Geopolitical Risk and Emerging Market Sovereign Risk Premia

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Abstract

This study examines the determinants of sovereign risk, focusing on the impact of geopolitical risk in emerging market economies (EMEs) sovereign risk metrics. Using local projection techniques, we evaluate the effects of geopolitical risk on sovereign credit default swaps (SCDS) and emerging market bond indexes (EMBI) in EMEs, including the recent war between Ukraine and Russia. Our findings highlight the significance of considering geopolitical risk when analyzing risk premiums for emerging markets. Notably, we find that the impact of geopolitical risk shocks on SCDS is higher than the effect on EMBI spread dynamics. Furthermore, using recursive estimations, we show that the effect of geopolitical risk on SCDS and EMBI spreads has been relatively stable. On the other hand, we find an important degree of heterogeneity across countries by analyzing evidence from individual countries. Some countries in our sample seem statistically unaffected by geopolitical risk, particularly when examining EMBI dynamics.

Keywords: Sovereign risk, credit default swaps, emerging markets, geopolitical risk, local projections.

JEL Codes: C22, F37, G15, G17.

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1 Introduction

Sovereign credit default swaps (SCDS) and emerging markets bond indexes (EMBI) are widely used by policymakers and market participants as proxies for sovereign risk in EMEs. They reflect investors' assessment of a government's creditworthiness and the bond performance in emerging market economies, which are critical factors related to investors' expectations of sovereign default risk. Investors closely monitor the performance of CDS and EMBI spreads as investing in emerging markets can pose some risks as their currencies generally are more volatile, their economic conditions are usually different from developed economies, and their political structure can be unstable compared to advanced economies.

When there is high political and economic uncertainty in an economy, investors are willing to pay a higher premium to hedge their portfolio against a higher probability of sovereign default risk, driving the CDS and EMBI spread levels to a higher level. Therefore, identifying the main determinants of sovereign risk is crucial for policymakers and practitioners. In this paper, we attempt to identify the effects of geopolitical risk on sovereign risk since these shocks may negatively affect EMEs, increasing their risk of default.

The contribution of our study to the literature on EMEs sovereign risk is twofold. First, this paper contributes by analyzing the main determinants of CDS and EMBI in emerging market economies, focusing on the impact of geopolitical risk. Second, we assess the impact of geopolitical risk on sovereign credit risk in EMEs, considering the invasion of Russia into Ukraine. In this context, we employ local projections techniques for panel data to determine the primary effects of geopolitical risks on two measures of sovereign risk—CDS and EMBI—not typically analyzed jointly in the literature on EMEs' risk premiums. Furthermore, we demonstrate that the Geopolitical Risk (GPR) Index proposed by Caldara and Iacoviello (2022) can be employed to assess the impact of these types of shocks on CDS and EMBI spreads. We also argue that although the geopolitical risk may have an aggregated impact, there is an important level of heterogeneity across countries.

The article comprises five sections, including this introduction. Section two analyses the importance of geopolitical risk shocks on emerging market risk premia. In addition, we discuss the theoretical motivation and the possible channels through which sovereign risk could be affected by geopolitical risk shocks. Section three describes the data and stylized facts about the dynamics of CDS and EMBI in ten emerging market economies and their co-movement. Section four presents the econometric approach and the main results. The final section summarizes the main findings and discusses policy implications.

2 Assessing the importance of geopolitical risk and EMEs' risk premiums

Why is it important to study the impact of geopolitical shocks on EMEs' risk premiums? The recent literature on the impact of geopolitical risk has highlighted that this type of shocks may significantly affect asset prices. According to Klement (2021), geopolitical shocks affect the fair value of an asset by changing the risk premium related to sovereign risk. Pástor and Veronesi (2013) argue that investors may demand extra returns to hold riskier assets in a politically uncertain environment. In this case, geopolitical shocks may command a risk premium unrelated to economic shocks related to heightened uncertainty as economic sentiment falls and markets tend to pull back. Furthermore, in its Financial Stability Report, the IMF (2023) notes that geopolitical tensions could threaten financial markets and financial stability through a financial channel. In their analysis, the imposition of financial restrictions, increased uncertainty, and cross-border credit and investment outflows triggered by an escalation of tensions can raise banks' debt rollover risks and funding costs. This situation can also drive up interest rates on government bonds, reducing the value of banks' assets and adding to their funding costs. As a result, geopolitical shocks indirectly affect assets, as policy decisions might change future cash flows and inflation, which alters the risk-free rate. Consequently, geopolitical events may lead to higher CDS and EMBI spreads.

Although there is extensive literature on the impact of geopolitical risk on equity prices, fixed income, and commodities (Caldara and Iacoviello (2022), Umar et al. (2022), Iyke et al. (2022), Nonejad (2022), Gong and Xu (2022), Wang et al. (2022), Zaremba et al. (2022), Jung et al. (2021)), few studies have specifically analyzed the effect of geopolitical risk shocks on sovereign risk premiums (either CDS or EMBI spreads), which is the focus of this paper. For example, Klement (2021) suggest that, according to the evidence found by Caldara and Iacoviello (2022) regarding the effects of an increase in the GPR index on financial markets, geopolitical risk shocks tend to have long-lasting impacts on the risk premium when the shock persistently affects economic growth and other variables such as the inflation rate and the risk-free rate. Bratis et al. (2021) find evidence of volatility spillovers between a global geopolitical index and sovereign risk during the crisis period of 2009-2012 for core and periphery Economic and Monetary Union countries.

Simonyan and Bayraktar (2022) analyze the relationship between CDS and country-specific and global factors, including geopolitical risk. The authors find that equity indexes, international reserves, the VIX, and oil prices are the most critical determinants of CDS in eleven emerging economies. However, the impact of geopolitical risk is not significant in the estimations. Subramaniam (2022) finds that the impact of geopolitical uncertainty on sovereign bond spreads of BRICS economies depends on the interest rate regime. Decomposing the sovereign bond yields into long-term, medium-term, and short-term factors, the author evidences that geopolitical risk positively causes the yield curve factors in the extreme high-rate regimes, while the effects in extreme low-rate regimes are on the curvature and the slope of the yield curve. Naifar and Aljarba (2023) analyze the potential co-movement between sovereign credit risk and geopolitical risk in nineteen developed and developing economies. Using a quantile approach, the authors find that geopolitical risk has a heterogeneous, asymmetric, and mainly positive effect on CDS and that countries with more considerable sovereign wealth funds are less affected than others.

One important consideration regarding the dynamics of sovereign risk premiums is that CDS and EMBI spreads depend on the joint behavior of the discount factor used in valuation and the default probabilities (Chernov et al., 2020). Default probabilities reflect the endogenous responses of the economy to shocks and government debt. In cases where adverse shock realizations and increases in government debt occur, investors require compensation for potential default losses during such episodes. In this context, a crucial determinant of the value of expected payments is the hazard rate, which is the probability of default given that default has not already occurred. This hazard rate depends on variables determining the ability to pay (Gamboa and Romero, 2024). In the case of emerging markets, the variables that are related to default probabilities correspond to debt levels and commodity prices, regional financial conditions, and factors related to the global financial cycle, which directly affect their economic performance, creditworthiness, and the discount factor used in the valuation, and these variables can be affected by geopolitical developments.

The selection of controls included in the estimated models is similar to the specifications proposed by Gamboa and Romero (2024) and Vargas-Herrera et al. (2022). Nonetheless, given the complex nature of geopolitical shocks, several channels may affect the determinants of sovereign credit risk, and ex-ante, it will not be clear how these shocks might impact a specific country's sovereign risk. For example, particular geopolitical shocks could increase oil prices, potentially benefiting the risk profile of an oil-exporting emerging market economy. Conversely, some geopolitical shocks may reduce international investors' appetite for emerging market risk, translating into more stringent external financial conditions and higher CDS and EMBI spreads for an emerging economy. As we will show in Section 4, we aim to isolate exogenous geopolitical risk to examine how, in general, it affects the dynamics of both CDS and EMBI spreads.

3 Data and some stylized facts

3.1 Geopolitical Risk (GPR) Index

Although there is no simple way to measure geopolitical uncertainty, the GRP index developed by Caldara and Iacoviello (2022) has become a widely used and recognized indicator for assessing this risk. According to the authors, geopolitical risk is associated with the "threat, realization, and escalation of adverse events associated with wars, terrorism, and any tensions among states and political actors that affect the peaceful course of international relations."

In this context, this index quantifies the level of geopolitical risk by measuring the frequency of relevant terms appearing in leading international newspapers[1]. In this context, the GPR index incorporates a wide range of geopolitical events, such as military tensions, terror attacks, and political confrontations, to reflect the overall geopolitical uncertainty and signals the episodes of increased geopolitical tensions, as shown in Figure 1. For our econometric exercises, we normalize the GPR index to obtain a shock series with zero mean and variance equal to one.

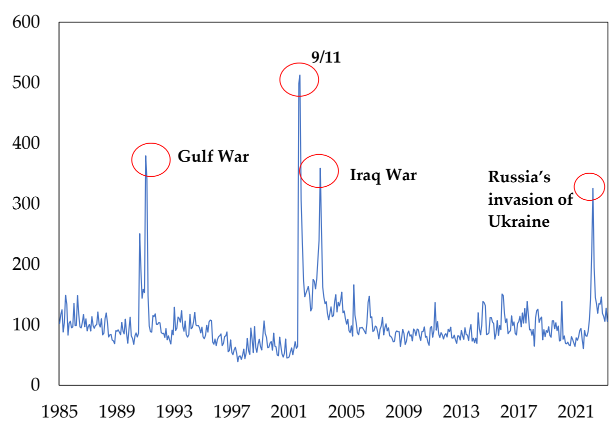


Figure 1: GPR index and main geopolitical risk events from January 1985 to January 2023.

Source: Data obtained from Caldara and Iacoviello (2022).

[1]The GPR index reflects automated text-search results of the electronic archives of 10 newspapers: Chicago Tribune, the Daily Telegraph, Financial Times, The Globe and Mail, The Guardian, the Los Angeles Times, The New York Times, USA Today, The Wall Street Journal, and The Washington Post. The index is computed by counting the number of articles related to adverse geopolitical events in each newspaper for each month (as a share of the total number of news articles).

3.2 Emerging market risk premium fundamentals

In our empirical analysis, we examine the sovereign risk premium, specifically 5-year CDS and EMBI spreads, for a group of 10 emerging market economies, including Brazil, Chile, China, Colombia, Malaysia, Indonesia, Mexico, Peru, South Africa, and Turkey, from March 2005 to June 2022. We also extend our analysis to Russia up to March 2022 due to data availability restrictions resulting from the invasion of Ukraine. These sovereign risk premium measures (CDS and EMBI spreads), expressed in basis points, reflect the perceived default risk of a particular economy. Consequently, an increase corresponds to a rise in risk, while a reduction represents a decrease in default probabilities.

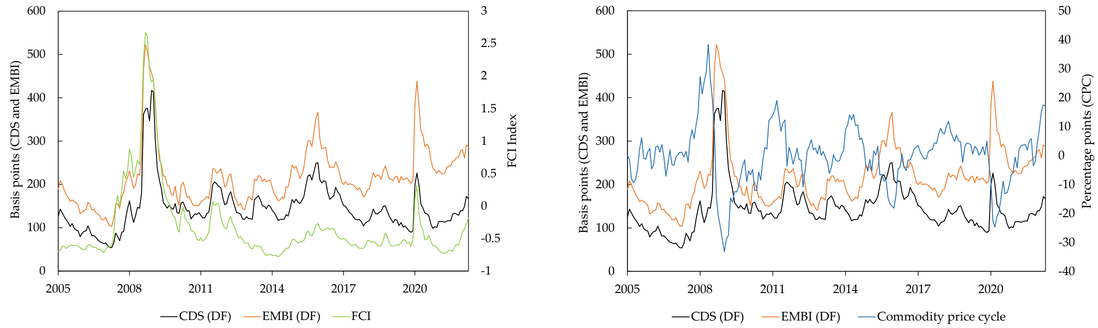
Regarding the drivers of emerging markets risk premiums, we use the cycle of each country's commodity terms of trade[2]; as a measure of debt levels, we use the gross debt position of each country computed by the IMF[3]. To account for a proxy of the global financial cycle, we use the U.S. Financial Conditions Index[4]. Finally, as a measure of EMEs' financial conditions, or the appetite of international investors for EMEs' foreign-denominated debt, we construct an indicator based on the dynamic factor of emerging market CDS and EMBI spreads following the approach of Vargas-Herrera et al. (2022) and Gamboa and Romero (2024). This indicator is constructed using a dynamic factor model for the risk premium measures employed for country i using $n - i$ series.

Figure 2 illustrates the evolution of emerging market financial conditions computed using CDS and EMBI spreads. As depicted in Panel (a), tighter (higher) levels of financial conditions coincide with episodes of elevated EMEs' risk premiums. In Panel (b), it is demonstrated that episodes of low commodity prices are associated with an increase in the typical components of emerging markets risk premiums. In Appendix A.1, we present the main descriptive statistics and unit root tests of the variables used in our study.

[2]Commodity terms of trade, as computed by the IMF, is a measure that captures the relative price movements of a country's commodity exports and commodity imports. It is an essential indicator for understanding a country's economic performance, particularly in commodity-dependent economies. We estimated various filters for robustness to obtain the cyclical component of the commodity terms of trade. In the graphs and estimation, we used the Hodrick and Prescott filter. For robustness and the aggregated estimations, we also used the Bloomberg commodity price index.

[3]See Appendix A.1.

[4]The Financial Conditions Index, computed by the Federal Reserve Bank of Chicago, is a comprehensive measure that captures the overall risk, liquidity, and leverage conditions in the U.S. financial system. The NFCI is constructed by aggregating more than 100 individual indicators of financial conditions, covering various aspects of the financial sector, such as credit markets, leverage, funding, and asset prices. Increases in this index represent that financial conditions are stringent. For robustness, we also replace it with VIX, although the VIX is one of the indicators included in the NFCI.



(a) (b)

Figure 2: Dynamic Factor of emerging market CDS and EMBI spreads. Panel (a) compares this common factor with the financial conditions index and Panel (b) compares it with the commodity price cycle.

Source: Bloomberg, Federal Reserve Bank of Chicago and Authors' calculations

4 Econometric Approach

4.1 Impact of geopolitical shocks on EMEs risk premiums: a panel approach

We use local projections to assess the effects of GPR shocks on EMEs' risk premiums (CDS and EMBI spreads). This method, introduced by Jordà (2005), is a flexible approach to estimating impulse response functions in linear models. Unlike traditional VAR techniques, local projections directly estimate variables' dynamic responses to shocks without relying on a specific structural form of the data-generating process (Jordà, 2005). The method involves running a series of simple regressions at different horizons, where the impulse responses can be calculated by a sequence of projections of the endogenous variables shifted forward in time onto their lags. In our case, the key independent variable of interest is the GPR index, used as a proxy for geopolitical risk shocks.

Following Inoue et al. (2022), if we let Y_t be a vector of macroeconomic variables that are affected by structural shocks ϵ_t, the structural moving average representation can be written as:

$$Y_t = \Theta(L)\epsilon_t \tag{1}$$

where L denotes the lag operator, $\Theta(L) = \Theta_0 + \Theta_1 L + \Theta_2 L^2 + \ldots$, and Θ_h is a

($K \times K$) matrix of coefficients. As shown in Plagborg-Møller and Wolf (2021) and Inoue et al. (2022), the coefficients $\Theta(L)$ are the structural impulse response or, analogously, the dynamic causal effects of the structural shocks. In our specific case, the impulse response coefficient in equation 1 can be calculated via direct linear regression of future outcomes on current covariates for each horizon by calculating the following local projection regression:

$$Y_{RP,i,t+h} = \Theta_{h,RP} GPR_{i,t} + \gamma_h' W_{i,t} + e^h_{RP,i,t+h} \tag{2}$$

Where $Y_{RP,i,t+h}$ corresponds to the risk premia measures, namely the EMBI or the CDS spreads for country i, and for the local projection periods $t+h$, W_{it} denotes the control variables (including country fixed effects) and $e^h_{RP,i,t+h}$ are the residuals. As we mentioned, the controls used in our regressions correspond to country-specific gross government debt levels and commodity terms of trade cycles. We also include controls variables related to the Global Financial Cycle using the US financial conditions index as a proxy (and the VIX for robustness tests) and an emerging market sovereign risk premia measure computed as in Gamboa and Romero (2024) and Vargas-Herrera et al. (2022). Since these reduced-form residuals are linear combinations of other structural shocks, they are serially correlated. Thus, HAC estimators for the variance have to be used to account for serial correlation. In these regressions, the sequence of estimated coefficients $\Theta_{h,RP}$ represent the local projection impulse responses. In addition, we estimate equation 2 recursively to assess how stable has been the results. The estimations are from January 2005 up to July 2023, except for the exercises that include Russia and Ukraine, which run up to March 2022 when data is available.

In the following subsections, we perform different exercises to assess the impact of geopolitical risk on CDS and EMBI spreads.

4.2 Results

4.2.1 Impact of geopolitical risk on risk premium: Panel Results

To assess the impact of GPR shocks on the common factor of risk premiums, we estimate equation 2 for a panel of EMEs. In our estimations, we used two measures of country risk premium: the 5-year CDS and the EMBI spread, as we mentioned before.

Figure 3 shows how CDS spreads change in response to a one-standard-deviation shock in the GPR Index, which represents an increase in sovereign risk perception following geopolitical unrest. The analysis was done using local projection methods. The plot in the figure shows the impulse response of CDS spreads over ten months following the shock, with 68% confidence bands to show the statistical uncertainty around the estimates.

The analysis reveals that the impact of the GPR shock on CDS spreads reaches its highest point approximately three months after the shock, with an increase of around ten basis points. After that, the effect gradually declines but stays around eight basis points and slowly decreases until the seventh month. From month eight to ten, the impact of the GPR shock on CDS spreads starts to decrease significantly, eventually disappearing. This result suggests that the market's response to geopolitical uncertainty is temporary but can influence risk perceptions for a while before they return to normal.

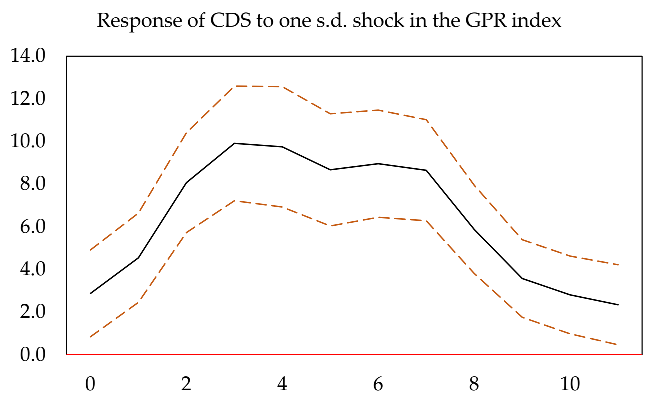


Figure 3: Response of CDS for a panel of emerging market countries to a one-standard deviation shock in the GPR index. The dotted line represents the 68% confidence bands.

Source: Authors' computations.

Analogously, Figure 4 depicts the response of EMBI spreads when there is a shock of one standard deviation in the GPR Index. The analysis indicates that the highest impact of GPR shocks on EMBI spreads is seen three months after the geopolitical shock, where spreads increase by approximately six basis points. This peak indicates a significant but moderate adjustment in risk premiums compared to the more sensitive CDS spreads. After the peak, the EMBI spreads remain high, fluctuating between 4 and 2 basis points up to the eighth month. Then, the effect becomes negative, but this change is statistically insignificant, suggesting that the initial shock's influence diminishes and does not lead to a substantial long-term shift in market perceptions as captured by CDS spreads. This pattern highlights geopolitical shocks' temporary impact on emerging market debt instruments, although its impact seems smaller than on CDS.

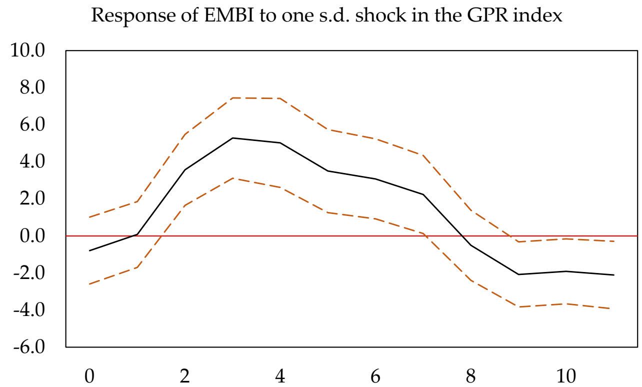


Figure 4: Response of EMBI spreads for a panel of emerging market countries to a one-standard deviation shock in the GPR index. The dotted line represents the 68% confidence bands.

Source: Authors' computations.

4.2.2 Including Russia and Ukraine to EMBI local projections

When incorporating Russia and Ukraine EMBI with data from January 2005 to March 2022, the initial impact of a geopolitical shock appears to be more pronounced (Figure 5), suggesting a higher sensitivity of Russian sovereign bonds to geopolitical unrest than other emerging markets. However, the persistence of this effect is notably lower. This diminished persistence indicates that while the immediate reaction regarding risk perception is stronger in Russia and Ukraine, it tends to stabilize more quickly than in other emerging markets. This observation highlights these countries' unique financial dynamics within the broader context of emerging market responses to geopolitical risks.

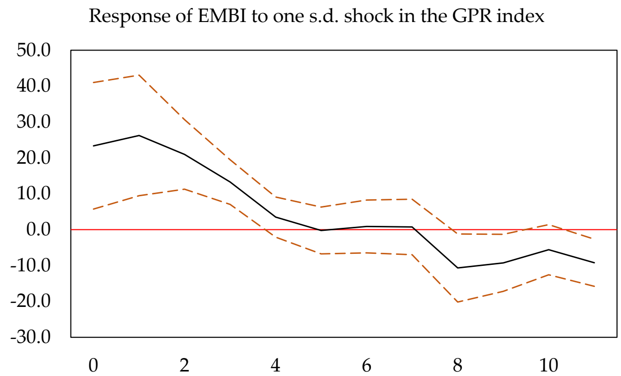


Figure 5: Response of EMBI spreads for a panel of emerging market countries, including Russia and Ukraine, to a one-standard deviation shock in the GPR index. The dotted line represents the 68% confidence bands.

Source: Authors' computations.

4.2.3 Recursive estimations in a panel setting

We extended our analysis beyond the initial local projections and investigated the impact of GPR shocks on emerging market risk premiums in a panel context. To explore the stability of these impacts across different periods, we used a recursive estimation approach. This enabled us to determine whether significant changes have occurred in how EMEs respond to geopolitical uncertainties. By doing so, we were able to better understand the temporal variability and potential evolution in the relationship between geopolitical shocks and EME risk premiums. This result provides deeper insights into the resilience and vulnerability of emerging markets to global geopolitical dynamics. Our results showed that the impact of GPR is stable in both CDS and EMBI spreads (Figures 6 and 7).

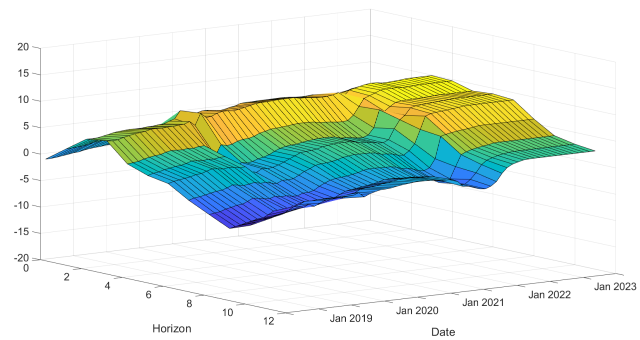


Figure 6: Response of CDS for a panel of emerging market countries to a one standard deviation shock in the GPR index using recursive estimations.

Source: Authors' computations.

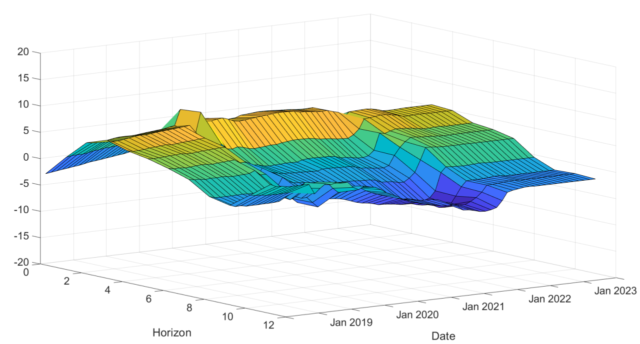


Figure 7: Response of EMBI spreads for a panel of emerging market countries to a one standard deviation shock in the GPR index using recursive estimations.

Source: Authors' computations.

4.2.4 Some country results

Graph 8 illustrates the response of CDS spreads in $t + 3$ for a sample of emerging markets to a one standard deviation shock in the geopolitical risk index. This graph employs rolling estimates to capture the temporal dynamics of this response. Notably, the impact on CDS spreads in Brazil, Colombia, South Africa, and Turkey is significant, indicating a heightened sensitivity of these countries' credit risk to geopolitical uncertainties. For these nations, the geopolitical risk shock translates into a marked increase in CDS spreads, suggesting that investors perceive a greater risk of default in the face of heightened geopolitical tensions. Conversely, for the remaining countries in the sample, the impact of geopolitical risk shocks on CDS spreads appears to be small and statistically insignificant, reflecting a lower sensitivity or a more resilient perception of creditworthiness amidst geopolitical fluctuations.

On the other hand graph 9 depicts the response of EMBI spreads in $t + 3$ to the same 1 SD shock in the geopolitical risk index. Here, the impact on EMBI spreads is generally more negligible than the CDS spreads, indicating a relatively muted reaction of bond spreads to geopolitical risk. Notably, the results for South Africa and Turkey, which showed significant impacts in the CDS analysis, are no longer significant in the context of EMBI spreads. This disparity underscores the varied response mechanisms between different financial instruments to geopolitical risks. The findings highlight the significant heterogeneity in how geopolitical risk influences financial markets, with certain countries and financial metrics showing pronounced vulnerabilities while others remain relatively unaffected. This result suggests that investors' risk perceptions and responses to geopolitical shocks can vary widely depending on the specific economic and financial contexts of the countries involved.

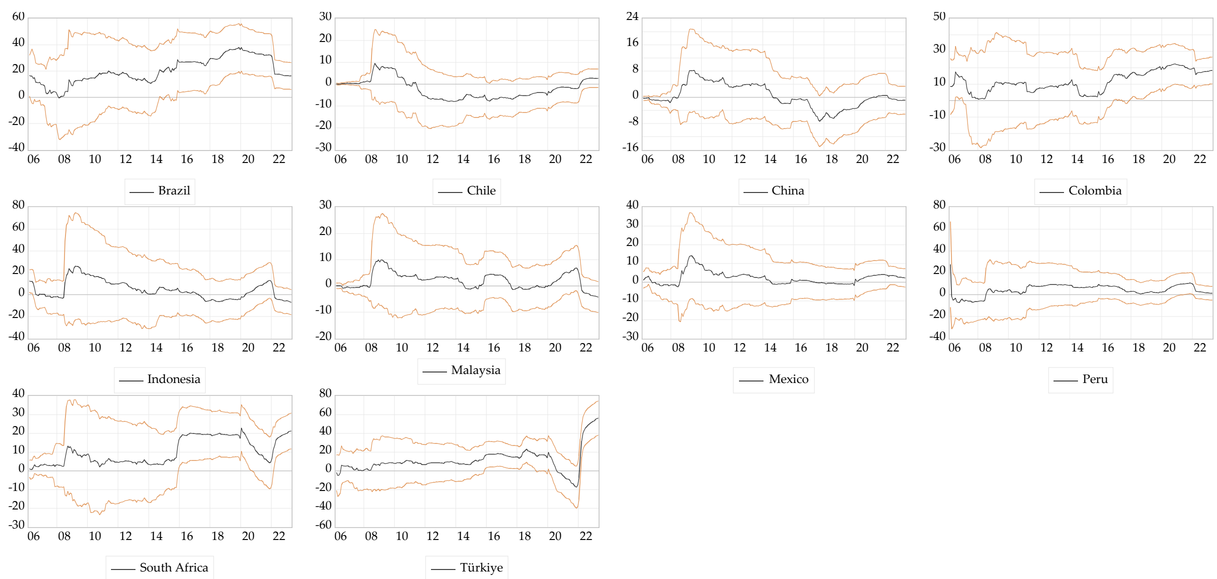


Figure 8: Response of CDS in $t + 3$ in a sample of emerging markets to a 1 SD shock in the geopolitical risk index. The dotted lines represent 2 S.D. confidence intervals.

Source: Authors' computations.

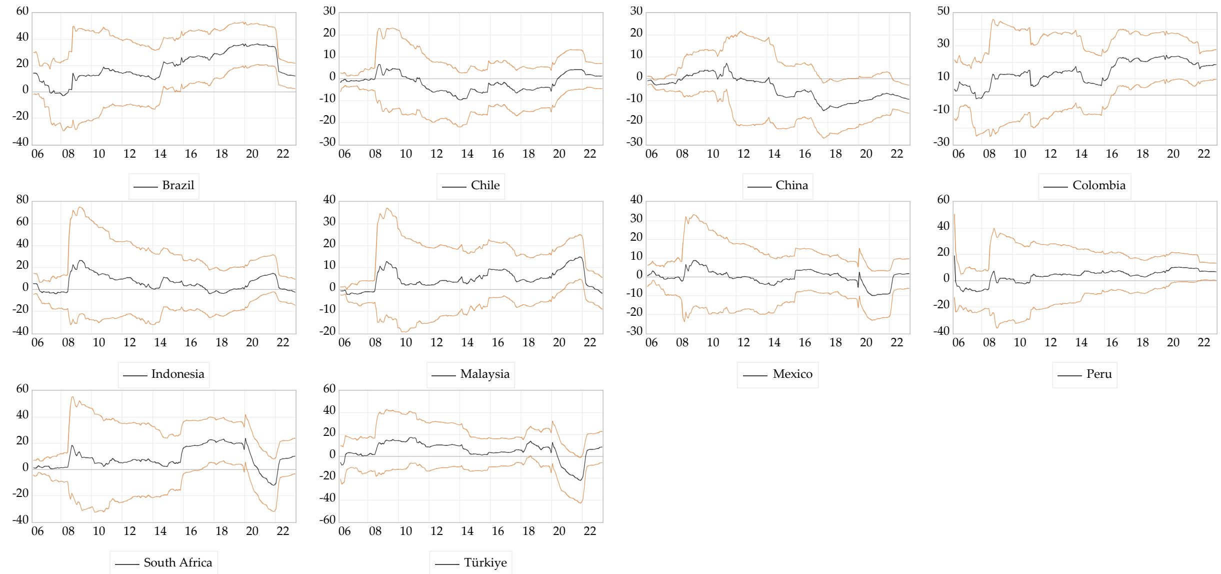


Figure 9: Response of EMBI spreads in $t + 3$ in a sample of emerging markets to a 1 SD shock in the geopolitical risk index. The dotted lines represent 2 S.D. confidence intervals.

Source: Authors' computations.

5 Conclusion

This study investigates how geopolitical risk affects sovereign risk metrics, specifically CDS and EMBI spreads in a sample of EMEs. Our research, which utilized local projection techniques and recursive estimations, confirms that geopolitical risks play an important role in these metrics that reflect the perceived risk of sovereign default.

Geopolitical events demonstrate the vulnerability of EMEs to external shocks. Due to contagion effects and heightened uncertainty, such events increase the borrowing cost for affected countries and raise the risk premiums across corresponding markets. Based on our recursive estimations, our analysis reveals that these impacts have a relatively stable effect on sovereign risk assessments in a sample of emerging market economies. Nonetheless, we find an important degree of heterogeneity across countries by examining evidence from individual countries, and some countries in our sample seem to be statistically unaffected by geopolitical risk, particularly when examining EMBI dynamics. Furthermore, our research contributes to understanding how CDS and EMBI spread react to geopolitical uncertainties.

Our study highlights the importance of continuously monitoring geopolitical developments and incorporating associated risks into the economic planning and risk management frameworks of EMEs.

Future research should explore these relationships more deeply to understand the causal mechanisms between geopolitical events and sovereign risk premiums. This could involve analyzing more granular data and a bigger sample to capture the risk premia dynamics more broadly.

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A Appendix

A.1 Descriptive statistics and unit root tests

Panel unit root test: Summary
Series: CDS
Sample: 2005M01-2023M07
Exogenous variables: Individual effects
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	−1.66095	0.0484	10	2180
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	−7.75119	0.0000	10	2180
ADF - Fisher Chi-square	106.391	0.0000	10	2180
PP - Fisher Chi-square	81.7841	0.0000	10	2220

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: EMBI
Sample: 2005M01-2023M07
Exogenous variables: Individual effects
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	−0.79457	0.2134	10	2180
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	−6.42384	0.0000	10	2180
ADF - Fisher Chi-square	85.2974	0.0000	10	2180
PP - Fisher Chi-square	71.2166	0.0000	10	2220

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

	CDS_BRAZIL	CDS_CHILE	CDS_CHINA	CDS_COLOMBIA	CDS_INDONESIA	CDS_MALAYSIA	CDS_MEXICO	CDS_PERU	CDS_SOUTHAFRICA	CDS_TURKEY
Mean	197.54	75.04	70.54	163.77	173.47	88.04	121.94	125.45	186.17	289.37
Median	174.52	73.03	68.63	136.53	151.89	83.88	112.90	115.83	187.49	248.59
Maximum	488.14	259.14	230.22	439.15	746.90	284.12	421.39	409.13	455.70	857.07
Minimum	66.55	12.98	10.62	73.93	63.30	13.61	30.70	43.12	26.36	119.16
Std. Dev.	86.24	41.75	38.77	74.24	104.89	50.38	56.80	58.89	85.73	144.57
Skewness	1.06	1.39	1.03	1.43	3.20	1.18	2.35	2.17	0.39	1.42
Kurtosis	3.78	6.80	4.93	4.66	16.16	5.15	11.44	9.70	3.63	4.70
Jarque-Bera	47.62	206.29	74.29	101.81	1989.30	94.96	868.25	591.14	9.42	101.37
Probability	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Observations	223	223	223	223	223	223	223	223	223	223

Table 1: Descriptive statistics of CDS spreads for various countries

	EMBI_BRAZIL	EMBI_CHILE	EMBI_CHINA	EMBI_COLOMBIA	EMBI_INDONESIA	EMBI_MALAYSIA	EMBI_MEXICO	EMBI_PERU	EMBI_RUSSIA	EMBI_SOUTHAFRICA	EMBI_TURKEY	EMBI_UKRAINE
Mean	268.64	148.27	149.51	222.96	254.47	146.71	245.76	184.23	256.16	254.67	328.67	768.34
Median	244.27	139.39	157.73	197.14	226.62	132.33	223.23	170.26	211.00	251.14	294.41	601.32
Maximum	558.76	382.00	286.68	549.60	885.70	428.50	673.59	522.91	4325.22	681.68	735.36	3863.00
Minimum	143.22	54.91	37.86	108.38	143.95	67.78	97.43	103.95	95.30	57.61	162.74	140.29
Std. Dev.	83.85	55.68	56.75	81.25	117.46	61.35	99.22	64.61	308.73	120.20	122.34	677.18
Skewness	1.09	1.58	-0.19	1.70	3.45	1.74	1.24	2.69	11.25	0.84	1.03	2.63
Kurtosis	3.85	7.06	2.53	6.33	16.83	6.90	4.85	12.69	147.39	4.18	3.23	10.24
Jarque-Bera	47.21	228.51	3.16	195.94	2060.54	235.26	82.12	1060.80	184184.5	36.63	37.36	690.43
Probability	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	207	207	207	207	207	207	207	207	207	207	207	207

Table 2: Descriptive statistics of CDS and EMBI spreads for various countries