Automation After the Assembly Line Computerized Machine Tools, Employment and Productivity in the United States

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Since the 1970s, computerized machine tools have been replacing semi-skilled manufacturing workers, contributing to factory automation. We build a novel measure of exposure to computer numerical control (CNC) based on initial variation in tool types across industries and differential shifts toward CNC technology by tool type over time. Industries more exposed to CNC increased capital investment and experienced higher labor productivity. Total employment rose, with gains for college-educated workers and abstract tasks compensating for losses of less-educated workers and routine tasks. Employment gains were strongest for unionized jobs. Workers in exposed industries returned to school and relevant degree programs expanded.