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INSIGHT

Recent Trends in Wages and Productivity

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Productivity growth is an important determinant in long-term wage growth. In 2022, labor productivity growth and real wage growth have been negative, a concern for many policymakers. This CRS Insight discusses the theoretical relationship between productivity and wages and the historical and recent trends of the two. For more information about recent wage trends, see CRS Report R47380, *Average Wage Growth and Related Economic Trends in 2022*, by Lida R. Weinstock.

The Relationship Between Wages and Productivity

In economic theory, wages are equal to the marginal product of labor—the added output from the last worker hired. In other words, employers set wages for workers based on how much those workers individually produce. Historically, the relationship has not been close economy-wide in the short run. To measure the productivity of labor, the Bureau of Labor Statistics (BLS) calculates the amount of output produced per worker per hour worked. Productivity increases allow for more goods and services to be produced using the same amount of labor. In theory, an increase in productivity may result in an increase in wages, all else equal. For example, if a worker generates $10 of revenue per hour, the employer may be willing to pay up to $10 per hour. If that worker becomes more productive and generates $11 of revenue per hour, the employer's willingness to pay may increase up to $11 per hour as well. Therefore, increases in real wages that occur in tandem with increases in labor productivity are generally viewed as more sustainable than those that are not. Since productivity increases allow for increased output (and revenue) per unit of labor, a corresponding real wage increase would not be expected to push up inflation. Rather, productivity helps maintain business net revenue without raising prices. However, if real wage growth outstrips productivity growth, workers would be paid more than they add to their employers' output and revenue, causing the employers' costs to increase, which may result in increasing prices.

Historical Trends

Most economists agree that until the 1970s, productivity and pay trends were closely correlated. However, there is disagreement about whether productivity and pay trends began to diverge at that point, with productivity growing faster than real wages, often referred to as the productivity-pay gap. Much of the disagreement comes down to methodology for analyzing these trends. There are several different measures of productivity, pay, and inflation that can be used in determining trends in productivity and pay

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such that trends across different methodologies may differ. For example, BLS found that across sectors and industries, much of the productivity-pay gap could be explained by using an output deflator as opposed to the consumer price index to calculate real compensation. Of note, this was not the case across all industries, and BLS noted that a decreasing labor share of income—the share of income going to workers as opposed to other factors of production, such as capital—was also a major explanatory variable and the dominant one in some industries. Nonetheless, many measures do find a gap, which would indicate that pay trends have been lower than productivity growth trends on average. Explanations for this gap are wide-ranging, including changes to the way employers compensate their employees, globalization, and increasing wage inequality.

Recent Trends

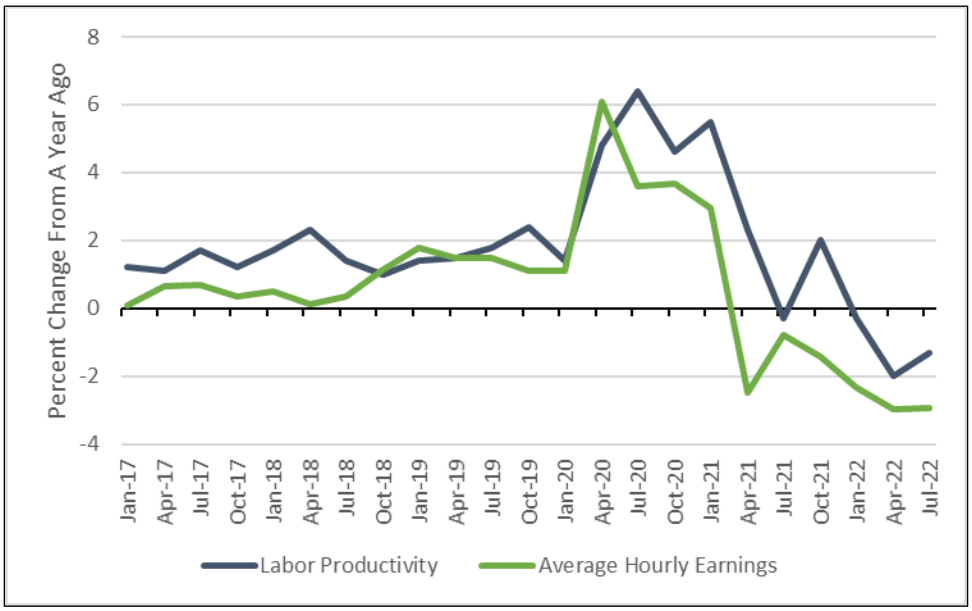
Figure 1 below shows the trends in labor productivity and real average hourly earnings growth over the past few years. The two series are fairly volatile from quarter to quarter, but wage growth has generally been slower than productivity growth, meaning that, in real terms, wage gains have typically been associated with productivity gains of greater value.

Both productivity growth and real wage growth were high in 2020 but have declined since. Notably, both real wage and productivity growth have been consistently negative in 2022. Although nominal wage gains have been above trend in 2022, they have been lower than inflation, causing real wages to decline. While real wage declines have been deeper than productivity declines—and therefore not of immediate concern in terms of fueling inflation—declining productivity is, in and of itself, a concern for future wages. The extent to which this trend may continue is not certain, however.

There is some evidence to suggest that labor productivity increases during recessions as workers boost their output, some of which would likely be reversed during an expansion. During the height of the pandemic, employment decreased rapidly and then increased at a slower pace. Some of the factors temporarily holding back job growth had to do with the nature of the public health crisis. During this time, some workers were required to work harder, longer, or with fewer coworkers, resulting in increased productivity. Some economists have also argued that the increase in productivity at the height of the pandemic was the result of changes in the composition of the workforce that was reversed when employment recovered.

As the economy has recovered and added jobs at a relatively rapid clip, productivity growth would typically decrease, all else equal—more workers means that each worker can work less intensively (less capital per worker). However, some factors affecting business operations and the labor force have proven longer lasting and could result in a downward shift in productivity growth trends. Such factors include supply chain issues and health factors. The pandemic also resulted in innovations to the way individuals work, although it is not yet clear whether these changes (such as the widespread adoption of videoconferencing technology and increased telework) will affect longer-term productivity trends positively, negatively, or at all.

Figure 1. Labor Productivity and Real Wage Growth
Q1 2017 to Q3 2022



Source: CRS calculations using BLS productivity and CES data.

Trends in productivity and wage growth moving forward have important implications for the economy. One aspect of this relationship that economists are currently watching closely is whether wage growth will outpace productivity growth, as this could result in further upward pressure on prices in the economy. For more information on the relationship between wages and inflation, see CRS Insight IN12075, *Is the United States Experiencing a Wage-Price Spiral?*, by Lida R. Weinstock.

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