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**Magdalena Tusińska**
University of Economics in Katowice
e-mail: magdalena.tusinska@ue.katowice.pl
ORCID: 0000-0001-9646-9628

# THE COVID-19 PANDEMIC AS A CATALYST FOR INCOME INEQUALITY

**Abstract.** The goal of this paper is to examine COVID-19 potential long-run effects on income inequality, seeking answers in the wider context of inequality sources and foregoing evidence from industrialised countries. Thus, the phenomena that existed prior to the pandemic but, due to its impact, may accelerate the process of growing income inequality in the long term, must be identified. Since left unchecked, growing disparities may lead to long-lasting negative effects and forming a kind of vicious cycle, the article also seeks to present general policy proposals that possibly can mitigate disparities. According to the hypothesis, the ongoing structural transformation triggered by the pandemic can act as a catalyst for the further dynamics of increasing inequality. What has been identified as the most important drivers of inequality is digital divide, as well as automation and robotization having significant impact on the world of work.

*Keywords*: coronavirus, COVID-19, income inequality, digital divide, automation, labour market, pandemic.

## 1. Introduction

Inequality in various dimensions has come to the forefront of public awareness to such an extent that it now dominates scientific and political debates in much of the world. The background of this situation is the growth of economic inequality in industrialized countries over several decades, reversing a trend toward greater equality that prevailed during stable growth in the post-World War II era. Beginning in the 1980s, differences among various segments of the population in both income and wealth have accelerated as a consequence of various complex processes briefly discussed in this paper (i.a. globalization and technological progress). However, the primary premise of this article was the economic shocks triggered by the outbreak of the COVID-19 pandemic in 2020 and the subsequent containment measures affecting business and social life. Lockdowns implemented worldwide forced the majority of societies to stay at home and impelled companies from

various industries to reorient their work arrangements. Analogous changes were observed in the field of education at various levels.

Even though the pandemic has been declared over, its aftermath has provided a timely opportunity to explore the topic of inequality even more intensively since the event has brought vastly different opportunities and burdens across occupations, sectors, genders, regions, and countries. While disparity has many facets, this inquiry mainly concentrates on within-country income inequality in industrialized states. Despite this focus, there are references to other forms of economic inequality, such as wealth, and their various dimensions, including gender, as they all interact with each other.

The goal of this paper is to examine COVID-19 potential long-run effects on income inequality, seeking answers in the wider context of inequality sources and foregoing evidence from industrialised countries. Thus, the phenomena that existed prior to the pandemic but, due to its impact, may accelerate the process of growing income inequality in the long term, must be identified. The paper also seeks to present general policy proposals that have the potential to mitigate this inequality. It may outwardly seem subjective, but it is approached with the spirit of objectivity and scientific economic argumentation. This effort must have been made because inequality is more than just a scientific problem; it touches upon questions of justice. As J.M. Keynes (1926) predicted, areas of moral agreement and disagreement would be incorporated into economic discussions. He claimed, "the fiercest contests and the most deeply felt divisions of opinion are likely to be waged in the coming years not around technical questions, where the arguments on either side are mainly economic, but around those which, for want of better words, may be called psychological or, perhaps, moral." These words seem more relevant today than ever.

There is also a hypothesis formulated in this article: the ongoing structural transformation triggered by the pandemic can act as a catalyst for the further dynamics of increasing inequality.

The major contribution of this research is not meant to strictly predict the future or analyze statistical data but rather to provide a broad perspective on potential changes in income inequality and to identify the underlying logic for these differentials based on observations thus far. A deep understanding of the contemporary reasons for economic inequality is crucial to avoid an unintended increase in this phenomenon.

The article is based on literature, articles, and other online sources. The research methods used include a critique of the literature covering the subject matter, descriptive analysis, and deduction.

The paper is organized as follows: after this introduction, the second part discusses overall issues concerning economic inequality, including the discussion on the legitimacy of the phenomenon and the drivers of growing income inequality. The next section reviews works that have investigated the evolution of polarization during the pandemic and identifies the circumstances that may reinforce existing inequality dynamics. The fourth section considers policy responses to begin mitigating some of the disparities that existed prior to the pandemic and might have been exacerbated by it in the long run. The article ends with conclusions

## 2. Income inequality – its sources, drivers and consequences

Income inequality encompasses various aspects in the economic context, including wealth, pre-tax income, natural resources, products (Munzer, 2021), opportunities, consumption, or savings (Stantcheva, 2021). These dimensions are interconnected, for example, a high concentration of wealth often exacerbate income inequality in a mutually reinforcing cycle. While the reflection on the unequal distribution of these factors, with a focus on income inequality, dates back to the birth of economics as a science, it has gained renewed attention from authors such as Atkinson (2015), Deaton (2013), Piketty (2017), Milanovic (2016) or Stiglitz (2012) advocating for the fight against inequality. This has made income inequality one of the most prominent subjects in both theoretical and empirical analyses over the last two decades. These authors have, to some extent, joined the traditional debate on the trade-off between effectiveness and equality. The essence of this discussion is presented in Table 1, which outlines arguments in favor of and against income inequality. The middle column emphasizes that in practice, a compromise between effectiveness and equality is accepted, depending on the economic system in place, because "one size does not fit all."

Though the discussion (Table 1) seemed to be anyone's game for years, what has come to the forefront currently is the growing weight of the arguments enumerated in the right-hand column. Even institutions like the International Monetary Fund, typically perceived as advocates of economic growth and a liberal approach, have intensified their focus on inequality (IMF, 2017). This shift arises not only from inconclusive evidence regarding the relationship between income inequality and economic growth (Table 1) or moral dilemmas but also from the main factors responsible for incremental stratification. Since this process cannot be

**Table 1**

**Pros and cons of income inequality**

| Inequality should not be fought against because it ... | A trade-off | Inequality should be fought against because it ... |
|---|---|---|
| ... fosters a higher saving rate of rich people and the investment rate is positively related to the saving rate (Kaldorian approach) – pro-growth argument (Aghion et al., 1999; Barro 2000)<br><br>... conduce to returns to education and differentiation in labour earnings, can spur human capital (Becker and Chiswick, 1966; Beckers 2006).<br><br>... incents to work, innovativeness and entrepreneurship – they are stronger in more unequal societies (Aghion et al., 1999; Lazear and Rosen, 1981; Beckers, 2006; Galbraith, 2011). | Accepted level of inequality – being usually a result of combination of various patterns, including historical and institutional determinants, as well as "traditional" both redistributive mechanisms and equal opportunities policy (public education)<br><br>It results in the decreased effectiveness of resource allocation and in distortions – Okun's leaky bucket (Okun, 1975). | ...deprives the ability of lower-income households to stay healthy (physically and mentally) and accumulate physical and human capital (Grossman, 2001; Perotti, 1996; Galor and Moav, 2004; Stiglitz, 2012; Wilkinson & Pickett, 2009) – anti-growth argument<br><br>... leads to different perceptions of the world between different groups having less interactions and more rent-seeking behaviors, undermines any sense of solidarity and trust (Bardhan, 2005; Stiglitz, 2012) ⇒ deterioration of social capital<br><br>... brings political instability, opens way for populist alternatives, limited trust of foreign investors (Grossman, 2001; Perotti, 1996)<br><br>... causes social diseases (addictions, crime) and greater environmental degradation (Stiglitz, 2012) |

Source: Own elaboration.

mainly justified in terms of conventional economics concepts such as "just deserts" or "work ethic," economists have started placing greater importance on other broad trends affecting income and wealth distribution. These trends include technological progress, globalization, and changes in institutional settings.

While technological progress generally carries positive connotations, the benefits of ongoing digital transformation accompanying this progress are not evenly distributed. One of the main reasons for this uneven distribution is the digital divide among individuals, households, socioeconomic groups, or geographic areas. This divide pertains to both access to infor-

mation and communication technologies (ICTs) and their effective utilization for various activities, such as learning, work, public services, banking, and other daily functions. This gap may take various forms depending on whether lack of digital literacy, infrastructure, appliances or access to the broadband internet are considered (OECD, 2001; Huws, 2001). However, regardless of its form, the digital divide has the potential to perpetuate income inequality by strengthening the advantages of groups proficient in ICT over those excluded from these opportunities.

In addition to digital divide, diversified level of education, other skills and experiences matter in the context of various changes observed in the nature of work, many of which are driven by technological advancements. As early as Tinbergen (1974) noted, technological progress increases the demand for educated and highly skilled workers, exerting upward pressure on their wages. In contrast, blue-collar workers performing routine or easily replaceable tasks face lower earnings and employment opportunities, often requiring them to undertake less skilled work. This phenomenon reflects the effects not only of automation and robotization, which have reduced the range of jobs available to workers with low to mid-level skills (particularly in production and administrative support roles), but also of globalization. International trade and offshoring, in particular, have had negative impacts on the wages and job prospects of lower-skilled workers, as tradeable sectors expand beyond manufacturing, facilitated by digitalization, which allows a wider range of activities to be conducted across borders. Consequently, although the specifics vary from one country to another, a common trend in industrialized economies over the last four decades has been the sustained decline in real wages experienced by less-educated workers (Autor, 2019; Acemoglu & Restrepo, 2022; Acemoglu et al., 2023; Dustmann et al., 2009; Acemoglu & Autor, 2011).

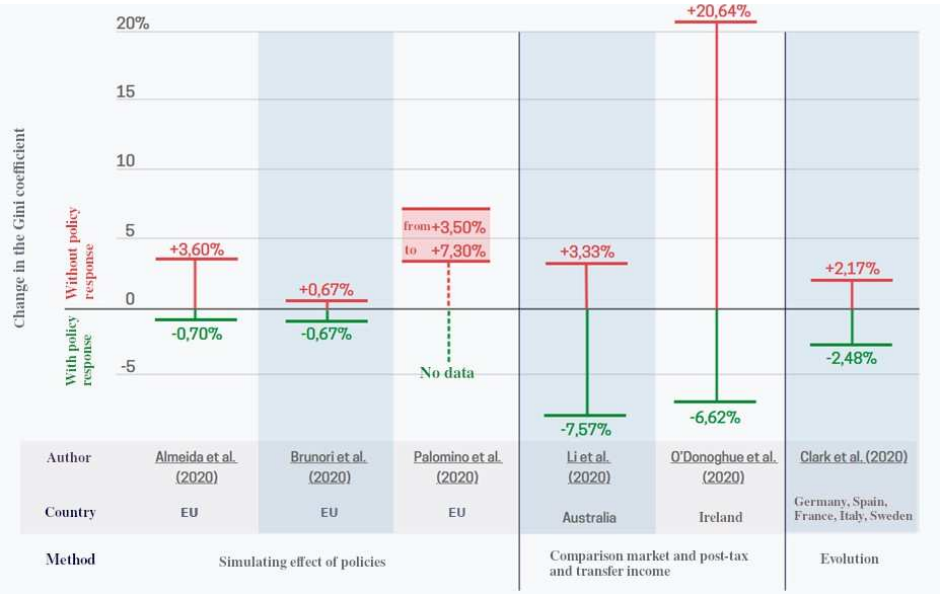
Another mechanism contributing to increasing income inequality arises from the shift of income from labor to capital, coupled with a detachment of wages from business profitability, largely driven by automation. This results in a more unequal distribution of capital income, with dominant companies capturing larger market shares in increasingly concentrated and winner-takes-all markets (Qureshi, 2023).

All of these processes have occurred alongside changes in the institutional environment. Deregulation, the growing financialization of economies, the erosion of labor market institutions (including minimum wage laws and collective bargaining), and the declining progressivity of tax and transfer systems have all significantly contributed to the growing income polarization within economies (Brzeziński, 2017; Tomkiewicz, 2017, p. 17–23).

## 3. The pandemic and income inequality in industrialized countries

Turning to the evidence from the pandemic crisis in industrialized countries, with a focus on income inequality, the natural starting point is the onset of lockdown measures. These lockdowns not only resulted in a decline in global economic and social activity but also had profound effects on the labor market, affecting factors such as job quantity, job quality, and wages. Following the outbreak of the pandemic, substantial economic losses, particularly in vulnerable industries, immediately led to a sharp decline in household incomes and an increase in income inequality. However, thanks to a combination of existing redistributive mechanisms and extraordinary government interventions, these inequalities were reduced relatively quickly. Without government support, the lockdown circumstances would likely have exacerbated income inequality and this mechanism can be illustrated using the example of G7 countries. Household incomes generally increased during the pandemic, despite a plummet in GDP, which suggests significant public support (OECD, 2020). Furthermore, various authors have investigated the effects of policy responses to the pandemic in different countries, with their findings presented in Picture 1.

**Pic. 1.** Literature review on the influence of public policy on the Gini coefficient




Source: on the basis of Stantcheva (2021) and Szewczyk (2021).

The magnitude of the effects of policy interventions varied from one country to another (Pic. 1), depending not only on the measures implemented but also on the preexisting economic structure, employment conditions, the specificity of the economic system, and various other factors. Nevertheless, during the first year of the pandemic, income inequality actually declined. These findings may initially appear to contradict the hypothesis presented in this article, but short-term interventions can obscure the broader picture. To clarify this, it is essential to focus on the premises of inequality discussed in the first section, which primarily referred to phenomena and processes that were already in motion before the pandemic. The digital divide and the transformation of the labor market are crucial here, as they created highly unequal opportunities and experiences for households and workers, which the pandemic circumstances interacted with.

Above all, the lockdowns compelled people to rely on the internet and internet-based services for communication and work and school responsibilities from home. However, while ICTs were a lifeline for some segments of society, others faced significant challenges. Crucially, digital literacy and infrastructure are unevenly distributed across the income spectrum, indicating that lower-income households struggled the most (Stancheva, 2021; McClain et al., 2021). Studies from various developed countries demonstrate that households with insufficient equipment for each member experienced more significant constraints in their ability to engage in online activities, including reduced opportunities for learning (Ong et al., 2020), limited chances to maintain a social life (Beaunoyer et al., 2020), or access online services, such as medical care. Additionally, the increased global use of bandwidth disproportionately affected less well-equipped households, resulting in slower internet speeds. Reduced connectivity speeds, which are also common in rural and lower-income areas, hindered residents' ability to adhere to social distancing measures, putting them at greater risk of contracting the virus (Chiou & Tucker, 2020). However, it is indispensable to highlight that the digital divide and the type of region only partially explain the potential for implementing social distancing measures. Sector and occupation also play significant roles in this context.

One might assume that these issues should no longer be a subject of analysis, given the official end of lockdowns and the pandemic. However, three reasons necessitate continued consideration. Firstly, due to illness or death, the income of poorer families could be permanently reduced. Secondly, the increased reliance on online activities has persisted in various fields, including the world of work. Thirdly, even short-term experiences

of digitally excluded groups may lead to long-term consequences, such as a deterioration of human capital resulting from gaps in education and adverse effects on mental and physical health. Given that digital exclusion primarily affects lower-income households, it is likely that these challenges have disproportionately impacted poorer households during and possibly after the pandemic.

In the context of income inequality, it is pertinent to expand on the labor market's role. The unemployment shocks resulting from the pandemic were described as the most severe crisis since World War II (CCSA, 2020). However, these shocks were heterogeneous across the income distribution. While there may be some variations in studies in precisely defining "high-earners" and "low-earners", general findings suggest that the latter were more vulnerable to unemployment shocks, despite being more likely to work in "essential" occupations that typically experience fewer layoffs or furloughs. This phenomenon can be explained by the overrepresentation of low-income workers in the so-called secondary labor market (Piore, 1978), characterized by precarious employment arrangements such as part-time jobs or temporary contracts. Such employment is highly sensitive to economic cycles, which makes it particularly vulnerable during crises. Eurostat data (2020) confirms that more low-earners were at risk of job loss, temporary layoffs, or reduced hours in the European Union countries during the early phase of the pandemic. Similar trends were observed in other regions as well. In the United Kingdom, for example, employment decreased by 12% for low-earners compared to 5% for high-earners from February to March 2020 (Adams-Prassl et al., 2020). In the United States, the figures were 37% versus 14% (between January and mid-April 2020) (Chetty et al., 2020). In Australia, 14.7% of low-earners and 2.58% of high-earners experienced job losses in April 2020 (Li et al., 2020).

Regarding engagement and dismissals, the employment trajectory for workers in the top wage quartile followed a V-shaped pattern, unlike those at the bottom of the income distribution (Chetty et al., 2020). Consequently, higher-income workers were less vulnerable to job losses, and their employment recovered relatively quickly. This disparity was not solely attributed to the nature of work performed by low-income workers but was compounded by their greater mental health deterioration, which could have exacerbated job search difficulties (Pieh et al., 2020).

While the immediate focus has been on short-term aspects of unemployment, furloughs, and job engagements, it is essential to highlight that the pandemic's long-lasting consequences, such as the impairment of human capital, cannot be ignored.

Continuing the topic of the labor market, the pandemic undeniably accelerated automation and digitalization, favoring more skill-intensive sectors and exerting wage pressure on such workers. Although the cost-saving advantages of automation were evident before 2020, the outbreak of the pandemic introduced significant uncertainty (Baker et al., 2020). This uncertainty prompted entrepreneurs and business owners to adopt precautionary measures to prepare for potential future pandemics. As a result, labor-intensive sectors became even less attractive (Stiglitz 2020; Tyson & Lund, 2021), further reinforcing automation and the reallocation of low-income workers (as described in the first section) and exacerbating income inequalities.

While the primary focus in this article is on income inequality, it is crucial to acknowledge the pandemic's impact on specific vulnerable groups, including women, immigrants, and disabled individuals, who are more susceptible to adverse labor market outcomes (ILO, 2020 a, b). These groups faced initial challenges and lower incomes that may have been further compounded by the pandemic. For instance, the COVID-19 crisis had unequal effects on men and women, with women experiencing a more significant impact (a "she-session") in terms of employment and work-life balance (Christensen, 2014; Tusińska, 2021), putting additional pressure on wage decreases.

Still considering the topic of the labor market, there was a noticeable surge of interest in remote work during the lockdown. However, the feasibility of remote work varies significantly across industries and professions. Data suggests that the ability to work remotely is unevenly distributed among income groups, with lower-income employees having less potential and fewer opportunities for remote work. In the United States, for example, 45.5% of high-income workers and only 18.4% of low-income workers worked remotely during the pandemic. In Europe, the disparity is even more pronounced (Sostero et al., 2020; Bick et al., 2020). Furthermore, remote work often came with a wage premium (Bonacini et al., 2021; Irlacher & Koch, 2021), which could further exacerbate income inequalities. The new work arrangements had varying effects on work productivity. According to Etheridge et al. (2020), high-income workers, especially in financial, insurance, or IT sectors, became more productive compared to the year before the pandemic. In contrast, low-income workers, particularly in education, administrative, entertainment, or accommodation sectors, experienced reduced productivity. This disparity may be influenced by diverse factors, including less favorable home working conditions for lower-income households and differing potentials for remote work in various sectors, often related

to income levels (Dingel & Neiman 2020). Even though the pandemic is officially declared to be over, remote work has become the norm in some industries. Consequently, low-income workers face increasing pressure on wage decreases and reallocation, as they are overrepresented in occupations with limited potential for remote work (Tyson & Lund 2021).

It is also worth noting that the lockdown had varying impacts on the expenditure patterns of households depending on their income levels. During the "national quarantine," wealthier households were more affected by consumption restrictions, allowing them to accumulate extra savings (Angelopoulos et al., 2021). In contrast, low-income households, whose consumption is dominated by basic necessities, reduced their consumption to a lesser extent. Consequently, the widening of wealth and income inequality is likely to persist in the future.

## 4. What policy responses do we need in the long-term?

The content covered in the previous sections underscores the significance of addressing the skills-technology gap to mitigate income inequality. In light of these circumstances, the pandemic has accelerated the need to ask questions regarding the extent to which and how the benefits and costs of ongoing processes should be shared within society. It is crucial to determine how to support workers during times of transition. As mentioned, this is not merely a matter of moral disagreement but rather an acknowledgment of the long-term economic consequences of disparities (as outlined in Table 1). We can draw inspiration for addressing this problem from the comprehensive agenda proposed by Stantcheva and Rodrik, presented in the form of a $3 \times 3$ matrix (Table 2). This matrix distinguishes between targeted income groups and the stages at which interventions take place. It categorizes policies into three key areas: pre-redistribution policies (pre-production and production stages) and redistribution policies (post-production stage).

Pre-production policies, which include education and (re)training programs designed to upskill and reskill workers, play a critical role in shaping the skills, financial capital, social networks, and social capital that individuals bring to the labor market, as well as their opportunities. The second set of policies influences the functioning of the labor market, encompassing decisions made by firms and other labor market dynamics. These policies also hold significance in addressing income inequality. The final stage comprises ex-post redistribution instruments, such as government transfers or progressive taxation (Rodrik & Stantcheva, 2021).

It is important to acknowledge that there may be variations in institutional and policy settings among countries. However, this framework might be regarded as a general set of guiding principles for addressing inequality over the medium and long term.

**Table 2**

**The policy matrix – 3×3 framework**

| | | At what stage of the economy does policy intervene? | | |
|---|---|---|---|---|
| | | Pre-production stage | Production stage | Post-production |
| Which income segment do we care about? | Bottom incomes | primary education and early-childhood programs; vocational training | minimum wage; apprenticeships; reduced social security contributions by firms; in-work benefits | social transfers (housing, family, child benefits); guaranteed minimum income; earned income tax credit |
| | Middle class | public higher education; adult retraining programs | Industrial/cluster policies; occupational licensing; SME support programs; on-the-job training; collective bargaining & work councils; trade policies; EU structural and investment funds | unemployment insurance; pensions |
| | Top incomes | inheritance, gift & estate taxes | R&D tax credits; competition and antitrust policies | top income tax rates; wealth taxes; corporate taxes. |

Source: Rodrik & Stantcheva (2021), Stantcheva (2021).

The authors' approach is based on the concept of a "good jobs welfare state model," which may not be entirely novel, as the idea of a welfare state has been well-established and implemented in various countries over time. European welfare states prioritize two key pillars: education and training (the first column) and progressive taxes, transfers, and social insurance programs that safeguard against unemployment, illness, or disability (the third column). However, the term "a good job" may require further elucidation. Its exact definition can vary based on local and national circumstances, as well as people's individual preferences and informal institutions, such as their desire for flexibility. Nevertheless, one can identify some standard criteria that characterize a good job, including safe and reasonable working conditions, adequate compensation, access to healthcare and childcare, pension benefits, and robust social insurance coverage. Career opportunities and advancement prospects are also integral to the concept. In essence, good

jobs enable individuals to lead a typical middle-class life, as articulated by Rodrik and Stantcheva (2021). Therefore, in addition to the strategies mentioned earlier, the authors underscore the significance of actively fostering good jobs and labor market experiences that explicitly promote high-quality employment (the second column). Such policies should strike a balance between fostering competitive markets and fostering inclusivity, harnessing innovation for the benefit of broader segments of the population, particularly those in the middle and lower-income brackets. While this approach may seem compelling in theory or as a slogan, without tangible actions, the labor market may continue to diverge into small pockets of highly productive, well-compensated work and a proliferation of low-paying jobs.

Some of the proposals presented (Table 2) may be controversial. For instance, guaranteed minimum income programs are currently experimental in certain regions, and solutions like wealth taxes (situated in the bottom-right cell) can be a subject of debate. Similarly, some experts advocate for robot taxation in this context to counteract the repercussions of automation on income inequality. Nevertheless, it is essential to recognize that the matrix serves as an organizational framework and does not dictate the right or wrong direction or instrument. It serves as a tool to identify potential areas for intervention.

## 5. Conclusion

Exploring the problem of income inequality has long been a challenge for economists due to its multifaceted and complex nature. However, it is a challenge worth tackling, as widening income inequality is often considered one of the defining issues of our time. Academics frequently point out that significant and sustained increases in inequality within economies are often driven by forces such as technological advancements, globalization, and changes in institutional frameworks. In addition to these long-term drivers, short-term disruptions, like the COVID-19 pandemic, can exacerbate or perpetuate existing disparities. The impact of the pandemic may vary depending on the country and the time frame considered, but it is evident that its effects were unevenly distributed across income groups. One crucial factor contributing to these unequal effects is the digital divide, which permeates various aspects of life, including private life, health, education, and work. The pandemic highlighted the significant disparities in opportunities in these areas, making social interactions, learning, work, and other activities significantly more challenging for marginalized groups. What also

lies at the bottom of the inequality-increasing dynamics reinforcement are changes on labour market. The economic fallout of COVID-19 have been more disruptive and less beneficial for low-income households compared to high-income households. Poorer households faced a higher risk of unemployment and income reduction, while high-income households were less liable to job losses and could have even experienced income growth. Furthermore, the pandemic made it abundantly clear that significant inequalities exist in the quality of jobs available to different groups. Low-income workers, often overrepresented in occupations with limited potential for remote work and in sectors heavily affected by the pandemic, have faced increased pressure to adapt. These trends were already in place before the pandemic but were further enhanced by it. If this trajectory continues, income inequality is likely to persist and even worsen. Thus, the impact of the pandemic on the world of work and inequality seems to extend well beyond the period of the lockdown or the pandemic.

In conclusion, the findings confirm the hypothesis, but there are several areas that call for future inquiry. Possible research should focus on tailoring economic policies to address inequality based on a country's specific economic system and societal consensus. However, regardless of the country, the initial policy response should prioritize closing the digital divide, as digital equality is not only a matter of individual rights but also critical for addressing various challenges, including the long-term repercussions of the pandemic. Economies should strive for improved productivity and innovation, thus, "leaks" should be minimized in the system. Policy ideas should aim to make the economic growth process itself more inclusive while promoting better market outcomes. An important avenue for future research is the role of labor market institutions in mediating the effects of automation and robotization. It is a vital and interesting object of investigation in the context of market dynamics shifts and growing economic inequality.

## REFERENCES

Acemoglu, D., Autor, D. (2011). Skills, Tasks and Technologies: Implications for Employment and Earnings, in: O. Ashenfelter & D. Card (ed.), *Handbook of Labor Economics*, edition 1, volume 4, 1043–1171.

Acemoglu D., Koster H.R.A., Ozgen, C. (2023). Robots and Workers: Evidence from the Netherlands. *NBER Working Paper* 31009 http://www.nber.org/papers/w31009.

Acemoglu, D., Restrepo, P. (2022). Tasks, automation, and the rise in u.s. wage inequality. *Econometrica* 90(5), 1973–2016.

Adams-Prassl, A., T. Boneva, M. Golin, and C. Rauh (2020). Inequality in the Impact of the Coronavirus Shock: Evidence from Real Time Surveys. *Discussion Paper Series* IZA DP No. 13183. https://docs.iza.org/dp13183.pdf

Aghion P., Caroli E., C.García-Peńalosa. (1999). Inequality and Economic Growth: The Perspective of the New Growth Theories. *Journal of Economic Literature* 37 (4), 1615–1660.

Almeida, V., S. Barrios, M. Christl, S. De Poli, A. Tumino, and W. van der Wielen (2020). Households' income and the cushioning effect of fiscal policy measures during the Great Lockdown. *JRC Working Papers on Taxation & Structural Reforms* No 06/2020.

Angelopoulos, K., S. Lazarakis, R. Mancy, and M. Schroeder (2021). Briefing Note: Medium-run wealth inequality following COVID-19. University of Glasgow and Lancaster University. http://eprints.gla.ac.uk/232684/

Atkinson, A.B. (2015). *Inequality – What Can Be Done?*, Harvard University Press.

Autor, D. (2019). Work of the past, work of the future. *NBER Working Paper* 25588 http://www.nber.org/papers/w25588.

Baker, S.R., Bloom, N., Davis, S.J., Terry, S.J. (2020). Covid-induced economic uncertainty. *NBER Working Paper* 26983 http://www.nber.org/papers/w26983.

Bardhan, P. K. (2005). *Scarcity, Conflicts, and Cooperation: Essays in the Political and Institutional Economics of Development*. Cambridge, Massachusetts: MIT Press.

Barro, R. J. (2000). Inequality and Growth in a Panel of Countries. *Journal of Economic Growth* 5(1), 5–32.

Beaunoyer, E., Sophie Dupere S., Guitton, M.J., (2020). COVID-19 and digital inequalities: Reciprocal impacts and mitigation strategies. *Computers in Human Behavior* 111, 1–9.

Becker, G. S., Chiswick B. R. (1966). Education and the Distribution of Earnings. *American Economic Review* 56 (1/2), 358–69.

Becker G.S., Nashat Becker G. (2006). *Ekonomia życia*. Gliwice: Helion.

Bick, A., Blandin A., Mertens, K. (2020). Work from Home after the Covid-19 Outbreak. *CEPR Discussion Paper* No. DP15000.

Bonacini, L., G. Gallo, and S. Scicchitano (2021). Working from home and income inequality: Risks of a 'new normal' with COVID-19. *Journal of Population Economics* 34 (1), 303–360.

Brunori, P., Maitino, M.L., Ravagli, L., & Sciclone N., (2020). Distant and Unequal. Lockdown and Inequalities in Italy. *Working Papers – Economics* wp2020_13.rdf, Universita' degli Studi di Firenze, Dipartimento di Scienze per l'Economia e l'Impresa.

Brzeziński M. (2017), Nierówności dochodowe i majątkowe w Europie – fakty, przyczyny, konsekwencje, http://coin.wne.uw.edu.pl/mbrzezinski/research/artyku%C5%82_nierownosci_PAN.

CCSA, The Committee for the Coordination of Statistical Activities (2020). How COVID-19 is changing the world: a statistical perspective.

Chetty, R., J. N. Friedman, N. Hendren, M. Stepner, and T. O. I. Team (2020). The Economic Impacts of COVID-19: Evidence from a New Public Database Built Using Private Sector Data. *NBER Working Paper* 27431.

Chiou, L., Tucker, C.E. (2020). Social Distancing, Internet Access and Inequality. *NBER Working Paper* No. w26982.

Christensen K. (2014). He-cession? She-cession? The Gendered Impact of the Great Recession in the United States. *Review of Radical Political Economics* 47(3), 368–388.

Clark, A., C. D'Ambrosio, and A. Lepinteur (2020). The Fall in Income Inequality during COVID-19 in Five European Countries. *Working Paper* 565, ECINEQ, Society for the Study of Economic Inequality.

Deaton, A. (2013). The Great Escape: Health, Wealth and the Origins of Inequality. Princeton University Press.

Dingel, J. I. and B. Neiman (2020). How many jobs can be done at home? *Journal of Public Economics* 189, 104235, 1–8.

Dustmann, Ch., Ludsteck, J., Schönberg, U. (2009). Revisiting the German Wage Structure. *The Quarterly Journal of Economics*, Vol. 124, Issue 2, 843–881.

Eurostat (2020). https://ec.europa.eu/eurostat/statistics-explained/index.php?title=COVID-19_labour_effects_across_the_income_distribution&stable=0 (15.05.2023).

Galbraith, J.K. (2011). *Ekonomia w perspektywie. Krytyka historyczna*. Warszawa: PTE.

Galor, O., Moav, O. (2004). From Physical to Human Capital Accumulation: Inequality and the Process of Development. *Review of Economic Studies* 71 (4), 1001–1026.

Grossmann, V. (2001). *Inequality, Economic Growth and Technological Change*. Heidelberg: Physica-Verlag.

Huws, U. (2001). *The Making of a Cybertariat? Virtual Work in a Real World.* Socialist Register https://socialistregister.com/index.php/srv/article/view/5753 (2020.09.1).

ILO (2020a). COVID-19 and the world of work: Impact and policy responses. ILO Monitor 1st Edition.

ILO (2020b). ILO Monitor: COVID-19 and the world of work. Second edition. Updated estimates and analysis.

IMF (2017). World Economic Outlook, April 2017: Gaining Momentum? https://www.imf.org/en/Publications/WEO/Issues/2017/04/04/world-economic-outlook-april-2017 (15.10.2022).

Irlacher, M. and M. Koch (2021). Working from Home, Wages, and Regional Inequality in the Light of COVID-19. *Jahrbücher für Nationalökonomie und Statistik*. 241(3) https://www.degruyter.com/document/doi/10.1515/jbnst-2020-0030/html?lang=en

Keynes, J. (1926). The end of *laissez-faire*. https://www.panarchy.org/keynes/laissezfaire.1926.html (15.05.2023).

Lazear, E., Rosen S. (1981). Rank-Order Tournaments as Optimum Labor Contracts. *Journal of Political Economy* 89 (5), 841–64.

Li, J., Y. Vidyattama, H. A., La, R. Miranti, Sologon D.M. (2020). The Impact of COVID-19 and Policy Responses on Australian Income Distribution and Poverty. Technical Report 2009.04037, arXiv.org.

McClain, C., Vogels, E.A., Perrin, A., Sechopoulos, S., Rainie, L. (2021). *The Internet and the Pandemic*. Pew Research Center. https://www.pewresearch.org/internet/2021/09/01/the-internet-and-the-pandemic/

Milanovic, B. (2016). *Global Inequality: A New Approach for the Age of Globalization*. The Belknap Press of Harvard University Press.

Munzer S.R. (2019). *Economic inequality across traditions*. In: *Economic Inequality and Morality*. Diverse Ethical Perspectives. ED. By R. Madsen, W.M. Sullivan. Brookings Institution Press.

O'Donoghue, C., D. M. Sologon, I. Kyzyma, and J. McHale (2020). Modelling the Distributional Impact of the COVID-19 Crisis. *Fiscal Studies* 41 (2), 321–336.

OECD (2001). Understanding the Digital Divide. *OECD Digital Economy Papers*, 49.

OECD (2020). https://www.oecd.org/coronavirus/en/data-insights/ (15.05.2023).

Ong, P., Mar, D., Larson, T. et al. (2020). COVID-19 and the Digital Divide in Virtual Learning. UCLA Center for Neighborhood Knowledge. Retrieved from https://escholarship.org/uc/item/0cp5m1wd (30.05.2023).

Qureshi, Z. (2023, May 16). *Rising inequality: A major issue of our time*. Brookings. https://www.brookings.edu/articles/rising-inequality-a-major-issue-of-our-time/ (30.05.2023).

Palomino, J.C., Rodrıguez, J. G., Sebastian R. (2020). Wage inequality and poverty effects of lockdown and social distancing in Europe. *European Economic Review* 129, 103564, 1–25.

Perotti, R. (1996). Growth, income distribution, and democracy: What the data say. *Journal of Economic Growth*, Vol. 1, Issue 2, 149–187.

Pieh, C., S. Budimir, and T. Probst (2020). The effect of age, gender, income, work, and physical activity on mental health during coronavirus disease (COVID-19) lockdown in Austria. *Journal of Psychosomatic Research* 136, 1–9.

Piketty, T. (2017). *Capital in the Twenty-First Century*. The Belknap Press of Harvard University Press.

Piore, M. (1978). Dualism in the Labor Market: A Response to Uncertainty and Flux. The Case of France. *Revue économique*, 1(29), 26–48.

Stantcheva, S. (2021). Inequalities in the Times of a Pandemic. 73rd Economic Policy Panel Meeting.

Stiglitz, J. (2012). *The Price of Inequality*. London: Allen Lane.

Stiglitz, J. E. (2020). The Pandemic Economic Crisis, Precautionary Behavior, and Mobility Constraints: An Application of the Dynamic Disequilibrium Model with Randomness. *NBER Working Paper* 27992.

Sostero, M., Milasi, S., Hurley, J., Fernandez-Macias, E., Bisello, M. (2020). Teleworkability and the COVID-19 crisis: A new digital divide? *JRC Working Papers on Labour, Education and Technology* 05/2020,121193. https://jointresearch-centre.ec.europa.eu/system/files/2020-07/jrc121193.pdf.

Szewczyk, N. (2021). *Pandemia pogłębiła nierówności w wielu wymiarach*. Obserwator finansowy https://www.obserwatorfinansowy.pl/bez-kategorii/rotator/pandemia-poglebila-nierownosci-w-wielu-wymiarach/ (15.05.2023).

Thorbecke, E., Charumilind, Ch. (2002). Economic Inequality and Its Socioeconomic Impact. *World Development* 30 (9).

Tinbergen, J. (1974). Substitution of Graduate Labor by Other. *Kyklos* 27 (2), 217–226.

Tomkiewicz, J. (2017). *Dynamika i struktura dochodów w warunkach globalizacji*. Warszawa: Wydawnictwo Naukowe PWN.

Tusińska, M. (2021). Gender and Economic Downturn. The Focus on Women and the Pandemic Crisis. *Studies in Logic, Grammar and Rhetoric* 66(4), 513–530.

Tyson, L., S. Lund (2021). *The Post-Pandemic Labor Market's Long-Term Scars*. Project Syndicate. https://www.project-syndicate.org/commentary/pandemic-permanent-job-losses-need-worker-retraining-by-laura-tyson-and-susan-lund-2021-03 (15.05.2023).

Wilkinson, R., Pickett, K. (2009). *The Spirit Level. Why More Equal Societies Almost Always Do Better*. Allen Lane.