

Robots in the workplace increase wealth inequality

Submitted by: BlueSky Education

Monday, 6 March 2023

Exposure to increased automation through robotics at work increases the risk of unemployment and decreases wealth accumulation, particularly for less educated households, finds new research from Frankfurt School of Finance & Management (<https://www.frankfurt-school.de/en/home/>).

Progress in digital technologies has accelerated, including advancements in robotics, automation, and artificial intelligence, with important consequences for individuals and the workplace.

Yigitcan Karabulut, Associate Professor from Frankfurt School, and colleagues from Sveriges Riksbank and London Business School, explored the effects of increased automation on household wealth and underlying economic mechanisms.

They considered the adoption of industrial robots, fully autonomous machines capable of performing tasks, and combined this industry-level measure of automation with an extensive dataset of wealth records and information on the demographics and labour market outcomes of around 300,000 households. They then studied the effect of changes in exposure to workplace robots on financial behaviour and wealth outcomes of households, including stock market participation and wealth distribution.

The researchers found that households more exposed to industrial robots at work experienced a significantly larger decrease in wealth accumulation.

Having established a negative effect of workplace robots on household wealth, the researchers then analysed underlying economic factors. They found that individuals working in industries with a higher rate of robot adoption, on average, experienced lower income growth and faced increased unemployment risk.

Examining impact on financial behaviour, they also demonstrate that households facing increased risk to their income substantially reduce or fully eliminate exposure to the stock market, a phenomenon the researchers call the “portfolio channel”. As returns on wealth are affected by willingness to take financial risk, limiting exposure to the stock market leads to accumulation of less wealth over time, suggesting that the portfolio channel amplifies the inequality-enhancing effects of increased automation.

The researchers also explored the impact of automation relative to level of education. Prof. Karabulut explains, “While skill upgrading of jobs with emerging tech may favour some, it could also leave others behind. When we analyse the effects of robot adoption by education level, increased exposure to robots increases the unemployment risk and significantly decreases the financial risk-taking of less educated households, with no such effects for the better educated.”

This suggests rapid automation can widen the wealth gap between high- and low-skill individuals, and highlights potential economic consequences of increased automation.

The paper with the findings has been accepted for publication in the Review of Financial Studies.

/ENDS

For more information, a copy of the research, or to speak with Prof Karabulut, please contact Kyle Grizzell from BlueSky Education on +44 (0) 1582 790709 or kyle@bluesky-pr.com