

AUTOMATION, GLOBAL LABOR MARKET, AND OUTPUT: DO PRODUCTIVITY- IMPROVING TECHNOLOGIES RAISE OVERALL WORK DEMAND?

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Abstract. We follow recent research (e.g. Spencer, 2018) showing that, enabled by technology, employment platforms have enabled capitalist employers to subcontract labor at decreased expense than if they carried it out internally. Work has been organized that circumvents current labor regulations and social protections. Using the data from CaixaBank Research (based on data from Innosight and David Deming), Current Population Survey, Federal Reserve Bank of St. Louis, GSV Advisors, U.S. Labor Department, and The Wall Street Journal, we performed analyses and made estimates regarding job trends (routine vs. non-routine, cognitive vs. manual), U.S. venture-capital and growth investments in education (capital flows, \$bn, and number of transactions), U.S. productivity and jobs (1955–2018), and the trend in the tasks demanded for U.S. jobs (change compared with 1980, %). Empirical and secondary data are employed to support the claim that capitalist employers, by filling positions beyond the bounds and without any official employment contract, are likely to neglect their moral duties towards personnel. The likelihood of their growth may in addition disintegrate the quality of labor open to employees. The cutting-edge technology has been coupled with substandard labor market practices. The pursuit of a more considerate work setting that reinforces lengthy free time while furthering more substantially rewarding work necessitates alterations in partnership that transfer power to employees over the utilization of technology.

Keywords: automation, labor, market, productivity, technology

JEL Classification: E24, J21, J54, J64

1. Introduction

The employment of technology to establish an unnecessary workforce with less work labor privileges has been effective for individuals owning platform firms to the detriment of persons they employ, i.e. prolonged hours of labor without subsidies such as sick leave, paid holiday, and minimum wages. Labor in the gig economy is likely to weaken the challenging rights of workers. Technology has been utilized within workplaces to systematize supervising and boost labor. In work, employees grapple with having their undertakings registered and evaluated by technology on a systematic ground. With more cutting-edge surveillance technology calibrated to be improved that can be put on by and embedded into employees (Mengoli et al., 2017; Mihaylova, 2017; Nica et al., 2017, A, B, C; Otrusínová, 2016), labor will be effortlessly tracked and heaped on. Technology is regulated by the principles of production and the configurations it takes require the ownership connections in which it is positioned. The asymmetrical ownership of production circumscribes technology and confines its employment both for diminishing work time and for intensifying the quality of labor. (Spencer, 2018)

2. Literature review

High-proficient, problematic-to-automate jobs progressively necessitate social skills. Expertise in human cooperation is chiefly contingent on implicit knowledge. Jobs that demand superior degrees of analytical and mathematical inference but inferior degrees of social relations (Machan, 2017; Popescu et al., 2017; Profiroiu & Nastacă, 2016) have progressed quite insufficiently. Computers are unsatisfactory in replicating human cooperation, as inspecting the minds of individuals and responding represents an unconscious process. Workplace human cooperation entails team production: employees challenge each other's strengths and readjust responsibly to dynamic contexts. Such nonroutine cooperation is integral to the human ascendancy over technology. (Deming, 2017) The labor division may further automation as it singles out standard tasks and stimulates worker modularity. The effect of automation on urban employment may jeopardize expansion, which is broadly determined by hiring opportunity. (Frank et al., 2018) The automation capacity is inferior in jobs that necessitate programming, introducing, instructing or persuading individuals, whereas the risk of automation is superior in jobs with a significant proportion of tasks that are connected with exchanging data. (Arntz et al., 2017)

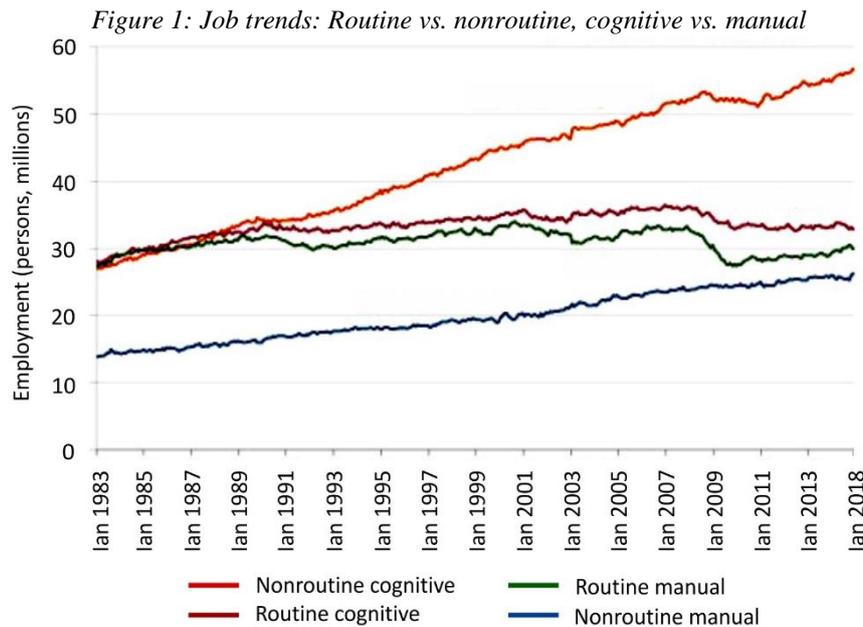
3. Methodology

Using data from CaixaBank Research (based on data from Innosight and David Deming), Current Population Survey, Federal Reserve Bank of St. Louis, GSV Advisors, U.S. Labor Department, and The Wall Street Journal, we performed analyses and made estimates regarding job trends (routine vs. nonroutine, cognitive vs. manual), U.S. venture-capital and growth investments in education (capital flows, \$bn, and number of transactions), U.S. productivity and jobs (1955–2018), and the trend in the tasks demanded for U.S. jobs (change compared with 1980, %).

4. Results and discussion

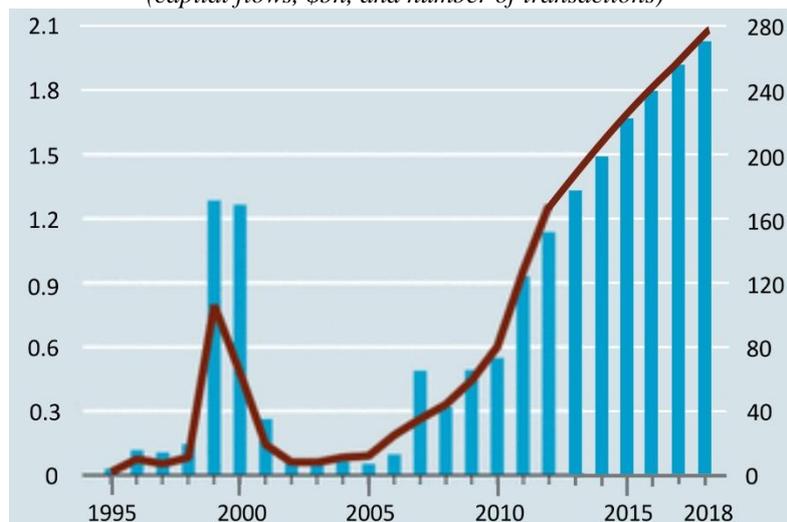
Enabled by technology, employment platforms have enabled capitalist employers to subcontract labor at decreased expense than if they carried it out internally. Work has been organized that circumvents current labor regulations and social protections. Capitalist

employers, by filling positions beyond the bounds and without any official employment contract, are likely to neglect their moral duties towards personnel. The likelihood of their growth may in addition disintegrate the quality of labor open to employees. The cutting-edge technology has been coupled with substandard labor market practices. The pursuit of a more considerate work setting that reinforces lengthy free time while furthering more substantially rewarding work (Acosta Price, 2017; Havu, 2017; Klierova & Kutik, 2017; Nica, 2017) necessitates alterations in partnership that transfer power to employees over the utilization of technology. (Spencer, 2018) (Figures 1–4)



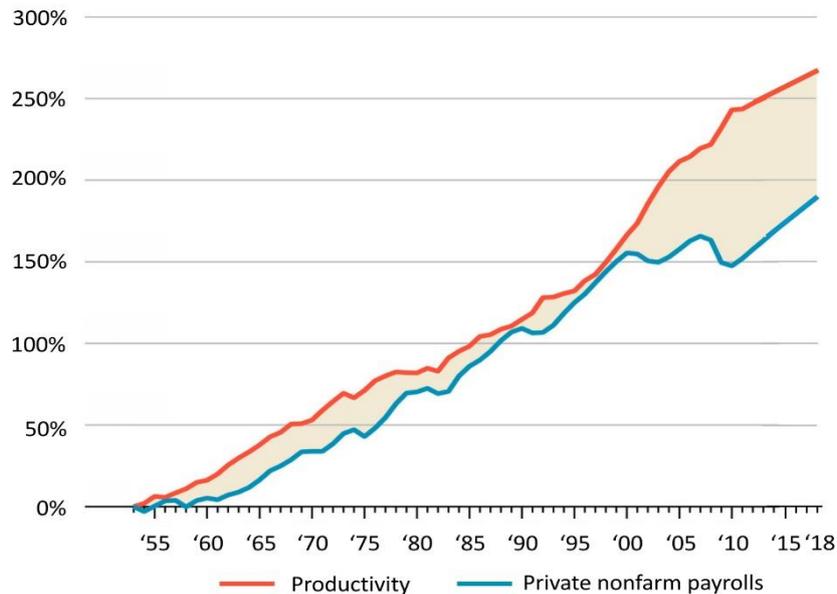
Sources: Current Population Survey; Federal Reserve Bank of St. Louis; and our estimates.

Figure 2: U.S. venture-capital and growth investments in education (capital flows, \$bn, and number of transactions)



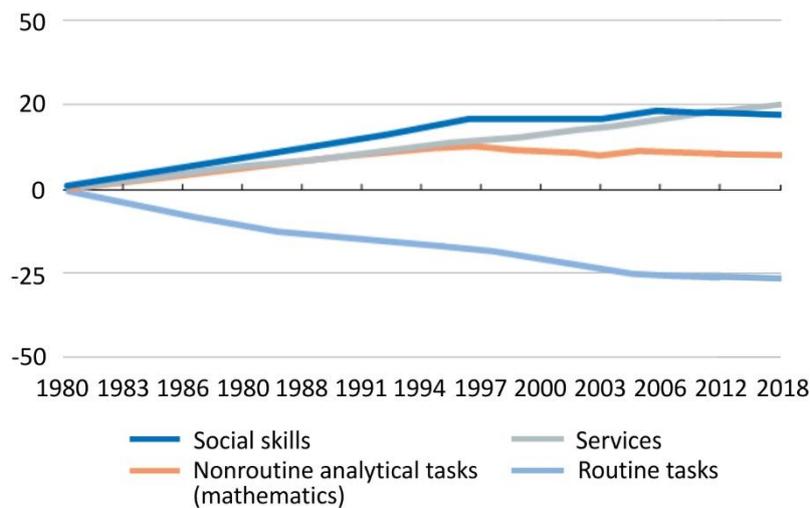
Sources: GSV Advisors; and our estimates.

Figure 3: U.S. productivity and jobs (1955–2018)



Sources: U.S. Labor Department; The Wall Street Journal; and our estimates.

Figure 4: The trend in the tasks demanded for U.S. jobs (change compared with 1980, %)



Sources: CaixaBank Research, based on data from Innosight and David Deming; and our estimates.

5. Conclusions

If society aims to exploit technology in the interest of a reduced amount of, and superior, labor (Cennamo, 2018; Elsbach & Stigliani, 2018; Jiang & Lavaysse, 2018; Robinson, 2018; Emran et al., 2018; Hémet & Malgouyres, 2018), it should take up democracy in employment and increase ownership rights concerning production to employees. Improving the representation and influence of workers is instrumental in guaranteeing that technology is mobilized for unselfish objectives (Campbell et al., 2017; Shaefer et al., 2017), and not misused on incessant consumerism and production that serves the capital owners without regard for the other individuals composing the society. Technological advancements may generate more labor for workforce to perform. The cutting-edge digital technologies are being employed to lead to

more replaceable, precarious and overworked individuals. Their subsequent large-scale implementation put at risk more employees to even more unsatisfactorily quality labor. The tendency towards the adoption of technology for being cost-effective indicates that employees cannot be certain of technology to diminish the burden of labor and to improve its qualitative content. (Spencer, 2018)

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