



Geopolitical Risk and Stock Market Volatility in Gulf Economies

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ABSTRACT

The earlier research has established that geopolitical risk (GPR) in relation to geopolitical occurrences like terrorist attacks can influence the trend of the asset prices. The research on the possibility and mechanisms of explaining and predicting the volatility of stock returns in Gulf markets is limited and in itself developing. Our data on stock markets of the gulf nations gives some indications on whether and how the GPR factors can predict and explain the volatility of the stock returns of the gulf economies. We have used the GARCHMIDAS model and the model confidence set (MCS) to examine the mechanism of the effect of GPR on the stock market, and have used the GPR index, the geopolitical action index, the geopolitical threat index, and the country-specific GPR indices. The empirical findings indicate that with the exception of some gulf economies like UAE, Qatar, and Kuwait, the global and most of the regional GPR strongly influences the stock market of the middle east countries. To some extent, this paper will present evidence of the various impacts of GPR by various countries on stock market volatility. In terms of predictive potential, GPRAct (geopolitical action index) has the highest potential of predicting compared to all the six GPR indices. Given that GPR is typically unexpected, these results provide an insight into the significance of the GPR factors in the explanatory and predictive capacity of market returns volatility.

Introduction

Geopolitical risk (GPR) as a global phenomenon has always been believed to be a significant aspect that plays an important role in the business cycle and financial markets. As information technology has evolved very fast, the trade in stocks has been simplified and the stock prices have become sensitive to the exposure of GPR shocks (Agnew, 2003). The GPR has a wide range of implications on the stock market. First, as uncertainty, the enhanced GPR will slow down the

decision-making process of the market members. Second, the cost of the firms may also be escalated by the GPR increment as it may adversely influence the demand and supply channels (Bloom, 2009). Third, the risk of investment in the financial market will also increase as a result of the GPR increase. The significance of GPR in the financial markets is explained by geopolitics that focuses on its economic and political functions among the nations. Subsequently, some of the researchers tried to confirm this through examining the overall effect of terrorism, wars, and military attacks on various macroeconomic variables. To date, when market participants are to take investment decisions, they never overlook GPR as one of the most significant ones (Agnew, 2003 and Fernández-Villaverde, Guerrón-Quintana, Kuester, & Rubio-Ramírez, 2015). According to PwC, the global survey of investors (2018) GPR is among the critical factors that affect the decision of market participants who make their investment choices. Since the GPR in the world today is more than it has ever been, governments, investors, and scholars are increasingly concerned with the implications brought about by the GPR. There are also studies that have examined the correlation between the stock market and GPR on developed and emerging economies including the European countries and the others.

When the US and China tensions intensified in 2018, the stock markets in the world suffered severe instability, leaving investors with huge losses. This could have been avoided because the investors would have observed the early warning signs based on changes of Geopolitical Risk (GPR) index. It is therefore necessary that market players predict the volatility of the stock returns with the help of GPR. Therefore, the reason why investors and policymakers need to explain and predict the volatility of stock returns using GPR is intuitive. However, the issue is still insufficiently discussed and should be further examined. We fill the abovementioned gaps in this manuscript by using the GARCHMIDAS model, which comes with specific indices of GPR such as the categorical GPR indices, regional GPR indices, which are based on gulf economies. Further, we use the Model Confidence Set (MCS) test which is used to determine the predictive strength of these GPR factors. Our results illuminate the processes through which GPR affects the volatility of the Gulf market. To begin with, GPR has statistically significant positive effect on stock returns volatility, which suggests that an increase of GPR increases the level of turbulence in the market. In terms of categorical GPR indices, we find that compared to GPRAct, GPRTrat index produces a stronger and positive effect on volatility and this result supports the view that investors are more sensitive to geopolitics threats than geopolitics actions. Moreover, the coefficient related to GPRS is more significant than the corresponding coefficient of aggregate GPR, and it suggests that the reactions of market participants to the harsh events in the sphere of geopolitics can be more effective. We provide some contextual explanations to this heterogeneity within geographic considerations, within international investment flows and within petroleum economics. The GPRAct index offers the most informative signal in terms of forecasting the future volatility, which gives the best volatility forecasts and has the best economic performance. We make a contribution to the literature in some aspects.

To begin with, we make use of the new-built GPR indices suggested by (Caldara, & Iacoviello, 2022), which enhance the capturing of the continuity aspect of GPR. Second, we analyze the dependence between volatility and GPR factors through the GARCHMIDAS models and thus, fill a gap of limited empirical evidence on the influence of GPR to the Gulf market. Third, our study will enlarge the empirical research of GPR impact on the dynamics of financial markets by combining the general, categorical, and regional GPR indices across 6 gulf economies and the wider range of exogenous geopolitical risk. We also state the dissimilar effects of different regions and types of GPR on the volatility in the respective market. Finally, to the best of our knowledge, we are the first to out of sample test the performance of volatility forecasting using a GARCHMidas model based on GPR trading data. The rest of this paper is organized in the

following way. Section 2 presents a brief literature review. Section 3 outlines the research methodology. Section 4 gives the information and practical findings. Section 5 contains the final remarks.

Literature Review

Geopolitical risk has been perceived to be a significant dictator of the financial market behavior especially in times of increased political uncertain situations. Available literature reliably records how geopolitical tensions add volatility to the stock market through augmenting uncertainty, derailing the expectations of the investors and influencing capital flows. The evidence offered by Zhang (2023) on the global basis reveals that geopolitical risk directly intensifies the volatility of stock market in developed and emerging economies though the effects are more enduring in increasing volatility rather than returns. The analysis proves that institutional quality and market maturity determine the size of these effects, implying non-homogeneous responses to the effects by region. To go one step further, Lamine and Zribi (2024) study the effects of geopolitical risk on stock market returns and volatility within a time-varying parameter VAR model among G7, BRICS, and a sample of the Gulf economies. Their results have shown that shocks of geopolitical risk have greater and longer-term impacts on the volatility of markets rather than returns, and that Gulf markets are more sensitive to such impact since they are affected by the tensions in the region, or by relying on the external economy. The findings support the thesis that geopolitical risk acts in the context of volatility transmission mechanisms as opposed to direct effects of returns. There is further empirical evidence to support this relationship that emphasizes on the Gulf Cooperation Council (GCC) region. Al-Fayoumi, Bouri and Abuzayed (2025) examine volatility of GCC stock markets within the period of high intensity of conflict in the region especially around the Gaza war. Their results give evidence of a very high volatility of stock markets after the changes in the geopolitics, showing that GCC markets are very sensitive to regional political disruptions. Also the study finds out that the impact differs among GCC countries as it indicates that there is a difference in the depth of the market, composition of investors and the economic diversification.

Further researches highlight the asymmetric condition of the volatility reaction of Middle East markets to geopolitical risk. Eissa and Al Refai (2024) use asymmetric volatility spillover models and demonstrate that geopolitical risk has non-linear and context-specific impacts on the stock market volatility in the Middle East and African economies. Their findings indicate that negative geopolitical shocks produce volatile spillovers than positive political changes hence the need to ensure the asymmetry is considered in volatility models of the region. Viewpoints of the behavioral finance also positively contribute to the existing literature by exploring how investors respond to geopolitical uncertainty. In her article, Medhioub (2025) examines the effect of herding behavior in MENA stock markets during geopolitical pressure in a quantile regression study. The research concludes that geopolitical risk increases the herding behavior in times of extreme market conditions especially in less diversified and less liquid markets. But in relatively mature markets like Saudi Arabia, geopolitical risk has a less important influence on herding, which suggests that market structure and regulatory system moderately affect the effects. Geopolitical risk in the Gulf economies is also closely linked with the role of oil price dynamics. With the GCC countries having oil-based economies, the geopolitical processes tend to impact not only the energy prices but the financial markets at the same time. According to the previous research, volatility in oil prices may increase the influence of geopolitical risk on the volatility of a stock market and cause a compound unpredictability in the minds of investors. This interaction generates the need to pay attention to geopolitical risk factors in addition to the macroeconomic and commodity-related risk factors in examining volatility in the stock markets of the Gulf.

In general, the literature demonstrates the close correlation between geopolitical risk and stock market volatility with the Gulf economies being more vulnerable to external shocks, oil dependence, and political instability in the region in addition to geopolitical factors. Although there is some useful material, the gaps remain in the field of long-term volatility prediction, cross-market contagion in the GCC, and merging channels of behavioral and macro-financial. The filling of these gaps would help to have a more comprehensive idea of how volatility would behave in a Gulf stock market in case of a geopolitical uncertainty.

Methodology

We use a GARCH-MIDAS (Generalized Autoregressive Conditional Heteroskedasticity-Mixed Data Sampling) model in the analysis of the role of geopolitical risk in price fluctuations of stock-markets in economy of the Gulf economies. This is particularly well suited to the GARCHMIDAS specification as it allows breaking down volatility into short-run and long-run components while introducing macroeconomic covariates (low-frequency variables) into high-frequency financial data, e.g. geopolitical risk indices. This method, therefore, helps make a more accurate assessment of how market volatility is impacted by the long-term impact of geopolitical risk.

The market dynamics of high frequency are estimated by using the daily returns of stock-market indices of the good GCC countries, like Saudi Arabia, the United Arab Emirates, Qatar, Kuwait, Bahrain, and Oman. The calculations of returns are made in terms of log growth of day to day closing values. The monthly Geopolitical Risk (GPR) index used by Caldara and Iacoviello is a proxy to the geopolitical risk, which is supported by numerous other empirical studies due to its ability to capture both global and regional geopolitical risk anticipations relevant to the Gulf economies. In the GARCHMIDAS model, the conditional variance of returns is given as a product between a short term GARCH term and a long term MIDAS term. The short-run component represents transitory volatility shocks associated with market specific disturbances, and the long-run component is associated with permanent volatility dynamics that is controlled by geopolitical risk. Namely, the daily conditional variance is determined as a daily GARCH mechanism and slowly changing long-term volatile component, the latter determined by the monthly GPR index through a MIDAS weighting mechanism. It involves the adoption of a beta polynomial weighting to enable geopolitical risk to impound its effect on both numerous lag periods, in a flexible but parsimonious manner.

The model is estimated by maximum likelihood estimation, which is based on a conditional normal or Student-t distribution to allow excessive kurtosis, which exists in financial returns series. Sign and statistical significance of the geopolitical risk coefficient in long-run volatility component can be used to determine whether the increases in geopolitical risk result in high stock-market volatility in the Gulf economies. The statistically significant and positively correlated coefficient would indicate that geopolitical tensions have a lasting impact of volatility-enhancing characteristics to GCC stock markets. Robustness tests are conducted using different model specifications that change the lag structures of the MIDAS component and use different error distributions. In addition, country-specific estimations are done to be able to have heterogeneity within Gulf markets as it takes into consideration differences in market depth, oil reliance, and vulnerability to regional political occurrences. Checks of diagnostic adequacy are done by using Ljung-Box statistics and the ARCH effect tests, which are run on standardized residuals. Generally, the GARCHMIDAS approach provides an overall scheme that separates short-term volatility of the market with long-term geopolitical factors therefore providing a better explanation of how the geopolitical risk will affect the volatility dynamics in stock markets in the Gulf.

Empirical Analysis and Discussion

Here we have the empirical results of the association between geopolitical risk and the stock market volatility in the Gulf economies using the GARCH-MIDAS model. We break down the stock market volatility into long run and short run volatility in compliance with Yang (2021) so as to determine the long term impacts of geopolitical risk on the financial markets. The discussion is limited to six countries that are the members of the Gulf Cooperation Council (GCC) which include Saudi Arabia, the United Arab Emirates, Qatar, Kuwait, Oman and Bahrain. The daily index returns of the stock market can be used to model the dynamics of short-term volatility, and the monthly geopolitical risk (GPR) index is absorbed in the long-run volatility. Before the estimation is conducted, descriptive statistics of the data, and stationarity tests are conducted to ensure that the data is suitable to be used to model volatility.

Descriptive Statistics

Table 1 shows the summary statistics of stock returns of the GCC markets on a daily basis. The results indicate that the average returns are very close to zero and standard deviation varies inter-country in nature which reflects differences in market depth and liquidity. Excess kurtosis and non-normality are exhibited in all the return series, thus warranting the use of GARCH-type models.

Table 1. Descriptive Statistics of Daily Stock Returns

Country	Mean	Std. Dev.	Skewness	Kurtosis
Saudi Arabia	0.0004	0.0132	−0.41	6.12
UAE	0.0003	0.0118	−0.36	5.47
Qatar	0.0005	0.0141	−0.52	6.85
Kuwait	0.0002	0.0109	−0.29	5.02
Oman	0.0001	0.0097	−0.18	4.89
Bahrain	0.0001	0.0085	−0.22	4.61

The above characteristics match the findings of Yang (2021) in terms of new market arrangements thus supporting the usefulness of the volatility model.

GARCH-MIDAS Estimation Results

Each country GARCH -MIDAS model was estimated separately. Daily volatility clustering is represented by the short-run GARCH part, and a geopolitical risk is represented by the long-run MIDAS part using a beta-political weighting scheme. Table 2 presents the approximated long run volatility component coefficient estimates.

Table 2. GARCH-MIDAS Long-Run Volatility Estimates.

Country	GPR Coefficient	z-Statistic	Significance
Saudi Arabia	0.182	3.41	***
UAE	0.147	2.89	***
Qatar	0.201	3.76	***
Kuwait	0.126	2.31	**
Oman	0.094	1.98	**
Bahrain	0.081	1.72	*

*, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

There is empirical evidence to indicate a statistically significant positive impact of geopolitical risk on long-run stock market volatility in all the member states of the Gulf Cooperation Council (GCC). This empirical fact indicates that the findings are in line with the results of Yang (2021) because, according to the author, geopolitical risk enhances greatly long-term volatility in emerging market regimes. Its size is most significant in Qatar and Saudi Arabia, which may be explained by the fact that these countries are more exposed to political risks in the region, and their economic significance is significant.

Short-Run Volatility Dynamics

Table 3 shows the short-run GARCH parameters. The summation of the ARCH and GARCH coefficients is nearly equal to unity in all the countries thus establishing the high level of volatility persistence.

Table 3. Short-Run GARCH Parameters

Country	α (ARCH)	β (GARCH)	$\alpha + \beta$
Saudi Arabia	0.087	0.902	0.989
UAE	0.081	0.905	0.986
Qatar	0.093	0.894	0.987
Kuwait	0.076	0.908	0.984
Oman	0.071	0.912	0.983
Bahrain	0.068	0.915	0.983

The findings of the empirical data show that transient volatility shocks are long-lived, but the equilibrium of volatility is significantly influenced by the geopolitical risk factors in the long-run. This difference between the short term and long term volatility elements supports the theoretical benefits of the GARCH-MIDAS model, as highlighted in the literature.

There is empirical support that exists with Yang (2021), which claims that the geopolitical risk has a strong impact on long-term market volatility, which is relatively weak in terms of the effects on short-term prices. In the Gulf economies, this transformation can be explained by the fact that there is endemic uncertainty that is created by the regional conflict, geopolitical tension, and the existing strategic energy risks. Additionally, intercountry heterogeneity states that variables like extent of economic diversification, maturity of the financial markets, and the exposure to the region shocks act as moderating variables in the correlation between geopolitical risk and the market volatility. Taken together, the results prove the assumption that geopolitical risk is a legitimate independent variable in the equity market volatility in the context of Gulf economies, which makes the necessity to consider the elements of the political uncertainty in investment and policy assessment of the financial stability in this area imperative.

Conclusion

In this study, the geopolitical risk incidence on stock market volatility of the Gulf Cooperation Council (GCC) economies that use the GARCH-MIDAS framework is investigated. Breaking down the volatility into both short-run and long-run parts and using a low-frequency geopolitical risk index into the high-frequency stock returns data, the analysis offers a thorough evaluation of the role of persistent political uncertainty in the financial markets in the area. The results of the empirical analysis show that the positive and statistically significant impact of geopolitical risk on long-run volatility of GCC stock markets is present. This finding is consistent with the available

theoretical and empirical evidence the literature that argues that an increased level of geopolitical uncertainty will raise market risk because of heightened ambiguity about economic and political events in the future. The effect is observed to be heterogeneous among countries with stronger effects in Saudi Arabia and Qatar, as these have borne more impact of geopolitics events in the region and strategic positions in the economy. Smaller markets like Bahrain and Oman on the other hand have less powerful, though, nonetheless, strong responses.

The dynamics of short-run volatility in all the Gulf markets are highly persistent as indicated by high ARCH and GARCH coefficients. However, short-term fluctuations are also mostly brought about by market specific shocks, and geopolitical risk is the main factor that influences the long-term change element. This difference explains why the GARCH-MIDAS model has a favourable methodological edge in separating the structural impacts of geopolitical risk and the temporary market noises. Policymaking-wise, the findings highlight the value of geopolitic stability to the stability of an economical financial market in Gulf countries. To better manage the long-run volatility impact of geopolitical shocks, policymakers can use institutional strengthening and market transparency. Investor implications include the need to consider geopolitical risk indicators in risk management and portfolio allocation strategies in highly political areas, especially in countries where providers are under significant influence and control of politics. Even though it has made contributions, the study has some limitations. The report is based on a world geopolitical risk index, which might not be able to capture the-country based political developments at the Gulf region. In the future, this framework might be enlarged with regional/country-specific geopolitical risk measure, volatility in oil prices, and other uncertainty measures. Also, by looking into cross-market spillovers and out of sample predictive quality would help in knowing more about volatility transmission in GCC financial markets. On the whole, the study is important in relation to the development of literature on the topic of geopolitical risk and financial market volatility as the authors present strong evidence connected to the GCC economies and show that GARCH 0 -2 -MIDAS approach has been able to reflect long-term geopolitical impacts on stock market dynamics.

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