Chapter 6

Changes in East Asian Trade Structures and Analysis of Competitiveness

KAJIWARA Hirokazu

The main purpose of this chapter is to examine changes in trade relationships in East Asia (NIEs, ASEAN 4, China, Japan, and the U.S.), on the basis of inter-industry classifications, utilizing data concerning trade value (1970-2000) and degree of trade linkage. No region of the world has demonstrated such conspicuous economic change as East Asia. East Asia's trade-led growth means that economic changes are typically reflected in trade structures. An examination of changes to trade structures will, therefore, bring interesting facts to light. After a discussion of such changes, I will go on to use RCA and competitiveness indices to analyze the changes in competitiveness occurring against the background of changes in trade structures. In this chapter my approach differs from conventional analyses in conducting a trade analysis based on inter-industry classifications. It is conventional to conduct trade analyses using commodity classifications, but this approach, discards the industry perspective. Clearly, it is difficult to evaluate trade analyses based on industry classifications. The challenge adopted in this chapter is to correct this problem point by formulating long-term statistics and conducting a multi-faceted analysis in order to produce a convincing trade analysis on an industry-by-industry basis.

In the 1960s the East Asian NIEs (South Korea, Taiwan, Hong Kong, Singapore) achieved rapid development by increasing their exports of manufac-

tured products. China and the ASEAN 4 nations (Indonesia, Malaysia, the Philippines, and Thailand) have followed the same path since 1980. East Asian trade was dependent in this process on the EU, the U.S. and Japan. However, this structure has changed significantly since the 1990s; the dependence of East Asian trade on these nations has declined, and regional trade interdependence has increased. In the 1990s, intra-regional export dependence increased to cover a broad range from South Korea's 32% to Singapore's 46%, outstripping the share of exports to the U.S., the EU and Japan. ASEAN 4 demonstrates the same type of changes, but China remains strongly export-dependent on the EU, the U.S. and Japan, and its intra-regional export dependence is declining. This reflects regional structural changes rather than being a characteristic of China's late development. China's cheap and abundant labor force is attracting enterprises in Japan and the NIEs to transfer their production bases in order to maintain their competitiveness in the European and U.S. markets, and exports to the EU and the U.S. from Japan and the NIEs are therefore now being made from China. Focusing on the NIEs, we see that in 2000 10.71% of South Korea's exports were being made to China; in Taiwan that figure was 2.10%, in Hong Kong 34.45% and in Singapore 3.90%. In the same year, the percentage of Taiwan and Singapore's exports being made to Hong Kong were 21.68% and 7.86%

respectively. Both nations were exporting to China via Hong Kong. The increase of the dependence of the NIEs on exports to China and Hong Kong provides an explanation of the changes which have occurred in trade structures in the region.

Naturally, China is not the only factor in this increased dependence on intra-regional exports in East Asia. Exports to ASEAN 4 and the NIEs have also increased. For example, between 1990 and 2000, Thailand's total exports increased 2.98 times; its exports to China increased 10.56 times and to Hong Kong 3.35 times, while its exports to Indonesia increased 8.65 times, to Malaysia 4.90 times, to the Philippines 6.44 times, to Singapore 3.54 times, to Taiwan 6.44 times and to South Korea 3.21 times. In the same period, Malaysia increased its total exports 3.33 times. Its exports to China and Hong Kong increased 4.88 and 4.75 times respectively, while its exports to Indonesia increased 4.98 times, to the Philippines 4.38 times, to Singapore 2.68 times, to Thailand 3.43 times, to Taiwan 5.84 times and to South Korea 2.41 times. These figures show that intra-regional export dependence centers on the ASEAN 4 nations. Similarly, China remains a significant factor for other nations in the region, but their level of intra-regional trade with nations other than China is clearly increasing. Japan and the U.S., both of which have a major influence on trade in East Asia, are also increasing their level of dependence on exports to the region.

This change in export destinations corresponds to large-scale changes in the composition of export commodities. East Asia is reliant on intermediate goods, capital goods and consumer durables for its export trade; the region is no longer dependent on labor-intensive goods (textiles, sundries, etc.) for its exports. In terms of inter-industry classifications, the proportion of products of the machinery and trans-

port machinery sectors in the region's exports is growing rapidly. The machinery sector is characterized by the production of large numbers of units and components, with a time-consuming roundabout production process. This sector is also characterized by constant development of new products and new technologies. This is also a sector with high potential for a broadening and deepening of the division of labor. At the time when Japan's product import ratio was unusually low in comparison with other advanced industrial nations, the fact was explained in terms of the nation being unable to establish the type of division of labor found in the EU and the U.S. with its neighboring nations. However, the regional division of labor has progressed with the development of neighboring Asian nations, and the evolution of an export structure based on the machinery sector has increased the possibility of its further extension. In terms of volume, machinery exports follow the order intra-regional, the U.S. and Japan, reflecting the progress of the intra-regional division of labor in this sector. Japan's decreased share reflects the fact that a division of labor is not being established with Japan itself; enterprises in Japan are using regional investment to pursue a strategy centering on division of labor with Japanese enterprises in the region.

Figures for degree of trade linkage in East Asia vary, but an overall declining tendency is observable. This is not because trade relationships are weakening. Rather, as previously discussed, intra-regional trade in East Asia is expanding. The decline in the degree of trade linkage is due to the following factors:
In their drive for development, East Asian nations have pursued an export-oriented industrialization strategy which has increased levels of both exports and imports. This expansion of the scale of exports and imports has diversified markets and caused a transition from the Japan-U.S.-EU- reliant trade

structure to one which emphasizes intra-regional trade. The increase in total exports and the decentralization of markets has decreased the percentage of exports to, for example, a hypothetical country B in the total exports of a hypothetical country A, a percentage which is utilized as the numerator in calculating the degree of trade linkage. The increase in scale of country B's imports also increases country B's share in total world imports, a figure used as the denominator in calculations of trade linkage. The figure for degree of linkage naturally declines with an increase in the denominator and a decrease in the numerator. Changes in the degree of trade linkage in East Asia can therefore be seen to express the expanded scale of import and export and the transition away from Japan-EU-U.S.-reliant trade structures.

Another interesting area of focus is the changes in competitiveness occasioned by changes in trade structures and trade relationships. An RCA analysis of trade statistics makes clear the fact that the progress of industrialization with a consequent increase in export volume and expansion of the range of export commodities causes a progressive standardization marked by the disappearance of commodities with a noticeably high RCA value and a significant reduction in the number of commodities with an RCA of zero.

In the nations studied, products manufactured by the textiles, leather and products thereof, chemical products, metal products, machinery, transport equipment and certain other sectors have high RCA values, with RCA values increasing for chemical products and machinery. RCA calculated for export commodities shows the competitiveness of the commodities; because they are produced in large numbers, their tendency is to level out at the world average. However, RCA calculated on the basis of inter-industry classifications shows the competitiveness of industries, and because many different commodities (labor-intensive commodities, capital-intensive commodities, technology-intensive commodities) are produced by the same industry, there is no movement towards the world average. The normal tendency of RCA classified by industry is the same as that of long-term changes in industrial structure: With development from developing to advanced industrial nations, the competitiveness of heavy, chemical or machinery industries increases. Furthermore, as shown by the electrical industry, in sectors with rapid development of products and technologies and whose proportion of total industrial production and export is increasing, RCA increases still further. Conversely, a drop in RCA shows an industry which is losing competitiveness and whose proportion of total industrial production and export is declining.

The flying geese paradigm of industrialization analyzes product life on the basis of long-term changes in competitiveness. Product life commences with no competitiveness and import-dependence. Increasing domestic import demand in turn increases the possibility for domestic manufacture of the product, and domestic manufacture eventually commences. After this, domestic manufacture increases in scale, competitiveness steadily increases, and exports are commenced. Expansion of production and export cannot continue indefinitely, and eventually later-developing nations catch up and competitiveness enters a stage of decline. This decline in competitiveness not only causes production to drop, but steadily increases imports from later-developing nations. In other words, product life completes an import – domestic production – export – re-import cycle. The competitiveness index shows the import and export aspects of this cycle. The denominator of the formula used to calculate it is total

imports and exports, while the numerator is exports minus imports. The index registers complete import-dependence (a value of −1), gradual increase of export volume (falling negative figures), export volume topping import volume (positive figures) and increasing export volume (figures approaching +1). After export volume reaches its peak, import volume increases (figures decline from around +1). That is, movement of the index from −1 through 0 towards +1 registers increasing competitiveness, and movement from +1 through 0 towards −1 registers declining competitiveness. Many analyses have made use of this index, but the thirty-year period which forms the subject of this chapter is not sufficient for a change in product life, and only a part of one product life can be analyzed. Therefore, sectors which RCA analysis shows to have maintained their competitiveness in most of the target countries (textiles, leather and products thereof, chemical products, metal products, machinery and transport equipment) have been selected as subjects, allowing changes in competitiveness to be analyzed from a different perspective.

Competitiveness indices largely agree with hypothesized changes, but are not as high as the figures generated by RCA calculations. This reflects the export-driven increase in imports which is characteristic of the export-oriented industrialization adopted in East Asia, and is also indicative of the fact that exports do not increase in isolation. The increased regional division of labor reflected in changes in trade structures is also due to this characteristic. RCA formulated for exports alone is high, or shows rapid increases. Analyses using competitiveness indices which include imports trace the process of long-term change, and do not cause a ceiling to be reached in the short term.

Because industries manufacture a diverse range of products, it is difficult to perform an analysis of competitiveness on an industry classification basis. However, studies of changes in the competitiveness of industries are essential to the analysis of relationships between industries and changes in the trade relationships between nations and regions. This is because changes in competitiveness can be seen to be reflected in trade. When conducting such analyses, bringing together degree of linkage, RCA and the competitiveness index as demonstrated in this chapter and utilizing the distinct perspectives they provide will be effective in enabling researchers to go directly to the heart of the issue.