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Technological Change and Systemic Inequality: A Political-Economic Analysis Based on the Labour Market, Capital Accumulation and the Distribution of Opportunities

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Abstract: This paper explores how international migration reshapes traditional citizenship and national identity amid globalization. From the theoretical perspective of transnationalism, it argues that cross-border ties blur the dividing line between legal citizenship and individual belonging, challenging the nation-state-centered traditional view of citizenship. the study holds that the reconstruction of citizenship is jointly shaped by capital flows, migration policies and social stratification. On one hand, under neoliberalism, investor and skilled migrant policies increasingly link residency eligibility to economic contribution and fuel the commodification of citizenship. On the other hand, large numbers of low-skilled migrants fill labor shortages yet work under precarious employment, suffering from inadequate social security and restricted political participation. Besides, descendants of transnational migrants develop hybrid cross-border identities but may struggle with identity conflicts and a lack of belonging. Based on the above analysis, the paper concludes that citizenship is no longer merely a legal membership; instead, it represents evolving power relations shaped by interactions among transnational capital flows, labor migration and state governance. When formulating migration policies, governments should strike a balance between economic growth goals and social inclusion to adapt to the evolving practice of citizenship in a globalized world.

Keywords: Technological Change; Systemic Inequality; Labour Market Polarization; Capital Accumulation; Digital Divide; Inclusive Policy

1. Introduction

Throughout history, technological change has had a transformative effect, fueling economic growth, increasing productivity, and revolutionizing societies. For over a century, from the Industrial Revolution to the modern digital age, innovations have transformed industries, labor markets, and the global distribution of wealth (Javaid et al., 2024)[1] . However, the benefits of technological progress have not been shared equally. With breakthroughs like automation, artificial intelligence, and digital platforms accelerating, their effects on economic inequality are now at the center of academic and policy debates (Capraro et al., 2024)[1] . Historically, technological change has an ambivalent relation to inequality. the Kuznets Curve shows that inequality increases as economies change and decreases when the benefits of economic growth become more widely distributed in society (Kavya and Shijin, 2020)[6] . However, Piketty's (2014) "r > g" hypothesis shows how wealth and income generated from capital can grow faster than the economy as a whole, compounding inequality.

The impacts are apparent today, with high-skill workers and capital owners winning out from a transforming technology while low and middle-income groups fall behind. As this essay shows, the connections between technological change and inequality manifest along three relationships: the jobs in the labor market, producing capital, and the ownership of both. It tracks how automation and job polarization are changing the nature of work, how technological advances accelerate wealth concentration, and how the cycle of inequality between access to education and digital tools continues to exacerbate inequality. This essay argues that while technological change is likely to reduce inequality through innovation and growth, its course is bound to aggravate disparities unless deliberate intervention is undertaken. Unless inclusive policy strategies are pursued to confront these challenges, the uneven distribution of gains will intensify economic,

political, and social divides in the future.

2. Historical Perspectives on Technology and Inequality

The history of the interaction between technical advancement and inequality has been characterized by a complicated cycle of possibilities and exclusions brought about by progress. the Industrial Revolution is a prime example. Mechanization increased productivity, but initially, this increased inequality, because while capital owners and skilled artisans benefitted, the unskilled were unemployed (Salvo, Weisdorf, and Ridolfi, 2022)[9] . This fits Kuznets ' Curve, which suggests inequality rises at the beginning stages of industrialization before falling as societies put in place redistributive tools, such as public education and social welfare. Such convergence is, however not inevitable, argues Piketty (2014)[3] . When the return on capital r exceeds economic growth g, it results in the concentration of wealth, as illustrated by 19th-century Europe in which inherited wealth dominated economic power. In the 20th century, technology such as electrification, and the mass production of consumer goods led to better economic inclusivity, especially in the post-World War II era (Council on Foreign Relations, 2023)[4] . It was a time of strong labor unions, progressive taxation, and growing welfare states that recirculated the gains from productivity. However, globalization and digitalization since the late 20th century can turn these trends upside down in many areas.

For instance, automation and offshoring reduced manufacturing jobs in industrialized economies, contributing to job polarization and wage stagnation for middle-income workers (Prettner and Strulik, 2019)[17] . the contemporary digital age is a striking case of technology both worsening and alleviating inequality. Milanovic's (2016) [14] "Kuznets Waves" framework highlights that each major technological transformation catalyzes another wave of growth in inequality, and identity shifts because only a minority of individuals initially derive value from new opportunities. Importantly, these historical trends expose that technology is not inherently inequitable, but rather, without inclusive institutional frameworks and redistributive policies, technology aggravates inequalities. Countries that invested proactively in education and infrastructure, like South Korea when it transformed into a tech economy, show how inclusive growth can happen (Lee, 2024)[12] . In contrast, societies that prioritize the accumulation of capital above the empowerment of labor risk becoming entrenched in inequality. These lessons highlight how structural inequities and tech progress should also be focused on.

3. Labor Market Transformations

The transformation of the labor market due to technological change is one of the most visibly and directly felt impact innovation has on inequality. Shifting like this also breaks up ways we do work, spreading out chances and dangers in a way that could make divides stronger. Although tech creates new industries and jobs, it takes existing work away from people with routine or manual labor skills too (Høtte, Somers&Theodorakopoulos, 2023)[2] Trends like these must be watched for their effects on income inequality, job security, social mobility. the important aspect here is the wear and tear on traditional employment models. the gig economy typified by Uber or Deliveroo is an example of the precariousness of current work (Hern, 2020)[7] : And this increases the inequality because there ' s a two caste labor system; even if some have high wage, safe work, tons more are left with low wage, volatile jobs. Studys such as Emmenegger et al. 2012 reiterate labor-market dualisation and make sure that it is the ones with less education and fewer means to adapt themselves to new technologies who will feel this most acutely. Automation and AI have not only caused more job losses, they've shifted what kinds of skills are required in order to get a job. the brilliant high skilled worker that knows how to make something amazing gets the best pay and the ones who don't retrain or can't go back to school are left behind. There's a contrast between the kinds of jobs available in manufacturing and clerical jobs where there are repetitive tasks that are being automated. But now even the non-routine cognitive jobs like legal research or medical diagnosis are getting changed due to AI and it is becoming harder to compete for those high skilled jobs(Upreti and Sridhar, 2024)[20]

4. Inequalities Show up in Those Uneven Geographies of Change Too. In Cities That Are Strong in Digital

infrastructure and have a large number of high-

tech industries, these areas get an unfair advantage, attracting investment and talents. On the other hand, in rural and economically poor regions where people have no choice but to move away because of job losses and the arrival of new economic realities. And this lack of opportunity is part of something that many have come to know as “brain drain ” where educated members are departing for cities and leaving further scarce the talented in places trying not to send their educated away(Docquier, 2014)[3] : As the labor market is changing, there are issues concerning with the collective bargaining and labors union. In the past Unions were very important when it came to getting good pay and working conditions during times of trouble. (Visser, 2023)[24] Technological changes of the labor market will make inequality worse and threaten social stability and harmony for a long time to come. So the real question isn't will labor markets change, it's how do countries want to handle those changes to create equitable results.

5. Capital Accumulation

Technological change makes inequality go up when it hits capital accumulation, concentrating wealth among people who own and control productive stuff. It also shows the separation between people that make money off of having money, and everyone else who relies on a job for their income. Structure of the Digital Economy is an excellent case to show that the accumulation of capital creates inequality. Google, Apple and Amazon are the big tech company that makes a lot of money because they have economies of scale and network effects and also IP (Katz, 2020)[10] . They work with companies which are operating in a market where only some large organizations take most of the benefits, this idea is linked by economists such as Piketty (2014)[16] to what he calls ‘ superstar ’ firms. Payouts from such items are much larger than wages increases for almost everybody. They concentrate the resulting cash in shareholders and corporate executives. Automation technologies which lower how much we need humans for work cause an even worse sharing of good things economically. Automation reduces the production cost, improves efficiency which increases corporations profit but not wages. the savings from such technology would mainly benefit the investor or the owner of capital and hence continue with the income inequality(Upreti and Sridhar, 2024)[23] . But still those innovations are out of reach for most people and creates a bigger divide between the wealthy few who have access to institutions like banks and everyone else.

6. Access to Opportunities

Unequal opportunities are an important mechanism through which technological change reproduces inequalities. Who gains from innovations depends decisively on the level of education, the digital infrastructure, and the technological tools at their disposal. Systemic barriers keep those who are not very well placed locked out of upward mobility, entrenching economic and social divisions (Smeeding, 2016)[21] . So it is, in many developing and underdeveloped regions across the globe, where access to education is uneven and limits the capability to move into technologies that leap. This drawback is apparent in the digital economy, where the best-paying posts invariably require market-driven skills such as coding, data analysis, or artificial intelligence, which are impossible for large sections of the world’s population to acquire.

This digital divide considerably worsens socio-economic disparities in access to opportunities. Gaps in internet connectivity, especially between urban and rural geographies, or between high and low-

income parts of the world, shut marginalized populations out of the global digital economy. In Sub- Saharan Africa, for instance, where internet penetration rates are considerably below global averages, lack of digital access stifles education, entrepreneurship, and access to markets (Seuyong et al., 2023)[2] . On the other hand, urban agglomerations with strong digital infrastructure draw in investment and talent, perpetuating and even leading to regional disparities. Socio-economic status also mediates access to technology. This gap is something that needs to be addressed by targeted policies, like universal access to broadband, cheap digital tools, and an open education system. Unless it is addressed, progress will lock the opportunities in the hands of the rich elite, perpetuating inter-generational inequality.

7. Political and Social Implications

The consequences of technological inequality extend far beyond the economic realm, influencing governance, social cohesion, and

citizens' trust in institutions. With the ongoing change in technology widening wedges in wealth and access, it challenges traditional power structures and increases divisions in and between societies. Wealth created by technological innovation is often converted into political power, with wealthy individuals and corporations deploying their capital to direct policy to their advantage (Lewis, 2022)[22] . Tech monopolies like Meta and Google have built significant lobbying coalitions to fight back against regulatory infrastructure. Gilens ' (2005) [5] research on democratic responsiveness shows how concentrated wealth undermines equal representation with policies reflecting elite interests instead of those of the general population.

Technical inequality also generates social polarization. As the divide deepens between those who do and do not benefit from innovation, anger, and distrust of elites grows. (Jones, 2022)[9] . Furthermore, the consequences of technological inequality influence social unity and the state's welfare. Such gaps in access to digital infrastructure and tools tend to reflect or widen existing fault lines of race, class, and geography. For instance, the innovations in telemedicine, online education, or digital banking are less likely to help marginalized communities, which may have fewer resources, and so perpetuate cycles of disadvantage.

8. Mitigating the Impact of Technological Change

On matters of technology change, policy intervention by deliberately targeting structural sources of inequality is needed: both the governments and businesses combined and international institutions have to put concerted efforts toward the transformation which can increase the spread of the beneficiaries and not keep reinforcing the status quo. Education provides critical equipment for fighting inequality amid the disruption caused by the onset of technological change. For instance, investing in quality education access for all including quality education in STEM, fosters the development of the requisite skill set required in an economy driven by innovation. Indeed, countries like South Korea have demonstrated: that at the forefront, non-discriminatory systems of education widen social mobility and contract the skills gap, allowing broader labor market participation (OECD, 2014). [15] Policy measures against wealth concentration are also needed. More progressive taxation, wealth taxes, or regulations against monopolistic practices would reduce unbalanced benefits to capital owners in this sector. For example, antitrust activity against dominant

firms such as Amazon or Google can facilitate competition and create more competitive economic opportunities. (Thompson, 2022)[22] . Education, infrastructure, taxation, and safety nets, all are necessary components of a multidimensional approach that would allow societies to benefit from technological innovation while limiting its pernicious consequences. A failure to act risks worsening economic, social, and political divides that weaken the potential for technology to play a role in shared prosperity.

9. Conclusion

This essay argued that, although technological development is presumed to reduce inequality through innovation and growth, the advancement of technology will systematically widen gaps, unless specific countermeasures are taken. This essay explored these processes through the lenses of labor market transitions, capital accumulation, and resource access, guided by theoretical frameworks such as Piketty's "r > g" hypothesis and Milanovic's "Kuznets Waves. " the labor markets, combined with the dynamics of automation, job polarization, and the complementarity of technological innovations, indicate that the divisive implications of technology may be differential of high- and low-skilled workers.

The return on investing in technology is growing at a rate outpacing wages, resulting in inequality due to accumulating capital. As educational and professional networks and digital tools persist in being out of reach, these divides carry forward and leave marginalized groups wanting in a knowledge economy. This highlights the reality that the benefits of technological change are not automatic or evenly shared. Beyond economics, technological inequality influences political and social outcomes. Progressive tax policy should support education, universal access to connect information systems and digital infrastructure, and strong enforcement of antitrust policy to limit the concentration of choice, among others, are good complements to technology. International collaboration is also crucial for addressing the digital divide between countries

and facilitating fair global development.

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