

Why the Real A.I. Threat Is in the Back Office

Ben Casselman

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The Hidden Workers Most Threatened by A.I.

As artificial intelligence spreads, millions of middle-class jobs in human resources, billing and payroll could be at risk. Most are held by women.

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If artificial intelligence disrupts the job market, which workers will be most vulnerable?

The obvious answer, and the one that has dominated public debate over A.I. job loss in recent months, is that the workers most at risk are programmers, software engineers and other tech industry employees. They have borne the brunt of the [mass layoffs](#) by Meta, Block and other Silicon Valley companies. Their skills are the ones that A.I. systems have mastered first.

But many economists are more concerned about a different, larger group of white-collar workers: customer service representatives, bookkeepers, payroll clerks and human resources specialists who fly under the radar but collectively account for tens of millions of jobs.

Some of these workers have college degrees. Many do not. They are spread across the country and throughout the economy, working in every industry, in big cities and small towns, at major corporations and mom-and-pop businesses. They are disproportionately — overwhelmingly, in some occupations — women.

These jobs typically offer a middle-class salary or a pathway to achieving one — much as manufacturing jobs did for men before decades of globalization and automation wiped many of them away.

“I worry that A.I. will be to high-school-educated women what deindustrialization was to high-school-educated men,” said Molly Kinder, a former researcher at the Brookings Institution who is starting an organization focused on A.I.’s impact on workers and the economy.

For now, such an outcome is a fear, not a forecast. Despite high-profile layoffs in tech and finance, there is little firm evidence that A.I. has [hurt the labor market as a whole](#).

Economists have become [increasingly convinced](#) that disruptions are likely, but they say it is too early to know where or how widespread they will be. They remain broadly skeptical of claims that the technology will lead to mass unemployment in the near future. Some A.I. industry leaders have walked back such predictions in recent weeks.

But given the extraordinary pace at which companies are adopting A.I. — and at which the technology is improving — economists say [policymakers need to consider the potential effects](#) on the labor market. And they say they are concerned that the public debate has focused too much on software engineers and a relative handful of other high-status careers — lawyers, consultants, economists — rather than the

workers who could be most vulnerable.

Back-office jobs deserve more attention in the A.I. discussion, said Mark Muro, an economist at Brookings who has studied the impact of the technology.

“These are the kind of anchor jobs for families and households,” he said. “We really need to keep our eye on what is occurring across the entire labor market and in all of these occupations.”

Good Jobs at Risk

Software engineers have dominated the public discussion of A.I. partly because they have been the first to adopt it in their work. Measures of A.I. exposure that are based on how people are using the technology, therefore, inevitably show programming jobs as among the most at risk.

But as the technology spreads through the economy, a broader set of roles could be affected. For companies, the promise of A.I. is that it will save them money, and back-office jobs are an obvious place to look to cut costs.

“If you think about the back office, that’s not the main function of the company, so they might think of it as a cost center,” said Jung Ho Choi, an accounting professor at Stanford.

Economists at Northwestern University [recently recalculated measures](#) of A.I. exposure based on the makeup of the total work force, not just the people using the technology. Administrative and frontline roles, such as customer service representatives, rose to the top of the list.

“The most affected jobs are secretaries, are routine clerks,” said Michelle Yin, one of the working paper’s authors. “They’re not computer scientists or data scientists at all.”

Widely cited measures of A.I. exposure, she added, “give the wrong impression” about who will be most affected — and, in particular, tend to understate the impact on people without college degrees, older workers and people of color.

Ms. Kinder gave the example of medical records specialists, a job that pays about \$50,000 a year and typically doesn’t require a college degree. More than 90 percent of the jobs are held by women, many of whom work from home, making it an ideal role for many mothers with young children.

Other examples include billing and payroll clerks, and customer service representatives — jobs that pay at or near middle-class salaries without requiring a college degree. All of them are dominated by women. And all of them are, by various measures, vulnerable to substitution with A.I.

“My worry is that the lesson from deindustrialization is that many of these women will be able to get another job, but it might be a much worse job,” Ms. Kinder said. “It might be more precarious.”

Vanishing Options

Such workers are also more vulnerable in another way: They will have a harder time recovering if they do lose their jobs.

In a [recent paper](#), researchers at GovAI, a nonprofit focused on A.I. policy, sorted occupations into categories based on not only how exposed they were to A.I. displacement but also their ability to adapt to a job loss, using factors like age, education and income.

The good news: Many of the workers most exposed to A.I. right now are relatively well positioned to adjust. They [tend to be younger](#), giving them more time to shift directions in their career. They generally have more education and live in cities with more job opportunities. And they are more likely to have

higher incomes, giving them the resources to sustain them through a job search.

The workers to be most concerned about, the authors argue, are the ones who are both at high risk of displacement and have little capacity to adapt: customer service agents, secretaries and other back-office workers.

“If A.I. does lead to displacement, then these are the folks that you might want to consider paying special attention to,” said Sam Manning, one of the authors. Policymakers, he said, should “think about what sort of additional support they might need to manage a job transition, compared to the managing partner at a consulting firm or a lawyer or software engineer who’s similarly exposed, but if they lose their job, they have lots of things that might make them better positioned to find a new one.”

Fewer Rungs on the Ladder

Back-office workers are hardly strangers to technological disruptions. Word processors displaced typists; spreadsheet programs and accounting software displaced bookkeepers; online booking sites displaced travel agents.

Those changes came gradually, however, giving workers a chance to adapt. Women, in particular, responded to the disappearance of many secretarial jobs in the 1980s and 1990s by attending college in record numbers, opening pathways to better-paying careers. U.S. businesses employ far fewer secretaries than they did 50 years ago, but the jobs that remain are more complex and better paid than they used to be.

Women who didn’t attend college, however, have been pushed into retail, hospitality and health care — sectors where jobs tend to be physically demanding and poorly paid, with few opportunities for advancement.

“College-educated women are the ones who came out on top from this,” said Eliza Forsythe, an economist at the University of Illinois who has studied earlier waves of white-collar automation. “They’re the ones who experienced the employment gains without the wage declines. Everyone else are the ones who didn’t do as well from this technology.”

The risk with A.I. is that it will move too quickly for workers to adapt — and that, this time, a college degree won’t protect against displacement. Indeed, many of the jobs that women transitioned to during the computer revolution of the 1980s and 1990s, like accounting and human resources, are now vulnerable to A.I. displacement.

Ms. Forsythe said A.I. was also likely to create new jobs, as did earlier technological revolutions. And it is too soon to know to what degree A.I. will displace workers rather than make them more productive, potentially allowing them to earn more.

“I would be cautious about just focusing on what are we losing as opposed to what are we going to gain on the other side,” Ms. Forsythe said.

Even if A.I. doesn’t destroy jobs, there could be lasting consequences for workers caught in the transition. Mr. Muro, the Brookings economist, [has studied](#) how A.I. threatens jobs that have traditionally served as “gateways” between low-paying, entry-level work and more sustainable careers.

Someone who starts as a receptionist, for example, might move into a customer service job that pays only modestly better but offers a chance to move into a much better job in human resources or even management. If A.I. eliminates that middle step, it could be harder for workers to move up the career ladder, said Justin Heck, a coauthor on a recent article with Mr. Muro.

“What happens if we’re no longer building those skills on the job? Where is there available to move up?” Mr. Heck asked. “What are the ramifications three years from now, when workers remain stranded in low-

wage work, and employers are struggling to fill high-wage roles because we’ve carved out the middle?”

What is your current employment status?

What level of education do you have?

How has A.I. affected your career or career decisions? If you have a job, are you worried about losing it? If you're looking for work, do you think A.I. is making your search more difficult?

0 words

Are you using A.I. for work right now? If so, is your employer pushing you to use it, or are you using it on your own? Do you think using A.I. will help protect you from losing your job, or make you more vulnerable?

0 words

How old are you?

Where do you live?

What is your name?

What is your email address?

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