

Is the pandemic accelerating automation? Don't be so sure

The pessimists could, of course, eventually be proven right

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AS ECONOMIES REOPEN, labour shortages are still worsening. In America the number of unfilled vacancies, at 9.3m, has never been so high. Job postings in Canada are 20% above pre-pandemic levels. Even in Europe, slower out of the post-lockdown gates, a growing number of employers complain of how hard it is to find staff. Debates over labour shortages have focused on welfare policy and economic disruption. But the phenomenon has a deeper lesson. It tells us something about the myths of automation.

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Economists have confidently asserted that a wave of job-killing robots was sweeping the labour market. The IMF says the pandemic is “hastening a shift in employment away from sectors more vulnerable to automation”. In a recent co-written article Joseph Stiglitz, a Nobel prizewinner, says the extra costs of covid-19 are “accelerating the development and adoption of new technologies to automate human work.” In congressional testimony last year Daron Acemoglu of the Massachusetts Institute of Technology suggested that more firms were “substituting machines for workers”. But can pandemic-induced automation really be creating an army of surplus workers if employers are complaining of a deficit?

The economists had good reason to believe that job-killing automation would surge. Recessions often lead firms to adopt more robots, in part

because labour gets more expensive as revenues but not wages decline. In a pandemic bosses have an extra incentive to automate jobs, as research by the IMF has shown. Robots do not need to socially distance. Nor do they get sick. Thanks largely to government stimulus programmes, firms have also accumulated spare cash, which they may now be able to deploy on robotics or on artificial-intelligence software.

Those who believe that automation is speeding up can point to many examples. In Ohio Lee's Famous Recipe Chicken, a restaurant chain, has installed automated voice systems to take drive-through orders. Pittsburgh's international airport recently became America's first to use ultraviolet robots for cleaning. British farmers boast of using ever more machines to pick strawberries and kill weeds. The number of news stories mentioning both "pandemic" and "automation" is growing at an annual rate of 25%.

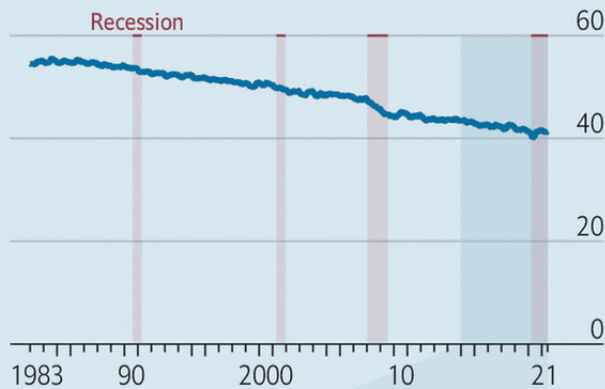
The automation debate is heavy on speculation and anecdote. It is light on evidence. The citation from one prominent work to justify the claim that automation was "already" happening included a *New York Times* article and a theoretical microeconomics paper. According to some research, last year automatable jobs vanished in large numbers; but it is hard to disentangle the effect of technological change from lockdowns. It is true that America's GDP is nearly at its pre-pandemic level even as the level of employment is 7m lower. This, some say, shows that the economy can get by with many fewer people. But it could just mean that productivity per worker has risen, perhaps because of poorly understood things like remote working. Many of those on the sidelines will get jobs as fear of the virus fades and they find something which suits them, in turn raising output above pre-pandemic levels.

It is not only labour shortages which undermine the story of a growing wave of job-killing robots. In America the wages of the worst-paid workers, who are thought to be especially vulnerable to automation, are rising more quickly than the average, in contrast to the aftermath of the financial crisis. Borrowing a methodology from the Federal Reserve Bank

March of the machines

United States, routine jobs
as % of total employment

January 1983-May 2021



January 2015-May 2021



Sources: Federal Reserve Bank of St Louis;
Bureau of Labour Statistics; *The Economist*

The Economist

of St Louis, *The Economist* has divided America's labour market into "routine" and "non-routine" roles. Routine jobs involve patterns which are easier for robots to learn: say, data entry or checking out goods in a supermarket. For four decades routine jobs have slowly declined as a share of the total, as robots have improved (see chart).

Sticking with the routine

So far, however, the covid-induced downturn is bucking the trend. Had the pre-pandemic rate continued, we estimate that in May 2021 routine jobs would have accounted for 40.9% of overall employment. In fact they now account for 41.4%, meaning that America now has in the order of 1m "extra" routine jobs than expected.

Perhaps the uncertainty over variants

is deferring some investment in robotics. The mere act of installing new machinery is also more difficult in a world of travel bans and quarantine. American imports of industrial robots fell by 3% in 2020.

Australia may be a better place to look for signs of a job-killing wave. After some strict lockdowns the country has been under fairly loose domestic restrictions for over a year, giving a glimpse of what may lie in store elsewhere. Adapting the results of a government study in 2015, we gave 335 occupations (from "hotel and motel managers" to "complementary health therapists") a score from zero to 100, reflecting how automatable they seem.

Automatable jobs were in relative decline before the pandemic, falling to

57% of the workforce by 2019. The trend has continued, with evidence of a covid-19 acceleration: 55% of Australians are now employed in vulnerable occupations. (We found similar trends in New Zealand.) Yet Australia's unemployment rate is nearly as low as before the pandemic. Howls from employers about labour shortages are even louder than in America. Automation is not, it seems, putting people on the economic scrapheap.

The pessimists could eventually be proved right. But even if they are not, predictions of a world without work will continue. This is because the enduring fear of the march of the machines is not really the result of a dispassionate analysis of the evidence. It could hardly be so, when centuries of technological improvement have never led to widespread structural unemployment. Countries with more robots tend to have less joblessness, not more.

Worries about technological unemployment are instead the expression of something else. They reflect a deep-seated fascination with and fear of technology. And they reflect many economists' concern to get policymakers to pay more attention to the job prospects of people with the least marketable skills, who are always most vulnerable to economic shifts and shocks. These are perfectly understandable motivations. But next time you hear a warning about job-killing robots, think twice. ■

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