

INTRODUCTION

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RAPID industrial progress has greatly changed the industrial structures of the countries in East and Southeast Asia since the 1970s and expanded their manufacturing sectors' share of production. The main thrust of development policy in these countries has shifted from one of initiating industrialization to one of developing the manufacturing sector as a whole for sustained economic growth. Two Asian NIEs, the Republic of Korea and Taiwan, expanded external trade and steadily industrialized at the same time. Since their initial periods of industrialization in the 1950s and 1960s their economies have made the structure of their manufacturing sector more complete. Although the Southeast Asian economies are relatively more dependent on their resource base, they are moving steadily forward with industrialization. Experiences in both regions hold important clues for developing countries that want industrialization with sustained manufacturing growth.

Analyses of these growth relies heavily on the theories of export-oriented industrialization. Only limited analyses have been made of ramifications that expanding exports have on domestic developing economies, how domestic industrial structure must change in order to accommodate that impact, and how the changes react back on imports. A research group organized by the Institute of Developing Economies, most members of which contributed to this special issue, turned its attention to inter-industry relations to provide theoretical and empirical approaches to industrialization in an international trade system. This special issue presents their research systematically.

The first paper uses the dual-economy model that has been traditionally applied to developing economies, and theoretically examine the effects and meaning of industrialization policy in an open economy investigating the supply of capital (investment) goods to the agricultural sector. The next four papers examine empirically and theoretically the dual-industrial development and emphasize the linkage effects pointed out by Ohno and Imaoka in their work, "The Experience of Dual-Industrial Growth: Korea and Taiwan," published in the December 1987 issue of *The Developing Economies*.

The last three papers look at the factor endowment structure as a determinant in trade and industrial patterns, giving attention to the distinction between skilled and unskilled labor and analyzing, from diverse angles, the implications of the factor endowment structure.

Ohyama theoretically examines industrialization policy in a dual economy initially dominated by its agricultural sector. He examines an industrialization

policy prevalent in developing countries, that of protecting (by means of pricing policies) industries that supply agricultural capital goods, and discusses the appropriateness of such policies and the effects they have on the trade and industrial structure. For his dynamic analysis, Ohyama introduces foreign trade to the Harris-Todaro model to explicate the movement of labor from agriculture to manufacturing and the possibilities of unemployment in the manufacturing sector. He concludes that the appropriate operation of pricing policy permits progress in industrialization. But in the absence of economies of scale and technological progress, industrialization is not particularly desirable in the long run for the nation as a whole. In contrast, shrinking disparities in wage rate between the two sectors and controlling agricultural sector savings will lead to an industrialization that gives long-term increases in national economic welfare.

Kubo presents a theoretical model of the dual-industrial development mechanism. His analysis uses a two-sector model for middle-income countries hypothesizing Korea and Taiwan. The model has two sectors, export industries that are internationally competitive and intermediate-capital goods industries with economies of scale, the latter assumed to be under policy-protection. The model's static and dynamic analyses show that the dual-industrial development is possible if capital accumulation in both sectors reaches a critical level and that export and intermediate-capital goods industries will grow simultaneously on a sustained growth path.

Ohno tries to examine in a theoretical way the rationale of the dual-industrial strategy, taking into consideration the learning effects. He employs a two-period and three-sector model to analyze the effects of export-promotion policy on the economy in which the import-substituting industries are protected by the government. The result shows that the export-promotion policy should be combined with liberalization of the domestic market, when the learning effect in import-substituting industry is sufficiently large. Conversely, when the learning effect is small, a higher level of protection is needed.

Yanagihara analyzes pre-World War II Japan, which was newly industrializing and expanding manufacturing production at a faster rate than the industrialized countries of the time. Observations of the trade structure for the entire manufacturing sector show that the period of expansion in industrial production during the first decades of the twentieth century was one of progress in import substitution. Analyzing the import-substitution process in the chemical and steel industries suggests that demand expansion generated by the backward-linkage effect of exports, which was brought on by import-substituting protective measures, made economies of scale possible and induced rapid growth for the entire manufacturing sector.

Yokoyama and Itoga examine growth patterns of manufacturing industries in the Philippines and Thailand using indices of capital intensity, export-import ratio, supply ratio of intermediate goods, and economies of scale. They show that food processing takes up a large proportion of the manufacturing sector and that the dual-industrial pattern does not exist as it does in Korea and Taiwan. The authors further hypothesize that expanding production in import-substituting labor-intensive

industries led to growth in both the Philippine and Thai manufacturing sectors, and that that expansion was made possible by increased productivity in the agricultural sector that generated increases in domestic demand.

Yokoyama, Ohno, Itoga, and Imaoka empirically verify the trade and industry structure in East and Southeast Asia from the theoretical framework of comparative advantage. Using Leontief and Leamer indices (the latter of which takes into consideration the factor intensity of production for the domestic market as well as of exports and imports) they measure the four countries of Korea, Taiwan, Malaysia, and Japan to compare factor endowment of the skilled and unskilled labor forces and of natural resources. They conclude that Japan is a capital-abundant country, that Taiwan is a labor-abundant country, in both skilled and unskilled labor, that Malaysia is a resource-abundant country, and that Korea shifted from capital- to labor-abundant country in the first half of the 1970s.

Imaoka empirically studies the formation of skilled labor in Asia. Training of workers is now given serious attention as a task of industrialization in East and Southeast Asia and Imaoka attempts to empirically clarify the mechanism of skills accumulation. He uses case studies to analyze the in-company mechanism of skill formation in Japanese corporations and clarify the role that personnel, employment, and wage systems play in promoting skill formation. Observing that Japanese subsidiaries and joint ventures in Asia contain similar mechanisms but that local corporations do not, he discusses the roles of Japanese affiliates in Asia in skill formation.

Yokoyama examines the so-called Dutch disease, i.e., the phenomenon that export boom in natural resources causes domestic deindustrialization, and discusses the relation of that disease to export-oriented industrialization strategies. He points out that the state of factor intensity in the industries that export natural resources or in other industries and intermediate demand linkages can eliminate the possibility of the Dutch disease. Furthermore, the Dutch disease may not occur when the supply of labor is infinitely elastic. Certain of its effects is shown to appear when the labor market is segregated into two parts, one of skilled labor with full employment and the other of unskilled labor in unlimited supply. Yokoyama points out that substitutability between skilled and unskilled labor may cause the disease.