variables were omitted because their coefficients were insignificant. A number of other alternatives, such as the share of primary exports and manufacturing exports in total exports, were also tested and omitted as they did not improve the explanatory power of the regression.

Oil This denotes the ratio of oil and mineral trade (exports and imports) to total GDP. It can be argued that for large producers of raw materials such as oil and minerals, a certain degree of trade is not a policy option but is inevitable. The same is true for raw material-importing countries. For a country that is just self-sufficient in terms of raw materials, trade becomes more of a policy option.¹²

Transport The costs involved in trading are an important determinant of a country's export orientation. In structural terms long distances to export markets and poor physical infrastructure restrain the ability to trade. To capture these aspects of trade we therefore use the average cif/fob ratio of the three major export markets of each country obtained from the IMF's *Direction of Trade Statistics*. Exporting countries report their free on board value (fob) to their trade partners and importing countries report the value of imports which include carriage, insurance and freight (cif). The divergence in price between them is a measure of transport cost.¹³

Population This is used as a measure of market size. As argued earlier, market size is important for economies of scale. Countries that have large domestic markets tend to be more closed, because their companies can make use of scale economies to grow rapidly. Companies in small countries, however, need external markets to expand. Thus the larger a country is, the smaller will be its share of exports in total GDP.

11. Where the share of services is relatively higher.

12. There is a potential limitation with this variable as it presumes that oil exports and imports have the same effect on trade intensity. This may not be the case; for example, in the case of low-income countries that receive substantial aid which can be used to import oil.

13. For a comprehensive discussion on the role of transport costs on trade see Limao and Venables, 2002.

Step 2

The residuals from the first regression will be used as an export promotion policy index (EPPI) because they reflect the relative export openness of countries given their structural characteristics.¹⁴ The EPPI, as one of many other factors that might have an influence on economic growth, will be included in a regression with the other variables. There are a number of variables that may have an influence on economic growth. They can be divided into the following categories (see Mosley et al., 1995: 1468):

Orthodox instruments are the real exchange rate, the average inflation rate and the real interest rate. *Heterodox* instruments are export subsidies, the average effective rate of protection and the share of public investment in GDP. *New growth theory* variables are the initial level of GNP per capita, the investment rate, export growth and the change in literacy rate. The list can be enlarged to capture external shocks, such as a sharp fall in demand for exports or in terms of trade, and input price shocks, such as the oil shocks of 1974 and 1979 and the debt crisis of the 1980s. All of these variables might be important to some extent as determinants of economic performance. However, this article is primarily interested in the impact of export promotion on economic performance and is not concerned with the details of the specific impact of the above variables. In other words, it is not its aim to prove the importance of the above variables for economic development. They are included in the regression purely to obtain a more accurate picture of the impact of export promotion.

$$\text{GDPgr} = f(\text{EPPI} + \text{Xgr} + \text{Igr} + \text{GNPpc1983} + \text{Government} + \text{Unrest} + \text{Population} + \text{Illiteracy})$$

where GDPgr = Gross domestic product, annual average growth rate; EPPI = Export promotion policy index; Xgr = Exports, annual average growth rate; and Igr = Investment, annual average growth rate.

GNPpc1983 This is the initial level of per capita GNP in 1983 which is included to see whether there is convergence between developed and developing countries.

Government This denotes the real government share of GDP. The SAEI index captures the effect of policy on growth via exports that is not captured by the volume effect of exports. This variable is included to capture other policy effects that are not captured by SAEI.

Unrest The recent literature puts emphasis on social peace as one of the most important factors for development. Country dummies are included for countries that experienced

14. Positive values imply open and negative values imply closed economies. In order to express values in logarithmic form in the second regression, a constant number was added to the residuals so that all values became positive (higher values implying more open economies). Moreover, as the residuals were highly correlated with trade intensity, the index was expressed as a proportion of trade intensity.

social unrest during the period.¹⁵

Population In typical neo-classical regressions, population growth rate is included as a rough measure of the labour force in addition to capital in the production function. In many studies, however, it has been found to be insignificant and even negatively correlated with economic growth rates. It will nevertheless be included primarily to be consistent with the existing literature, and subsequently because it may indeed be negatively correlated with economic growth, since rapid population growth may reduce the level of net resources available for investment.

Illiteracy This is used as a measure of human capital.

In this regression, the export growth rate is assumed to capture any external shocks to the economy. A sudden external demand shock or a gradual decline in export demand will have a negative impact on the economy. The inclusion of exports within the EPPI will allow us to gauge the impact of trade policy independently of external shocks.¹⁶ So far, no one has included a measure of export orientation in conjunction with the growth rate of exports.

The investment growth rate is assumed to capture the impact of all the internal policy variables,¹⁷ external shocks,¹⁸ and duties and official transfer receipts of the countries.¹⁹ As alternative indicators, the share of investment in GDP (I/GDP) and the investment growth rate modified by the share of investment in GDP ($Igr * [I/GDP]$) were also introduced into the regression. However, the investment growth rate was found to be more significant and improved the quality of the regression. It is usually argued that the share of investment in GDP is a more appropriate indicator (see Ukpolo, 1994: 446) because of demand and capacity-utilisation considerations. This is so because investment growth rates are more volatile compared with the rate of capital growth.

In this regression, however, ten-year averages of all variables are used to satisfy such considerations. Moreover, I/GDP might be a more problematical indicator than is recognised in the literature, as both components of the I/GDP ratio are strongly correlated. For example, if a sharp fall in the investment rate is accompanied by a sharp fall in GDP growth, the I/GDP ratio may remain fairly high. If the fall in GDP growth is higher than the fall in investment, one might observe a shrinking economy with an increasing I/GDP rate.

This regression will be estimated for the low-income countries, middle-income countries and high-income countries (see Appendix for the classification of countries).

15. The History Guy: New and Recent Conflicts of the World. http://www.historyguy.com/new_and_recent_conflicts.html.

16. In other words, exports in an 'open' economy might be growing more slowly than in a 'closed' economy as a result of various shocks. What we are interested in is not whether exports are growing faster in the economy, but whether the economy is more open.

17. Such as the level of the real interest rate, inflation rate and other variables which may have an impact on investment.

18. Such as an import price increase for inputs which may reduce the funds available for investment.

19. Such as debt repayments and external net resource transfers (i.e. aid).

Empirical results

The calculations produced some interesting results that should be interpreted with caution. First, as some important structural characteristics may be omitted from the first regression, the index may be biased and the results may be misleading. Second, the interpretation of the results is not straightforward. The regression results reported in Table 2 suggest that the EPPI is only significant for middle-income countries at the 10% level. For low- and high-income countries export promotion does not have any significant impact on economic growth. As expected, investment and exports are significant at the 1% level. An interpretation of the results for the other variables is beyond the scope of this study. The above analysis provides evidence to suggest that relatively more export-oriented middle-income economies grow faster than comparatively less export-oriented middle-income economies. Given their structural

Table 2: GDP growth as a function of export promotion policy, export growth, investment growth, initial level of GNP per capita (1987), government share in GDP, social unrest, population, primary enrolment and political system (10-year average, 1987-96; cross-country analysis)

Variables	LIC	MIC	HIC	Variables	LIC	MIC	HIC
Constant	1.685 (1.093)	0.670 (0.459)	-1.953** (-1.928)	Population	-0.902 (-1.717)	-0.875 (-3.610)*	0.579 (2.365)**
EPPI	0.824 (1.441)	1.167** (2.280)	-0.383 (-0.874)	Illiteracy	0.080 (1.005)	0.055 (1.556)	0.072 (1.036)
Export growth	0.183* (2.560)	0.384* (6.149)	0.417* (4.677)	R-Bar-Sq	0.676	0.812	0.871
Investment growth	0.196* (4.669)	0.138* (4.441)	0.556* (6.721)	DW-test	2.232	1.951	2.193
GNPpc (1987)	-0.008 (-0.126)	-0.005 (-0.175)	-0.065 (1.709)	DF	23	20	23
Government	-0.018 (-0.115)	-0.005 (-0.782)	0.065 (2.194)**	F-test	9.087*	13.239*	27.278*
Unrest	0.036 (0.689)	0.015 (0.516)	NA				

Notes: * significant at 1% level; ** significant at 10% level. Dependent variable is GDP growth. Variables are in logarithmic form. Figures in parentheses are t-statistics. 84 countries are included, 28 in each income group. LIC: low-income, MIC: middle-income, HIC: high-income countries. DF: Degree of freedom. The regression passes all diagnostic tests in Microfit (functional form, normality and heteroscedasticity). Country dummies for MIC: Belize, Trinidad and Tobago and Chile.

Source: World Bank, *World Development Indicators*, except for the unrest variable, which is taken from The History Guy: New and Recent Conflicts of the World, http://www.historyguy.com/ew_and_recent_conflicts.html.

peculiarities, middle-income countries that choose to promote exports more will grow faster than those countries that prefer to promote exports less. The results, however, cast

doubt on the overall validity of the export-led development hypothesis for low- and high-income countries.

A number of issues need to be addressed in interpreting these results. First, the coefficient on export growth is positive and highly significant and this is usually interpreted as evidence in support of export-led development. As argued earlier, however, such a correlation is expected and its relevance to export-led development is controversial. Although some researchers interpret this in favour of promoting exports, others believe that it has no relevance to export-led development. In other words, a positive correlation between two variables does not mean that export growth precedes GDP growth. The issue here is whether resources are better employed in the export sector and there is an efficiency gain from such specialisation.

Intuitively one would expect a stronger correlation between export growth and GDP growth in a more open economy compared with a closed economy, whether or not resources are more efficiently employed. It may be the case that one country may promote exports in the 'wrong' sectors and create inefficiencies, and another may employ resources more efficiently but may export less. In the first case, although there will be a very strong correlation between exports and GDP growth, the resources will be used inefficiently and will lead to poorer economic performance.²⁰ In the second case, although the resources are employed more efficiently, there will be weaker correlation between exports and GDP as the economy is less open. In other words, it is entirely possible that exports will be promoted in the wrong sectors and create inefficiencies. While this promotion will strengthen the correlation between exports and GDP growth rates, the economy will suffer from this specialisation.

Second, although the results do not provide strong evidence for export-led development, whether they provide evidence against it is a matter of interpretation. One can argue that promoting exports has a positive and statistically significant (although marginal) effect for middle-income countries and it is probably insufficient to offset the growth-retarding features of low-income countries. The empirical work presented here provides no evidence to suggest that export promotion retards growth. In this view, one needs to prove a negative effect to argue against export-led development.

An alternative view would insist that the lack of evidence is evidence against export-led development, as the propositions of the hypothesis are clearly stated. Export-led development proposes a direct link between promoting exports and economic growth. If promoting exports does not bring about significantly better economic performance, relying on exports as an engine of growth may be misleading. In other words, to argue against export-led development, one does not need to prove that increased exports would harm the economy.

Finally, a case for fallacy of composition (although it has not been proved here) cannot be rejected. Although more export-oriented middle-income countries grow faster, this does not necessarily mean that if all middle-income countries export more, they will all grow correspondingly faster. The fallacy of composition implies that what is good for one is not necessarily good for all. If a group of countries try to increase exports of the same commodity simultaneously, this will reduce the world price without increasing export volumes sufficiently and the value of exports may fall.

20. Indeed, as Streeten (1982) argues, it is just as possible to have inefficient export promotion policies as it is to have inefficient import-substitution policies.

The same logic is valid for total exports when countries have similar export commodity composition. For example, a country may devalue its currency to increase its own exports and market share at the expense of other countries. Although one may see a positive correlation between devaluations (exports) and GDP growth, when all countries devalue their currencies their total exports in value terms may not increase or may even decrease.

It is important to note that this is a relative index; it shows the export orientation of the countries in comparison with one another. The position of a country is not only determined by its own policies, but also by the policies of others. If all other countries become increasingly export-oriented, a country that maintains the status quo will become less so. Thus, the results do not necessarily mean that all countries experience accelerated growth when they are more export-oriented. If one can show that, even if middle-income countries have increased their trade openness significantly, there is no corresponding positive economic performance, there is a case for fallacy of composition.

Conclusion

This article is concerned with export-led development, a highly controversial issue in economics. It attempts to contribute to the relevant literature by providing an alternative measure of export promotion. This measure controls for structural characteristics of countries that determine 'export orientation' in order to obtain an index of export promotion that captures policy effects only. It then tests whether promoting exports stimulates economic growth.

Our empirical results did not provide strong evidence for export-led development, as only for middle-income countries was there a weak positive correlation between the EPPI and economic growth. For low- and high-income countries, there was no evidence for the benefits of promoting exports. Whether these results can be used as an argument against export-led development is a matter of interpretation. They certainly do not provide evidence that promoting exports harms the economy. However, if one defines export-led development as 'an expansion of the economy with exports serving as a *leading sector*' (Pass et al., 1993), this proposition has not been supported by our results. In other words, although promoting exports may not harm the economy, relying heavily on exports to stimulate growth may be misleading. The results, however, cannot be interpreted as being against the possible benefits of promoting exports. Exports are extremely important for all countries whether they are low-, middle- or high-income. These results imply that a too narrow focus on exports as an engine of growth may be deceptive.

Streeten (1988: 7) complains that there is a lack of a 'handbook for reform-minded prime ministers and presidents who would like to know how to manage the transition to a better society'. Such an approach oversimplifies the complex realities of the Third World. In our view, there can be no ready-made solutions to the economic problems of developing countries. Any theory that pretends that there are such solutions is bound to be popular but unsuccessful.

The primary proposition of this article is that, from the perspective of developing countries, promoting exports is inherently neither good nor bad. Such a trade policy has the power to create opportunities and it has the power to destroy livelihoods. In our

view, no single trade policy will serve all countries equally, as development is a non-linear and complex process, and no simple rules can be recommended to developing countries. Developing countries have diverse structures. A uniform trade policy cannot possibly bring about the benefits that it purports to do.

To summarise, in the real world matters are rarely simple and there can be no 'handbook' for development purposes. Developing countries should have a pragmatic approach to trade policies. Industrial policies in general and trade policies in particular should be produced according to a country's specific circumstances.

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Appendix: Country groups

Low-income countries

Ethiopia, Malawi, Democratic Republic of Congo, Nepal, Sierra Leone, Guinea-Bissau, Niger, Chad, Nigeria, Madagascar, Burkina Faso, Rwanda, Mali, Uganda, Bangladesh, Kenya, Togo, Central African Republic, The Gambia, Nicaragua, Benin, India, Ghana, Zambia, Mauritania, Pakistan, Comoros, China, Senegal, Guyana, Zimbabwe, Honduras, Cameroon, Sri Lanka, Côte d'Ivoire

Middle-income countries

Republic of Congo, Indonesia, Suriname, Papua New Guinea, Egypt, Philippines, Iran, Morocco, Guatemala, Dominican Republic, Jordan, Ecuador, Algeria, El Salvador, Jamaica, Tonga, Paraguay, Tunisia, St Vincent and the Grenadines, Colombia, Peru, Fiji, Thailand, Costa Rica, Belize, Panama, Turkey, Grenada, Dominica, Mauritius, Venezuela, Malaysia, Chile, South Africa, Gabon

High-income countries

Trinidad and Tobago, Mexico, Brazil, Oman, Uruguay, Seychelles, Barbados, Argentina, Saudi Arabia, Malta, Bahrain, Korea, Portugal, Greece, Cyprus, Spain, New Zealand, Kuwait, Italy, United Kingdom, Canada, Australia, Hong Kong, Finland, Netherlands, Sweden, Singapore, France, Iceland, United States, Belgium, Austria, Norway, Denmark, Japan