

KEY MESSAGES

FRONTIER ISSUES

The impact of the technological revolution on labour markets and income distribution

What is the issue?

- New technologies hold immense promise, but can also be seen as a threat to labour markets and equality.
- New technologies, such as artificial intelligence, are threatening to substitute brainpower, just as machines did with muscle power.
The biggest public fear is that robots and AI will replace human jobs on a large scale, resulting in mass unemployment or underemployment and, consequently, widespread impoverishment.
- Breakthrough technological innovation is not enough to cause an industrial revolution. Diffusion is also critical.

Where are we?

- New technologies are contributing to increased inequalities—among workers and between workers and firm owners.
The impact of technology on inequality depends on which group of workers is easier to replace by new machines and on how the overall gains are shared between firm owners and workers.
- New technologies have already affected certain sectors, but have not (yet) boosted economy-wide productivity and wage growth.
- New technologies are contributing to a shift towards more flexible, but potentially more precarious “contingent work” arrangements.

What will the future bring?

- New technologies do not replace entire occupations, but rather specific tasks that an occupation requires.
- Least at risk of being automated are: a) cognitive tasks requiring judgment, problem solving, intuition, persuasion or creativity; and b) manual tasks requiring a high degree of situational flexibility and human interaction.
Examples include teaching children, providing nursery services, developing a design proposal, making recruitment decisions or laying of electrical wiring.
- Just because a job could be eliminated, does not mean it will be eliminated.
Various studies estimate that between 10 and 80 per cent of jobs may be at risk from being automated in the coming decades. The higher-end scenario is not realistic.
- New technologies also create jobs in a broad range of occupations and industries.

- Job destruction and job creation are determined not only by technological feasibility, but also by economic, legal, regulatory or socio-political factors:

Job Destruction	Job Creation
<ul style="list-style-type: none"> ■ Reduces labour required to perform tasks ■ Automates tasks, not occupations ■ Alters the tasks an occupation requires 	<ul style="list-style-type: none"> ■ Complements specific job tasks ■ Creates new industries and products ■ Generates higher productivity, lowers costs and prices ■ Generates higher growth and income, higher demand

- Technology-driven automation in large manufacturing powerhouses may limit the ability of developing countries to gain a competitive advantage in new sectors.
- While new technologies may encourage some manufacturers to move production closer to their main markets, there is no massive reshoring of jobs from developing to developed countries.

What can we do?

- The impact of technology on economies is not a given. We can shape it with policies at the local, national, and global level.
Governments and the United Nations can and should influence these processes.
- Instead of fearing new technologies, policymakers should embrace and direct them, adopting flexible policies and promoting national capacities to innovate.
- Technological progress is not an excuse for policy inaction. It should be an incentive to find better solutions.
Proactive policies are needed to help workers adapt to the new demands and to ensure that the gains are broadly shared. This requires re-thinking and re-designing labour market policies, social security schemes and taxation systems.
- Very little is known about the potential impact of new technologies on low-income countries.
More research is needed to help governments and people prepare for the changes brought by artificial intelligence and robotics.