

A Regional Comparison Of The COVID-19 Pandemic's Impact On Income Inequality

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ABSTRACT: As of now, more than three years after the first case was detected, government measures against the COVID-19 pandemic have been abolished almost globally. Amidst the initial lack of vaccines and pharmaceutical interventions, governments were forced to implement various measures - usually those aimed at restricting population movement. These public health measures led to severe economic shocks, with inequality being no such exception. Hence, this paper seeks to dissect and discuss COVID-19's impacts on income inequality on a global scale. This is achieved by comparing different regions such as North America, Europe, Australia, Asia, South America, etc. (eventually categorizing them into developing, emerging, and developed) and analyzing the trends they experience in income inequality along with the role of fiscal, monetary and micro-financial policies in helping those affected.

Generally speaking, the results of our paper follow as such: income inequality (1) has decreased in developed/emerging nations, (2) has increased/been exacerbated in developing nations, and (3) has been heavily dictated by the fiscal, monetary and micro-financial policies implemented by governments to mitigate the effects of COVID-19.

KEYWORDS: Behavioural and Social Sciences; Economics; Gini Coefficient; Fiscal.

■ Introduction

COVID-19, being the only pandemic up to date in which data was tracked correctly, collected, and recorded, offers academics a novel chance to study the economic impacts of pandemics on a global scale. These articles and studies mainly focus on macroeconomic objectives such as economic growth, low and stable inflation, healthy balance of payments, etc.

However, one gap we noticed in existing published literature revolved around the effect of COVID-19 on income/wealth inequality. This may primarily be due to the relative need for comparable data for income inequality, especially when contrasted with other economic objectives.

Therefore, we have multifold key objectives: to examine the effects of public health actions on income inequality, to analyze the importance of government fiscal, monetary, and micro-financial packages in curbing income inequality, to compare regional changes in income inequality during the pandemic and to support or challenge existing literature on this topic.

■ Literature Review

Studies agree that public health policies - especially lockdown measures in some developing countries - negatively impacted household incomes. For example, it is argued that these policies, alongside inadequate social protection, propelled many South African households into experiencing food insecurity (specifically due to low levels of educational attainment and high dependence on labor income).¹ The lockdown caused the free market forces of demand and supply to decrease rapidly, thus causing large numbers of workers to be laid off and ultimately impacting household incomes.¹ Impacts on investment were also evident.¹ School closures most affected children

from low-income backgrounds, and labor with low education levels were affected far more than those with secondary or tertiary education.^{1,3} The 'Work from Home' orders exacerbated pre-existing inequalities in the labor market, specifically the preference for male, white workers.⁴

Despite this, most studies have shown that the robust fiscal, monetary, and micro-financial policies implemented by developed countries actually assisted in decreasing disposable income inequality. Job-support programs, along with the rapid development of the welfare system, have aided in decreasing disposable income inequality compared to pre-pandemic levels.³ In tandem, a study was able to track five European countries, finding that disposable income inequality generally decreased; they used surveys to observe during the pandemic period and discovered that measures such as extensive furlough payments greatly helped the millions impacted by public health policies (e.g., lockdowns, restrictions, and curfews).² The importance of policies and packages in unexpectedly severe times such as these is solidified in further literature.^{1,4,5}

In parallel with the existing research, our study aims to explore further COVID-19's impact on income inequality, specifically the role of fiscal, monetary, and micro-financial economic policies. We go beyond the existing literature by conducting this comparison on a global scale, comparing and contrasting the data in different regions.

Before conducting our research, we believed that COVID-19 and the subsequent public health policies it triggered greatly harmed the distribution of income/widening of wealth inequality in almost all countries. Reasons for this included the consequential mass unemployment after lockdowns, subse-

quent decline in middle/low-income households (due to their high dependency on job-related income), and the fact that high-income households have multiple flows of income to rely on, such as shares, assets, etc.

While some papers supported our initial hypothesis,^{6,7} a larger number of them served to reject it. Data from both the included studies and secondary sources, such as The World Bank, The Organisation for Economic Co-operation and Development (OECD), etc., collated to disprove our hypothesis. Ultimately, it was found that the implementation of extensively supportive demand-side policies assisted most developed countries in decreasing income inequality levels; the opposite was witnessed in developing countries due to less robust programs.

■ Methods

This paper mainly derives data from the Gini coefficient/index, the most commonly used measure of income inequality worldwide. This indicator is defined as the ratio of the area between the Lorenz curve of the distribution and the 45-degree line of perfect equality to the total area under the 45-degree line; a value of 0 expresses total equality, and a value of 1 represents maximal inequality. Due to the recent nature of the COVID-19 pandemic, we have predominantly analyzed statistics from 2019 to 2020. While a few countries have released data for 2021, this number remains low and, therefore, has yet to be generally used as evidence in this paper.

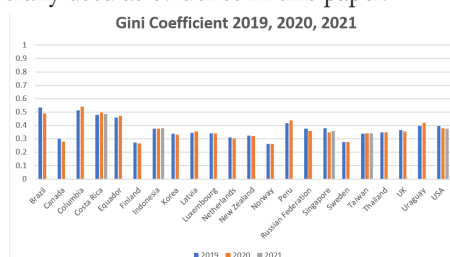


Figure 1: Overview of the Gini Coefficient in 2019, 2020 and 2021.

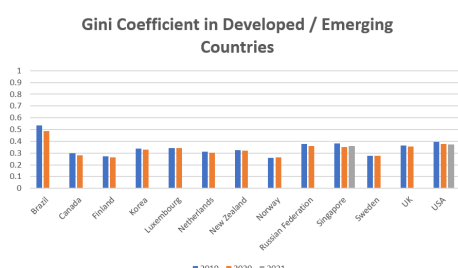


Figure 2: Gini Coefficient from 2019 - 2021 in developed/emerging countries.

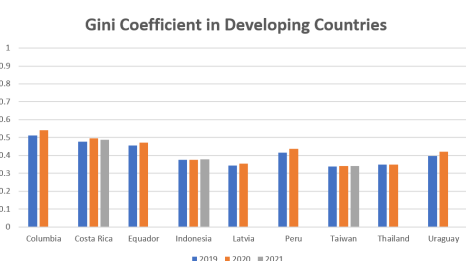


Figure 3: Gini Coefficient from 2019 - 2021 in developing countries.

The data in Figures 1, 2, and 3 have been taken from the OECD, The World Bank, IMF, and Statistica. With the Gini Coefficient as the 'y' variable and the country as the 'x' variable, we can immediately visualize two key trends in Figure 1: Some countries (e.g., Fiji, Peru, Thailand) witnessed an increase in their Gini Coefficient while others (e.g., the UK, Canada South Korea) alternatively viewed a general decrease.

Figures 2 and 3 show the change in the Gini Coefficient mainly between 2019 and 2020 in developed/emerging and developing countries, respectively. It is evident in Figure 2 that most developed countries faced a decline in their Gini Coefficient from 2019 (pre-pandemic) to 2020 (during the pandemic). It is important to note one subtle anomaly: despite being a developed country, Norway underwent a minor increase of 0.02 in the Gini Coefficient from 2019 - 2020. However, as it is already one of the most equal countries in the world (in terms of income distribution), this minute observation holds little significance. On the contrary, Figure 3 establishes the opposite trend for developing countries. In this case, the Gini Coefficient stays relatively stable or increases from 2019 - 2020. This variance in income inequality rates will be explored in the next section.

Additionally, microsimulation and calibration can track disposable income inequality via the EUROMOD website alongside information from direct surveys about income changes, such as COME-HERE, directed by the University of Luxembourg.² The 20-minute questionnaire was run via Qualtrics (an online service tool) in France, Germany, Italy, Spain, and Sweden; data from it is summarised below in Figure 4.

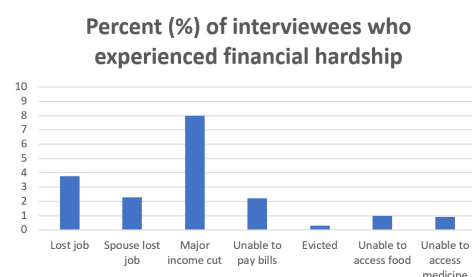


Figure 4: Results of the COME-HERE survey.

Though we have yet to delve into an extensive analysis of this resource, the IMF offers an excellent, comprehensive Policy Response Database that covers 197 Policy Responses to COVID-19.

Aside from this, we also used information from pre-existing academic papers due to the need for more available data. A few examples of these include 'Income Inequality and the COVID-19 Crisis in the European Union' by the ILO, 'The Impact of the COVID-19 Pandemic on Income Inequality in OECD Countries' by the OECD and 'Inequality and the COVID-19 Crisis' by the IMF.

■ Results and Discussion

Studies agree that public health policies - especially lockdown measures- in some developing countries - negatively impacted household incomes. Examples are the protective measures that caused food insecurity for many South African households, mainly due to the overwhelming reliance on labor

income.¹ During the lockdown, demand and supply sharply decreased, leading to a substantial wave of labor layoffs.¹ Unemployment was prevalent in low-skilled occupations and tertiary sector jobs such as retail, hospitality, and tourism. Those with lower pay tend to have fewer savings and limited access to social safety nets, so they are especially vulnerable to financial hardship. Lockdowns and social distancing measures also disproportionately impacted small businesses, forcing them to close permanently or face prominent financial struggles. In addition to our aforementioned point, these small businesses are often owned and operated by low-income individuals and lack the brand recognition/loyalty larger chains have, thus suffering during the pandemic era. It is important to note that the lack of access to credit and government support was a critical factor in the failure of many small businesses. In tandem, the pandemic led to an apparent widening of inequality across different sectors of the economy. Industries revolving around technology, e-commerce, and healthcare witnessed an increase in demand and a subsequent increase in income for workers in these sectors.

The impact of COVID-19's subsequent health policies is evident when examining education. School closures most affected children from low-income backgrounds, and laborers with low education levels were affected far more than those with secondary or tertiary education.^{1,3} Finally, the 'Work from Home' orders exacerbated pre-existing inequalities in the labor market, specifically the preference for male, white workers.⁴ This is as the closure of schools and childcare centers led to more women assuming traditional roles by performing domestic duties during the pandemic, thus exacerbating gender inequality in the workforce.

Yet, despite the adverse effects of public health policies, some countries viewed a decrease in their income inequality levels. Employment-related support programs and the rapid development of the welfare system actually decreased disposable income inequality compared to pre-pandemic levels.³ It is evident from the collated data in Figures 1 and 2 that the countries with declines in their Gini Coefficient are 'developed,' this term refers to a country with a relatively high standard of living, a developed industrial base, and a high Human Development Index.

During the COVID-19 pandemic, governments implemented various fiscal, monetary, and micro-financial measures to support their citizens and mitigate the economic impact of the crisis. Some of the most significant measures included direct cash transfers and increased social safety net benefits (e.g., unemployment insurance and food assistance programs) to redistribute wealth and provide financial support to those most affected by the economic downturn. In particular, these measures aimed to protect low-income households, small businesses, and workers in industries hit hard by the pandemic (disproportionately affected by the pandemic, as aforementioned).⁸ EUROMOD was used to 'simulate separately' COVID-19's effects and the policy responses that followed in twenty-seven European countries.^{2,8} The results show that if no policy responses were present, the average 2020 Gini Coefficient of these twenty-seven countries would actually have

increased by 3.6%, rather than the apparent decrease we see in our figures.

While all governments would have attempted to implement similar financial packages, only the most financially robust governments would have been able to do so on a level significant enough to insulate incomes for low-income households. By extension, governments with this ability are often found in developed countries; the option to hold such financial strength is made available due to their robust, diverse, and stable economies. Hence, as supported by Figure 1, Figure 3, and related studies, the inverse happened in developing countries. Due to their often less financially stable governments and the consequent inability to provide large-scale fiscal packages, they faced a general increase in their Gini Coefficients, therefore undergoing a brutal pandemic era in which income inequality was seen to rise.

Several preceding studies echo this sentiment. One such examination proves the value of such policies in the event of 'black swan' shocks, specifically in the developing nation of South Africa.¹ Through the use of input-output tables and a Social Accounting Matrix (SAM) to track the circular flow of money, it was concluded that South African households with lower levels of education and a strong dependency on job-related income experienced a drop in income so severe that people were being forced to into food insecurity.¹ This effect was mainly because South Africa imposed very few additional policies alongside its national lockdown.¹

As previously mentioned, data was collected from the COME-HERE survey conducted by the University of Luxembourg, which we have summarised in Figure 4.2 Despite 8.1% of interviewees from the COME-HERE survey stating that they faced a significant income cut at some point during the pandemic, data from EUROMOD shows that disposable income distribution mapped via the Gini Index stayed relatively stable (0.258 in 2019, 0.258 in 2020 and 0.257 in 2021).^{2,8} Thus, it is plausible to infer that Luxembourg's extensive policy responses swiftly insulated the significant income cut. The IMF's 'Policy Responses to COVID-19' database states that the Luxembourg Parliament implemented substantial fiscal policy, including spending measures and liquidity support to specific businesses (e.g., self-employed firms). At the beginning of 2019, €2.3 billion (3.6% of 2019 GDP) was provided. Key spending measures were obtaining medical equipment, paying unemployment benefits to certain extents, and giving firms capital advances to lower costs. Monetary and micro-financial policies were also vastly executed; for example, Luxembourg banks offered to legally postpone payments on loan repayment for small/medium-sized enterprises, self-employed businesses, and liberal professionals. Hence, our knowledge of these actions and the stability (and eventual decrease) of the Gini Coefficient lead us to further believe in the significance of governmental packages/policies in protecting levels of equality in such economically shocking times.^{2,8}

■ Conclusion

In conclusion, we deduced that a nation's change in income inequality was mainly based on the respective government's fiscal policies/social packages. When examining economically developed regions like North America, Europe, and Australia, we observe a consistent decrease in their Gini Coefficient, which can be attributed to the robustness and effectiveness of the policies they have established and the overall stability of their economies. These regions have implemented comprehensive measures to address income disparities and promote equitable distribution of wealth. Conversely, underdeveloped areas such as Africa, South Asia, and South America experience a contrasting trend. The Gini Coefficient tends to increase in these regions, indicating a worsening income inequality situation. A myriad of socio-economic factors contribute to this observation, including limited access to quality education, insufficient social welfare programs, inadequate infrastructure, political instability, and disparities in resource allocation. These regions face significant challenges in addressing income inequality, and their governments often struggle to implement effective policies due to various systemic, structural, and financial barriers. Though not considered at length in this paper, factors such as working from home and labor shocks also affected income inequality somewhat.

It is vital to note the limitations of our study, especially as we use the Gini Coefficient as our indicator of choice. One issue is that it is sensitive to income distribution at the extremes. Hence, a slight change in the extremely rich can significantly affect the Gini coefficient. Additionally, it needs to consider the absolute income level, only the distribution of income, which can make it troublesome to compare inequality between countries and different time periods. Another important restriction is that it does not consider the distribution of wealth or non-income measures of well-being - factors that could significantly affect the severity of income distribution.

Furthermore, the Gini Coefficient does not indicate whether a change in inequality is driven by changes in income distribution or population size (since our study is relatively short-term, however, we can rule this possibility out). Finally, we acknowledge the fact that we were unable to discover data regarding income inequality in the continent of Africa. Thus, we could not compare the Gini Coefficients of this region to others in our study; by omitting this region, we also exclude the possibility of uncovering additional, less obvious, and potentially disparate trends in income inequality.

Still, overall, we believe our findings to be accurate and reflect the COVID-19 pandemic's impact on income inequality.

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