THE PROCESS OF INDUSTRIAL DEVELOPMENT
AND ALTERNATIVE DEVELOPMENT STRATEGIES

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The author alone is responsible for the contents of this essay that should not be interpreted to reflect the views of the World Bank. Also, references to Taiwan are made without prejudice to its political status.
The invitation to present the Graham Memorial Lecture at Princeton University provided me with the welcome opportunity to review and to summarize my ideas on the process of industrial development and on industrial development strategies. This essay retains the format of the lecture and it eschews footnote references. A list of my publications, from which the empirical evidence cited in the essay is derived, is contained in the Appendix.

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I. Introduction

The Subject Matter

In the title of the essay, the use of the expression "industrial development" rather than "industrialization" is meant to convey the idea that the development of manufacturing industries is part and parcel of overall economic development. At its earlier stages, industrial development is contingent on demand and savings generated in the primary sector; subsequently, intersectoral flows assume importance and protection and other incentives to manufacturing will affect the profitability of primary activities.

The expression "process" in the title emphasizes the element of continuity in industrial development as well as the idea that countries may proceed through similar stages in the course of their industrialization. While the concept of "stages" has fallen into disuse, and even disrepute, it is a convenient way to characterize the pattern of industrial development until countries become full-fledged industrial nations.

The use of the expression "process" does not mean to convey the idea that, once begun, industrial development would continue uninterrupted. There are, in fact, "accidents de parcours" that may halt or reverse the process. Such accidents may be due to external causes, such as the theft of a few specimens of the Hevea plant at the start of the century, leading to the production of rubber in the South East Asia, that cut short the export boom in Brazil and reduced thereby demand for industrial products.

But, more often than not, the "accident de parcours" are due to inappropriate policies. More generally, the results obtained will depend on the policies applied. This will be the case, in particular, after the completion of the first stage of import substitution. The reference to "alternative develop-
ment strategies" in the title of the essay reflects my view as to the importance of the choice of policies for industrial and economic development.

The Role of Objective Factors

This is not to deny the role of objective factors, such as country size, natural resource endowment, location, preferential ties, foreign investment, foreign aid, education, and political and social conditions, in the process of industrial development. At the same time, the importance of these factors should not be exaggerated.

The size of the country will influence the scope for the exploitation of economies of scale and the extent of domestic competition, and hence the degree to which inward-oriented industrial development may proceed without incurring excessive costs. But a large country may unduly postpone policy reform while a small country will be under greater pressure to carry out reforms.

In this connection, reference may be made to the positive correlation observed between the size of domestic markets and tariffs in the present-day industrial countries at their early stages of industrial development. While the United States and Russia had the highest rates of protection at the time of their early industrial development, the small countries of the Benelux and Scandinavia were traditionally free traders.

The correlation between country size and protection is far from perfect in the developing countries of today, indicating the importance of policy choices. Thus, Brazil, the developing country with the largest domestic market, turned towards promoting manufactured exports in the mid-sixties as continued import substitution encountered market limitations and led to a slowdown of
industrial and economic growth. In turn, a large developing country, India, a medium-size country, Chile, and a small country, Uruguay, continued with inward-oriented policies during the period preceding the oil crisis.

Also, contrary to the oft-expressed view that seeks to explain the adoption of an outward-oriented development strategy by Far Eastern developing countries in terms of market size, these countries are hardly small as far as developing countries are concerned. Thus, Korea may be considered a large developing country, having a population nearly one-half larger than Argentina; Taiwan has a population more than one-half larger than Chile; and Hong Kong more than one-half larger than Uruguay, with Singapore not far behind.

The availability of natural resources will benefit industrial development by providing domestic markets and investible funds for manufacturing industries as well as materials for further transformation. It is, however, a mixed blessing as the availability of primary exports may lead to the postponement of domestic policy change; high wages in natural resource industries raise wages and hence production costs in manufacturing industries; and natural resource exports give rise to an unfavorable exchange rate for industrial activities. While the Kuwait syndrome represents a rather special case, oil earnings have adversely affected the international competitiveness of manufacturing industries in Venezuela and, more recently, in Mexico.

In reference to the success of Denmark and Norway in transforming their export structure, it has been suggested that these countries have benefited from their favorable geographical location, with nearby markets for manufactured goods in Western Europe. However, Japan did well in exporting
manufactures, notwithstanding its distant location as did subsequently Korea
and Taiwan that had more success in exporting to the United States than to the
nearby Japanese market.

Location will be relevant for regional economic integration. But
regional integration may lead to the establishment of a high cost area as
it happened in Central America; at any rate, integration efforts have met
with little success in developing countries. And, countries as different
as Brazil and Ivory Coast see the large markets of the industrial countries
to be more promising than regional markets. Finally, Korea and Taiwan have
reached high growth rates of exports and GNP without having access to regional
markets.

Preferential ties to industrial countries, too, are said to provide
advantages for exporting manufactured goods. A better formulation would be
to speak of potential advantages as the Philippines in the first half of
the century and, more recently, the former French territories participating
in the Lome convention have not been successful in exploiting the opportunities
provided by preferential access. In turn, contrary to popular misconceptions,
Korea and Taiwan have not enjoyed preferential access to the U.S. market.

Also, foreign direct investment has been of much greater importance
in Latin America than in the Far East. With the exception of Singapore,
Far Eastern developing countries have by-and-large followed the Japanese
pattern in relying on indigenous entrepreneurship. At any rate, it is not
only the volume but the direction of foreign direct investment that matters.
While investment in export industries will contribute to economic growth,
foreign direct investment in industries operating behind high protection may
entail a net loss of foreign exchange for the host country. This will be the
case if the foreign exchange cost of materials and machinery, augmented by the
repatriation of profits, exceeds the cif import value of the product.
In the case of Korea and Taiwan, foreign aid should be set against defense spending it was to a large degree destined to finance. In fact, since the late fifties in Taiwan, and since the mid-sixties in Korea, defense spending has exceeded foreign aid by an increasing margin. At the same time, the contribution of foreign aid to economic development will depend on the form it takes as the tying of aid tends to raise industrial costs and food aid may hinder agricultural development.

Education has further been cited as a major factor contributing to the economic success of the Far Eastern countries. But, measured by the Harbison-Myers index, Chile and Uruguay had high education levels in the nineteen-sixties and nevertheless exhibited poor economic performance. At any rate, the level of education is the result of investment in human capital, which is affected by government policies.

Political and social conditions may also assist or hinder industrial development. At the same time, there are successful, as well as unsuccessful, economic performers among both dictatorships and democracies. Furthermore, references to social conditions often become ex-post rationalizations. Thus, while the growth successes of Korea and Taiwan have come to be attributed to the Confucian ethic, twenty years ago AID administrators ridiculed the notion that the commercial-minded Taiwanese would become successful producers and exports of manufactured goods and only fifteen years ago Korea was considered a hopeless case.

II. Early Stages of Industrial Development

The Generation of a Surplus in the Primary Sector

Industrial development generally begins in response to domestic demand generated in the primary sector that also provides investible funds for manu-
facturing industries. Demand for industrial products and investible savings represent possible uses of the surplus generated in agriculture, understood in a larger sense to include crops, livestock, fisheries, and forestry, or in mining. The surplus is generated as primary output comes to exceed subsistence needs and, more often than not, it is associated with export expansion.

At the same time, the effects of primary exports on industrial development depend to a considerable extent on input-output relationships and on the disposition of incomes generated in the export sector. Infrastructure in the form of ports, railways, and roads are often important inputs for primary exports, and their availability may contribute to the development of industrial activities.

The disposition of incomes generated in the export sector is affected by ownership conditions. In the case of foreign ownership, a substantial part of the surplus may be repatriated, albeit taxing the earnings of foreign capital does add to domestic incomes. There are leakages in the form of investing and spending abroad, as well as consuming imported luxuries, in the case of domestic ownership in a system of plantation-type agriculture and large-scale mining, too. And, as Douglas North noted, plantation owners have little incentive to finance human investment in the form of general education.

By contrast, in cases when family-size farms predominate, demand is generated for the necessities and the conveniences of life as well as for education. Such demand contributes to the development of domestic industry that enjoys "natural" protection from imports in the form of transportation costs. It further contributes to the accumulation of human capital that finds use in manufacturing industries.
The process of industrial development may be accelerated if natural protection is complemented by tariff or quota protection. This last point, in turn, leads me to the discussion of the next step in the industrialization process: the first, or "easy" stage of import substitution.

The First Stage of Import Substitution

With the exception of Britain at the time of the Industrial Revolution, and, more recently, Hong Kong, all present-day industrial and developing countries protected their incipient manufacturing industries producing for domestic markets. There were differences, however, as regards the rate and the form of protection. While the industrial countries of today relied on relatively low tariffs, a number of present-day developing countries applied high tariffs or quantitative restrictions that limited or even excluded, competition from imports.

At the same time, high protection discriminates against exports through the explicit or implicit taxation of export activities. Explicit taxation may take the form of export taxes while implicit taxation occurs as a result of the effects of protection on the exchange rate. The higher the rate of protection, the lower will be the exchange rate necessary to ensure equilibrium in the balance of payments, and the lower the amount of domestic currency exporters receive per unit of foreign exchange earned.

The adverse effects of high protection are exemplified in the case of Ghana, where import prohibitions encouraged inefficient, high-cost production in manufacturing industries; taxes on the main export crop, cocoa, discouraged its production; and other crops were adversely affected by the unfavorable
exchange rate. Ghana's neighbor, the Ivory Coast, in turn, followed a policy encouraging the development of both primary and manufacturing activities. As a result, it increased its share in cocoa exports, developed new primary exports, and expanded manufacturing industries.

Differences in the policies applied may largely explain that, between 1960 and 1978, per capita incomes fell from $430 to $390 in Ghana, in terms of 1978 prices, as compared to an increase from $540 to $840 in the Ivory Coast. This has occurred notwithstanding the fact that the two countries have similar natural resource endowments and, at the time of independence, Ghana had the advantage of a higher educational level and an indigenous civil service corps.

Indeed, there is no need for high protection at the first stage of import substitution, entailing the replacement of the imports of nondurable consumer goods, such as clothing, shoes, and household goods, and of their inputs, such as textile fabrics, leather and wood, by domestic production, since these commodities suit the conditions existing in developing countries that are at the beginning of the industrialization process. The commodities in question are intensive in unskilled labor; the efficient scale of output is relatively low and costs do not rise substantially at lower output levels; production does not involve the use of sophisticated technology; and a network of suppliers of parts, components, and accessories is not required for efficient operations.

The relative advantages of developing countries in these commodities explain the frequent references made to the "easy" stage of import substitution. At the same time, to the extent that the domestic production of these
commodities generates external economies in the form of labor training, the
development of entrepreneurship, and the spread of technology, there is an
argument for moderate infant industry protection or promotion.

III. Inward-Oriented Industrial Development Strategies

The Choice of Second-Stage Import Substitution

In the course of first-stage import substitution, domestic production
will rise more rapidly than domestic consumption, since it not only provides
for increases in consumption but also replaces imports. The rate of growth
of output will however decline to that of consumption, once the process of
import substitution has been completed.

Maintaining high industrial growth rates, then, necessitates turning to
the exportation of manufactured goods or moving to second-stage import substitu-
tion. This choice, in fact, represents alternative industrial development
strategies that may be applied after the completion of the first stage of
import substitution. I will first consider second-stage import substitution,
representing the application of an inward-looking industrial development
strategy, and will subsequently examine an outward-oriented strategy that does
not discriminate against exports, with favorable effects on the exporting of
manufactured goods.

Second-stage import substitution was undertaken in the postwar period
in several Latin American countries, some South Asian countries, in particu-
lar India, as well as in the European Socialist countries. In Latin America,
it responded to the ideas of Raul Prebisch, in whose view adverse foreign
market conditions for primary exports and lack of competitiveness in manu-
factured exports would not permit developing countries to attain high rates
of economic growth by relying on export production. Rather, Prebisch suggested
that these countries should expand their manufacturing industries oriented towards domestic markets. This purpose was to be served by industrial protection that was said to bring additional benefits through improvements in the terms of trade.

Similar ideas were expressed by Gunnar Myrdal. Myrdal influenced the policies followed by India, which were also affected by the example of the Soviet Union that chose an autarchical pattern of industrial development. And, the European socialist countries faithfully imitated the Soviet example; they attempted to reproduce the Soviet pattern in the framework of much smaller domestic markets and also lacking the natural resource base of the Soviet Union.

Second-stage import substitution involves the replacement of the imports of intermediate goods and producer and consumer durables by domestic production. These commodities have rather different characteristics from those replaced at the first stage. Intermediate goods, such as petrochemicals and steel, tend to be highly capital-intensive. They are also subject to important economies of scale, with efficient plant size being high compared to the domestic needs of most developing countries and costs rising rapidly at lower output levels. Moreover, the margin of processing is relatively small and organizational and technical inefficiencies may contribute to high costs.

Producer durables, such as machinery, and consumer durables, such as automobiles and refrigerators, are also subject to economies of scale. But, in these industries, economies of scale relate not so much to plant size as to horizontal and to vertical specialization, entailing reductions in
product variety and the manufacture of parts, components, and accessories on an efficient scale in separate plants. Reducing product variety will permit longer production runs that lower production costs through improvements in manufacturing efficiency along the "learning curve," savings in expenses incurred in moving from one operation to another, and the use of special-purpose machinery. Horizontal specialization is however limited by the smallness of domestic markets in the developing countries. Similar conclusions apply to vertical specialization that leads to cost reductions through the subdivision of the production process among plants of efficient size.

In this connection, reference may be made to General Motors that has ten thousands of subcontractors, each producing a part or component. This extended division of the production process has permitted General Motors to produce at a substantially lower cost than its U.S. competitors. Some years ago, Martin Shubik reached the conclusion that, without antitrust legislation, only General Motors would survive in the United States and predicted the disappearance of several small American car producers. This has in fact occurred since and, without federal support, Chrysler would have met a similar fate.

At the same time, the production of parts, components, and accessories has to be done to precision for consumer durables and, in particular, for machinery. This, in turn, requires the availability of skilled and technical labor and, to a greater or lesser extent, the application of sophisticated technology.

Given the relative scarcity of physical and human capital in developing countries that completed the first stage of import substitution, they are at a disadvantage in the manufacture of highly physical-capital intensive inter-
mediate goods and skill-intensive producer and consumer durables. In limiting
the scope for the exploitation of economies of scale, the relatively small size
of their national markets also contributes to high domestic costs in these
countries. At the same time, net foreign exchange savings tend to be small
because of the need for importing materials and machinery.

The domestic resource cost ratio relates the domestic resource cost
of production, in terms of the labor, capital, and natural resources utilized,
to net foreign exchange savings (in the case of import substitution) or net
foreign exchange earnings (in the case of exports). In the absence of serious
distortions in factor markets, the domestic resource cost (DRC) ratio will
be low for exported commodities. It is also relatively low for consumer non-
durables and their inputs, in the production of which developing countries
have a comparative advantage. However, for the reasons noted beforehand,
DRC ratios tend to be high in the manufacture of intermediate goods and producer
and consumer durables.

Correspondingly, the establishment of these industries to serve narrow
domestic markets is predicated on high protection. Also, rates of protection may
need to be raised as countries "travel up the staircase," represented by
DRC ratios, in embarking on the production of commodities that less and less
conform to their comparative advantage. This will occur as goods produced
at earlier stages have come to saturate domestic markets. High protection,
in turn, discriminates against manufactured and primary exports and
against primary activities in general.
Characteristics of Inward-Oriented Development Strategies

In the postwar period, several capitalist countries in Latin America and in South Asia and the socialist countries of Central and Eastern Europe adopted inward-oriented industrial development strategies, entailing second-stage import substitution. Capitalist countries generally utilized a mixture of tariffs and import controls to protect their industries whereas socialist countries relied on import prohibitions and on industry level planning.

Notwithstanding differences in the measures applied, the principal characteristics of the industrial development strategies applied in the two groups of countries show considerable similarities. To begin with, while the infant industry argument calls for temporary protection until industries become internationally competitive, in both groups of countries protection was regarded as permanent. Also, in all the countries concerned, there was a tendency towards what a Latin American economist aptly described as "import substitution at any cost."

Furthermore, in all the countries concerned, there were considerable variations in rates of explicit and implicit protection among industrial activities. This was the case, first of all, as continued import substitution involved undertaking activities with increasingly high domestic costs per unit of foreign exchange saved. In capitalist countries, the generally uncritical acceptance of demands for protection contributed to this result, when, in the absence of price comparisons, the protective effects of quantitative restrictions could not even be established. In socialist countries, the stated objective was to limit imports to commodities that could not be produced domestically, or were not available in sufficient quantities, and no attempt was made to examine the implicit protection the pursuit of this objective entailed.
In both groups of countries, the neglect of intraindustry relationships further increased the dispersion of protection rates on value added in processing, or effective protection, with adverse effects on economic efficiency. In Argentina, high tariffs imposed on caustic soda at the request of a would-be producer made the theretofore thriving soap exports unprofitable. In Hungary, the high cost of domestic steel, based largely on imported iron ore and coking coals, raised costs for steel-using industries and large investments in the steel industry delayed the substitution of aluminum for steel, although Hungary had considerable bauxite reserves.

Countries applying inward-oriented industrial development strategies were further characterized by the prevalence of sellers' markets. In capitalist countries, the size of national markets limited the possibilities for domestic competition in industries established at the second stage of import substitution while import competition was practically excluded by high protection. In socialist countries, the system of central planning applied did not permit competition among domestic firms or from imports and buyers had no choice among domestic producers or access to imported commodities.

The existence of sellers' markets provides little inducement for catering to the users' needs. In the case of industrial users, it led to backward integration as producers undertook the manufacture of parts, components, and accessories in order to minimize supply difficulties. This outcome, observed in capitalist as well as in socialist countries, led to higher costs, since economies of scale were foregone.

Also, in sellers' markets, firms had little incentive to improve productivity. In capitalist countries, monopolies and oligopolies assumed
importance, and the oligopolists often aimed at the maintenance of market shares while refraining from actions that would invoke retaliation. In socialist countries, the existence of assured outlets and the emphasis on short-term objectives on the part of managers discouraged technological change.

The managers' emphasis on short-term objectives in socialist countries had to do with uncertainty as to the planners' future intentions. In capitalist countries, fluctuations in real exchange rates (nominal exchange rates, adjusted for changes in inflation rates at home and abroad) created uncertainty for business decisions. These fluctuations, resulting from intermittent devaluations in the face of rapid domestic inflation, aggravated the existing bias against exports as the domestic currency equivalent of export earnings varied with the devaluations, the timing of which was uncertain.

In countries engaging in second-stage import substitution, distortions were further apparent in the valuation of time. In capitalist countries, negative real interest rates adversely affected domestic savings, encouraged self-investment, including inventory accumulation, at low returns, and provided inducements for the transfer of funds abroad. Negative interest rates also necessitated credit rationing that generally favored import-substituting investments, whether it was done by the banks or by the government. In the first case, the lower risk of investments in production for domestic as compared to export markets gave rise to such a result; in the second case, it reflected government priorities. Finally, in socialist countries, ideological considerations led to the exclusion of interest rates as a charge for capital and as an element in the evaluation of investment projects.
There was also a tendency to underprice public utilities in countries following an inward-oriented strategy, either because of low interest charges in these capital-intensive activities or as a result of a conscious decision. The underpricing of utilities benefited, in particular, energy-intensive industries and promoted the use of capital.

In general, in moving to the second stage of import substitution, countries applying inward-oriented development strategies de-emphasized the role of prices. In socialist countries, resources were in large part allocated centrally in physical terms; in capitalist countries, output and input prices were distorted and reliance was placed on non-price measures of import restrictions and credit allocation.

**Effects on Exports and on Economic Growth**

The discrimination in favor of import substitution and against exports did not permit the development of manufactured exports in countries engaging in second-stage import substitution behind high protection. There were also adverse developments in primary exports as low prices for producers and for consumers reduced the exportable surplus by discouraging production and encouraging consumption.

In fact, rather than improvements in the external terms of trade that were supposed to result, turning the internal terms of trade against primary activities led to a decline in export market shares in the countries in question. Decreases in market shares were especially pronounced in cereals, meat, oilseeds, and nonferrous metals, benefiting developed countries, in particular, the United States, Canada, and Australia.
The volume of Argentina's principal primary exports, chiefly beef and wheat, remained, on the average, unchanged between 1934-38 and 1964-66 while the world exports of these commodities doubled. In the same period, Chile's share fell from 28 percent to 22 percent in the world exports of copper, which accounts for three-fifths of the country's export earnings.

Similar developments occurred in socialist countries where the allocation of investment favored industry at the expense of agriculture. In Hungary, the exports of several agricultural commodities, such as goose liver, fodder seeds, and beans, declined in absolute terms and slow increases in production necessitated the imports of cereals and meat that were earlier major export products.

The slowdown in the growth of primary exports and the lack of emergence of manufactured exports did not provide the foreign exchange necessary for rapid economic growth in countries pursuing inward-oriented industrial development strategies. The situation was aggravated as net import savings declined because of the increased need for foreign materials, machinery, and technological know-how. As a result, economic growth was increasingly constrained by limitations in the availability of foreign exchange, and intermittent foreign exchange crises occurred as attempts were made to expand the economy at rates exceeding that permitted by the growth of export earnings.

Also, the savings constraint became increasingly binding as high-cost, capital intensive production at second-stage import substitution raised capital-output ratios, requiring ever-increasing savings ratios to maintain rates of economic growth at earlier levels. At the same time, the loss of incomes due to the high cost of protection reduced the volume of available savings and, in capitalist countries, negative interest rates contributed to the outflow of funds.
In several developing countries, the cost of protection is estimated to have reached 6-7 percent of the gross national product. At the same time, there is evidence that the rate of growth of total factor productivity was lower in countries engaging in second-stage import substitution than in the industrial countries. Rather than reducing the economic distance vis-à-vis the industrial countries that infant industry protection was supposed to promote, then, there was a tendency for this lag to increase over time.

IV. Outward-Oriented Industrial Development Strategies

The Choice of Outward Orientation

The slowdown in economic growth that eventually resulted from the pursuit of an inward-oriented development strategy led to policy reform in several of the countries applying such a strategy. Among capitalist countries, policy reforms were undertaken in the mid-sixties in Argentina, Brazil and Colombia, and in subsequent years in Mexico. The reforms generally involved providing subsidies to manufactured exports, reducing import protection, applying a system of crawling pegs, adopting positive real interest rates, and introducing greater realism in the pricing of public utilities.

Among socialist countries, central resource allocation and price determination gave place to the decentralization of decision making in Hungary. This involved introducing market relations among firms and linking domestic prices to world market prices through the exchange rate, with adjustment made for import tariffs and for export subsidies.
The policy reforms undertaken by countries that engaged in second-stage import substitution thus involved making increased use of the price mechanism and reducing price distortions, in particular in foreign trade. The incentive systems that emerged as a result of the reforms in the period preceding the 1973 oil crisis may be compared with the incentive systems applied in countries that adopted an outward-oriented industrial development strategy immediately following the completion of first-stage import substitution.

An outward-oriented development strategy should not be interpreted to mean favoring exports over import substitution. Rather, it is characterized by providing similar incentives to production for domestic and for export markets. Thus, the definitions of inward- and outward-oriented development strategies are not symmetrical. At the same time, these definitions reflect reality as few countries gave incentives to any of their exports appreciably in excess of incentives to sales in domestic markets.

Apart from the lack of a bias against exports, countries applying outward-oriented development strategies generally had positive real interest rates, adopted realistic prices for public utilities, reduced inter-industry differences in incentives, and provided for automaticity and stability in the incentive system. On the whole, these countries minimized price distortions and relied on the market mechanism for efficient resource allocation and rapid economic growth.

Among present-day industrial countries, an outward-oriented development strategy was adopted by Denmark and Norway in the years immediately following the Second World War. In Southern Europe and, with certain limitations, in Japan, this occurred starting in the mid-fifties. Finally, in Korea,
Singapore, and Taiwan, an outward-oriented strategy has been pursued since the early sixties.

In comparing the incentive systems applied by the three Far Eastern countries and those adopted in the four Latin American countries following second-stage import substitution, several features deserve attention. These relate to the treatment of the export sector, relative incentives to exports and import substitution, the variability of incentive rates among particular activities, relative incentives to manufacturing and to primary production, and the automaticity and stability of the incentive system.

In the three Far Eastern countries, a free trade regime was applied to exports. Exporters were free to choose between domestic and imported inputs; they were exempted from indirect taxes on their output and inputs; and they paid no duty on imported inputs. The same privileges were extended to the producers of domestic inputs used in export production.

The application of these rules provided equal treatment to all exports. And while some additional export incentives were granted, they did not introduce much differentiation among individual export commodities. At the same time, these incentives ensured that in the manufacturing sector, on the average, exports received similar treatment as import substitution. Furthermore, there was little discrimination against primary exports and against primary activities in general; incentives were on the whole provided automatically; and the incentive system underwent few modifications over time.

Latin American countries (Argentina, Brazil, Colombia, and Mexico) that reformed their incentive system after engaging in second-stage import substitution granted subsidies to their nontraditional exports. They also reduced the extent of import protection, both directly through tariff cuts and import liberalization, and indirectly as the growth of exports in response to
the subsidies provided diminished the need for exchange rate depreciation and thereby reduced the protective effects of tariffs.

The four Latin American countries did not, however, provide exporters with a free choice between domestic and imported inputs. Rather, in order to safeguard existing industries, exporters were required to use domestic inputs produced under protection. To compensate exporters for the resulting excess cost, as well as for the effects of import protection on the exchange rate, the countries in question provided explicit export subsidies.

These subsidies did not suffice, however, to provide producers with export incentives comparable to the protection of domestic markets. Thus, there continued to be a bias in favor of import substitution and against exports, albeit at a reduced rate. The extent of discrimination was especially pronounced against traditional primary exports that did not receive export subsidies and, in some instances, continued to be subject to export taxes.

Furthermore, with export subsidies and the protection of inputs used in export industries varying among industries, there was considerable variation in the extent of export subsidies to value added in the production process. Considerable intercommodity variations were observed also in regard to effective rates of protection on sales in domestic markets. At the same time, some of the incentives were subject to discretionary decision-making.

Nevertheless, with the adoption of the crawling peg, the policy reforms undertaken in the four Latin American countries imparted considerable stability to the incentive system. Also, discrimination against exports and against primary activities was reduced to a considerable extent while such discrimination persisted in countries that continued to apply policies of import substitu-
tion during the period until the oil crisis of 1973. Such was the case in India, Chile and Uruguay.

In India, the introduction of selected export subsidies in the mid-sixties was far overshadowed by the continued use of import prohibitions and the controls imposed on investment; subsidies were also subject to complex regulations and discretionary decision making. Chile traditionally had the highest level of import protection in Latin America and, after brief experimentation with import liberalization, import restrictions were reimposed in the early seventies. Protection levels were also high in Uruguay and little effort was made to promote exports.

Incentives and Export Performance

There is evidence that the system of incentives applied affects the country's export performance. Econometric estimates made for a number of countries show that increases in export prices due to export incentives are associated with a rise in the volume of exports. In the case of Korea, it has also been shown that export incentives are positively correlated with the share of exports in domestic output and with the contribution of exports to increases in output in an interindustry framework.

These results are confirmed by a comparison of the export performance of countries applying different incentive schemes. The comparisons have been made for three groups of countries: countries that adopted an outward-oriented industrial development strategy following the completion of the first stage of import substitution (Korea, Singapore, and Taiwan); countries that moved to the second stage of import substitution but subsequently reformed their systems of incentives (Argentina, Brazil, Colombia, and Mexico); and countries that continued to apply an inward-oriented development strategy during the period until the 1973 oil crisis (India, Chile, and Uruguay).
Export performance may be indicated in a variety of ways. For purposes of the comparison, I have made use of the rate of growth of exports and changes in export-output ratios. In the case of the ten developing countries I have considered, the results obtained by the use of the two measures gave broadly similar results.

Increases in manufactured exports and in export-output ratios during the 1960-66 period were the most rapid in the three Far Eastern countries, which adopted an outward-oriented strategy in the early sixties. These countries further improved their export performance in the 1966-73 period, when they intensified their export promotion efforts. As a result, the share of exports in manufactured output rose from 1 percent in 1960 to 14 percent in 1966 and to 41 percent in 1973 in Korea, from 11 percent to 20 percent and to 43 percent in Singapore, and from 9 percent to 19 percent and to 50 percent in Taiwan. Notwithstanding their poor natural resource endowment, the three countries also had the highest growth rates of primary exports, and hence of total exports, among the ten countries.

Between 1966 and 1973, the growth of manufactured exports accelerated in the four Latin American countries that reformed their system of incentives during this period. In particular, the share of exports in manufactured output rose from 1 percent in 1966 to 4 percent in 1973 in both Argentina and Brazil. Nevertheless, this share remained much lower than in the Far East and the countries in question experienced a continued erosion in their traditional primary exports, although they made gains in nontraditional primary exports that received subsidies. Correspondingly, the countries in question experienced an acceleration in the rate of growth of their total exports but they
were far surpassed by the three Far Eastern countries.

India, Chile and Uruguay, which continued with an inward-looking development strategy, did poorly in primary as well as in manufactured exports and showed a decline in the share of exports in manufactured output between 1960 and 1973. India lost ground in textiles, its traditional export, and was slow to develop new manufactured exports. As a result, its share in the combined exports of manufactured goods of the ten countries declined from 69 percent in 1960 to 12 percent in 1973. In the same period, Chile's share fell from 4 percent to 1 percent, while in Uruguay it never reached one-fifth of one percent of the total.

**Exports, Employment, and Economic Growth**

Continued import substitution behind high protection in narrow domestic markets involves "travelling up the staircase" by undertaking the production of commodities that involve increasingly higher domestic costs per unit of foreign exchange saved. By contrast, exporting involves "extending a lower step on the staircase" by increasing the production of commodities in which the country has a comparative advantage, with low domestic resource costs per unit of foreign exchange. Exporting further permits the fuller use of capacity and allows reductions in unit costs through the exploitation of economies of scale contributing thereby to efficient import substitution. Finally, exposure to foreign competition provides stimulus for technological change.

Resource allocation according to comparative advantage, higher capacity utilization, and the exploitation of economies of scale lower capital-output ratios in export activities, and the resulting savings in capital may be used to increase output and employment elsewhere in the economy in countries
where labor is fully employed. This will occur through the indirect effects of export expansion that creates demand for domestic inputs and generates higher incomes which are in part spent on domestic goods.

The higher incomes made possible through export expansion will give rise to increased savings, and there is some evidence that a greater than average proportion of incomes generated in the export sector is saved. Lower capital-output ratios and higher savings ratios, then, will ease the savings constraint to economic growth. Export expansion will also ease the foreign exchange constraint, permitting thereby increases in the importation of materials and machinery.

The experience of individual countries provides evidence of the direct and indirect effects of exports during the period preceding the 1973 oil crisis. In countries for which data are available, capital-labor ratios were substantially lower in export industries than in import-substituting industries. At the same time, there was a shift toward labor-intensive export industries in countries following an outward-oriented development strategy, such as Korea, while a shift in the opposite direction occurred in countries pursuing inward-oriented strategies, such as India.

Available data also indicate that the rate of capacity utilization increased to a considerable extent during the sixties in Korea and Taiwan, and after 1965 in Brazil. The shift towards labor-intensive industries and increased capacity utilization, in turn, led to higher employment and lower incremental capital-output ratios in the countries concerned.

Manufacturing employment increased by 10-12 percent a year in Korea and Taiwan, leading to reductions in unemployment rates. Par'i passu with
the decline in unemployment, real wages increased rapidly as the rate of
growth of the demand for labor on the part of the manufacturing sector
exceeded the rate at which labor was released by the primary sector. After
the 1966 policy reforms of the mid-sixties, real wages increased also in
Brazil. By contrast, real wages declined in India, Chile, and Uruguay.

Furthermore, income increments were achieved at a considerably lower
cost in terms of investment in countries that consistently followed an
outward-oriented strategy. Thus, in the 1960-73 period, incremental capital-
output ratios were 1.8 in Singapore, 2.1 in Korea, and 2.4 in Taiwan. At
the other extreme, these ratios were 5.5 in Chile, 5.7 in India, and 9.1
in Uruguay. The four Latin American countries that undertook policy reforms
represent an intermediate group, with incremental capital-output ratios
declining after the institution of policy reforms. In Brazil, where the
rate of capacity utilization increased to a considerable extent, the ratio
fell from 3.8 in 1960-66 to 2.1 in 1966-73.

Outward orientation also appears to have been associated with higher
domestic savings ratios and it attracted foreign investment. Increased export
earnings and the inflow of foreign capital, in turn, permitted increasing the
imports of materials and machinery. A case in point is Brazil where the
ratio of imports to the gross national product rose from 6.1 percent in 1966
to 11.1 percent in 1973.

The operation of these factors gave rise to a positive correlation
between exports and economic growth. The three Far Eastern countries had
the highest GNP growth rates throughout the period; the four Latin American
countries that undertook policy reforms improved their growth performance to
a considerable extent after the reforms were instituted; while India, Chile, and Uruguay remained at the bottom of the growth league.

V. The Choice of a Development Strategy: Lessons and Prospects

Inward vs. Outward Development Strategies

The evidence is quite conclusive: countries applying outward-oriented development strategies had a superior performance in terms of exports, economic growth, and employment whereas countries with continued inward orientation encountered increasing economic difficulties. At the same time, policy reforms aimed at greater outward orientation brought considerable improvements in the economic performance of countries that had earlier applied inward-oriented policies.

It has been suggested, however, that import substitution was a necessary precondition for the development of manufactured exports in present-day developing countries. In attempting to provide an answer to this question, distinction needs to be made between first-stage and second-stage import substitution.

I have noted that, apart from Britain and Hong Kong, the exportation of nondurable consumer goods and their inputs was preceded by an import substitution phase. At the same time, there have been differences among the countries concerned as regards the length of this phase and the level of protection applied. First-stage import substitution was of relatively short duration in the present-day industrial countries and in the three Far Eastern developing countries that subsequently adopted an outward-oriented strategy; it was longer in most other developing countries that also generally had higher levels of protection.

Nor did all nondurable consumer goods and their inputs go through an import-substitution phase before their exportation was undertaken by the Far Eastern countries. In the textile, clothing, and shoe industries, examples are synthetic textiles in Korea, plastic shoes in Taiwan, and fashion clothing
in Singapore, all of which began to be produced largely for export markets. Plywood and wigs, that were Korea's leading exports in the late sixties and early seventies, did not go through an import substitution phase either.

Wigs provide a particularly interesting example as they reflect the responses of entrepreneurs to incentives. Korea originally exported human hair to the industrial countries, in particular the United States. Recognizing that human hair was made into wigs by the use of a labor-intensive process, entrepreneurs subsequently came to exploit what appeared to be a profitable opportunity to export wigs, given the favorable treatment of exports in Korea and the limitations imposed on wigs originating from Hong Kong in the United States. The supply of human hair soon proved to be insufficient, however, and firms turned to exporting wigs made of synthetic hair, that became Korea's second-largest single export commodity following plywood.

The example indicates that entrepreneurs will export commodities which correspond to the country's comparative advantage if the system of incentives does not discriminate against exports. It also points to the need to leave the choice of exports to private initiative. Thus, one can hardly assume that government planners would have chosen wigs as a major potential export and that they would have effected a switch from human hair to synthetic hair in making wigs. And even if a product group, such as toys, were identified, the choice of particular products had to be made by the entrepreneur who has to take the risks and reap the rewards of his actions. At the same time, providing similar incentives to all export commodities other than those facing market limitations abroad, and avoiding a bias against exports will ensure that private profitability corresponds to social profitability as was, by and large, the case in countries following outward-oriented strategy.
These considerations may explain that Singapore and Taiwan did not need a planning or targeting system for exports. Export targets were in effect in Korea, but the fulfilment of these targets was not a precondition of the application of the free trade regime to exports or the provision of export incentives. And while successful exporters were said to enjoy advantageous treatment in pending tax cases and the existence of export targets may have exerted pressure on some firms, these pressures merely served to enhance the effects of export incentives without introducing discrimination among export products. At any rate, most firms continually exceeded their targets. A case in point is the increase of Korean exports by two-thirds between the second quarter of 1975 and the second quarter of 1976, exceeding the targets by a very large margin.

The reliance on private initiative in countries which adopted an outward-oriented development strategy can be understood if we consider that exporters require flexibility to respond to changing world market conditions. Nor can the government take responsibility for success and failure in exporting that will affect the profitability of the firm. For these reasons, among socialist countries, Hungary gave firms the freedom to determine the product composition of their exports following the 1968 economic reform and, in particular, after 1977.

Nor was the expansion of manufactured exports predicated on export targets in Latin American countries that reformed their system of incentives in the period preceding the 1973 oil crisis. The question remains, however, if the development of exports was helped by the fact that these countries had undertaken second-stage import substitution.

The question may be answered in the negative as far as nondurable consumer goods and their inputs are concerned. Had appropriate incentives
been provided, these commodities could have been exported once first-stage import substitution had been completed as was the case in the Far Eastern countries. In fact, to the extent that the products in question had to use some domestic inputs produced at higher than world market costs, exporters were at a disadvantage in foreign markets. It may also be assumed that the inability to fully exploit economies of scale and the lack of sufficient specialization in the production of parts, components, and accessories in the confines of the protected domestic markets retarded the development of the exports of intermediate products and producer and consumer durables.

More generally, as a Hungarian economist pointed out, there is the danger that second-stage import substitution leads to the establishment of an industrial structure that is "prematurely old," in the sense that it is based on small-scale production with inadequate specialization and outdated machinery. Should this be the case, moving subsequently towards outward orientation will encounter difficulties.

Such difficulties were apparent in the case of Hungary and may also explain that, while exports grew rapidly from a low base, their share in manufacturing output remained small in the Latin American countries that moved towards an outward orientation from the second stage of import substitution. In turn, in the period following the oil crisis, the Far Eastern countries increasingly upgraded their exports of nondurable consumer goods and began exporting machinery, electronics and transport equipment.

For several of these products, including shipbuilding in Korea, photographic equipment in Singapore, and other electronic products in Taiwan, exporting was not preceded by an import substitution phase. There are
even examples, such as color television sets in Korea, where the entire production was destined for foreign markets.

Intermediate goods, machinery, and automobiles require special attention, given the importance of economies of scale on the plant level in the case of the first; the need for product (horizontal) specialization for the second; and the desirability of vertical specialization in the form of the production of parts, components, and accessories on an efficient scale for the third. In all these cases, production in protected domestic markets will involve high costs in most developing countries and the establishment of small-scale and insufficiently specialized firms will make the transition to exportation difficult. This contrasts with the case of nondurable consumer goods and their inputs, where efficient production did not require large plants or horizontal and vertical specialization.

It follows that, rather than entering into second-stage import substitution as a prelude to subsequent exports, it is preferable to undertake the manufacture of intermediate goods and producer and consumer durables for domestic as well as for foreign markets. This will permit the exploitation of economies of scale and ensure efficient import substitution in some products, while others continue to be imported. At the same time, it will require providing equal incentives to exports and to import substitution in the place of import protection that discriminates against exports.

Vulnerability and Policy Responses to External Shocks

Outward orientation involves increasing the share of exports in the gross national product. The high share of exports, in turn, has been said to increase the vulnerability of the national economies of countries undertaking such a strategy to foreign events. In assessing the validity of this claim, the experience of the 1973 oil crisis and the subsequent 1974-75 world recession offers an interest.
Available evidence indicates that the Far Eastern countries applying an outward-oriented strategy weathered the effects of the quadrupling of oil prices and the world recession better than countries with continued inward orientation. This may be explained by differences in the "compressibility" of imports and in the flexibility of the national economies of countries applying different strategies. Outward orientation is associated with high export and import shares that permit reductions in nonessential imports without serious adverse effects on the functioning of the economy. By contrast, continued inward orientation involves limiting imports to an unavoidable minimum such that any further reduction will have a considerable cost in terms of regional growth. Also, the greater flexibility of the national economies of countries pursuing an outward-oriented strategy, where firms learn to live with foreign competition, makes it possible to change the product composition of exports in response to changes in world market conditions whereas inward orientation entails establishing a more rigid economic structure.

I come next to policy responses to external shocks. While there were pressures for a shift towards inward orientation in the immediate aftermath of the oil crisis and the world recession, the Far Eastern countries continued with an outward-oriented development strategy that permitted maintaining high rates of growth of exports and GNP. Thus, taking the 1973-79 period as a whole, per capita GNP rose at average annual rates of 8.3 percent in Korea, 6.1 percent in Singapore, and 5.5 percent in Taiwan. Growth rates declined, however, after 1978 in Korea as the exchange rate became increasingly overvalued and some large, capital-intensive investments were undertaken.

Brazil attempted to maintain past rates of economic growth by relying on foreign borrowing and on increased import protection. The high capital-intensity
of import substitution projects, however, raised capital-output ratios and led to a decline in the rate of economic growth, with per capita incomes rising 5.2 percent a year in 1976-73, 4.5 percent in 1973-76, and 2.4 percent in 1976-79. At the same time, the servicing of foreign loans imposed an increasing burden on Brazil's balance of payments.

Policy changes in the opposite direction occurred in Chile and in Uruguay that had applied an inward-oriented strategy until the 1973 oil crisis. These countries responded to the deterioration of their terms of trade and the slowdown in the growth of foreign demand for their export products by reforming the system of incentives. The reforms involved eliminating quantitative restrictions, reducing the bias against exports, liberalizing financial markets, and adopting positive real interest rates.

In Uruguay that had a stagnant economy in the previous decade, the reform of the system of incentives led to rapid increases in exports and in the gross national product, with per capita GNP rising 3.1 percent a year between 1973 and 1976 and 4.3 percent between 1976 and 1979. The growth of exports and GNP accelerated also in Chile, following a period of dislocation due to the application of a severe deflationary policy aggravated by rapid reductions in tariffs.

Argentina and Colombia rely on domestically produced oil and hence were not affected by the quadrupling of petroleum prices. Colombia also enjoyed higher coffee prices that more than offset the shortfall in exports due to the slowdown in the growth of foreign demand. But, it reduced incentives to nontraditional exports, with attendant losses in export market shares, and was not able to translate increases in foreign exchange earnings from traditional exports into higher GNP growth rates. Finally, the distortions
caused by rapid inflation were largely responsible for low GNP growth rates in Argentina.

Mexico lost export market shares in both traditional and nontraditional exports following the adoption of domestic expansionary policies, financed in large part by the inflow of foreign capital. And while the discovery of large oil deposits benefited Mexico's balance of payments, it increased the overvaluation of the currency that discriminated against agricultural and manufacturing activities. Finally, substantive policy changes did not occur in India, that continued to lose export market shares.

Policy Prescriptions and Prospects for the Future

The experience of developing countries in the postwar period leads to certain policy prescriptions. First, while infant industry considerations call for the preferential treatment of manufacturing activities, this should be done on a moderate scale, both to avoid the establishment and the maintenance of inefficient industries and to ensure the continued expansion of primary production for domestic and for foreign markets.

Second, one should provide equal treatment to exports and to import substitution in the manufacturing sector, in order to ensure resource allocation according to comparative advantage and the exploitation of economies of scale. This is of particular importance in the case of intermediate goods and producer and consumer durables, where the advantages of large plant size and horizontal and vertical specialization are considerable, and import substitution in the framework of small domestic markets makes the subsequent development of exports difficult. In turn, providing equal incentives will contribute to efficient exportation and import substitution through specialization in particular products and in their parts, components and accessories.
Third, infant industry considerations apart, variations in incentive rates within the manufacturing sector should be kept to a minimum. This amounts to the application of the "market principle" in allowing firms to decide on the activities to be undertaken. In particular, firms should be free to choose their export composition in response to changing world market conditions.

Fourth, in order to minimize uncertainty for the firm, the system of incentives should possess stability and automaticity. This purpose would also be served if the reform of the system of incentives necessary to apply the principles just described was carried out according to a timetable made public in advance.

It has been suggested, however, that the practical application of these principles -- characteristic of an outward-oriented development strategy -- would encounter market limitations in the industrial countries, which are aggravated by protectionist policies followed in these countries. In addressing this issue, one needs to examine recent and prospective trends in trade in manufactured goods between the industrial and the developing countries.

Notwithstanding protectionist pressures in the industrial countries, their imports of manufactured goods from the developing countries rose at a rapid rate during the period following the oil crisis, averaging 10.2 percent a year in volume terms between 1973 and 1978. Moreover, the "apparent" income elasticity of demand for these imports, calculated as the ratio of the growth rate of imports to that of the gross domestic product, increased from 3.6 in 1963-73 to 4.1 in 1973-78.
Given the increased volume of manufactured imports from the developing countries, one may expect the "apparent" income elasticity of demand for manufactured goods originating in these countries to decline in the future. Assuming an elasticity of 3.2 and a GDP growth rate of 3.9 percent in the industrial countries, I have projected their manufactured imports from the developing countries to rise at an average annual rate of 12.5 percent between 1978 and 1990. The projections reflect the assumption of unchanged policies in the industrial countries, including the maintenance of the Multifiber Arrangement.

As a result of these projected changes, the share of the developing countries in the consumption of manufactured goods in the industrial countries would rise from 1.5 percent in 1978 to 4.0 percent in 1990, with an incremental share of 8.9 percent. Incremental shares would be the highest in clothing, 28.1 percent; they would be 7.2 percent in textiles and 6.6 percent in other consumer goods. Nonetheless, the production of textiles and clothing would rise at an average annual rate of 2 percent in the industrial countries. And, these countries would have a rising export surplus in trade in manufactured goods with the developing countries that would contribute to the growth of their manufacturing sector.

At the same time, in accordance with the "stages" approach to comparative advantage, changes would occur in the product composition of the manufactured exports of the developing countries as they proceed to higher stages of industrial development. This process is exemplified by Japan that shifted from unskilled-labor intensive exports to skill-intensive and to physical-capital intensive exports and is increasingly expanding its technology-intensive exports.
Shifts in export composition are now occurring in the newly-industrializing developing countries, including the Far Eastern countries and Latin American countries that carried out policy reforms after the mid-sixties. The Far Eastern countries that have a relatively high educational level may increasingly take the place of Japan in exporting skill-intensive products while Latin American countries may expand the exports of relatively capital-intensive products. Countries at lower stages of industrial development, in turn, may take the place of the newly-industrializing countries in exporting products that require chiefly unskilled labor.

To the extent that the newly-industrializing countries replace Japanese exports, and their exports are in turn replaced by countries at lower stages of industrial development, the threat to the manufacturing industries of the industrial countries is reduced. Nor does the upgrading and the diversification of manufactured exports by the newly-industrializing countries represent a serious threat, inasmuch as the exports of individual commodities would account for a relatively small proportion of the consumption and production of the commodities in question in the industrial countries. This conclusion also applies to the international division of the production process, which is exemplified by the development of Ford's "world car" that will entail manufacturing in nineteen countries.

It follows that it is in the interest of the newly-industrializing developing countries to upgrade and to diversify their exports in line with their changing comparative advantage. This is further in the interest of countries at lower stages of industrial development, since they can replace the exports
of unskilled-labor intensive commodities from the newly-industrializing countries in industrial country markets.

There are also considerable possibilities to expand trade in manufactured goods among the developing countries themselves. First of all, with increases in oil earnings, the largely open markets of the OPEC countries will experience rapid growth. Furthermore, the newly-industrializing countries may trade skill-intensive and physical-capital intensive goods among themselves and exchange these commodities for the unskilled-labor intensive products of countries at lower stages of industrial development.

The expansion of this trade is predicated on the pursuit of outward-oriented strategies by the newly-industrializing countries, so as to provide appropriate incentives to exports and to allow imports from other developing countries. The pursuit of such a strategy would also contribute to efficient import substitution by ensuring low-cost manufacture through international specialization and the international division of the production process. Similar conclusions apply to countries at lower stages of industrial development.

Finally, lowering protection in the industrial countries would lead to increases in their manufactured imports from the developing countries over and above projected levels. This also corresponds to the well-conceived interests of the industrial countries that would benefit from shifts to high-technology products within a manufactured sector as higher export earnings would permit the developing countries to increase their imports of these products.

Trade liberalization in the industrial countries could proceed over a ten-year horizon without involving excessively large adjustment costs. One
may accept, for example, a decline in the production of textiles and clothing over time by not replacing the normal attrition of workers and depreciated equipment in branches that utilize largely unskilled labor. In turn, new entrants into the industrial labor force may increasingly enter technologically advanced industries where productivity levels are substantially higher.

Apart from expanding the volume of trade, then, the pursuit of appropriate policies by developed and by developing countries would permit shifts in the pattern of international specialization in response to the changing structure of comparative advantage in countries at different levels of industrial development. As a result, the efficiency of resource allocation would improve, and rates of economic growth accelerate, with benefits to all concerned.
Appendix

Selected Publications

Bela Balassa


"Reforming the System of Incentives in Developing Countries," *World Development*, 3 (1975), 365-82.


"The Newly-Industrializing Developing Countries after the Oil Crisis" Weltwirtschaftliches Archiv, 117 (1981).


*These publications provide empirical evidence in support of the propositions advanced in the Essay.