

**Impact of
Cross-Country Conflict
on Stock Market Return**



United International University
QUEST FOR EXCELLENCE

Impact of Cross-Country Conflict on Stock Market Return

Submitted To

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Dr. Md. Mohan Uddin

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United City, Madani Avenue, Badda, Dhaka 1212, Bangladesh

Dear Sir,

I respectfully submit my project report entitled “Impact of Cross-Country Conflict on Stock Market Returns,” prepared as part of the requirements for the Bachelor of Business Administration (BBA) program, majoring in Finance & FinTech at United International University. This report reflects my academic effort to explore the relationship between cross-country conflict and financial market performance.

The primary objective of this study is to examine whether cross-country conflict consistently affects stock market returns across different economies. In preparing this report, I have endeavored to apply theoretical concepts to practical analysis while ensuring clarity, accuracy, and academic integrity.

I am sincerely grateful for your guidance, which has been invaluable in completing this work in a structured and meaningful manner. I would be honored if you kindly review this report and provide your valuable feedback. I hope that the findings of this study offer useful insights into how macroeconomic stability influences market responses to cross-country conflict.

Sincerely,

Mohammad Aqib Khan

ID: 111 221 137

Acknowledgement

I would like to thank everyone who helped me complete this project.

First, I am very grateful to Almighty Allah for giving me the strength, patience, and determination to finish this research successfully.

I would like to sincerely thank my supervisor, Md. Mohan Uddin, PhD, Professor at the School of Business & Economics (SoBE), United International University, for his guidance, advice, and support throughout this project. His suggestions and feedback were very helpful in completing this study.

I am also thankful to United International University for providing the resources and environment that made this work possible.

I would like to thank my friends and classmates for their help, advice, and encouragement during this project.

Finally, I am deeply grateful to my family for their love, support, and understanding, which gave me the motivation to complete this work.

Abstract

This study looks at how cross-country conflicts affect stock market returns. It also shows how a country's financial health changes this effect. Many studies say that conflicts always reduce market performance. But this study wants to test if that is always true. It looks at a country's financial strength, like government debt and foreign exchange reserves. These factors help us understand how badly the market is affected.

The study uses monthly data. It has 616 observations from six countries. These countries are India, Israel, Lebanon, Mexico, Pakistan, and Ukraine. The data covers the time from February 2017 to September 2025. A Two-Way Fixed Effects model is used in this study. It also uses Driscoll–Kraay standard errors to measure the results properly.

The results show that conflicts do not always cause a big drop in stock returns. Sometimes the effect is small. The impact depends on a country's financial condition. In countries with high debt, the negative effect becomes much stronger. In countries with low foreign exchange reserves, the effect is even worse. It can be more than 16 times stronger than normal periods. This means stock market drops after conflicts are mainly caused by weak financial conditions. It is not only because of the conflict.

Overall, the study shows that strong reserves and low debt are very important. These help protect markets from outside attacks. The findings are useful for investors and policymakers. They also help us understand how economies stay strong during difficult times.

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1.0 Introduction

1.1 Historical Context

People can start war. Also, they can win. But they cannot save their economy. The economy is affected before the fight that people start. This happens because of the online platforms. Online platforms kill economy before people.

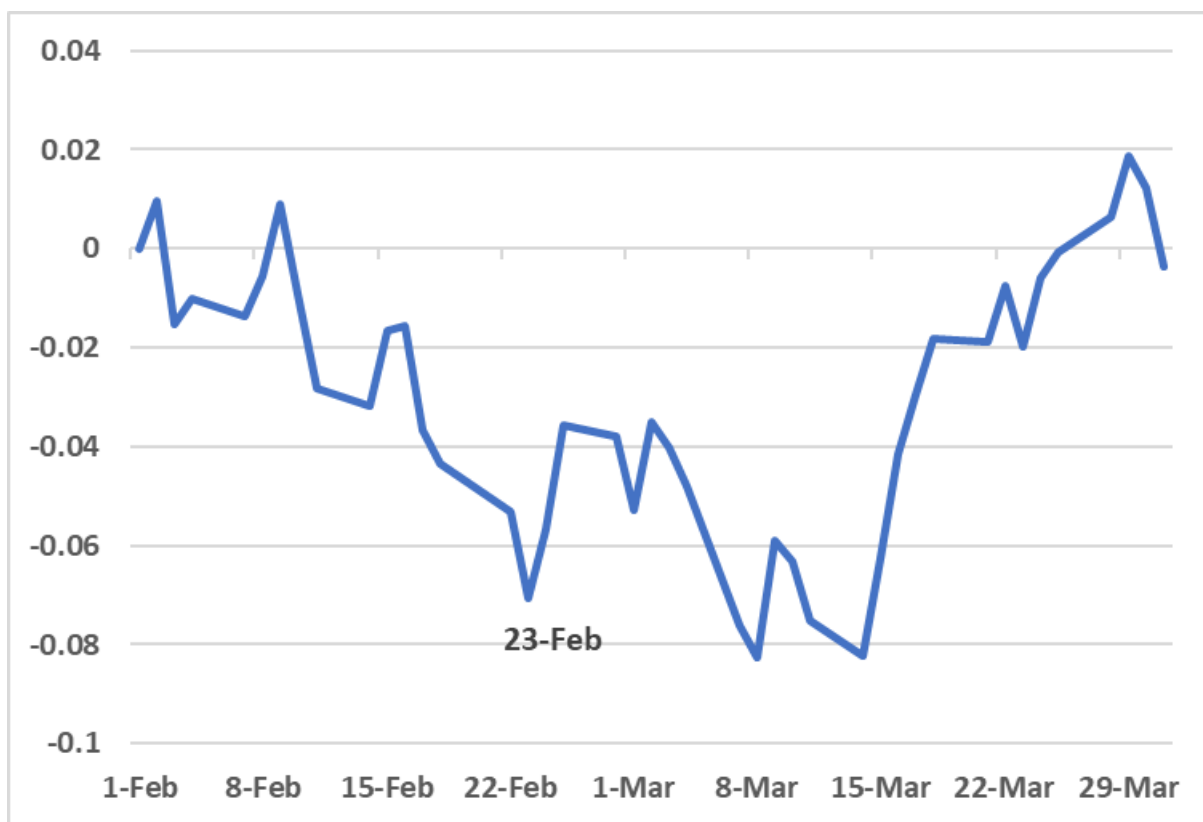


Figure 1: Cumulative Performance of the S&P 500 Around the Russia-Ukraine Invasion
(Feb-Mar 2022)

(S&P 500 Historical Data (SPX), 2026)

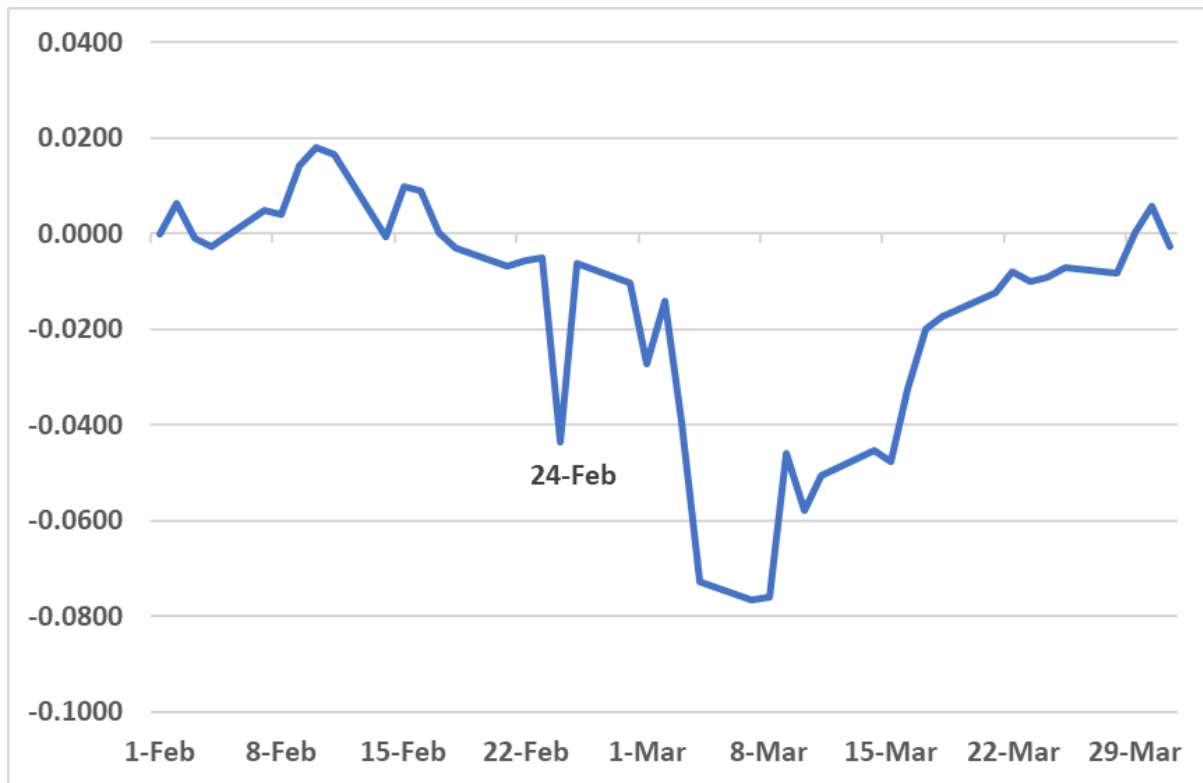


Figure 2: Cumulative Performance of the FTSE 100 Around the Russia-Ukraine Invasion
(Feb-Mar 2022)

(FTSE 100 Historical Data (FTSE) - Investing.Com, n.d.)

There are trends in the stock market. Figure 1 & 2 shows us that the S&P 500 and FTSE 100 started falling before the attack (before 24 Feb, 2022). This happens because investor's panic. They think the war will kill their gains from the stock. So, they start to sell before the event. For example: before 24 Feb, investors became aware, they sold their stocks, and the market started falling before any fight happened. That means there was a trend even before the war.

In the modern world, stock prices react differently in different situations. It is not the fault of the stock, but it is the thinking of the people who wants to move from risky assets to safer assets.

1.1.1 Economic Impact

In the modern world, news is the most important factor. It spreads very fast. One thing's impact from a corner of the world can go to the other corner in less than a second. So, this thing can stop big companies. Because almost no big company in this world make their product in their own country. They get supplies from many countries. For example: Apple make their product in USA. But they assemble them in China.

So, this trade link between many countries can break because of the war even before the war. This break can stop production of the country. So, sells go down, profit go down, and this makes the stock prices fall.

Another thing is very important which is closeness. If a country is very close to a war-affected country, then it will feel the worst impact from any other country. Another important thing is dependence. Close countries depend on each other very much. They prefer many products from the closest country as it will reduce costs for them.

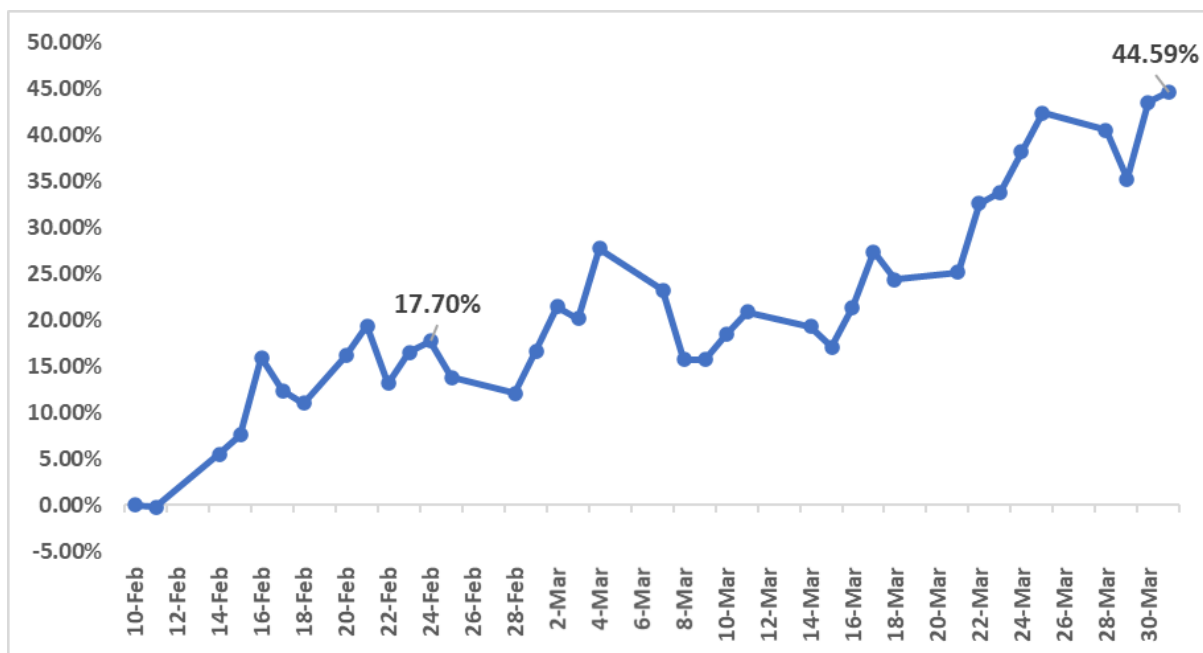


Figure 3: Natural Gas Price Increase (Feb-March 2022)

(Natural Gas Futures Price Today, 2026)

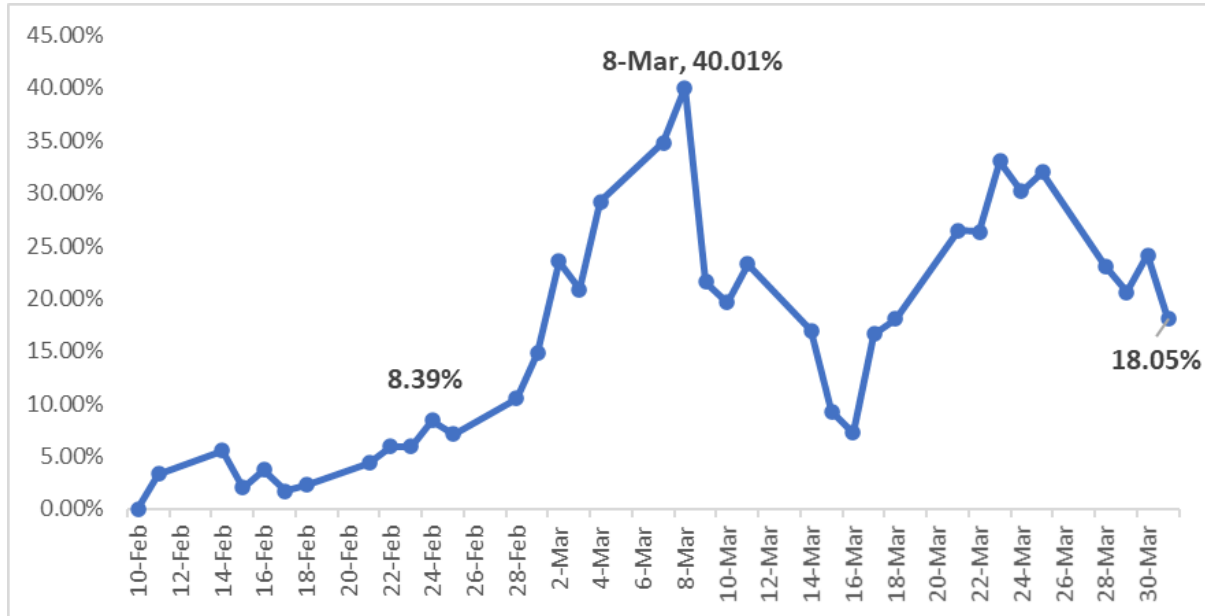


Figure 4: Brent Oil Price Increase (Feb-March 2022)

(Brent Oil Futures Historical Prices, 2026)

The prices of the products go up because of the conflicts. Figure 3 & 4 shows us the prices. From 10 February to March, the prices went up like fire. Brent oil went up about 40%. It was the highest point. Then it went down.

On the other hand, the gas prices went up more and more. Because it is hard to replace gas for the people in this world.

European markets go down but comeback faster. But it takes time for the markets which are emerging (Boussetta et al., 2025). Market which are developing takes a long time to comeback in stable situation.

Countries like Australia, France, Germany, India saw big drops in their markets only after the attack. Both European and Asian stock markets were hit hard. But countries like Hungary went down even before the war started (Yousaf et al., 2022).

1.2 Research Problem

Studies show cross-country conflicts have bad effects in the stock markets. But people are not sure if the effects are very strong and same for every country. Our study tries to show that if the effect is same for all countries or not. And we tried to focus on the weak points like low foreign exchange reserves and high government debt.

1.3 Research Questions & Hypotheses

Based on the empirical framework, this study addresses the following questions:

1. Does cross-country conflict create a statistically significant negative pressure on stock market returns?
2. How much negative impact is increased by high level of government debt in the domestic stock markets?
3. Do reduced foreign exchange reserves increase investor panic during conflict and does it result in larger decline in stock returns?

To answer the research questions, the following alternative hypotheses (H1) were tested against the null:

- i. H1: Geopolitical conflict has a significant negative impact on stock market returns.
- ii. H2: The negative impact of conflict on stock returns is significantly magnified in countries characterized by high external debt.

- iii. H3: Low foreign exchange reserves highly increase the negative conflict coefficient of stock return.

1.4 Significance of the Research

This study is important for many people. It shows the importance of different economic parts of the country. If the economic parts are strong then the stock market of the country can face any problem which is thrown at it.

For investors, it is important to see the economic conditions of the country in which they are investing, not only the stock returns and volatility.

For academic research, it shows that financial conditions can significantly change the impact of the conflict to the country

2.0 Literature Review

2.1 General Market Reaction

Previous studies show that conflicts and wars between countries usually make stock markets go down. But how much they go down and in what way is different for different countries, industries, and market types.

For example, the Russia–Ukraine conflict made stock returns fall a lot. It was mainly in Russia and some European countries. Industries like mining, construction, and manufacturing were hit harder than other sectors (Das et al., 2023). Similarly, European stock markets reacted differently depending on their type. Emerging markets went down more for a long period. And they were more unstable than developed markets (Boussetta et al., 2025).

Research that studies events also shows that wars act as sudden “shocks” and cause unusual drops in stock markets around the conflict date. Studies on Russia-Ukraine war show that most G20 and European markets went down a lot either just before or right after the attack. It was with differences in how quickly and how much each region was affected (Martins et al., 2023; Yousaf et al., 2022).

Not all markets react in the same way. In the 2023 Israel war, global markets changed a little bit. But the nearby markets were affected more and sometimes went up. This shows that markets react quickly to news (Saad, 2025).

2.1.1 Behavioral & Firm-Level Effects

Many studies show that conflicts affect people’s behavior and different industries. During the Russia-Ukraine war, mainly at the start of the conflict, investors in emerging markets copied

each other. At the same time, developed markets stayed more stable (Blasco et al., 2024). Israel-Gaza war shows us another thing which is focus of investors. Focus of investors made the markets more volatile (Ahmed & Sleem, 2024).

Companies must move from the conflict affected countries. If a company stays in the country where the conflict is happening then it will have more impact than the other companies who moved from that country (Tosun & Eshraghi, 2022).

2.1.2 Sectoral & Sanction-Based Impact

Country connection is a thing that impacts the markets (Martins et al., 2023). Russia-Ukraine war shows us that Europe and Asia were highly affected. But US was affected less because it was less connected with the conflict (Küçükçolak et al., 2024).

With war side by side, economic sanctions also affect stock markets. Because if big countries impact sanctions then the stock values of targeted weak countries will go down (Biglaiser & Lektzian, 2020).

Overall, studies show that conflicts make lower stock returns. It causes investors to act differently and affects countries, industries, and companies.

2.2 Future Direction

2.2.1 Expanding Scope & Sectoral Analysis

Some things from the studies are not answered.

The long-term effect must be seen in the future research (Das et al., 2023; Martins et al., 2023). More countries should be studied to see different perspectives (Boussetta et al., 2025; Yousaf et al., 2022). Different industries should be studied to look at different stock returns and their patterns (Ahmed & Sleem, 2024; Küçükçolak et al., 2024).

2.2.2 Behavioral, Institutional, and Policy Dimensions

Another thing to study is the investors' perspectives and their behaviors before and after the war (Blasco et al., 2024; Tosun & Eshraghi, 2022). Companies' working capital management, stockholders also should be studied (Martins et al., 2023). Government actions and sanctions should be focused to see the real life situations (Biglaiser & Lektzian, 2020).

Another focused thing is diversifying investments which helps investors to get returns from many markets but do that really work when conflicts happen. It should be known by the researchers (Saad, 2025; Yousaf et al., 2022).

3.0 Methodology

3.1 Data & Sample

This study uses data from international sources. These include the Global Conflict Tracker, the World Bank, and the International Monetary Fund. We took monthly data from February 2017 to September 2025. The study looks at six countries: India, Israel, Lebanon, Mexico, Pakistan, and Ukraine. These countries will show us different conflict and economic levels. There are 616 observations 103 months of data for each country.

3.2 Variable Construction

We constructed the variables according to the analysis. The table below shows us all the variables, frequency, and source from where we collected the data. The sources are trusted internationally.

Table 1: Variables used in the study

Variables	Description	Frequency	Unit	Source	Link
Conflict Events	Number of conflict incidents country by country	Monthly	Log-transformed count	Global Conflict Tracker	https://www.cfr.org/global-conflict-tracker
Government Debt	General government gross debt	Annual	Billion USD	WDI	https://databank.worldbank.org/reports.aspx?
Forex Reserves	Total International Reserves, country by country	Annual	USD	IMF	https://www.imf.org/en/publications/weo
GDP Growth	Quarterly GDP growth rate	Quarterly	%	IMF	https://www.imf.org/en/publications/weo

We studied mainly the conflicts and stock returns relationships. We used log-percentage returns and “log plus one” transformation for conflicts to handle no 0 conflict months. Another thing it showed us that the conflict impact from the previous month to this month’s stock return.

Then we added two new variables: High debt and Low Reserves. It will help us to see that if a country has high government debt or low foreign money reserves then it is affected more or less or equally.

Then we added more variables: GDP growth, trade openness, and total reserves. We used these from previous years because it shows us how the economic condition of a country from the previous parts changes with the conflicts.

3.3 Estimation Methodology

The countries of our study are very different. So, we used Two-Way Fixed Effects (TWFE) model to see how the conflicts between countries affect different situational countries and their stock returns. We did the F-test before choosing this method.

We used 5 models. We started with the conflict and stock return relationship. Then we added high debt and low reserve. And we also added the other 3 variables step by step. It made us a total of 5 models. We handled autocorrelation with the Driscoll–Kraay standard errors.

Our full model (Model 5) is defined as follows:

Stock_Return_log_pct_{it}

$$\begin{aligned} &= \beta_1 \cdot \text{Conflict_events_log1p_lag1}_{it} + \beta_2 \cdot \text{High_debt}_{it} + \beta_3 \\ &\cdot \text{Low_reserves}_{it} + \beta_4 \cdot (\text{Conflict_events_log1p_lag1}_{it} \times \text{High_debt}_{it}) + \beta_5 \\ &\cdot (\text{Conflict_events_log1p_lag1}_{it} \times \text{Low_reserves}_{it}) + \beta_6 \cdot \text{GDP_growth_q}_{it} \\ &+ \beta_7 \cdot \text{Govt_debt_pct_GDP_lag1y}_{it} + \beta_8 \cdot \text{Trade_open_pct_gdp_lag1y}_{it} + \beta_9 \\ &\cdot \text{Forex_reserves_raw_lag1y}_{it} + \alpha_i + \lambda_t + \epsilon_{it} \end{aligned}$$

Table 2: Constructed Variables

Variable Name	Symbol/Term in Equation	Description
Stock Return	Stock_Return_log_pct	Dependent variable; monthly logarithmic stock market returns in percentage.
Conflict Intensity	Conflict_events_log1p_lag1	Primary independent variable; log-transformed count of conflict events, lagged by one month.
High debt	High_debt	Dummy variable; equals 1 if the country's debt-to-GDP ratio is in the top quartile (high stress), 0 otherwise.
Low reserves	Low_reserves	Dummy variable; equals 1 if foreign exchange reserves are in the bottom quartile (low liquidity), 0 otherwise.
Conflict × High debt	Conflict_x_High_debt	Interaction term; measures the additional impact of conflict when a country is in a high-debt state.
Conflict × Low reserves	Conflict_x_Low_reserves	Interaction term; measures the additional impact of conflict when a country has low foreign reserves.
GDP growth	GDP_growth_q	Control variable; quarterly GDP growth rate to account for economic cycle effects.
Govt debt (% GDP)	Govt_debt_pct_GDP_lag1y	Control variable; continuous measure of government debt as a percentage of GDP (lagged).
Trade openness	Trade_open_pct_gdp_lag1y	Control variable; sum of exports and imports as a percentage of GDP (lagged).

Forex reserves	Forex_reserves_raw_lag1y	Control variable; raw level of foreign exchange reserves (lagged).
Fixed Effects	α_i, λ_t	Entity (country) and Time (month) fixed effects to control for unobserved factors.

4.0 Findings

At first, we checked if the data we collected were reliable or not. This was very important to prove that our analysis was correct.

4.1 Descriptive Statistics & Distributional Properties

The descriptive statistics for the 616 country-month data show us how the variables go up and down in the six countries (India, Israel, Lebanon, Mexico, Pakistan, Ukraine).

Table 3: Descriptive Statistics

Variable	Mean	Std. Dev.	Minimum	Maximum	Skewness	Kurtosis
Stock Return (log %)	0.7545	5.2040	-26.4600	33.5600	-0.3750	5.9250
Conflict Events (log1p, lag1)	0.0831	0.2593	0.0000	2.5649	3.8690	20.485
GDP Growth (Quarterly)	1.2953	2.9481	-13.0900	12.6500	-1.1350	6.8900
Govt. Debt (% GDP)	476.5292	1368.44	5.0000	17936	8.8750	98.4210
Trade Openness (% GDP)	61.9208	23.8468	24.7016	114.8883	0.3540	2.3020
High Debt (Dummy)	0.4854	0.5002	0.0000	1.0000	0.0580	1.0030
Low Reserves (Dummy)	0.4383	0.4966	0.0000	1.0000	0.2490	1.0620

Here, stock return was very unstable because the mean was very small and the standard deviation was very big (min = -26.46, max = 33.56). This is very volatile situation. Cross-country conflict had high skewness and kurtosis. It was not normally distributed. So we did the log + 1 transformation.

We can also see, high debt and low reserves happened 48.5% and 43.8% accordingly. This was helpful for us because it helped us to see both good and bad situations.

4.2 Correlation Analysis & Multicollinearity Diagnostics

To see how the variables are independent, we did Pearson Correlation Matrix Analysis.

Table 4: Correlation Matrix

	Stock_Return log_pct	Conflict_events log1p_lag1	High_debt	Low_reserves	GDP_growth_q	Govt_debt pct_GDP_lag1y	Trade_open pct_gdp_lag1y	Forex_reserves raw_lag1y
Stock_Return log_pct	1.00000	0.00427	0.05893	0.09417	-0.00436	0.04318	-0.01085	0.00376
Conflict_events log1p_lag1	0.00427	1.00000	0.10228	-0.05571	-0.00651	0.03333	0.06675	-0.02628
High_debt	0.05893	0.10228	1.00000	-0.07892	-0.02900	0.18578	0.04147	0.08942
Low_reserves	0.09417	-0.05571	-0.07892	1.00000	-0.04720	0.18061	0.16400	-0.14500
GDP_growth_q	-0.00436	-0.00651	-0.02900	-0.04720	1.00000	-0.00887	-0.00739	0.09256
Govt_debt pct_GDP_lag1y	0.04318	0.03333	0.18578	0.18061	-0.00887	1.00000	0.28846	-0.07385
Trade_open pct_gdp_lag1y	-0.01085	0.06675	0.04147	0.16400	-0.00739	0.28846	1.00000	-0.26241
Forex_reserves raw_lag1y	0.00376	-0.02628	0.08942	-0.14500	0.09256	-0.07385	-0.26241	1.00000

The usual correlation is 0.70. But our data has 0.28 which is the highest in this set. That means there is no correlation. Every variable in this set is separated.

The correlation of cross-country conflict and stock market return is very low which is 0.004.

This was very weak connection which means simple regression is not enough for this data.

That's why we moved to TWFE.

4.3 Visual Analysis of Time-Series Trends

We tried to see the patterns of the data next.

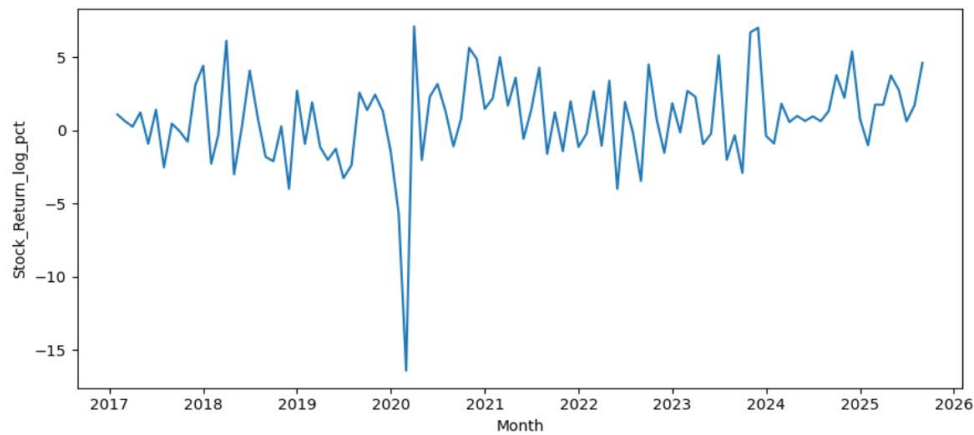


Figure 5: Average Monthly Stock Return Across Sample Countries

Figure 5 shows us the volatility every country faced which is an aggregate view. It includes the pandemic effect of 2020 and volatility clusters in 2024.

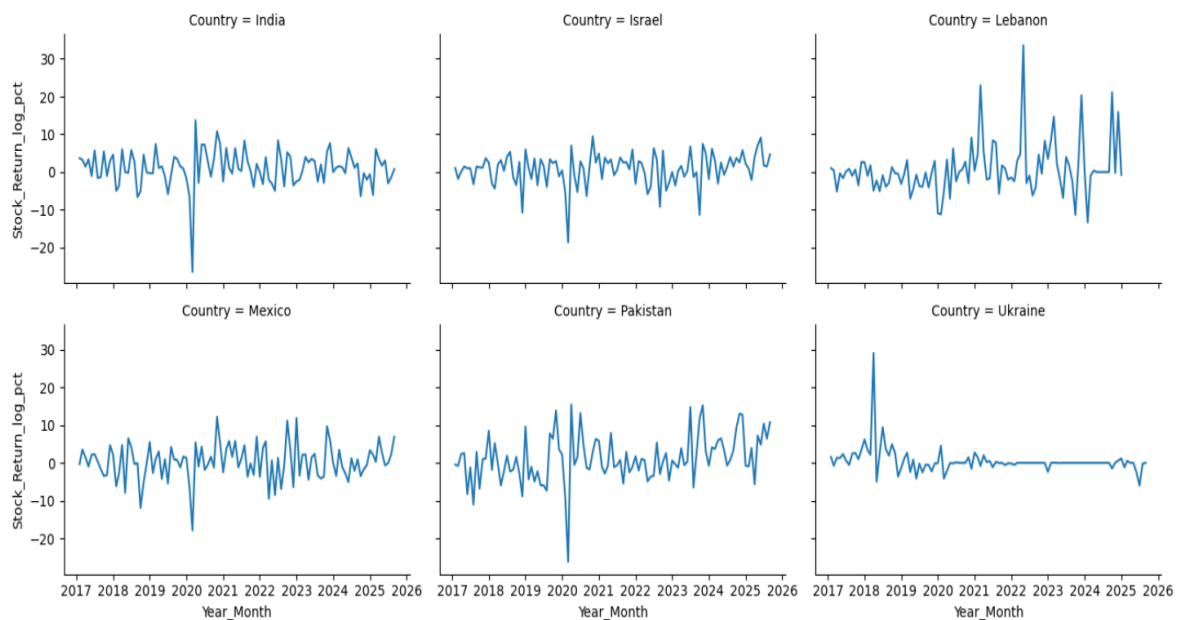


Figure 6: Individual Country Stock Returns

In figure 6, we tried to see countries individually. It helped us to see different national characteristics. We can see, Ukrain and Lebanon were more volatile compared to India. So, different countries in our study were reacting differently. We must consider country specific factors.

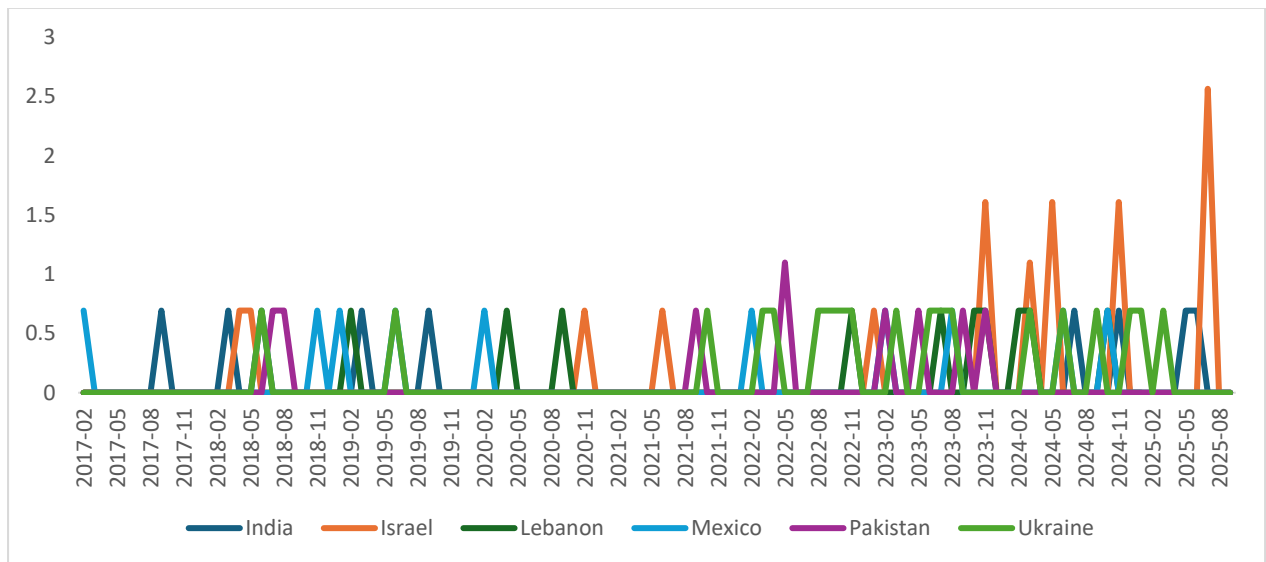


Figure 7: Conflict Events Over Time (All Countries)

We tried to see the conflict increasing periods next. Figure 7 showed us that the conflicts increased a lot from 2022 to 2025.

4.4 Regression Models

We deeply focused on this part. First, we tried to check the base 2-conflicts and stock return. Then we added other variables step by step in model 2, 3, 4, and 5.

Model 1: Baseline Analysis of Conflict & Stock Return

```

=====
PanelOLS Estimation Summary
=====
Dep. Variable:    Stock_Return_log_pct    R-squared:                0.0024
Estimator:        PanelOLS                R-squared (Between):      0.0538
No. Observations: 616                    R-squared (Within):      -0.0024
Date:             Fri, Mar 20 2026        R-squared (Overall):     -0.0022
Time:             21:00:21                Log-likelihood            -1754.9
Cov. Estimator:   Driscoll-Kraay

Entities:         6                      F-statistic:              1.2076
Avg Obs:          102.67                  P-value                   0.2723
Min Obs:          96.000                  Distribution:              F(1,506)
Max Obs:          104.00                  F-statistic (robust):     2.0557
                                           P-value                   0.1523
Time periods:     104                    Distribution:              F(1,506)
Avg Obs:          5.9231
Min Obs:          5.0000
Max Obs:          6.0000

=====
Parameter Estimates
=====
Parameter Std. Err. T-stat P-value Lower CI Upper CI
-----
Intercept 0.8267 0.0503 16.428 0.0000 0.7278 0.9256
Conflict_events_log1p_lag1 -0.8684 0.6057 -1.4338 0.1523 -2.0584 0.3216
=====

F-test for Poolability: 2.5697
P-value: 0.0000
Distribution: F(108,506)

Included effects: Entity, Time

```

This model shows us that if the last month had high number of conflict, then the stock will have low return this month. The co-efficient is -0.8684. That means if 1 unit conflict increases then the stock return falls by -0.8684.

But it was not significant. The P-value is 0.1523. That means conflict does not affect all countries similarly. That's why we need to go for the 2nd model next.

Model 2: Conflict Impact with Macroeconomic Controls

PanelOLS Estimation Summary						
Dep. Variable:	Stock_Return_log_pct	R-squared:	0.0390			
Estimator:	PanelOLS	R-squared (Between):	-190.73			
No. Observations:	616	R-squared (Within):	-0.0187			
Date:	Fri, Mar 20 2026	R-squared (Overall):	-0.6425			
Time:	21:00:21	Log-likelihood	-1743.4			
Cov. Estimator:	Driscoll-Kraay	F-statistic:	4.0755			
Entities:	6	P-value	0.0012			
Avg Obs:	102.67	Distribution:	F(5,502)			
Min Obs:	96.000	F-statistic (robust):	2.8703			
Max Obs:	104.00	P-value	0.0144			
Time periods:	104	Distribution:	F(5,502)			
Avg Obs:	5.9231					
Min Obs:	5.0000					
Max Obs:	6.0000					

Parameter Estimates						
	Parameter	Std. Err.	T-stat	P-value	Lower CI	Upper CI
Intercept	-3.4198	2.6598	-1.2857	0.1991	-8.6456	1.8060
Conflict_events_log1p_lag1	-0.8341	0.6154	-1.3553	0.1759	-2.0432	0.3750
GDP_growth_q	-0.0607	0.1758	-0.3451	0.7301	-0.4062	0.2848
Govt_debt_pct_GDP_lag1y	-0.0006	0.0004	-1.7341	0.0835	-0.0014	8.623e-05
Trade_open_pct_gdp_lag1y	0.1120	0.0469	2.3898	0.0172	0.0199	0.2042
Forex_reserves_raw_lag1y	-1.523e-11	5.075e-12	-3.0006	0.0028	-2.52e-11	-5.257e-12

F-test for Poolability: 2.8052
P-value: 0.0000
Distribution: F(108,502)

Included effects: Entity, Time

Again, we can see, higher conflict last month will result in low return this month. The Co-efficient is -0.8341.

Trade openness has positive effect on returns which were: co-efficient = 0.1120, p = 0.017. That means more trade results in better stock market situation and return.

Foreign reserves and government debt has negative effects on stock market returns. That means if foreign reserves goes down then risk will go up and stability will go down. Because FX doesn't give direct profits to the country. Also, high debt reduced stock market return. FX here is very significant which can hit hard to the country.

As the conflict coefficient was not significant, we felt the need for the interaction terms to carry forward our analysis.

Model 3: The Moderating Effect of High Debt

PanelOLS Estimation Summary

Dep. Variable:	Stock_Return_log_pct	R-squared:	0.0413
Estimator:	PanelOLS	R-squared (Between):	-203.08
No. Observations:	616	R-squared (Within):	-0.0113
Date:	Fri, Mar 20 2026	R-squared (Overall):	-0.6757
Time:	21:00:21	Log-likelihood	-1742.7
Cov. Estimator:	Driscoll-Kraay		
		F-statistic:	3.0782
Entities:	6	P-value	0.0035
Avg Obs:	102.67	Distribution:	F(7,500)
Min Obs:	96.000		
Max Obs:	104.00	F-statistic (robust):	2.3581
		P-value	0.0223
Time periods:	104	Distribution:	F(7,500)
Avg Obs:	5.9231		
Min Obs:	5.0000		
Max Obs:	6.0000		

Parameter Estimates

	Parameter	Std. Err.	T-stat	P-value	Lower CI	Upper CI
Intercept	-3.8806	2.5656	-1.5125	0.1310	-8.9214	1.1602
Conflict_events_log1p_lag1	-0.6677	0.7947	-0.8401	0.4012	-2.2291	0.8938
High_debt	0.5792	0.4944	1.1715	0.2420	-0.3922	1.5506
Conflict_x_high_debt	-0.2928	1.3671	-0.2142	0.8305	-2.9788	2.3931
GDP_growth_q	-0.0506	0.1754	-0.2882	0.7733	-0.3952	0.2941
Govt_debt_pct_GDP_lag1y	-0.0007	0.0004	-1.7881	0.0744	-0.0015	7.008e-05
Trade_open_pct_gdp_lag1y	0.1164	0.0469	2.4826	0.0134	0.0243	0.2085
Forex_reserves_raw_lag1y	-1.571e-11	5.174e-12	-3.0356	0.0025	-2.587e-11	-5.541e-12

F-test for Poolability: 2.7869

P-value: 0.0000

Distribution: F(108,500)

Included effects: Entity, Time

We again started with the base conflict co-efficient. It was -0.6677 here.

When high debt was included, the effect rose. Co-efficient became -0.2928. Which means the total effect will be -0.9605.

Model 3 shows us that stock return fall more in countries with high debt. The result from this model was good but not significant. The normal economic factors still mattered here. But the base co-efficient was not significant yet.

Model 4: The Moderating Effect of Low Reserves

PanelOLS Estimation Summary

Dep. Variable:	Stock_Return_log_pct	R-squared:	0.0627
Estimator:	PanelOLS	R-squared (Between):	-30.461
No. Observations:	616	R-squared (Within):	-0.0192
Date:	Fri, Mar 20 2026	R-squared (Overall):	-0.1193
Time:	21:00:21	Log-likelihood	-1735.7
Cov. Estimator:	Driscoll-Kraay		
		F-statistic:	4.7764
Entities:	6	P-value	0.0000
Avg Obs:	102.67	Distribution:	F(7,500)
Min Obs:	96.000		
Max Obs:	104.00	F-statistic (robust):	3.0626
		P-value	0.0036
Time periods:	104	Distribution:	F(7,500)
Avg Obs:	5.9231		
Min Obs:	5.0000		
Max Obs:	6.0000		

Parameter Estimates

	Parameter	Std. Err.	T-stat	P-value	Lower CI	Upper CI
Intercept	-3.1864	2.5439	-1.2526	0.2110	-8.1845	1.8117
Conflict_events_log1p_lag1	-0.2820	0.5054	-0.5579	0.5771	-1.2748	0.7109
Low_reserves	2.2602	0.7856	2.8772	0.0042	0.7168	3.8036
Conflict_x_low_reserves	-1.4135	2.0758	-0.6809	0.4962	-5.4919	2.6649
GDP_growth_q	-0.0367	0.1863	-0.1969	0.8440	-0.4028	0.3294
Govt_debt_pct_GDP_lag1y	-0.0006	0.0003	-1.6533	0.0989	-0.0013	0.0001
Trade_open_pct_gdp_lag1y	0.0585	0.0505	1.1569	0.2479	-0.0408	0.1577
Forex_reserves_raw_lag1y	-1.86e-12	5.869e-12	-0.3170	0.7514	-1.339e-11	9.67e-12

F-test for Poolability: 2.9147

P-value: 0.0000

Distribution: F(108,500)

Included effects: Entity, Time

In our 4th model, the base co-efficient was -0.2820. When we included low reserves, the effect was much bigger. The interaction co-efficient (conflict x low reserves) resulted in -1.4135. That means low foreign money, bigger fall in stock return. Because government cannot handle problems because of low foreign money. The low reserve variable is very positive but the base conflict and interaction is not significant yet.

Model 5: Comprehensive Analysis of Conflict & Macroeconomic Vulnerabilities

PanelOLS Estimation Summary

Dep. Variable:	Stock_Return_log_pct	R-squared:	0.0632
Estimator:	PanelOLS	R-squared (Between):	-23.646
No. Observations:	616	R-squared (Within):	-0.0247
Date:	Fri, Mar 20 2026	R-squared (Overall):	-0.1023
Time:	21:00:21	Log-likelihood	-1735.6
Cov. Estimator:	Driscoll-Kraay		
		F-statistic:	3.7300
Entities:	6	P-value	0.0001
Avg Obs:	102.67	Distribution:	F(9,498)
Min Obs:	96.000		
Max Obs:	104.00	F-statistic (robust):	2.4341
		P-value	0.0103
Time periods:	104	Distribution:	F(9,498)
Avg Obs:	5.9231		
Min Obs:	5.0000		
Max Obs:	6.0000		

Parameter Estimates

	Parameter	Std. Err.	T-stat	P-value	Lower CI	Upper CI
Intercept	-2.9524	2.4187	-1.2207	0.2228	-7.7044	1.7996
Conflict_events_log1p_lag1	-0.0943	1.1455	-0.0823	0.9344	-2.3449	2.1563
High_debt	-0.2491	0.5806	-0.4291	0.6681	-1.3899	0.8917
Low_reserves	2.4048	0.8979	2.6783	0.0076	0.6407	4.1689
Conflict_x_high_debt	-0.2449	1.4914	-0.1642	0.8696	-3.1752	2.6854
Conflict_x_low_reserves	-1.4532	2.1856	-0.6649	0.5064	-5.7473	2.8408
GDP_growth_q	-0.0382	0.1883	-0.2028	0.8394	-0.4081	0.3318
Govt_debt_pct_GDP_lag1y	-0.0005	0.0003	-1.5606	0.1193	-0.0012	0.0001
Trade_open_pct_gdp_lag1y	0.0525	0.0502	1.0456	0.2963	-0.0462	0.1512
Forex_reserves_raw_lag1y	-7.12e-13	7.108e-12	-0.1002	0.9203	-1.468e-11	1.325e-11

F-test for Poolability: 2.8738

P-value: 0.0000

Distribution: F(108,498)

Included effects: Entity, Time

This is our 5th and main model. The TWFE was operating here fully. The base conflict became -0.0943. R-squared value was 0.0632.

Including interaction terms, it shows us that the beta = -0.2449 (conflict x high debt). The total result is -0.3392 if we add the base and interaction.

Then the low reserve is stronger. The beta is -1.4532. The base and interaction total becomes -1.5475. That means countries with low reserve will see their stock returns go down by -1.5475 if 1 unit of conflict increases.

Finally, we can say, conflict itself doesn't hurt stock market hardly. It is the interaction terms which come into play. The main factor here we saw was the low reserves. Low reserve was the only variable which was significant but still other things matter because it helps to predict the stock return.

Analysis of Conditional Slopes under Macroeconomic Stress

Table 5: Conditional Slopes

Economic Condition	Calculation Logic	Conditional Slope (Impact on Returns)	Interpretation
Reference State (Normal)	Baseline β_1	-0.0943	Minimal impact on returns when debt is low, and reserves are high.
High-Debt State	$\beta_1 + \beta_4$	-0.3392	Conflict has a 3.6x stronger negative impact under fiscal stress.
Low-Reserve State	$\beta_1 + \beta_5$	-1.5475	Conflict has a 16.4x stronger negative impact under liquidity stress.

To see the total effect with the base, we used the conditional slope analysis. This result show us that the conflict doesn't affect all countries similarly.

Country with high debt will have the impact more than 3 times than a normal country with normal debt level. And a country with low reserves will have more than 16 times strong effect than a normal country. That means high debt and low reserves are causing the main problem for a country, but not the conflict alone. We calculated these things by adding base and interaction terms to see the total effect.

5.0 Discussion

5.1 Summary of Empirical Findings

In total, the market is not crashed only by the conflict. If the market is crashing, then there was problem which started long ago. Financial conditions matter the most. Conflict creates problem for all countries. But it is just not an issue for a country which has good economic condition like: no high debt, no low reserves. Only countries with bad economic conditions face the big problems and crash. The 3x and 16x effects are only for the countries with bad economic conditions.

5.2 Alignment with Existing Literature

The findings of this research help us understand better how cross-country conflict affects stock markets. Previous studies, like (Martins et al., 2023) and (Yousaf et al., 2022), show that conflicts cause negative returns. This study agrees with them because it finds that markets become very volatile during conflicts. But some research, like (Das et al., 2023), says conflicts cause a big drop in stock returns everywhere. But our study shows that the effect is not always significant for all countries. This supports (Saad, 2025), who says that market reactions can be different depending on the country. So, we should not think conflict always lowers stock prices.

A main contribution of this study is that it explains why markets react differently. For example, (Boussetta et al., 2025) found that emerging markets have bigger drops than developed markets. Our study gives the matter that having extra foreign money matters. High government debt can increase more 3 times the negative effect of conflict on returns. This gives the proof for what (Biglaiser & Lektzian, 2020) suggested about how policies affect markets during crises.

Our study adds macroeconomic variables. It shows that low foreign exchange reserves make the impact of conflict sixteen times worse. This proves that strong financial reserves are very important. It was supported (Martins et al., 2023), who recommended to include economic conditions in conflict studies to understand markets more.

6.0 Conclusion

Good conditions of the economy help to keep stock markets safe. The market is not crashed only by the conflict. If the market is crashing, then there was problem which started long ago. Financial conditions matter the most. Conflict creates problem for all countries. But it is just not an issue for a country which has good economic condition like: no high debt, no low reserves. Only countries with bad economic conditions face the big problems and crash. The 3x and 16x effects are only for the countries with bad economic conditions.

6.1 Limitations & Future Research

Our main problem from this study is that we did not study different industries individually. We studied as a whole of different industries of different countries. Future research should study how conflict affects different sectors like: finance, tourism, energy etc.

Another weakness is we didn't count how big or small the conflicts were. A small conflict can reduce stock price a lot. So, future research should focus on that thing.

7.0 References

- Ahmed, W. M. A., & Sleem, M. A. E. (2024). Attention to Israel's war on Gaza and stock price behavior: Evidence from the Tel Aviv market. *Journal of Economic Studies*, 52(8), 1519–1539. <https://doi.org/10.1108/JES-08-2024-0512>
- Biglaiser, G., & Lektzian, D. (2020). The effects of economic sanctions on targeted countries' stock markets. *International Interactions*, 46(4), 526–550. <https://doi.org/10.1080/03050629.2020.1765774>
- Blasco, N., Casas, L., & Ferreruela, S. (2024). Does war spread the herding effect in stock markets? Evidence from emerging and developed markets during the Russia-Ukraine war. *Finance Research Letters*, 63, 105365. <https://doi.org/10.1016/j.frl.2024.105365>
- Boussetta, S., Dragotă, V., & Iordache, A. (2025). Military Conflicts and Stock Markets: The Effect of the Russia–Ukraine Conflict on the European Stock Market. *Eastern European Economics*, 0(0), 1–43. <https://doi.org/10.1080/00128775.2025.2463436>
- Brent Oil Futures Historical Prices. (2026, February 20). Investing.Com. <https://www.investing.com/commodities/brent-oil-historical-data>
- Das, B. C., Hasan, F., Sutradhar, S. R., & Shafique, S. (2023). Ukraine–Russia Conflict and Stock Markets Reactions in Europe. *Global Journal of Flexible Systems Management*, 24(3), 395–407. <https://doi.org/10.1007/s40171-023-00345-0>
- FTSE 100 Historical Data (FTSE)—Investing.com. (n.d.). Retrieved February 21, 2026, from <https://www.investing.com/indices/uk-100-historical-data>
- Küçükçolak, R. A., Küçükçolak, N. İ., & Küçükoğlu, S. (2024). The impact of the Russia–Ukraine crisis on oil and gas shares: An event study approach. *International Journal of Economic Policy Studies*, 18(1), 325–340. <https://doi.org/10.1007/s42495-023-00129-5>

- Martins, A. M., Correia, P., & Cró, S. (2023). Stock market reaction to the military conflict between Russia and Ukraine: An event study for the European tourism and hospitality industry. *Journal of Applied Economics*, 26(1), 2261756.
<https://doi.org/10.1080/15140326.2023.2261756>
- Natural Gas Futures Price Today*. (2026, February 20). Investing.Com.
<https://www.investing.com/commodities/natural-gas>
- Saad, G. (2025). Financial markets' reactions to the 2023 Israel war: An empirical perspective from stock markets. *Kybernetes*. <https://doi.org/10.1108/K-04-2024-1070>
- S&P 500 Historical Data (SPX)*. (2026, February 20). Investing.Com.
<https://www.investing.com/indices/us-spx-500-historical-data>
- Tosun, O. K., & Eshraghi, A. (2022). Corporate decisions in times of war: Evidence from the Russia-Ukraine conflict. *Finance Research Letters*, 48, 102920.
<https://doi.org/10.1016/j.frl.2022.102920>
- Yousaf, I., Patel, R., & Yarovaya, L. (2022). The reaction of G20+ stock markets to the Russia–Ukraine conflict “black-swan” event: Evidence from event study approach. *Journal of Behavioral and Experimental Finance*, 35, 100723.
<https://doi.org/10.1016/j.jbef.2022.100723>
- Ahmed, W. M. A., & Sleem, M. A. E. (2024). Attention to Israel's war on Gaza and stock price behavior: Evidence from the Tel Aviv market. *Journal of Economic Studies*, 52(8), 1519–1539. <https://doi.org/10.1108/JES-08-2024-0512>
- Biglaiser, G., & Lektzian, D. (2020). The effects of economic sanctions on targeted countries' stock markets. *International Interactions*, 46(4), 526–550.
<https://doi.org/10.1080/03050629.2020.1765774>

- Blasco, N., Casas, L., & Ferreruela, S. (2024). Does war spread the herding effect in stock markets? Evidence from emerging and developed markets during the Russia-Ukraine war. *Finance Research Letters*, 63, 105365. <https://doi.org/10.1016/j.frl.2024.105365>
- Boussetta, S., Dragotă, V., & Iordache, A. (2025). Military Conflicts and Stock Markets: The Effect of the Russia–Ukraine Conflict on the European Stock Market. *Eastern European Economics*, 0(0), 1–43. <https://doi.org/10.1080/00128775.2025.2463436>
- Brent Oil Futures Historical Prices*. (2026, February 20). Investing.Com. <https://www.investing.com/commodities/brent-oil-historical-data>
- Das, B. C., Hasan, F., Sutradhar, S. R., & Shafique, S. (2023). Ukraine–Russia Conflict and Stock Markets Reactions in Europe. *Global Journal of Flexible Systems Management*, 24(3), 395–407. <https://doi.org/10.1007/s40171-023-00345-0>
- FTSE 100 Historical Data (FTSE)*—Investing.com. (n.d.). Retrieved February 21, 2026, from <https://www.investing.com/indices/uk-100-historical-data>
- Küçükçolak, R. A., Küçükçolak, N. İ., & Küçükoğlu, S. (2024). The impact of the Russia–Ukraine crisis on oil and gas shares: An event study approach. *International Journal of Economic Policy Studies*, 18(1), 325–340. <https://doi.org/10.1007/s42495-023-00129-5>
- Martins, A. M., Correia, P., & Cró, S. (2023). Stock market reaction to the military conflict between Russia and Ukraine: An event study for the European tourism and hospitality industry. *Journal of Applied Economics*, 26(1), 2261756. <https://doi.org/10.1080/15140326.2023.2261756>
- Natural Gas Futures Price Today*. (2026, February 20). Investing.Com. <https://www.investing.com/commodities/natural-gas>

Saad, G. (2025). Financial markets' reactions to the 2023 Israel war: An empirical perspective from stock markets. *Kybernetes*. <https://doi.org/10.1108/K-04-2024-1070>

S&P 500 Historical Data (SPX). (2026, February 20). Investing.Com.

<https://www.investing.com/indices/us-spx-500-historical-data>

Tosun, O. K., & Eshraghi, A. (2022). Corporate decisions in times of war: Evidence from the Russia-Ukraine conflict. *Finance Research Letters*, 48, 102920.

<https://doi.org/10.1016/j.frl.2022.102920>

Yousaf, I., Patel, R., & Yarovaya, L. (2022). The reaction of G20+ stock markets to the Russia–Ukraine conflict “black-swan” event: Evidence from event study approach. *Journal of Behavioral and Experimental Finance*, 35, 100723.

<https://doi.org/10.1016/j.jbef.2022.100723>

8.0 Appendix

This appendix contains the Python script used for data preprocessing, exploratory data analysis, and the execution of the Two-Way Fixed Effects (TWFE) panel regression models.

1. Data Preprocessing and Cleaning

Sorting data and checking for duplicates

```
df = df.sort_values(["Country", "Year_Month"]).copy()
dups = df.duplicated(subset=["Country", "Year_Month"]).sum()
print("Duplicate country-month rows:", dups)
```

Defining variables for descriptive analysis

```
vars_for_desc = [
    "Stock_Return_log_pct",
    "Conflict_events_loglp_lag1",
    "High_debt",
    "Low_reserves",
    "GDP_growth_q",
    "Govt_debt_pct_GDP_lag1y",
    "Trade_open_pct_gdp_lag1y",
    "Forex_reserves_raw_lag1y"
]
```

2. Descriptive Statistics and Data Integrity

Generating summary statistics and checking for missing values

```
print(df[vars_for_desc].describe().T)
summary_stats = df.describe()
desc_table = df[vars_for_desc].describe().T
desc_table.to_excel("Research_Summary_Statistics.xlsx")
print(df[vars_for_desc].isna().sum())
```

3. Exploratory Data Visualization

Plotting average monthly stock returns across sample countries

```
country_means = (
    df.groupby("Year_Month")["Stock_Return_log_pct"]
        .mean()
        .reset_index()
)
```

```

plt.figure(figsize=(9, 4.5))

plt.plot(country_means["Year_Month"],
country_means["Stock_Return_log_pct"])

plt.title("Average Monthly Stock Return Across Sample Countries")

plt.xlabel("Month")

plt.ylabel("Stock_Return_log_pct")

plt.tight_layout()

plt.show()

# Stock returns by country over time

sns.lineplot(data=df, x="Year_Month", y="Stock_Return_log_pct",
hue="Country")

plt.title("Stock Return by Country Over Time")

plt.xlabel("Month")

plt.ylabel("Stock Return (%)")

plt.legend(bbox_to_anchor=(1.05, 1), loc='upper left')

plt.tight_layout()

plt.show()

# Faceted line plots for individual country analysis

sns.relplot(
    data=df, x="Year_Month", y="Stock_Return_log_pct",
    col="Country", col_wrap=3, kind="line", height=3, aspect=1.5
)

```

4. Feature Engineering: Construction of Interaction Terms

```

# Creating interaction variables for Debt and Reserve moderation

if "Conflict_x_high_debt" not in df.columns:
    df["Conflict_x_high_debt"] = (
        df["Conflict_events_log1p_lag1"] * df["High_debt"]
    )

if "Conflict_x_low_reserves" not in df.columns:
    df["Conflict_x_low_reserves"] = (
        df["Conflict_events_log1p_lag1"] * df["Low_reserves"]
    )

```

5. Econometric Model Specification (Panel OLS)

```

# Setting MultiIndex for Panel Data Analysis

df = df.set_index(["Country", "Year_Month"])

# Defining model formulas (Nested Approach)

```

```

f1 = "Stock_Return_log_pct ~ 1 + Conflict_events_loglp_lag1 + EntityEffects
+ TimeEffects"

f2 = "Stock_Return_log_pct ~ 1 + Conflict_events_loglp_lag1 + GDP_growth_q
+ Govt_debt_pct_GDP_lagly + Trade_open_pct_gdp_lagly +
Forex_reserves_raw_lagly + EntityEffects + TimeEffects"

f3 = "Stock_Return_log_pct ~ 1 + Conflict_events_loglp_lag1 + High_debt +
Conflict_x_high_debt + GDP_growth_q + Govt_debt_pct_GDP_lagly +
Trade_open_pct_gdp_lagly + Forex_reserves_raw_lagly + EntityEffects +
TimeEffects"

f4 = "Stock_Return_log_pct ~ 1 + Conflict_events_loglp_lag1 + Low_reserves
+ Conflict_x_low_reserves + GDP_growth_q + Govt_debt_pct_GDP_lagly +
Trade_open_pct_gdp_lagly + Forex_reserves_raw_lagly + EntityEffects +
TimeEffects"

f5 = "Stock_Return_log_pct ~ 1 + Conflict_events_loglp_lag1 + High_debt +
Low_reserves + Conflict_x_high_debt + Conflict_x_low_reserves +
GDP_growth_q + Govt_debt_pct_GDP_lagly + Trade_open_pct_gdp_lagly +
Forex_reserves_raw_lagly + EntityEffects + TimeEffects"

# Fitting models with Driscoll-Kraay robust standard errors
m1 = PanelOLS.from_formula(f1, data=df).fit(cov_type="kernel")
m2 = PanelOLS.from_formula(f2, data=df).fit(cov_type="kernel")
m3 = PanelOLS.from_formula(f3, data=df).fit(cov_type="kernel")
m4 = PanelOLS.from_formula(f4, data=df).fit(cov_type="kernel")
m5 = PanelOLS.from_formula(f5, data=df).fit(cov_type="kernel")

```

6. Post-Estimation Analysis and Slope Calculation

```

# Extracting coefficients for conditional effect analysis
b = m5.params

base_conflict_slope = b["Conflict_events_loglp_lag1"]

high_debt_conflict_slope = b["Conflict_events_loglp_lag1"] +
b["Conflict_x_high_debt"]

low_reserves_conflict_slope = b["Conflict_events_loglp_lag1"] +
b["Conflict_x_low_reserves"]

print("Base conflict slope:", base_conflict_slope)

print("Conflict slope under high debt:", high_debt_conflict_slope)

print("Conflict slope under low reserves:", low_reserves_conflict_slope)

```

7. Final Data Export and Reporting

```

# Correlation matrix construction
corr_matrix = df[vars_for_desc].corr()

# Comparison of all regression models
from linearmodels.panel import compare

comparison = compare({"Model 1": m1, "Model 2": m2, "Model 3": m3, "Model
4": m4, "Model 5": m5})

# Exporting comprehensive results to Excel

```

```
with pd.ExcelWriter("Research_Full_Analysis_Report.xlsx") as writer:
    desc_table.to_excel(writer, sheet_name="1_Descriptive_Stats")
    corr_matrix.to_excel(writer, sheet_name="2_Correlation_Matrix")
    results_as_text = str(comparison)
    pd.DataFrame([results_as_text]).to_excel(writer,
sheet_name="3_Regression_Results", index=False, header=False)
    df_slopes.to_excel(writer, sheet_name="4_Conditional_Slopes",
index=False)
```