Why Did Profitability Decline in the 1990s?
-- Decomposition of Rates of Return to Capital

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In the prolonged recession, Japan has been suffering from a low rate of return to capital. As profitability plays an important role as an engine for economic growth, increase of profit is a vital issue. The rate of return to capital can rise either as a result of a rise in capital productivity or a rise in capital income share. This report will compare these factors with respect to Japan and the US and consider the recent low rate of return to capital in Japan.

Figure 1 shows the rate of return to capital (=corporate capital income / corporate fixed assets) of non-financial corporations of Japan and the US. In Japan, this rate increased from about 5% to about 8% in the latter half of the 1980s after declining rapidly in the early 1970s. It started to fall again from 1989 and has remained below 5% in recent years.

The rate of return enjoyed in the US has been higher than that of Japan since Japan’s rate of return fell in the early 1970s. The difference between the two nations narrowed in the late 1980s, but the subsequent severe profit squeeze in Japan widened the gap again. Recently, however, the gap has been narrowed due to the fall of the profitability in the US.

Figure 1 Rates of Return to Capital of Non-financial Corporations of Japan and the US

(Note) Rate of return = corporate capital income / corporate fixed assets.
What caused the recent low rate of return to capital in Japan? The rate of return to capital (=capital income/assets) can be decomposed into two components: the capital income share (=capital income/output) and the output-to-capital ratio (=output/assets). These factors are not independent. For instance, a decline in the relative price of capital goods could lead to a reduction in the output-to-capital ratio as capital is substituted for labour in response to higher capital input prices. However, this decomposition helps us to grasp the long-term effects that the variation of each factor has on the overall rate of return.

Figure 2 illustrates the average growth rates of corporations with respect to each factor, including both financial and non-financial sectors. After the rate of return to capital in Japan slowed its declining rate from 6.5% in the 1970s to 1.5% in 1980s, it again decreased faster in the 1990s, reaching a rate of 6.3%. The decline in both the capital income share and the output-to-capital ratio equally accounted for the fall in rate of return in the 1970s and the 1980s. In the 1990s, unlike these previous decades, the decrease in the rate of return to capital was mainly attributed to a fall in the capital income share. It accounted for 90% of the total decline of profitability. In interpreting this result, we must be careful to note that this does not mean that the output-to-capital ratio did not affect the fall in the profitability in the 1990s. Although its contribution seems relatively small because of a large drop in capital's share, it still had as much influence on the profitability deterioration as in the 1980s. The average productivity of capital has been steadily decreasing.

In the US, the rate of return to capital decreased at an average rate of 1.5% in the 1970s and the 1980s, but this trend switched to an increase in the following decade. This is mainly because the capital income share increased in the 1990s whereas it had decreased in the 1980s. The output-to-capital ratio also continued to increase and contributed to an increase in profitability.

In order to increase the rate of return in capital, Japan needs to improve capital productivity or shift factor shares toward labour. Adjustment of the excess in physical capital and more efficient investments are required for the improvement of capital productivity. A decline in the capital income share is identical to a rise in the labour income share. The compensation of employees per capita, deflated by GDP deflator, grew faster than the average rate of labour productivity in the 1990s. The acceleration of real wages relative to productivity results in a shift in factor shares toward labour. We also need further analytical research on adjustment in real wages before considering measures to improve profitability.
Figure 2-1 Decomposition of Growth Rate of Return to Capital of Corporations (Japan)

-8
-6
-4
-2
0
2
1980/70 1990/80 2000/90

Year

Capital income share
Output-to-capital ratio
Growth rate of return to capital

(Note) Rate of return = (corporate capital income - net interest payments) / fixed assets. Output-to-capital ratio = GDP / fixed assets