AUTOMATION, TRAINING AND THE FUTURE OF WORK

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THE POLICY PUZZLE

Automation and technological change have been associated with the "hollowing out" of the U.S. labor market, but it is unclear what role public policy can play in helping workers adapt.

- Since the 1990s, the availability of middle-class, middle-skill jobs in the United States has been declining, while the numbers of low-wage jobs and high-wage, high-skill jobs have been growing.[i]
- Economists have linked this phenomenon to automation and technological change that has been "skill-biased" (favoring highly-educated workers) and routine-biased (disadvantaging workers who perform routine tasks at their jobs).[ii]
- Job training programs have been a popular policy response to the displacement of workers, but these initiatives have a mixed track record of success.[iii]

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What policy approaches might address the challenges of a hollowed-out labor market, while avoiding the missteps of past investments?

- Evidence from a Taubman Center / YouGov survey suggests reforms to the current approach to worker re-training that emphasize building worker buy-in
- Additionally, innovation policies should consider how the technologies they invest in could displace workers and contribute to the "hollowing out" of the labor market.

THE LIMITATIONS OF JOB RE-TRAINING

As trade and automation have contributed to the decline of U.S. manufacturing industries and put millions of American workers out of a job, the dominant public policy response has been to invest in re-training dislocated workers. These programs have been criticized as ineffective.[iv]

- Job training programs in the U.S. received more than $5 billion in federal funding in 2017, most of which was allocated to state and local initiatives. The programs primarily fund job centers that aim to help disadvantaged populations find jobs.
- Federally-funded programs such as the Trade Adjustment Assistance (TAA) program target "dislocated" workers who require retraining because they have lost their jobs due to globalization and trade.
- Multiple evaluations of programs targeted at dislocated workers in the U.S. have cast doubt on their effectiveness, suggesting that the costs of these programs likely outweigh their benefits for workers.[v]
- Labor scholars have argued that job training programs either lack sufficient input from employers or require more coordination among the multiple institutions (e.g. job centers, community colleges, apprenticeship) that manage training initiatives.[vi]

FINDINGS: WHAT WORKERS THINK ABOUT AUTOMATION

A national survey conducted by YouGov in partnership with the Taubman Center for American Politics and Policy reveals that workers' perceptions of automation could represent a barrier to the success of job re-training programs.[vii]

- The workers surveyed reported that the effects of automation and technological change on their productivity, job satisfaction, and job security were overwhelmingly positive. 1 in 3 workers indicated that automation and technological change have made their job security *better*, whereas 1 in 10 workers indicated that their job security has become worse as a result of automation and technological change.
- Workers without a college degree (36%) were slightly more likely than workers with a college degree (32%) to report that their job security was *better* as a result of automation and technological change. This perception is puzzling given the evidence that less educated workers have been more vulnerable to technological change than more educated workers.
- One potential explanation for these results is that workers overestimate their invulnerability. For example, 19% of workers reported that automation and technological change have had *better* effects on their productivity than on the productivity of their co-workers. More than 80% of workers report having higher than average skills across a number of categories. This suggests that a substantial share of workers believe that they are better equipped to adjust to technological change than their peers.
- These findings are consistent with other survey results, which indicate that while workers express worries about the general effects of automation on the labor market, they are mostly confident that automation will not negatively affect them personally.[viii]

POLICY RECOMMENDATIONS

How workers think about automation has implications both for the implementation of ongoing job re-training programs, as well as for the broader public policy responses to automation and technological change.

- Workers' lack of concern about the implications of automation and technological change for their jobs suggests that they might not see the need to participate in the job re-training programs designed to assist them. While job training programs currently focus on satisfying employer needs and coordinating employer demand, they should also consider how to establish buy-in from skeptical workers in vulnerable jobs.
- Policy approaches to the "hollowing out" of the labor market should also extend beyond initiatives to alter labor supply. Policies should also consider how to influence labor demand to create new middle-skill jobs.
    - The Department of Defense, the Department of Energy, the National Science Foundation, and other government agencies currently invest in innovation policies aimed at accelerating the development of new technologies in the national interest. These investments should evaluate how the new technologies might affect the labor market. How might the adoption of government-backed innovations alter the tasks associated with certain jobs – and the skills required to perform those jobs? Just as new development projects perform environmental impact assessments, public investments in technology should integrate "labor impact assessments" to ensure government and industry alike are aware of big potential disruptions to the labor market. The goal is not necessarily to avoid innovations that displace workers, but to prepare for changes in ways that can avoid exacerbating inequality.
    - Public policies should also encourage the inclusion of worker input in how new technologies are deployed. One model for worker involvement in the innovation process comes from the automotive industry. In their collective bargaining agreements with General Motors (GM), the United Auto Workers (UAW) have agreed to discuss new technologies and their effects on the unionized workforce as GM plans to adopt them. The UAW is recognizing that new technologies will inevitably come, but that workers and their employers can shape how they are adopted and the effects that they have.

ENDNOTES

[i] David Autor and David Dorn, "The Growth of Low-Skill Service Jobs and the Polarization of the US Labor Market," *The American Economic Review* 103, no. 5 (2013): 1553–1597; Maarten Goos and Alan Manning, "Lousy and Lovely Jobs: The Rising Polarization of Work in Britain," *The Review of Economics and Statistics* 89, no. 1 (2007): 118–33; Maarten Goos, Alan Manning, and Anna Salomons, "Explaining Job Polarization: Routine-Biased Technological Change and Offshoring," *The American Economic Review* 104, no. 8 (2014): 2509–26.

[ii] Daron Acemoglu and David Autor, "Skills, Tasks and Technologies: Implications for Employment and Earnings," *Handbook of Labor Economics* 4 (2011): 1043–1171.

[iii] Paul Osterman, "Employment and Training Policies: New Directions for Less Skilled Adults," in *Workforce Policies for a Changing Economy*, ed. Harry Holzer and Demetra Nightingale (Washington, DC: Urban Institute, 2006).

[iv] Lola Fadulu, "Why Is the U.S. So Bad At Worker Retraining," *The Atlantic* (blog), January 4, 2018, https://www.theatlantic.com/education/archive/2018/01/why-is-the-us-so-bad-at-protecting-workers-from-automation/549185/; Jeffrey Selingo, "The False Promises of Worker Retraining," *The Atlantic* (blog), January 8, 2018, https://www.theatlantic.com/education/archive/2018/01/the-false-promises-of-worker-retraining/549398/.

[v] Sheena McConnell et al., "Providing Public Workforce Services to Job Seekers: 15-Month Impact Findings on the WIA Adult and Dislocated Worker Programs" (Washington, DC: U.S. Department of Labor, May 2016), https://www.mathematica.org/our-publications-and-findings/publications/providing-public-workforce-services-to-job-seekers-15-month-impact-findings-on-the-wia-adult; Peter Schochet et al., "Estimated Impacts for Participants in the Trade Adjustment Assistance Progam Under the 2002 Amendments" (Washington, DC: U.S. Department of Labor, August 2012), https://wdr.doleta.gov/research/FullText_Documents/ETAOP_2013_10_Participant_Impact_Report.pdf.

[vi] Paul Osterman, "Employment and Training for Mature Adults: The Current System and Moving Forward" (Washington, DC: Brookings Institution, November 2019), https://www.brookings.edu/research/employment-and-training-for-mature-adults-the-current-system-and-moving-forward/; Osterman, "Employment and Training Policies: New Directions for Less Skilled Adults."

[vii] The survey research related to automation and the workforce was conducted jointly with Richard Locke. For preliminary findings, see: Ben Armstrong and Richard M. Locke, "What Workers Think About Automation: Findings from a National Survey of the American Workforce," *Working Paper*, 2019, https://www.dropbox.com/s/xlxgc3wu0mbfx45/Armstrong%20Locke%20-%20Sep%2019.pdf?dl=0.

[viii] Aaron Smith and Monica Anderson, "Automation in Everyday Life" (Washington, DC: Pew Research Center, October 2017); Ipsos Public Affairs and University of Virginia McIntire School of Commerce, "Americans' Attitudes Toward Automation," October 2017, https://www.ipsos.com/en-us/news-polls/ipsos-uva-automation-2017-10.