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Automation, AI & Work

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Take-Aways

- AI is turbocharging the automation of routine jobs.
- AI will continue existing automation trends: generating more jobs, but fewer good jobs.
- Inequality is not baked into the technology; AI's impact hinges on the policies that governments adopt.

Recommendation

How will AI affect society? Professors Laura D. Tyson and John Zysman see AI technologies playing an enormous role in the ongoing automation of work. In this detailed paper, the authors look at the effects of automation on the workplace over the last three decades to gain insight into what the future holds. The picture looks grim: Automation has reduced the share of good jobs for all but the most skilled workers. However, the authors argue that this tech is, ultimately, what people make of it. The right policies can make all jobs good jobs and share the productivity gains of AI more equitably.

Summary

AI is turbocharging the automation of routine jobs.

Over the last 30 years, automation has replaced humans in many low-skill and medium-skill jobs. AI continues and amplifies the trend of automating tasks that humans used to do. Paired with robots, AI optimizes already-automated tasks. It also extends the reach of automation to cognitive tasks.

> *"AI and the intelligent tools and systems it enables will automate many routine tasks, change existing tasks, and create new tasks for humans, often involving new forms of human and machine collaboration and new forms of work organization."*

Current AI is task specific. It can replace humans in low-demand, routine physical and cognitive tasks. AI cannot currently replace humans in tasks that require real-world knowledge, reasoning, judgment or social interaction.

AI will continue existing automation trends: generating more jobs, but fewer good jobs.

Because AI extends the scope of automation, it will likely continue the trends of the last 30 years, especially in the manufacturing and services fields, which represent 90% of employment:

- **Automation has polarized labor** – Middle-skill jobs are disappearing, replaced by high-skilled jobs and some low-skill jobs.
- **Polarization has contributed to a wage gap** – High-skill employees have seen their wages increase. Middle-skilled workers, now less in demand and only able to find low-skill jobs, have seen their wages stagnate.
- **Wage growth no longer tracks productivity growth** – Productivity has grown more than wage growth over the last three decades, which shouldn't happen in a competitive job market.
- **Workers' share of national income has declined** – Over the same period, owners' share has increased by an equivalent amount.

> *"The social and economic dislocations have grown, while the offsetting benefits have not been as robust or rapid as anticipated and have not been broadly shared."*

Advanced economies are experiencing a drop in labor supply which will likely feed into the trend of polarization, causing wage increases for jobs that AI cannot replace while further driving the use of AI for routine tasks.

AI will also affect labor by empowering digital transaction platforms like Amazon and Uber, which will, in turn, facilitate the growth of gig employment. Gig work typically lacks the legal and social protections of standard employment.

Inequality is not baked into the technology; AI's impact hinges on the policies that governments adopt.

It is not the technology itself that determines AI's effects on work, but the choices made by AI researchers, investors and, perhaps most importantly, policymakers. The United States has focused, primarily, on creating tech that outperforms humans, not on creating good jobs. In the United States, high taxes on labor relative to taxes on machinery and software create an incentive for businesses to replace workers with automation.

To ensure equitable growth and stability, advanced economies must put policies in place that share the costs and benefits of the evolving AI landscape across society. Creation of and access to good jobs should be a prime goal.

> *"We are optimistic that wise interventions can change the trajectory of AI's adverse effects on labor."*

Three main policy areas will help make all jobs good jobs:

- Workers need lifelong education and training to give them access to skilled jobs and labor market policies that help them transition.
- Social benefits and legal protections should cover all workers, including gig workers.
- Workers who remain in low-wage jobs, many of whom are women and low-education workers, will need income support to ensure a living wage.

About the Authors

Distinguished professor of the Graduate School at University of California, Berkeley's Haas School of Business **Laura D'Andrea Tyson** is an economist and former chair of the White House Council of Economic Advisers. **John Zysman** is professor emeritus in the Department of Political Science at the University of California, Berkeley and co-founder of the Berkeley Roundtable on the International Economy.

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