

Income Inequality, Peace and Conflict: Do More Peaceful Countries Face Greater Risks from Rising Inequality?

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Abstract

Income inequality significantly undermines a country's stability, weakens its peaceful environment, and increases the risk of conflict. Furthermore, the impact of income inequality on peace may be greater in more peaceful countries than in those experiencing lower levels of peace. This proposition is a relatively unexplored area in the literature. This paper examines the impact of income inequality on countries with varying levels of peace. Using panel data spanning 2008 to 2020 for 159 countries, we applied a fixed effects model and panel quantile regression to assess the impact of income inequality on peace and to determine how inequality may affect more and less peaceful countries. We found that higher income inequality, weak rule of law and poor political stability reduce peace within countries. Importantly, we found that more peaceful countries are more adversely affected by increased income inequality, suggesting that they face a greater risk of disruption when income inequality is present. Moreover, the association between income inequality and peace follows a J-curve. Our findings provide policymakers with valuable guidance for designing strategies to reduce income inequality, thereby preserving or enhancing peace and lowering conflict within a country.

Keywords

Income inequality, conflict, peace, rule of law, inequality threshold

Introduction

Peace is a fundamental and universal prerequisite for a country's development, security and prosperity. Countries that maintain peace tend to experience greater stability, higher economic growth and improved quality of life (Yazdi Feyzabadi et al., 2015). It is the foundation of a stable and harmonious community in which individuals work to achieve their goals through access to opportunity and the protection of property rights. This environment fosters economic development, political stability and social wellbeing. Conversely, the lack of peace affects human life by eroding social unity and impeding development across all sectors. The absence of peace can be manifested by political polarisation, cyberbullying, the spread of misinformation and mistrust, and the inability to reach an agreement (Piazza, 2023; Simangan et al., 2026). Peace is therefore seen as both the

goal and the precondition for social and economic development.

Moreover, peace is not just about the absence of war or violence; it is also an outcome of well-balanced social, political and economic systems. Indices such as the Global Peace Index (GPI), which provides a holistic measure of a country's level of peace, have been increasingly used to identify global and regional trends in peace. The GPI is published by the Institute for Economics and Peace (IEP). It measures peacefulness through a three-domain global index, comprising domestic and international conflict, societal safety and security, and militarisation. The indicators include crime rate, political instability, access to resources, and the extent of government function (Institute for Economics and Peace, 2023). The GPI is especially significant because it enables the measurable assessment of peace and comparisons across countries and regions. For example, in recent years, Scandinavian countries have ranked among the most peaceful, while regions affected by conflict in the Middle East have ranked among the least peaceful. This variability highlights that peace is not a vague notion; it is grounded in tangible, measurable determinants that vary by country context.

On the other hand, income inequality continues to rise; for instance, the poorest 10% of the population receives only about 2–7% of global income, while the richest 10% receives nearly 40% (UNDP, 2025). Furthermore, inequality has increased in almost every region of the world; however, some countries have observed higher income inequality than others. In view of the adverse impacts of income inequality on societies, the United Nations emphasises reducing it and encourages policies that promote economic inclusion. Reducing income inequality is included among the 17 Sustainable Development Goals (SDGs), where it is ranked as Goal 10 (UNDP, 2025).

Moreover, income inequality has become one of the most important factors affecting peace. Societies characterised by widespread income disparity are known to suffer a higher risk of violence, crime and social unrest (Wilkinson & Pickett, 2009). Income inequality creates tension by instilling distrust among citizens and fuelling envy or anger, which can snowball into an institutional breakdown that undermines attempts to preserve peace (Buttrick & Oishi, 2017).

Income inequality is usually measured by the Gini coefficient, a metric where 0 indicates perfect income equality and 1 indicates absolute income inequality. Less harmony in a society – e.g., political division, economic crisis, rioting and violence – is more often observed where the Gini coefficient is near 1 (Cingano, 2014). For instance, the relationships between inequality and higher levels of crime, where social inequalities incite desperation, competition and marginalisation, are established (Fajnzylber et al., 2002). Furthermore, when inequality is present, trust and confidence in institutions and governments remain low, which contributes to the difficulty of maintaining peace.

The political and institutional determinants of peace are equally important. Income inequality is not the only indicator of economic disparities between people; political stability, The absence of corruption, and the rule of law are also factors that shape structural peace. Political instability, for example, undermines trust in government and public-service delivery, leading to discontent and conflict. Empirical research indicates that countries that suffer from political instability and have weak institutions are more likely to experience violence and political unrest (Fearon & Laitin, 2003). Similarly, defending the rule of law – that is, the notion of equality before the law and the principle of justice – is a key component of fair, accountable governance frameworks that reduce perceived inequality and promote stability. Judicial injustice, corruption and impunity are more common in societies with a weak rule of law, and can lead to societal grievances that may breed public disillusionment and discontent.

These factors are at the heart of establishing peace, yet the link between income inequality, political stability and the rule of law remains under-examined in depth. Countries with high inequality but strong legal systems might mitigate their potential harms, whereas nations with a weak rule of law might amplify them. In other words, more peaceful countries may experience a different impact of income inequality than less peaceful countries. Academics have observed that, because these complex relationships are intertwined, they require nuanced analysis to understand how inequalities in society affect peace (Oduola et al., 2017). Evidence shows that inequality is particularly pernicious in combination with other socio-political challenges, such as the presence of weak systems of governance (Ravallion, 2014). A high Gini coefficient in a politically unstable country can hasten the arrival of conflict. This is because disenfranchised groups are typically denied equal representation or rights in already splintered systems. This forms a vicious cycle in which inequality fuels instability, which leads to greater inequality. In contrast, countries with high levels of inequality but effective redistribution mechanisms, such as progressive taxation or social safety nets, may be able to contain their impacts.

The relationship between income inequality and peace may vary across countries, depending on their existing levels of peacefulness and institutional conditions. Higher income inequality may have different implications for relatively peaceful countries compared with countries already experiencing high levels of instability and conflict. While previous research has examined how the effects of income inequality differ between developed and developing countries (Parsons & Naghshpour, 2023), the extent to which income inequality affects countries with different levels of peace remains relatively understudied.

The complications in the effects of inequality raise even more questions about whether some level of inequality might be natural and perhaps unavoidable in peaceful societies. Economists and social theorists have long disagreed over whether total income equality is realistic, or even desirable. Nevertheless, structural inequalities are a natural consequence of different education, technological change, talents and labour market needs. For instance, using the logic above, jobs that require higher skills, like those of doctors or engineers, would generally pay more than low-skilled jobs. This kind of ‘natural inequality’, or structural income inequality, is more a mark of economic diversity and specialisation than of systemic

inequity. There could be a threshold level of inequality, above which peace is damaged, but below which inequality is at worst neutral, and perhaps even good for economic dynamism (Milanovic, 2016). The point at which inequality becomes a conflict risk (perhaps determined using the Gini coefficient) would also be an identifiable threshold, clarifying when social inequity becomes harmful to peace.

Therefore, this study first aims to investigate the impact of income inequality on a country's level of peace and then examine whether this effect differs across countries with varying levels of peace. The second objective is to identify the level of income inequality beyond which peace begins to decline, providing a potential benchmark for policymakers. This may help policymakers assess how much inequality needs to be reduced and identify measures to prevent further increases in inequality before it adversely affects peace. Such evidence may be particularly relevant for highly developed and relatively peaceful countries, which may need to remain vigilant about rising inequality even when their current levels of peace and stability remain high. By examining both the overall relationship and the differential effects across varying levels of peace, this study contributes to the existing literature by providing a more nuanced understanding of the inequality–peace relationship and its potential threshold.

Literature Review

A number of studies have investigated the causes of income inequality and its impact on society. For instance, Neckerman and Torche (2007) found that less generous social welfare, regressive taxation, labour market fluctuations, and institutional changes in firms are the main causes of income inequality, along with technological change in the United States and globally. Moreover, they found that income inequality has an adverse impact on health and educational attainment, and increases crime and incarceration. Likewise, in many developed countries (the US, Canada, the UK), Kochan and Riordan (2016) found that changes in labour market institutions, including unions, wage regulations and poor safety-net policies, have contributed to income inequality. Similarly, Polacko (2021), reviewing many studies, explored that poor policy and political change, deformation of labour unions, executive pay and poor taxation systems are the main causes of income inequality, along with other structural reasons, such as technological change and globalisation. Moreover, the researcher found that income inequality is associated with numerous health and social problems.

However, the relationship between income inequality and the level of peace within a country is a complex and multifaceted issue that has also been the subject of extensive academic research. This section also aims to synthesise the existing research on the topic and provide a comprehensive understanding of the potential mechanisms through which income inequality may affect the level of peace in a country. While some studies have suggested that high levels of income inequality can contribute to social unrest and violence, others have found that the link between the two is not as straightforward (Dossou et al., 2023; Doğan, 2019; Freeman, 2018; Buttrick & Oishi, 2017).

Coccia (2018), using data from 191 countries, revealed that a strong positive relationship exists between income inequality and violence, indicating that greater inequality often leads to higher levels of social unrest and conflict. Similarly, Neckerman and Torche (2007), and Hillesund et al. (2018), have found that income inequality is associated with higher crime rates, as individuals in disadvantaged socioeconomic positions may turn to criminal activities as a means of achieving social mobility or addressing perceived injustices. Another study, by Ippolito and Cicatiello (2019), found a negative association between political stability and income inequality in Italy, indicating that higher income inequality correlates with increased political volatility and social conflicts, suggesting a link between

economic disparities and the absence of peaceful governance. Likewise, Richmond (2014) found a positive relationship between violence and income inequality. The author added that the law and enforcement of institutional reforms alone do not guarantee a reduction in violence or ensure political stability.

Moreover, many other studies found the importance of income equality to peace. For instance, Ghazalian and Hammoud (2021) state that countries that experience higher levels of income inequality tend to be less peaceful. Likewise, Justino (2019) found that promoting the redistribution of income is one of the important components of bringing peace. Similarly, Bhattacharya and Paul (2024) found that high-income countries tend to have better peace index scores, suggesting a correlation between income equality and peace. Furthermore, several other studies (Castelló-Climent, 2010; Braun et al., 2019; Ezcurra, 2019; Ghazalian & Hammoud, 2021; Djailani & Surwandono, 2023) found that income inequality has a detrimental effect on growth and the peace of countries.

Surprisingly, to date, we have not found a relevant study that has investigated how more or less peaceful countries react to income inequality. However, in general, it is recognised that most peaceful countries (which are more likely to be developed) do not accept increasing income inequality. Mostly peaceful countries have better welfare programmes, progressive taxation systems, better labour policies, laws against wage discrimination, and better rules and regulations and their implementation, which ultimately lead to greater income equality in the first place and then fewer violent protests in the second place. While it has been established that income inequality between developing and developed countries differs, it remains unclear how this difference affects the distribution of income within each country. In addition, the income disparities can also be observed within the developing and developed countries themselves (Della Posta, 2017).

For instance, some studies in developed countries have explored that income inequality is significantly associated with conflicts and subsequently reduces the peace of a country; Dorling (2012) found that violent riots in the United Kingdom in 2011 were associated with income inequality. The author suggests that persistent income inequality in a society increases the likelihood of social unrest. Likewise, Tsui et al. (2018) found that income inequality in the United States has been increasing, especially among the big corporations, and it is associated with anger and frustration, which can eventually cause disruption in a society. Importantly, Caruso and Biscione (2022) carried out a study on income inequality and armed conflicts in 40 European countries (including six out of ten of our sample's most peaceful countries: Austria, the Czech Republic, Denmark, Ireland, Portugal and Slovenia). Using panel data spanning 2000 to 2017 and instrumental variable regression, they found that income inequality is associated with armed conflicts that subsequently deteriorate the peace of a nation.

Overall economic growth is strongly associated with better redistribution of income. However, some countries (such as OECD members [OECD, n.d.]) that value economic growth also understand the importance of wellbeing (feeling healthy, happy and prosperous) and peace, due to their imperative role in fostering long-term equitable and sustainable prosperity in the country. Nevertheless, how income inequality affects peaceful countries remains unexplored in the literature, making it imperative to empirically analyse this relationship to provide policymakers with the necessary information to better achieve equitable and sustainable prosperity.

Another challenging question for researchers is to find the optimal level of income inequality where economic growth and peace do not deteriorate (Tsui et al., 2018). Although some studies (Khatun & Saadat, 2021; Sztaydynger, 2018) have attempted to identify the threshold level of income inequality for better economic growth, it varies from country to country and requires further research at the global level. Hence, our study covers two significant research gaps by providing insights into how more and less

peaceful countries are affected by income inequality and what could be the global optimal level of income inequality.

Data and Methodology

Variables

Most of the data are from the 1980s; however, Gini index data are available from 2008 and were accessed from the World Inequality Database (<https://wid.world/>). The Global Peace Index (GPI), rule of law and political stability ranking data were accessed from Our World in Data (<https://ourworldindata.org/>). Thus, we used yearly data from 2008 to 2020 for 159 countries in the analysis (four countries were dropped while running the main model; the full list is given in Table A1 in the appendix). An unbalanced panel data-set was constructed to capture the time-invariant impact of income inequity on peace in the countries. The GPI is considered a dependent variable, ranging from 1 (the most peaceful country) to 5 (the least peaceful country). The GPI takes a wide range of continuous values (e.g., 1.5, 2.2, 2.3 and so on) between 1 and 5. Therefore, it is treated as a numeric variable rather than a factor or categorical variable in the analysis. None of the countries in our data set achieved either extreme value; the most peaceful country, with a GPI of 1.09, is Iceland, and the least peaceful, with a GPI of 3.59, is Afghanistan.

Because peace is strongly dependent on the rule of law and political stability, both are considered control variables. Rule of law is measured on a 0–1 scale, while political stability is reported on a 0–100 percentile-rank scale, with higher values indicating stronger governance.

Limitations

This study has several limitations that should be considered when interpreting the findings. First, data availability constrained the study period. Our selected data sources do not provide consistently recorded observations before 2008 and after 2020; therefore, we restricted the analysis to the period for which sufficiently consistent and comparable panel data were available. Second, although the model includes key institutional factors, such as the rule of law and political stability, we did not include a broader set of socioeconomic variables, including GDP per capita, education, unemployment and urbanisation. While these variables are commonly used in the broader macroeconomic literature, their inclusion may raise concerns regarding potential multicollinearity and the control of variables that may themselves be related to both inequality and peace. Nevertheless, their omission means that our model does not capture all potentially relevant socioeconomic dimensions, and future research could examine these factors using more comprehensive data. Third, the estimated relationships should not be interpreted as causal effects. Although the fixed-effects specification helps account for unobserved, time-invariant country-specific characteristics, it does not eliminate all sources of endogeneity, including time-varying omitted variables and potential reverse causality. Accordingly, our findings should be interpreted as conditional associations rather than evidence of a causal effect of income inequality on peace. Future research using richer datasets and stronger identification strategies could further investigate the causal mechanisms underlying these relationships.

Descriptive statistics

The main variable of interest is the Gini index, which ranges from 0 to 1, with 0 representing perfect equality and 1 representing perfect inequality; the mean Gini index in the sample is 0.43. Table 1 provides further details on all variables.

Table 1. Summary statistics.

Variable	Observations	Mean	Std. dev.	Min	Max
GPI	2,064	2.02	0.45	1.09	3.59
Gini index	2,064	0.43	0.11	0.15	0.74
Rule of law	2,064	0.53	0.31	0.01	1.00
Political stability	2,064	52.76	28.80	0.00	100.0
Years	2,064			2008	2020
Countries	159				

Figures 1 and 2 show the ten most and least peaceful countries along with their Gini indices, respectively. Figure 1 shows that Iceland is the most peaceful country, and Ireland is the tenth most peaceful country in the world. Interestingly, most of the countries in the top ten list have a Gini index value of less than 0.32. On the other hand, Figure 2 presents the least peaceful countries along with their Gini indices. Afghanistan has the highest GPI value, indicating that the country is the least peaceful. Most of the countries in Figure 2 have a Gini index greater than 0.32. Figure 3 presents world maps showing the Gini index (left) and the Global Peace Index (GPI) (right) for countries.

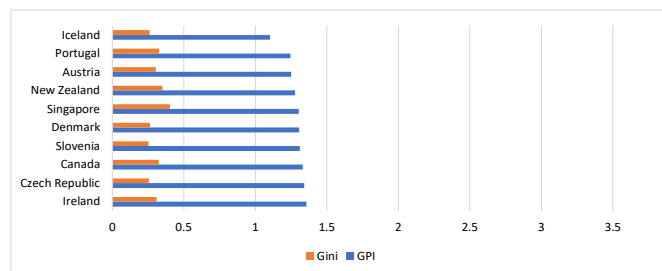


Figure 1. The most peaceful countries of the world in 2020, along with the Gini index score. Source: Authors' own creation.

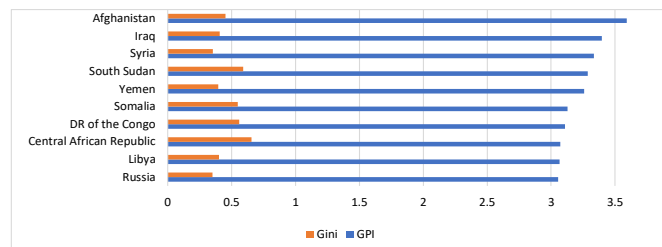


Figure 2. The least peaceful countries of the world in 2020, along with the Gini index score. Source: Authors' own creation.

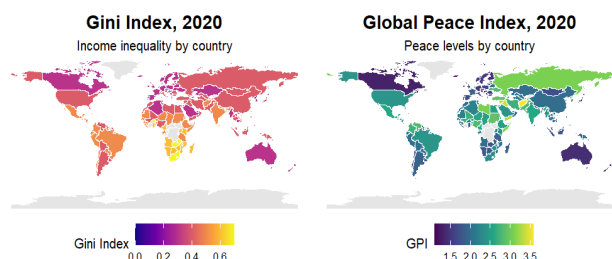


Figure 3. GPI and Gini index for all countries. Created by the authors using data.

Note: A higher Gini coefficient indicates greater income inequality, while a higher GPI score indicates a lower level of peace.

Methodology

Fixed effects model

A fixed effects model was employed to examine the impact of income inequality on peace in the countries studied (the first objective of the study). The Hausman test was applied to confirm the appropriateness of the model – the test suggested that the fixed effects model should be used (results provided in Table A2 in the appendix). The fixed effects model captures country-specific, time-invariant differences and general time trends. Time-specific shocks, such as wars, climate change and natural disasters, all of which could affect a country's peace, are captured by time-fixed effects. The general specification of the fixed effects model is as follows.

$$y_{it} = \alpha_i + \beta x_{it} + u_{it}$$

Where:

y_{it} is the dependent variable for country i in period t

x_{it} represents independent variables such as the Gini index, the rule of law and political stability for a country i in period t

β represent the coefficients for the independent variables.

α_i captures time-invariant individual-specific effects

u_{it} is the idiosyncratic error term

t shows time (years in our case)

i represents the panel unit (countries in our case)

Panel quantile regression

It is hypothesised that the impact of income inequality may differ among the most and least peaceful countries – generally the developed versus underdeveloped countries (Dossou et al., 2023; Freeman, 2018). While the fixed effects model or ordinary least squares regression provides the conditional mean of the dependent variable (GPI, in our case), given the independent variables, we were specifically interested in examining how more and less peaceful countries are affected by income inequality. In other words, we wanted to analyse how countries with low GPI scores (more peaceful) respond to income inequality, and vice versa (the second objective of the study). This means we aimed to study the distribution of our dependent variable across GPI percentiles. Therefore, panel quantile regression was employed to capture the impact of income inequality on the least, medium and most peaceful countries. For that, the model was estimated for several quantiles, such as the 10th, 25th, 50th and 75th. The quantiles are based on the GPI value. The 10th quantile indicates the lower value of GPI, which corresponds to a higher level of peace; conversely, the 75th quantile indicates a higher value of GPI, corresponding to a lower level of peace. The general specification of the model is as follows.

$$Q_{\tau}(y_{it}|x_{it}, \alpha_i) = \alpha_i(\tau) + \beta_{\tau} x'_{it}$$

Where:

$Q_{\tau}(y_{it}|x_{it}, \alpha_i)$ is the conditional quantile of the dependent variable GPI at quantile τ (in this case, 0.10, 0.25, 0.50 and 0.75)

β_{τ} is the quantile-specific coefficient vector, which varies across different quantiles

α_i represents the individual fixed effect

t shows time (years, in this case)

i represents the panel unit (countries, in this case)

Quantile regression provides robust estimates by capturing heterogeneous effects, allowing us to examine how the independent variables influence the dependent variable across different percentiles of its distribution.

Results and Discussion

We first discuss the results for the fixed effect model in Table 2. It shows that a one-unit increase in the Gini index is associated with a 0.63 increase in GPI. It implies that if income inequality rises, the country's peace declines significantly. Our results corroborate the findings of Djailani and Surwandono (2023). We also found that stricter rule of law and political stability significantly improve the country's peace. Many other studies indicate the same result (Buttrick et al., 2017; Ippolito & Cicatiello, 2019; Korkut Pata et al., 2022). Perhaps when people experience income inequality in a society, the crime rate rises, thereby undermining the rule of law and peace.

Table 2. Fixed effect model results.

Gini index	0.630	0.175	3.610	0.000	0.288	0.973
Rule of law	-0.174	0.043	-4.010	0.000	-0.259	-0.089
Political stability	-0.006	0.000	-19.940	0.000	-0.007	-0.005
Year's effect	Yes					
Cons	2.148	0.083	25.750	0.000	1.984	2.312
R-squared:	Within = 0.1968		Between = 0.7319		Overall = 0.6921	
Number of obs	2,064					
Number of groups	159					
F(15, 1890)	=	30.87				
Prob > chi2	=	0.0000				

We assume that more peaceful countries may experience a more pronounced impact of income inequality than the least peaceful countries. This could be due to differences in institutional quality and the public response to income inequality. We employed panel quantile regression, and the results are presented in Table 3.

The results provide some interesting insights. The 10th quantile includes countries with the lowest GPI scores; in other words, a higher level of peace (mostly developed countries are in this group). The results for the 10th quantile show that for each 1-unit increase in the Gini index, there is a 0.85-unit decrease in peace in the country. However, at the 25th percentile, the results show that a one-unit increase in the Gini index reduces peace by less than was observed for the top peaceful countries. Additionally, in the 50th quantile, we find that the impact of the Gini index shrinks compared to the 10th quantile – implying that most peaceful countries get relatively worse if income inequality exists. Interestingly, at the 75th quantile, where most countries have higher GPI scores (lower levels of peace), they are adversely affected by income inequality. However, the size of the Gini coefficient indicates that the magnitude of the effect is less than for the 10th quantile.

The results imply that more peaceful countries are more adversely affected by income inequality than less peaceful countries. It is possible that the most peaceful countries are more sensitive to income inequality. In other words, they are more conscious of income inequality than countries with lower levels of peace.

The results from Table 3 indicate that more and less peaceful countries experience different impacts of income inequality. Reducing income inequality improves a country's peace; however, there may still be some 'structural' inequality. For instance, the income of a highly skilled labourer may differ significantly from that of other less-skilled labourers, but reducing income inequality to an extremely low level could lead to an unfair distribution of income and eventually undermine the country's peace. It

raises an important question about how much income inequality is ideal for a country to achieve a higher level of peace. As mentioned in the literature review section, some studies have attempted to estimate the optimal level of income inequality for better economic growth; however, the estimated level differs significantly across countries. For instance, Sztudynger (2018) found that the optimal level of the Gini index in the United States is 0.46, and in Sweden it was found to be 0.24. Likewise, in South Asian countries (Bangladesh, India, Nepal, Pakistan and Sri Lanka), Khatun & Saadat (2021) found that the optimal level of income inequality is 0.44 (Gini index value). Nevertheless, to date, we have not found a study that has attempted to find the optimal level of the Gini index for peace.

Table 3. Fixed effect model results.

Variables	Coefficient	Std. err.	z	p > z	[95% conf. interval]
10th Quantile of GPI					
Gini	0.856	0.339	2.520	0.012	0.191 1.522
Rule of law	-0.113	0.086	-1.320	0.187	-0.281 0.055
Political stability	-0.006	0.001	-6.310	0.000	-0.007 -0.004
25th Quantile of GPI					
Gini	0.768	0.254	3.020	0.003	0.270 1.265
Rule of law	-0.137	0.064	-2.140	0.033	-0.263 -0.011
Political stability	-0.006	0.001	-8.620	0.000	-0.007 -0.004
50th Quantile of GPI					
Gini	0.630	0.188	3.350	0.001	0.261 0.999
Rule of law	-0.174	0.048	-3.660	0.000	-0.267 -0.081
Political stability	-0.006	0.000	-12.020	0.000	-0.007 -0.005
75th Quantile of GPI					
Gini	0.492	0.258	1.910	0.056	-0.013 0.997
Rule of law	-0.211	0.065	-3.240	0.001	-0.338 -0.083
Political stability	-0.006	0.001	-9.060	0.000	-0.007 -0.005

We use the LOWESS (Locally Weighted Scatterplot Smoothing) graphical method – a non-parametric approach to visualise the relationship between income inequality (Gini index) and peace (GPI). The results are presented in Figure 4: the x-axis shows the Gini index values and the y-axis shows the GPI values. We found that up to 0.24 on the Gini index, the country's peace increases (or the GPI reduces). The relationship between income inequality and peace is non-linear, characterised by a J-shaped curve. For instance, as the Gini index rises above 0.24, GPI also increases, indicating that the country's peace begins to decline. This finding is important for countries that want to maintain a natural level of income inequality (the inequality that exists because of naturally different resource endowments). However, it requires more in-depth, countrywide data and advanced statistical analysis, which we could not conduct in this study due to the unavailability of the necessary data.

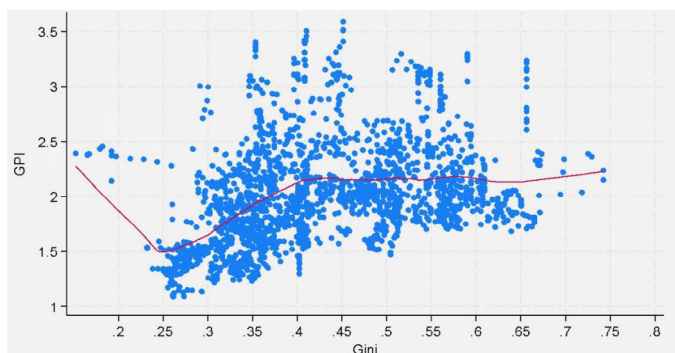


Figure 4. Optimum level of the Gini index.

Conclusion

Extreme income inequality adversely affects all countries, both more and less peaceful, by concentrating power at the top and misery at the bottom. An equitable distribution of income plays a significant role in shaping peace in any country. A higher level of income inequality is associated with social unrest, crime and weakened trust in institutions, which eventually erode the level of peace in the country. Most would agree that every country aims to maintain the rule of law and stability, thereby improving the country's peace, with studies showing that nations with greater income disparities tend to experience greater instability and conflict. However, the relationship is not straightforward, as governance quality, rule of law and political stability mediate the effects of inequality on peace. While some degree of inequality is natural and may not always be harmful, determining the specific level of inequality is challenging. Countries with strong legal systems and redistributive policies may mitigate the negative effects of inequality, while weak governance structures can exacerbate tensions and, in turn, affect a country's peace.

Using data from 159 countries, we applied a fixed effects model, a panel quantile regression and the LOWESS method to examine the impact of income inequality on countries' peace and to explore which levels of income inequality may not be detrimental to countries' peace. This research paper reports three main results. First, income inequality reduces countries' peace – our results are consistent with empirical and theoretical literature linking income inequality to conflicts, social unrest, anger and political instability. When the poor become poorer and the rich become richer, and this continues in a society, the poor are more likely to perceive it as unfair. This often results in peaceful protests at first and violent conflicts in the end. Secondly, our results show that countries characterised as less peaceful are less adversely affected, whereas more peaceful countries are more adversely affected by income inequality. This result seems surprising, and also interesting – while more peaceful countries are more likely to have better law and enforcement institutions, social cohesion, justice systems and democratic practices, income distribution disparities erode these foundations more severely. Perhaps, in more peaceful countries, people expect fair distribution of income, and even a little inequality is considered a breach of the social contract. Thirdly, we found that the relationship between income inequality and peace is nonlinear, resembling a J-curve. Our analysis shows that a moderate level of income inequality (a Gini value of 0.24) is acceptable in countries and does not undermine a country's peace. It indicates that as the Gini index crosses 0.24, it begins to exacerbate peace within countries. However, it requires more data and advanced statistical analysis to explore the global income inequality threshold.

Importantly, reducing inequalities is one of the United Nations Development Programme's SDGs (Goal 10). Our findings emphasise the importance of reducing disparities in nations to achieve long-lasting peace. We

suggest that governments should prioritise inclusive economic growth that not only increases the country's overall economic growth, but also ensures that the benefits of this growth are widely shared. Moreover, authorities should consider progressive taxation, fair redistribution of income, and targeted subsidies to lower the gaps between poor and rich (Polacko, 2021). Lastly, governments should strengthen their institutions by promoting transparency, accountability and meritocracy to safeguard people's economic rights and the fair distribution of income – these strategies would reduce conflict and, as a result, improve peace in countries. For future research, we suggest exploring causal inference and the long-run relationship between peace and income inequality, covering more data, as substantial heterogeneity across countries may introduce confounding factors that affect peace levels. This approach would also help reduce the risk of reverse causality.

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Appendix

Table A1. List of countries included in the analysis, along with their Global Peace Index and Gini index values in the year 2020.

S. No	Country	GPI	Gini Index	S. No	Country	GPI	Gini Index
1	Afghanistan	3.6	0.5	41	Ecuador	2	0.5
2	Albania	1.8	0.3	42	Egypt	2.5	0.4
3	Algeria	2.2	0.3	43	El Salvador	2.2	0.4
4	Angola	2	0.6	44	Equatorial Guinea	1.8	0.6
5	Argentina	1.9	0.4	45	Eritrea	2.6	0.5
6	Armenia	2	0.3	46	Estonia	1.6	0.3
7	Australia	1.4	0.3	47	Eswatini	1.9	0.6
8	Austria	1.3	0.3	48	Ethiopia	2.5	0.5
9	Azerbaijan	2.1	0.2	49	Finland	1.4	0.3
10	Bahrain	2.1	0.3	50	France	1.9	0.3
11	Bangladesh	2.1	0.5	51	Gabon	2.1	0.5
12	Belarus	2	0.3	52	Georgia	2	0.4
13	Belgium	1.5	0.3	53	Germany	1.5	0.3
14	Benin	2.2	0.5	54	Ghana	1.8	0.6
15	Bhutan	1.5	0.5	55	Greece	1.9	0.3
16	Bolivia	2	0.4	56	Guatemala	2.2	0.5
17	Bosnia/Herzegovina	1.9	0.4	57	Guinea	2	0.5
18	Botswana	1.8	0.6	58	Guinea-Bissau	2.1	0.5
19	Brazil	2.4	0.5	59	Guyana	2.1	0.4
20	Bulgaria	1.6	0.4	60	Haiti	2.1	0.6
21	Burkina Faso	2.2	0.7	61	Honduras	2.2	0.5
22	Burundi	2.4	0.5	62	Hungary	1.5	0.3
23	Cambodia	1.9	0.3	63	Iceland	1.1	0.3
24	Cameroon	2.6	0.6	64	India	2.6	0.5
25	Canada	1.3	0.3	65	Indonesia	1.8	0.4
26	Central African Republic	3.1	0.7	66	Iran	2.7	0.4
27	Chad	2.5	0.5	67	Iraq	3.4	0.4
28	Chile	1.8	0.5	68	Ireland	1.4	0.3
29	China	2	0.4	69	Israel	2.8	0.4
30	Colombia	2.7	0.5	70	Italy	1.6	0.4
31	Costa Rica	1.7	0.5	71	Jamaica	2	0.5
32	Cote d'Ivoire	2.1	0.6	72	Japan	1.4	0.3
33	Croatia	1.5	0.3	73	Jordan	2	0.4
34	Cuba	2	0.5	74	Kazakhstan	2	0.3
35	Cyprus	1.9	0.3	75	Kenya	2.4	0.6
36	Czech Republic	1.3	0.3	76	Kosovo	2	.
37	Democratic Republic of the Congo	3.1	0.6	77	Kuwait	1.7	0.4
38	Denmark	1.3	0.3	78	Kyrgyz Republic	2	0.3
39	Djibouti	2.1	0.4	79	Laos	1.8	0.4
40	Dominican Republic	2	0.4	80	Latvia	1.6	0.3
				81	Lebanon	2.7	0.4
				82	Lesotho	2.1	0.6
				83	Liberia	1.9	0.5

S. No	Country	GPI	Gini Index
84	Libya	3.1	0.4
85	Lithuania	1.6	0.4
86	Madagascar	1.9	0.6
87	Malawi	1.9	0.5
88	Malaysia	1.5	0.4
89	Mali	2.7	0.4
90	Mauritania	2.2	0.5
91	Mauritius	1.5	0.5
92	Mexico	2.6	0.5
93	Moldova	1.8	0.3
94	Mongolia	1.7	0.4
95	Montenegro	1.8	0.3
96	Morocco	2	0.4
97	Mozambique	2.1	0.6
98	Myanmar	2.4	0.3
99	Namibia	1.8	0.6
100	Nepal	1.9	0.5
101	Netherlands	1.5	0.3
102	New Zealand	1.3	0.3
103	Nicaragua	2.4	0.5
104	Niger	2.6	0.5
105	Nigeria	2.8	0.4
106	North Korea	3	0
107	North Macedonia	1.8	0.3
108	Norway	1.5	0.3
109	Oman	1.9	0.4
110	Pakistan	2.8	0.4
111	Palestine	2.6	0.4
112	Panama	1.9	0.5
113	Papua New Guinea	2	0.4
114	Paraguay	2	0.5
115	Peru	2	0.5
116	Philippines	2.4	0.4
117	Poland	1.6	0.3
118	Portugal	1.2	0.3
119	Qatar	1.6	0.3
120	Republic of the Congo	2.3	0.6
121	Romania	1.5	0.4
122	Russia	3.1	0.4
123	Rwanda	2	0.6
124	Saudi Arabia	2.4	0.3
125	Senegal	1.8	0.5

S. No	Country	GPI	Gini Index
126	Serbia	1.8	0.3
127	Sierra Leone	1.9	0.5
128	Singapore	1.3	0.4
129	Slovakia	1.5	0.2
130	Slovenia	1.3	0.3
131	Somalia	3.1	0.5
132	South Africa	2.3	0.7
133	South Korea	1.8	0.3
134	South Sudan	3.3	0.6
135	Spain	1.7	0.3
136	Sri Lanka	2	0.5
137	Sudan	2.9	0.5
138	Sweden	1.5	0.3
139	Switzerland	1.4	0.3
140	Syria	3.3	0.4
141	Taiwan	1.7	0.3
142	Tajikistan	2.2	0.4
143	Tanzania	1.9	0.5
144	Thailand	2.2	0.4
145	The Gambia	1.9	0.5
146	Timor-Leste	1.8	0.3
147	Togo	2.1	0.6
148	Trinidad and Tobago	2	0.4
149	Tunisia	2	0.4
150	Turkey	2.9	0.4
151	Turkmenistan	2.2	0.4
152	Uganda	2.2	0.6
153	Ukraine	2.8	0.3
154	United Arab Emirates	1.9	0.3
155	United Kingdom	1.7	0.3
156	United States of America	2.4	0.4
157	Uruguay	1.7	0.4
158	Uzbekistan	2	0.4
159	Venezuela	2.8	0.4
160	Vietnam	2	0.4
161	Yemen	3.3	0.4
162	Zambia	1.8	0.7
163	Zimbabwe	2.3	0.6

Note: GPI = Global Peace Index.

Source: <https://wid.world/> and <https://ourworldindata.org/>

Source: Authors' own creation.

Appendix

Table A2. Hausman test results.

	Chi_Square	DF	p_Value
Hausman test	123.72	3	0.000
			(fixed effects preferred)
Total sum of squares:	38.143		
Residual sum of squares:	27.452		
R-squared:	0.2803		
Adj. r-squared:	0.27925		
Source: Authors' own creation.			

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