

International Business Networks of Japanese Companies and Changes in the Trade Structure in Asia

By Aizawa Takahiro

FOCUSED on optimizing their overall business practices, Japanese manufacturers are shifting various corporate business functions overseas, primarily within East Asia, to take advantage of relatively cheap labor and more opportunities to expand their markets. The following is an overview of how patterns of international business network development at Japanese corporations have changed in recent years, as well as the associated changes in trade patterns in the East Asia region.

Since the late 1980s, the number of corporations established in other Asian countries by Japanese manufacturers of electrical machinery, transport equipment, and other industrial sectors has been increasing, as have the sales generated by these corporations. These Japanese manufacturers have organized their corporate business functions so that research activities (basic and practical research, research and development) are conducted in Japan, while the man-

ufacturing processes (parts manufacturing and product assembly) are conducted in Japan as well as in ASEAN countries and China, showing the increasing shift toward Asia.

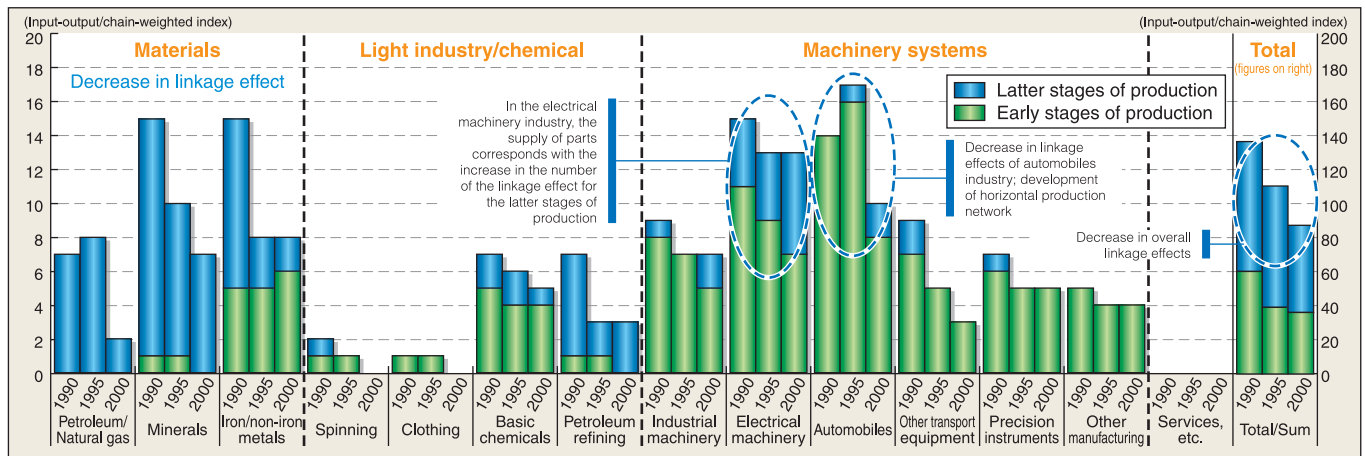
As manufacturing develops on an international scale, fewer and fewer companies are establishing vertical production networks by which to organize domestic and overseas business functions, dividing labor so that different stages of production are conducted in Japan or overseas. Instead, an increasing number of companies are establishing horizontal production networks in which the entire production process is carried out both inside and outside of Japan. By structuring production in this way, Japanese manufacturing industry is moving away from a division of labor based on the difference of factor endowment to a division of labor based on the degree of value, under which low value added, labor-intensive processes are carried out in developing countries

and high value added, capital-intensive processes are performed in Japan.

The effects that these changes in the patterns of international business network development of Japanese manufacturers have on the division of labor in East Asia as a whole are evident in the changing industrial linkage effects structure. The international and inter-industry relations effect represent the ways in which production in an industry in one country affects production in another industry in another country. Japanese companies which establish vertical production networks see a higher inter-industry relations effect, since the production of goods overseas promotes the production of parts in Japan. By contrast, Japanese manufacturers with horizontal production networks tend to see a smaller inter-industry relations effect.

The relation number of the industrial linkage effect indicate that the overall inter-industry relations effect between Japan and other East Asian countries

Figure 1 The relation number of the linkage effect between Japan and East Asia [about Japanese industries (selected industries)]



Source : Compiled from *Survey Research on East Asia Inter-Industry Relations and Trade Structure and the Restructuring of the Japanese Economy*, Japan Industrial Policy Research Institute (JIPRI)

Notes : 1. Figures represent the number of the forward and/or backward linkage effects taking the value dividing the linkage effect on recipient country production by domestic production of 5% or higher.

2. Early stages of production correspond with upstream manufacturing in the relations effect, while latter stages of production correspond with downstream manufacturing in the relations effect.

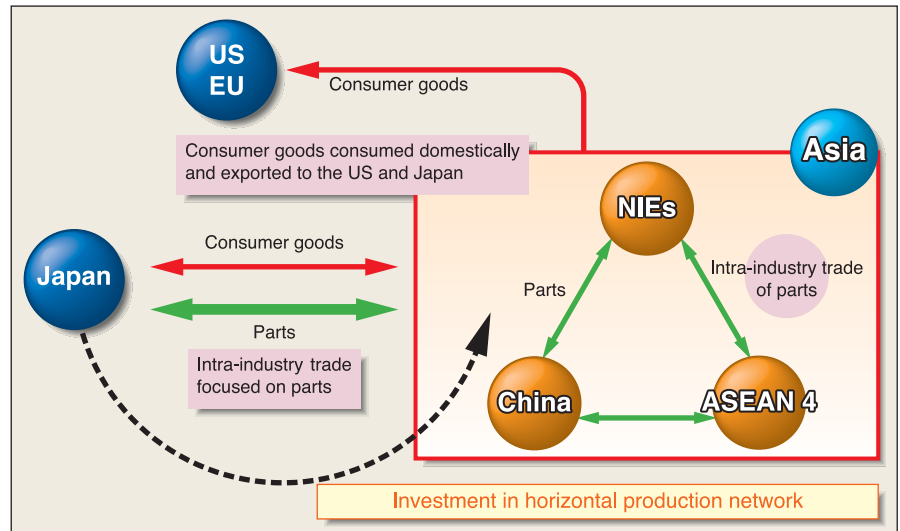
Source material : *Asian International Input-Output Table 1990, 1995 and 2000*, Institute of Developing Economies (IDE)

and regions has decreased, a fact which corresponds with the rise of horizontal production networks of Japanese manufacturers. The drop in the number of the linkage effects is particularly notable in the automotive industry, as Japanese automakers increasingly pursue integrated production overseas, in part to promote the procurement of parts locally. Against this backdrop, Japanese manufacturers are introducing more advanced technologies at their local affiliates in these countries and their local affiliates are providing technical training for local corporations. In the case of the electrical machinery industry, which has the highest relation number of the linkage effects, an increasing number of Japanese companies are shifting away from supplying their local affiliates with parts and are instead finding themselves on the other end of the supply chain. This reversal indicates a significant decrease in the one-way flow of parts supplied by Japanese electrical machinery manufacturers to overseas manufacturers, as well as an increasing availability of parts from a greater number of countries and regions in East Asia for procurement by Japanese companies.

The relation number of the linkage effects within East Asia indicates a drop in the relations effect for the materials industry and an expansion in the relations effect for the electric machinery industry. As the input-output/chain-weighted index for the relations effect in Japan's electric machinery industry peaks, East Asian countries and regions are increasingly supplying parts each other to those at the higher value end of the manufacturing network.

The international structure of the Japanese manufacturing industry has shifted from a vertical to a horizontal production network, and we are seeing the emergence of mutual-parts trading between East Asian countries and regions. As a result, the intra-industrial trade of parts and capital goods is expanding in East Asia. It is notable that this structure is inconsistent with the concept held in developed nations that products should be differentiated,

Figure 2 Division of Labor in Asia



Source : Compiled by METI

with “intra-industry trade primarily in consumer goods, based on individual preferences in end-consumer goods.”

It should be noted that trade between Japan and other East Asian countries in the electric machinery sector exhibits a particularly high proportion of intra-industry trade within the East Asia region, and the intra-industry parts trade ratio between Japan and China, and Japan and the ASEAN 4, is rising. This indicates that, as production base is laid in China and the ASEAN 4, the production network is shifting to one in which these items, particularly manufacturing parts, are supplied by Japan to China and the ASEAN 4, as well as vice versa.

The export industry is therefore seeing increasing intra-industry trade of these items between Japan and other East Asian countries and regions, and the quality of the items exported by East Asian countries to third-country markets are in part the same products as those in Japan. A comparison by added value of products exported to third countries by Japan and other East Asian countries and regions suggests that these other countries are exporting an increasing number of goods with values similar to those of Japanese exports. This indicates that as Japanese companies pursue greater development of horizontal production networks, production base of these countries and regions are estab-

lished locally, and that production and export of high value added products is advancing.

Finally, the economic relationship between East Asian countries can be analyzed in terms of demand. Demand within individual countries and regions is becoming increasingly dependent on the markets in the other countries in this region. Japan and the United States remain extremely important in terms of final demand for the value-added goods produced in East Asian countries and regions. Strong market growth, however, makes China an increasingly important player in terms of demand for goods, whether manufactured domestically or in other countries.

The horizontal production networks forged by Japanese manufacturers in the manner described above is promoting the production industry in various countries and regions, bringing about an expansion within the region of mutual trade in parts for manufacturing. Japanese companies are responding to these changes, adapting their international business networks to suit the production base developing in Asia, and recognizing the increasing strength of China as a consumer. **JS**

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