

# Changing Production Networks in Asia

By Junjiro SHINTAKU

## Export Growth Lies behind Economic Boom

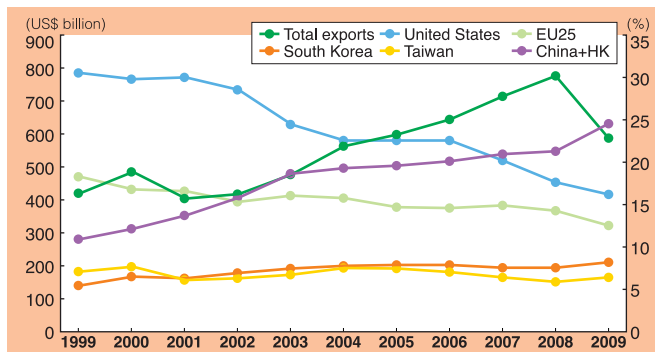
Since the 1980s, Japan's manufacturing industries have relocated their production bases to overseas markets as a way of addressing trade disputes and a strong yen. The automobile industry has located production bases in its big markets (i.e., the United States and Europe) under a market-based production scheme. Of late, it has been rapidly expanding output in China. Meanwhile, the electrical/electronic industries have located mass-production bases largely in member states of the Association of Southeast Asian Nations (ASEAN) and China since the latter half of the 1980s under a cost-based production scheme. This transfer of manufacturing plants overseas has resulted in changes in Japan's trade structure.

*Chart* shows the trends of Japan's total export values and the percentages of exports by region over the last decade. Since the end of World War II, Japan's exports have consistently grown in value. After a respite in the latter half of the 1990s, exports expanded steadily from 2002 onward, and in 2008 reached a record annual high of \$775.9 billion. In 2009, exports plunged to \$580.8 billion in the aftermath of the collapse of Lehman Brothers Inc. in September 2008, but they were still almost on a par with what they were in 2005 when the Japanese economy picked up. This means export growth lay behind Japan's booming economy.

In the meantime, however, the fundamental structure of exports has dramatically changed from what it was until the 1980s. Japanese exports by region reveals that Japan's economic and trade patterns have changed steadily. Of the country's overall exports to the rest of the world, the United States accounted for 16% in 2009, down sharply from 30% in 1999. Also, the share of the European Union (EU) went down to 13% from 18%. By contrast, the ratio of Japan's exports to China grew to 24% from 11% during the same period, and those to South Korea and Taiwan edged up to 8% and 6%, respectively.

CHART

## Trends of Japan's export values & ratios by market



Source: Compiled by author based on JETRO data drawn from Trade Statistics, Ministry of Finance

## Shift to Intermediate Goods in Exports

The changes in Japan's export destinations have brought about shifts in its export goods. Of the country's exports to the United States, which used to be its largest export market, such durable consumer goods as automobiles take up 30-35%. As for exports to China, which is currently the biggest export market for Japan, raw materials for industrial products and capital goods have consistently made up 35% and 50%, respectively, over the last decade, with durable consumer goods accounting for only about 5%. Similar compositions of export goods can also be seen in Japan's exports to South Korea, Taiwan and the ASEAN countries. Intermediate goods such as capital goods and materials for industrial products occupy the largest share, approximately 85%, in Japan's exports to East Asia as a whole.

Japanese-made intermediate goods go to Asian manufacturing plants of Japanese corporations and to South Korean, Taiwanese and Chinese corporations. The typical trade pattern in southern China is *lailiaojiagong* (toll manufacturing), in which imported materials are processed into products for export. Specifically, intermediate goods are first exported from Japan to Hong Kong. The bonded goods are then brought to Japanese-affiliated factories on the east coast of Guangdong Province in southern China. The goods are assembled there into final products and brought back to Hong Kong for export to the United States and elsewhere. Similarly, Japanese factories in ASEAN countries import intermediate goods from Japan, fabricate those goods into final products and export them to the United States and Europe.

The global market shares of the Japanese semiconductor and liquid crystal display (LCD) industries steadily followed a downward trend since the 1990s. In the meantime, South Korean and Taiwanese semiconductor and LCD makers boosted production and market share. It might appear that Japanese manufacturers are locked into fierce rivalry with South Korean and Taiwanese peers in the fields of semiconductors and LCDs. However, South Korea and Taiwan are both large export markets for Japan. In 2006, Japan's exports to and imports from South Korea amounted to \$50 billion and \$27 billion, respectively, resulting in a large trade surplus for Japan. Similarly, Japan posted a big trade surplus with Taiwan.

What are main Japanese export goods in its trade with South Korea now? Among goods with high export ratios are steel (with exports to South Korea accounting for 20% of Japan's total steel exports in 2006), chemical products (16%), electrical measuring instruments (14%), precision instruments (12%), electronic components (11%) and metal-working machines (10%). All of these are industrial goods and indispensable components and equipment for industrial sectors in which South Korean corporations have strong international competitiveness.

For Japanese producers of components and manufacturing equipment, South Korean and other Asian corporations are important customers. For example, exports of equipment for LSI and flat-panel

display manufacturing to South Korea amounted to 116.9 billion yen, while those to Taiwan came to 280.5 billion yen and to China 158.3 billion yen in 2006. Exports to the three markets together made up 62% of Japan's overall exports of such equipment.

In East Asia, international division of labor is established. Industrial goods such as manufacturing equipment and components are first produced in Japan and then exported to South Korea and Taiwan, where the goods are processed by capital-intensive, cutting-edge industries. The processed goods are then exported to China, where they are assembled by labor-intensive industries into final products. The typical example is the LCD industry. In 2004, South Korea and Taiwan accounted for 37% and 27%, respectively, of Japan's exports of components of deflection plates for LCD panels. The global market shares of Japanese manufacturers of LCD components and flat-panel manufacturing equipment stand high, in the range of 60% to 100%, and their exports to Asian countries are much greater than their domestic sales. This is because production of large-sized LCD panels in Japan is only about 15% of the global total, compared with a combined 80% in South Korea and Taiwan, thus encouraging Japanese producers to sell them to these two markets.

Further, some of these panels are exported to China where they are assembled into final products (e.g., LCD TVs) at factories of Chinese companies as well as of Japanese- and South Korean-affiliated corporations. In this way, international division of labor has been built up in East Asia, with each country taking comparative advantage; industrial goods (Japan), capital-intensive intermediate goods (South Korea and Taiwan) and labor-intensive assembled goods (China).

## New Trends

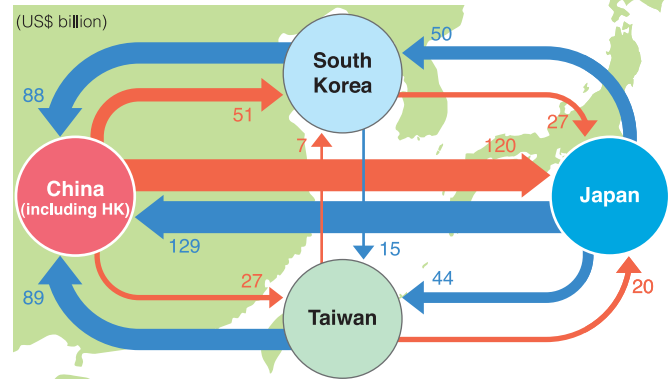
While expanded overseas production by Japanese manufacturers has touched off concerns about the hollowing out of the domestic manufacturing industry, the Japanese manufacturing sector has shifted its industrial structure to one based on intermediate goods over the last decade. As a result, it would be safe to say intermediate goods have now become a main source of the Japanese manufacturing industry's competitive edge. In 2007, Asia alone made up \$75.2 billion of Japan's overall trade surplus of \$91.7 billion. In recent years, however, new signs of change are emerging.

### 1) Expansion of local market-oriented exports

Japan's overall trade surplus shrank sharply to \$19.8 billion in 2008, but its surplus with Asia stayed high at \$75.5 billion. In 2009, Japan also posted a large trade surplus, \$68.0 billion, with Asia. In the aftermath of the global financial crisis, the US and European markets became stagnant. Theoretically, this indicates production in Asia for export to the US and European markets would decline in tandem. However, no visible drop was seen in Japan's exports to Asia, particularly to China. This is apparently because intermediate goods that Japan exported to Asian countries were used for products targeted at local markets.

As a matter of fact, the global financial crisis has prompted not a few Japanese corporations to hammer out and promote strategies for developing newly emerging markets, in particular the Chinese market. What is vital for them is how to promote sales of their goods such as consumer electronics and automobiles in the Chinese market. Japanese businesses have to muscle out their South Korean and

## Trade structure in East Asia (2006)



Source: Compiled by author based on White Paper on Trade & Investment, JETRO (2007 edition)

Chinese rivals in fierce competition in that market. Particularly notable in that respect is the dramatic rise of South Korea's Hyundai Motor Co., Samsung Electronics Co. and LG Electronics Inc. in emerging markets.

Given steady expansion of the Chinese market, Japanese corporations are also expected to boost sales of their intermediate goods to Chinese firms. In such transactions, Japanese corporations should be asked to fit their products to local requirements in price and quality. Requirements of Chinese firms are quite different from those of Chinese factories of Japanese-affiliated companies. In this context, a greater number of Japanese corporations would relocate production and development of intermediate goods to China.

### 2) Competition in exports of intermediate goods

Japan used to have a high percentage in the world's total exports of intermediate goods to East Asia. The Japanese share, however, has been falling in recent years. In the area of electrical machinery, ASEAN countries, China, South Korea and Taiwan have been emerging as main exporters of intermediate goods.

Under the conventional trade structure, South Korea is said to have developed a strong sense of crisis. South Korean corporations used to produce LCD TVs based on Japanese intermediate goods. However, South Korean firms fear that Chinese manufacturers expand in the same way as themselves, and that the raison d'être of South Korean firms could eventually be lost amid deepening ties between Japanese and Chinese businesses. As a result, some South Korean companies are beginning to shift their main business to intermediate goods just as the Japanese manufacturing sector did.

In fact, South Korean corporations have been growing strongly in such electronic components as ceramic condensers. According to a survey report on components of the iPad developed by Apple Inc. of the United States, many of their components are of South Korean make, and Japanese components are extremely limited in number. In international division of labor for the tablet personal computer, Taiwanese corporations produce the device using components made in South Korea and Taiwan, and the US company sells it worldwide.

In the newly emerging production networks in East Asia, Japanese corporations have to face up to the urgent need to rebuild their own positions. **JS**

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