

Economic Trends

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Slow Capital Accumulation and the Decline in Labor's Share of Output

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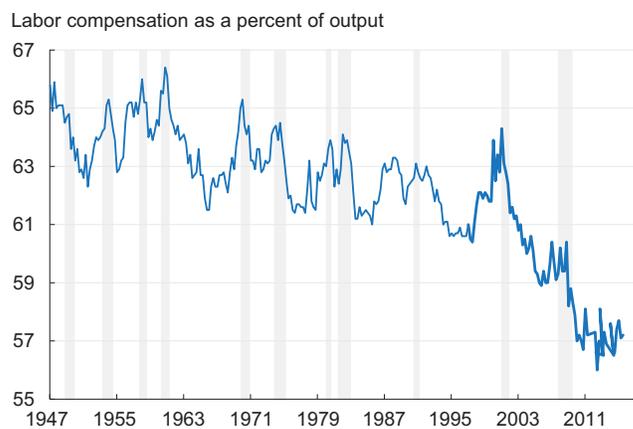
Since capital and labor tend to be complementary in the production of goods and services, the same factors that have slowed down capital accumulation since the early 2000s may have weakened businesses' labor demand and may have decreased the labor share.

The labor share of output—the ratio of labor compensation to output—has trended downward for decades, but it has declined at a faster rate since the early 2000s. The labor share in the nonfarm business sector hovered around 64 percent in the 1950s, declined to 61.4 percent in 2002, and dropped more rapidly thereafter. It is currently close to 57 percent.

A declining labor share means that wages grow less than productivity. Since the early 2000s, wages have risen much more slowly than productivity. Since 2002, real compensation per hour in the nonfarm business sector has grown at an average annualized rate of 0.73 percent, while productivity has grown at an average annualized rate of 1.79 percent.

According to Karabarbounis and Neiman (2013), the decrease in the relative price of investment goods, partly due to progress in information and communication technologies, has induced firms to replace labor with capital, thereby reducing the labor share. Elsby, Hobijn and Sahin (2013) find that part of the long-term

Labor Share



Notes: Nonfarm business sector. Shaded bars indicate recessions.
Sources: Bureau of Labor Statistics; Haver Analytics.

decline in the labor share may be explained by the offshoring of labor-intensive production processes, which has led to a higher capital-labor ratio in U.S. production, and a lower labor share.

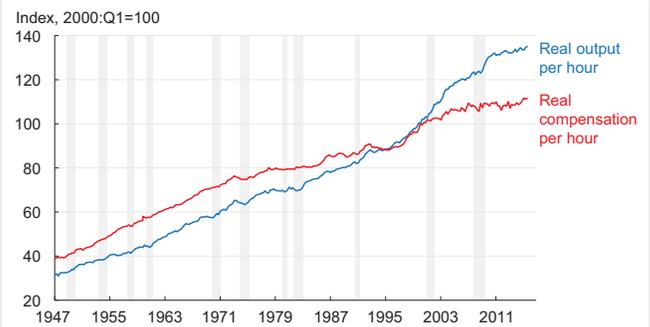
Lawrence (2015a and 2015b), however, points out that the labor share decline may be connected with a lower, rather than a higher, capital-labor ratio. Most estimates suggest that capital and labor tend to be complementary in the production of goods and services, which means that production requires the use of both capital and labor together, and it is difficult to substitute capital for labor or labor for capital. When capital and labor are complementary, a decrease in the capital-labor ratio is associated with a contraction in businesses' demand for labor, which leads to a plunge in the wage rate and to a decline in the labor share. Lawrence then connects the labor share decline with a lower effective capital-labor ratio induced by labor-augmenting technological progress—a type of technological progress that raises the productivity of labor relative to capital and encourages businesses to substitute labor for capital.

Lawrence's argument suggests that the steeper decline of the labor share since the early 2000s may be connected with the slowdown of capital growth in those years. Capital services, which grew at an average rate of 4.3 percent annually before 2002, have since grown only 2.2 percent annually on average. Capital services per hour, an indicator of the capital-labor ratio, grew at an average rate of 2.89 percent annually before 2002, but have since grown 2.05 percent annually on average.

Depending on the strength of the complementarity between capital and labor, a given decrease in the growth rate of the capital-labor ratio can be associated with a sizeable decline in the labor share. For instance, if we use an empirically plausible value for the strength of complementarity (an elasticity of substitution equal to 0.5), then a decrease in the capital-labor ratio of, say, 10 percent translates into a decrease in the labor share of approximately 2.5 percentage points, all else constant.

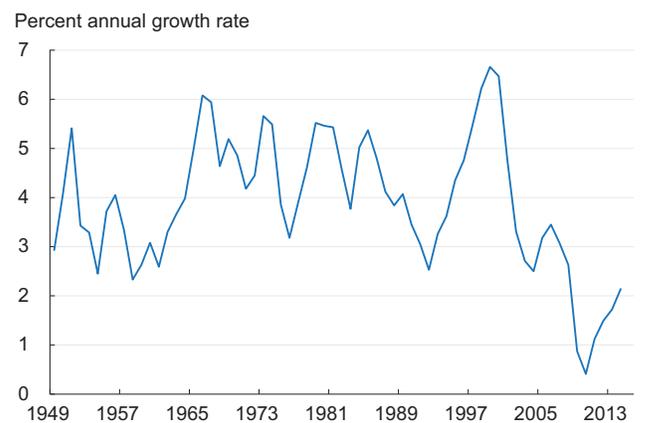
This suggests that the same factors that have slowed down capital accumulation since the early 2000s may have also weakened businesses' labor demand, leading to a faster decline in the labor share and a wider gap between wage growth and productivity growth. One such factor could be the deceleration of multifac-

Real Wage and Productivity



Notes: Nonfarm business sector. Shaded bars indicate recessions. Both series scaled to 100 in 2000:Q1.
Sources: Bureau of Labor Statistics; Haver Analytics; author's calculations.

Capital Services



Note: Nonfarm business sector.
Sources: Bureau of Labor Statistics; Haver Analytics.

tor productivity. Since 2005, multifactor productivity has grown 0.58 percent annually on average, more than a percentage point slower than in the previous 1996-2004 period, which was characterized by fast productivity growth.

References

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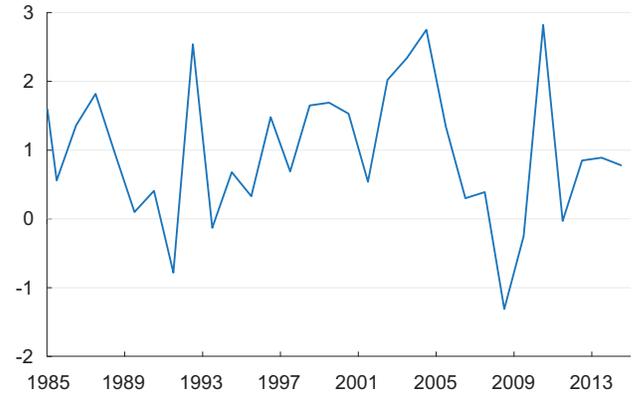
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Multifactor Productivity

Percent annual growth rate



Note: Nonfarm business sector.

Sources: Bureau of Labor Statistics; Haver Analytics.



Filippo Occhino is a senior research economist in the Research Department of the Federal Reserve Bank of Cleveland. His primary areas of interest are monetary economics and macroeconomics and his recent research has focused on the interaction between the risk of default in the corporate sector and the business cycle.

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