

# Geopolitical tensions and sovereign credit risks

## Abstract

This paper investigates the impact of country-specific geopolitical risks (CS\_GPR) on credit default swaps (CDS). Using a dataset from 39 countries globally from 2006 to 2022, we find that idiosyncratic geopolitical shocks heighten the sovereign risk of the home country, causing significant increases in CDS spreads. The impact of CS\_GPR on CDS becomes more pronounced during the periods of higher geopolitical tension, perceived sovereign credits risks, market volatility and poorer economic and market performance.

JEL Classification: E44; F51; G18; H63.

Keywords: Geopolitical risk; Credit default swaps; Sovereign credit risk; Market volatility.

## 1. Introduction

When Russia began its invasion of Ukraine in February 2022, Credit Default Swaps (CDS) spreads of both countries rose dramatically with the 5-year Russian CDS surging to 894bps on 24 February 2022 from 224bps on 31 January 2022 (SOLVE Platform, 2022). More recently, amid the ongoing armed conflict between Israel and Hamas, the 5-year Israel CDS has more than doubled since the start of the conflict (Bloomberg, 2023). These situations indicate that global investors demand a higher premium to insure against the risk of default when country-specific geopolitical risks increase, which translates into widening CDS spreads. In this paper, we examine the degree to which country-level geopolitical risks influence CDS spreads.

The impact of geopolitical risks (GPR) on financial markets has garnered significant attention from scholars, leading to numerous studies that explore the links between GPR and various asset classes including equities, commodities, and currencies (Baur and Smales, 2020; Salisu et al., 2022; Iyke et al., 2022). However, to date, very few studies have investigated the links between GPR and CDS spreads. For instance, Bratis et al. (2023) analyse the links between geopolitical risks, CDS and bond spreads in core and periphery European Monetary Union (EMU) countries, during and after the sovereign debt crisis. Their results reveal that sovereign bond yields and CDS were strongly linked to GPR during the crisis and GPR has a greater influence on CDS than on the bond market. In another study, Afonso et al. (2023) explore the effects of GPR and world uncertainty on the sovereign risk of European countries and show that geopolitical tensions in border countries lead to an increase in sovereign risk. This effect is more

evident in times of market turbulence, such as the subprime crisis. These two studies consider the influence of GPR on CDS however they solely focus on European countries. Therefore, a more global perspective on the association between GPR and sovereign CDS is needed that encompasses a diverse range of countries and thus we aim to fill this research gap in this paper.

Accordingly, we analyse the responses of CDS in 39 countries to CS\_GPR using country-specific GPR indices developed by Caldara and Iacoviello (2022). Using alternative econometric approaches, we find robust evidence that country-specific idiosyncratic geopolitical shocks raise the sovereign risk of the home country, which in turn drives up the cost of insuring against default, resulting in increased CDS spreads. Our findings further reveal that the impact of idiosyncratic CS\_GPR on CDS is greater, widening spreads significantly, when the country-level geopolitical tensions are high during the periods of higher perceived sovereign credits risks, and market volatility. This impact is also stronger for the times of lower market valuations and poor stock market performance. To the best of our knowledge, this is the first study that contributes to the academic literature by providing global evidence on the relationship between country-level geopolitical risk and sovereign credit risk. Our findings are not only relevant to scholars but also offer valuable insight for global investors, policy makers and government authorities highlighting the impact of CS\_GPR on sovereign CDS spreads.

The remainder of this paper is organized as follows. Section 2 presents the data and methodology. Section 3 discusses the empirical results and Section 4 concludes the paper.

## 2. Data and Methodology

Our dataset consists of monthly data of the CDS spreads (dependent variable) and country-specific GPR indices<sup>1</sup> (test variable) from Caldara and Iacoviello (2022) for 39 countries<sup>2</sup> worldwide between January 2008 and June 2022.<sup>3</sup> We also employ a set of global- and country-level control variables on monthly-basis during the same period. The list of research variables is available in Appendix 1.

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<sup>1</sup> For more information about the construction of the country-specific GPR indices, visit [https://www.matteoiacoviello.com/gpr\\_country.htm](https://www.matteoiacoviello.com/gpr_country.htm).

<sup>2</sup> These countries include Argentina, Australia, Belgium, Brazil, Canada, Chile, China, Colombia, Denmark, Finland, France, Germany, Hong Kong, India, Indonesia, Israel, Italy, Japan, Malaysia, Mexico, Netherlands, Norway, Peru, Philippines, Portugal, Russia, Saudi Arabia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, Ukraine, United Kingdom, United States and Venezuela.

<sup>3</sup> Refinitive Datastream serves as the source of the CDS data which are available from January 2008.

Specifically, we estimate the following empirical baseline model to investigate the impact of country-specific idiosyncratic GPR on CDS spreads.

$$\begin{aligned} \text{CDS}_{i,t} = & \alpha_0 + \beta_1 \text{CS\_GPR}_{i,t-1} + \beta_2 \text{Treasury\_level}_{t-1} + \beta_3 \text{VIX}_{t-1} + \beta_4 \text{SPX}_{t-1} + \\ & \beta_5 \text{TED\_spread}_{t-1} + \beta_6 \text{Unemployment\%change}_{i,t-1} + \\ & \beta_7 \text{Inflation\%change}_{i,t-1} + \beta_8 \text{MSCI}_{i,t-1} + \beta_9 \text{Rating}_{i,t-1} + \\ & \sum_{i=1}^N \gamma_i \text{Country\_FE} + \sum_{t=1}^T \delta_t \text{Month\_FE} + \sum_{k=1}^K \omega_k \text{Year\_FE} + \sigma_{i,t} \quad (1) \end{aligned}$$

where  $i, t$  and  $k$  denote country, month and year, respectively.  $\text{CDS}_{i,t}$  is the credit default swap spread of country  $i$  at month  $t$  and  $\text{CS\_GPR}_{i,t-1}$  is the country-specific geopolitical risk of country  $i$  at month  $t-1$  (previous month). The global-level control variables include Treasury\_level, VIX, SPX and TED\_spread and country-level control variables contains Unemployment%change, Inflation%change, MSCI and Rating. Considering the issue of endogeneity, we use one-month lagged values of CS\_GPR and other control measures. This ensures all independent variables are predetermined with respect to the CDS spreads, which provides a sufficient temporal period for CDS to adapt to the impact of country-level geopolitical risks and uncertainties. Finally, we add Country\_FE, Month\_FE and Year\_FE to control for the country, month and year fixed-effect, respectively. The descriptive statistics and correlation matrix of variables are provided in Appendix 2.

### 3. Empirical Results

Table 1 reports the results of our main analyses. First, we use the ordinary least squares (OLS) to examine the relationship between country-specific geopolitical risk (CS\_GPR) and CDS spreads. To ensure that our findings are not significantly diverged by the inclusion of different control variables, we regress CS\_GPR alone on CDS in Column (1), with global-level control variables in Column (2), and with both global- and country-level control variables in Column (3) that specifies our baseline model. The OLS estimations show that the coefficients of CS\_GPR are positive and statistically significant in all regressions. Particularly, our baseline model results reveal that one unit of increase in country-level GPR leads to 0.186 base-point increase in CDS spreads on average in a month. This evidence suggests that idiosyncratic geopolitical tensions increase the sovereign risk of the home country, which in turn drives up the cost of insuring against default, and thus translates into increased CDS spreads.

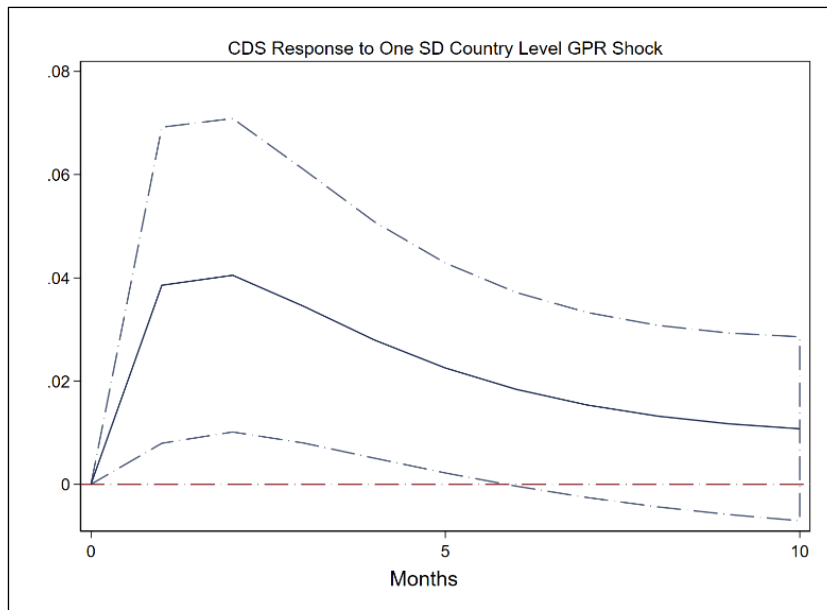
**Table 1.** The impact of country-specific GPR on CDS spreads

<i>Dependent variable: CDS<sub>it</sub></i>				
<i>Independent variables:</i>	OLS			Panel-VAR
	(1)	(2)	(3)	(4)
CS_GPR <sub>t-1</sub>	0.292*** (0.081)	0.303*** (0.078)	0.186*** (0.063)	0.415** (0.172)
Treasury_level <sub>t-1</sub>		0.010 (0.059)	0.070 (0.057)	-0.007 (0.033)
VIX <sub>t-1</sub>		0.216*** (0.044)	0.204*** (0.043)	0.068*** (0.008)
SPX <sub>t-1</sub>		-1.670*** (0.168)	-1.372*** (0.187)	-0.145*** (0.047)
TED_spread <sub>t-1</sub>		0.118*** (0.020)	0.094*** (0.020)	0.030*** (0.008)
Unemployment%change <sub>t-1</sub>			0.007 (0.009)	-0.003 (0.003)
Inflation%change <sub>t-1</sub>			0.007 (0.007)	-0.003 (0.002)
MSCI <sub>t-1</sub>			-0.541*** (0.038)	-0.206*** (0.051)
Rating <sub>t-1</sub>			-0.278*** (0.023)	-0.062*** (0.012)
Country_FE	Yes	Yes	Yes	No
Month_FE	Yes	Yes	Yes	No
Year_FE	Yes	Yes	Yes	No
No. of Observations	6,460	6,460	5,872	5,822
R-squared	0.879	0.893	0.897	

**Notes:** This table reports the coefficients and robust standard errors in parentheses. All continuous variables are winsorized at the 1st and 99th percentile to minimize the effects of the outliers. \*\*\*, \*\* and \* indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Second, to assess whether our main results are robust to the usage of different econometric techniques, we employ a more advanced approach - namely, panel vector autoregressive (Panel-VAR) model, to investigate the effect of country-specific GPR on CDS. This method allows treating all independent variables as endogenous and is powerful in exploring the linkages amongst variables. As illustrated in Column (4), the Panel-VAR results are consistent with the OLS findings. Moreover, Figure 1 shows the impulse response function (IRF) of CDS spreads to a one standard deviation shock in country-level GPR. The IRF demonstrates that the effect appears to peak in the short term and gradually diminishes over the subsequent months, yet remains above the baseline for the duration observed, which also confirms our previous findings.

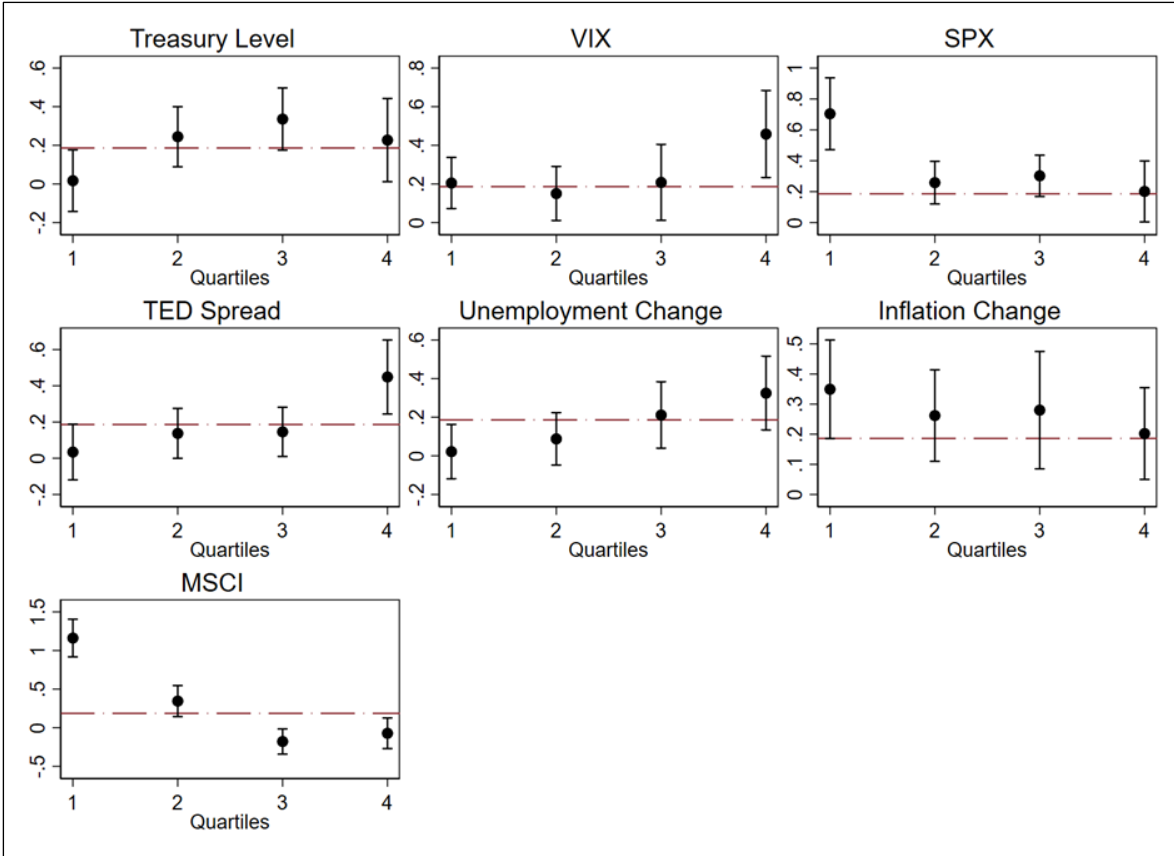
**Figure 1.** Impulse response function



**Notes:** The solid line depicts median impulse responses with 95% confidence bounds over monthly time horizon.

Finally, we perform further analysis to analyse the heterogeneity in the level of  $CS\_GPR$  and provide more insight into its effect on CDS spreads. Accordingly, we regress  $CS\_GPR$  interacting with different control variables quartiles from lowest (Q1) to highest (Q4) on CDS. The results of quartile regression (QR) are available in Appendix 3. Figure 2 displays the graphical illustrations of the results.

**Figure 2.** Quartile transition of country-specific GPR on CDS spreads via each control variable



**Notes:** This figure explores the impact of the CS\_GPR and its interactions with all continuous control variables. Each variable is categorized into four quartiles for nuanced analysis. The long dash-dotted line displays the coefficient of  $CS\_GPR_{t-1}$  in Column (3) from Table 1.

Figure 2 demonstrates that as we move from the lowest to the highest quartiles of Treasury\_level, VIX, TED\_spread, Unemployment% change, and Inflation% change, there is a marked increase in CDS spreads. This suggests that the impact of CS\_GPR on CDS intensifies, when idiosyncratic geopolitical tensions coincide with periods of elevated sovereign credit risks, increased market volatility, and diminished economic prosperity. However, for SPX and MSCI, the relationship is reversed; higher quartiles are associated with a reduced impact of geopolitical risk on CDS spreads, indicating a more pronounced effect during times of lower market valuations and weaker stock market performance. Consequently, the QR results provide support to what we have previously reported, thus indicating the robustness and consistency of our main findings.

#### 4. Conclusions

In this paper, we investigate the impact of CS\_GPR on sovereign credit risks globally. Based on a monthly dataset of CDS spreads from 39 countries over the period 2008-2022, we find that there is a positive relationship between a country’s geopolitical risks and credit default swap

spreads. This evidence shows that higher geopolitical risk of a country significantly increases its default risk. This is because when idiosyncratic geopolitical shocks increase, global investors perceive that country riskier and hence they would demand higher premiums to insure against the risk of default, which then leads to widening CDS spreads. We further detect that the effect of country-specific GPR on CDS spreads is more pronounced in a higher uncertainty and volatile environment. Our findings are robust to employing different econometric approaches, including the OLS, Panel-VAR and QR techniques.

Our study has important implications for investors, policy makers, government authorities and fellow researchers. As the study emphasizes the importance of country-specific GPR in affecting CDS spreads, global investors should carefully consider the geopolitical risk when setting their diversification strategies and constructing their global portfolios. Policy makers and government authorities are responsible for maintaining stability in government management and capital markets. Hence, they should expect an increase in CDS spreads when geopolitical shocks heighten, so to formulate their policies and decisions accordingly. Our study is the first contributing to the extant literature by providing global evidence on the relationship between country-level geopolitical risk and sovereign credit risk. Therefore, it can serve as a valuable benchmark for future studies in this area.

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