

AI and income inequality

According to Professors Kevin Murphy and Finis Welch, in 1979, college graduates only earned 32 percent more than high school graduates. According to the Bureau of Labor Statistics, by 2022, college graduates were earning 68 percent more. This increase in income inequality has caused anxiety among the group earning

Joe McGarrity



lower salaries. Politicians have noticed this anxiety and offered various solutions. Bernie Sanders wants to tax the richer group and use the proceeds to redistribute income toward the poorer group. Donald Trump wants to protect American manufacturing jobs by placing higher tariffs on products produced abroad.

While politicians focus on how to deal with the increased inequality, economists have turned their attention to explaining why it has occurred. MIT Professor David Autor argues that computer and information processing innovations since 1980 can explain a large part of the diverging economic fortunes of these two groups. These innovations have made college-educated workers more productive. They could use software to produce a lot more output per hour. For instance, an accountant with tax software can complete a lot more work in an hour than one using a 1980s-type calculator. Firms tend to reward more productive workers with higher salaries, so this type of technological advance led to higher salaries for college-educat-

ed workers.

Many workers with just a high school education weren't so lucky. The information processing technology eliminated the need for many jobs. Firms no longer hired typists since word processing programs could do the job. Firms also stopped hiring people to do basic calculations since spreadsheets could perform this task. The displaced workers looked for other jobs, ones for low-skilled workers that were unaffected by the increase in information processing technology. With so many workers flooding into these markets, firms could get away with paying their workers less. As a result, income inequality increased over time, and college-educated workers received higher wages while high school-educated workers received lower wages.

While the technological advances over the last few decades may have increased income inequality, some economists believe that the current advances in artificial intelligence (AI) might reduce the income inequality. Planet Money, a show on National Public Radio, recently reported the research results that inform this view. The study looked at the productivity of workers who responded to customers' questions via chatbots. On their computer screens, each worker could see the material the customer typed in one chatbot along with suggested answers from AI in another chatbot.

The AI came up with its suggested answers by reading all of the previous communications between customers and workers. It retained the responses that the customers rated highly in the surveys they

completed after getting help. It discarded the answers that were rated poorly.

The AI's suggested answers greatly improved the productivity of the lowest-skilled workers who were answering questions. These workers performed better because now they had access to the answers that the highly skilled workers gave in similar situations. In contrast, the highly-skilled workers saw almost no increase in their productivity: they were already providing high quality answers and did not need much help. Since firms pay workers based on their productivity, the AI chatbot should increase the wages of the lower-skilled workers and barely affect the wages of the higher-skilled workers.

You can imagine that AI may have a similar influence in many labor markets. A nurse practitioner may gain access to the diagnoses the best doctors in the world made in situations that are similar to the one she now faces. This advice will increase her productivity. In contrast, the world's best doctors don't need the AI advice, so their productivity won't change much. As a result, the now more productive nurses should see their wages increase while the world's best doctors won't.

The academic study has an important implication. It is that technological advances, particularly in AI, may achieve the goal that Bernie Sanders has been seeking to achieve: a reduction in income inequality.

Joe McGarrity is a Professor of Economics at UCA. He can be reached at joem@uca.edu.