New Research Shows How Technology Squeezes Middle Skilled Workers

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The rise of information and communication technologies (ICT) has increased the demand for highly-skilled, university-educated, workers at the expense of middle-skilled workers according to new research from the Centre for Economic Performance at the London School of Economics and Political Science (LSE).

However, recent technical change has had little effect on low-skilled workers according to the research [1] published in the latest issue of the journal Review of Economics and Statistics.

The researchers analysed how the employment and wages of high, medium and low educated workers had changed in 11 countries, including the UK, over 25 years [2].

They found that industries that experienced the fastest growth in ICT also experienced the fastest growth in the demand for the most educated workers and the fastest drops for those in the middle – defined, in the UK, as people who had completed secondary education but not an undergraduate degree.

The research also shows that, as industries have increased their use of ICT, the wages, as well as employment, of highly skilled workers have risen relative to middle skilled workers.

Technical change accounts for between 15 - 25 percent of the growth in the aggregated wage bill of highly skilled workers [3].

Professor John Van Reenen, Director of the Centre for Economic Performance at LSE and co-author of the paper, said: “We found that there has been a carving out of middle- skill jobs. People in these kinds of jobs, such as administrators or bank clerks, perform lots of routine tasks that can easily be computerised.

“In contrast, high and low skilled workers’ roles involve more non-routine tasks – whether they are with brains or brawn. This means that consultants and doctors, as well as cleaners and carers, are much less likely to be replaced by computers.”

The researchers found that education plays a key role in the types of job people go into. For example, middle educated workers are over-represented in occupations that require routine mental tasks. In contrast, the most educated workers concentrate disproportionately in occupations that require more non-routine tasks. The least educated workers’ jobs involve less non-routine mental tasks than others, but more non-routine manual tasks.

Dr Guy Michaels, Associate Professor of Economics at LSE and co-author of the paper, said: “Young people should not depend on secondary school education alone to secure them a good ‘mid-level’ job in the future. There will be fewer jobs like these, especially those involving routine mental tasks.

“Degrees certainly cost more than in the past but, as an investment, they are also more valuable in securing a decent job than 30 years ago.”

-ENDS-

Notes to Editors:

[1] ‘Has ICT polarized skill demand? Evidence from 11 countries over 25 years’ by Guy Michaels, Ashwini Natraj and John Van Reenen is available from the LSE press office

[2] The researchers looked at data from the EUKLEMS database from 1980-2004. This provides data on college graduates and separates non college graduates into those with low education and those with middle education. It covers 11 developed economies (UK, US, Japan and nine European countries).

[3] Demand for workers of different levels of skill (low, middle, high) was worked out by looking at changes to the employment and fraction of the total wage bill that goes to each group.

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broadest sense, with an academic profile spanning a wide range of disciplines, from economics, politics and law, to sociology, information systems and accounting and finance.

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The Centre for Economic Performance is an independent ESRC funded research centre based at the London School of Economics and Political Science. Its members are from the LSE and a wide range of universities within the UK and around the world.

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