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New Brookings report forecasts automation's sizable impacts on the American workforce through 2030

Authors find demographic and geographic variation in susceptibility throughout the United States based on analysis of over 300 occupations

Washington, D.C. – The Brookings Metropolitan Policy Program released new research today that analyzes the impacts of automation on the American workforce, examining data focused on the mix of industries, geographies, and demographic groups across the U.S.

The report, titled *Automation and Artificial Intelligence: How machines are affecting people and places*, offers projections for how automation and artificial intelligence will impact the American economy over the next few decades, looking at the susceptibility of tasks in occupations that are potentially automatable.

The authors, Mark Muro, Robert Maxim, and Jacob Whiton, focus on areas of potential occupational change rather than net employment losses or gains. Special attention is applied to digging beneath national top-line statistics to explore variations by industry, geography (metropolitan area and state), and demographics (age, gender, race/ethnicity, educational attainment).

Key findings include:

- **Demographic variation:** Young people, men, and underrepresented groups, particularly Hispanics and blacks, will face pronounced difficulties as a result of automation's disruptions—an underexplored viewpoint in current coverage of automation.
- **Geographic unevenness:** Some places will do much better than others in dealing with the coming transitions. Places such as Las Vegas, Louisville, Ky., and Toledo, Ohio are among the most susceptible to the automation of job tasks, while the list of least susceptible places includes coastal giants such as Washington, D.C., the Bay Area, New York City, and Boston.
- **Varying levels of occupational susceptibility:** By 2030, some 25 percent of U.S. employment will have experienced high exposure to automation, while another 36 percent of U.S. employment will experience medium exposure, and another 39 percent will experience low exposure. Those with greater than 90 percent automation potential over the next two to three decades

represented only 4 percent of U.S. employment in 2016. Job tasks projected to be 100 percent automatable represent only half of one percent of the workforce (740,000 jobs).

- **Education helps combat automation:** Occupations not requiring a bachelor's degree are a staggering 229 percent more susceptible to automation compared to occupations requiring at least a bachelor's degree. Just 6 percent of workers with a four-year degree or more are employed in jobs with a high potential for automation.

“The next phase of automation, increasingly involving AI, seems like it should be manageable in the aggregate labor market, though there are many sources of uncertainty,” said Mark Muro, senior fellow and lead author of the report. “With that said, the potential effects will vary significantly across occupations, regions, and demographic groups, which means that policymakers, industry, and society as a whole needs to focus much more than they are on ensuring the coming transitions will work for all of those affected.”

While this report concludes that the future may not be as dystopian as the most dire voices claim, plenty of people and places will be affected by automation, and much will need to be done to mitigate the coming disruptions. The authors offer five recommendations for federal, state, and local policymakers: 1) embrace growth and technology; 2) promote a constant learning mindset; 3) facilitate smoother adjustment; 4) reduce hardships for workers who are struggling; and 5) mitigate harsh local impacts.

The report, including interactive data displaying automation's impacts on occupations in the 100 largest metropolitan areas, is available here: <https://brook.gs/2HodtAv>.

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