p-ISSN : 2708-2474 | e-ISSN : 2708-2482
DOI(Journal): 10.31703/gmsr
DOI(Volume): 10.31703/gmsr/.2024(IX)
DOI(Issue): 10.31703/gmsr.2024(IX.II)

www.gmsrjournal.com

GMSR
Global Management Sciences Review
managing humanity

GMSR

GLOBAL MANAGEMENT SCIENCES REVIEW

HEC-RECOGNIZED CATEGORY-Y

VOL. IX, ISSUE II, SPRING (JUNE-2024)

Double-blind Peer-review Research Journal
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Doi: https://dx.doi.org/10.31703

Article title

Transnational Turbulence: Volatility Spillover from the U.S. Political Uncertainties to the Emerging Economies of South Asia

Global Management Science Review

p-ISSN: 2708-2474 e-ISSN: 2708-2482
DOI(journal): 10.31703/gmsr
Volume: IX (2024)
DOI (volume): 10.31703/gmsr.2024(IX)
Issue: II Spring (June-2024)
DOI(Issue): 10.31703/gmsr.2024(IX-II)

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Issue: II Spring (June-2024)
https://www.gmsrjournal.com/Current-issues/9/2/2024

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Abstract

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Keywords: Volatility Spillover, Markov-Switching, DCC-GARCH, Political Uncertainties, South Asia

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Pages: 99-111
DOI:10.31703/gmsr.2024(IX-II).10
DOI link: https://dx.doi.org/10.31703/gmsr.2024(IX-II).10
Article link: http://www.gmsrjournal.com/article/A-b-c
Full-text Link: https://gmsrjournal.com/fulltext/
Pdf link: https://www.gmsrjournal.com/jadmin/Auther/31rvlolA2.pdf

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Doi: https://dx.doi.org/10.31703

Citing this Article

10	Transnational Turbulence: Volatility Spillover from the U.S. Political Uncertainties to the Emerging Economies of South Asia						
	Author	Hina Mushtaq Abdul Qayyum Muhammad Ishtiaq		DOI	10.31703/gmsr.2024(IX-II).10		
Pages	99-111	Year	2024	Volume	IX	Issue	II
Referencing & Citing Styles	APA	Mushtaq, H., Qayyum, A., & Ishtiaq, M. (2024). Transnational Turbulence: Volatility Spillover from the U.S. Political Uncertainties to the Emerging Economies of South Asia. *Global Management Sciences Review*, *IX*(II), 99-111. https://doi.org/10.31703/gmsr.2024(IX-II).10					
	CHICAGO	Mushtaq, Hina, Abdul Qayyum, and Muhammad Ishtiaq. 2024. "Transnational Turbulence: Volatility Spillover from the U.S. Political Uncertainties to the Emerging Economies of South Asia." *Global Management Sciences Review* IX (II):99-111. doi: 10.31703/gmsr.2024(IX-II).10.					
	HARVARD	MUSHTAQ, H., QAYYUM, A. & ISHTIAQ, M. 2024. Transnational Turbulence: Volatility Spillover from the U.S. Political Uncertainties to the Emerging Economies of South Asia. *Global Management Sciences Review,* IX, 99-111.					
	MHRA	Mushtaq, Hina, Abdul Qayyum, and Muhammad Ishtiaq. 2024. 'Transnational Turbulence: Volatility Spillover from the U.S. Political Uncertainties to the Emerging Economies of South Asia', *Global Management Sciences Review*, IX: 99-111.					
	MLA	Mushtaq, Hina, Abdul Qayyum, and Muhammad Ishtiaq. "Transnational Turbulence: Volatility Spillover from the U.S. Political Uncertainties to the Emerging Economies of South Asia." *Global Management Sciences Review* IX.II (2024): 99-111. Print.					
	OXFORD	Mushtaq, Hina, Qayyum, Abdul, and Ishtiaq, Muhammad (2024), 'Transnational Turbulence: Volatility Spillover from the U.S. Political Uncertainties to the Emerging Economies of South Asia', *Global Management Sciences Review,* IX (II), 99-111.					
	TURABIAN	Mushtaq, Hina, Abdul Qayyum, and Muhammad Ishtiaq. "Transnational Turbulence: Volatility Spillover from the U.S. Political Uncertainties to the Emerging Economies of South Asia." *Global Management Sciences Review* IX, no. II (2024): 99-111. https://dx.doi.org/10.31703/gmsr.2024(IX-II).10.					

e-ISSN: 2708-2482 Volume: IX (2024) Issue: II-Spring (June-2024) p-ISSN: 2708-2474

Global Management Sciences Review
www.gmsrjournal.com
DOI: http://dx.doi.org/10.31703/gmsr

Pages: 99-111 URL: https://doi.org/10.31703/gmsr.2024(IX-II).10 Doi: 10.31703/gmsr.2024(IX-II).10

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Abstract

The study explores the dynamics of volatility spillover from U.S. political uncertainties to the emerging economies of South Asia by using the Markov-Switching and a DCC-GARCH model. By using the daily data from 2000 to 2024, the study has found that the U.S. political risk has significantly affected the majority of the South Asian stock markets during the first regime. On the other hand, it has affected the stock markets of Bangladesh and Maldives during the second regime. Moreover, the transition probabilities also show a higher likelihood of remaining in the second regime of high volatility along with longer expected durations. Then, the DCC-GARCH model confirms the dependence of these markets' returns on their lagged squared residuals. Overall, the volatility spillover from the U.S. political uncertainties exists in the short run to Indian, Bangladeshi, and Maldivian stock markets, while this spillover exists in the long run for all the stock markets.

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Introduction

Economic integration between the world's financial markets has increased due to the impact of economic globalization. This led to the expansion of international trade in the world. The world has witnessed a huge change in the international finance system, like the adoption of a floating exchange rate system and the removal of blockades for foreign exchange and capital flow within the nations (Aloui, 2007). Because of this improved trade, fast processing of information, and advancement in information technology, the transmission of returns and volatilities has amplified. The financial and portfolio managers need to comprehend the nature and degree of the connection between these financial markets (Maghyereh & Abdoh, 2021). The relationship between these financial markets is examined by finding the mean and volatility spillover across them because it is crucial for designing the optimal portfolio and smart hedging strategies.

The crisis brings a negative trend to the stock markets. The relationship between different classes of assets is different in different financial markets of the world. This relationship has also changed during political and global health crises like COVID-19. International investors' perceptions change during a crisis (Hoffmann et al., 2013). This happens due to their decreased expectation and level of risk tolerance during the crisis, and their perception improved at the end of the crisis (Yousaf et al., 2018). Literature has shown that individual investors started showing herding behavior compared to institutional investors during the period of crisis because they panicked due to the alarming situation of the economy (Kim & Wei, 2002). Therefore, the crisis brought about a change in the behavior of investors.

When the big financial markets of the world face a financial crisis, then the effect of this crisis also affects the other markets of the world, which have strong integration with it, and vice versa. The fractal market hypothesis argues that the stock market prices show fractal properties because their sharp uncertainties in the market can lead to market crises. Secondly, the meteor shower effect explains that the volatility in the market can spill over to the other market, and it continues in that market and keeps producing volatility in geographically distant markets, which open many hours later (Susmel & Engle, 1994). The global integration of the stock markets does create opportunities for international investors to diversify their portfolios, but at the same time, it does bring challenges for them.

Political crises are shaping the financial and economic interactions of the economies (Dogan et al., 2021). These investors are giving more importance to geopolitical risk than political instabilities. High levels of geopolitical crises reduce the economic activities of a country and its stock returns. The political risks for this study have been measured with the help of Geopolitical risk, which is the risk coming from terrorist attacks and tensions between the countries that affect their correlations. This will capture the direct and indirect risks originating from the political incidents of a country. These geopolitical crises negatively impact stock market returns (Caldara & Iacoviello, 2022). The political crisis contributes to the volatility spillover in the stock market. These crises negatively affect the stock and positively impact the oil markets (Smales, 2021). Scholars have used the Markov-Switching GARCH model to study the impact of political risk on the stock markets because of the non-linear relationship between them (Hoque & Zaidi, 2021).

The political uncertainties in the USA affect the South Asian stock markets. This will increase disturbance in other countries of South Asia because investors are not willing to invest in a country with risky returns (Shear et al., 2020). Therefore, it becomes mandatory for international portfolio managers to adjust the allocation of their assets between the different financial markets during a crisis. It also calls for the attention of policymakers to take sound actions for the smooth functioning of their financial and commodity markets during a period of crisis. Therefore, the aim of this investigation is to find the pattern of Spillover from the U.S. political uncertainties to the stock markets of South Asia.

The study brings novelty by using the two-regime bivariate MS-EGARCH model. In contrast, most of the studies in the literature have used the basic tests of univariate and bivariate GARCH models for finding the patterns and trends in the data. Secondly, the model is suitable for detecting the dependence on the regime of the impact, asymmetric and persistent response to the shocks because the conditional variance is dependent on the past and the present shocks along with the past states of the economies. Thirdly, the study has also used the non-parametric approach for checking the spillover from the political uncertainties of the USA by applying the Markov regime-switching model, while the existing literature has made use of the parametric models (Kilian L., 2010). The DCC-GARCH model has also been used to study volatility spillover in the short and long run. Moreover, this study checks the impact of the political uncertainties of the USA on the stock markets of South Asia. The interconnections, average effects, and volatility transmission from advanced economies to South Asian developing nations are influenced by various political upheavals. These include the consequences of terror strikes, significant political occurrences, armed conflicts, and associated contentions (Balcilar et al., 2018; Bouras et al., 2019; Elsayed & Helmi, 2021).

Literature Review

Political crises create uncertainties in the world economies because investor shies away from the stock markets during the political crises to avoid their losses. They tend to sell their stocks and that further increases the volatility in this market which further reduces the prices. The political crisis increases the volatility spillover from the world's developed nations to the developing and emerging nations. Political instability is part of the crisis and many nations of the world have faced. The international political crisis increased the level of volatility, which impact the

South Asian countries. During political crises, there are greater chances of spillover (Onyeama, 2021). Irshad (2017) has checked the impact of inflation, industrial Production, political instability, and exports on the returns and volatility of the stock markets by using the ARDL and ARCH/GARCH families and found that political instability negatively affects the country's stock market.

Literature has shown that the political crisis of the world has resulted in a significant decline in the stock market returns and increased volatilities. Sharma & Bangur (2024) systematically reviewed the literature that studies the impact of political events on the stock markets. Bhatia (2023) has checked the impact of political crises on the stock market efficiency within the Indian Banking Sector by using the Wild Bootstrap Automatic Variance Ratio. Their findings show that internal crises of the markets have a more negative and significant impact on the market as compared to the pandemic or global financial crises. Study finds that internal crises in the industry are shaping the efficiency of the markets.

The Ukraine Crisis has led to increased fluctuations in crude oil prices, reaching new highs. This development is expected to affect China's economic landscape (CNBC, 2022). To identify enhanced diversification opportunities during times of crisis, researchers have examined the influence of geopolitical risk on oil, gold, and stock returns throughout the Global Financial Crisis, the COVID-19 pandemic, and the Russia-Ukraine War. This analysis employed Wavelet Power Spectrum and Wavelet Coherence Transformation techniques (Shaik et al., 2023). Their findings indicate that gold provides superior diversification prospects compared to stocks and oil markets during financial turmoil. This research contributes to a deeper comprehension of how geopolitical risk impacts financial markets in turbulent periods and aids in identifying potential safe-havens. Overall, existing literature demonstrates the adverse effects of wars on stock markets (Kamal et al., 2023). Studies utilizing event study methodology have observed negative abnormal returns on the event date, with this unfavorable market reaction dissipating after the event.

Murtaza & Ali (2015) also studies the impact of political uncertainties on the stock market of Pakistan. He has taken a total of nine events and grouped them into two categories. The first category involves those events that cause changes in government policies and the other are those events that do not bring any change in government policy. By using t-statistics, the findings show that those political uncertainties that affect the government policies significantly affect the stock returns of the KSE. Scholars find the impact of political events on the KSE and find that elections of the state result in increased stock returns, while the selection of prime minister results in decreased stock returns in Pakistan (Audi et al., 2022). Other studies have also been done to find the impact of political instability on stock returns and they have found a negative relationship between them. The increase in political instabilities results in the decline of stock prices (Irshad, 2017).

Studies have found that political uncertainties are affecting stock prices. They have further confirmed that political uncertainties reduce the prices of the stocks in the year prior to the elections and during the elections as well because the level of uncertainty increased during this period and that decreased the stock returns (Fulgence et al., 2023). Literature also shows that presidential elections also increase the volatilities in the stock markets because the high level of pre-election uncertainty increases the volatilities in the stock markets (Musah et al., 2023).

On the other hand, exports positively impact stock prices, and inflation harms the economy. Saeed Meo (2017) has studied the influence of political instability, corruption, and effectiveness of the government on the performance of the stock market by using the VECM model for the countries of South Asia. They found a positive relationship exists between political stability and corruption control in South Asian countries.

Ghanem & Rosvall (2014) have studied the impact of the major events in the world on the international prices of the stock markets by using the event study methodology. They have found that the stock market responds differently to the different events of the world. The spillover is significantly negative for the economic events, and they have found neutral and positive reactions to the stock market. Moreover, they have found evidence that the stock markets of Europe follow a similar pattern after the effect of international events of the world.

Globalization has increased the dependencies between the financial markets of the globe (Ali, 2022). The domestic and international markets are closely integrated. The information flows and volatility from the currency markets in the international markets affect the domestic stock markets of the country. The political and natural crisis in the international markets transmits to the highly integrated domestic markets, and these crises reduce the benefits of portfolio diversification for international investors. International investors can benefit from their portfolios only when the markets have weak integration. The crisis in the immense international markets affects other countries' financial markets. The level of integration between the international markets also changes during a crisis.

Sulehri & Ali (2020) have studied the impact of political events on the stock markets of Pakistan by using the event study methodology. They have taken a total of 18 events, which included the positive and negative events, and they have found that major events in Pakistan have significant influence on the stock markets, like the nuclear test and reinstating of Nawaz Sharif by the Supreme Court. The Ukraine Crisis has increased the volatility in the crude oil price and reached heights. This aims to hit China's economy (CNBC, 2022). Overall, they have found that the major events bring instability to the stock market returns of Pakistan. The political events bring volatility to the stock markets, which is of major concern for investors and policymakers in making investment decisions. Based on this literature, the following hypothesis has been developed:

$\boldsymbol{H_1}$: Their volatility spillover has increased from the political uncertainties of the USA to the stock markets of South Asian countries.

Methodology

The study has also used the Markov-Switching Regression model to address the non-linear nexus of the South Asian stock markets. This technique has the benefit over the conventional techniques because it addresses the non-linear nature of the time series data. The switching regression helps find non-linearity and asymmetry in the financial data of the markets. The model is also helpful whenever adjustments are driven mainly by exogenous actions (Baghchi, 2017).

Moreover, for estimating the spillover from the political uncertainties of the U.S. to the stock markets of South Asia, the DCC-GARCH model has been used. The model enables estimating the correlations in the volatilities that are dynamic in nature and it also helps devise the optimal diversification alternatives for the investors and portfolio managers. The study has used the daily data of South Asia's stock markets. The stock markets include Maldives, Pakistan, Sri Lanka, Afghanistan, Nepal, Bhutan, and Bangladesh stock exchanges. Afghanistan was subsequently excluded from the research due to the absence of stock data, as the country lacks a stock exchange. This study employs geopolitical risk as a substitute for political crisis, which is characterized as the risk stemming from terrorist activities, armed conflicts, and interstate political tensions (Elsayed & Helmi, 2021). Such risks disrupt the smooth and typical progression of international relations (Caldara & Iacoviello, 2022).

Results & Discussion:

Descriptive Statistics

Table 1 recapitulates the findings and shows that the average returns of NEPSE stock markets have a maximum value of 0.000728, while crude oil markets have the lowest mean return of 0.000205. The table also shows that the Maldives Stock Exchange Index (MASIX) has a maximum value of returns of 0.614748. The Royal Securities Exchange of Bhutan Limited (BSI) has having least amount of standard deviation of 0.005200. Moreover, the values of Skewness help in understanding the nature of data distribution. Moreover, the Maldives Stock Exchange Index (MASIX) has a maximum value of skewness of 6.102631, which makes it positive or right-skewed. Then, the Kurtosis value is larger than three for all the market returns. The high value of Kurtosis tends to produce extreme returns in the market that can also be positive and negative. Moreover, Jarque-Bera's values are also significant for the returns of all the series and endorse that these returns distributions are not normal.

Table 1

Descriptive Statistics

	RNIFTY50	RKSE100	RNEPSE	RDSEX	RMASIX	RBSI	RCSE	RGPR USA
Mean	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Median	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Maximum	0.163	0.085	0.0829	0.097	0.614	0.061	0.182	2.282
Minimum	-0 152	-0.077	-0 162	-009	-0 244	-0 021	-0138	-0.871
Std. Dev.	0.014	0.013	0.016	0.01	0.026	0.005	0.011	0.055
Skewness	-0.594	-0.299	-0.632	-0.203	6.102	3.052	0.015	11.817
Kurtosis	14.529	7.062	13.19	17.525	147.019	34.399	28.463	538.482
Jarque-Bera	31127.76	3979088	6031.87	16909	3337257	32913	148779	68580

	RNIFTY50	RKSE100	RNEPSE	RDSEX	RMASIX	RBSI	RCSE	RGPR USA
Probability	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sum	2.442	3.418	0.999	4.29	1.385	0.297	2.877	0.819
Sum Sq. Dev.	1.184	0.99	0.393	0.196	2611	0.02	0.766	17.754

Unit Root Test

The ADF and Phillip-Perron tests have been used and results are reported in Table 2. The findings show that all the series of prices are non-stationary at their first level, and consequently, these get stationary at their first difference after differencing them. Hence, the study can discard the null hypothesis of stationary series at their level. This suggests that all of these series have a unit root, and their first difference should be used for further analysis to avoid spurious regressions.

Table 2

Unit Root Test

	Augmented dicky Fuller Test		Phillips-Perron Test	
	At Level	1st difference	At Level	1st difference
KSE-100	-2.290 (0.438)	-66.852 (0.000)	-2.379 (0.390)	-67.233 (0.000)
NIFTY-50	-1.367 (0.870)	-72.848 (0.000)	-1.428 (0.852)	-72.848 (0.000)
NEPSE	-1.944 (0.630)	-17.743 (0.000)	-1.791 (0.708)	-34.273 (0.000)
DSEX	-1.608 (0.478)	-18.364 (0.000)	-1.558 (0.503)	-41.324 (0.000)
MASIX	-2.118 (0.534)	-62.551 (0.000)	-2.064 (0.565)	-62.562 (0.000)
BSI	-0.183 (0.993)	-17.341 (0.000)	-0.867967 (0.9575)	-28.962 (0.000)
CSE-All Share	-3.371 (0.055)	-11.303 (0.000)	-2.978903 (0.1382)	-62.647 (0.000)
GPR-USA	-6.185307 (0.000)	-56.647 (0.000)	-7.406319 (0.070)	-34.876 (0.000)

Heteroscedasticity & ARCH-LM Test

For the application of ARCH and GARCH models on the data, it is required to check the heteroscedasticity and autocorrelation of the returns series. This family is used for analysis and results have been reported in Table 3. For checking these two conditions, firstly, the heteroscedasticity has been checked, and it shows significant results at a 5% level for all the returns series except the returns of The Royal Securities Exchange of Bhutan Limited (BSI), which were significant at a 10% level. Secondly, the study used the ARCH-LM test to check the ARCH effects in the returns series. The results favor the alternate hypothesis and reject the null hypothesis of no autocorrelation in the data, and the ARCH-LM Test has been used. Consequently, it confirms the ARCH effect's existence in the series. After fulfilling both conditions, the volatility spillover has been checked with the help of Markov-& DCC-GARCH approaches.

Table 3

Heteroscedasticity & ARCH-LM Test

		Heteroscedasticity	ARCH-LM
KSE-100	F-Statistics	407.931	2.712
	P-value	0.000	0.099
NIFTY-50	F-Statistics	250.740	3.498

		Heteroscedasticity	ARCH-LM
	P-value	0.000	0.003
NEPSE	F-Statistics	159.908	2.310
	P-value	0.000	0.042
DSEX	F-Statistics	11.058	5.454
	P-value	0.000	0.000
MASIX	F-Statistics	1.566	0.674
	P-value	0.210	0.642
BSI	F-Statistics	3.309	8.141
	P-value	0.069	0.000
CSE-All Share	F-Statistics	192.744	6.297
	P-value	0.000	0.000
GPR-USA	F-Statistics	21.01111	35.66187
	P-value	0.000	0.000

Volatility spillover from Political Uncertainties (Global Political Risk) of USA to South Asian Stock Markets

The study now checks the volatility spillover that comes from the political uncertainties of the United States of America. The Markov Switching Model has been employed for investigating the volatility spillover from the Global Political Risk of the United States of America to the South Asian Stock markets, and its results are presented in Table 4. The results show that in the first regime, the Global Political Risk of the USA has positively and significantly affected the KSE-100, BSI, and CSE-All Share. It has negatively affected the returns of the NEPSE, the DSEX, and MASIX. At the same time, the National Stock Exchange of India (NIFY-50) remains unaffected. On the contrary, during the second regime, the Global Political Risk of China had a positive and significant impact on the Dhaka Stock Exchange (DSEX) and a negative impact on the Maldives Stock Exchange (MASIX). This shows that the political uncertainties of the USA are affecting the stock markets of Bangladesh and Maldives only.

Moreover, the standard error of regression coefficients has lower values in the second regime for all the South Asian stock markets, which means the volatility has decreased for these stock markets during the political uncertainties in the USA. The lower values of standard errors bring more accuracy for the model estimation. Overall, the values of standard errors are low for the second regime, and both values are closer to zero, which indicates the absence of random error in the model. It also confirms the data adequacy and low difference between the real and predicted values by the model.

Table 4

Bi-Variate Markov Switching Model

Stock Markets	Regimes	Variable	Coefficient	St. Error	Z-Statistics	Probability
KSE-100	Regime 1	RNYSE	0.001	0.000	4.132	0.000
	Regime 2	RNYSE	0.000	0.000	1.339	0.181
NIFTY-50	Regime 1	RNYSE	0.000	0.000	-0.669	0.503
	Regime 2	RNYSE	0.000	0.001	-0.454	0.650
NEPSE	Regime 1	RNYSE	-0.001	0.000	-3.618	0.000
	Regime 2	RNYSE	-0.002	0.001	-1.345	0.179
DSEX	Regime 1	RNYSE	-0.021	0.012	-1.742	0.082
	Regime 2	RNYSE	0.000	0.000	-2.099	0.036
MASIX	Regime 1	RNYSE	-19.852	0.854	-23.234	0.000
	Regime 2	RNYSE	-10.139	0.503	-20.161	0.000

Stock Markets	Regimes	Variable	Coefficient	St. Error	Z-Statistics	Probability
BSI	Regime 1	RNYSE	0.002	0.001	2.003	0.045
	Regime 2	RNYSE	0.000	0.000	-0.578	0.564
CSE-All Share	Regime 1	RNYSE	0.010	0.001	7.490	0.000
	Regime 2	RNYSE	0.000	0.000	0.769	0.442

Transition Probabilities and Expected Durations from Markov Switching Model

The study has reported the estimates of probabilities for transition along with the forecasted duration in each Regime during Political Uncertainty in the USA in Table 5. The transition probabilities from the first regime to the second regime (P_{12}) are higher for most South Asian Stock markets than the transition probabilities from the second to first regime(P_{21}). This shows that the second regime is relatively permanent, and the transition process is comparatively slow from the second regime to the first regime. However, the KSE-100, the National Stock Exchange of India Limited (NIFTY-50), and the Nepal Stock Exchange (NEPSE) have high values of transition from the second to the first regime. The majority of stocks have a larger expected duration of remaining in the second regime, while the expected duration of being in the second regime also has higher values; this confirms that the second regime is more stable than the first one. The Maldives Stock Exchange (MASIX) has maximum values of expected duration in the second regime. Additionally, the one-step ahead regime switching probabilities for all the stock markets are shown in Figure 1.

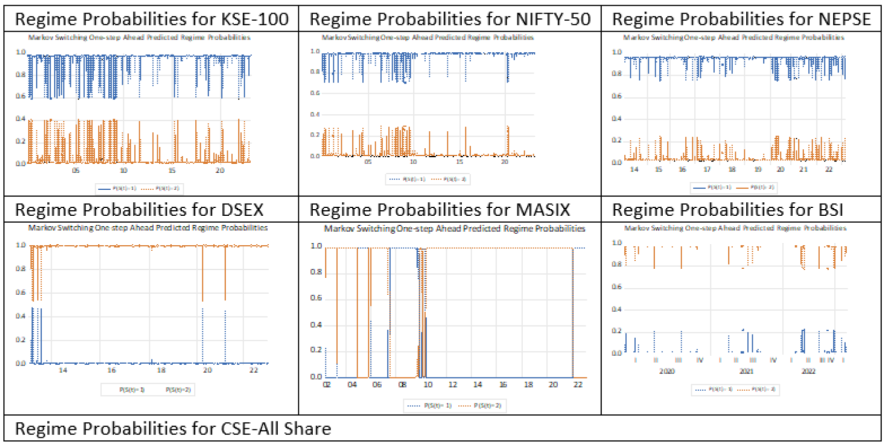
Table 5

Transition Probabilities and Expected Durations

Stock Markets	Transition Probabilities				Expected Duration	
	P_{11}	P_{12}	P_{21}	P_{22}	DU_1	DU_2
KSE-100	0.976	0.024	0.593	0.407	42.144	1.687
NIFTY-50	0.985	0.015	0.708	0.292	68.341	1.412
NEPSE	0.961	0.039	0.750	0.250	25.904	1.334
DSEX	0.475	0.525	0.004	0.996	1.905	268.227
MASIX	0.996	0.004	0.001	0.999	283.781	960.297
BSI	0.228	0.772	0.025	0.975	1.295	39.629
CSE-All Share	0.368	0.632	0.008	0.992	1.582	121.542

Figure 1

Regime Switching Probabilities for all the South Asian Stock Markets



Short and Long Run Volatility Spillover from Political Risk of USA and South Asian Stock Markets

For checking the short and long-run volatility spillover in the South Asia stock markets, the study has employed the DCC-GARCH model, and its results have been reported in Table 6. The results show that α is significant for all the stock markets except the Royal Securities Commission of Bhutan (BSI), confirming the dependence on the lagged squared residuals. Then, the β values are also significant for all the stock markets, showing the persistence of volatility. It also confirms that volatility can be estimated by its lagged values. Moreover, the sum of α and β is less than for all the series, which signifies the deterioration in the persistence of volatility with time, and it further confirms that conditional correlation does not remain constant and keeps changing with time. Overall, it confirms the diffusion of information from the Political uncertainties of the USA to the stock markets of South Asia.

The value of DCCα shows significant values for the National Stock Exchange of NIFTY-50, DSEX, and MASIX, while the remaining stock markets remain unaffected. This confirms that transmission of volatility spillover from the political uncertainties does exist in the short run for the stock markets of India, Bangladesh, and Maldives only. On the contrary, the value of DCCβ shows significant values for all the stock markets at a 5% level, which means volatility spillover does exist from the political uncertainties of the USA to these markets in the long run. This means investors need to look for alternate options for diversifying their portfolios because all the South Asian markets are being affected by the political uncertainties of the USA in the long run.

Table 6

DCC-GARCH Approach

Stock Markets	Estimates	µ	Ω	A	β	DCC α	DCC β	Elapsed Time
KSE-100	Coefficients	0.000	0.000	0.153	0.807	0.441	0.554	16.610
	Sig-Value	0.000	0.000	0.000	0.000	0.440	0.000	
NIFTY-50	Coefficients	0.000	0.000	0.110	0.878	0.162	0.763	10.905
	Sig-Value	0.000	0.046	0.000	0.000	0.000	0.000	
NEPSE	Coefficients	0.000	0.000	0.216	0.735	0.012	0.826	4.925
	Sig-Value	0.010	0.000	0.000	0.000	0.775	0.007	
DSEX	Coefficients	0.000	0.000	0.247	0.740	0.125	0.841	4.776
	Sig-Value	0.101	0.068	0.000	0.000	0.002	0.000	
MASIX	Coefficients	0.000	0.000	0.021	0.973	0.745	0.250	15.678
	Sig-Value	0.626	0.462	0.000	0.000	0.000	0.000	
BSI	Coefficients	0.000	0.000	0.032	0.953	0.001	0.586	2.218
	Sig-Value	0.653	0.822	0.153	0.000	0.504	0.000	
CSE-All Share	Coefficients	0.000	0.000	0.280	0.718	0.058	0.824	10.083
	Sig-Value	0.138	0.339	0.000	0.000	0.139	0.000	

DCC GARCH Forecasts

The forecasts for the Conditional Correlation Matrices are shown in Table 7. The forecasted conditional correlation between all the series is almost close to zero, which suggests that no significant relationship exists among the forecasted returns of both series. The National Stock Exchange of India (NIFTY-50), the Maldives Stock Exchange (MASIX), and the Royal Securities Exchange of Bhutan (BSI) have negative correlation forecasts with the Global Political Risk of the USA. The conditional correlation remains constant over 5 periods, suggesting that the model expects a constant and stable relationship between both series in the near future.

Table 7

DCC GARCH Forecasts

Stock Markets	1	2	3	4	5
KSE-100	0.107	0.107	0.106	0.106	0.106
NIFTY-50	-0.191	-0.177	-0.163	-0.151	-0.140
NEPSE	0.006	0.006	0.006	0.005	0.005
DSEX	0.067	0.065	0.065	0.062	0.061

MASIX	-0.003	-0.003	-0.003	-0.003	-0.003
BSI	-0.039	-0.039	-0.039	-0.039	-0.039
CSE-All Share	0.012	0.008	0.004	0.001	-0.002

Correlation between US & South Asian Political Risk

The association between the Global Political has been checked, and its results are shown in Table 8 and graphically in Figure 2. Overall, the findings show a positive and weak relationship between the majority of South Asians and the political uncertainties of the USA. This shows that these series show some dependence on each other. On the contrary, the Royal Securities Exchange of Bhutan (BSI) has a negative Correlation with the political uncertainties of the USA. Figure 4 also shows that patterns of their correlation are not constant. Instead, it keeps changing with time and returns to its mean position that exists in the long term.

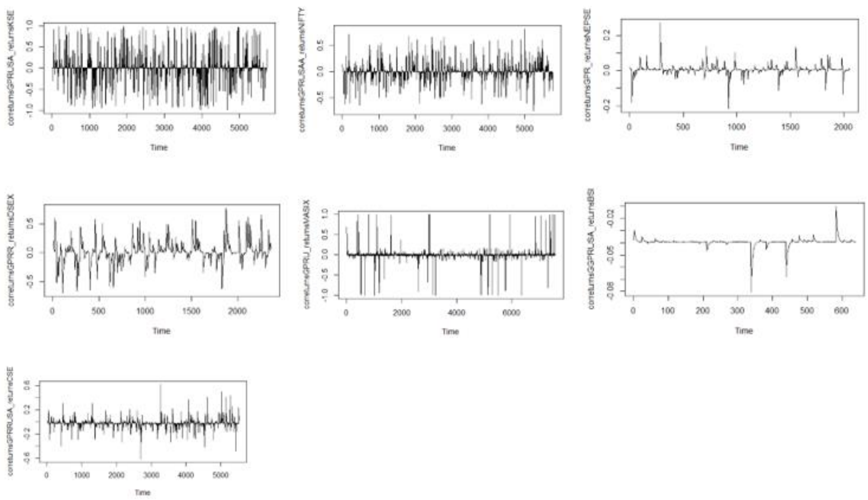
Table 8

Correlation among US & South Asian Political Risk

Stock Markets	Correlation
KSE-100	0.009
NIFTY-50	0.100
NEPSE	0.015
DSEX	0.136
MASIX	0.671
BSI	-0.030
CSE	0.019

Figure 3

Correlation among US & South Asian Political Risk



Covariance among US & South Asian Political Risk

The covariance among the Political uncertainties is shown in Table 9 and graphically in Figure 4. The results show that covariance between both the series is low and propose that fluctuations in the political conditions of the USA cannot predict the volatility in the South Asian' stock markets.

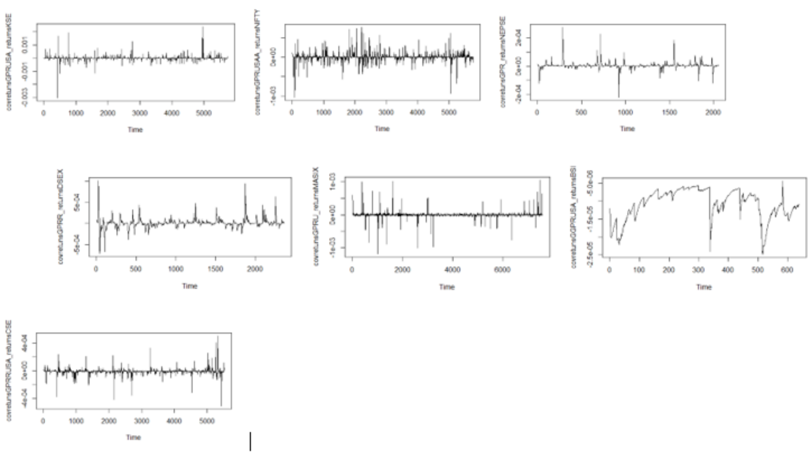
Table 9

Covariance among US & South Asian's Political Risk

Stock Markets	Variance of NYSE Returns	Variance of Stock Market Returns	Covariance
KSE-100	1.97E-04	1.77E-04	1.68E-06
NIFTY-50	3.07E-03	2.67E-04	9.02E-05
NEPSE	3.27E-03	1.57E-04	1.05E-05
DSEX	3.10E-03	6.05E-05	5.88E-05
MASIX	1.46E-03	5.10E-04	5.78E-04
BSI	1.15E-02	-1.47E-05	2.14E-05
CSE-All Share	3.20E-03	1.11E-04	1.11E-05

Figure4

Covariance among US & South Asian's Political Risk



Results Discussion

The Markov Switching Model has shown that in the first regime, the Global Political Risk of the USA affected the majority of the stock markets in South Asia. This shows that the political uncertainties of the USA are affecting the stock markets of Bangladesh and Maldives only during periods of high volatility. Moreover, the standard error of regression coefficients has lower values in the second regime for all the South Asian stock markets, which means the volatility has decreased for these stock markets during the political uncertainties in the USA. The transition probabilities from the first to the second regime are higher for most South Asian Stock markets. This shows that the second regime is relatively permanent, and the transition process is comparatively slow from the second to the first regime. Then expected duration is large for second regime, while the expected duration of being in the second regime also has higher values; this confirms that the second regime is more stable than the first one. The Maldives Stock Exchange (MASIX) has maximum values of expected duration in the second regime, which shows that volatility does not spill over to this market from the political uncertainties in the USA.

The DCC-GARCH model confirms the dependence on the lagged squared residuals for all the stock markets and the persistence of volatility. It also confirms that volatility can be estimated by its lagged values. Moreover, the sum of α and β is less than for all the series, which signifies the deterioration in the persistence of volatility with time. Overall, it confirms the diffusion of information. It also confirms that transmission of volatility spillover from the political uncertainties does exist in the short run for the stock markets of India, Bangladesh, and Maldives only. In contrast, long-term volatility spillover is evident across all South Asian stock markets. This implies that investors should seek alternative diversification strategies for their portfolios, as the political uncertainties in the United States have a long-term impact on all South Asian markets. The research indicates a weak but positive correlation between most South Asian markets and US political uncertainties. On the contrary, the Royal Securities Exchange of Bhutan (BSI) has a negative Correlation with the political uncertainties of the USA. Results show that patterns of their correlation are not constant. Instead, it keeps changing with time and returns to its mean position that exists in the long term.

Conclusion

The study aimed to find the volatility spillover from the U.S. political uncertainties to the stock markets of South Asia. The findings have found a significant spillover from the USA geopolitical risk to the South Asian stock markets. The results of the Markov-Switching model have shown a significant spillover during the period of high volatility, especially for the stock markets of Maldives and Bangladesh. Moreover, the transitions from the second regime are slow due to reduced volatility. Then, DCC-GARCH's findings have shown the short-run spillover in India, Bangladesh, and Maldives, while spillover does exist in the long run for all the markets. Overall, there exists a positive but limited association between South Asian stock markets and the geopolitical risk of the United States. Therefore, it is crucial for investors to look for alternative options for investments during the time of heightened political uncertainties in the USA.

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