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Volume Title: Trade and Structural Change in Pacific Asia

Volume Author/Editor: Colin I. Bradford, Jr. and William H. Branson, editors

Volume Publisher: University of Chicago Press

Volume ISBN: 0-226-07025-5

Volume URL: <http://www.nber.org/books/brad87-1>

Publication Date: 1987

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Chapter Author: Colin I. Bradford, Jr, William H. Branson

Chapter URL: <http://www.nber.org/chapters/c6914>

Chapter pages in book: (p. 3 - 24)

1 Patterns of Trade and Structural Change

Colin I. Bradford, Jr., and William H. Branson

1.1 Introduction: Definition and Characteristics of NICs

Because of its rapid economic growth over the last twenty years, Pacific Asia provides a fascinating laboratory for analyzing the dynamics of economic growth. The fact that growth in Pacific Asia has been export-led has added to the analytical interest in the area both because of the impact of exports from Pacific Asia on the rest of the world and because of the interaction between trade and growth characteristic of the Pacific Asian experience. Japan led the way to dynamic growth in the 1960s. If Japan had been the only country in the region to achieve high growth, Japan's unique qualities would have been seen as the main determinants of exceptional performance. In the 1970s, however, the East Asian newly industrializing countries (NICs)—South Korea, Taiwan, Hong Kong, and Singapore (often referred to as the Gang of Four)—became major exporters of manufactured goods on a global scale and achieved extraordinarily high rates of economic growth. The remaining developing countries in Pacific Asia, sometimes referred to as the ASEAN Four (Association of South East Asian Nations)—Malaysia, the Philippines, Thailand, and Indonesia—have shown strong, though not spectacular, economic performance in the late 1970s and early 1980s. (Although a member of ASEAN, Singapore is nevertheless in the Gang of Four; also, the conference on which this volume is based was organized before Brunei entered ASEAN.) The major Latin Amer-

Colin I. Bradford, Jr., is associate director of the Yale Center for International and Area Studies and is a research economist with the National Bureau of Economic Research. William H. Branson is professor of economics at the Woodrow Wilson School, Princeton University, and a research associate of the National Bureau of Economic Research.

ican countries—Argentina, Brazil, and Mexico—also manifested high growth and export performance in the 1970s, but they experienced enormous financial problems in the 1980s. The Mediterranean European countries—Greece, Yugoslavia, Spain, and Portugal—industrialized rapidly in the 1960s and exported manufactures at rapid rates in the 1970s without the financial crunch in the 1980s experienced by Latin America.

This diverse economic record among high-growth, trade-oriented industrializing countries raises broad questions regarding the relationship of trade, structural change, and economic growth. From a global perspective, the most immediate issue is whether the East Asian NICs are *sui generis*, unique cases unreplicable elsewhere because of their unusual conditions, circumstances, and characteristics, or whether the East Asian NICs represent models that not only can but should be emulated by other industrializing nations. This is an issue which is addressed comparatively in chapters 7 and 8, by Bradford and Krause, and which occupied a good deal of the discussions at the conference in Kuala Lumpur.

It becomes clear from such analyses and exchanges that defining the phenomenon of dynamic, trade-oriented growth is a challenging intellectual task. Most analysts would agree that the East Asian Gang of Four are NICs, if by the term *newly industrializing countries* is meant countries with exceptionally high GDP growth rates and unusually strong export performance, especially of manufactured goods exports. But beyond this, the issue gets more difficult; it goes to the heart of thinking and theorizing about growth and development and the relationship of trade to sectoral change and aggregate performance, about which there is great debate, discussion, and controversy. This issue will not be settled here, but its main contours will be explored as a framework for reading the other analyses in this volume.

The issue of uniqueness versus universality of dynamic development is an old one. While concerned principally about the limited spread of economic growth historically, Simon Kuznets wondered in 1965 “whether the restrictive locus of pioneering impact is an inherent characteristic of all revolutionary breakthroughs to a new economic epoch” (1966, 465). The time periods when such “breakthroughs,” “turning points,” or “takeoffs” occurred are as much matters of controversy as the nature of the dynamic surge itself. Differences between Kuznets’s designation of the time periods for the “beginning of modern growth” in what are now advanced countries and Rostow’s (1978, p. 778, table N-31, n. 2) “takeoff” periods are not substantial. However, Lloyd Reynolds’s (1983) “turning points” to “a sustained rise in per capita income” differ greatly from Walt Rostow’s takeoff periods. Reynolds and Rostow agree that Latin America preceded East Asia,

but Reynolds's analysis points to turning points in the mid-to-late nineteenth century, whereas Rostow's takeoff periods are in the mid-twentieth century (see table 1.1).

The major studies of the recent spurts in industrialization, growth, and trade have varying criteria for establishing categories. The first major study of the NICs was published by the Organization for Economic Cooperation and Development (OECD) in 1979. While acknowledging that borderlines between categories were "bound to be arbitrary," ten countries were identified as NICs based on (a) their rapid penetration of world markets of manufactures, (b) a rising share of industrial employment, and (c) an increase in real GDP per capita relative to the more advanced industrial countries (OECD 1979, 18–22). These criteria established Greece, Portugal, Spain, Yugoslavia, Brazil, Mexico, and the Gang of Four in East Asia as NICs. The Chatham House study of the NICs published in 1982 focused on the Gang of Four plus Brazil, Mexico, Argentina, and India, all of which had achieved exports of manufactures in excess of \$1 billion by 1976 (Turner and McMullen 1982, 6, 10, table 2.1). The Development Assistance Committee (DAC) in its 1982 *Review* examined "second tier" exporters and distinguished between NICs and potential NICs based on both the magnitude of manufactured exports in 1979 and their growth rate between 1972 and 1978, while maintaining the classification of the ten OECD-designated countries as NICs (OECD 1982, 123–32, esp. table XII-2 and n. 1 on p. 123). Interestingly, the only developing countries to have both more than \$1 billion in manufactured exports in 1979 and average growth rates in manufactured exports between 1972 and 1978 above 13% are Taiwan, Korea, Singapore, and Brazil in the \$3 billion and above range, and Malaysia, the Philippines, and Thailand in the \$1–\$2 billion range, Hong Kong was the only other country besides Taiwan and Korea to have above \$10 billion in manufactured exports, but Hong Kong experienced a 1972–78 growth rate of exports

Table 1.1 Transition Periods in Dynamic Developing Economies

	Turning Points (Reynolds)	Takeoff (Rostow)
Korea	1910	1961–68 (p. 555)
Taiwan	1895	1953–60 (p. 540)
Brazil	1850	1933–50 (p. 486)
Mexico	1876	1940–60 (p. 493)
Argentina	1860	1933–50 (p. 474)
Thailand	1850	1960s (p. 551)
Colombia	1855	n.a.

Sources: Reynolds 1983, 941–80, esp. 943 and 958. Rostow 1978, pages indicated in table.

in the 7%–13% range. The World Bank and the International Monetary Fund (IMF) have a category they call “major exporters of manufacturers,” the criteria for which are unspecified. This category excludes Taiwan for noneconomic reasons and also leaves out Spain (which is classified by the World Bank as an “industrial market economy”) and Mexico (which is classified as a “middle income oil exporter”). The World Bank and the IMF category of major exporters of manufactures includes Greece, Yugoslavia, Portugal, Argentina, Brazil, Hong Kong, Singapore, and Korea as well as Israel and South Africa. The World Bank adds two additional countries: the Philippines and Thailand (World Bank 1985, p. xi; International Monetary Fund 1985, 201).

Development of a clear theory that would predict which countries will be the next NICs rather than establish criteria for the designation of NICs *ex post* is one of the central problems of the field of economic development. Rostow’s analysis of takeoffs is an attempt at such a theory whose success is not universally acknowledged. While development theorists struggle with the problem, a more systematic empirical approach to the identification of NICs may be feasible. We have in mind the application of cluster analysis to a large body of data on developing countries, such as is contained in the World Bank data base.¹

A clustering algorithm applied to such a data base would ascertain whether a group of countries that are generally considered NICs emerges as a separate cluster on the basis of the characteristics in the data base. This would identify a cluster of countries that are similar to each other relative to the entire group’s dissimilarity to the rest of the countries. If such a cluster emerged, and if some non-NIC countries were also in it, they would share the characteristics of the already identified NICs. This type of analysis might provide a more systematic basis for identification of next-tier NICs. The entire procedure would test the validity of our current identifications of NICs as a meaningful economic category.

Despite all the limitations, qualifications, and differences in definitions, it is clear that the developing economies of Pacific Asia are of great interest in the study of dynamic trade and development performance. The East Asian Gang of Four qualify as NICs according to most classifications, even if the category either varies or is unclear; and Malaysia, Thailand, and the Philippines are of consequence in most studies as examples of potential NICs. There seems to be some convergence of analytical opinion that the relevant comparisons outside Pacific Asia are Greece, Yugoslavia, Spain, and Portugal in Europe, and Argentina, Brazil, and Mexico in Latin America. However, even though it seems to be clear which countries are NICs, it is not as clear what it means to be a NIC and, therefore, whether the NICs represent exceptional cases or replicable models. The fact that it is agreed that the category in the 1970s and early 1980s contains only a relatively few countries and that there is general agreement on the countries which

should be identified as NICs does not provide the answer to the question, are the NICs *sui generis*?

The meaning of the NIC category explored most thoroughly in this volume is the relationship between exceptional export performance, especially in the growth of manufactured exports, and dynamic development, by which is meant some combination of rapid aggregate economic growth and structural change. The sectoral composition of output and trade, the rates of structural change in production and exports, and the relationship of rates of structural change to economic growth constitute continuing themes throughout the volume. The relationship between the sectoral composition of output and the composition of exports is of considerable interest in understanding the dynamics of growth and development. It raises a number of broad issues recurrent in the book, in particular the relationship of factor proportions to the composition of trade, the impact of abundant resource endowments on industrialization and manufactured exports, and the rapidity of adjustment of the patterns of trade and structures of production to dynamic growth in different “tiers” of countries. These are discussed more fully in the next section of this chapter. Also raised by these analyses are a set of issues related to the types of development strategies, styles, and regimes associated with varied economic outcomes. The nature of the mix between active government policies and market forces, the relative effectiveness of credit versus fiscal subsidies, and the balance between demand- versus supply-determined industrialization and exports are examined in the last section of this chapter.

1.2 Industrialization and Structural Change

The relationship between trade and structural change is brought to the fore by the dynamic performance of the transitional economies of Pacific Asia and their analogues in Mediterranean Europe and Latin America that have been identified as NICs. An index developed by the United Nations Industrial Development Organization (UNIDO) that measures the change in the value-added share of sixteen individual manufacturing sectors in total value added between 1965 and 1980 is a good measure of the rapidity of structural change in the manufacturing sector over the period in which there have been rapid exports of manufactures from the NICs and other transitional economies. This index is given in table 1.2 along with the average annual growth rate of manufacturing value added over 1965–80 for sixteen transitional economies in three major regions. (Again, no data are available for Taiwan.)

Overall, the figures in table 1.2 confirm the expected relationship between high rates of structural change within manufacturing and the dynamic performance in exports of manufactures and in aggregate

Table 1.2 Structural Change and Industrialization: 1965–80

Transitional Economies	Index of Structural Change in Manufacturing ^a	Average Growth Rate of Value Added in Manufacturing
European NICs		
Spain	24.73	6.78
Yugoslavia	12.01	6.94
Portugal	21.61	7.18
Greece	13.56	7.00
Asian NICs		
India	20.89	2.59
Korea	31.37	18.99
Taiwan	n.a.	n.a.
Hong Kong	9.87	6.05
Singapore	48.32	11.41
Next-tier NICs		
Philippines	10.95	5.45
Thailand	17.69	7.98
Malaysia	15.86	8.12
Colombia	10.90	6.36
Natural Resource NICs		
Brazil	30.03	9.50
Mexico	14.83	7.09
Argentina	15.90	3.12
Indonesia	19.52	10.20
Global Averages		
Developed countries	10.90	4.66
Developing countries	13.83	6.55
World	10.60	4.85

Source: United Nations Industrial Development Organization, *Industry and Development: Global Report 1985* (New York: United Nations, 1985), pp. 31–40 and country tables pp. 135ff.

^aThe index of structural change is derived from sixteen manufacturing branches. It is a measure of the degree of correlation between the value-added shares in 1965 and 1980. If the correlation is high, then there is little structural change and the index is low. But if the correlation is low, then there is a lot of structural change and the index is high. Both expanding and shrinking branches contribute to the index (UNIDO 1985, 39).

growth associated with the NICs. Of the total of thirty-two observations of the two variables in the table, only three are below the world averages and seven are substantially below the averages for developing countries, which are higher than the averages for developed countries. Of the sixteen economies, Korea, Singapore, and Brazil are in the top four according to measures of both structural change and value-added growth in manufacturing. One suspects that were there data for Taiwan, it would be in the high range of these measures as well. Hong Kong is the exception. Because of the dominance of textiles within the manufacturing sector and in the exports of manufactures of Hong Kong, dynamic growth in the 1965–80 period has been associated with this

one subsector rather than with shifts in the sectoral composition of output and exports. Textiles was already a significant sector by 1965 in Hong Kong, so that the rate of structural change associated with its growth is relatively less compared with other transitional economies.

Indonesia is surprisingly high on both measures, the high rates of change deriving undoubtedly from low absolute levels of industrialization. The two measures for the next-tier NICs—the Philippines, Thailand, Malaysia, and Colombia—show relatively uniform rates among the four countries in the category, and averaged together they are almost exactly the average for the developing countries as a whole. Mexico and Argentina experienced rates of structural change above the average for developing countries, though half of that of Brazil. Mexico also had an above-average rate of growth in valued added in manufacturing, but Argentina's rate was below the world average. The European NICs experienced rates of growth in manufacturing value added slightly above the average for developing countries and well above that of the industrial countries. Rates of structural change in manufacturing vary among the European NICs, with Spain and Portugal having very high indexes and with Yugoslavia and Greece having indexes only slightly above the world average.

The association of unusually high rates of structural change in manufacturing with exceptionally high rates of growth in manufactured exports is a useful lens through which to view the country experience and trade patterns analyzed in this volume. Rapid industrialization, significant shifts in the sectoral composition of output and exports, and high rates of economic growth along with major surges in exports of manufactures constitute the dynamic development patterns now identified with the NICs. The policy experience of each country, the internal economic structure, and the trade relationships within Pacific Asia and between the region and the world economy provide material for further insight into the dynamics of rapid development and export growth.

1.3 Global and Regional Patterns of Trade

Patterns of trade have changed substantially between the OECD area (North America, Japan, Europe) and the developing world of Latin America, Africa, and Asia since the early 1960s. The United States and Japan have developed complementary trade with Latin America and Asia in manufactures, exchanging capital goods for final consumer goods. Europe's trade with Africa has remained more traditional, since the African developing countries below the Sahara are not yet exporters of manufactures.

Trade patterns *within* Pacific Asia have also changed substantially over the same period. We can distinguish three tiers of countries in the area, consisting of Japan, the Gang of Four, and the ASEAN Four.

Complex trade relations have developed among these three tiers, and currently tensions exist as the countries look toward the future. As the Gang of Four and the ASEAN Four move up the ladder of comparative advantage, to what extent will the markets of the Pacific Asian countries in the upper tiers open to the exports of the lower-tier countries, and to what extent will lower-tier countries have to supplant upper-tier countries in exporting to third markets, particularly the United States and Europe? These are important issues for economic relations within Pacific Asia.

In this section of the chapter we draw on the conference papers and comments to discuss the highlights of the changes in trade patterns between the OECD countries and Pacific Asia and within the latter, and we speculate on their implications for future developments. We begin by reviewing major findings on trade patterns between the OECD “Big Three”—the United States, Japan, and the European Community (EC)—and Pacific Asia. Here the overview papers by Branson, Waelbroeck, and Yamazawa (chaps. 2–4) are in surprising agreement. Then we discuss the *basis* for trade within Pacific Asia, drawing mainly on the papers by Bradford and Krause (chaps. 7–8). It is clear from all of these papers, as well as that of Kotlikoff and Leamer (chap. 9), that in a broad sense a factor-proportions model of comparative advantage is useful in understanding the patterns of trade of Pacific Asia. This impression is also generally confirmed by the country papers. Next we discuss briefly the potential problems of trade adjustment in the three tiers of Pacific Asia, as they move up the ladder of industrial and technological development. In a sense, the lower-tier economies are crowding up against the higher-tier ones; how are they each going to adjust? Finally, we will offer some observations on a point that comes up in several of the country papers and was a subject of considerable comment: the “problem” posed by natural resource endowments as the ASEAN Four industrialize. This discussion is reminiscent of the “Dutch disease” literature in northern Europe.

1.3.1 Trade between the OECD and Pacific Asia

The growth of manufacturing capacity in the developing countries, especially in Asia and Latin America since the 1960s, is changing the nature of north-south trade. As Riedel (1984) shows, only the sub-Saharan African countries now remain one-or-two-primary-commodity exporters. For many developing countries, the growth of manufactured exports has reduced the share of primary exports to well below 50% of total exports.

Growth in manufactured exports in the Latin American and Asian developing countries has been concentrated in labor-intensive goods, mainly consumer goods and assembly products. Textiles and simple

electronics are good examples. To expand their manufacturing capacity, these economies must import capital equipment from the industrial countries. This has created an exchange of labor-intensive, somewhat lower-technology consumer goods for more capital-intensive (both physical and human) and technology-intensive goods. This exchange contributes at the margin to an increase in specialization within and complementarity between the economies involved.

The overview papers by Branson, Waelbroeck, and Yamazawa are in general agreement on the relevance of this analysis for trade between the countries of the OECD and Pacific Asia. At the broadest level, Branson's comparison of the patterns of trade in manufactures of the United States, Japan, and the EC finds a substantial expansion of this form of complementary trade between the United States and Latin America and between Japan and the rest of Pacific Asia. This proximity phenomenon is also noted by Waelbroeck: Europe's trade with the south is concentrated in Africa, the United States with Latin America, and Japan with Asia. The United States and Japan each compete in the other's "natural" market and have the second shares in these markets, with Europe third in both. Yamazawa's paper, concentrating on Japan and her Pacific neighbors, also notes the importance of complementary trade in manufactures. Thus, all three papers see the same general development in trade patterns.

This broad picture is complicated to some extent by the split in the direction of U.S. exports and imports of manufactures. The major source in the developing world of U.S. consumer goods imports is Pacific Asia, while the major destination of U.S. exports is Latin America. The latter remains relatively resource-rich, like the ASEAN Four, with their exports depending largely on world market conditions. While U.S. manufactured exports are more closely tied to economic developments in Latin America, U.S. imports of manufactures are linked to Pacific Asia.

The implications of these developing patterns of trade and interdependence between the United States, Japan, and Europe on the one hand and the major developing-country regions on the other can be the object of interesting speculation. It may be that Japan's trade is becoming relatively more complementary and integrated with the more "proximate" economies of Asia, while Europe's trade is more closely tied to Africa. This pattern is suggested by a joint reading of the three overview papers. The United States may be in an intermediate position. Its exports are more concentrated on Latin America, which has experienced midrange growth (between Africa and Asia). At the same time, the United States is increasingly integrated with Pacific Asia on the import side. This suggests that a broader Pacific concept (including Latin America) is now an important focal point for U.S. foreign economic policy.

1.3.2 Factor Proportions and Trade

The rise of new industrial powers in the world economy has been based on rapid structural transformation within these industrializing countries. This internal process of structural change has been characterized not only by the broad shift from primary production (mining and agriculture) to industry but also by sectoral shifts within manufacturing, as we have seen in the measure of structural change in table 1.2. The general pattern of development is for a gradual sectoral evolution to occur as the availability and the quality of factors of production evolve.

The industrialization process begins with natural resource based manufacturing. As the urban labor force increases, labor-intensive manufacturing grows more rapidly and eventually predominates. Per capita income growth based on the more dynamic industrial sector generates increased savings in the economy. This capital accumulation enables the economy to move into industrial sectors requiring more capital-intensive modes of production. Sophistication grows with industrial experience, and educational levels rise with economic growth. As a consequence, the economy eventually moves into skill- and technology-intensive industrial sectors.

These sectoral shifts within industry essentially respond to changing availabilities of inputs into the manufacturing process. Comparative advantage in trade is determined by the relative abundance of these factor inputs. Therefore, changes in the relative availability of labor, capital, skills, and technological innovation change not only the structure of industry but the composition of trade as well.

Countries at given moments in time can be thought of as being on a ladder of comparative advantage, tiered according to their standing in factor endowments. Data in the papers by Bradford and Krause confirm that the composition of exports from Pacific Asia reflects different factor intensities among countries and over time. Moving up the ladder of comparative advantage, natural-resource-intensive exports diminish continuously as a percentage of total exports, labor-intensive exports surge and fade, and physical and human capital-intensive exports increase their share.

The very substantial preponderance of labor-intensive exports from the Asian NICs is clearly manifested in the data in Bradford's paper as is the increase in physical and human capital exports. The nascent rise of labor-intensive exports from the next-tier NICs in the 1970s is also apparent. Accelerated structural change of exports is evident in the European NICs; structural change is more restrained in the Latin American NICs and Indonesia, where natural resource exports generate the foreign exchange required for growth.

The NICs, by definition, are on a divergent development path, outpacing other economies at similar stages of development. Their dynamism appears to have gone beyond that which follows naturally from changing factor endowments, though favorable factor conditions were important. Public policies and government promotion of export-oriented growth strategies also played a major role in the unusual success of the NICs. By the very nature of this process, the NICs posed adjustment challenges for the Pacific Basin, for the OECD economies, and for the entire world economy. This dynamic change in the composition of exports from Pacific Asia does not appear to have been accompanied thus far by changes in the composition of imports that would allow the absorption of export surges within the region. This pattern poses trade policy challenges for the future as factor endowments and export promotion policies play a continuing role in changing the composition of exports from dynamic economies that seek expanding markets for their exports.

1.3.3 Trade Adjustment among the Three Tiers of Pacific Asia

As the economies of Pacific Asia develop and grow, two alternative models of evolution of their trade patterns are likely to be relevant. The actual outcome will be some mixture of the two, but the distinction is useful analytically. In the first model, exports from the lower-tier countries displace those of upper-tier countries in world markets, particularly North America and Europe, as the upper-tier countries move on to higher levels of sophistication and technology. In this model, as Japan's export mix shifts toward high-technology items, such as computers and sophisticated machinery and electronics, the Gang of Four countries expand, for example, their exports of consumer manufactures, such as television receivers, to North America and Europe. As the Gang of Four moves gradually out of supplying textiles to these third markets, the ASEAN Four move in. A similar process could take place in electronics assembly. In this model, higher-tier economies in Pacific Asia do not open their own markets significantly to imports from lower-tier countries; instead they compete in external markets. In the conference, representatives of the lower-tier countries voiced opinions that seemed to reflect their view that this is the model favored by the upper-tier countries, particularly Japan and Korea. We might call this the "world integration" model.

The alternative has already been suggested. As the upper-tier countries grow and their industrial structures become more sophisticated, they open to imports from the lower-tier countries. The latter would find the direction of their manufactured exports more oriented toward the other Pacific Asian countries than to Europe or North America in this model, which we might call "regional integration." In the confer-

ence, lower-tier representatives seemed to prefer the regional integration model to world integration.

Which of these patterns seems more likely to develop? Manufactured imports were about \$150 billion in Europe and in the United States in the early 1980s and \$40 billion in Japan. Exports from the Asian NICs and the ASEAN Four were a relatively small share of the European market; in his paper Jean Waelbroeck argues that the Gang of Four and ASEAN Four shares of the European market can be expanded without meeting active resistance. The U.S. market remains relatively open with the exception of textiles, in which trade is governed by the international Multi-Fiber Arrangement. In textiles, the Pacific Asian countries face potentially serious competition from China. Nevertheless, the world integration model seems feasible in terms of potential expansion both of shares of North American and European manufactured imports and of their aggregate levels.

Japan's trade pattern is substantially different from that of the United States or Europe. Because of her need to import raw materials, Japan must run a sizable surplus on trade in manufactures just to maintain overall balance. Imports from the rest of Pacific Asia already occupy a substantial share of Japan's low level of manufactured imports, as shown in the papers by Branson and Yamazawa. This means that a significant further opening of Japan's market to exports of manufactures from Pacific Asia might require an expansion of her exports of manufactures to those countries. As Yamazawa shows, Japan already has established a complementary trade with the Gang of Four and the ASEAN Four, exporting capital goods while importing raw materials from the ASEAN Four and consumer goods from the Gang of Four. This is a pattern similar to trade between the United States and less-developed countries (LDCs) on a broader scale, with U.S. raw material imports coming largely from Latin America and consumer goods imports from Asia.

Thus expansion of trade along the regional integration model would probably involve growth in cross-trade in manufactures, with countries specializing further along lines of comparative advantage, as outlined in the paper by Krause. Cross-trade in manufactures would require a mutual openness of markets, rather than a unilateral opening by the upper-tier countries in Pacific Asia.

The implications of each outcome—world integration or regional integration—are still shadowy but are potentially important. The world integration model would bring the Pacific Asian countries, and perhaps China and South Asia as well, into a pattern of world complementarities, with a relatively high level of interdependence with the United States and possibly Latin America. The regional integration model would emphasize the interdependence *among* the Pacific Asian coun-

tries, with looser economic ties to the United States. The latter model could be an important element in the development of a regional power to rival the United States, Europe, and even the USSR, while the world integration model could tie the Pacific Asia economies individually more closely to the United States.

1.3.4 Natural Resources and Industrialization

The principal differences between the already-industrialized Asian NICs and the ASEAN Four are size and natural resource endowments. The Asian NICs industrialized on a base of skilled labor, a homogeneous population, good location, and perhaps a self-selected entrepreneurial class that was separated from China after the revolution. While to differing degrees the ASEAN Four also have a Chinese entrepreneurial class, they are much larger, more heterogeneous, and, most importantly, well-endowed with natural resources. Natural resources present a problem for development that is essentially the same as the now famous Dutch disease problem of deindustrialization in northern Europe.

In its simplest variant, the analysis runs as follows. The natural resource development boom pulls labor into that sector from agriculture and manufacturing, raising real wages throughout the economy. At the same time, export strength in the natural resource sector tends to appreciate the currency in real terms. Both the rise in the real wage and the currency appreciation squeeze profits in the incipient manufacturing sector, blocking its development. Thus, it is clear in an intuitive way that discovery and subsequent development of natural resources could dampen industrialization that would provide a more secure, longer-run basis for growth.

Considerations from models of trade theory add refinement to the standard Dutch disease analysis, as Ronald Findlay noted in a perceptive comment at the conference. The real wage will rise in the shrinking (or relatively slowly growing) manufacturing sector only if the natural resource boom pulls resources away from it in a way that increases labor-intensity in the manufacturing sector. In a simple two-factor Heckscher-Ohlin-Samuelson trade model, this would require that the shrinking manufacturing sector be capital-intensive relative to the expanding natural resource sector. In this standard case the capital-labor ratio would tend to fall in both sectors.

A more appropriate model, outlined by Findlay, would have three sectors—agricultural, manufacturing, resource extraction—each with a specific factor—land, capital, and resources—but all using labor. Then expansion of the resource sector, by pulling labor from agriculture and manufacturing, would raise both the land-labor and capital-labor ratios. This would raise the real wage in terms of both food and manufactures,

yielding a strong Dutch disease result. This would be the model most applicable in the case of the ASEAN Four. It may also help to explain why the Latin American NICs have not achieved the same degree of specialization in manufactured exports as the East Asian NICs.

If this is the appropriate model, what policy can be followed to permit continued industrialization? Essentially, the problem is to shield the incipient manufacturing sector from the effects of the natural resource boom. Since the resource boom has both internal (rising real wages) and external (real exchange rate appreciation) effects, two measures might be useful. Taxation of wages in the resource sector could reduce the pressure on real wages in the manufacturing sector. Profits taxation or directed use of the budgetary surplus in a nationalized resource sector to invest abroad or to import capital goods could eliminate the effect on the exchange rate. Both policy measures are essentially ways to ensure that the proceeds of the resource boom are invested in growth in manufacturing by offsetting the real wage and exchange rate effects of a natural resource export boom.

1.4 Government Policy and Market Forces

The dynamic growth and export performance of the Pacific Asian developing countries raise the question of how these success stories were achieved. The relationship of cause and effect is an elusive one in economics generally and particularly so in analyzing aggregate performance. In a not dissimilar volume Arnold C. Harberger notes “the virtual impossibility of building a direct link of modern theory between the observed growth rate of a country and its overall economic policy” (1984, 6). The eight country studies in the present volume provide a sense of the variety of policy experience in Pacific Asia. As in the Harberger volume, which contains case studies of five developed and seven developing countries, the reader of the chapters in this book undoubtedly will conclude that “there is no magic formula” (Harberger 1984, 427).²

Nevertheless, economics would be a dull and probably less insightful enterprise without controversy. The East Asian NICs, in particular, have inspired a set of debates regarding the causes of their economic achievements. These debates concern the relative contribution of market forces and economic policies, of outward versus inward orientation, and of internal liberalization and export promotion; the effectiveness of fiscal versus credit subsidies; and whether exports are demand driven or supply determined.

The relative roles of markets and governments in dynamic growth is an old issue in economics. There has been a lively debate for decades in Latin America on what Albert O. Hirschman called in a widely read

essay in 1961 “ideologies of economic development” (1961). More recently the issue has surfaced as a debate about getting prices right versus getting policies right. This version of the controversy was sparked by empirical research on price distortions undertaken by the World Bank which found that higher economic growth was associated with lower price distortions in thirty-one developing countries and that high price distortion was associated with low growth (World Bank 1983; Agarwala 1983). Later World Bank analyses showed that “big price distortions also lead to slower growth of exports and a greater likelihood of debt-servicing difficulties” (World Bank 1985, 54). Although Taiwan, Singapore, and Hong Kong were not included in the thirty-one countries analyzed by the World Bank, there has been a tendency to identify the Pacific Asian developing countries as market-oriented economies with low levels of price distortion. Indeed, Thailand, Korea, Malaysia, and the Philippines are among the six countries with the lowest price distortions as measured by the World Bank’s composite index (World Bank 1983, table 6.1). As a result, the Pacific Asian experience has been at the center of the current controversy surrounding the efficacy of markets and governmental policies in promoting development.³

1.4.1 Inward versus Outward Orientation

The highly dynamic export performance of the Pacific Asian developing economies has given rise to a discussion about the virtues of inward- versus outward-oriented growth strategies (Streeten 1982; Balassa 1983). The East Asian and Latin American NICs have frequently been cited as contrasting examples of export orientation and import substitution respectively (Morgan Guaranty 1983). Part of the controversy undoubtedly derives from the use of loosely fashioned phrases which sound like dichotomous typologies when in fact more rigorous specification of meaning would reveal that they define different points along a spectrum of policy regimes rather than stark alternatives. What follows is an attempt to attach differentiated meaning to commonly used labels that are often used as substitutes for one another. The results are summarized in table 1.3 and reveal a continuum from autarky to export promotion that we hope captures a variety of configurations of elements defining development strategies. No attempt is made here to identify particular countries with specific development thrusts, but it is hoped that by differentiating the categories and conceptualizing them as elements of a spectrum, the varieties of policy experience analyzed in the case studies in this volume may be thought about more clearly than by applying the dichotomous framework conventionally used.

Inward versus outward orientation are helpful as the most general categories under which a variety of development strategies can be

Table 1.3 Development Strategy Typologies: A Continuum

Autarky	No trade "Delinking" Self-reliance	Dirigisme
Closed economy	Exports and imports less than 5% as a share of GDP	
Import Substitution	(a) Discriminates against all imports through controls: EER_m > EER_x (b) Selective discrimination (c) Mild and limited applications (("left wing deviations"))	
<i>Inward orientation</i>	Priority given to the domestic economy	Markets
<i>Outward Orientation</i>	Priority given to exports	Markets
Trade economy	Exports 15% or more as a share of GDP	
Open economy	Internal liberalization $EER_x =$ EER_m (a) tradable goods (b) (a) + nontradable goods (c) (a) + (b) + macroeconomic variables	
Export promotion	(a) Uniform subsidies for all exports: $EER_x > EER_m$ (b) Selective subsidies: Industrial policy Import substitution (("right wing deviations"))	Dirigisme

Note: EER_x and EER_m are the real effective exchange rates for exports and imports, respectively.

classified. They imply simply a difference in emphasis—as between the domestic market (not imports) and trade, and in particular exports, as the main sources of economic growth. They appear, then, at the mid-point of the spectrum between autarky and export promotion rather than necessarily being identified with the extremes in the type of development strategy.

Autarky means no trade and would derive from a severe government decision to "delink" from the world economy in order to achieve some measure of self-reliance or the appearance thereof (Diaz-Alejandro 1978). The terms *closed* and *open* are often used to describe the bias of policies toward import substitution or export promotion. In this rendering, it is helpful to have designations which empirically identify the importance of trade in the conomy. A closed economy is defined here as one in which trade (exports plus imports) as a share of GDP is low, that

is, less than 5%. It may be that this ratio is low because of deliberate policies, but it may also be due to size, the abundance of natural resources, the similarity of country endowments to world endowments, or other factors. A closed economy is not autarkic but neither is it one in which trade is a major factor in the economy. By definition, closed economies are not of much interest in this volume. A "trade economy" is its opposite. It is a category in which exports are a large share of GDP, say above 15%. The phrases *export-led* or *open economy* are more frequently used. However, *export-led* implies some empirical substantiation of a cause-effect relationship *from* exports *to* economic growth, when in fact high GDP growth may drive exports by generating a supply surplus. The term *open economy* associates internal liberalization (the removal of import controls, tariffs, etc.) with trade as a large share of GDP. Abstracting for the moment the direction of the causality or the degree of this association, the phrase *trade economy* attempts to convey the importance of exports in an economy that is necessarily embodied in a high-export share of GDP. The term *trade economy* is meant to be policy neutral. The question of whether exports are driven by external demand and thereby induce internal growth or are supply determined is discussed briefly at the end of this chapter. Both the terms *closed economy* and *trade economy* identify endogenous economic outcomes rather than policy inputs.

An "import substitution" strategy is a set of deliberate policies that discriminates against those imports which compete with existing or nascent domestic sources of production. Import substitution does not necessarily imply a low volume of imports, as capital goods imports may be essential to establish the industries necessary to achieve self-sufficiency in the designated range of activities. Normally, import substitution strategies discriminate against imports through the use of import controls, tariffs, multiple exchange rate systems, or other policy devices (Findlay 1981, 30–33; Krause 1981, 597–611). But the scope and degree of the bias against imports may vary considerably. In the extreme case, it is the dominant policy, and hence, the development strategy is fundamentally determined by it. In a more limited case, policies may be applied only to selected sectors, with the bulk of the economy otherwise being relatively "open" in the sense that most activity is market determined. It is also possible that selective import substitution policies may be part of an industrial policy which in turn is part of an export promotion strategy.

The other large category of strategies is outward orientation, which means that priority is given to exports either in the economy or in the policy of the country. In its mildest manifestation, exports may be responsive to external demand and grow rapidly as a result of the intrinsic competitiveness of the economy or, at a minimum, of the

tradable goods sectors. On the other hand, there may be a deliberate policy to liberalize the economy, ranging from a limited case of liberalization only in tradable goods sectors to a more inclusive case of liberalization across the economy as a whole, even incorporating macroeconomic variables such as interest rates. Internal liberalization is labeled here as an "open economy" strategy. In most of the literature, open economy is synonymous with outward orientation, and the two terms are used interchangeably as if they have identical and equally specific meanings.

In the formulation here, open economy is delineated as only one type of outward-oriented strategy, that associated with internal liberalization. The open economy–internal liberalization strategy implies that the incentives to export are equivalent to the incentives to import, or as Anne Krueger puts it, "there is as much incentive to earn as to save foreign exchange" (1985, 20). This in effect means, as Jagdish Bhagwati (1986a) has emphasized, that the effective exchange rate for exports "is not significantly different" from the effective exchange rate for imports. Curiously, Bhagwati labels this an export promotion strategy (EP), which has a potentially quite different meaning from the characterization of the term to be set forth here. In Bhagwati's formulation the absence of discrimination against exports is the major achievement and is seen to provide sufficient incentives for export "promotion." A policy of equivalent incentives for imports and exports would be a free trade optimality point in Ronald Findlay's (1981) ingenious formulation on the subject.

Finally, the most dirigisme form of outward orientation is designated here as export promotion. In this strategy category, the state plays a major role in goal setting and policy implementation to achieve the goals. Variation can exist under an export promotion strategy. A mild form, for example, would be illustrated by uniform export subsidies across the range of exports rather than favoring some export sectors over others (Krueger 1981, 18). A more interventionist form of export promotion would be linked to an industrial policy which sets sectoral priorities for investment, credit, foreign exchange, imports, and/or subsidy allocations to make the structure of production conform to the export strategy. It is in this more interventionist type of export strategy that the relative effectiveness of fiscal versus credit subsidies, discussed below, is of greatest interest. Import substitution policies could run simultaneously with and support this style of development strategy. Under this strategy category, it is highly possible that the effective exchange rate provides more incentives for exports than for imports, in effect subsidizing exports and shielding import-competing industries. As a result, exports are promoted beyond the range of optimality leading to what Findlay calls "right wing deviations" and Bhagwati now designates "ultra-EP strategy" (1986b).

These typologies of development strategies, while roughly hewn, at least differentiate among categories in the economic literature that are frequently lumped together. The often portrayed dichotomy between inward- versus outward-oriented growth strategies, in this framework, becomes more a gradual gradation of approaches to development composed of different clusters of elements. The eight transitional countries of Pacific Asia undoubtedly fall at different places on the continuum, as do their counterparts in Mediterranean Europe and Latin America. There is no reason to expect regional homogeneity. It may be hoped that the country experiences traced in this volume, as Alexander Gerschenkron's "journey" through the story of European industrialization in the nineteenth century, may, "by destroying what Bertrand Russell once called the 'dogmatism of the untravelled,' help in formulating a broader more enlightened view of the pertinent problems and in replacing the absolute notions of what is 'right' and what is 'wrong' by a more flexible and relativistic approach" (1982, 26–27).

1.4.2 Fiscal versus Credit Subsidies

The Asian NICs provide instructive contrasts between alternative policy measures to stimulate export-oriented industrialization. Two extremes are Korea, which essentially used a system of credit subsidies and financial repression, and Taiwan, which used fiscal subsidies with relatively free credit markets. The two cases are described in the papers by Wontack Hong and Chi Schive (chaps. 10–11).

The credit subsidy approach begins with the identification of favored export-oriented sectors to receive low-interest loans. Since these are provided below market rates, a queue forms and credit must be rationed. Unsuccessful applicants must turn to the curb market, where credit is available at a much higher interest rate. In general, the weighted average of the subsidized rate and the curb rate is an approximation of the shadow rate that would clear a free market.

With capital costs subsidized in the favored sector and effectively taxed in the curb market, the favored sector tends to become too capital-intensive, or "large-scale." The nonfavored sector becomes too labor-intensive, or "small-scale." This implies that when the system is ended and both interest rates move toward the shadow rate, the formerly favored sector will suffer capital losses and some bankruptcies, while the nonfavored sector will shed labor. Thus, ending a credit subsidy regime may entail a period of bankruptcies and unemployment. Hong suggests that this was the case in Korea.

In addition, the requirement that the banking sector provide loans at below-market rates, as well as a possible requirement to buy government debt at low rates, means that deposit rates must be suppressed if the banking system is to remain profitable. This will tend to dis-

courage saving in the financial sector, shrinking the resource base for investment in industrialization. Thus, the credit subsidy route can reduce saving and misallocate it, creating a deepening distortion that can be expensive to eliminate. Again, Korea may be an example of the problem.

A fiscal subsidy on output or exports of the chosen industry can avoid these “side effects” without additional cost to the taxpayers. In the credit subsidy system, the cost is hidden in low deposit rates, while with fiscal subsidies it is explicit in the tax structure. To achieve equivalent incentives to invest in the chosen industries, the cost of fiscal subsidies should be less. They avoid the bias between factor inputs and the need for suppression of deposit interest rates. Further, the fiscal subsidies can be phased out without the twin difficulties of bankruptcy and unemployment threatening to reach unstable levels. Chi Schive’s paper on Taiwan illustrates the case. Thus, Pacific Asia provides experiences with alternative forms of government intervention that can be instructive throughout the developing world.

1.4.3 Demand- versus Supply-Driven Export Growth

The trade and development literature contains discussions regarding the degree to which trade-related dynamic growth is externally driven or internally generated. James Riedel goes to quite some length to question the notion of trade as the “engine of growth” of developing countries, especially as this notion is put forward by Sir Arthur Lewis in his 1979 Nobel lecture. Nevertheless, Riedel concludes, after considerable statistical analysis, that “the evidence, therefore, suggests that supply rather than demand factors have principally determined LDC export performance in manufactures” (1984, 69). Curiously, this is not too distant from Lewis’s own assertion in the Nobel lecture that “if a sufficient number of LDCs reach self-sustaining growth, we are into a new world. For this will mean that instead of trade determining the rate of growth of LDC production, it will be the growth of LDC production that determines LDC trade, and internal forces that will determine the rate of growth of production” (Lewis 1980, 562).

The focus in this volume on structural change and trade and the association of rapid structural change in industry with dynamic exports of manufactures highlights the issue of supply- versus demand-driven growth. The issue cannot be resolved here. However, evidence in the case studies in this book on the development strategies of Korea, Singapore, and Taiwan seems to fit, with some variation among them, within the “export promotion” category above (Bradford 1986). This evidence, along with the association of unusually rapid rates of structural change with transitional economies, leads toward the conclusion that supply push may have been more important than demand pull in

driving the transition process. Rapid structural change in manufacturing and in exports seems to have been induced by a strategic sectoral design that was an integral part of export promotion and seems to have gone beyond the scale feasible based on responsiveness to international demand under conditions of favorable factor endowments. High export growth associated with unusually rapid rates of structural change in manufacturing and exports suggests that public policy played a role in continuously shifting the specialization of production toward exports. The identification of supply push and export promotion strategies as key elements that determine dynamic transitional growth is offered here as a central idea with which to approach the studies in this book.

Notes

1. See Hartigan 1975 for an introduction to cluster analysis. A special application is factor analysis. Algorithms exist, so our suggestion here would appear to be feasible.

2. The Harberger (1984) volume contains studies of the growth experience of twelve countries and explores "the connections between economic policy and economic growth" of Britain, Japan, Sweden, Germany, and the United States, and Tanzania, Ghana, Indonesia, Jamaica, Taiwan, Mexico, and Uruguay.

3. For critical views see Bradford 1984, 121–26, and chap. 7 in this volume; Fishlow 1985; and Evans and Alizadeh 1984, 22–43, 43–46.

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