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The Impact of Geopolitical Risk on Financial Conditions of Emerging Economies

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Abstract

The detrimental impacts of financial instability on the world economy during the financial crisis highlighted the requirement to understand the existing financial circumstances. Stability and developments in financial conditions are important for economic prosperity. This study analyses the impact of geopolitical risk on the economic conditions of some specific emerging economies using monthly data from January 1999 to September 2016 by applying a fixed-effects panel data model. The estimation results demonstrated that geopolitical risk has a significant, negative impact on financial conditions. It shows geopolitical risk could be seen as a key factor that contributes towards financial conditions. Further, it implies that negative shocks of high geopolitical risk experienced by emerging economies are one of the primary reasons for the financial conditions' deterioration. The findings provide important insights for governments, policymakers, and investors. For instance, governments and politicians should refrain from expressing or producing tension, economic discomfort, or news that is likely to increase a high geopolitical risk. Maintaining a close eye on geopolitical risk and its sources may also help to stabilize financial conditions and develop a well-functioning financial system. As a result, investors would be better informed about an economy's economic and financial conditions, allowing them to diversify their international portfolios and devise investing strategies during uncertain economic times.

Keywords: Geopolitical Risk, Financial Conditions, Emerging Economies

JEL Classification Code: D80, D81, E02, H56

1. Introduction

It is widely accepted today that geopolitical risk has a negative effect on economic growth (Soybilgen et al., 2019; Akadiri et al., 2020; Soltani et al., 2021). The equity and bond markets, including green bonds markets, are highly volatile and exposed to climate and geopolitical risks (Antonakakis et al., 2017; Cheng & Chiu, 2018; Das et al., 2019; Lee & Chen, 2020; Lee & Lee, 2020; Lee et al., 2021a, 2021b; Lee & Wang, 2021; Sohag et al., 2022). However, there are compelling theoretical and empirical considerations to support the idea that the economy is also negatively impacted by deteriorating financial conditions (Gilchrist & Zakrajšek, 2012). More recently, empirical evidence has grown suggesting financial shocks have a greater impact on the economy's downside risks than its potential upside (Adrian et al., 2019, Chavleishvili & Manganelli, 2019; Carriero et al., 2020). Stability and improvements in financial conditions are important for economic growth (Adrian et al., 2018). Despite this fact, the impact of geopolitical risk on financial conditions has not been fully examined.

The financial conditions are referred to as a high level of co-movement in the values of risky assets, credit expansion, leverage, and financial aggregates (Rey, 2016), which encapsulates a wide range of financial variables (Mbelu & Soobyah, 2019). In turn, they are delineated as a leading

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indicator of business operations since they shape the direction of the economy (Juhro & Iyke, 2019). To decide any policy stance, it is required to account for financial conditions in all markets (Giri & Bansod, 2019). More importantly, ignoring the contribution of financial conditions typically understates the conditional downside risks to economic growth in crises (Coe & Vahey, 2020).

The severity and economic consequences of the financial crisis have led to the rise of financial conditions indices (FCIs), which are collective measures of financial conditions that act as proxies for the current state of financial affairs (Aramonte et al., 2018). Financial condition indices are, by definition, financial conditions that are mapped onto real-world economic situations and measure the current state of financial variables (Hatzius et al., 2010). FCIs can be thought of as a barometer of financial health and may reflect the ease of obtaining finance (Reinbold & Restrepo-Echavarria, 2017; Arregui et al., 2018). Further, Rey (2015) and Miranda-Agrippino and Rey (2020) described financial conditions as highlighting fluctuations in financial operations. FCIs, according to the consensus (Hatzius et al., 2010; Gilchrist & Zakrajšek, 2012; Koop & Korobilis, 2014), are a better predictor of future economic activity. As a result, they largely link up for monetary policy's impact on the real economy. Moreover, FCI measures may be useful in anticipating future economic activity. It is extensively discussed in the literature whether these indices should be treated as current financial indicators or as predictive tools for financial and economic operations that might be used as early-warning indicators (Giri & Bansod, 2019). Financial condition indices may be utilized as a warning indication of a probable financial spillover into the real economy when financial markets are stressed and vulnerable to periods of volatility (Mbelu & Soobyah, 2019).

In 2008, emerging economies experienced financial crises, and the subsequent credit crunch revealed the impact of financial conditions on global real economic growth. Geopolitical risk and policy uncertainty shocks have recently emerged at the forefront of policy and academic debates on financial volatility (Baker et al., 2016; Caldara & Iacoviello, 2018). Pressures, conflicts, ethnic violence, and unlawful activities against politics and civilians are all linked to geopolitical threats (Balli et al., 2019). Geopolitical tensions between countries, i.e., the US with Turkey, Russia, and China, Saudi-Iran, Russia-Ukraine, Syrian, Yemen crises, and North Korea, also the European fragmentation battle, have raised worries and awareness about the economic consequences of geopolitical risk (Shahbaz et al., 2018). As a result, geopolitical risk currently ranks top five of the world's business threats (PriceWaterhouse Coopers, 2018).

The global financial crisis highlighted the importance of keeping a close eye on both financial and macroeconomic stability. Several empirical researchers have discovered geopolitical risk as exogenous shocks influence financial markets and various economic indicators through diverse mechanisms. Lanouar and Goaied (2019) found political upheavals, terrorism, and natural disasters, for example, all have an impact on global tourism. Das et al. (2019) argued that economic market responsiveness to shocks or volatility is strongly influenced by geopolitical risk. Balcilar et al. (2018) evidenced the role of geopolitical risk as a generator of irrational volatility in financial markets. The returns and volatility of the oil market are significantly impacted by global geopolitical events (Antonakakis et al., 2017), and have a negative impact on stock market performance (Hoque & Zaidi, 2020). Moreover, geopolitical risk is a key factor influencing trade cycles, economic directions, and stock markets (Balcilar et al., 2018). In the wake of high geopolitical threats, only gold and silver show consistent haven attributes (Al Mamun et al., 2020; Baur & Smales, 2020). Furthermore, realized oil volatility (Kesicki, 2010; Mei et al., 2020), oil prices, and financial liquidity (Abdel-Latif & El-Gamal, 2019; Su et al., 2019) are also interrelated evidence during periods of heightened geopolitical risk.

The above-mentioned studies empirically agree that geopolitical issues have a detrimental impact on a wide range of economic indicators and financial markets. Similarly, terror theory suggests poor economic consequences in the wake of war and terrorism. Eckstein and Tsiddon (2004) theoretically support the changes in the economy's trend and the business cycle arising due to war and terrorism. Specifically, terrorism-prone nations lose the trust of domestic and international investors, resulting in a decrease in both domestic and foreign investment. Additionally, war-like occurrences result in a shift in people and financial resources, which has an unfavorable influence on economic growth (Zakaria et al., 2019), and has clear implications for the terror endangers life theory (Eckstein & Tsiddon, 2004). Formerly, Caldara and Iacoviello (2018) stated that one of the significant factors influencing investment choices and having an impact on financial markets and business cycles is geopolitical risk. Thus, we can reasonably expect the effects of the geopolitical risk index, composed of political pressures and cross-border conflicts, war and terrorism, natural disasters, and ethnic violence, on financial conditions.

Based on the aforementioned rationale, the current study aims to investigate how geopolitical risk affects financial conditions in a panel of nine emerging nations (Brazil, Colombia, Mexico, Russia, Turkey, China, India, South Korea, and Malaysia) over a period of 17 years, from January 1999 to September 2016. Although data on geopolitical risk is available for eighteen nations, only nine of the eighteen nation's financial conditions index data are available, leading to the selection of the nine emerging nations. While the goal of determining the impact of geopolitical risk on financial

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conditions is empirically studied, the study's novelty is increasing significantly. This study is important in that it is considered the first to examine the association between the financial conditions index and geopolitical risk. As was already indicated, numerous other studies have looked at each of the variables in combination with other variables, but to the best of the authors' knowledge, no existing research has investigated the current dimension. Additionally, the current study makes use of the strengths of the financial conditions index developed by Koop and Korobilis (2014) and the geopolitical risk index developed by Iacoviello (2018).

The unfavorable events, such as sudden upheaval in asset markets and geopolitical turmoil, could reflect investor behaviour. It is important to examine and monitor the impact of geopolitical shocks on financial conditions to keep the financial system stable and avoid financial prospects of risk. The findings are critical for governments, policymakers, and investors. The policymakers, for example, should design such policies that avoid conflicts, discomfort, or information that could exacerbate a high geopolitical risk. Furthermore, effective policies should aim to lessen the sources of instability in financial markets or implement geopolitical risk-mitigation policies. As a result, financial conditions can become more consistent. As a necessary consequence, investors would be better informed about an economy's economic and financial conditions, allowing them to diversify their international portfolios and devise investing strategies during uncertain economic times.

The rest of the paper is structured as follows. First, the review of literature; subsequently, the data and models explicate the examination of our study, the discussion will follow the empirical analysis and the paper ends with a conclusion drawn.

2. Literature Review

During economic crises, the adverse effects of financial instability influenced the global economy, necessitating an informed assessment of financial conditions. Specifically, around the time of the 1893 crisis, financial conditions, according to Coe and Vahey (2020), radically altered assessments of downside risks to economic growth. The size and complexity of the financial market are serious concerns. Financial crises, such as the Great Recession, can become systemic, affecting the whole financial market. Not all crises, however, become systemic. Some financial crises, such as Argentina's and Turkey's currency crises, do not inevitably spread to other financial sectors. A crisis in the foreign exchange market, for example, may not always spread to the credit market (Mbelu & Soobyah, 2019). Even in countries with flexible exchange rates and huge financial markets, monetary policy shocks in the United States, according to Rey (2016), spill over and damage domestic

financial conditions in a world of free-flowing money. Also, Aziz et al. (2020) examined spillover effects on stock returns in the wake of global policy uncertainty.

Even when global financial shocks have a significant impact, Arregui et al. (2018) suggest that countries may affect their own financial conditions on average. For instance, positive shocks in exchange rate decrease foreign direct investment; similarly, negative shocks increase the inflows of foreign direct investment. Thus, fluctuations in exchange rates effects financial conditions especially in emerging economies (Qamruzzaman et al., 2019). In addition to current market conditions, future market moves in response to shocks are seriously affected by the volatility of stock returns (Nguyen & Nguyen, 2019). In particular, countries have a lot of leeways when it comes to monetary policy. Local financial conditions, on the other hand, react to global financial shocks more quickly than changes in local policy rates, making timely policy responses more difficult. Furthermore, the general equilibrium model of Pástor and Veronesi (2013) emphasized the link between political risk and stock markets. Markets become more sensitive and volatile as a result of political news, particularly when the economy is undergoing difficult financial conditions.

The financial conditions of the economy are a leading indicator of business activity, and it encourages individuals to make better financial decisions (Juhro & Iyke, 2019). Bernanke and Blinder's (1992) findings, as well as those of Kashyap et al. (1996, 1994), Peek and Rosengren (1997), and Paravisini (2008), highlight the importance of the efficient financial system to the overall economy. The financial conditions are equally crucial for growth (Zhang et al., 2020). Moreover, Adrian et al. (2018) employed quantile regressions on a panel of advanced and emerging market countries to show that financial conditions influence the growth in the conditional distribution of GDP. Similarly, Balcilar et al. (2016) employ a financial condition index made up of sixteen financial indicators to see the unanticipated changes in financial conditions in a nonlinear and asymmetric fashion. They discover that financial shocks to the African economy exhibit a nonlinear response, with financial shocks having a greater impact on an increase in manufacturing production and Treasury bill rates during upswings. During recessions, inflation reacts strongly to financial volatility. As a result, policymakers and investors must be aware of changing economic and financial conditions (Koop & Korobilis, 2014).

The geopolitical risk is currently a big issue harming the world's economies. Unlike other sources of global shocks, geopolitics has the potential to generate a wide range of crises, including war, terrorism, and economic, ethnic, and within-state political violence, all of which are expected to have a global influence on the economy. The existing literature on the interconnectivity of geopolitical risk and financial sectors

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demonstrates that geopolitical disputes, state tensions, or political instability cause uncertainty and changes in the economic and political environment have a significant influence on the stock market (Hoque & Zaidi, 2020; Lee & Lee, 2020; Lee et al., 2021; Sohag et al., 2022), stock market volatility (Das et al., 2019), oil returns (Antonakakis et al., 2017) and volatility (Antonakakis et al., 2017; Mei et al., 2020), oil prices (Su et al., 2019), tourism demand (Lanouar & Goaied, 2019; Lee et al., 2020) and economic growth (Soybilgen et al., 2019; Akadiri et al., 2020; Soltani et al., 2021). Nonetheless, geopolitical risk influences business cycles, financial markets, and economic directions (Balcilar et al., 2018), and geopolitical risk shocks are linked to major economic contractions (Cheng & Chiu, 2018).

The geopolitical shocks affect investors' behavior toward financial markets (Adel et al., 2021), which may be reflected in the financial conditions of economies. Nonetheless, articles in newspapers about economics, war, political violence, or financial uncertainty do influence stock prices. The flow of information regarding economic and political risk, stress, and uncertainty influences investors (Kim & Jung, 2015) and has a clear implication for information precision theory (Pastor & Veronesi, 2017). Because the economic system is complicated, there will be a lot of signals and noise for an investor to pick up on and act on in the market. Investors with low cognitive capabilities may consider specific information to be critical and disregard the rest, which is imprecise. In the same way, investors may believe that news about war-like occurrences is more realistic than policy uncertainty; it could cause financial market volatility to rise. The reaction of investors to certain news seems to have a direct impact on financial conditions via stocks or financial markets.

According to the terror endangers life theory, the worth of the future is diminished in comparison to the present. As a result of increased terror activity, investment falls; both income and consumption fall in the long run. In this vein, Eckstein and Tsiddon (2004) demonstrate that this terror theory has clear economic ramifications, aiding in the understanding of changes in the Israeli economy's trend and the business cycle. Terrorism has a significant influence on the aggregate economy, according to their estimations. As stated by Zakaria et al. (2019), terrorism influences economic growth through channel variables such as foreign direct investment, domestic investment, and government spending. Furthermore, countries with a large degree of violence lose domestic and international investors' confidence, resulting in a drop in domestic and foreign investment. Moreover, war-like events also cause a shift in personnel and financial resources, which has a negative impact on economic growth. Similarly, Aslam et al. (2018) demonstrate that Asian stock markets have been damaged by terrorism. Therefore, it is reasonable to predict that war-like

events, as part of geopolitical risk, will have a major impact on financial conditions.

Besides, the significant impact of geopolitical risk on major economic indicators and financial markets has been empirically tested and well-documented in the literature. Together, the fluctuations in economic indicators and financial markets direct the financial conditions of economies. And financial conditions are important to be studied as business activities, the financial system, and the overall strength of the economy are dependent on financial conditions. More importantly, available literature has demonstrated that financial conditions matter in different ways for policymakers, and it is necessary to have empirical evidence of which factors contribute to depressing financial conditions.

On the other hand, there is consensus about the negative consequences of geopolitical risk, and directly or indirectly, the shocks from geopolitical risk affect financial conditions. The worldwide increase in financial globalization has highlighted the strong impact that geopolitical risk may have on economies around the world. More importantly, Arregui et al. (2018) suggested the rapidity with which foreign shocks affect domestic financial conditions may make it difficult to respond quickly and effectively if necessary. Thus, rather than closely monitor each financial sector as well as the entire financial system before the geopolitical crisis transmits into the real economy. It would be justified to examine the effects of geopolitical risk on the aggregate state of the financial sector. Therefore, we hypothesize that financial conditions negatively suffer as a result of high geopolitical risk, in keeping with the explanation above.

3. Data and Methodology

3.1. Data

We make use of monthly data for nine emerging economies- Brazil, Colombia, Mexico, Russia, Turkey, China, India, South Korea, and Malaysia- spanning 17 years from January 1999 through September 2016. The nine emerging countries are taken as a sample because of the incomplete absence of recent data for the rest of the emerging countries. Furthermore, due to a lack of more current data for the countries under consideration, the ending period has been used to 2016. We measure financial conditions using the FCI index resulting from a set of ten financial indicators, including changes in long-term interest rates, corporate spreads, term spreads, interbank spreads, sovereign spreads, stock and house price returns, equity return volatility, changes in financial sector market share, and credit growth. The study employs the financial conditions index (FCI), which is based on Primiceri's (2005) time-varying parameter vector autoregression model and Doz et al. (2011) dynamic factor models, which follows

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the approach of Koop and Korobilis (2014). This method has two advantages. First, it has the potential to remove current macroeconomic situations from financial conditions. Second, it allows for a dynamic interaction between the FCI and changing macroeconomic variables. The monthly data for FCI is accessed from IMF[1].

We measure geopolitical risk (GPR) using a newly constructed index developed by Caldara and Iacoviello (2018). They developed the index by counting the appearance of words related to geopolitical tension in the major 11 national and global newspapers by automatic text search technique. The electronic archives of each newspaper were examined as of January 1985 for eight sentences: geopolitical uncertainty, war risk, risk of war, military threat, terrorist threat, terrorist activity, and Middle East and tension. Caldara and Iacoviello (2018) identified the above-mentioned phrases in each newspaper. The index is result based on an average of 100 in the years 2000–2009. The monthly data for the GPR index developed by Caldara and Iacoviello (2018) is obtained from the website[2].

The study uses control variables such as the real effective exchange rate and consumer price index as a measure of inflation, industrial production index proxy for GDP, and broad money as a proxy for money supply. We use them as control variables as they are significant determinants of financial conditions identified in the literature (Zheng & Yu, 2014; Balcilar et al., 2016; Adrian et al., 2018; Juhro & Iyke, 2019). The required data for control variables are extracted from various sources because of the unavailability of data for a specific period of time in a single database. All the variables used in the study are transformed in a natural logarithm except FCI. Table 1 outlines the specification of variables and a summary of data sources.

3.2. Descriptive Statistics

Summary statistics for the variables considered in the analysis for the sampled emerging markets are shown in Table 2. The high mean for geopolitical risk 99.05 with a standard deviation of 25.92 (μ = 99.05, S.D = 25.92) indicates that political risk exists in emerging markets. Besides, the range of geopolitical risk is also large for these markets (175), which indicates high political risk for sampled countries. The results of the Jarque-Bera test evidence the normality of data for all variables.

Table 1: Specification of Variables and Data Sources

Variables	Measure of Variables	Source
Geopolitical risk	GPR index	www.policyuncertainty.com
Financial conditions	FCI index	International Monetary Fund (IMF)
Real effective exchange rate	Real effective exchange rate index (2010 = 100)	International Financial Statistics (IFS) Federal Reserve bank ST. Louis (FRED)
Inflation	Consumer Price Index	International Financial Statistics (IFS) Federal Reserve bank ST. Louis (FRED)
GDP	Industrial production Index	International Financial Statistics (IFS) Federal Reserve bank ST. Louis (FRED)
Money supply	Broad money (current LCU)	World Development Indicators (WDI)

Table 2: Descriptive Statistics

Variables	Mean	Std. Dev	Max	Min	Jarque Berra	Obs
FCI	−0.27	1.04	3.59	−1.37	13.505 (0.116)	1836
GPR	99.05	25.92	221.41	45.99	39.605 (0.100)	1836
EX	78.98	14.43	108.04	47.67	13.228 (0.134)	1836
CPI	90.89	27.97	152.21	47.64	44.21 (0.712)	1836
IPI	88.30	11.18	110.46	58.59	31.43 (0.91)	1836
M2	2.55	1.70	6.05	4.66	65.43 (0.125)	1836

The table includes means, Standard deviation, minimum and maximum values along with observations in the sample. Jarque-Berra test is for normality and *p*-values are given in parenthesis. FCI denotes the financial conditions index, GPR is the geopolitical risk, CPI is the consumer price index, EX is the real exchange rate, IPI is the industrial production index, and M2 is the money supply.

3.3. Methodology

The impact of geopolitical risk on financial conditions is investigated in this study using regression analysis. In most studies, one of the three-panel data regression models—the pooled model, the fixed-effects model, or the random-effects model—is used. Regression analysis is one of the most important tools in economic science modeling. Multivariate analysis is a technique for describing and analyzing the relationships between a single variable and a collection of other variables. Multiple regression refers to a regression that is based on several experimental variables. However, only one test variable is used in simple regression. The following are simple regression model expressions:

$$y = \beta_0 + \beta_1 X + \varepsilon \qquad (1)$$

According to Brooks (2008), a single independent variable cannot explain the dependent variable, hence multiple independent variables must be employed to explain the phenomenon. As a result, to move from simple regression to multiple regression, more independent variables must be included in the equation.

$$y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_k X_k + \varepsilon \qquad (2)$$

By adding extra independent variables to the model, the components that are included as errors are now included as independent variables. The coefficients, or parameters that determine the effect of the independent variables on the dependent variable are $\beta_1 \ldots \beta_k$. When all other independent variables are held constant, each independent variable's coefficient represents an average change in the dependent variable over a unit set of the independent variable.

A constant term, β_0, should be included in both simple and multifactor regressions. This term is unaffected by an explanatory variable. If all explanatory variables have the same importance, the estimated value of the dependent variable is denoted by the constant term (Brooks, 2008). The regression approach remained the same, with each explanatory variable's relative influence on the dependent variable being examined. To test the hypotheses within the model, the *p*-value coefficients term of the explanatory variables has significant levels of 1%, 5%, and 10%. Furthermore, we have a propensity to employ the Hausman test and the Langrage multiplier (LM) test to decide between a fixed and random effect model, as well as a pooled OLS and random-effect model (Dougherty, 2011).

Following that, our main empirical specification defines the following form of equation based on generic multifactor regression and adjusting to a fixed-effect model:

$$\begin{aligned} \text{FCI}_{it} = \gamma + \beta_1 \text{GPR}_{it} + \beta_2 \text{EX}_{it} + \beta_3 \text{IPI}_{it} \\ + \beta_4 \text{CPI}_{it} + \beta_5 \text{M2}_{it} + \varepsilon_{it} \end{aligned} \qquad (3)$$

Where FCI is the financial conditions index, GPR denotes geopolitical risk, EX is the real effective exchange rate, IPI is industrial production, CPI is the consumer price index, and M2 denotes money supply. The coefficient γ = fixed effects, i = given location, ε = residual error in period t, t = 1999 to 2016, β_1 = coefficient of the respective independent variable. To avoid spurious regression coefficients, where the relation between geopolitical risk and financial conditions is driven by changes in variables that simultaneously affect both geopolitical risk and financial conditions, we use macro-level control variables. Where $\beta_2 \ldots \beta_5$ = coefficient of respective control variables.

We employed the Hausman test and the Langrage multiplier (LM) test to determine which model is most appropriate for our investigation. The hypotheses we investigated in our study gave us guidelines on how to choose between fixed and random effects models.

$$\text{Hausman test} = \begin{cases} H_0\text{: the appropriate model is the random} \\ \quad\quad \text{effect} \\ H_a\text{: the approriate model is the fixed effect} \end{cases}$$

Similarly, the Langrage multiplier (LM) test guides whether to use pooled OLS or fixed-effects models. The following hypotheses were put to the test:

$$\text{Langrage multiplier (LM)} = \begin{cases} H_0\text{: the appropriate model} \\ \quad\quad \text{is pooled OLS} \\ H_a\text{: the appropriate model} \\ \quad\quad \text{is the fixed effect} \end{cases}$$

The results of the Hausman test and the Langrage multiplier (LM) show that the fundamental hypothesis should be rejected, and the alternative hypothesis for the existence of the fixed effects should be accepted. Table 3 shows the results of the Hausman test and the Langrage multiplier (LM) test. The results suggest a fixed-effects panel data model.

The rationale for using a fixed-effects model outlines our interest in examining how geopolitical risk affects changing financial conditions. This model is intended to investigate

Table 3: Panel Data Model Selection Tests

Hausman Test	224.85***
Breusch and Pagan Langrage multiplier (LM) test	743.02***

The table shows the results of the model specification tests. Estimates of test coefficients are shown in the figures. The symbols ***, ** & *denote significance levels of 0.1 percent, 1 percent, and 5 percent, respectively.

the factors that lead to changes inside an entity. Since it is a constant for each entity, a time-invariant characteristic cannot result in such a change (Torres-Reyna, 2007). In our empirical investigation, a fixed-effect model examines the link between an entity, such as a country, and a dependent variable. When employing a fixed-effects model, we consider that the independent variables may be impacted or biased by the individual and that this needs to be controlled accordingly. The association between entities' independent variables and the error term is based on this logic (Bell & Jones, 2015). We would evaluate the overall impact of the independent factors on the dependent variable by using a fixed-effect model, which eliminates the impact of those time-invariant properties. The fixed-effects model also makes the crucial assumption that each individual's time-invariant properties are distinct from others and should not be associated with one another. Since every entity is unique, error terms and constants that reflect particular attributes should not be connected with those of other entities. Fixed-effects models are not appropriate if the error terms are associated since they may result in incorrect assumptions (Greene, 2005).

4. Results and Discussion

The study uses a fixed-effects panel data model to examine the effect of geopolitical risk on financial conditions in emerging economies. The correlation among predictors presented in Table 4 indicates the high correlation between the industrial production index (IPI) and consumer production index (CPI) across sample countries and using both variables leads to a multicollinearity problem.

Therefore, we need to drop one of the variables in the analysis. Since we use IPI for GDP and CPI for inflation as a proxy, being CPI is a major component of GDP, it is better to drop CPI from the model. It can be seen from the provided results that geopolitical risk has a negative correlation with all predictors used in the estimation. It implies that a rise in geopolitical risk tends to decrease the real exchange rate, inflation, GDP, and money supply.

Table 5 presents the estimation results for Eq. (3), with and without the set of macro-level control variables. The coefficient for geopolitical risk (-0.151) in column 5 is statistically significant at a 1% level. The results indicate that geopolitical risk has a negative impact on financial conditions. It implies that ceteris paribus, a one standard deviation shock of geopolitical risk, depresses financial conditions by 15.1%. The negative impact of geopolitical risk on the size of future macroeconomic activities is explained theoretically by Eckstein and Tsiddon (2004). Also, Gilchrist et al. (2014) provided a theoretical model that successfully replicates the stylized facts concerning the macroeconomic implications of uncertainty and financial shocks posed by the geopolitical risk that strongly evidences interaction between uncertainty and financial conditions. The F-statistics test results show significant coefficients, which implies that the

Table 4: Correlation Analysis

Variables	GPR	EX	CPI	IPI	M2
GPR	1.000				
EX	−0.109	1.000			
CPI	−0.038	0.383	1.000		
IPI	−0.041	0.450	0.732	1.000	
M2	−0.014	0.031	0.200	0.224	1.000

Table 5: Fixed-Effects Results

Dependent Variable: FCI					
	(1)	(2)	(3)	(4)	(5)
GPR	−0.165*** (0.045)	−0.168*** (0.045)	−0.165*** (0.047)	−0.151*** (0.047)	−0.151*** (0.047)
EX		−0.487*** (0.127)	−0.288** (0.135)	−0.202 (0.142)	−0.205 (0.149)
IPI				−0.324*** (0.076)	−0.319*** (0.079)
M2					−0.002 (0.008)
Constant	0.587*** (0.206)	2.805*** (0.600)	4.064*** (0.552)	4.632*** (0.550)	4.712*** (0.727)
R^2 overall	0.011	0.030	0.206	0.229	0.230
R^2 within	0.004	0.015	0.036	0.041	0.041
R^2 between	0.104	0.122	0.412	0.449	0.449
F-statistics	13.42***	15.06***	28.22***	29.11***	28.49***

The Fixed-Effects are based on heteroscedasticity-robust standard errors clustered by groups. The coefficient estimates are provided in the figures and standard errors are in parentheses below the coefficient estimates. The symbols ***, **,& *denote significance levels of 1 percent, 5 percent, and 10 percent, respectively.

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geopolitical risk and control variables used in the study have significantly explained variations in the financial conditions.

The results support our study hypothesis; geopolitical risk has a negative impact on financial conditions. This negative relationship does also hold in the presence of control variables. The finding suggests that rising geopolitical risk has direct financial ramifications for emerging economies. The findings of the study are fully in line with Balcilar et al. (2018). They back this up by claiming that geopolitical risk is the most important element influencing business cycles, financial markets, and economic trends. Thus, it generally shapes or directs economic conditions, which can be inferred as financial conditions (Juhro & Iyke, 2019).

The findings of the study are also consistent with Antonakakis et al. (2017), Balcilar et al. (2018), and Hoque and Zaidi (2020). More specifically, Antonakakis et al. (2017) revealed a negative effect of geopolitical risk on oil market returns and volatility. Balcilar et al. (2018) indicate the role of geopolitical risk as a driver of bad volatility in stock markets. Hoque and Zaidi (2020) find that political turbulence at the country level has a negative impact on the stock market performance of four vulnerable emerging economies. On the other hand, depending on contemporaneous time, lag time, volatility regimes, and the stock market, global geopolitical risk can either have a positive or negative impact on stock market performance.

The reported outcomes for the control variables agree with the claims that the real exchange rate, money supply, and industrial production are significant determinants of financial conditions. Which are in line with Adrian et al. (2018), who explore that GDP growth is more responsive to financial conditions. Juhro and Iyke (2019) suggested exchange rates and money supply signal good financial conditions.

5. Conclusion

The global financial crisis highlighted the necessity for monetary authorities to take a holistic perspective of the financial conditions before making decisions. Interest rate targeting may not always be useful or practicable in the aftermath of financial crises. Although financial constraints may not be directly imagined, a substantial study has recently been performed to see if a single index might be used to have a comprehensive view of financial market factors. We examined the geopolitical risks that affect the financial conditions in this study using an aggregate measure of the financial conditions index. The study looked at the impact of geopolitical risk on financial conditions using the fixed-effect panel data model. In the corresponding analysis, monthly data for nine emerging nations for which geopolitical risk index and financial conditions index data are available were used from January 1999 to September

2016. The study adds to the literature by providing empirical evidence on the impact of geopolitical risk on financial conditions. The findings show that geopolitical risk has a significant and negative impact on financial conditions. This suggests that geopolitical shocks can be one of the primary causes of depressing financial conditions.

These findings provide important insights for governments, policymakers, and investors. Governments and politicians should, for instance, refrain from projecting or generating anxiety, apprehension, or information that is likely to increase high geopolitical risk. Additionally, effective policies should implement measures to lessen geopolitical risks or diminish the factors that cause market volatility. As a result, financial conditions can achieve a more consistent structure. As a result, investors would be better informed about an economy's economic and financial conditions to diversify their international portfolios and develop investing strategies in uncertain economic times.

The current study was limited to only nine emerging countries because of a lack of recent and complete data for the remaining emerging countries. Future researchers may employ more sophisticated and dynamic panel data models by using more updated data and delving deeper into financial conditions. Apart from geopolitical risk, other exogenous factors that can affect financial conditions that were not investigated in this study, such as bond and equity inflows into emerging economies, will need to be investigated in future studies.

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Endnotes

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