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## *Japan's Labor Productivity Only 61 Percent of the United States'*

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Since the 1990s, the U.S. economy has achieved an improvement in labor productivity through the use of information technology (IT) and others, led primarily by the service industries. Meanwhile, the labor productivity of the service industries in Japan has remained low, so the gap between the two countries appears wide. Thus, the Council on Economic and Fiscal Policy (CEFP) has set a national goal of improving labor productivity in order to accelerate the growth of the Japanese economy. In order to achieve this goal, it is necessary to know the productivity gaps between Japan and other countries. We compares Japan's labor productivity with that of the U.S. and five countries in Europe and Asia, while attempting to be as rigorous as possible in estimating input prices, which hold the key to the measurement of productivity.

### *A Comparison of Productivity Proves Difficult*

Labor productivity is often defined as (real value added)/(number of workers × annual working hours), that is, the amount of value added created by a worker in an hour. Since the amounts of value added are shown in the local currencies, they cannot be compared as they are. They need to be converted into a single currency by using proper purchasing power parities (PPP). So far, however, there have been no proper purchasing power parities by industry.

How, then, is a PPP which is proper for a comparison of value added obtained? Value added is output minus input. This means that if output and input are obtained, the PPP of value added, which is the difference between the two, can be ascertained indirectly.

Now, let us consider the PPP of output by taking automobile industry as an example. When it is assumed that the ex-factory prices of automobiles with identical specifications are 2 million yen in Japan and 20,000 dollars in the United States, the conversion rate as measured from these automobiles, or the output PPP, is 100 yen to the dollar.

With respect to input price, let us take steel as an example. If a ton of steel costs 100,000 yen in Japan and 500 dollars in the United States, the input PPP is 200 yen to the dollar. If it is possible to compute an output PPP and an input PPP in this manner, then the value-added PPP can be obtained using the information of inter-industrial relations in an input-output table.

Out of the PPPs used so far, the ones released by the Organization for Economic Cooperation and Development (OECD) are well known. However, they are obtained from price studies, which cover only final demand goods. Consequently, they involve the following problems (1) The prices include distribution margins, (2) intermediate goods are not covered, and (3) imported products are included. Therefore, it is hard to say that they accurately reflect the price of value added by domestic producers.

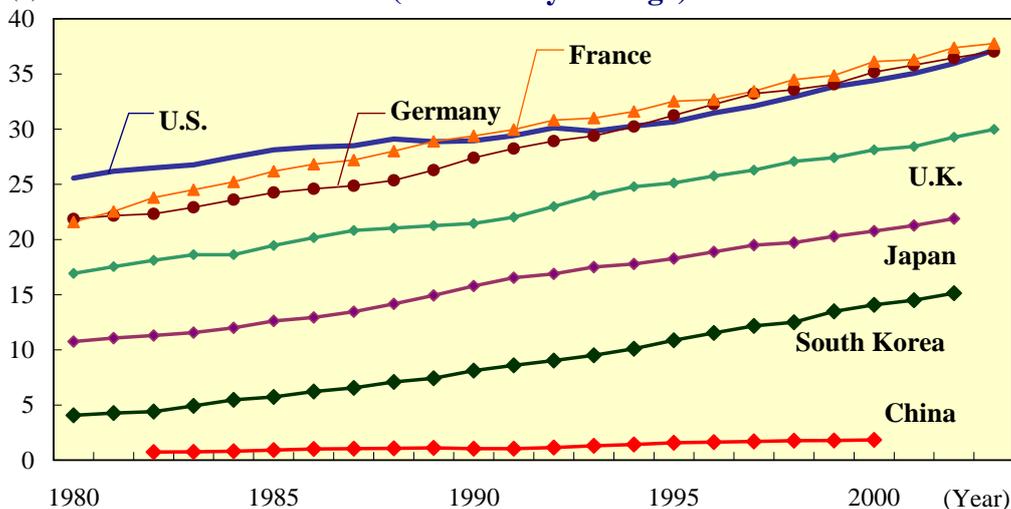
A comparison of productivity requires producer prices, such as the above-mentioned shipment prices of automobiles. This type of purchasing power parity, namely the output PPP, is based on an approach from production. However, a study of this kind has never been made.

The European Union (EU), having recognized that its major priority is to improve the labor productivity of its member-nations, has begun to explore growth strategy for its service industries. After making productivity studies one of its main research fields, the EU conducted a rigorous study on output PPPs and released its results in March 2007. By using these new PPPs, we have conducted a comparison and analysis of labor productivity in the seven countries of Japan, the United States, the Republic of Korea (South Korea), China, the United Kingdom, Germany and France.

### *Japan is Far Behind the United States and Europe*

Figure 1 shows a comparison of labor productivity in the seven countries, obtained from value added PPPs. The average value added labor productivity (per man-hour) for all industries in Japan (2002) was 21.9 dollars, or only 61 percent of the United States' figure, which stood at 36.0 dollars. With respect to European countries (2003), the figures were 37.8 dollars for France, 37.0 dollars for Germany and 30.0 dollars for the United Kingdom, all of which rivaled that of the United States. The Japanese figure was conspicuously low. With respect to Asia (other than Japan), the figure was 15.1 dollars for the Republic of Korea, which was equivalent to 41 percent of the figure for the United States and 67 percent of that for Japan. The figure for China (2000) was 1.8 dollars, which was only 5 percent of that for the United States.

**Figure 1 An International Comparison of Value Added Labor Productivity (all-industry average)**

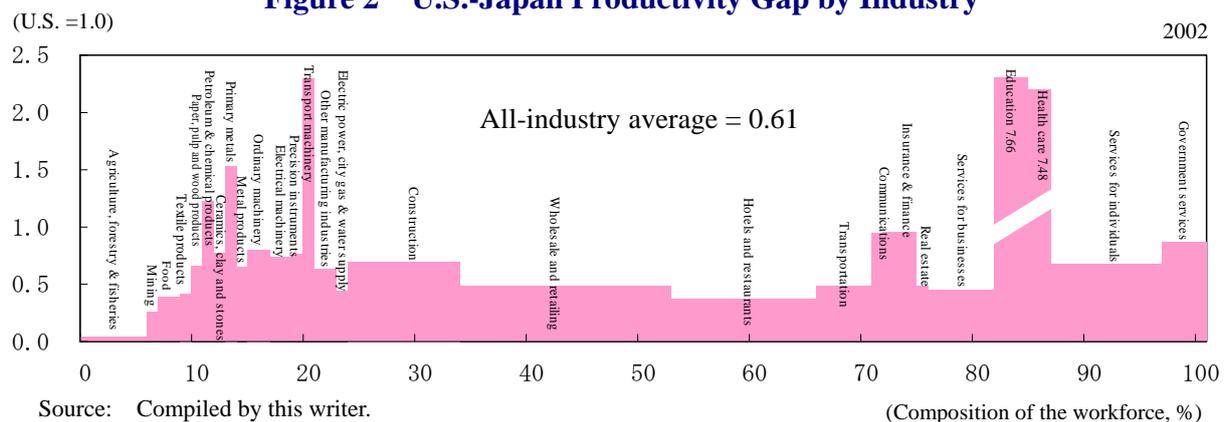


Source: Compiled by this writer.

Figure 2 shows the productivity gap between Japan and the United States by industry. The vertical axis shows the productivity of Japan, when that of the United States is taken as 1. The horizontal axis shows the composition of the workforce. While many Japanese industries fell below the United States in terms of productivity, in five industries (petrochemical products, primary metals, transport machinery, education and health care) Japan's productivity was higher than that of the United States. The high productivity in the transport machinery industry is consistent with the strong international competitiveness of Japanese passenger cars. The extremely high productivity of the education and health care industries in Japan as compared with the United States can be attributed to the facts that in Japan, labor input is small relative to the amount of value added and that prices of education and health care are extremely low compared with those in the United States.

These results are more or less consistent with the results of the study by the Cabinet Office, which is based on the OECD's PPPs and which found that "Japan's labor productivity is 70 percent of that of the United States" (as of 2005). This being the case, even if Japan achieved its goal of raising the rate of increase in labor productivity by 50 percent during the next five years, it would still be difficult to be on a par with the United States in terms of the level of productivity.

**Figure 2 U.S.-Japan Productivity Gap by Industry**



Note: This report constitutes part of the findings of a study commissioned by the Japan Economic Foundation (JEF).

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