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**Comparative Advantage and Development
Policy Twenty Years Later**

by

Anne O. Krueger

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CONTENTS

1.	Trade Policy versus Growth circa 1960	3
2.	Experience with Export-led Growth	5
3.	Inner and Outer Oriented Strategies Contrasted	8
3.1	What is Export Oriented Growth?	8
3.2	Salient Characteristics	10
3.3	Relationship to Industrialization	11
3.4	Disadvantageous Import Substitution or Advantageous Export Promotion?	12
4.	Why Is Performance Different?	13
4.1	Technological Factors	14
4.1.1	Small Size of the Domestic Market	14
4.1.2	How Important are Indivisibilities and Scale Economies?	17
4.1.3	Differing Factor Intensities	18
4.1.4	Infant Industry Considerations	19
4.1.5	Interdependence and quality	21
4.2	Economic Behavior	22
4.3	Policy Formulation	24
5.	Summary and Conclusions	26
	Notes	29
	BIBLIOGRAPHY	32

TABLES

Table 1.	Experience of the Successful Exporters	7
Table 2.	Illustrative Calculation of Relative Size of Markets 1979	15

COMPARATIVE ADVANTAGE AND DEVELOPMENT POLICY TWENTY YEARS LATER

Anne O. Krueger^a

In most developing countries, politicians' early efforts to raise growth rates and living standards almost always included the erection of high trade barriers and the adoption of a set of policies designed to foster industrialization through "import substitution". These actions were based largely on an instinctive rejection of the "comparative advantage" doctrine, which was understood to imply laissez-faire in all matters pertaining to the trade regime and domestic economic policies. In addition, it was often associated with the policy prescription that developing countries should forever specialize in the production and export of primary commodities in exchange for manufactures. Because of these associations, attacks upon the "free trade" doctrine served as a focal point for the debate over the applicability of principles of rational resource allocation to developing countries.

Over almost four decades of research and experience with development policies and their effects, the range of the debate over trade policies has been greatly narrowed. While initial arguments were more emotional than rational, analyses of the theoretical issues and empirical evidence has gradually increased understanding of the issues involved and reduced the range of disagreement.

If one were to pinpoint the landmark contribution to this advance in understanding, Hollis Chenery's "Comparative Advantage and Development Policy" would stand out. His seminal paper provided a carefully reasoned statement as to the tensions between trade

^a This essay is written for inclusion in a volume in honor of Hollis Chenery on the occasion of his 65th birthday. It was written while the author was visiting at the Industrial Institute for Economic and Social Research in Stockholm, for whose support I am grateful.

theory and development policy. He advanced the dialogue by a quantum leap in his dispassionate and careful analysis of the issues, and in his identification of the many empirical questions requiring investigation. His essay stood for well over a decade as the definitive statement of the profession's understanding of the trade-policy growth relationship and only with additional research, prompted in part by his analysis, has the profession been able to move beyond it. Thus, it seems appropriate in a volume in Chenery's honor that the relationship between trade policy and development should be reexamined in the light of the theoretical advances and empirical evidence which have been amassed over the past twenty years.

It is useful to start by reviewing the issues as Chenery set them forth in the early 1960s. Thereafter, the experience of some developing countries is briefly reviewed to motivate the reassessment of trade policies and their impact which follows. Then, in Section 3, the alternative strategies are contrasted. Section 4 then contains an analysis of the various factors that may have accounted for differences in growth rates under alternative strategies.

1. Trade Policy versus Growth Circa 1960

Chenery set forth the criteria for the optimality of free trade in terms of market structures and pricing mechanisms, as was then conventional.¹ He then noted that:

"Growth theory contains at least four basic assumptions about underdeveloped economies that differ strongly from those underlying comparative advantage doctrines: (1) factor prices do not necessarily reflect opportunity costs with any accuracy; (2) the quality and quantity of factors of production

may change substantially over time, in part as a result of the production process itself; (3) economies of scale relative to the size of existing markets are important in a number of sectors of production; (4) complementarity among commodities is dominant in both producer and consumer demand." (P. 21.)

Chenery then proceeded to consider productivity changes over time, "dynamic external economies", and "uncertainty and flexibility" as considerations that might mitigate against the optimality of the free trade outcome even of a perfectly competitive market allocation.

Chenery was careful to note that the presence of market imperfections did not necessarily imply that departure from laissez-faire was clearly justified. Nonetheless, the basic arguments he evoked were widely used by others as the rationales for departures from free trade, and especially for the encouragement of "import substitution" industries, on the grounds that they possessed the dynamic characteristics that warranted intervention.

Theoretically, of course, there is no way to resolve the argument: there might in principle be dynamic external economies, various infant industry mechanisms, and other phenomena whose presence destroys the optimality of laissez-faire and free trade. At a theoretical level, it is possible for trade theorists to point out that many of the stated bases for departures from free trade are really the basis for alternative, and potentially Pareto-superior, interventions. Thus, as Fishlow and David noted, in the case of factor market imperfections policies other than a trade intervention would lead to an outcome superior to that attainable with a trade intervention: correction of the distortion at its source is first best.

For present purposes, what is important is to note that advocates of relatively unfettered trade and a liberal economy were essentially on the defensive in 1960: they questioned the size of the presumed dynamic factors and noted the static costs that were incurred. Essentially, the argument for protection, quantitative controls over economic activity, and economic planning in general was an argument of market failure in a laissez-faire economy and a contrasting of that presumed failure with the performance of an "ideal" command economy (where it was left to the individual economist to decide how much detailed intervention was ideal). Nowhere in the discussion did the advocates of liberal trade policies suggest that the dynamics of growth were in their favor: on the contrary, there was a presumption that growth considerations were in at least potential conflict with the efficiency of static resource allocation.

2 Experience with Export-Led Growth

While the debate over resource allocation and "dynamic factors" proceeded, some developing countries were abandoning or substantially reducing their trade barriers and other controls on economic activity. The results were far more spectacular than even the most ardent of proponents of free trade would have forecast. Growth rates rose to heights that had previously been regarded as unattainable. South Korea achieved a rate of growth of real GNP in excess of ten percent annually over the entire decade from 1960 to 1970 and weathered the oil price increase of 1973-74 better than almost any other oil-importing country. Taiwan, Hong Kong, Singapore and Brazil also thrived on "outer-oriented" trade policies to an extent not previously deemed feasible. While "special circumstances" were at first thought to have been responsible for each individual success story, it soon became apparent that the export-oriented countries had enough in common so that there was something more to their success than apparently lucky circumstances and specific factors.

This is not the place to review the circumstances associated with each successful export-oriented strategy. Many cases have been intensively scrutinized elsewhere², and numerous analyses of cross-section and time series performances of groups of countries confirm the surprisingly strong relationship between export growth and overall growth of real GNP.³ Table 1 gives a few pertinent data simply as a reminder of the extent of the success. As can be seen, both Brazil and South Korea dramatically altered their growth rates and their economic structures subsequent to their changes in strategy. Taiwan adopted unified exchange rates, a liberalized outer-oriented trade regime, and policies geared to improving resource allocation in the early 1950s so that a contrast between performance under alternative incentive structures is not possible. Data for Singapore and Hong Kong likewise are not available with which to contrast performance.

For present purposes, the important points are three: 1) no observer of any of these countries can possibly doubt that the remarkable rates of growth were somehow closely related to factors associated with the rapid growth of exports; 2) for all countries where it was possible to contrast performance before and after policy changes, there could be little doubt that the growth rate jumped sharply after adoption of export-oriented strategies; and 3) the fact that the high growth rates of real GNP were sustained for a very long period of time suggests strongly that the accelerated growth was not due simply to static gains from improved resource allocation. Indeed, to attribute all of the increase in the growth rate directly to increased exports would imply either an implausibly large multiplier or a simplistic theory of economic growth. The unresolved question is what it is about an export-oriented strategy that brings about such a remarkable economic transformation.

In a sense, therefore, the tension between growth theory and resource allocation precepts of the early 1960s has been turned around. Whereas theory suggested that there might be dynamic factors that contravened the rational resource allocation principles, the

Table 1 Experiences of the Successful Exporters

Country	Time period	<u>Rate of growth of:</u>		<u>Ratio to GDP of:</u>	
		Real GDP	Dollar value of exports	Exports	Investment
Brazil	1960-67	4.1	3.7	7	0.14
	1968-73	11.5	16.5	8	0.23
Hong Kong	1963-78	8.2	9.2	0.999	0.28
Korea	1953-60	5.2	5.7	0.03	0.11
	1960-78	9.6	28.4	0.29	0.35
Singapore	1965-78	8.6	8.7	1.87	0.39
Taiwan	1960-76	8.7	20.9	0.47	0.28

Sources: United Nations, Yearbook of National Accounts Statistics 1966, Table 4A; 1975, Volume III, Tables 2A and 4A; 1979, Table 6A; and World Bank, World Development Report 1978 (for Taiwan) and 1981.

Note: Ratios are from the last year in the interval indicated.

empirical evidence suggests that there are dynamic factors at work along an export-oriented growth path. From a theory without any evidence in the early 1960s suggesting departures from free trade for dynamic reasons, the tables are totally turned: we now have empirical evidence strongly suggestive of dynamic factors that may be associated with export-led growth. It is the purpose of the remainder of this essay to explore the possible links between an export orientation and overall economic performance. As will be seen, there are numerous hypotheses, some of which may simultaneously be valid while some are mutually contradictory. To suggest that a number of mechanisms may generate dynamic factors is not to quantify their relative importance. Indeed, it seems clear that the success of the export-oriented countries has raised a host of questions, especially about microeconomic behavior, that require empirical investigation in order to further understanding of the growth process.

3 Inner- and Outer-Oriented Strategies Contrasted

3.1 What is Export-Oriented Growth?

The terms "outer-oriented", "export promotion", "export substitution" and "export-led growth" have all been used interchangeably to describe the policies adopted in the successful exporting countries. That practice is continued here. It should not, however, be interpreted to mean that there is complete agreement as to what an export-oriented strategy is.⁴

A first question, in fact, is whether an export-oriented set of policies is anything other than the absence of policies discriminating in favor of sales in the domestic market.⁵ The criterion for optimal resource allocation, it will be recalled, is that the marginal rate of transformation in production domestically should equal the ratio of prices in the international market (i. e. the international marginal rate of transformation) in the absence of monopoly power in trade.⁶

In principle, a government could protect some industries in the domestic market while simultaneously providing sizeable export subsidies to other industries.⁷ In practice, however, the scope for such two-way protection is limited: 1) protective devices or export subsidies are meaningful only if they discriminate against some other activities, 2) protection of any sizeable number of activities is generally inconsistent with encouraging exports, because exporters require relatively easy access to international markets for their imports of raw materials and intermediate and capital goods; and 3) protection at the heights deemed necessary to induce import substitution activities usually requires a degree of control (to prevent smuggling, false invoicing and so on) sufficient to deter exports and to make the security of a protected domestic market sufficiently profitable to pull resources into import-substitution activities at the expense of potential exports.

Thus, most analysts would agree that an export-oriented strategy is one in which there is no bias of the incentive structure toward favoring production of import substitutes. What is probably not agreed upon is whether an export-led growth strategy is one that has no bias of the trade regime (and other incentives) or whether instead it is one that has a bias making production for export even more profitable than it would be at free trade. As will be seen below, there are a number of bases for believing that an export-oriented strategy generally entails less of a departure from free trade and equalized incentives than does an inner-oriented strategy.

Indeed, in what follows, there are two interpretations of almost every aspect of the discussion. On one hand, the factors that have apparently favored higher growth under export-oriented policies can be interpreted as precisely those that have been closer to an optimal resource allocation. Alternatively, they can also be interpreted as having been interventions which more correctly encouraged the "dynamic" factors that had previously been thought to be associated with protectionist policies and departures from free trade.⁸

3.2 Salient Characteristics

The essential characteristics of import substitution and export-oriented regimes have been examined elsewhere.⁹ As is well known, no two regimes are identical and each must be analyzed in the context of the totality of conditions, including especially those in factor markets, that prevail. Nonetheless, there are some fairly uniform features, and for present purposes what is required is to establish a few stylized facts that will be used in the discussion that follows.

The following differences will be assumed to exist as between import-substitution and export-oriented regimes:

- i) Import substitution regimes generally have licensing procedures for imports of manufactured producer goods, and importation is generally not possible until application for an import license has been made and acted upon. This process inevitably entails delays and paperwork. By contrast, export-oriented regimes permit ready access to imports of intermediate and capital goods, at least to exporters.
- ii) Import substitution regimes are characterized, *inter alia*, by overvalued exchange rates so that there is excess demand for foreign exchange (which is held in check by the licensing process already discussed). One important consequence is that domestic producers of import substitutes would receive a substantially lower price for their product in the world market than they do behind the wall of tariff and quantitative-restriction protection that is the hallmark of import substitution regimes. Because of this, it rarely pays an import-substitution firm to expand its production beyond that which can be sold in the domestic market. By contrast, export-oriented regimes have fairly realistic exchange rates and provide at least as much, if not more, incentive to sell abroad as to sell domestically, with the consequence that most firms base their capacity on expected domestic and foreign sales.

- iii) Generally, it requires virtual prohibition of imports to induce import substitution after the initial stages. Either imports are prohibited by the licensing system once domestic production capacity is in place, or a tariff is imposed at a sufficiently high level as to make the import alternative uneconomic. This results in widely differing levels of tariffs and tariff equivalents (nominal and effective) for different import substitution industries. Under export promotion, by contrast, most incentives are couched in such a way that they apply to all exporters and are based on either the dollar value of export sales or of value added in export sales. This results in a considerably greater degree of uniformity in the incentives confronting producers of different products.
- iv) Whereas import substitution regimes are characterized by quantitative restrictions or prohibitive tariffs for many commodities, export oriented policies generally entail the avoidance of quantitative restrictions and use of (generally low) tariffs with relatively simple procedures to permit exporters access to the international market at international prices for their inputs.

3.3 Relationship to Industrialization

One way in which import substitution and export-oriented trade strategies do not greatly differ is that the rate of industrial growth exceeds that of the rest of the economy under either strategy. In fact, output of primary commodities seems to grow more rapidly under export promotion than under import substitution, but the industrial growth rate is also higher. In some instances (notably Brazil), the switch to an export orientation has witnessed the emergence of major new primary commodities as exports, as well as the rapid expansion of manufactured exports. But the chief rationale for import substitution in many developing countries was to stimulate industrial growth, and it is with respect to the industrial sector that arguments over the alternative strategies are set forth here.

3.4 Disadvantageous Import Substitution or Advantageous Export Promotion?

An unresolved question concerns the degree to which export-oriented trade and growth strategies led to superior performance because of their advantages or because of the drawbacks of an import-substitution policy. It is possible to defend either view, and in a sense the two propositions are opposite sides of the coin. One can, for example, argue that import substitution policies very quickly resulted in the exhaustion of "easy" import substitution opportunities and that retardation of growth ensued as saving rates did not increase as rapidly as capital intensity of additional import substitution ventures. Thus, import substitution slows down. Alternatively, one can argue that exporting permits concentration in low-cost activities and becomes easier as entrepreneurs gain experience in international markets. Either way, what is really important is the contrast between the two, and in what follows, focus will be on the differential between alternative strategies.

There are some apparent paradoxes, however. Import substitution, which was rationalized in many countries as a means of reducing dependence on the international economy, actually seems to increase it as import substitution activities are import-intensive and require imports of both intermediate and capital goods to sustain production and growth. By contrast, export promotion seems to reduce dependence, in the sense that foreign exchange earnings grow rapidly, markets become increasingly diversified, and the economy increasingly flexible.

Similarly, import substitution is relatively easy to launch, as such initially simple and administratively straightforward measures as protection or import prohibitions provide adequate incentives for initial ventures. It becomes increasingly difficult and costly over time, however. By contrast, starting an export-oriented growth strategy is difficult and requires a combination of policies and determination on the part of the government that is difficult politically to achieve. However, once started, an export-oriented

growth strategy seems to have a number of selfreinforcing features. For example, under import substitution the profitability of producing for the domestic market, combined with the import intensity of import substitution, seems to combine to shift the demand for foreign exchange rapidly outward while simultaneously discouraging exports and thus shifting the supply of foreign exchange inward. Currency overvaluation in turn encourages intensification of import restrictions and further "foreign exchange shortage", while further import substitution requires increased supplies of foreign exchange to maintain flows of imported intermediate goods and raw materials and to permit new investments. Conversely, successful export promotion implies an upward shift in the supply of foreign exchange, thus permitting additional liberalization of the import regime and thus furthering the bias of the regime toward exports.

In discussing the reasons for differential performance below what is under discussion is the reasons why the cumulative effects of export promotion are to stimulate even more rapid growth while the cumulative effects of import substitution are to lead to a deceleration in the rate of growth. To observe that there are these differences in returns over time is not to explain why, which is the subject to which attention now turns.

4 Why is Performance Different?

There are three constellations of factors which bear on performance differentials. Their relative and absolute importance probably varies considerably between countries, both because of their different circumstances (such as size and resource endowment) and because of political and cultural differences which under either set of incentives affect both the ways in which politicians and bureaucrats behave and also the relations between government and business.

The three sets are: technological factors, determinants of economic behavior, and political-economic interactions. By technological factors are meant such considerations as the nature of production functions including the extent of indivisibilities and economies to scale, the presence of infant industry considerations and the spread in factor intensities across activities. Economic factors refer to such phenomena as peoples' responses to incentives and direct controls, the impact of industry structure on behavior, and the flexibility of the economy. Political-economic interactions relate to the determinants of policy, the factors which influence decision makers to alter their course, and the pressures which bear upon policy makers.

4.1 Technological Factors

Several properties of production functions may be important in leading to differential payoffs between export promotion and import substitution as strategies for industrialization and growth. These include the possibilities of exploiting scale economies and indivisibilities under alternative strategies; the differences in factor intensity between different production processes; the infant industry considerations; and possibly even the nature of interdependence among industrial activities.

4.1.1 Small Size of the Domestic Market

Casual inspection of population statistics can give a very misleading impression of the size of domestic markets for manufactured products in developing countries. Since many of both the technological and economic factors considered below are essentially based on the proposition that markets in developing countries are usually too small (for various reasons to be considered below) to make import substitution policies an economically viable alternative, it is useful to start with some calculations to illustrate just how small those markets are. Table 2 contains some computations.

Table 2 Illustrative Calculation of Relative Size of Markets,
1979

Country	Population (millions)	GNP (millions of U S dollars)	Nonagri- cultural Income	Value of Industrial Output
			(millions of U S dollars)	
Tanzania	18.0	4 680	2 152	608
Ethiopia	30.9	4 017	2 169	603
Bangladesh	88.9	8 001	3 520	1 040
Egypt	38.9	18 672	14 377	6 535
Philippines	46.7	28 020	21 295	9 807
Indonesia	142.9	52 873	37 011	17 448
South Korea	37.8	55 944	44 755	21 818
Turkey	44.2	58 786	45 265	17 048
Nigeria	82.6	76 322	59 531	34 345
India	659.2	125 248	77 653	20 966
Sweden	8.3	115 536	112 069	36 972
Brazil	116.5	207 370	184 559	78 801
Canada	23.7	228 468	219 329	75 394
United Kingdom	55.9	353 288	346 222	127 183
Germany	61.2	717 876	703 518	351 759
Japan	115.7	1 019 317	968 351	425 113
United States	223.6	2 376 868	2 305 571	808 135

Source: World Bank, World Development Report 1981.

For a group of relatively large developing countries and a few developed countries, the first column gives population size as of 1979. The second column gives an estimate of gross domestic product in U. S. dollars (obtained by multiplying the per capita income estimate in dollars by estimated population). The third and fourth columns are intended to provide some indication of the size of the market for various industrial products. To be sure, there is no perfect indicator of "size of market" for all industrial products. For some (e. g. fertilizers), the size of agricultural output may be preferable. But for a large number of commodities either the size of nonagricultural GNP (possibly as a measure of potential consumer demand taking into account Engels' Law) or the size of the industrial sector (possibly as an indicator of the size of market for investment goods and intermediate goods) may be crude proxies. But clearly, only for some consumer nondurables, such as matches, candles, clothing and footwear, can population size alone play a significant role.

As can be seen, even some of the populous developing countries have markets, however measured, that are relatively small by contrast with the developed countries. Bangladesh, for example, is estimated to have a non-agricultural income approximately 3 percent that of Sweden and less than 2 percent that of Canada, neither of which is regarded as an economy large enough to forego the benefits of specialization and international trade. Even Brazil, which has as large population and is in the middle-income country group, has a market apparently very similar in size to that of Canada. Despite a large population, the Indian market is estimated to be just over one quarter that of Brazil's based on the value of industrial output. Obviously for low income countries with smaller populations, the size of the domestic market is even smaller than that indicated for those included here.

For present purposes, the important consideration is that import substitution policies inherently tend to encourage expansion of any industry only up to the size of the domestic market (which itself may be smaller when commodities are higher priced). Be-

cause of the properties of import substitution regimes (as outlined in 3.2), expansion of an activity beyond the amount sold in the domestic market is seldom profitable. Many of the technological, economic, and political-economic considerations discussed below hinge crucially upon this proposition. It is of interest that one of the four features of growth theory that Chenery noted was the small-size of-domestic-market proposition.

4.1.2 How Important are Indivisibilities and Scale Economies?

For processes and activities that are highly divisible and of constant returns to scale, size of production run does not matter.¹⁰ And, indeed, there are industries, especially among consumer non-durables, in which there do not appear to be significant indivisibilities and in which small size of production may not be a barrier to economic viability.

There are other processes, however, where one or more indivisibilities are important, or where there are sizeable scale economies. There are often essential pieces of capital equipment (e. g. heavy presses) for which it requires a substantial volume of production before they are fully utilized. Likewise, there are many processes for which there is a minimum efficient size of plant (e. g. fertilizer, tires) or for which there are significant indivisibilities. In most metal casting, pressing, and shaping activities, for example, the die or mould must be changed whenever a new shape or form is to be produced. Because changing dies and moulds is time-consuming, the longer the length of the production run for a given metal product, the smaller the fixed costs relative to variable costs. Obviously, the importance of this consideration diminishes with the length of the production run, but given modern technology, the variety of shapes and forms is almost unlimited. With small sizes of domestic markets, the lengths of production runs can frequently be sufficiently small so that the time taken changing dies and moulds exceeds the time taken once they are in operation before another change must be made.

While import substitution policies generally entail reliance upon sales in the domestic market for the great preponderance of output and thus lead to short production runs and high average variable costs, an export-oriented strategy permits a developing country, regardless of the size of its domestic market, to establish economically efficient sizes of plants and to maintain long production runs. Thus, the limitations of a small size of domestic market can be largely overcome, at least for traded goods, in an export-oriented economy. It should be noted, too, that under an export-oriented strategy producers in a small developing country can obtain those specialized products which are not produced domestically at internationally competitive prices. By contrast, under import substitution regimes, either there are substantial delays in obtaining items not domestically produced because of import licensing procedures and restrictions or producers must obtain their items (possibly of less than optimal specification) from high-cost (possibly monopolistic) domestic sources.

4.1.3 Differing Factor Intensities

It is widely recognized that developing countries are usually relatively well endowed with unskilled labor and that the rate of human and physical capital formation (broadly defined) is the constraint upon expansion of the industrial sector. If most industrial activities had fairly similar factor proportions, this constraint would act equally to limit industrial growth under both trade strategies unless one resulted in more rapid factor accumulation than the other. If, however, factor proportions differed significantly among industrial sectors, export promotion would permit a more rapid growth of value added and employment of unskilled labor in industry for the same rate of human and physical capital formation. In particular, if there is a wide range of factor intensities among industrial processes, countries whose economies are oriented toward the international market will witness fairly rapid expansion of the relatively unskilled-labor-using industries while under import substitution the limits of expansion of those industries

will be largely determined by the rate of growth of domestic demand once production has expanded sufficiently to replace imports; thereafter growth can proceed only at the rate of growth of real income times the income elasticity of demand for the commodity in question (unless costs and prices are falling).

While there are meaningful estimates of the overall variation in factor intensities among manufacturing and industrial processes, the wide variation in incremental capital-output ratios among countries is at least suggestive that there may be significant differences. For the 1960-73 period, they ranged from 1.7 to 2.5 for Korea, Singapore and Taiwan in contrast to numbers such as 5.5 and 5.7 for Chile and India (see Balassa 1978b for details). When Brazil switched trade strategies, the incremental capital-output ratio fell from 3.8 for 1960-66 to 2.1 in 1966 to 1973. While there are many possible reasons for these differences,¹¹ the possibility of significant differences in factor proportions, and exporters' abilities to expand production of items with appropriate factor intensities, may be of considerable importance.

4.1.4 Infant Industry Considerations

The infant industry argument has a long history in economic thought and is well known. It essentially rests upon the proposition that new, or "infant" industries may generate externalities and exhibit decreasing costs over time in such a way that 1) it will not pay any individual firm to undertake the "learning investment" and incur the initial losses under laissez-faire conditions, but 2) the early losses in these activities will be repaid to society as a whole with an adequate rate of return if they are undertaken.¹²

The infant industry argument, in one form or another, has been extensively used as a basis for defending intervention, and especially protection, in developing countries, on dynamic grounds. Trade theorists long pointed out that protection was an inefficient instrument even in the presence of infant industries, but they

based their case on the proposition that production could be encouraged through the use of a production subsidy (or equivalently a tax on non-infant industries) with the same benefits and without the consumption costs that are necessarily incurred with protection. Given the experience of the export-oriented developing countries, there are important grounds for believing that, if there are infant industries, they can once developed be expanded well beyond the size of the domestic market. Indeed, if the infant industry argument were selectively valid, and/or if the nature of infant industries was such that there was an appropriate sequencing of their development, the encouragement of those industries to expand well beyond the size of the domestic market would be crucial to realization of the available returns from the infant.

Stated another way, if there were an infant industry whose development could result in large-scale cost reductions, restriction of the industry's output to the quantity demanded in the domestic market would necessarily reduce the dynamic gains from development of the industry to far smaller magnitudes than was possible if the industry could be induced to export. Viewed in this light, there is nothing in the infant industry argument that indicates that import substitution, or more generally protection, is preferable to an unbiased or export oriented trade-and-growth strategy.

The experience of the successful exporting countries is suggestive that there may have been gains, well beyond the size of the domestic market, in expanding many industries selectively. Had the resources devoted to increasing the size of production run in individual firms instead had to be devoted to other undertakings, it need not be argued that those activities would necessarily have been ones with comparative disadvantage in the long run: it would suffice if additional output in already-started industries could have achieved further scale economies or exploited further indivisibilities in the production process.

4.1.5 Interdependence and Quality

Efficient production of most manufactured goods entails the utilization of a wide variety of inputs. For all but the simplest of processing activities, the production process is dependent upon standardized inputs, and gradations in quality or deviations from specifications raise producers' costs in important ways. Countries adopting inner-oriented trade strategies have generally (because of foreign exchange shortage and in order to enforce a degree of protection) required producers to obtain their intermediate inputs from domestic producers if at all possible. The mechanism to ascertain whether domestic sources were available has usually been sufficiently restrictive so as to lead to long delays in obtaining necessary import licenses. The consequence has been that domestic producers have generally been restricted under import substitution regimes to obtaining many of their inputs domestically. This in turn has led to a rigidity of the production process forced by interdependence: insofar as individual producers have not achieved satisfactory standards of quality control, their products have raised costs in using firms.

The fact that the demands for intermediate inputs are generally fairly specialized has in turn implied that there were few domestic producers of any particular item. Consequently, the interdependence of the economy has resulted in a situation where production stoppages (or even inadequate quality of inputs) in one sector of the economy very quickly affect other firms and industries. These phenomena, in turn, lead to high costs for users of the intermediate goods in question.

Under a liberal trade regime, exporters have access to international markets for their intermediate inputs. While they purchase domestically when available, their freedom of choice permits them to access the cheapest source (including considerations of quality, reliability, and delivery date), thus reducing their own production costs. That this may be important is suggested by the fact that in South Korea, even with her relatively labor-intensive consumer

goods exports in the 1960s, approximately 50 percent of the value of exports represented inputs of intermediate goods and raw materials (see Krueger 1979 for details).

4.2 Economic Behavior

If the technological factors discussed in 4.1 were of sufficiently large magnitude, they alone could explain differences in performance under alternative policies. Little evidence is available as to their relative importance, however. The same may be said for those influences on economic behavior discussed here.

The point of departure is once again the relatively small size of most domestic markets. That implies that, when industries are encouraged by protection, there will either be very few firms producing a given product line or that firms will be of very small size. Any policy encouraging competition via increasing the number of firms in a given line of activity will result in reduced size of each firm.¹³ Many import-restricting mechanisms indeed preclude entry and reduce the possibility of competition among firms, regardless of the number in the industry. To cite but one example, a frequently-encountered licensing mechanism allocates intermediate goods and raw material imports to firms in proportion to their share of industrial capacity or output. To the extent that outputs and inputs are in more or less fixed proportions and resale of inputs is either costly or prohibited, these mechanisms tend to render market shares fairly rigid, thus inducing a lack of competition among firms. That, together with the small size of market and the limitation of expansion of individual industries to the rate of growth of the domestic market, generally implies that growth rates of most firms and industries will be fairly uniform: changing shares come about more slowly than they would in a more competitive environment.

The absence of competition itself probably cuts down the extent to which individual entrepreneurs concern themselves with engineering and economic efficiency: some part of their monopoly

rents may be taken out in the form of the "quiet life". Moreover, to the extent that competitive mechanisms are weakened, relatively high-cost firms will lose market share more slowly than they would under alternative market structures while low-cost firms will expand more slowly. Finally, insofar as each industry's growth is linked to the overall growth of the economy and differs only when income elasticities of demand differ, there is little scope for changing the shares of individual industries in overall output.

By contrast, when industrial growth is based upon the international market, competition is provided in that market itself and firms can be of optimal economic size without regard to the size of domestic market. Low-cost firms in individual industries can expand at their desired rate unconstrained by raw material availability or the price elasticity of domestic demand for the product, thus leading to cost reductions and output expansions for industries greater than that observed under more slowly-changing shares even for given costs in individual firms. Moreover, industries with comparative advantage can increase their shares of industrial output at a more rapid rate when they can profitably export than when their growth is restricted to their share of the (slowly growing) domestic market.

Thus, to the extent that competitive markets induce lower cost activities in individual firms, there is a presumption that an export-oriented trade strategy will induce greater economic and engineering efficiency. For any given distribution of costs within an industry, the possibility of exporting permits more rapidly changing market shares, and hence a more rapid increase in the industry's competitiveness. Finally, changing individual industries' shares of industrial output can further accelerate the average rate of increase of factor productivity and of the industrial sector.

Acquiring evidence as to the quantitative importance of these components of industrial growth will be difficult and time-consum-

ing. Nonetheless, in seeking to understand the reasons why outer-oriented trade strategies have resulted in more rapid growth of output, it seems clear that they warrant further investigation.

4.3 Policy Formulation

It is widely recognized that government policy instruments which "fight the market" are less likely to achieve the intended results than those which create incentives for individuals to carry out desired courses of activity. Nonetheless, there seems to be a universal temptation for politicians to want to regulate economic activity and to pass laws rather than to create incentives.

However, there are a number of obvious limits to the extent to which quantitative controls can be imposed in the context of export-oriented policies. Moreover, the feedback to policy makers signalling that mistakes may be being made is almost certainly much stronger under an export-oriented policy stance than it is under import substitution. It is quite possible that the constraints upon the nature of policies, and the quicker feedback to policy makers as to the effects of their policies, are at least as important in explaining the success of outer-oriented regimes as are the economic and technological factors considered above, although it is evident that quantifying their role would provide a significantly greater research challenge.

Turning first to the limits upon quantitative restrictions, it was already stated that exporters must have ready access to the international market for their purchased inputs. Provision of that access substantially reduces the scope for quantitative restrictions upon any category of imports: if quantitative restrictions are highly restrictive, the reward for evading them will be substantial. When it is substantial, enforcement is possible only with fairly detailed scrutiny of all incoming goods. That scrutiny, in turn, is inconsistent with the ready access required. Thus, the fact that some imports are intermediate goods used by exporters imposes a limit on the height of protection accorded to any productive activity.¹⁴

Moreover, an export-oriented set of policies by their nature rewards those who export and is nondiscriminatory. In and of itself, that feature implies that there will be considerably less variation in the protective- or subsidy- equivalents of export incentives than usually arises from the incentives for import substitution. Since rewards are inherently based upon performance, which in turn is highly correlated with the social profitability of the activity, there is a greater built-in tendency toward less variability in incentives under export promotion than under import substitution. In addition to more constraints upon the size of mistakes, there is also a greater likelihood that mistakes will be rectified sooner. This is because there is likely to be quicker and more self-evident feedback under an export-oriented strategy. Since even the most unrealistic policy maker recognizes that foreigners cannot be required to accept domestically-produced goods, any decision to encourage a particular line of exports which happens to be uneconomic will in fact be accompanied by large losses, either to the exporter who will then contrast his production, or to the government, if it is inducing exports by subsidies. Either way, the costs are highly visible and provide a feedback that policy is inappropriate that is far stronger than an implicit or explicit tariff of comparable magnitude provides under import substitution regimes.

These considerations pertain to broader classes of policy as well. In particular, the maintenance of an unrealistic exchange rate is possible under an outer-oriented regime only if export subsidies continue to make exporting profitable. But if overvaluation of the currency increases, the cost of the subsidies also grows. As with other measures, these self-evident costs provide a feedback and incentives for some government officials (those in the Treasury and those attempting to expand their expenditures on other items) to support moves toward a realistic exchange rate.

One other potentially important, but probably unmeasurable, aspect of feedback should be noted: under import substitution and direct controls over imports, firms have built-in incentives to

misrepresent their activities in ways that will induce the receipt of more import licenses and other permissions and privileges. Government officials naturally must suspect information presented to them, and thus require verification or check producers' claims before acting on their applications. Under an export-oriented regime, the incentive to misrepresent performance is far smaller, as is the scope for so doing: surrender of foreign exchange proceeds is sufficient proof of exports and a fairly realistic exchange rate provides little incentive for misrepresenting performance. Moreover, since most developing countries are relatively small in the world market, there is a smaller tendency for government and industry to view each other with suspicion, and a greater tendency to view their joint efforts as a positive sum game vis-à-vis the rest of the world. This in and of itself seems to generate relatively more straightforward relations between government and business in export-oriented economies.

5 Summary and Conclusions

Ironically, the same dynamic factors which were earlier thought to be the basis for a "growth theory" prescribing divergences from free trade in fact upon inspection if they exist at all appear to be factors which tend to favor reliance upon the international market in the process of economic growth.

Whether there are dynamic factors, and how important each of them may be, is still an open question. The experience of the outer-oriented countries certainly suggests that something more than the direct impact of exports was at work in accounting for the superior growth performance. When one examines critically some of the bases upon which that superior performance may have rested, most of the factors earlier thought to have justified protectionist regimes are in fact arguments, if for intervention at all, for bias toward exporting as contrasted with production for a protected domestic market.

Whether export-oriented countries have performed better because their regimes are de facto closer to a free trade resource allocation optimum, or whether instead their superior performance is the result of their ability to capture the dynamic gains associated with an export oriented strategy is still an open question. Investigation of it will require careful empirical analysis of the various hypotheses sketched out in Sects 4.1, 4.2, and 4.3. What seems certain is that the existence of dynamic factors in no way creates a presumption that growth induced via protection of the domestic market will be in any way superior to growth under neutral or outer-oriented trade strategies.

Insofar as the superior results achieved under export orientation have been the result of the behavioral differences sketched out in 4.2, rather than the technological factors sketched in 4.1, the fact of openness itself, rather than of export growth, is a critical ingredient for rapid increases in output and productivity. This consideration is significant in evaluating the prospects for future growth of developing countries in the context of a potentially slower expansion of world trade: if it is openness itself which conveys benefits due to competition and the nature of policy instruments employed, the gains from an export orientation will be almost as great (provided the world economy remains open) with slower growth of world trade as with more rapid growth. To be sure, growth potential of developing countries will inevitably be even greater with more rapid growth of the international economy. Nonetheless, if the major gains from an outer-oriented trade strategy come about because of the effects of that strategy on the domestic economic structure, the costs to developing countries of a deceleration in the growth of world trade will be far smaller than if the technological hypotheses explaining the differential in growth performance under alternative strategies is correct.

Obviously, both the technological and the behavioral hypotheses (as well as those pertaining to economic policy) have relevance, and the important questions center on their quantitative magnitude. While much remains to be learned, the interrelationships of an

export-oriented trade strategy with the entire structure of domestic economic activity are such as to warrant the conclusion that far more is at work in bringing about rapid growth under an outer oriented trade strategy than simply the fact of an increased share of exports in GNP.

Notes

¹ Trade theory has proceeded in three stages. In the first stage, the gains from free trade were demonstrated almost without qualification. In the second stage, theorists derived the conditions in terms of perfect markets under which free trade would be optimal. In the third stage, theorists derive optimality conditions in terms of equality between domestic and international marginal rates of transformation and then proceed to show circumstances under which a trade intervention might improve welfare contrasted with laissez-faire in the presence of inequality between transformation rates. In general, it can be shown that if domestic and international marginal rates of transformation are not equalized due to domestic market imperfections, intervention in the trade sector will always be at best a second-best welfare solution contrasted with a domestic intervention directed toward the source of the distortion.

² For analysis of the South Korean experience, see Frank, Kim and Westphal, Krueger, and Westphal and Kim. South Korea moved away from the export-oriented model and began developing heavy industry in the late 1970s. The consequences for the economy were disastrous and, at the time of writing, the government is attempting to move back to the earlier growth path.

On Taiwan, see Fei, Ranis and Kuo and Liang and Liang. On Hong Kong, see Lin, Mok and Ho, Riedel, and Sung. For Brazil, see Carvalho and Haddad and Langoni.

³ See, among others, Balassa (1978a), Michaely and Krueger (Ch 11).

⁴ There is, however, agreement as to what an export-oriented strategy is not. In particular, it is not a set of ad hoc, specific policies, encouraging designated industries that are highly protected in the domestic market to sell some (usually small) fraction of their output abroad in return for continuing to receive their privileged position. Most highly protectionist countries adopt some incentives to induce their protected industries to export at least to some extent. That specific inducement, which is often nothing other than a tax charged on domestic producers to offset part of their monopoly position in the domestic market, is at best a partial offset to the overall discrimination of incentives in favor of selling in the domestic market.

⁵ In practice, several distinctions need to be drawn. There is, first of all, discrimination by product which occurs when some commodities receive higher protection or larger subsidies than others. There is, secondly, discrimination by place of sale even for the same commodity. Although both of these types of discrimination occur (with the export oriented countries having discriminated in favor of overseas sales contrasted with home sales of the

same commodity) the discussion in this essay will proceed as if the only form of discrimination was import barriers (which would discriminate against exportable commodities) or export subsidies (which would discriminate against import-competing commodities). Of course, if an exportable were protected in the domestic market and subsidized in like amount, there would be discrimination in favor of the commodity and no discrimination by geographic destination.

⁶ It is highly improbable that individual developing countries have monopoly power in their imports of manufactured goods, which are the ones which have been subject to protection. The practice of regarding international prices as correctly reflecting the international marginal rate of transformation will be followed throughout this essay. If the readers believe there are instances of monopoly power in trade, the statements can easily be amended to provide for optimal tariffs.

⁷ Assume all exports were accorded subsidies as a percentage of f. o. b. price at the same proportionate rate as the ad valorem uniform rate of protection on all imports. Then, the resulting resource allocation would be the same as with free trade at a unified exchange rate provided that no distortions were introduced by capital flows at a different rate. In practice, exports are encouraged by a variety of devices (tax exemptions, favored access to rationed credit, and so on) but the subsidy equivalent of these devices can be calculated, so that it simplifies exposition to refer to these as subsidies. There are also interesting questions concerning the side effects of some export inducements, including credit rationing, in inducing nonoptimal choice of techniques. These issues are ignored here.

⁸ There is an interesting contrast in the economic policies of the successful exporters. Singapore appears to have been quite interventionist while Hong Kong was genuinely laissez-faire, with Brazil, Taiwan and South Korea somewhere in between. As will be discussed below, however, to the extent that there was intervention it generally was in the form of providing incentives rather than in imposing direct controls. Likewise, all the successful countries seem to have provided most incentives on an across-the-board basis so that eligibility for rewards was determined by total export performance and not differentiated by commodity groups.

⁹ On import substitution regimes, see Bhagwati. On export-oriented regimes, see Balassa 1978a.

¹⁰ Even here, the statement must be qualified insofar as failure to expand one group of activities may require that resources be employed in other, less viable, activities.

¹¹ Some of the economic-behavioral factors suggested in Sect 4.2 point to the possibility that productivity may increase more rapidly in all industries under an export promotion strategy than under import substitution. To the extent that those factors are empirically important, they, too, would result in a lower observed incremental capital-output ratio.

¹² See Baldwin for an excellent analysis of the conditions under which the infant industry argument might be valid.

¹³ It is in principle conceivable that with highly elastic price elasticity of demand, the reduction in price accompanying the elimination of monopoly power might permit an increase in the average size of firm, production run, or whatever the relevant unit for achieving economies was.

¹⁴ A partial exception to this statement is luxury consumer goods which are not domestically produced. Some countries, most notably Korea, have imposed relatively high duties on imports of those goods with the intent of taxing luxury consumption heavily. Since those goods are not usually used in the production process, and domestic production is not undertaken, protection or import prohibitions on those items seems not to have a very high cost.

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