

I'll be back . . . for your job

Cody Parkinson

The portion of national income that goes to workers, also known as the labor share, has decreased from about 63 percent in 2000 to 56 percent in 2018. One reason for the decline may be the loss of workers' bargaining power as a result of outsourcing and offshoring, declining union membership, and noncompete clauses that restrict worker mobility. Another potential factor for the reduced labor share is automation. In "[Are workers losing to robots?](#)" (*FRBSF Economic Letter*, Federal Reserve Bank of San Francisco, September 30, 2019), Sylvain Leduc and Zheng Liu examine the contribution of automation to the declining labor share as a result of reduced bargaining power.

Traditional economic models suggests that increased productivity due to automation raises wages. Labor supply and demand would stabilize and eventually lead to full employment, and workers would be compensated for the added production. Using nonfarm payroll employment data from the U.S. Bureau of Labor Statistics, Leduc and Liu reevaluate the traditional correlation between automation and wages. They use a revised economic model that accounts for shifting bargaining power, technological improvements, and job search frictions. The model also includes inputs such as quarterly unemployment data, job vacancies, real wage growth, and labor productivity growth to help assess the role of automation.

Using the updated model, the authors compare the actual change in the labor share from 1985 to 2018 with the change in labor share if automation is kept constant at its long-run average. Leduc and Liu find that without automation, the labor share would have been around 59.5 percent in 2018, which is higher than the actual 56.0-percent labor share. The model implies that businesses are more likely to automate during economic expansions and less likely to automate during recessions. This cycle would lead to less bargaining power for employees during good economic conditions because businesses can simply automate the position. Reduced bargaining power lowers wages. The model also shows that productivity would have risen less and wages more had automation not become more prevalent over the previous two decades.

Although automation has lowered the labor share, it has also contributed to the decline in unemployment in recent years. Leduc and Liu argue that the option to automate a position generates an incentive for firms to create jobs because automation is a reliable fallback should the job search be unsuccessful. While some jobs are lost to automation, others are created because of it.

Consistent with other research on the topic, Leduc and Liu's model finds that the labor share is reduced as increases in automation restrain wages. Since 2000, the labor share has decreased approximately 7 percentage points. The decline accelerated during the Great Recession (2007–09). As firms choose to automate jobs, workers' bargaining power decreases. Despite increased productivity, "automation contributed substantially to the decline in the labor share since the early 2000s."