

Robots won't steal your job but they could shrink your pay

By Barrie McKenna

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Bank of Canada Governor Stephen Poloz was eager to strike an optimistic tone when he spoke recently to Queen's University students and teachers about the future of work.

From the internal combustion engine to self-driving cars, disruptive technologies have always created more wealth and more jobs than they destroyed, he assured his audience in a speech last week.

The classic example of this phenomenon is agriculture. At the time of Confederation, roughly half of Canadians worked on the farm. That fell to one third in the 1920s, 15 per cent in the 1950s and finally to just 2 per cent today. And yet, advances in equipment and fertilizers mean Canadian farms produce three times more than they did a century ago.

"New opportunities, new technologies and new industries are all waiting around the corner," Mr. Poloz promised – just as they were for 19th-century farmers.

Unfortunately, the economic assumption underpinning Mr. Poloz's rosy prophecy is taking a beating these days. Many experts argue that breakthroughs in artificial intelligence and robotics are so dramatic that they are permanently tilting the balance in favour of machines over humans. The net effect will leave millions of us underemployed or out of work, with nothing to do.

Half of today's work activities could be automated by 2055, or sooner, according to a widely cited 2017 study by McKinsey & Co., *A Future That Works: Automation, Employment and Productivity*.

The reality is considerably more nuanced. No, the robots aren't stealing our jobs, but less of the spoils may be going into workers' paycheques.

That, at least, is the finding of a major new study by labour economists and professors David Autor of the Massachusetts Institute of Technology and Anna Salomons of Utrecht University in The Netherlands. Using nearly five decades of data from 28 industries in 18 countries, the authors conclude that automation has created more jobs than it has killed (6 per cent more between 1970 and 2007), while greatly expanding economic output. But the share of this expanding economic pie going to workers' wages has shrunk over that time, according to the study published this month by the Brookings Institution in Washington.

What concerns Prof. Autor isn't the number of jobs, it's the quality.

"No, the robots will not steal all of our jobs," Prof. Autor explains in a Brookings podcast. "The concern should not be about the number of jobs, but whether those are jobs that can support a reasonable standard of living and what set of people can access them."

There are more creative, rewarding and high-paying jobs than ever before. But the disruption is also creating a proliferation of low-skilled, low-paying and tenuous jobs in areas such as food service, cleaning, security and elder care.

"On the one hand you can say: 'Great, we have a lot of jobs.' On the other hand, those are not the jobs we'd most like to have," Prof. Autor points out.

Prof. Autor and Prof. Salomons's work shows that automation creates wealth and jobs as productivity gains filter through the economy. Some industries, such as education and health care, are more resistant to job destruction than others.

But at a more granular level, the spoils aren't being spread evenly across society.

The implicit suggestion in Mr. Poloz's description of the technical revolution in agriculture is that generations of Canadians found a better life off the farm. And so will the youth of today. In general, that's probably true. But many displaced farm labourers moved first into unsafe and back-breaking jobs, such as digging canals, laying railroads or mining coal.

The public-policy challenge for governments is to better manage the disruption, and "create pathways forward" for workers, as Mr. Poloz put it.

The obvious answer is to make sure young and dislocated workers have the tools to navigate the new world of work. That means more investment in apprenticeship programs and training regimes, including retraining for older workers, and a more generous social safety net for those left behind. Without a "shared sense of responsibility," Prof. Autor said, the disruption will spawn the kind of deep social divides now evident in the United States and elsewhere.

The challenge for Canada and other developed countries is to ease the transition as automation destroys jobs in areas such as retailing and steelmaking, while creating new ones for app developers and cloud-computing engineers.