

The Revival of Japanese Manufacturing Industry

By *Ishige Hiroyuki*

1. Economic recovery driven by manufacturing industry

While manufacturing industry makes up about 20% of Japan's GDP, it accounts for 90% of the country's exports and R&D investment (Fig. 1). Accordingly, this industry has a ripple effect on other industries and greatly influences the Japanese economy. To describe the current conditions of Japanese manufacturing industry, the number of employees in FY 2003 has continuously declined compared to the previous year, and the SME sector has been slow to recover. Nevertheless, production has been on a growth trend since the first quarter of 2002, and earnings have been on the rise since the third quarter of the same year. Reorganization in some sectors has led to the reduction of inherited surplus debt and excessive installation to a suitable level, and the platform has been laid for new development.

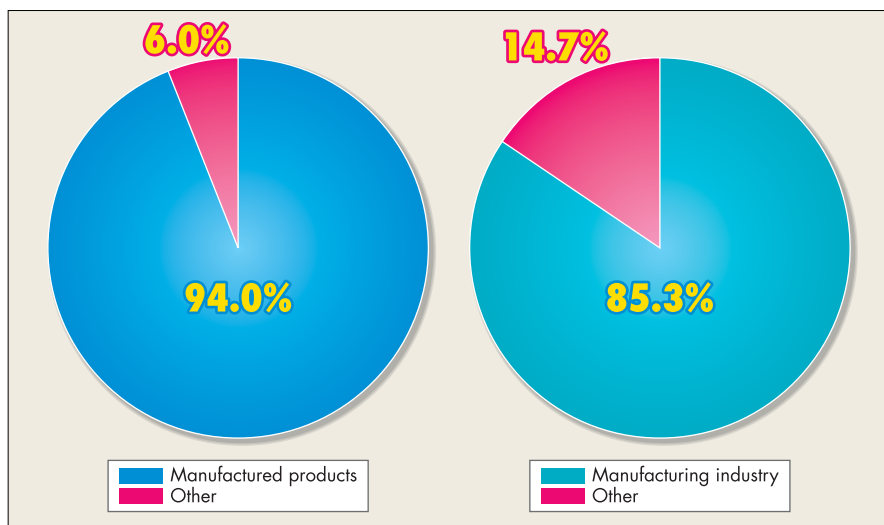
Increased exports and capital investment appear to be the factors behind the recovery of manufacturing industry.

Looking at the recent economic recovery from a micro perspective, however, in sectors like digital consumer electronics, new products that were impossible with previous technology and the materials are being created by the Japanese manufacturing industry's efforts for R&D and innovation. This has resulted in the creation of new demand, and helped boost corporate earnings, while also contributing to a positive cycle of further R&D and capital investment (Fig. 2). For example, the demand for digital consumer electronics has increased greatly, and in the previous three years, the size of the domestic markets for flat-panel TVs, DVD recorders and digital cameras have grown by about 4.5, 3.5, and 2.5 times respectively. This positive cycle resulting from R&D was possible in Japan, as there are both completed-product manufacturers and a wide range of parts manufacturers in this country. By working together and making mutual adjustments, they were able to produce new technologies and products. This extensive industrial integration has created an advantageous domestic business

environment, and has given rise to many links between industries. For example, added-value creation is being realized across the entire economy including the formed and fabricated materials industry which scales triple of added value creation by digital consumer electronics alone, according to analysis using an industry relation chart (Fig. 3). This widely surpasses the achievement of manufacturing industry, which realizes double added on average.

The major driving force behind the recent economic recovery has been the active capital investment of manufacturing industry, which continues to expand these new industries. The capital investment of manufacturing industry in 2003 exceeded ¥12 trillion (Fig. 4), and the increase rate at the beginning of 2004 was higher than the rate in the same quarter of the previous year. There has also been an increase in the value of machinery orders, a leading indicator of capital investment. Capital investment by manufacturing industry is likely to continue rising for the immediate future.

Figure 1 Share of exports held by manufactured products, and share of R&D costs



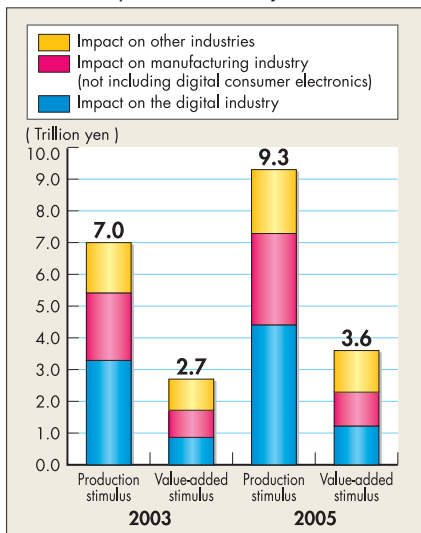
Source: White Paper on Manufacturing

Figure 2 Positive cycle



Source: White Paper on Manufacturing

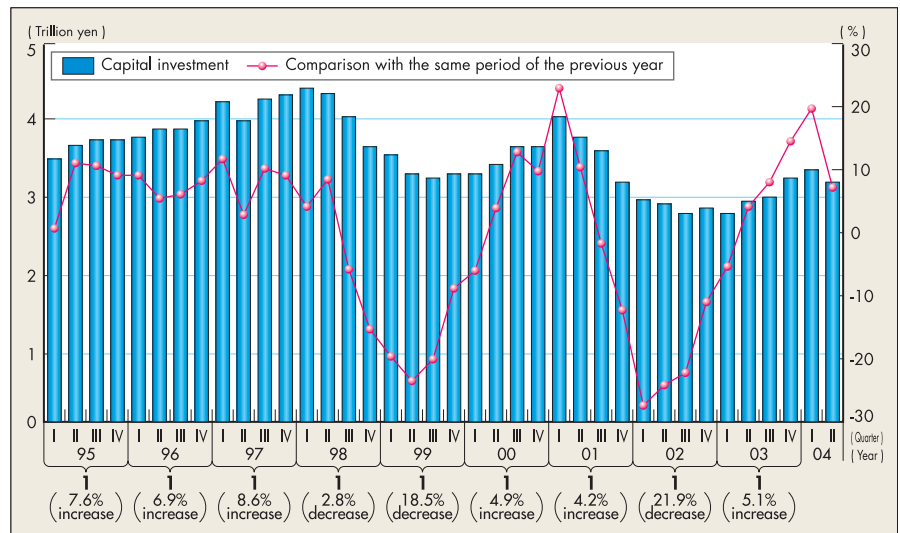
Figure 3 Impact of digital consumer electronics production on the Japanese economy



Source: Industrial Linkage Table in 2000

Note: Digital consumer electronics calculated using mobile phones, digital cameras, LCD panel TVs, and DVD recorders

Figure 4 Capital investment by manufacturing industry



Source: Ministry of Finance "Survey of Corporate Statistics (Quarterly)"

Notes: The figures at the bottom are based on the calendar year, and have been derived from quarterly data. The figures in brackets indicate comparisons with the previous year

2. Superior business environment for domestic manufacturing industry

On the world stage, there has been remarkable growth in trade and investment, and international competition between companies has greatly intensified. Given these circumstances, in order to secure optimally efficient production and development, more and more manufacturing companies are

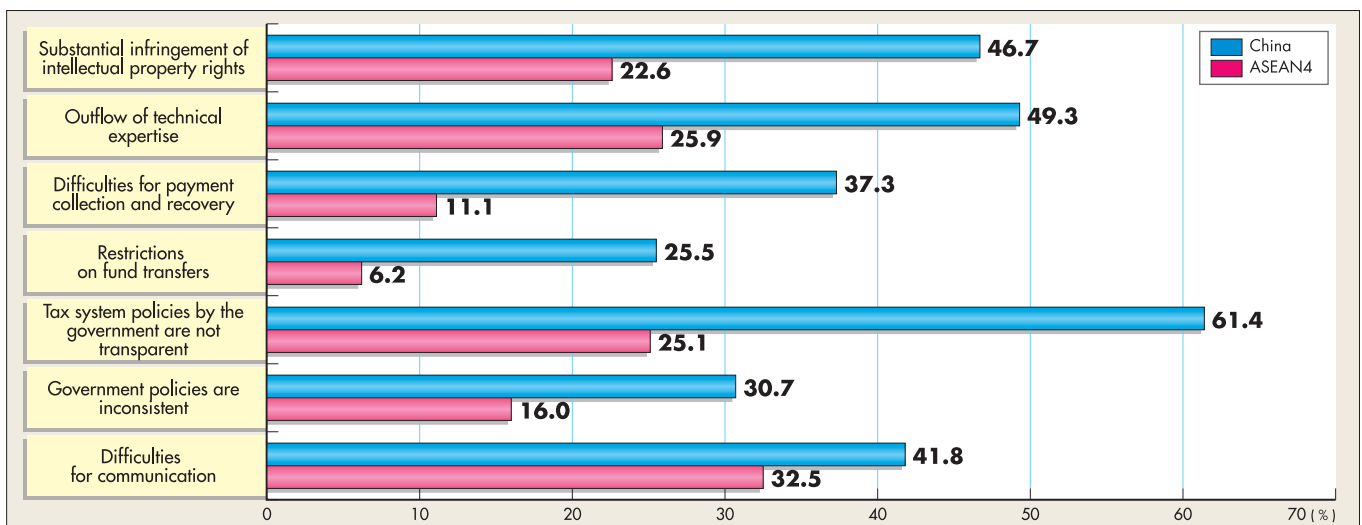
building global supply systems.

In particular, Japanese manufacturing industry is actively promoting business in China, a country that continues to experience high growth. Japan is increasing direct investment in China and pursuing cost benefits by expanding production such as simple processing and assembly, and exporting capital goods and key materials. This allows Japanese manufacturing industry to divide up manufacturing processes, and

allocate roles based on the strengths of its manufacturing foundation.

Investment by Japanese manufacturing industry in four ASEAN countries (Indonesia, Thailand, Philippines, and Malaysia) is actually surpassing investment in China and Hong Kong. Compared to China, ASEAN remains an important overseas manufacturing base for Japanese manufacturers, as it poses fewer problems for business development (Fig. 5).

Figure 5 Issues for business development in China and ASEAN4

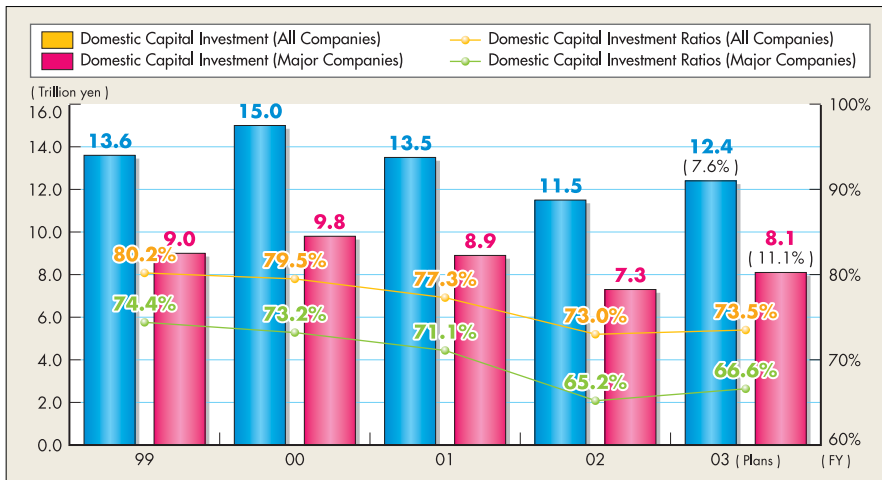


Source: White Paper on Manufacturing

Notes: Results of a questionnaire survey of manufacturers located in Japan.

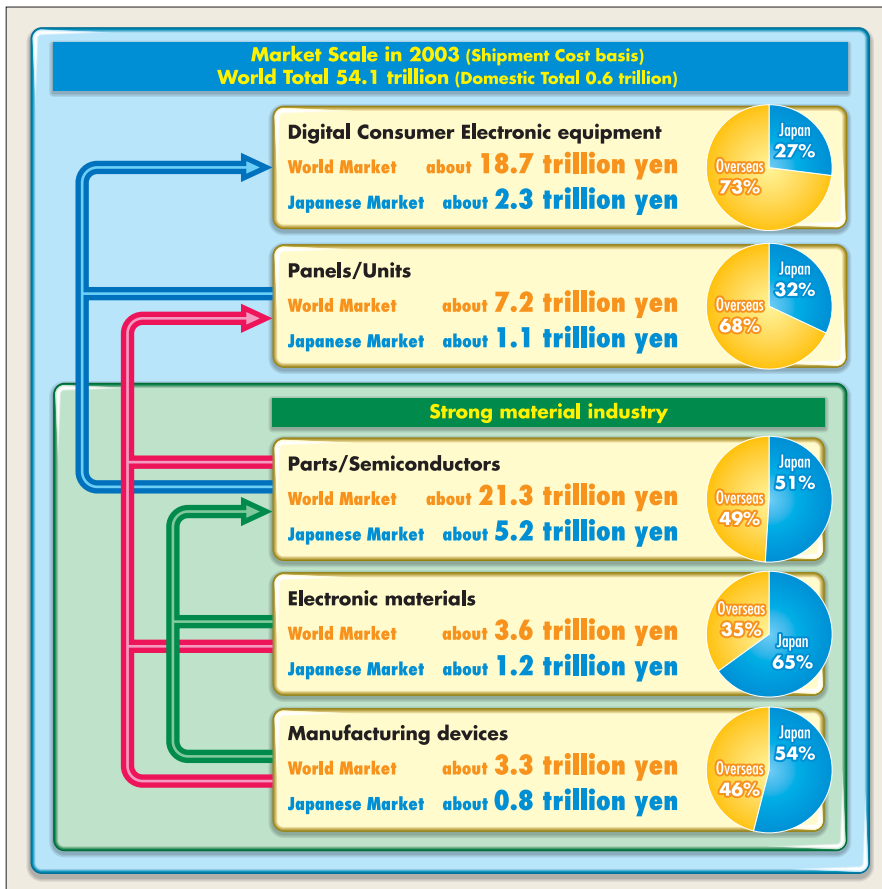
There were 306 valid responses regarding China, and 243 regarding ASEAN

Figure 6 Capital investment in Japan by Japanese manufacturing industry, and changes in capital investment ratios



Source: Adjusted by METI (original source: TANKAN, Bank of Japan)

Figure 7 Digital Consumer Electronics-Market and the share of Japanese companies



Source: New Industry Creation Strategy

Note : All figures are estimates

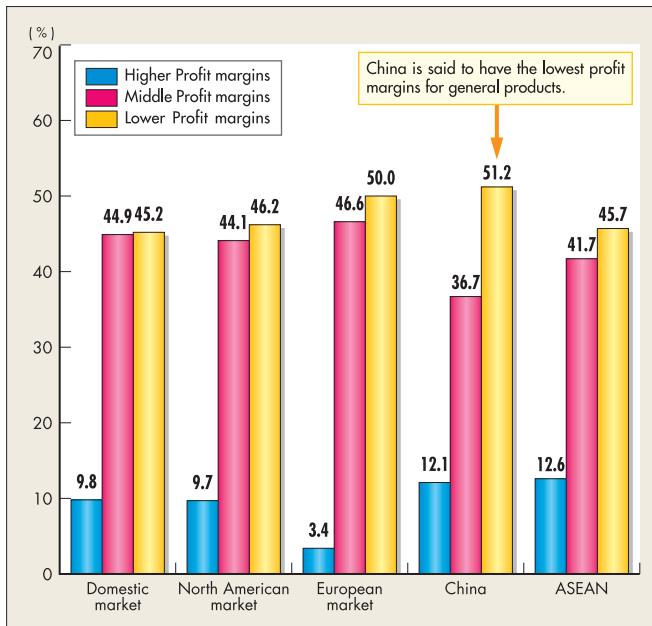
DESPITE the progress of globalization, there is also a trend toward reevaluating the advantages of the domestic business environment, utilizing domestic production based on thorough examination of the pros and cons, and bringing some overseas production bases back to Japan (Fig. 6).

The Japanese business environment offers advantageous points for introducing new production machinery and technology, and developing products promptly through the cooperation of processing and assembly companies and parts and material manufacturers. It has now become necessary, for fields like digital consumer electronics, to produce new products and functions by optimizing the combination of different types of materials and parts that have a mutual effect on each other, through the cooperation of a wide range of industries. Viewed from the perspective of cost, speed and long-term relationships, the concentration of advanced parts industries in Japan provides advantages for the domestic business environment (Fig. 7). Furthermore, the domestic market is experiencing more intense low-price competition and it is becoming hard to increase the profit margins on general products. However, in the case of luxury and differentiated products, about 40% of the companies in the domestic market are achieving high profit margins. The Japanese market is now a highly responsive one for superior products (Fig. 8 & 9). This business environment, with a strong desire to produce value-added products, gives the Japanese market its edge.

The remarkable thing concerning the repatriation and utilization of domestic Japanese manufacturing is the process innovation of development, production and distribution. Various corporate processes including production have been streamlined so far, but some companies are now able to realize radical improvements in efficiency by changing conditions that were once considered fixed restrictions.

With cell production, for example, in

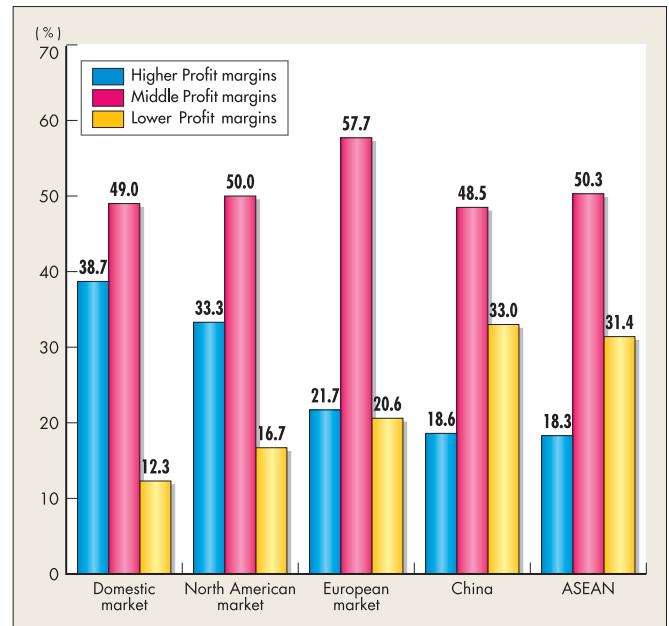
Figure 8 Profit margins for each general product



Source: METI, 2004

Notes: Random Survey of manufacturing companies in Japan. 413 valid responses.

Figure 9 Profit margins for each luxury (differentiated) product



addition to being able to produce various products in small quantities in a short period of time, there are positive effects that go beyond the production site to the entire business, including rapid measures for defective parts interfusion and improvement of cash flow through the reduction of work-in-progress and completed-product inventories. The possibilities for such process reform are being expanded by IT activities. Sales trends can be quickly learned and the right amounts of the required products can be produced as needed. Domestic productivity is realizing remarkable improvements through advanced supply chain management that supplies the market rapidly whenever needed, and through highly developed production systems that support the SCM.

With the revival of excellence in the domestic business environment, there are cases of production bases being moved back to Japan from overseas. In one case, an audio equipment manufacturer anticipated a savings in material and distribution costs due to the deflationary situation in Japan, and transferred production of portable minidisks

players from Malaysia to Yamagata. As a result of domestic production innovation, a manufacturing line that required 20 workers in Malaysia could now be managed with just a few people in Japan. In another case, a large home electronics manufacturer was performing part of its production of video cameras for the US market in China. However, when the ratio of parts procured in Japan rose to 40%, the company decided to move the production to Aichi and Gifu prefectures. As a result, the company was able to unify its production systems for video cameras destined for the US market. A horizontal production system for production standardization was secured, and the period for delivery to the US volume retailers was shortened by 25%.

Japan's manufacturing base offers technical and quality advantages for these kinds of initiatives. If the domestic production processes are efficient, it suggests that continuously performing production in Japan is cutting corners. We must continue to focus on this point and maintain our efforts to reform domestic production plants.

3. Further development of manufacturing industry

Manufacturing industry plays an important role in the Japanese economy, in fields such as R&D, and it accounts for over 90% of exports. By creating new products from R&D, developing new demand, restoring production and raising profits, the Japanese production industry is experiencing a positive cycle of further capital and R&D investment. A trend can be seen toward the repatriation of production bases in order to take advantage of the domestic business environment with its concentration of advanced material producers, and its potent market that strives to make value-added products. In order to reinforce this trend, we need to continue carrying out policies for maintaining and strengthening the foundation of Japanese manufacturing industry. **JS**

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