

A Tale of Two Workers: The Macroeconomics of Automation*

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Abstract

Progress in automation and information technologies has meant that industrialized economies have experienced a significant drop in the fraction of their population employed in middle wage, “routine task intensive” occupations. Applying machine learning techniques, we identify the types of individuals who would otherwise, if not for technological progress, be employed in such occupations and track their labor market outcomes. Based on these findings, we develop a quantitative, heterogeneous agent, general equilibrium model of labor force participation, occupational choice, and capital investment to study the aggregate and distributional effects of advances in automation. We use this framework as a laboratory to evaluate various public policies aimed at addressing the disappearance of routine employment and its consequent impacts on inequality.

Keywords: Polarization, Automation, Routine Employment, Labor Force Participation, Universal Basic Income, Unemployment Insurance, Retraining.

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