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ORIGINAL RESEARCH

Ukraine–Russia Conflict and Stock Markets Reactions in Europe

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Abstract *This paper analyses the impact of Ukraine–Russia conflict on stock markets in Europe. We consider the stock markets of nine EU countries and Russia. The analysis consists of day-firm which includes the time between 24 November 2021 and 23 May 2022. We consider ordinary least squared (OLS) and fixed effects as baseline models. Additionally, we consider the impact of this conflict on stock return for several months, the elasticity test, the instrumental variable—two-stage least squared (2SLS) approach for the robustness test and endogeneity concerns. We find evidence of the negative impact of the Ukraine–Russia conflict on stock return of that stock markets. In addition, our finding indicates that the impact of this war on the mining construction and manufacturing sectors is greater than on other sectors because Russia and Ukraine are the key suppliers or exporters of mining and manufacturing sector. Our finding also indicates that Ukraine–Russia conflict largely affects stock return of Russian stocks because Russia is directly involved in the conflict.*

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Introduction

The global economy is affected because of any war or conflict (Christine Lagarde, President of the ECB) between two countries or supergiant in the world. Similarly, Ukraine–Russia conflict started when Russia officially attacked Ukraine on 24 February of 2022 and a few months after positioning military outposts in Ukraine. The non-stop military attacks increased the concerns on several points, such as (i) the longevity of this war; (ii) how Russia replies to Western countries' sanctions; and (iii) the impact on the global economy, especially on global financial markets' reactions (Boungou & Yatié, 2022). Geopolitical tensions between NATO member states and Russia, which appeared to be easing after the end of the Cold War, have considerably intensified. Most policymakers and Ukrainians were caught off guard by Russia's invasion of Ukraine, which was also an exogenous shock for foreign companies with Russian operations (Berninger et al., 2022).

While most corporations in North America and Europe support Ukrainian independence and condemn Russia's conduct, company executives have had to make decisions about their Russian activities since the crisis began. Russia plays an important role in the global market because of its larger function in the enterprises, the largest country in the world and one of the most populous countries. However, invasion and the sanctions imposed by Western nations in response to the invasion imply that businesses will be unable to continue operating in Russia as previously. They must now decide whether they want to stay in Russia and face considerable hurdles to their operations due to

Western-imposed sanctions and the potential for a negative image due to being regarded as pro-Russian, or whether they want to abandon the Russian market entirely.

This paper considers the stock markets of nine EU countries and Russia. All these EU countries are major importers of Russian Brent crude oil or Ukrainian wheat. According to Bank (2022), the major commodity supply has been disrupted because of the war in Ukraine; the Brent crude oil and wheat prices are projected to increase by 40% compared to 2021 because both countries are the key exporters of crude oil (Russia) and wheat (Ukraine and Russia) (Alnoor et al., 2023; Hasan et al., 2023). This uncertainty, conflict, or war may affect stock markets in the EU and Russia.

European stock markets may be affected directly by the Ukraine–Russia conflict because of disrupting major imports from Russia or Ukraine, and Russia itself invasions Ukraine. Consequently, we show whether this war affects the stock returns in these stock markets separately.

Notably, we find that the Ukraine–Russia conflict and returns (stock) in the stock markets of the EU are negatively associated during the conflict or war period but positively associated prior to the conflict. In addition, our finding indicates that the Ukraine–Russia conflict negatively affects the return of stocks to all sectors. However, the impact of this war on the mining construction and manufacturing sector is more significant than other sectors (e.g. transportation and utility, wholesale and retail and service) because Russia and Ukraine are the key suppliers or exporters of the mining and manufacturing sector. They contribute more to both sectors than other sectors. Thus, the stock return of transportation and utility, wholesale and retail and service sectors is not affected largely. Our finding also indicates that the Ukraine–Russia conflict largely affects stock returns of stock markets in Russia because they are directly involved in this conflict. However, other countries' stock markets are less affected because Belgium, Cyprus, Finland, France, Poland, Romania and Sweden are not directly involved in the war, but they support the EU policy to impose sanctions against Russia. Notably, the coefficients for Hungary and Slovakia are positive because they are in a neutral position of imposing restrictions on Russia. Consequently, the stock return of these both countries' stock markets is not affected due to the Ukraine–Russia conflict. However, other countries' stock markets are affected because they are directly involved in war or sanctions. We find that Ukraine–Russia conflict negatively impacts on stock market (stock return) in the EU for shorter period than a relatively longer time.

Additionally, the robustness test results support the baseline regression results. All results indicate that our main findings are robust and free from endogeneity concerns. Our results suggest that Ukraine–Russia conflict negatively affects the stock markets of EU. These findings are consistent with the previous analyses that also find negative relation between Ukraine–Russia conflict or war and stock return (Boungou & Yatié, 2022; Burdekin & Siklos, 2022; Frey & Kucher, 2001; Goel et al., 2017; Hudson & Urquhart, 2015, 2022).

This study contributes to the existing literature in different ways, (1) the reaction of Ukraine–Russia conflict on the stock markets of the EU, (2) it also shows what kind of effect specific sectors in the European stock markets are observing because of Ukraine–Russia conflict and (3) finally it shows what kind of effect of Russian-Ukraine war on Russian stock market because we know that Russian and EU stock markets are different in size and structure.

We design this paper as follows. The next section provides the literature for developing the hypotheses of this study. In section "Data management and method," we describe methodology. In section "Method," we analyse the findings. Finally, we end this study by concluding remarks.

Literature Review

The academic literature on Ukraine–Russia conflict, which started on 24 February 2022, is still insufficient, although there are some early studies assessing the broad stock market reactions. Federle et al. (2022) look at the impact on stock markets of 66 countries, and they use the distance from Ukraine as a determinant. They find lower stock return if it is closer to Ukraine. Similarly, Yousaf et al. (2022) finds a significant negative effect on Asian and European stock markets. Deng et al. (2022) also look at Ukraine–Russia war, but they consider Environmental, Social, and Governance (ESG) elements of businesses and show that ESG ratings do not give a consistent indicator of company resilience in a crisis (Hasan et al., 2022). They also illustrate that regions are affected differently, owing to their reliance on Russian energy supplies. Previous studies on other political confrontations (e.g. Frey & Waldenström, 2004; Leigh et al., 2003) might also be used to conclude. Rigobon and Sack (2005) calculate the likelihood of conflict in the United States and how this "war risk" element affects the stock market. They found that the possibility of conflict greatly impacts stock price volatility.

Similarly, Choudhry (2010) shows that World War II increased the stock market volatility in the USA between 1939 and 1945. The literature concludes that businesses exposed to wars, or any kind of shocks suffer significant and unfavourable consequences (Hasan & Ahmed, 2021). However, our study focuses on the European stock market reactions because of Ukraine–Russia conflict. We expect that this war affects negatively stock returns. Moreover, we are expecting the impact of this war on the mining,

construction and manufacturing sector is greater than other sectors (e.g. transportation and utility, wholesale and retail and service) because Russia and Ukraine are the key suppliers or exporters of mining and manufacturing sector (Bank, 2022). They contribute more to both sectors than in wholesale and retail and service sectors. We look at the stock market reaction at the sector level and the entire stock market reaction, as previous studies have done. Considering the findings from prior literature, we propose the underlying hypotheses:

H1: The Ukraine–Russia conflict negatively affects stock return in the stock markets of EU.
H2: The Ukraine–Russia conflict has larger effect on mining and manufacturing sectors than other sectors in the European stock markets.

All the markets in Russia are possibly highly volatile markets than the standards of emerging markets (e.g. Castagneto-Gissey & Nivorozhkin, 2016; Gaddy & Ickes, 2010; Ibragimov et al., 2015; Jondeau & Rockinger, 2003). The emerging financial markets have been more sensitive because of several stocks, which may be internal or external shocks such as macroeconomic policy change, macroeconomic diversity, geopolitical conflicts, institutional changes or structural imbalances in the institutions or economy (e.g. discussion in Åslund et al., 2010; Claessens et al., 2000; Lagoarde-Segot & Lucey, 2009; Neaime, 2010, 2012). The sanctions from Western countries on Russia are a shock which significantly affects the prices of financial assets due to direct limitations imposed on individuals or firms, and it increases the risk of the country.

Hoffmann and Neuenkirch (2017) look at the Russian stock market reactions due to the Western sanctions on Russia. They find that political tension reduces the prices of financial assets (the prediction of increasing the variance of stock returns was around 6.5% due to Ukraine–Russia conflict). It was also noticed that stock markets in Russia have separated from leading global stock indices (a 30–50% reduction in returns correlation) after starting to impose the Western sanctions in Russia (Castagneto-Gissey & Nivorozhkin, 2016). Dreger et al. (2016) calculate the effects of Western sanctions on the exchange rate (Rouble) and conclude that only unforeseen penalties had a noticeable effect, with oil prices accounting for most of the variation in the exchange rate of Rouble. According to Gurvich and Prilepskiy (2015), sanctions had a $280 billion negative impact on capital supply between 2014 and 2017. According to Pak and Kretzschmar (2016), lower access to the capital markets of Western countries resulted in a significant expansion in state funding while also boosting state's participation in the banking industry.

In terms of the impact of sanctions on particular economic sectors, Golikova and Kuznetsov (2017) show that these Western sanctions will significantly affect the Russian enterprises that are strongly elaborated in trade with Ukraine and the EU and. Sectoral sanctions may induce economic breakup with regular trading partners, while sanctions against the defence industry may increase the country's defence budget burden (Klinova & Sidorova, 2014). According to Connolly (2015), Western sanctions may play an important role in the development of the Russian economy. The underdeveloped financial systems in Russia (Connolly, 2011), and lower access to external capital may significantly slow down their investment activities (Gurvich & Prilepskiy, 2015).

European businesses, particularly those exporting to Russia, are concerned about the sanctions' detrimental effects and have requested them to be lifted, according to the Deutsch-Russische (2016). Their suspicions are well-founded, as UN Comtrade figures reveal that EU countries reduced their exports to Russia by 14% in 2014 compared to previous year. Exports fell in 25 of the 28 EU member states. Exports from Malta, Cyprus, and Belgium dropped by 78, 42, and 27%, respectively. Large EU economies also suffered significant export losses, with Germany and the United Kingdom losing 18% of their exports, while France and Italy each lost roughly 12%. According to Eurostat data, the downturn in exports accelerated in 2015, EU28 decreased their exports to Russia by nearly 40%; specifically, exports reduced to 73.8 billion euros from 119.4 billion euros. For example, the United Kingdom reduced their exports to Russia by 51% in 2015 compared to 2013. Germany reduced their exports to Russia by 30% in 2015 than the previous year. In 2016, the EU 28's exports to Russia fell to a record low 72.4 billion euros. Although, exports climbed by 19% to 86.2 billion euros in 2017, compared to 2016 (Kholodilin & Netsunajev, 2019). We expect that the Ukraine–Russia conflict largely affects stock return of the stock markets of Russia because of the directly involvement of Russia in the conflict. However, other countries' stock markets are less affected because Belgium, Cyprus, Finland, France, Poland, Romania and Sweden are not directly involved in the war, but they support the EU policy to impose sanctions against Russia. We also expect that the Hungarian and Slovakian stock markets are not affected because they are in a neutral position of imposing restrictions on Russia[1]. Considering the findings from prior literature, we propose the following hypothesis:

H3: The Ukraine–Russia conflict largely affects stock markets of Russia more than the other EU stock markets.

[1] See, https://www.rferl.org/a/slovakia-hungary-russia-oil-sanctions/31832681.html.

Data Management and Method

Data Management

This section emphasizes data sources and variable definitions. In the analysis, we consider the stock return as a dependent variable and the Ukraine–Russia conflict (Boungou & Yatié, 2022) as an independent variable. This paper considers all the firms of nine EU countries[2] and Russia. All these EU countries are major importers of Russian Brent crude oil or Ukrainian wheat. According to Bank (2022), the major commodity supply has been disrupted because of the war in Ukraine; the Brent crude oil and wheat prices are projected to increase by 40% compared to 2021 because both countries are the key exporters of crude oil (Russia) and wheat (Russia and Ukraine). This conflict or war may affect stock return of stock markets of the EU countries and Russia.

The analysis consists of day-firm data from 24 November 2021 to 23 May 2022 (all working days). Considered the starting date of conflict, we refer to three months from 24 November 2021 to 23 February 2022 as 'pre-conflict period' and three months from 24 February 2022 to 23 May 2022 as 'post-conflict period'. For selecting post-conflict period from 24 February 2022 to 23 May 2022, we assume the immediate effects of this conflict on stock markets may have been three months long, and we are going to compare it with the stock market performance of three months pre-conflict period. Although we have checked the trends of returns after three months of war, we did not find any interesting movement in the trend.

Stock price and Firm-Level Data

We collect the stock price (closing price), common equity, and outstanding shares data from Compustat–Capital IQ (Global). We consider the daily closing stock price and quarterly common equity and outstanding shares to get the final sample. We calculate the size and BM (Book-to-Market value) from these data. In our analysis, we consider size and BM as control variables to control the effect of these variables on stock returns in the selected stock markets.

Ukraine–Russia Conflict Data

We collect the data from search volumes related to Ukraine–Russia conflict (including words like war, conflict, Vladimir, Putin, Ukraine, Russia, and Ukraine–Russia conflict) from Wikipedia trends (Boungou & Yatié, 2022). We consider this variable (Ukraine–Russia conflict) as an independent variable in this study, and we want to find how the Ukraine–Russia conflict impacts the selected European countries' stock markets.

Variable Definitions

This section focuses on the definitions of the variables in our sample. We include one dependent variable, one independent variable and two control variables in the final dataset (see Table 1).

Method

According to Boungou and Yatié (2022), we contemplate the following model in analysing the reaction of Ukraine–Russia conflict on stock return of all firms in ten European countries. We design a panel dataset in our sample to estimate the following model to get the expected results:

$$\text{Return}_{i,t} = \alpha + \beta_1 \text{Ukraine - Russia Conflict}_{i,t} + \vartheta \text{Controls}_{i,t} + \theta_t + \lambda_t + \varepsilon_{i,t} \quad (1)$$

where $Returns_{i,t}$ denotes stock returns from stock's closing price of firm i on day t. Ukraine–Russia $\text{conflict}_{i,t}$ expresses log of Wikipedia Trends data (Ukraine–Russia conflict) by firm i and day t. $Controls_{i,t}$ denotes the size and BM of firm i on day t. This regression controls firm and day fixed effects. The final analysis considers the Ukraine–Russia conflict's impact on European stock markets' stock return.

Findings

In Table 2, we describe the summary statistics of the variables for the considered period of Ukraine–Russia conflict. It shows that mean of stock return is 0.042, the Ukraine–Russia conflict is 4.823, size of firms is 5.32, and BM is 0.946. Median stock return is 0, the Ukraine–Russia conflict is 4.611, size of firms is 5.056, and BM is 0.434. Standard deviation of stock return is 0.449, the Ukraine–Russia conflict is 0.383, size of firms is 2.677, and BM is 2.228.

Notably, for dealing with the outliers, we winsorize the continuous variables at the 1st and 99th percentile. We exclude all the missing value observations of important variables.

Table 3 presents the descriptive statistics for each country's samples for the Ukraine–Russia conflict. This table contains observation numbers and mean of each variable. It shows that the mean of the stock return of firms is 0.022 for Belgium, 0.056 for Cyprus, 0.036 for Finland, 0.022 for France, 0.097 for Hungary, 0.015 for Poland,

[2] Belgium, Cyprus, Finland, France, Hungary, Poland, Romania, Russia, Slovakia, and Sweden.

Table 1 Variables definitions

Variable	Abbreviation	Definition and construction
Return	Stock returns	The return is calculated from the stock prices (closing price), which is associated with the profitability from the stock trading before and during the Ukraine–Russia conflict
Ukraine–Russia conflict	Ukraine Russia war	Following Boungou and Yatié (2022), we consider the log of Wikipedia Trends search data. It measures the intensity of internet searches related to the current conflict between Russia and Ukraine (reported in Table with Ukraine–Russia conflict)
SIZE	Market values	We calculate the market values from stock price and outstanding shares. Here, size is log of market value *t*
BM	Book to market	Book to market ratio is calculated by quarterly, *t,* of each firm

Table 2 Summary statistics

Variable	Observations	Mean	SD	p25	Median	p75	Skewness	Kurtosis
Return	97,677	0.042	0.449	− 0.011	0	0.008	7.439	62.743
Ukraine–Russia conflict	97,677	4.823	0.383	4.555	4.611	5.012	2.154	7.182
SIZE	97,677	5.32	2.677	3.444	5.056	7.037	0.310	2.739
BM	97,677	0.946	2.228	0.206	0.434	0.886	5.802	40.684

This table describes the different statistics of variables for the post period of Ukraine–Russia conflict. $Returns_{i,t}$ denotes returns (stock) from stock's closing price of firm *i* on day *t*. $Ukraine–Russia\ conflict_{i,t}$ expresses log of Wikipedia Trend (*Ukraine–Russia conflict*) by firm *i* and day *t*. $Controls_{i,t}$ denotes the size and BM of firm *i* on day *t*.

0.022 for Romania, 0.114 for Russia, 0.049 for Slovakia and 0.068 for Sweden. These statistics infer that the stock return for Russia (0.114) holds the highest, and the stock return for Poland (0.015) holds the lowest position. This table indicates that Sweden has the highest number of firms and observations, and Slovakia has the lowest number of firms and observations in the final samples (Table 3).

In Table 4, we present correlation between the variables for post-Russia-Ukraine conflict period. Importantly, we find an inverse correlation between stock returns and the Ukraine–Russia conflict (− 0.006). We also find an inverse correlation with BM and a positive correlation with size. Subsequently, we test whether the Ukraine–Russia conflict negatively influences stock return in the stock markets of EU.

In Table 5, we present baseline regression results by considering the estimation of Eq. (1). The dependent variable is stock returns. We consider the four regression models in our baseline analysis. In models (3) and (4), we run the regressions for the EU countries and Russia separately. This war may affect the EU and Russian stock markets directly because of disrupting major imports from Russia or Ukraine, and Russia itself invasions Ukraine. Consequently, we show whether this war affects the stock returns at these stock markets separately.

Model (1) partitions the post-conflict and pre-conflict period results without using the firm and day-fixed effects. We find that the Ukraine–Russia conflict and stock returns are negatively associated for post-conflict period (− 0.0074), but we find a positive association for pre-conflict period (0.0119). Stock return in the EU and Russian stock markets is reduced by 0.0074 if the Ukraine–Russia conflict is changed by 1 unit. Notably, both coefficients of Ukraine–Russia conflict are statistically significant. In (2), we also partition the post-conflict and pre-conflict period results with firm and day-fixed effects. We find that the Ukraine–Russia conflict and stock return are negatively associated in the post-conflict period but positively associated in the pre-conflict period. The stock return in the EU and Russian stock markets is reduced by 0.0491 if the Ukraine–Russia conflict is changed by 1 unit. However, both coefficients are statistically significant. This finding is consistent with the previous model (1). In the last two models, we separate the observations for the EU and Russia to support our hypotheses. In model (3), we partition the post-conflict and pre-conflict period results with firm and day fixed effects for EU stock markets' observations. We find that the stock return of EU stocks is reduced by 0.0036 due to changing the Ukraine–Russia conflict by 1, but the stock return is positive before this war. The finding is similar to the previous models (1) and (2). In model (4), we also partition the post-conflict and pre-conflict period results with firm and day fixed effects for Russian stock market observations. We find that the effect of Ukraine–Russia conflict on the Russian stock market (coefficient of Ukraine–Russia conflict is − 0.0454 in the

Table 3 Summary statistics: cross-country

Variable	Belgium		Cyprus		Finland		France		Hungary		Poland		Romania		Russia		Slovakia		Sweden	
	N	Mean	*N*	Mean	*N*	Mean	*N*	Mean	*N*	Mean	*N*	Mean	*N*	Mean	*N*	Mean	*N*	Mean	*N*	Mean
Return	7496	0.022	4628	0.056	9009	0.036	40299	0.022	2352	0.097	40213	0.015	4724	0.022	11902	0.114	768	0.049	45934	0.068
Ukraine–Russia conflict	7496	4.824	4628	4.823	9009	4.822	40299	4.823	2352	4.823	40213	4.823	4724	4.821	11902	4.823	768	4.823	45934	4.822
SIZE	7304	5.274	4628	3.262	9009	5.237	39555	4.744	2304	9.045	40165	3.987	4724	4.926	11380	8.498	768	2.482	45884	6.329
BM	3598	0.538	1776	3.208	7046	0.603	19524	0.704	768	2.766	19296	0.749	2863	1.282	3408	4.553	96	0.652	35829	0.772

This table describes the different statistics of variables of each country for the post period of Ukraine–Russia conflict. $Returns_{i,t}$ denotes returns (stock) from stock's closing price of firm *i* on day *t*. *Ukraine–Russia* $conflict_{i,t}$ expresses log of Wikipedia Trend (*Ukraine–Russia conflict*) by firm *i* and day *t*. $Controls_{i,t}$ denotes the size and BM of firm *i* on day *t*.

post-conflict period) is higher than the EU stock markets (coefficient of Ukraine–Russia conflict is − 0.0036 in the post-conflict period). Notably, we find a positive association between the Ukraine–Russia conflict and stock return during the pre-conflict period. This finding is similar to the previous models (1)–(3). The result is similar to the prior literature that also finds an inverse relation between the Ukraine–Russia conflict and the stock return (Boungou & Yatié, 2022; Burdekin & Siklos, 2022; Frey & Kucher, 2001; Goel et al., 2017; Hudson & Urquhart, 2015, 2022).

Table 6 presents the sector classifications for post-Ukraine–Russia conflict. We consider sectors separately for post-conflict period. We also use the firm and time fixed effects in models. Model (1) presents results for mining construction, model (2) presents results for manufacturing, model (3) presents results for transportation and utility, model (4) presents results for wholesale and retail, and model (5) presents results for the service sector. We find negative coefficients in all the models which are consistent with the baseline results. This finding indicates that the Ukraine–Russia conflict negatively affects stock return in all sectors. However, the impact of this war on the mining construction and manufacturing sector is greater than other sectors (e.g. transportation and utility, wholesale and retail and service) because Russia and Ukraine are the key suppliers or exporters of the mining and manufacturing sector. They contribute more to both sectors than other sectors. Thus, the stock return of transportation and utility, wholesale and retail and service sectors is not affected largely.

Table 7 presents the cross-country specification for post-Ukraine–Russia conflict. We consider all countries separately for post-conflict period. We use the firm and time-fixed effects in models. We find the different coefficient signs in different countries. Model (1) presents results for Belgium stock market, model (2) presents results for Cyprus stock market, model (3) presents results for Finland stock market, model (4) presents results for France stock market, model (5) presents results for Hungary stock market, model (6) presents results for Poland stock market, model (7) presents results for Romania stock market, model (8) presents results for Russia stock market, model (9) presents results for Slovakia stock market, and model (10) presents results for Sweden stock market. We find the negative coefficients for the models of Belgium (1), Cyprus (2), Finland (3), France (4), Poland (5), Romania (6), Russia (7) and Sweden (10), which consistent with the baseline results. Our finding indicates that Ukraine–Russia conflict largely affects stock return of the Russian stock markets because of the direct involvement of Russia in the war. However, other countries' stock markets are less affected because Belgium, Cyprus, Finland, France, Poland, Romania and Sweden are not directly involved in

Table 4 Correlation matrix

Variables	(1)	(2)	(3)	(4)
(1) Return	1.000			
(2) Ukraine–Russia conflict	− 0.006	1.000		
(3) SIZE	0.127	− 0.001	1.000	
(4) BM	− 0.034	0.000	− 0.042	1.000

The table states correlation matrix for the post-period of Ukraine–Russia conflict. $Returns_{i,t}$ denotes returns (stock) from stock's closing price of firm i on day t. $Ukraine–Russia\ conflict_{i,t}$ expresses log of Wikipedia Trend (*Ukraine–Russia conflict*) by firm i and day t. $Controls_{i,t}$ denotes the size and BM of firm i on day t.

Table 5 Baseline regression

Variable	(1)		(2)		(3)		(4)	
	Post-conflict (OLS)	Pre-conflict (OLS)	Post-conflict (FE)	Pre-conflict (FE)	Post-conflict (EU)	Pre-conflict (EU)	Post-conflict (Russia)	Pre-conflict (Russia)
Ukraine–Russia conflict	− 0.0074*	0.0119***	− 0.0491***	0.0412***	− 0.0036	0.0345***	− 0.0454	0.0386
	(0.0038)	(0.0034)	(0.0081)	(0.0089)	(0.0034)	(0.0030)	(0.0374)	(0.0333)
SIZE	0.0836***	0.0759***	0.5612***	0.5450***	0.6579***	0.6353***	0.3648***	0.3819***
	(0.0016)	(0.0015)	(0.0048)	(0.0047)	(0.0055)	(0.0052)	(0.0164)	(0.0202)
BM	− 0.0637***	− 0.0722***	0.0519***	0.0228***	0.0829***	0.0769***	− 0.0035	− 0.0410***
	(0.0011)	(0.0011)	(0.0018)	(0.0017)	(0.0022)	(0.0022)	(0.0058)	(0.0052)
Observations	94,204	97,677	94,204	97,677	90,796	94,135	3408	3542
Number of firms	1967	1964	1967	1964	1896	1893	71	71
Firm effects	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Day effects	No	No	Yes	Yes	Yes	Yes	Yes	Yes

This table presents the baseline regressions of all the observations for Ukraine–Russia conflict. $Returns_{i,t}$ denotes stock returns from stock's closing price of firm i on day t. $Ukraine–Russia\ conflict_{i,t}$ expresses log of Wikipedia Trends (*Ukraine–Russia conflict*) by firm i and day t. $Controls_{i,t}$ denotes the size and BM of firm i on day t. The regression controls the firm and day fixed effects. Robust standard errors clustered by gvkey (firms) appearing ***, ** and * which denotes the statistical significance for 1, 5 and 10% levels, respectively.

Table 6 Sector classifications

Variable	(1) Mining construction	(2) Manufacturing	(3) Transportation and utility	(4) Wholesale and retail	(5) Service
Ukraine–Russia conflict	− 0.0732**	− 0.0584***	− 0.0244	− 0.0370	− 0.0404
	(0.0351)	(0.0097)	(0.0194)	(0.0233)	(0.0247)
SIZE	0.4415***	0.5887***	0.8273***	0.4017***	0.4417***
	(0.0129)	(0.0062)	(0.0129)	(0.0163)	(0.0439)
BM	− 0.0296***	0.0654***	0.0876***	0.0627***	0.1074***
	(0.0046)	(0.0028)	(0.0054)	(0.0050)	(0.0151)
Observations	9,815	53,549	16,896	11,184	2760
Number of firms	205	1,118	353	233	58
Firm effects	Yes	Yes	Yes	Yes	Yes
Day effects	Yes	Yes	Yes	Yes	Yes

This table presents the sector classifications of all the observations for Ukraine–Russia conflict. $Returns_{i,t}$ denotes stock returns from stock's closing price of firm i on day t. $Ukraine–Russia\ conflict_{i,t}$ expresses log of Wikipedia Trends (*Ukraine–Russia conflict*) by firm i and day t. $Controls_{i,t}$ denotes the size and BM of firm i on day t. The regression controls the firm and day fixed effects. Robust standard errors clustered by gvkey (firms) appearing ***, ** and * which denotes the statistical significance for 1, 5 and 10% levels, respectively.

Table 7 Cross-country specification

Variables	(1) Belgium	(2) Cyprus	(3) Finland	(4) France	(5) Hungary	(6) Poland	(7) Romania	(8) Russia	(9) Slovakia	(10) Sweden
Ukraine–Russia conflict	− 0.0312	− 0.1712***	− 0.0955***	− 0.0326***	0.0153	− 0.0540***	− 0.0349	− 0.2839***	0.7726	− 0.0260*
	(0.0252)	(0.0604)	(0.0253)	(0.0126)	(0.1704)	(0.0100)	(0.0328)	(0.0857)	(0.6626)	(0.0153)
SIZE	1.1258***	0.7290***	0.8425***	0.8667***	0.3681***	0.4550***	0.7852***	0.3702***	0.8636*	0.6885***
	(0.0386)	(0.0298)	(0.0178)	(0.0132)	(0.0372)	(0.0108)	(0.0563)	(0.0165)	(0.4515)	(0.0095)
BM	0.1155***	0.0987***	0.2194***	0.2903***	− 0.0123	− 0.1570***	0.4148***	− 0.0020	1.2687	0.0831***
	(0.0203)	(0.0116)	(0.0118)	(0.0053)	(0.0130)	(0.0052)	(0.0261)	(0.0059)	(5.4424)	(0.0038)
Observations	3598	1776	7046	19,524	768	19,296	2863	3408	96	35,829
Number of firms	75	37	147	407	16	402	60	71	2	750
Firm Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Day Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

This table presents the cross-country specification of all the observations for Ukraine–Russia conflict. $Returns_{i,t}$ denotes stock returns from stock's closing price of firm i on day t. *Ukraine–Russia conflict*$_{i,t}$ expresses log of Wikipedia Trends (*Ukraine–Russia conflict*) by firm i and day t. $Controls_{i,t}$ denotes the size and BM of firm i on day t. The regression controls the firm and day fixed effects. Robust standard errors clustered by gvkey (firms) appearing ***, ** and * which denotes the statistical significance for 1, 5 and 10% levels, respectively.

the war, but they support the EU policy to impose sanctions against Russia. Notably, the coefficients for Hungary and Slovakia are positive because they are in a neutral position of imposing restrictions on Russia. Consequently, the stock return of these both countries' stock markets is not affected due to the Ukraine–Russia conflict. However, other countries' stock markets are affected because they are directly involved in war or sanctions.

Elasticity Test

We consider the elasticity test for the independent variable (Ukraine–Russia conflict) for all observations, Russia, and EU countries (stock markets). Following the method of elasticity (e.g. (Alam et al., 2019); Hillier et al. (2011), we estimate the elasticity to get the homogeneous base for comparison in this paper. This test finds the explanatory power of the independent variable (*Ukraine–Russia conflict*) by indicating whether it is inelastic or elastic. The elasticity is estimated as follows:

$$E_i = \beta_i \frac{\overline{X}_i}{\beta^p \overline{X}} \tag{2}$$

where E_i represents the independent variable (*Ukraine–Russia conflict*), β_i means coefficient, $\overline{X}_i$ means mean and $\beta^p \overline{X}$ is predicted value of $Return_{i,t}$.

In model (1) of Table 8, the elasticity coefficient is − 0.62 for all the observations. Since the elasticity equation uses the absolute value (omits the negative sign), the Ukraine–Russia conflict elasticity of stock returns in this situation would be 0.62 or 0.62%. This means that for every 1% increase in the Ukraine–Russia conflict, there is a 0.62% decrease in stock returns. Since the change in stock return is smaller than the change in the Ukraine–Russia conflict, we can conclude that the stock return is relatively inelastic. In model (2), the elasticity coefficient is − 1.06 for the observations of Russia. Since the elasticity equation uses the absolute value (omits the negative sign), the Ukraine–Russia conflict elasticity of stock returns in this situation would be 1.06 or 1.06%. This means that for every 1% increase in the Ukraine–Russia conflict, there is a 1.06% decrease in stock returns. Since the change in stock return is greater than the change in the Ukraine–Russia conflict, we can conclude that the stock return is relatively elastic. In model (3), the elasticity coefficient is − 0.52 for all the observations. Since the elasticity equation uses the absolute value (omits the negative sign), the Ukraine–Russia conflict elasticity of stock returns in this situation would be 0.52 or 0.52%. This means that for every 1% increase in the Ukraine–Russia conflict, there is a 0.52% decrease in stock returns. Since the change in stock return

Table 8 Elasticity

Dependent variable: $Return_{i,t}$										
Variables	Below median (− 0.030)					Above median (− 0.030)				
	(1) Russia	(2) Finland	(3) Sweden	(4) Belgium	(5) France	(6) Romania	(7) Hungary	(8) Cyprus	(9) Slovakia	(10) Poland
Ukraine–Russia conflict	− 0.884	− 0.087	− 0.080	− 0.073	− 0.055	− 0.005	0.073	0.104	0.169	0.228

This table presents the elasticity test for the post-conflict period. $Returns_{i,t}$ denotes stock returns from stock's closing price of firm i on day t. $Ukraine–Russia\ conflict_{i,t}$ expresses the log of Wikipedia Trend (*Ukraine–Russia conflict*) by firm i and day t.

is smaller than the change in the Ukraine–Russia conflict, we can conclude that the stock return is relatively inelastic.

The findings indicate that the change (decline) in stock return is greater in stock markets of Russia than stock markets of the EU due to the Ukraine–Russia conflict. This means that this war affects the stock markets of Russia more than other European stock markets. All findings are consistent with the baseline finding and ultimately support the hypothesis.

Robustness Test

We consider the alternative measurement and instrumental variable-two stage least square approach for the robustness of the baseline results and endogeneity concerns. In the instrumental variable-2SLS approach, we use the lag control variables as instrumental variables. We also use the firm and day fixed effects to make them consistent with the baseline models.

Table 9 presents the effect of one and three months of post-Ukraine–Russia conflict. We consider one and three months of post-conflict to show the results of this war's short and relatively long time effect on the European stock markets. Model (1) presents results for one-month pre-conflict, model (2) presents results for one-month post-conflict, model (3) presents results for three-months pre-conflict and model (4) presents results for three-months post-conflict. We find negative coefficient in (2) but positive coefficient in (1). This finding supports the baseline regression results. We also find negative coefficient in (4) but positive coefficient in (3). All findings suggest that the Ukraine–Russia conflict negatively affects the stock returns in stock markets in the EU. This finding supports the baseline regression results.

Table 10 presents the instrumental variable-2SLS approach for the pre and post-Ukraine–Russia conflict. We use a lag-independent variable (Ukraine–Russia conflict) as an instrumental variable in this model to check the endogeneity problem from errors in variables. Although we used different alternative measurements to support our baseline regression results. We still think that we may have errors in variables from calculating the Ukraine–Russia conflict variable in our analysis. Therefore, there is a

Table 9 Alternative measurements

Variable	(1) One-month (pre-conflict)	(2) One-month (post-conflict)	(3) Three-months (pre-conflict)	(4) Three-months (post-conflict)
Ukraine–Russia conflict	0.0362***	− 0.3529***	0.3694**	− 0.1386***
	(0.0058)	(0.1077)	(0.1435)	(0.0360)
SIZE	0.5832***	0.8494***	0.6897***	0.6564***
	(0.0089)	(0.0453)	(0.0278)	(0.0088)
BM	0.0230***	0.0667***	0.0358***	0.0702***
	(0.0032)	(0.0151)	(0.0088)	(0.0034)
Number of firms	1960	1962	1939	1965
Firm effects	Yes	Yes	Yes	Yes

This table presents the effect of several months of all the observations for Ukraine–Russia conflict. $Returns_{i,t}$ denotes stock returns from stock's closing price of firm i on day t. $Ukraine–Russia\ conflict_{i,t}$ expresses log of Wikipedia Trends (*Ukraine–Russia conflict*) by firm i and day t. $Controls_{i,t}$ denotes the size and BM of firm i on day t. The regression controls the firm and day fixed effects. Robust standard errors clustered by gvkey (firms) appearing ***, ** and * which denotes the statistical significance for 1, 5 and 10% levels, respectively.

Table 10 Instrumental variable-2SLS

Variable	(1) (post-conflict)	(2) (pre-conflict)	(3) (EU-post-conflict)	(4) (EU-pre-conflict)	(5) (Russia-post-conflict)	(6) (Russia-pre-conflict)
Ukraine–Russia conflict	− 0.0481***	0.0538***	− 0.0395***	0.0560***	− 0.2788***	0.0822
	(0.0081)	(0.0088)	(0.0077)	(0.0084)	(0.0862)	(0.0927)
SIZE	0.5554***	0.5308***	0.6679***	0.6225***	0.3499***	0.3599***
	(0.0055)	(0.0056)	(0.0064)	(0.0062)	(0.0192)	(0.0242)
BM	0.0537***	0.0186***	0.0866***	0.0707***	− 0.0001	− 0.0427***
	(0.0021)	(0.0020)	(0.0026)	(0.0026)	(0.0068)	(0.0063)
Observations	70,623	68,372	68,067	65,896	2556	2476
Firm effects	Yes	Yes	Yes	Yes	Yes	Yes
Day effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of firms	1967	1964	1896	1893	71	71
Wu–Hausman	0.000	0.298	0.000	0.132	0.000	0.876
Sargan	0.198	0.003	0.166	0.045	0.496	0.012

This table presents the instrumental variable-2SLS approach of all the observations for Ukraine–Russia conflict. $Returns_{i,t}$ denotes stock returns from stock's closing price of firm i on day t. $Ukraine–Russia\ conflict_{i,t}$ expresses log of Wikipedia Trends (*Ukraine–Russia conflict*) by firm i and day t. $Controls_{i,t}$ denotes the size and BM of firm i on day t. The regression controls the firm and day fixed effects. Robust standard errors clustered by gvkey (firms) appearing ***, ** and * which denotes the statistical significance for 1, 5 and 10% levels, respectively.

possibility to arise the endogeneity concerns from measurement errors (errors in variables). However, it requires testing whether the Ukraine–Russia conflict (explanatory variable) is endogenous or not by Wu–Hausman and Durbin (score) chi^2 p values. Moreover, we need an instrumental variable that should not correlate with the error term but is a good indicator of Ukraine–Russia conflict. It means that the instrumental variables have a sufficient correlation with Ukraine–Russia conflict (the instrumental variables explain the endogenous variable very well) but is uncorrelated with the error term. Therefore, it demands a few tests to find valid, not over-identified and strong instruments. From the post-estimation tests, we find that the Wu–Hausman values for post-conflict periods (all observations, EU and Russia) are significant (< 0.01) and Sargan values are insignificant for all post-conflict periods. We also find high minimum eigenvalue statistics. All values suggest that Ukraine–Russia conflict (explanatory variable) is endogenous. The instrumental variables are strong and not over-identified.

To make consistent results with the baseline regressions, we partition pre-conflict and post-conflict periods for all observations and the EU and Russia separately. We use the firm and time-fixed effects in models. In models (1) and (2), we find the negative coefficients for post-conflict period and positive coefficients for pre-conflict period. This finding indicates that Ukraine–Russia conflict affects stock return negatively in post-conflict period but positively in pre-conflict period. This finding is similar to the findings of baseline regression results. In models (3) and (4), we find negative coefficients for post-conflict period and positive coefficients for pre-conflict period for EU capital markets. This finding indicates that Ukraine–Russia conflict affects stock return negatively in post-conflict period at the EU capital markets but positively in the pre-conflict period. This finding is also similar to the findings of the baseline regression results. In models (5) and (6), we find the negative coefficients for post-conflict period and positive coefficients for pre-conflict period for Russian capital market. We also find that negative coefficient for post-conflict period for Russia is larger than post-conflict period of the EU. This finding indicates that Ukraine–Russia conflict largely affects stock return of stock markets of Russia because of direct involvement of Russia in war. The finding is also similar to the previous results. All results indicate that our main findings are robust and free from endogeneity concerns. We control the heterogeneity concern by using the firm and day fixed effects at the different models and find consistent results.

Conclusion

In this paper, we investigate whether the Ukraine–Russia conflict affects stock return of the stock markets of the EU. We begin our analysis with the baseline regressions. We also consider the impact of several months pre and post-conflict on stock returns. We also test sector classifications, cross-country specifications and instrumental variable-2SLS approach to support the hypotheses. We find consistency with the baseline regression results.

Comparing the results between pre and post-conflict, we find that Ukraine–Russia conflict and returns of Russian stocks are negatively associated in post-conflict period but positively associated in pre-conflict period. We also find the same results when considering the EU and Russian stock markets separately. We consider the one and three months of post-conflict to show the results of this war's short and relatively long-time impacts on the stock markets of the EU. These findings indicate that Ukraine–Russia conflict negatively affects the stock return in the European stock markets. In addition, our finding indicates that the Ukraine–Russia conflict negatively impacts stock returns to all sectors. However, the impact of this war on the mining construction and manufacturing sector is more significant than other sectors (e.g. transportation and utility, wholesale and retail and service) because Russia and Ukraine are the key suppliers or exporters of the mining and manufacturing sector. They contribute more to both sectors than other sectors. Thus, the stock return of transportation and utility, wholesale and retail and service sectors is not affected largely. Our finding also indicates that Ukraine–Russia conflict largely impacts stock return of the stock markets of Russia because of direct involvement of Russia in the war. However, other countries' stock markets are less affected because Belgium, Cyprus, Finland, France, Poland, Romania and Sweden are not directly involved in the war, but they support the EU policy to impose sanctions against Russia. Notably, the coefficients for Hungary and Slovakia are positive because they are in a neutral position of imposing restrictions on Russia. Consequently, the stock return of these countries' stock markets is not affected due to the Ukraine–Russia conflict. However, other countries' stock markets are affected because they are directly involved in war or sanctions.

Additionally, the robustness test results support the baseline regression results. In particular, all findings indicate that Ukraine–Russia conflict affects negatively on stock return in post-conflict period in the European capital markets but positively in pre-conflict period. This finding also supports baseline regression results. All results indicate that our main findings are robust and free from endogeneity concerns. Our results suggest that Ukraine–Russia conflict negatively impacts the stock market of the EU.

Implication

Investors, portfolio managers, and lawmakers can create effective investment strategies, geopolitical risk hedging techniques, and risk management activities. Given this geopolitical unpredictability, we found that the short-term impact on returns is more significant than the long-term impact, which emphasizes the significance of short portfolio reallocation and the creation of hedge strategies. Our discovery of a stronger long-term effect on volatility dynamics suggests that long-term asset allocation decisions need to take risk transmission from such uncertainty into account.

Research Limitation and Future Avenue

In this research paper, we used only European countries to the impact of Ukraine–Russia conflict, which is one of main limitation. Because the time we conducted this research paper in that time this war effect was more significant in the European countries, but now it is already more than a year before war was started and now it should be a wider effect means in the other countries also going to see this war effect. So, it might be worth to do some further research using global data set.

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Declarations

Conflict of Interest Authors do not have any financial conflict of interest.

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References

Alam, A., Uddin, M., & Yazdifar, H. (2019). Institutional determinants of R&D investment: Evidence from emerging markets. *Technological Forecasting and Social Change., 138*, 34–44.

Alnoor, A., Khaw, K. W., Chew, X., Abbas, S., & Khattak, Z. Z. (2023). The influence of the barriers of hybrid strategy on strategic competitive priorities: Evidence from oil companies. *Global Journal of Flexible Systems Management*, *24*(2), 179–198.

Åslund, A., Guriev, S., & Kuchins, A. (2010). *Russia after the global economic crisis*. Peterson Institute Press.

Bank, W. (2022). *Commodity Markets Outlook, April 2022 : The Impact of the War in Ukraine on Commodity Markets.* Commodity Market Outlook.

Berninger, M., Kiesel, F., & Kolaric, S. (2022). Should I stay or should I go? Stock market reactions to companies' decisions in the wake of the Russia-Ukraine conflict. In *SSRN working paper.*

Boungou, W., & Yatié, A. (2022). The impact of the Ukraine–Russia war on world stock market returns. *Economics Letters., 215*, p110516.

Burdekin, R. C., & Siklos, P. L. (2022). Armageddon and the stock market: US, Canadian and Mexican market responses to the 1962 Cuban missile crisis. *The Quarterly Review of Economics and Finance, 84*, 112–127.

Castagneto-Gissey, G., & Nivorozhkin, E. (2016). No contagion from Russia toward global equity markets after the 2014 international sanctions. *Economic Analysis and Policy, 52*, 79–98.

Choudhry, T. (2010). World War II events and the Dow Jones industrial index. *Journal of Banking & Finance, 34*(5), 1022–1031.

Claessens, S., Djankov, S., & Klingebiel, D. (2000). *Stock markets in transition economies* (The World Bank Financial Sector Discussion Paper No. 5, Washington).

Connolly, R. (2011). Financial constraints on the modernization of the Russian economy. *Eurasian Geography and Economics, 52*(3), 428–459.

Connolly, R. (2015). *Troubled times: Stagnation, sanctions and the prospects for economic reform in Russia* (Chatham House, Russia and Eurasia Programme Research Paper, London).

Deng, M., Leippold M., Wagner, A. F., & Wang, Q. (2022). Stock prices and the Ukraine–Russia conflict: Sanctions, Energy and ESG. In: *SSRN working paper.*

Deutsch-Russische A. (2016). Geschäftsklima Russland 2016–13. Umfrage des Ost-Ausschusses der Deutschen Wirtschaft und der Deutsch-Russischen Auslandshandelskammer.

Dreger, C., et al. (2016). Between the hammer and the anvil: The impact of economic sanctions and oil prices on Russia's ruble. *Journal of Comparative Economics, 44*(2), 295–308.

Federle, J., Müller, G., Meier, A., & Sehn, V. 2022. Proximity to war: The stock market response to the Russian invasion of Ukraine. In: *CEPR Discussion Paper Series.*

Frey, B., & Kucher, M. (2001). Wars and markets: How bond values reflect the Second World War. *Economica, 68*(271), 317–333.

Frey, B. S., & Waldenström, D. (2004). Markets work in war: World War II reflected in the Zurich and Stockholm bond markets. *Financial History Review, 11*(1), 51–67.

Gaddy, C., & Ickes, B. (2010). Russia after the global financial crisis. *Eurasian Geography and Economics, 51*(3), 281–311.

Goel, S., Cagle, S., & Shawky, H. (2017). How vulnerable are international financial markets to terrorism? An empirical study based on terrorist incidents worldwide. *Journal of Financial Stability., 33*, 120–132.

Golikova, V., & Kuznetsov, B. (2017). Perception of risks associated with economic sanctions: the case of Russian manufacturing. *Post-Soviet Affairs, 33*, 49–62.

Gurvich, E., & Prilepskiy, I. (2015). The impact of financial sanctions on the Russian economy. *Russian Journal of Economics, 1*(4), 359–385.

Hasan, F., & Ahmed, S. A. (2021). COVID-19 and two different stock markets: An event study analysis. *The Journal of Prediction Markets., 15*(2), 3–18.

Hasan, F., Islam, M. R., & Ishrat, F. (2022). COVID-19 Pandemic impact on the supply chains of the UK-based multinational manufacturing companies. *Business Ethics and Leadership., 6*(2), 44–67.

Hasan, F., Bellenstedt, M. F. R., & Islam, M. R. (2023). The impact of demand and supply disruptions during the Covid-19 crisis on firm productivity. *Global Journal of Flexible Systems Management., 24*(1), 87–105.

Hillier, D., Pindado, J., & Queiroz, V.D. & Torre, C. D. L. (2011). The impact of country-level corporate governance on research and development. *Journal of International Business Studies, 42*(1), 76–98.

Hoffmann, M., & Neuenkirch, M. (2017). The pro-Russian conflict and its impact on stock returns in Russia and the Ukraine. *International Economics and Economic Policy, 1*(14), 61–73.

Hudson, R., & Urquhart, A. (2015). War and stock markets: The effect of World War Two on the British stock market. *International Review of Financial Analysis., 40*, 166–177.

Hudson, R., & Urquhart, A. (2022). Naval disasters, world war two and the British stock market. *Research in International Business and Finance, 59*, p101556.

Ibragimov, M., Ibragimov, R., & Walden, J. (2015). *Heavy-tailed distributions and robustness in economics and finance*. Springer.

Jondeau, E., & Rockinger, M. (2003). Testing for differences in the tails of stock-market returns. *Journal of Empirical Finance, 10*(5), 559–581.

Kholodilin, K. A., & Netsunajev, A. (2019). Crimea and punishment: The impact of sanctions on Russian economy and economies of the euro area. *Baltic Journal of Economics, Baltic International Centre for Economic Policy Studies, 19*(1), 39–51.

Klinova, M., & Sidorova, E. (2014). Economic sanctions and EU-Russia economic relations. *Voprosy Ekonomiki, 12*, 67–79.

Lagoarde-Segot, T., & Lucey, B. M. (2009). Shift-contagion vulnerability in the MENA stock markets. *World Economy, 32*(10), 1478–1497.

Leigh, A., Wolfers, J., and Zitzewitz, E. (2003). What do financial markets think of war in Iraq? In: *NBER working paper.*

Neaime, S. (2010). Sustainability of MENA public debt and the macroeconomic implications of the recent global financial crisis. *Middle East Development Journal, 2*(02), 177–201.

Neaime, S. (2012). The global financial crisis, financial linkages and correlations in returns and volatilities in emerging MENA stock markets. *Emerging Market Review, 13*(3), 268–282.

Pak, O., & Kretzschmar, G. (2016). Western sanctions–only half the challenge to Russia's economic union. *Research in International Business and Finance, 38*, 577–592.

Rigobon, R., & Sack, B. (2005). The effects of war risk on US financial markets. *Journal of Banking & Finance, 29*(7), 1769–1789.

Yousaf, I., Patel, R., and Yaroyaya, L. (2022). The reaction of G20+ stock markets to the Russia–Ukraine conflict "black-swan" event: Evidence from event study approach. In: *SSRN Working Paper.*

Key Questions

1. How the European stock markets react because of the Russian invasion of Ukraine.
2. What kind of effect specific sectors in the European stock markets are observing because of the Russian invasion of Ukraine.
3. What kind of effect of Russian-Ukraine war on Russian stock market because we know that Russian and EU stock markets are different in size and structure.

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