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Covid-19 Fatalities and Internal Conflict: Does Government Economic Support Matter?

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Covid-19 Fatalities and Internal Conflict: Does Government Economic Support Matter?

Abstract

In this study, we look at the association between COVID-19 fatality rate and internal conflict, highlighting the importance of government economic support under the pandemic as a moderating factor. Our main hypothesis implies that increased COVID-19 fatality rates are likely to be positively associated with internal conflict in countries with lower levels of government economic support. Our empirical analysis confirms this prediction: employing cross-country data for more than 100 countries, the estimation results demonstrate that the positive effect of COVID-19 fatality rates on internal conflict may become insignificant with higher levels of government economic support. In countries where government spending in response to the pandemic is less than 5 to 6% of GDP, there is a significant risk of internal conflict resulting from increased COVID-19 fatality rates. Our main findings hold when we control for the effects of other socio-economic determinants relating to pre-pandemic internal political stability and alternative measures of conflict.

JEL-Codes: D740, H510, H530.

Keywords: Covid-19, conflict, political stability, fatality, fiscal measures.

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1. Introduction

There is established literature on the adverse effects of political instability on economic growth through several channels, such as increased uncertainty and reduced domestic and foreign investment (e.g. Alesina & Perotti, 1996; Busse & Hefeker, 2007), disturbed production (Alesina & Perotti, 1996), increased capital flight (Le & Zak, 2006), decreased international tourist arrivals (Saha & Yap, 201), socially sub-optimal governmental policies (Fredriksson & Svensson, 2003), and lower rates of productivity growth and physical and human capital accumulation (Aisen & Veiga, 2013). Conflict and instability through the abovementioned channels (among others) have sizable negative effects on growth. In a cross-country study, Collier (1999) estimates that country economic growth reduces 2.2 percentage points, on average, during a period of civil war compared to peacetime. Several case studies have quantified the magnitude of political turmoil on economic growth (e.g., in the case of the Arab Spring protests, see Matta et al (2019) and for Iran, see Farzanegan, 2020).

Given the negative effects of political instability on the economic performance and welfare of societies, several economic and political researchers have attempted to understand its determinants (e.g. Bjorvatn & Farzanegan, 2015; Farzanegan & Witthuhn, 2017; Farzanegan et al., 2018; Ishak & Farzanegan, 2021). In terms of internal instability (or internal conflicts), the literature shows that a wide range of social, economic and political factors, such as corruption, income inequality, natural resource rents, degree of ethnic fractionalization, economic development, youth unemployment rate, share of youth population, the level of democracy and trade openness, are important determinants.

In addition to the above-mentioned determinants, a strand of literature analyzes the relationship between government aggregate spending, military spending, and political instability (e.g. Bodea et al., 2016; Fjelde & de Soysa, 2009; Henderson & Singer, 2000; Liu, 2019; Mayai, 2020; Thies, 2010). In the present study, we extend the literature on the

government spending-political instability nexus by examining the effects of governments' fiscal measures in response to the SARS-CoV-2 Disease (COVID-19) pandemic and related fatalities on internal conflicts across more than 100 countries in 2020. Specifically, we investigate if higher levels of COVID-19 fatalities are positively associated with internal conflicts, adjusting for other important drivers of internal conflict. In addition, we are interested in finding out if government fiscal measures in response to the pandemic can weaken the relationship between COVID-19 fatalities and internal conflicts in the short term. In a special report on COVID-19 and Conflict (ICG, 2020), the International Crisis Group acknowledges that “[COVID-19] political consequences, both short- and long-term, are less well understood.” There has been an ongoing effort to understand the possible effects of the COVID-19 pandemic on conflict in specific regions such as Africa (Fiedler et al., 2021), Southeast Asia (Harding, 2020), Latin America (Murillo, 2020), the Middle East and North Africa (IMF, 2020) or in specific case studies (Zaidan, 2020 for Sudan; UN Security Council, 2020 for Haiti; Asmar, 2020 for Lebanon). The topic has gained attention in policy briefs (e.g., Mustasilta, 2020; Moyer and Kaplan, 2020; Brown et al., 2020) and the press (e.g., Marcus, 2020; Goldin, 2021; Salemi, 2020). Ide (2021) provides a review of five countries which experienced an increase in armed conflict activity (battles and explosions) during the first months of the pandemic (India, Iraq, Libya, Pakistan, and Philippines) and four countries which experienced a remarkable decline in the same period (Afghanistan, Colombia, Thailand, and Yemen).

However, to the best of our knowledge, an empirical analysis of the association between COVID-19 fatalities and internal conflict on a large number of countries, adjusting for other relevant drivers of conflict and considering the moderating role of government economic interventions in response to pandemic, is missing. By using a multiple cross-country regression analysis and considering subjective and objective measures of internal conflict and the conditional effect of COVID-19 fatalities on conflict, our study aims to fill this gap in literature.

Our study is inspired by the considerable growth of internal conflicts and government spending in response to the outbreak since early 2020. The human costs of COVID-19 have coincided with increased internal political instability and government fiscal measures in many countries. Figure 1 show the positive association between COVID-19 fatality rates (%) and two measures of internal conflict in our sample from 2020.

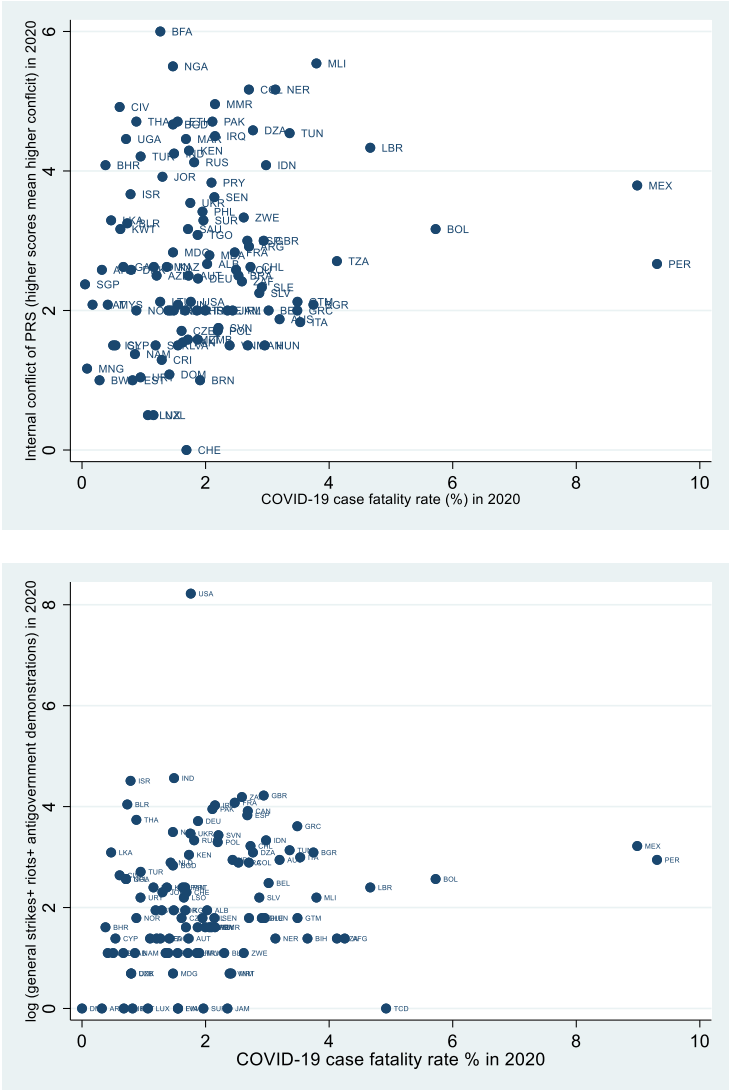


Figure 1. Internal conflict and COVID-19 fatalities in 2020
Note: COVID-19 fatalities are calculated as the percentage of confirmed deaths to confirmed cases of COVID-19 at the end of 2020 and is from Hale et al. (2021). Internal conflict data is from PRS (2021) and protests data are from Banks & Wilson (2021).

Since the early days of the COVID-19 pandemic, one of the major global sociopolitical trends has been a rise in internal conflicts, which has already been underway (Mustasilta, 2020). The pandemic has led to a rise in armed conflicts and other forms of violence and has indirectly

affected internal conflicts by intensifying economic hardship, poverty, inequality, authoritarianism and weakened global norms and institutions, which are the roots of internal conflicts (Labott, 2021; Yayboke et al., 2021)¹. In the 2020 survey conducted by leading expert economists from the Initiative on Global Markets' (IGM, 2020), the vast majority believe that the pandemic will worsen inequality, in part through its disproportionate effect on low-skilled workers around the world. A recent IMF report compared and related the COVID-19 pandemic to similar previous outbreaks (such as SARS, H1N1, MERS, Ebola, and Zika) and predicted that the inequality gap between the rich and poor will widen even more in the future (Ostry et al., 2020).

At the same time, governments around the world have adopted different types of fiscal measures (e.g. additional spending on infrastructure projects and health systems, payroll tax relief for businesses, debt relief, tax-free cash flow assistance) to limit the human and economic impacts of the pandemic (IMF, 2021a). In terms of economic impact, the goal of fiscal stimulus measures is to reduce economic uncertainty, boost business and consumer confidence and ultimately stimulate household consumption and business investment (OECD, 2020). In advanced economies, “Additional spending and forgone revenue” and “Equity, loans, and guarantees” as a percent of gross domestic product (GDP) are 17.31% and 11.4%, respectively. These rates are lower for emerging market economies (4.1% & 2.6%) and low-income developing countries (2% and 0.2%), as of June 5, 2021 (IMF, 2021b).

The contributions of this study are threefold. First, while there are some descriptive and historical studies on the impact of health crises (including the COVID-19 pandemic) on political stability and social unrest (e.g. Bapat, 2020; Censolo & Morelli, 2020; Labott, 2021; Mehrl & Thurner, 2021; Mustasilta, 2020; Polo, 2020; Woods et al., 2020; Yayboke et al., 2021), to the

¹ It is noteworthy that increased internal conflicts and social unrest due to the health crisis are not only happening during the COVID-19 pandemic but have also occurred in previous pandemics and outbreaks, such as the Black Death in the 1300s and the Spanish Flu pandemic of 1918 (Censolo & Morelli, 2020).

best of our knowledge, there is little empirical research examining the association between COVID-19 fatalities and internal conflicts across countries in 2020². Second, we explore the moderating role of government fiscal measures in response to the pandemic on the link between COVID-19 fatalities and internal conflicts, which has not received attention in existing studies. Third, although there is emerging literature on the impact of government fiscal measures in response to the health crisis on economic and financial variables (e.g. Demirgüç-Kunt et al., 2021; Gholipour & Arjomandi, 2021; Zaremba et al., 2020), no study has yet investigated the additional effects of the fiscal measures on political variables, including internal conflicts, using newly-employed economic policies relating to the COVID-19 pandemic. This point is critical as internal conflict can be a direct threat to regional stability and international peace and security because internal conflicts can spill over borders (Yayboke, 2021). In addition, as highlighted by the International Crisis Group (2020), political consequences of the pandemic are less understood and requires more empirical research to understand the short- and long-term effect of the health crisis. We address these three gaps in the literature.

Our empirical results show that higher COVID-19 fatality rates have a positive and significant association with internal conflict measures, controlling for other drivers of conflict. This relationship can be weakened if governments actively intervene in the economy by implementing fiscal policies during the health crisis.

The remainder of this paper is structured as follows: Section 2 reviews the relevant literature and then develops the hypothesis, Section 3 describes the data and methodology, Section 4 presents the estimation results, and Section 5 concludes the paper.

² Using a sample of 401 German districts over the period from March to May 2020, Plümper et al. (2021) examine the link between the stringency of containment policies and protest.

2. Literature review

2.1. Relationship between the COVID-19 burden and internal conflicts

Historical evidence over the past seven centuries proves that epidemics can have harmful effects on peace and political stability within the epidemic period and after. In looking at 57 important epidemic episodes over the period between the Black Death (1346-1353) and the Spanish Flu (1919-1920), Censolo and Morelli (2020) show that in 53 cases, epidemics are incubators of serious social disorder. Censolo and Morelli (2020) emphasise three channels through which epidemics influence political instability: by straining the relationship between the government and its citizens with restrictive measures, contributing to widening inequality and disseminating inaccurate information about the epidemic which may stoke irrational fears. In a similar study, but with data from the first five months of the COVID-19 pandemic, Polo (2020) provides some descriptive evidence that the pandemic can amplify violent conflicts, especially in conflict-prone countries, for at least two reasons: the pandemic intensifies the original reasons surrounding the conflict and governments and non-state actors can take advantage of the pandemic to advance their political and territorial objectives. Similar arguments provided by Mehrl and Thurner (2021) note that the COVID-19 pandemic's harmful economic consequences can worsen poverty and increase rebel group recruitment, offering opportunities for opposition movements to attack distracted and weakened incumbents, thereby triggering and intensifying armed conflicts. Menton et al. (2021) also show that the COVID-19 pandemic significantly intensified resource conflicts in Brazilian regions where indigenous peoples reside. In another study in Brazil, Calvimontes et al. (2020) argue that the spread of COVID-19 has strongly deepened pre-existing conflicts related to artisanal and small-scale gold mining communities in the Brazilian Amazon.

On the other hand, Mehrl and Thurner (2021) provide an opposing view by arguing that international actors (e.g. the United Nations) have called for a stop to armed conflict to facilitate

efforts to fight the spread of the pandemic. Apergis and Apergis (2020) also show that both the COVID-19 pandemic and oil prices (which pose a major threat to the national economy and public health) mitigate political polarization and reduce political conflicts between Republicans and Democrats in the US, which in turn reduces the political instability. Likewise, some observers (e.g. Yayboke et al., 2021) suggest that there might be opportunities for peace in unifying behind a common enemy (in this case, a virus).

In the present study, and based on justifications from Censolo and Morelli (2020), Mehrl and Thurner (2021) and Polo (2020), we propose that COVID-19 fatality rates can lead to higher levels of political instability across countries. Our study is different from Censolo and Morelli (2020), Mehrl and Thurner (2021) and Polo (2020) in at least two aspects: first, while they provide valuable historical and case study evidence, we apply cross-sectional multivariate regressions to statistically find a more robust relationship between the health crisis and political instability. Second, our study covers more than 100 countries in the analyses compared to their works, which only focuses on certain countries.

Given the above discussion, in this study, we hypothesize that

H1: The higher the COVID-19 fatality rate, the higher the risk of internal conflict.

2.2. Relationship between government spending and internal conflict

Several studies have examined the impact of aggregate government expenditures on political instability. While most empirical works show a positive relationship between government spending and stability, some researchers also find an insignificant relationship between these two variables.

Using a data from 141 countries from 1965-2006, Fjelde and de Soysa (2009) provide evidence that countries with higher levels of government spending to GDP, as an indicator of economic capacity, and good institutions are less likely to experience intrastate armed conflict.

They argue that redistributive government expenditures indicate a government's commitment to providing public goods and are popular with citizens, thereby promoting peace. Governments, through public spending, can also garner political support by offering employment or subsidies (Bratton and van de Walle, 1997; Acemoglu et al., 2004). In terms of government expenditure on social welfare services, Taydas and Peksen (2012) find that the likelihood of civil conflicts is significantly lower in countries where the government spends more on welfare policies (i.e. education, health, and social security). They argue that funding social services is seen as a gesture by governments to prioritize the needs of its citizens. As a result, there is less opposition and rebellion and more incentive to maintain peace. De Juan and Bank (2015) also find similar results by using regional data during the Syrian civil war. Their analyses show that the risk of violence is lower in sub-districts that have been favored by the ruling regime, in terms of preferential access to material goods. Using a panel of 12 Latin American countries over the period from 1970–2010, Justino and Martorano (2018) show that government spending on welfare has led to substantial reductions in the incidence of political conflicts. At a subnational context, using data set of 105 ethnic conflicts in Xinjiang in China over the period 1997-2005, Liu (2019) finds that local governments can reduce the hazard of ethnic conflicts by raising their provision of public goods (especially spending on education). He argues that growth in public spending mitigates the risk of ethnic conflicts through two channels: “(1) imposing higher opportunity costs on joining rebel groups; and (2) enhancing a state's legitimacy” (p. 741).

Similar theoretical evidence was provided by Azam (1995, 2001) and Grossman (1994, 1995). For example, Azam (1995) develops a game-theoretic model to analyse the governments' choice between increasing spending on national defence or giving “gifts” to their opponents as a means to stay in position. He argues that government investment in a redistribution policy can enhance the chance of lower levels of conflicts in Africa.

On the other hand, Thies (2010), using data from 157 countries, shows that higher levels of government expenditures do not reduce the number of civil wars. He argues that the insignificant link between government spending and internal conflicts is due to a positive channel and negative channel that neutralize this relationship. First, a large government (measured by its expenditures) may indicate the ability to expand capacity, showing strength and preventing civil war. However, another view suggests that large expenditures do not necessarily imply a strong government and that an ineffective government may actually spur conflict, should there be a struggle for the share of government expenditures. Likewise, Bodea et al. (2016) find that general government spending is not associated with a lower risk of conflict in both oil-rich and oil-poor countries from 1960-2009. Mayai (2020) even finds that government spending on the security sector is strongly correlated with lower public safety in South Sudan over the period 2006–2018. He argues that the government's allocated resources to the security sector are diverted to rebel groups through the corruption, which makes the public more vulnerable.

Since most studies in the literature support the positive relationship between government spending and political stability, we hypothesize that:

H2: The higher a government's fiscal measures in response to the COVID-19 pandemic are, the lower the risk of internal conflicts.

2.3. Government fiscal measures as a potential moderator for COVID-19 - conflicts

As noted by Censolo and Morelli (2020), there are various factors that may moderate the effect of the health crisis on political instability, such as the degree of existing social cohesion and political stability, the duration of the epidemic, mortality rates and diffusion and how the social costs of the epidemic are distributed among society.

In this study, we argue that the effect of COVID-19 fatalities on internal conflicts depends on the level of the government economic response to the pandemic. We test if the impact of COVID-19 fatalities on political stability can be weakened (strengthened) in countries where governments have provided more (less) economic support to their citizens. Expansionary fiscal policies during the crisis (through the Keynesian multiplier effect) can significantly stimulate national output and employment (at least in the short run) and mitigate the people's financial stress and economic difficulties that can cause social unrest and violence.

It is important to note that government expenditures have been used as a moderating variable in some studies that examine the link between macroeconomic factors and political instability. For example, Bodea et al. (2016) find that the impact of oil wealth on civil conflict depends on the size of government spending and the allocation of government expenditures for social welfare or the military. Farzanegan et al. (2018) also show that the effect of natural resource rents on internal conflicts depends on the degree of expenditure decentralization (the ratio of expenditures of sub-national governments to total government expenditures). Given that government expenditures measures are well-established moderating variables in the political instability literature, we also argue that government fiscal measures in response to the COVID-19 pandemic can play an important role in the relationship between COVID-19 fatality rates and internal conflicts. We hypothesize that:

H3: Higher levels of government fiscal measures in response to the COVID-19 pandemic weaken the relationship between COVID-19 fatality rates and internal conflicts.

3. Data and method

Our main dependent variable is the internal conflict index from the Political Risk Service (PRS, 2021). The index examines political violence in a country and its actual or potential impact on governance. The original index scores range from 0 (least stable system) to 12 (most stable system) and is the sum of three subcomponents, each with a maximum score of 4 points and a minimum score of 0 points. A score of 4 means very low risk and a score of 0 refers to very high risk. These three subcomponents are civil war/coup threat, terrorism/political violence and civil disorder. The index is widely used in the literature (see, for example, Jinjara, 2009; Farzanegan, Lessmann & Markwardt, 2013; Bjorvatn & Farzanegan, 2013, 2015). The International Country Risk Guide (ICRG) indicators, including political stability, are based on expert assessments. In our sample, there is a considerable cross-country variation in this variable. It ranges from a minimum of 6 in Burkina Faso to a maximum of 12 in Switzerland. For easier interpretation of results, we have subtracted the values of the index from 12 and thus, higher values in the modified version mean a higher risk of internal conflict.

For a sensitivity check, we also use data from the Cross-National Time-Series Data Archive (CNTS) (Banks & Wilson, 2021) to construct our protest indicator. Following Ishak and Farzanegan (2021), we select three indicators for less violent events of instability: anti-government demonstrations, general strikes, and riots. Our measure of protests is a count variable (in logs) of the number of demonstrations, strikes, and riots that occurred in a country in a given year and captures the magnitude of the instability. Our dependent variables show the status of domestic conflict in the 2020 pandemic year across countries.

The key explanatory variable is the COVID-19 case fatality rate, which is the ratio of COVID-19 confirmed deaths to COVID-19 confirmed cases (CFR). The source of data for COVID-19 is Hale et al. (2021). There is extensive discussion regarding the denominator of the CFR (total confirmed cases vs. closed cases). However, as Spsychalsk et al (2020) show, "...*the*

CFR calculated per total cases is the least affected by reporting biases” and “... is the best tool to express the fatality of the disease, even though it might underestimate this figure in the initial phase of an outbreak.” There is a large variation across countries from 0 in Bhutan, Dominica, and Vanuatu to more than 8% in Mexico and Peru.

To alleviate the negative direct and indifferent effects of COVID-19 on the political and economic systems, governments initiated different types of economic support programs. We use data from the Database of Fiscal Policy Responses to COVID-19, which is published by the IMF (2021). This database summarizes key fiscal measures governments have announced or implemented in selected economies in response to the COVID-19 pandemic and includes COVID-19 related measures since January 2020 and implemented thereafter. In this study, we use the Additional Spending and Forgone Revenue in Response to the COVID-19 Pandemic (as % of 2020 GDP) data. This includes additional spending on health and non-health sectors. There is a significant cross-country variation in this measure from 0% in countries such as Belarus, Burkina Faso, Liberia, and Tanzania to more than 80% of GDP, such as in Cyprus.

Our main hypothesis is that government economic supports in general reduce the destructive effects of COVID-19 on internal conflict. To examine this hypothesis, we have included an interaction term between the CFR and government economic supports. While our focus is on these two factors and their interaction, cross-country variation of internal conflict also depends on other variables. To reduce the risk of omitted variable bias, we have controlled for a set of socio-economic indicators in the (pre-)pandemic period (2019-2020). These variables, which illustrate the situation in 2019 and before, are measures of democracy and corruption from the Worldwide Governance Indicators (WGI, 2021) and GDP per capita growth rate, trade openness index and total natural resource rents (% of GDP) from the WDI (2021). The ease of doing business index from the WDI (2021) is also used as a control. Moreover,

Muslim-majority population³ and regional dummy variables for Latin America, East Asia & Pacific, Europe and Central Asia, Sub-Saharan Africa and Middle East and North Africa are also controlled. Table A1 in the Appendix provides variable definitions and data sources. Tables A2 and A3 in the Appendix present the list of countries in our estimations, using different conflict indicators. Table 1 presents the summary statistics.

The baseline econometric model (1) has the following form and we estimate it with ordinary least squares (OLS) regression (using robust standard errors).

$$CONFLICT_i = \alpha + \beta_1.CFR_i + \beta_2.Gov_Support_i + \beta_3.(CFR_i * Gov_Support_i) + \beta_4'.Z_i + \varepsilon_i \quad (1)$$

CONFLICT measures the internal conflict in 2020 based on the PRS internal conflict or CNTS protests indicators discussed earlier. As previously noted, the higher scores of internal conflict in the PRS index means lower levels of internal conflict, we modified the PRS index by subtracting the original scores from 12⁴. In the modified version, the range of this variable is from 0 (least level of internal conflict) to 6 (highest level of internal conflict). *CFR* denotes the COVID-19 case fatality rates at the end of 2020. *Gov_Support* is the government budgetary fiscal support to people and firms as a share of GDP in 2020. We expect that $\beta_1 > 0$ (a higher COVID-19 fatality rate increases internal conflict) and $\beta_3 < 0$ (the final effect of *CFR* on *CONFLICT* is weaker at higher levels of budgetary fiscal support to people and firms). *Z* is a vector of control pre-pandemic variables, including regional dummy variables. The subscript *i* refers to country *i*.

³ Gleditsch and Rudolfson (2016) show that in the post-Cold War era, most wars are civil wars and Muslim countries have a disproportionate share of these.

⁴ In our sample, this is from 6 to 12 (highest level of internal stability).

Table 1. Summary statistics of variables in the estimated general model (in general specifications)

Variable	Obs.	Mean	Std. dev.	Min	Max
Internal conflict ICRG in 2020	102	2.758	1.295	0	6
log of protests in 2020	104	2.177	1.315	0	8.220
COVID-19 fatality in 2020	102	1.962	1.436	0.049	9.307
Government COVID-19 spending (% of GDP)	102	5.806	5.107	0.168	25.450
Ease of doing business index in 2020	102	69.421	10.746	43.200	86.800
Total natural resource rents (% of GDP) in 2019	102	4.613	8.180	0	42.656
Trade (% of GDP) in 2019	102	90.464	58.925	26.310	381.520
Voice and accountability index in 2019	102	0.226	0.908	-1.617	1.687
Corruption index in 2019	102	-0.246	0.979	-2.170	1.337
Muslim majority population	102	0.196	0.398	0	1

4. Results

Our main results are shown in Table 2. The dependent variable is the modified version of the PRS internal conflict index from 2020. The average level of internal conflict in our sample of 102 countries in 2020 is 2.7 and the interquartile range is 1.91.

Model 1 only shows the effect of COVID-19 case fatality rates on this measure of conflict. The coefficient of COVID-19 case fatality rates is positive and statistically significant. This is in line with our hypothesis (*H1*) that there is a positive association between COVID-19 fatality rates and the risk of internal conflict. This is in line with the findings of historical analyses and case studies (e.g. Censolo and Morelli, 2020; Mehrl and Thurner, 2021; Polo, 2020) which provide evidence on the harmful impacts of the health crisis on political stability and peace.

Model 2 controls for regional characteristics and differences in our sample. The regional control increases the size of the effect of the CFR and its statistical significance. In Models 3 and 4 we include our two other variables of interest: government support, which has a dampening direct effect on internal conflict in Model 3, and the interaction of government support and the CFR. The coefficient of interaction term is negative, supporting our hypothesis (*H3*) of the mitigating effect of government economic support in the conflict-COVID-19 nexus. The interaction term is statistically significant in our general specification, which includes a broad set of other determinants of internal conflict in Model 5. Model 6 excludes the insignificant variables found in Model 5 and the results do not change.

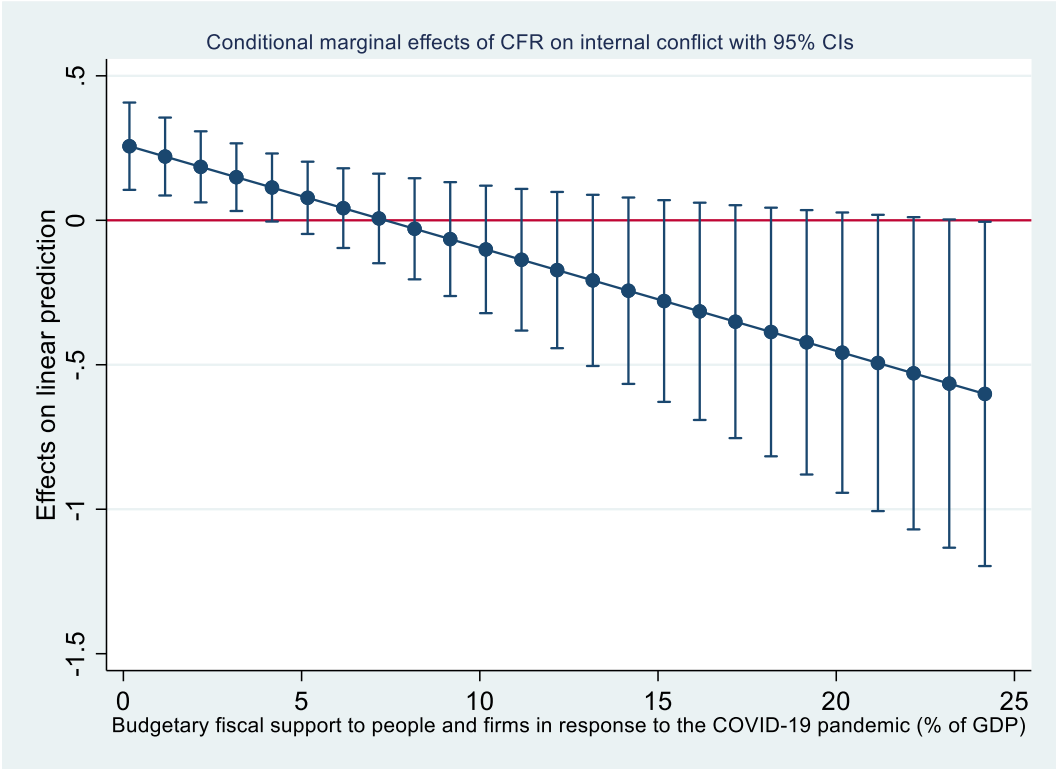
We illustrate the final association between the CFR and internal conflict at different levels of government economic support in Figure 2. For countries where government economic support is less than 5% of GDP, we observe a significant increasing effect of the CFR on internal conflict. The effect of the CFR becomes weaker and decreases at higher levels of economic support. Nevertheless, the only statistically significant part of the final effect is at lower levels of government support. In other words, there is no statistically significant association between the CFR and internal conflict at higher levels of government economic support.

Table 2. Internal conflict, COVID-19 fatalities, and government support (using PRS conflict data)

<i>Explanatory variables</i>	<i>Dependent variable: Internal conflict in 2020 (PRS)</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
Covid19 fatality rate (CFR) in 2020	0.126*	0.191**	0.229***	0.295***	0.263***	0.303***
	(1.85)	(2.58)	(3.00)	(2.92)	(3.38)	(3.80)
Government economic support % GDP in 2020 (Gov_support)			-0.059***	-0.029	0.087*	0.083*
			(-2.79)	(-0.75)	(1.98)	(1.96)
CFR*Gov_support				-0.015	-0.036**	-0.037***
				(-1.10)	(-2.50)	(-2.67)
GDP per capita growth rate in 2019					-0.036	
					(-0.62)	
Ease of doing business score in 2020					-0.025*	-0.031**
					(-1.71)	(-2.56)
Total natural resource rents % GDP in 2019					-0.046***	-0.045***
					(-3.20)	(-3.12)
Trade % GDP in 2019					-0.007***	-0.008***
					(-4.07)	(-4.56)
Corruption in 2019					0.225	
					(1.14)	
Democracy in 2019					-0.501***	-0.674***
					(-2.84)	(-4.88)
Share of Muslim population in total population					0.382	
					(1.35)	
Latin America dummy		-1.090**	-1.278***	-1.304***	-0.882**	-0.871**
		(-2.57)	(-2.96)	(-3.02)	(-2.01)	(-2.06)
East Asia & Pacific dummy		-0.900*	-0.681	-0.753	-0.245	-0.280
		(-1.77)	(-1.33)	(-1.48)	(-0.62)	(-0.72)
Europe & Central Asia dummy		-1.218***	-1.124***	-1.124***	0.096	0.087
		(-3.43)	(-3.26)	(-3.27)	(0.27)	(0.26)
Sub-Sahara Africa dummy		0.924**	0.726*	0.741*	0.297	0.403
		(2.25)	(1.73)	(1.80)	(0.72)	(1.02)
Middle East & North Africa dummy		0.151	0.029	0.022	0.520	0.737**
		(0.36)	(0.07)	(0.05)	(1.41)	(2.06)
Number of countries	106	105	103	103	102	102
R ²	0.02	0.27	0.33	0.33	0.57	0.56

Notes: The method of estimation is ordinary least squares. t statistics based on heteroscedasticity-robust standard errors are reported in parentheses. ***p < 0.01, **p < 0.05, *p < 0.1. Higher values of dependent variable refer to higher risk of internal conflict.

Figure 2. Marginal effect of CFR on internal conflict (based on Model 5)



To what extent are our results sensitive to the measure of internal conflict? The PRS index is based on expert assessments of risk of internal conflict. Table 3 replaces it with an objective measure of internal conflict which is based on counted events of conflict. We focus on riots, strikes and antigovernment demonstrations as more realistic types of instabilities in response to the COVID-19 pandemic. We have followed similar specifications as in Table 2. The positive association between the CFR and the event-based conflict measure is robust and positive across all models. The size of the effect increases even after controlling for other relevant drivers of conflict, such as corruption, democracy, economic growth, resource rents, trade openness and regional factors.

Table 3. Protest (log), COVID-19 fatalities and government support (using CNTS conflict data)

<i>Explanatory variables</i>	Dependent Variable: log of Protests in 2020					
	(1)	(2)	(3)	(4)	(5)	(6)
Covid19 fatality rate (CFR) in 2020	0.167*** (2.65)	0.221*** (3.02)	0.177** (2.35)	0.182 (1.64)	0.205** (2.20)	0.232** (2.59)
Government economic support % GDP in 2020 (Gov_support)			0.125*** (2.97)	0.128 (1.44)	0.111 (1.21)	0.115 (1.34)
CFR*Gov_support				-0.001 (-0.05)	-0.001 (-0.03)	-0.002 (-0.11)
GDP per capita growth rate in 2019					-0.063 (-1.18)	
Ease of doing business score in 2020					0.032** (2.05)	0.029* (1.77)
Total natural resource rents % GDP in 2019					0.005 (0.16)	
Trade % GDP in 2019					-0.008*** (-3.19)	-0.008*** (-3.25)
Corruption in 2019					0.415 (1.43)	0.321* (1.92)
Democracy in 2019					0.059 (0.14)	
Share of Muslim population in total population					-0.806** (-2.22)	-0.810*** (-2.66)
Latin America dummy		-0.381 (-0.91)	-0.186 (-0.58)	-0.187 (-0.58)	-0.589* (-1.94)	-0.564* (-1.92)
East Asia & Pacific dummy		0.065 (0.14)	-0.512 (-1.02)	-0.516 (-0.97)	-0.574 (-0.93)	-0.671 (-1.19)
Europe & Central Asia dummy		0.099 (0.25)	-0.204 (-0.55)	-0.205 (-0.54)	-0.016 (-0.03)	-0.095 (-0.22)
Sub-Sahara Africa dummy		1.076* (1.76)	1.441** (2.36)	1.441** (2.35)	1.939*** (6.10)	1.862*** (6.38)
Middle East & North Africa dummy		0.418 (0.75)	0.446 (0.82)	0.444 (0.80)	1.050* (1.96)	1.111* (1.98)
Number of countries	109	109	106	106	104	104
R ²	0.03	0.09	0.27	0.27	0.46	0.45

Notes: The method of estimation is ordinary least squares. t statistics based on heteroscedasticity-robust standard errors are reported in parentheses. ***p < 0.01, **p < 0.05, *p < 0.1. Higher values of dependent variables refer to higher number of counted domestic conflict events (anti-government demonstrations, riots, and strikes).

Figure 3. Marginal effect of CFR on log of protests (based on Model 5)

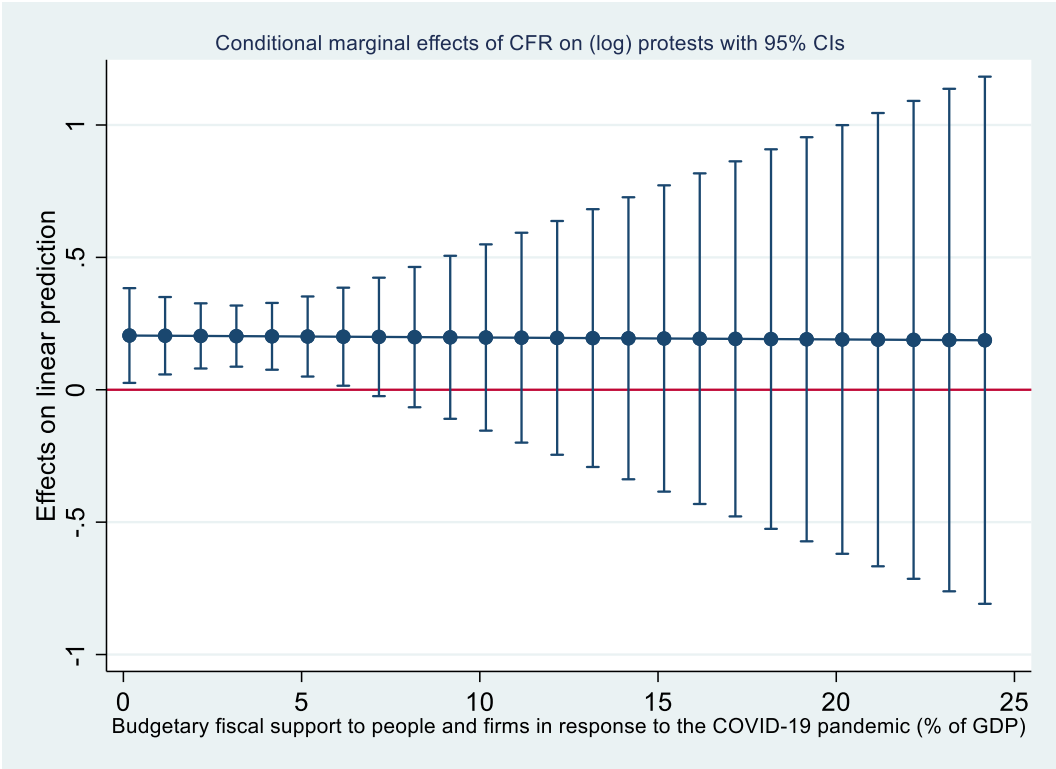


Figure 3 shows the marginal effect of the CFR on event-based protests at different levels of government economic support. We observe that the final effect is decreasing at higher levels. However, the only positive and significant effect of the CFR on protests is when the size of economic support is less than 6% of GDP. At levels below this threshold level, we have significant evidence (at 5% level) of the effect of the CFR on protests. Overall, both results in Tables 2 and 3 refer to a similar message: countries in which the size of budgetary support is low (less than 5 or 6% of GDP), the risk of conflict as a result of economic and social pressure during the COVID-19 pandemic is significantly high.

Our findings lend empirical support to the contemporary pattern of the positive impact of the pandemic on political unrest.

5. Conclusion

This research explores how cross-country differences in the experience of the COVID-19 pandemic is associated with subjective and objective indicators of internal conflict. It advances the hypothesis and empirically establishes that higher rates of COVID-19 fatalities have been a significant driver of internal conflict across countries. Moreover, we find a significant mitigating role of government fiscal measures in addressing the COVID-19 burden in the final effect of the pandemic on internal conflict. The findings arguably show a critical role of political institutions in active market intervention during pandemics, like in the recent COVID-19 case. We show that in countries with a higher share of government COVID-19-related spending, the positive association between COVID-19 fatalities and internal conflict becomes insignificant. Our results are robust to the inclusion of other covariates of internal conflict and pre-pandemic institutional factors such as corruption and the type of political regime.

Future research may explore the long-term effects of the COVID-19 pandemic on internal conflict and the role of government policies, especially as data on COVID-19 fatalities and fiscal measures in response to the pandemic become available for a longer period.

References

Acemoglu, D., Robinson, J.A., & Verdier, T. (2004). Kleptocracy and divide and rule: a model of personal rule. *Journal of the European Economic Association*, 2, 162–192.

Aisen, A., & Veiga, F. J. (2013). How does political instability affect economic growth?. *European Journal of Political Economy*, 29, 151-167.

Alesina, A., & Perotti, R. (1996). Income distribution, political instability, and investment. *European Economic Review*, 40, 1203–1228.

Alesina, A., Giuliano, P., & Nunn, N. (2013). On the origins of gender roles: women and the plough. *The Quarterly Journal of Economics*, 128, 469–530.

Apergis, E., & Apergis, N. (2020). Can the COVID-19 pandemic and oil prices drive the US Partisan Conflict Index? *Energy Research Letters*, 1(1). <https://doi.org/10.46557/001c.13144>

Asmar, A. (2020). What's Driving Lebanon's Mid-Pandemic Protests? Council on Foreign Relations, Available at: <https://www.cfr.org/in-brief/whats-driving-lebanons-midpandemic-protests>

Azam, J. P. (1995). How to pay for the peace? A theoretical framework with references to African countries. *Public Choice*, 83(1–2), 173–184.

Azam, J. P. (2001). The redistributive state and conflicts in Africa. *Journal of Peace Research*, 38, 429–444.

Bapat, N. (2020). Will COVID-19 cause a war? Understanding the case of the U.S. and China. *Peace Economics, Peace Science and Public Policy*.

Bjorvatn, K., & Farzanegan, M.R. (2015). Resource rents, balance of power, and political stability. *Journal of Peace Research*, 52, 758–773.

Bodea, C., Higashijima, M., & Singh, R. (2016). Oil and civil conflict: Can public spending have a mitigation effect?. *World Development*, 78, 1–12.

Bratton, M., & van de Walle, N. (1997). *Democratic experiments in Africa: Regime transitions in comparative perspective*. Cambridge University Press, New York.

Brown, R., Hurlburt, H., & Stark, A. (2020). How the Coronavirus Sows Civil Conflict. Foreign Affairs. Available at: <https://www.foreignaffairs.com/articles/world/2020-06-06/how-coronavirus-sows-civil-conflict>

Busse, M., & Hefeker, C. (2007). Political risk, institutions and foreign direct investment. *European Journal of Political Economy*, 23(2), 397–415.

Calvimontes, J., Massaro, L., Araujo, C. H.X., et al. (2020) Small-scale gold mining and the COVID-19 pandemic: conflict and cooperation in the Brazilian Amazon. *The Extractive Industries and Society*, 7, 1347–1350.

Censolo, R., & Morelli, M. (2020). COVID-19 and the potential consequences for social stability. *Peace Economics, Peace Science and Public Policy*. <https://doi.org/10.1515/peps-2020-0045>

Collier, P. (1999). On the economic consequences of civil war. *Oxford Economics Papers* 51 (1), 168–183.

De Juan, A., & Bank, A. (2015). The Ba'athist blackout? Selective goods provision and political violence in the Syrian civil war. *Journal of Peace Research*, 52(1), 91–104.

Demirgüç-Kunt, A., Pedraza, A., & Ruiz-Ortega, C. (2021). Banking sector performance during the COVID-19 crisis. *Journal of Banking & Finance*, 106305.

Farzanegan, M. R., & Witthuhn, S. (2017). Corruption and political stability: Does the youth bulge matter?. *European Journal of Political Economy*, 49, 47–70.

Farzanegan, M.R. (2020). The economic cost of the Islamic revolution and war for Iran: synthetic counterfactual evidence. *Defence and Peace Economics*.
<https://doi.org/10.1080/10242694.2020.1825314>

Farzanegan, M.R., Lessmann, C., & Markwardt, G. (2018). Natural resource rents and internal conflicts: Can decentralization lift the curse?. *Economic Systems*, 42, 186-205.

Fiedler, C., Mross, K., Adeto, Y.A. (2021). Implications of COVID-19 for conflict in Africa. German Development Institute Briefing Paper 12/2021, Bonn.

Fjelde, H., & de Soysa, I. (2009). Coercion, co-optation, or cooperation: state capacity and the risk of Civil War, 1961–2004. *Conflict Management and Peace Science*, 26 (5), 5–25.

Fredriksson, P. G., & Svensson, J. (2003). Political instability, corruption and policy formation: The case of environmental policy. *Journal of Public Economics*, 87(7/8), 1383-1405.

Gholipour, H.F., & Arjomandi, A. (2021). Economic policy responses to the COVID-19 pandemic and growth of non-performing loans. *International Review of Finance*, <https://doi.org/10.1111/irfi.12362>

Gleditsch, N. P., & Rudolfsen, I. (2016). Are Muslim countries more prone to violence? *Research and Politics*, 3, 1-9.

Goldin, I. (2021). Covid-19 has made fighting inequality more critical than ever. *Financial Times* (6 September 2021). Available at: <https://www.ft.com/content/24a39617-4ed9-491d-9195-d68191927655>

Grossman, H. I. (1994). Production, appropriation, and land reforms. *American Economic Review*, 84, 705–712.

Grossman, H. I. (1995). Robin hood and the redistribution of property income. *European Journal of Political Economy*, 11, 399–410.

Hale, T., Angrist, N., Goldszmidt, R. et al. (2021). A global panel database of pandemic policies (Oxford COVID-19 Government Response Tracker). *Nature Human Behaviour*, 5, 529–538.

Harding, B. (2020). Is Coronavirus Making Southeast Asia More Authoritarian? United States Institute of Peace, available at: <https://www.usip.org/publications/2020/06/coronavirus-making-southeast-asia-more-authoritarian>

Henderson, E., & Singer, D., (2000). Civil war in the post-colonial world, 1946–1992. *Journal of Peace Research*, 37 (3), 275–299. <https://doi.org/10.1515/peps-2020-0047>

ICG (2020). COVID-19 and Conflict: Seven Trends to Watch. Crisis Group Special Briefing N°4, New York/Brussels, Available at: <https://www.crisisgroup.org/global/sb4-covid-19-and-conflict-seven-trends-watch>

Ide, T. (2021). COVID-19 and armed conflict. *World Development*, 140, 105355.

IGM (2020). Inequality and the COVID-19 Crisis, IGM Forum of Chicago Booth. Available at: <https://www.igmchicago.org/surveys/inequality-and-the-covid-19-crisis/>

IMF (2021a). Policy Responses to COVID-19. Available at <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19#I>

IMF (2021b). Fiscal Monitor Database of Country Fiscal Measures in Response to the COVID-19 Pandemic. IMF Fiscal Affairs Department, July 2021. Available at: <https://www.imf.org/en/Topics/imf-and-covid19/Fiscal-Policies-Database-in-Response-to-COVID-19>

IMF (2020). COVID-19 Poses Formidable Threat for Fragile States in the Middle East and North Africa, International Monetary Fund, Washington DC. Available at: <https://www.imf.org/en/News/Articles/2020/05/13/na051320-covid-19-poses-formidable-threat-for-fragile-states-in-the-middle-east-and-north-africa>

Ishak, P.W., & Farzanegan, M.R. (2021). Oil price shocks, protest, and the shadow economy: Is there a mitigation effect?. *Economics & Politics*, <https://doi.org/10.1111/ecpo.12199>

Justino, P., & Martorano, B. (2018). Welfare spending and political conflict in Latin America, 1970–2010. *World Development*, 107, 98–110

Labott, E. (2021). Get ready for a spike in global unrest. Available at: <https://foreignpolicy.com/2021/07/22/covid-global-unrest-political-upheaval/>

Le, Q.V., & Zak, P.J. (2006). Political risk and capital flight. *Journal of International Money and Finance*, 25(2), 308–329.

Liu, C. (2019). Local Public Goods Expenditure and Ethnic Conflict: Evidence from China. *Security Studies*, 28(4), 739-772.

Marcus, J. (2020). Coronavirus: A ticking time-bomb for the Middle East. BBC News (31 March 2020). Available at: <https://www.bbc.com/news/world-middle-east-52103958>

Matta, S., Appleton, S., & Bleaney, M. (2019). The impact of the Arab spring on the Tunisian economy. *World Bank Economic Review* 33 (1), 231–258

Mayai, A. T. (2020) Security sector spending and public safety in South Sudan, 2006–2018, *African Security Review*, 29 (3), 280-296.

Mehrl, M., & Thurner, P.W. (2021). The effect of the COVID-19 pandemic on global armed conflict: Early evidence. *Political Studies Review*, 19(2), 286–293.

Menton, M., Milanez, F., Machado de Andrade Souza, J., & Sotto Maior Cruz, F. (2021). The COVID-19 pandemic intensified resource conflicts and indigenous resistance in Brazil. *World Development*, 138, 105222.

Moyer, J.D., & Kaplan, O., (2020). Will the Coronavirus Fuel Conflict? *Foreign Policy*. Available at: <https://foreignpolicy.com/2020/07/06/coronavirus-pandemic-fuel-conflict-fragile-states-economy-food-prices/>

Murillo, M. V. (2020). Elections and Protests in Latin America: COVID-19's Impact. Social Science Research Council, available at: <https://items.ssrc.org/covid-19-and-the-social-sciences/democracy-and-pandemics/elections-and-protests-in-latin-america-covid-19s-impact/>

Mustasilta, K. (2020). From bad to worse? The impact(s) of COVID-19 on conflict dynamics. European Union Institute for Security Studies. Available at: <https://www.iss.europa.eu/content/bad-worse-impacts-covid-19-conflict-dynamics>

Mustasilta, K. (2020). From bad to worse? The impact(s) of Covid-19 on conflict dynamics. European Union Institute for Security Studies, BRIEF/13, Paris.

OECD (2020). Tax and fiscal policy in response to the Coronavirus crisis: Strengthening confidence and resilience. 19 May 2020. Available at: <https://www.oecd.org/ctp/tax-policy/tax-and-fiscal-policy-in-response-to-the-coronavirus-crisis-strengthening-confidence-and-resilience.htm>

Ostry, J. D., Loungani, P., & Furceri, D. (2020). The pandemic will leave the poor further disadvantaged—IMF, World Economic Forum. Available at: <https://www.weforum.org/agenda/2020/05/pandemics-poor-rich-economics-coronavirus-covid19/>

Polo, S. M. T. (2020). A Pandemic of violence? The impact of COVID-19 on conflict. *Peace Economics, Peace Science and Public Policy*. <https://doi.org/10.1515/peps-2020-0050>

Saha, S., & Yap, G. (2014). The moderation effects of political instability and terrorism on tourism development: A cross-country panel analysis. *Journal of Travel Research*, 53 (4), 509–521.

Salemi, C. (2020). Does covid-19 raise the risk of violent conflict? Not everywhere. *The Washington Post* (15 October 2020). Available at:

<https://www.washingtonpost.com/politics/2020/10/15/does-covid-19-raise-risk-violent-conflict-not-everywhere/>

Taydas, Z., & Peksen, D. (2012). Can states buy peace? Social welfare spending and civil conflicts. *Journal of Peace Research*, 49(2), 273–287.

Thies, C. (2010). Of rulers, rebels, and revenue: State capacity, civil war onset, and primary commodities. *Journal of Peace Research*, 47 (3), 321–332.

UN Security Council (2020). Haiti's Stability in Peril without Strong Response to COVID-19, Legal Expert Tells Security Council. UN Security Council SC/14218. Available at: <https://www.un.org/press/en/2020/sc14218.doc.htm>

WDI (2021). World Development Indicators, The World Bank. Available at: <https://data-bank.worldbank.org/source/world-development-indicators>

WGI (2021). The Worldwide Governance Indicators, The World Bank. Available at: <https://info.worldbank.org/governance/wgi/>

Woods, E.T., Schertzer, R., Greenfeld, L., Hughes, C., & Miller-Idriss, C. (2020). COVID-19, nationalism, and the politics of crisis: A scholarly exchange. *Nations and Nationalism*. <https://doi.org/10.1111/nana.12644>

Yayboke, E., Graff, C., & Staguhn, J. (2021). Beyond Emergency Pandemic Response. Center for Strategic and International Studies (CSIS). Available at <https://www.csis.org/analysis/beyond-emergency-pandemic-response-case-prioritizing-peacebuilding-and-conflict-prevention>

Zaidan, Y. (2020). COVID-19 Threatens to Derail an Unsteady Democratic Transition in Sudan. *World Politics Review*, Available at: <https://www.worldpoliticsreview.com/articles/28860/covid-19-threatens-to-derail-an-unsteady-democratic-transition-in-sudan>

Zaremba, A., Aharon, D. Y., Demir, E., Kizys, R., & Zawadka, D. (2020). COVID-19, government policy responses, and stock market liquidity around the world: A note. *Research in International Business and Finance*, 56, 101359.

Appendix

Table A1. Definitions of variables

Variables	Definitions	Sources
Internal conflict in 2020 (PRS)	This is an assessment of political violence in a country and its actual or potential impact on governance. The highest rating is given to those countries where there is no armed or civil opposition to the government and the government does not indulge in arbitrary violence, direct or indirect, against its own people. The lowest rating is given to a country embroiled in an on-going civil war. The risk rating assigned is the sum of three subcomponents, each with a maximum score of four points and a minimum score of 0 points. A score of 4 points equates to Very Low Risk and a score of 0 points to Very High Risk. We have reversed the index by subtracting the original values from 12. Higher values mean higher risk of internal conflict in 2020.	PRS (2021)
log of Protests in 2020	The Protest index is a count variable (in logs) of the number of demonstrations, strikes, and riots that occurred in a country in 2020.	Cross-National Time-Series Data Archive (CNTS) (Banks & Wilson, 2021)
Covid19 fatality rate (CFR) in 2020	The ratio of COVID-19 confirmed deaths to COVID-19 confirmed cases (CFR) at the end of 2020 (%)	Hale et al. (2021)
Government economic support % GDP in 2020 (<i>Gov_support</i>)	Additional Spending and Forgone Revenue in Response to the COVID-19 Pandemic (as % of 2020 GDP). This includes additional spending on health and non-health sectors.	Database of Fiscal Policy Responses to COVID-19, IMF (2021)
GDP per capita growth rate in 2019	Real GDP per capita growth rate (%) in 2019	WDI (2021)
Ease of doing business index in 2020	The ease of doing business score helps assess the absolute level of regulatory performance over time. An economy's ease of doing business score is reflected on a scale from 0 to 100, where 0 represents the lowest and 100 represents the best performance.	WDI (2021)
Total natural resource rents % of GDP in 2019	Total natural resource rents (e.g., oil, gas, coal, mineral, forest) in GDP in 2019	WDI (2021)
Trade % of GDP in 2019	Total trade (import and exports) in GDP in 2019	WDI (2021)
Corruption index in 2019	Reverse of the control of corruption index. Higher scores refer to higher levels of perception of petty and grand corruption and capture of state by private elites and interests in 2019.	WGI (2021)
Democracy in 2019	Voice and accountability index. Higher scores refer to higher levels of political participation, freedom of media and association and government accountability to the people.	WGI (2021)
Muslim population	A dummy variable which is 1 if the share of Muslim population in the total population is more than 50% and 0 otherwise.	Alesina et al. (2013)

Table A2. List of 102 countries in the Model 6 of Table 2

Albania	Ireland	Senegal
Algeria	Israel	Sierra Leone
Argentina	Italy	Singapore
Australia	Jamaica	Slovak Republic
Austria	Japan	Slovenia
Azerbaijan	Jordan	South Africa
Bahrain	Kazakhstan	Spain
Bangladesh	Kenya	Sri Lanka
Belarus	Korea, Rep.	Sweden
Belgium	Kuwait	Switzerland
Bolivia	Latvia	Thailand
Botswana	Liberia	Togo
Brazil	Lithuania	Tunisia
Brunei Darussalam	Luxembourg	Turkey
Bulgaria	Madagascar	Uganda
Burkina Faso	Malaysia	Ukraine
Canada	Mali	United Arab Emirates
Chile	Malta	United Kingdom
Colombia	Mexico	United States
Costa Rica	Moldova	Uruguay
Cote d'Ivoire	Mongolia	Vietnam
Croatia	Morocco	Zambia
Cyprus	Myanmar	
Czech Republic	Namibia	
Denmark	Netherlands	
Dominican Republic	New Zealand	
El Salvador	Niger	
Estonia	Nigeria	
Ethiopia	Norway	
Finland	Oman	
France	Pakistan	
Gabon	Panama	
Germany	Paraguay	
Greece	Peru	
Guatemala	Philippines	
Hungary	Poland	
Iceland	Portugal	
India	Qatar	
Indonesia	Russian Federation	
Iraq	Saudi Arabia	

Table A3. List of 104 countries in the Model 6 of Table 3

Albania	Iceland	Portugal
Algeria	India	Russian Federation
Argentina	Indonesia	Senegal
Australia	Iraq	Sierra Leone
Austria	Ireland	Slovak Republic
Azerbaijan	Israel	Slovenia
Bahrain	Italy	South Africa
Bangladesh	Jamaica	Spain
Belarus	Japan	Sri Lanka
Belgium	Jordan	Sweden
Belize	Kazakhstan	Switzerland
Benin	Kenya	Tajikistan
Bolivia	Korea, Rep.	Thailand
Bosnia and Herzegovina	Kyrgyz Republic	Tunisia
Brazil	Latvia	Turkey
Bulgaria	Lesotho	Uganda
Burkina Faso	Liberia	Ukraine
Canada	Luxembourg	United Arab Emirates
Chad	Madagascar	United Kingdom
Chile	Malaysia	United States
Colombia	Mali	Uruguay
Costa Rica	Malta	Uzbekistan
Cote d'Ivoire	Mauritania	Vietnam
Croatia	Mauritius	Zambia
Cyprus	Mexico	
Czech Republic	Moldova	
Denmark	Morocco	
Dominica	Myanmar	
Dominican Republic	Namibia	
El Salvador	Netherlands	
Estonia	New Zealand	
Ethiopia	Niger	
Finland	Nigeria	
France	Norway	
Gabon	Pakistan	
Georgia	Panama	
Germany	Paraguay	
Greece	Peru	
Guatemala	Philippines	
Hungary	Poland	
