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**"Corporate Responses to Geopolitical Conflict: Analyzing U.S.
Companies' Exits from Russia Following the 2022 Ukraine
Invasion"**

Author: Kulyk Oleksandr
Student number: 589653
Thesis supervisor: Clemens Mueller
Second reader: [title and name of second reader]
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ABSTRACT

This paper analyses the corporate responses of the U.S. companies to the Russia's invasion of Ukraine in 2022. It studies the determinants that impact firms' decisions to stay or exit the Russian market and the following stock market reactions. Using event studies around the invasion date and the announcement dates of company withdrawals, this study observes the cumulative abnormal returns (CAR) and other financial measures to assess market reaction and corporate decisions. Findings indicate that firms with higher revenue dependency on Russia were less likely to withdraw, while bigger market capitalization increased the probability of withdrawal. Moreover, market reactions to exit announcements for companies with higher revenue exposure to Russia were mostly positive, suggesting investor support of long-term strategic decisions despite potential short-term losses. This study contributes to comprehension of the intersection of geopolitical events and corporate decision-making, emphasizing the importance of global market dynamics and offering ideas for future research on the economic impacts of geopolitical conflicts.

Keywords: geopolitical conflict, corporate strategy, CAR, U.S. companies, Ukraine invasion

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CHAPTER 1 Introduction

On the 24th of February 2022, Russia launched a full-scale invasion of Ukraine, which caused significant geopolitical tensions between Russia and the US, which declared full economic and military support of Ukraine. (White House, 2022) The unprovoked and unjustifiable act of aggression by Russia in Ukraine has resulted in numerous trade restrictions and sanctions by the US and EU to loosen up the Russian economy, making it the most sanctioned country in the world. (Bloomberg, 2022). In his speech to the US Congress, Ukrainian President Volodymyr Zelensky indicated the importance of global corporations leaving Russia and stopping paying taxes there, which are eventually used to fund this cruel war. (WSJ, 2022).

There were more than 1000 US companies doing business in Russia in 2021, that operated in various industries and substantially contributed to the country's economy through investments and employment. (Sonnenfeld, 2022). Companies with revenue exposure to Russia have faced critical decisions regarding whether to continue their operations in the region or to withdraw in response to the invasion. They were forced to weigh their financial aspect against the reputational to distance themselves from a country that started a military aggression against its neighbour. Massive corporate withdrawals from Russia showed a significant moment in the intersection of businesses and international politics, which has never occurred before.

This paper aims to find the key drivers for firms to exit Russia following the invasion of Ukraine. It will dive deeper into analysing how market size, revenue dependency and stock performance have led to the one or another corporate decision. Moreover, it will study how the market reacts to the announcement of exit taking into account the trading volume, market capitalisation and % of revenue in Russia.

Therefore, the first main research question was formulated:

Q1: Does higher CAR around the invasion day lead to a higher probability of companies leaving Russia?

To answer the following questions, the data about the abnormal returns of 87 stocks has been collected using the 24th of February as an event day. The event windows chosen are: (-1;1), (-3;3), and (-5;5) relative to the invasion date. The abnormal returns for each company over an event window were summed to generate variable CAR. Revenue in Russia and the market capitalization were chosen as other explanatory variables as those potentially having an impact on the decision to withdraw. The results demonstrated that % of revenues in Russia together with CAR have a significant negative effect on the potential decision to leave, while market capitalization has a significant positive effect in all three event studies.

For question 2, the focus was moved only to the firms that left russia, aiming to find how the announcement of the decision influences the stock performance. Thus, the second research was formulated as:

Q2: Does higher revenue exposure to russia generate lower CAR around the announcement to leave day?

To answer this question, a similar approach was taken to question 1, with the event date being different for each of the 96 companies sampled, namely the announcement to leave date. The event windows chosen are: (-1;1), (-1;2), and (-2;3) relative to the statement date. Apart from the Revenue in russia and the market capitalization from question 1, trading volume has been chosen as an explanatory variable. The results indicated that revenue in russia significantly influences CAR only using (-2;3) event window, market capitalization, and trading volume did not have any significant effect on CAR.

CHAPTER 2 Theoretical Framework

The literature on the impact of geopolitical conflicts on stock performances and corporate decisions enables us to understand how markets usually react to ongoing wars. Generally, many papers focused on the effect of different wars on the stock market. However, there have not been many global conflicts in the last 20 years, so most literature focuses on earlier wars. For example, Hudson and Urquhart (2015) observed the effects of major WW2 events on UK equity capital markets and found the overall influence to be very limited. Contrary to that, Choudhry (2010) found a positive effect of the good news for the Allies on the Dow Jones Industrial Average and a negative impact of the bad news. According to Ates(2002), during the Kosovo War, 56 defense companies across the USA, France, the UK, and Turkey realized positive abnormal returns. There was a significant difference between the abnormal returns of U.S. defense stocks and those of European defense stocks, with U.S. stocks showing stronger positive reactions.

Even though the war full-scale in Ukraine is ongoing for just 2,5 years, there is some literature about its impact on global financial markets. Generally, the overall market reaction was smaller than during Covid-19 and the Great recession 2008. The most affected were the industries that have a lot of connections to Ukraine and Russia(wheat, nickel) and oil industry (Izzeldin et al, 2022). Yousaf et al(2022) found that on the day of the invasion, the whole European markets realized significant negative returns, while North America, the Middle East, and Australia observed positive returns. Similarly to that , Boubaker et al(2022) also discovered that the closest European capital markets to Ukraine were more negatively affected than countries on other continents, like Australia and the US. Asian markets have also observed the negative CAR.

However, all these papers focus mostly on the impact of war on capital markets, which is not exactly the subject of research of this paper. The most similar study to this was done by Pajuste&Toniolo(2022), who focused on the potential reasons for companies to exit Russia. It analyzed whether the companies that leave are driven by the management or external pressures from stakeholders. The findings suggest that those who leave are usually the companies with strong internal governance which may choose to exit Russia based on ethical reasons and due to commitments to ESG. These companies prioritize long-term reputational benefits over short-term financial losses. Furthermore, they found that larger companies are more exposed to the social pressure to leave while usually being less exposed to Russia's market.

CHAPTER 3 Data

The data collection process for the US public companies' daily returns has been completed by using the CRSP Daily stocks file. The first study involved 9460 US publicly traded companies with industry SIC codes and realized daily returns on trading days from the 10th of February 2022 to the 10th of March 2022. The analysis of the stock returns of the companies that have revenue exposure to Russia was performed by using the list of publicly available companies also provided by Sonnenfeld(2022) and the website LeaveRussia.org made by the Kyiv School of Economics. The daily returns data was also extracted from the CRSP Daily stocks file. Sonnenfeld's (2022) list which is also called the "Yale Companies List" was created to trace the global corporations' response to the war in Ukraine. The companies were classified into 5 different categories to distinguish the extent to which the company has suspended its operations in Russia: withdrawal, suspension, scaling back, buying time, and digging in. This list enabled to separate the firms based on their decision to stay or leave the Russian market. LeaveRussia.org was founded by a team of 5 volunteers and transferred for free to the Kyiv School of Economics. Compared to the Yale list, it provides the archive of all press releases, announcements and news of every firm with dates, simplifying the process of accessing the exit announcement dates.

The case study of the US companies that either left or stayed in Russia after 24th of February, was performed by using Sonnenfeld(2022) list of companies that either remained in Russia and even expanded their business operations or left in the first 2 weeks of the full-scale invasion. Moreover, the website LeaveRussia.org made by the Kyiv School of Economics assisted in double-checking the information on exits and stays with links to the decisions announcements. Only the companies that left in the 2-week period(10 trading days) after the 24th of February were chosen since they were more likely to react to their stock performance in either a positive or negative way. Moreover, considering it a crucial factor, the data selection was limited to the firms that have information about their revenues in Russia enabling to estimate their risk and revenue exposure to Russia.

As of 10 March 2022, 87 stocks were observed for the case study, 44 being the leavers and 43 the stayers. All stocks are traded either on Nasdaq or NYSE. Information on whether the company has left or stayed was checked in Yale's list and LeaveRussia.org with the dates. The data for abnormal returns was extracted from the WRDS event study tool, while the CRSP Monthly stock file assisted in data collection for market capitalizations as of February 2022 with values in millions. Revenue in Russia in percentages was generated by using

LeaveRussia.org by dividing the revenue in Russia of a company in 2021 by the total revenue of a company.

For the second case study, only the leavers were chosen as a sample, with a total size of 96 companies. I aimed to estimate how the market reacted to the news of the exit of the Russian market. For all companies that have their revenue in Russia data available, I have observed their ‘announcement day’ namely when the company has published any statements about their exit. Once again, LeaveRussia.org has an archive with links to all the news that are related to the announcement of withdrawal. This includes official companies’ announcements, annual or quarterly reports with a text note, and news articles. This allowed to note this day for every company individually, while for the companies that announced this on a non-trading day (holiday or weekend) the next trading day was chosen as event day. The data collection process has been done in the same way as in event study 1 with also adding the monthly volume which is measured in a number of trades made by using the same tool in WRDS as for market capitalization.

CHAPTER 4 Method

This study will first examine the market performance of the whole US market from 10th February 2022 to 10th March 2022, covering the period of 2 weeks before the beginning of the invasion and 2 weeks after. This timeframe involves the first warnings from the US about the date of the invasion, Russia recognizing the independence of LPR and DPR, major corporations leaving Russia, and the US and EU imposing trade and economic sanctions on Russia. In order to observe the US market reaction in this period, an equally weighted portfolio has been created using all available US publicly traded companies and daily returns have been measured. Furthermore, the same approach was applied to the companies that had any business with Russia and the average returns were calculated.

For question 1, the event study was performed using WRDS tool with event date of 24th of February. The abnormal daily returns were calculated by using Market-Adjusted Risk Model, as it takes into account market movement and compare it to the stock performance (Campbell et al, 1997). The formula for AR(Abnormal Return) is:

$$AR_i = R_i - R_m$$

where R_i is the daily stock return, R_m is the daily market return(S&P 500).

The CAR(Cumulative Abnormal Return) was calculated by summing the Abnormal returns for each stock over a defined window.

$$CAR_i(t1, t2) = \sum_{t1}^{t2} AR_i(t)$$

The event windows chosen for this event study are (-1;1), (-3;3), and (-5;5) as proposed by Brown & Warner (1985). The study includes a shorter window (-1;1) to capture the immediate reactions around the invasion date. (-3;3) to observe the reaction to the first sanctions and trade restrictions imposed on Russia as well as Russia's recognition of the independence of the LPR and the DPR (BBC, 2022). Also, longer window (-5;5) to observe more extended reactions to the first news of the unsuccessfulness of Russia's invasion and inability to capture Kyiv in three days.

The linear regression is modeled as:

$$\ln(\text{MarketCap}) \sim a_i + \beta_1 * CAR_{invasion}(t1, t2) + \beta_2 * \text{RevenueRussia} + \beta_3 * \text{LeaveRussia} + u_i$$

where:

- *LeaveRussia* - the dummy variable equals 1 if the company has left Russia by 10.03.2022, or 0 if stayed
- a_i – intercept for dummy LeaveRussia
- β_1 – Cumulative Abnormal Return of a specific stock over (-1;1), (-3;3), (-5;5) event periods
- β_2 – percentage of total revenue that company had in russia
- β_3 – market capitalization in millions as of March 2022
- u_i – the error term

The second event study was used by combining multiple sub-event studies for each company individually. I used the same tool in WRDS as in event study 1, but now the event date was the day that the firm announced its withdrawal plans or exit announcement. The approach was identical to event study 1, with now independent variable being the CAR over a defined time period.

Contrary to event study 1, the decision to withdraw from Russia wasn't expected a lot in advance, like the war's beginning. Thus, for this event study, the event windows selected are shorter (-1;1), (-1;2), (-2;3).

The linear regression is modeled as:

$$CAR_{leave}(t1, t2) \sim a_i + \beta_1 * RevenueRussia + \beta_2 * \ln(TradingVolume) + \beta_3 * \ln(MarketCap) + u_i$$

- $CAR_i(t1, t2)$ - Cumulative Abnormal Return of a specific stock over (-1;1), (-1;2), (-2;3) event periods
- a_i – intercept for $CAR_i(t1, t2)$
- β_1 – percentage of total revenue that the company had in Russia in 2021
- β_2 – volume of trades in the month of announcement
- β_3 – market capitalization in millions as of March 2022
- u_i – the error term

CHAPTER 5 Results & Discussion

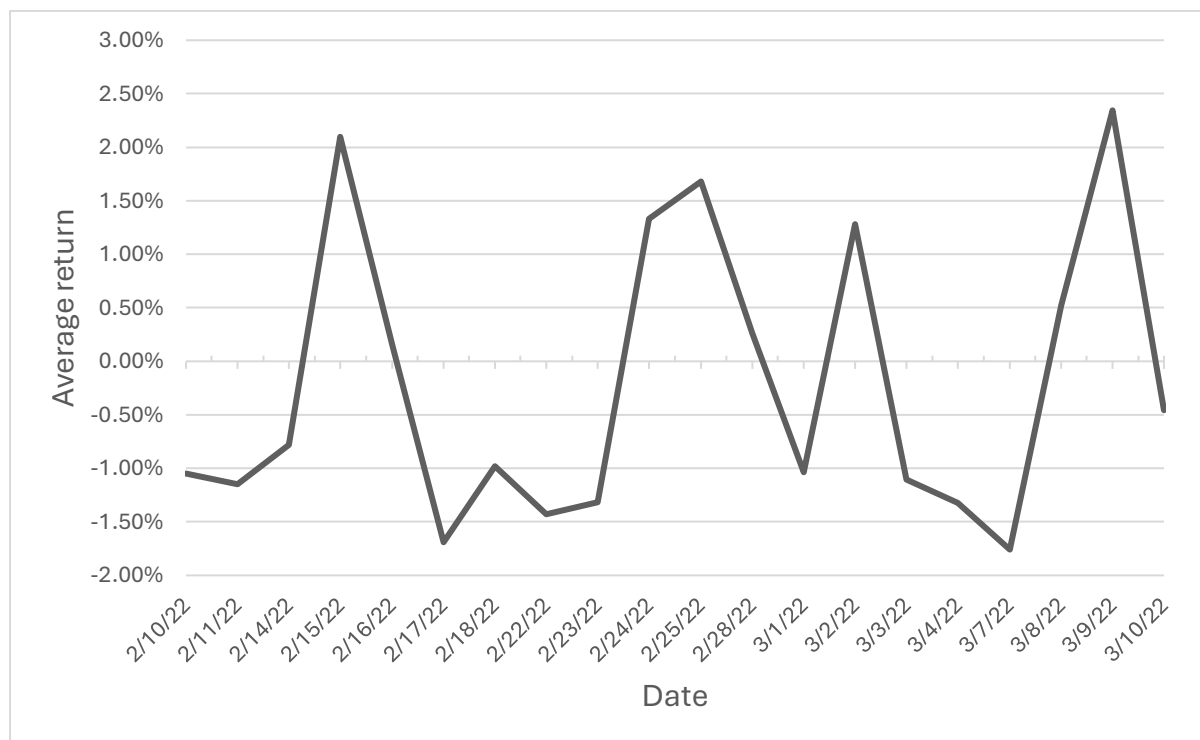


Fig. 1. The average US market returns.

This figure displays average daily returns of the whole US market from 10 February to 10 March 2022.

As could be seen from figure 1, the whole US stock market reacted very differently during the 2-week period before the beginning and 2-week after the full-scale invasion. The major world newspapers spread the first news about the date of the invasion on the 11th of February (Politico, 2022). The market return around those days was negative, mostly around 0,5-1 %. On the 16th of February, the positive return of 2 % could be associated with the failed beginning of the war, which might have been interpreted as a positive sign by the investors. The 4 days before the start of the invasion were characterized by the growing media and US government officials' pressure. President Joe Biden described the potential threat of a Russian invasion of Ukraine, highlighting the readiness of the U.S. to respond and potential sanctions on Russia. As Biden stated, "Every indication we have is they're prepared to go into Ukraine to attack Ukraine" (Politico, 2022). This statement demonstrates how dangerous the situation is, emphasizing the required actions to prevent the war between the two largest European countries. Surprisingly, during the first few days of the invasion, the US stock market responded positively. Some of the potential reasons for that are the potential increased government spending and surged oil prices, which drove the markets up. (Business Insider, 2022)

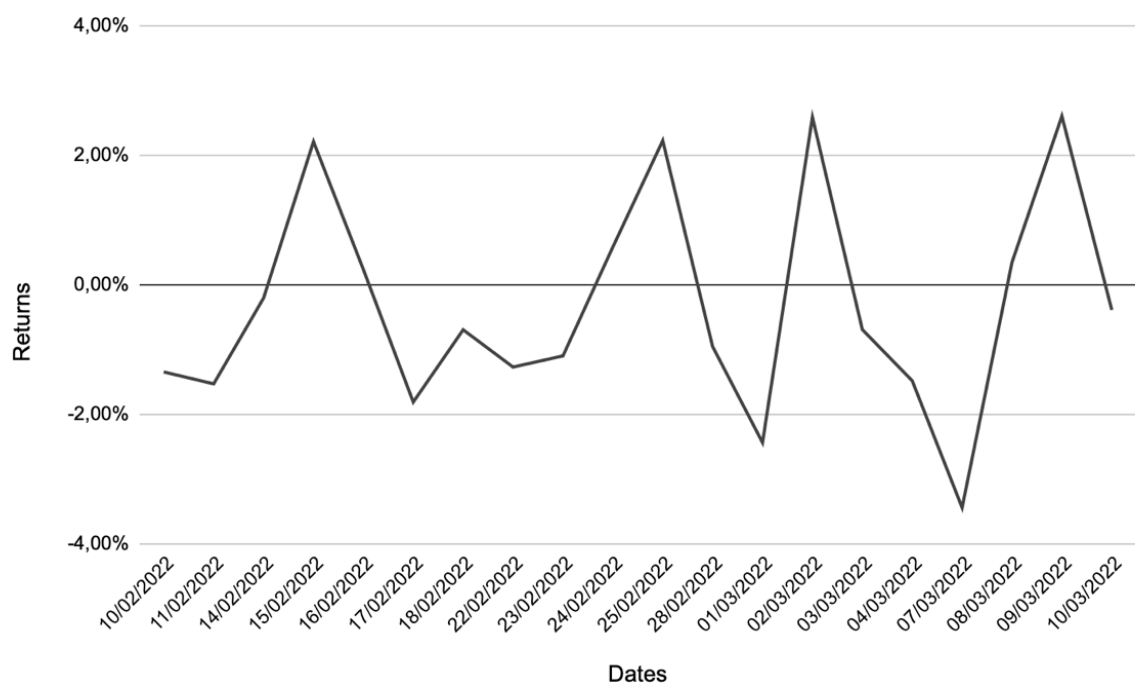


Fig. 2. The average US market returns of companies that had business in Russia. This figure displays average daily returns of the US companies with revenue exposure to Russia from 10 February to 10 March 2022.

Figure 2 provides information about the average stock returns of the companies that had any business in Russia. The overall market movement was very similar to the whole US market. Generally, the market was very volatile during this period and experienced both substantial positive and negative returns. At the beginning of the period, the returns were fluctuating around 0 %, meaning a relatively stable period. Once again, on the 16th of February, a significant upward trend could be associated with the failed predicted invasion date. The 1st and 7th of March 2022 are the days with the lowest average returns among the whole period.

Event study 1

Table 2.

Event study 1 on 24th of February

LeaveRussia	(-1;1)	(-3;3)	(-5;5)
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Revenue in Russia	-2.544*	-2.742**	-2.664*
	(1,373)	(1,376)	(1,357)
CAR _{invasion}	-0.415**	-0.586**	-0.636**
	(0,200)	(0,283)	(0,280)
Ln_MarketCapitalisation	0.081***	0.082***	0.081***
	(0,023)	(0,023)	(0,023)
constant	-0.307	-0.335	-0.308
	(0,254)	(0,253)	(0,261)
R ²	0.1505	0.1643	0.1722
Observations	87	87	87

Note: This table presents estimates from three regressions (Columns I – III) with one dependent variable- LeaveRussia. And three different independent variables, i.e. *RevRussia*, *Ln(MarketCap)*, and *CAR*, respectively. *LeaveRussia* is a dummy variable, 1 if company left, 0 if stayed. *CAR* is the sum of Abnormal returns over a defined time period. *Ln(MarketCap)* is the natural logarithm of the Monthly market capitalization. *RevRussia* is the percentage of revenue that the company had in russia in 2021. Standard errors are clustered at the firm level and given in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

As can be seen from the table, revenue in Russia has indeed had a significant negative impact on the decision to leave. In all three event studies, on average, a 1 % increase of revenue in Russia decreased the probability of leaving by 2.544, 2.742 and 2.664 % respectively to the event periods (-1;1), (-3;3), and (-5;5). Intuitively, this is in line with the logic that less financially connected to Russia companies are much more likely to leave as this market accounts only for a relatively small percentage of their businesses. While companies that have substantial levels of operations might decide not to leave as they view public criticism and potential accusations of lack of ethics as smaller threats than the loss of a huge market for them. Moreover, the *CAR* also appeared to have a significant negative impact on the choice to exit. The *CAR* coefficient has been steadily growing by expanding the time horizon of an event study. On average, a 1 % increase in *CAR* during the estimation window led to 0.415, 0.586, and 0.636 % lower probabilities of withdrawal from Russia by the firms. At the beginning of the full-scale invasion, many firms were shocked and undetermined of their future actions and a proper response to this war. Market reaction has probably played a crucial role in the verdict for many of the companies, with those having a higher *CAR* being

less likely to leave as investors did not react negatively to the absence of any actions so far. Finally, the market capitalization variable is also significant in all three event studies. On average, a 1 % increase in market capitalization results in 0.081, 0.082, and 0.081 % higher probability of exiting Russia. Since the 24th of February, many global corporations faced criticism for the passiveness of their reaction, but companies like Apple, Coca-Cola, and Meta were even more exposed to public pressure as they also acted as examples for other smaller firms. The R² in all three regressions fluctuated around 15-17 %, indicating a relatively high percentage of the variation of a dependent variable that is explained by an independent variable in a regression model.

Event study 2

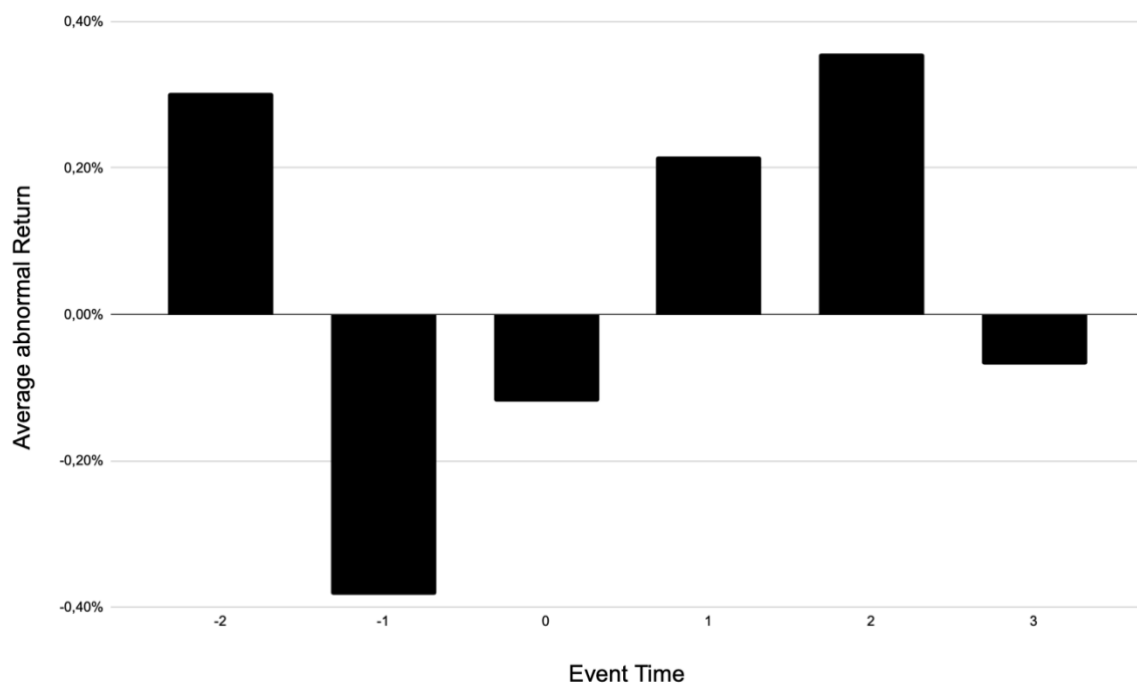


Fig. 3. The average market returns of companies that announced leaving Russia. This figure displays average daily abnormal returns of the US companies that announced to leave Russia with time-period (-2;3).

The figure above illustrates the average abnormal returns of the companies prior to their decision announcement to leave Russia and shortly after. The day before the statement release is associated with an average of -0,4 % abnormal return. The potential explanation is the leakage of information about the commitment to withdrawal, which sometimes happened in

the media before the actual announcement decision. On the announcement day, the average abnormal return did not differ significantly from zero, while the next two days illustrate slightly positive market reaction around 0,2-0,4 %. Generally, the decision to leave did not lead to substantial positive or negative market reaction.

Table 3.

Event study 2 on announcement day

CAR _{leave}	(-1;1)	(-1;2)	(-2;3)
Revenue in Russia	-0.197 (0,489)	0.282 (0,429)	0.597* (0,305)
Ln_TradingVolume	-0.002 (0,005)	0.002 (0,005)	-0.003 (0,005)
Ln_MarketCapitalisation	0.002 (0,004)	0.004 (0,005)	0.004 (0,004)
constant	-0.077 (0,070)	-0.106 (0,073)	-0.127 (0,094)
R ²	0.022	0.031	0.057
Observations	96	96	96

Note: This table presents estimates from three regressions (Columns I – III) with one dependent variable- CAR. And three different independent variables, i.e. *RevRussia*, *Ln(MarketCap)*, and *Ln(TradeVol)*, respectively. *CAR* is the sum of Abnormal returns over a defined time period. *Ln(MarketCap)* is the natural logarithm of the Monthly market capitalization in the month of the decision announcement. *RevRussia* is the percentage of revenue that the company had in Russia in 2021. *Ln(TradeVol)* is the total volume of stock tradings in the month of the decision announcement. Standard errors are clustered at the firm level and given in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Unfortunately, the second event study did not generate any significant results apart from Revenue in Russia using an event window (-2;3) under 10 % significance level. The R² in all three regressions fluctuated around 3-5 % meaning there are not enough variables chosen to explain the variation of the CAR. During the event period (-2;3), on average, a 1% revenue

increase in Russia led to a 0.597% increase in the total CAR of the stock. Surprisingly, the regression results demonstrated the opposite results to the expectations. More revenue-exposed countries to Russia realized higher returns than those who have fewer business operations there. One of the potential reasons is that the markets have perceived the exit of highly exposed companies as a strategic long-term move, despite the short-term financial losses.

CHAPTER 6 Conclusion

To conclude, this paper aimed to examine how the war in Ukraine impacted the US capital markets in various ways. This research offered a comprehensive analysis of the different reasons driving U.S. companies' decisions to exit Russia following its invasion of Ukraine and the market's response to these statements. The study is divided into two primary research questions, each of them addresses diverse aspects of corporate behavior and market reactions.

The introduction to the research involved the investigation of the market returns 2 weeks before and after the beginning of the invasion of the US stocks, namely: 1) the whole US stock market; 2) only companies that have any ongoing business operations in Russia. The results indicated a very similar trend of negative average market returns at the days of sanctions imposed announcements. Surprisingly, the invasion date was associated with positive average returns of around 2%. The second part of the study observed the market reaction to the announcement of companies exiting Russia. Interestingly, the results showed that larger revenue percentage in Russia did not have a significant influence on the CAR around the announcement day in 2 event windows, except for the (-2;3) window. In this window, companies with higher revenue exposure to Russia, on average, experienced higher CAR, which was not expected. This anomaly suggests that markets may have perceived the exit of highly exposed companies as a prudent long-term strategic move, despite the immediate financial implications.

Overall, the study underscores the complexity of corporate decision-making in response to geopolitical events and highlights the interplay between financial metrics, market sentiment, and reputational considerations. The evidence suggests that while financial exposure to a conflict zone can deter immediate exit decisions, market reactions can vary significantly based on investor perceptions of long-term strategic benefits.

These findings contribute to the broader understanding of how geopolitical conflicts influence corporate strategies and stock market behavior. They also provide a valuable reference for companies and policymakers in anticipating and managing the economic impacts of geopolitical events. Future research could further explore the long-term effects of such exits on corporate performance and investor trust, as well as the implications for global market dynamics.

Unfortunately, like any other research, it faced a substantial amount of limitations, which might have influenced the correctness of the results. The paper included only the publicly traded companies, that published an information about their revenues in Russia, while the results might differ for private companies. Furthermore, the second event study was conducted by relying on public news announcements to withdraw from Russia, while some of the releases might have been published with a delay making the results susceptible to transcription error and observation bias.

This study also opens field for future researches on how global geopolitics and businesses might intersect. While this paper focuses on financial markets in the US, which has completely taken Ukrainian side in this war conflict, it might be interesting to perform the similar study in the country which decided to stay neutral, like China, for example. Furthermore, while this paper focused mostly on financials reasons to withdraw, there also various ethical factors that might have played a crucial role in the companies' commitments. For instance, analyse which effect do ESG scores and level of shareholders' pressure have on the decision to leave. It is also insightful to measure long-term impact of decision to leave or stay on stock performance in the subsequent studies.

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APPENDIX

Appendix 1. The list of selected public US companies for event study 1.

company name	Ticker
ORACLE CORP	ORCL
MICROSOFT CORP	MSFT
HONEYWELL INTERNATIONAL INC	HON
ARCHER DANIELS MIDLAND CO	ADM
COCA COLA CO	KO
DENTSPLY SIRONA INC	XRAY
EXXON MOBIL CORP	XOM
GENERAL ELECTRIC CO	GE
GENERAL MOTORS CO	GM
INTERNATIONAL BUSINESS MACHS	IBM
EPAM SYSTEMS INC	EPAM
META PLATFORMS INC	META
ABBVIE INC	ABBV
PEPSICO INC	PEP
P V H CORP	PVH
SCHLUMBERGER LTD	SLB
APPLE INC	AAPL
SYNEOS HEALTH INC	SYNH
KRAFT HEINZ CO	KHC
UNIVERSAL CORP	UUV
GENERAL MILLS INC	GIS
KIMBERLY CLARK CORP	KMB
SPOTIFY TECHNOLOGY	SPOT
PROCTER & GAMBLE CO	PG
DELL TECHNOLOGIES INC	DELL
COLGATE PALMOLIVE CO	CL
DEERE & CO	DE
AIRBNB INC	ABNB
ABBOTT LABORATORIES	ABT
INTERNATIONAL PAPER CO	IP
PFIZER INC	PFE
JOHNSON & JOHNSON	JNJ

MERCK & CO INC NEW	MRK
FORD MOTOR CO DEL	F
DISNEY WALT CO	DIS
H P INC	HPQ
BROWN FORMAN CORP	BF
TJX COMPANIES INC NEW	TJX
JPMORGAN CHASE & CO	JPM
DANAHER CORP	DHR
MANITOWOC CO INC	MTW
AMERICAN EXPRESS CO	AXP
INTEL CORP	INTC
MEDTRONIC PLC	MDT
FEDEX CORP	FDX
STRYKER CORP	SYK
GILEAD SCIENCES INC	GILD
MOHAWK INDUSTRIES INC	MHK
STARBUCKS CORP	SBUX
TITAN INTERNATIONAL INC ILL	TWI
LAUDER ESTEE COS INC	EL
GREIF INC	GEF
TUPPERWARE BRANDS CORP	TUP
GUESS INC	GES
TENNECO INC DE	TEN
YUM BRANDS INC	YUM
AMDOCS LTD	DOX
GOLDMAN SACHS GROUP INC	GS
MONSTER BEVERAGE CORP NEW	MNST
ALIGN TECHNOLOGY INC	ALGN
MONDELEZ INTERNATIONAL INC	MDLZ
ZIMMER BIOMET HOLDINGS INC	ZBH
ACCENTURE PLC IRELAND	ACN
ALPHABET INC	GOOGL
HERBALIFE NUTRITION LTD	HLF
MASTERCARD INC	MA
ARMSTRONG WORLD INDS INC NEW	AWI
IRIDIUM COMMUNICATIONS INC	IRDM
PHILIP MORRIS INTERNATIONAL INC	PM
VISA INC	V
FORTINET INC	FTNT
NIelsen HOLDINGS PLC	NLSN
I T T INC	ITT
IQVIA HOLDINGS INC	IQV
AXALTA COATING SYSTEMS LTD	AXTA

TECHNIPFMC PLC	FTI
3M CO	MMM
WEATHERFORD INTERNATIONAL PLC	WFRD
FULLER H B CO	FUL
MATTEL INC	MAT
KENNAMETAL INC	KMT
MARSH & MCLENNAN COS INC	MMC
SILGAN HOLDINGS INC	SLGN
SEALED AIR CORP NEW	SEE
UNITED PARCEL SERVICE INC	UPS
RIBBON COMMUNICATIONS INC	RBBN
FLUOR CORP NEW	FLR

Appendix 2

Descriptive statistics of the variables in event study 1.

	Obs	Mean	Std. Dev.	Min	Max
CAR(-1;1)	87	-0.002	0.106	-0.135	0.915
CAR(-3;3)	87	-0.020	0.127	-0.564	0.882
CAR(-5;5)	87	0.002	0.136	-0.568	0.904
LeaveRussia	87	0.505	0.502	0	1
RevRussia	87	0.017	0.034	0.000	0.248
Ln_MarketCap	87	10.610	1.916	6.115	14.807
MarketCap	87	167362.5	386820	452.640	2694666

This table reports descriptive statistics for the main variables for event study 1. The number of observations, mean, standard deviation, and maximum, minimum values for 87 US publicly traded stocks during between the 10th of February and 10th of March. $\text{Ln}(\text{MarketCap})$ is the natural logarithm of the monthly market capitalization for that firm. LeaveRussia is a dummy variable, 1 if company left, 0 if stayed. CAR is the sum of Abnormal returns over a defined time period. RevRussia is the percentage of revenue that the company had in Russia in 2021.

Appendix 3. The list of selected public US companies for event study 2.

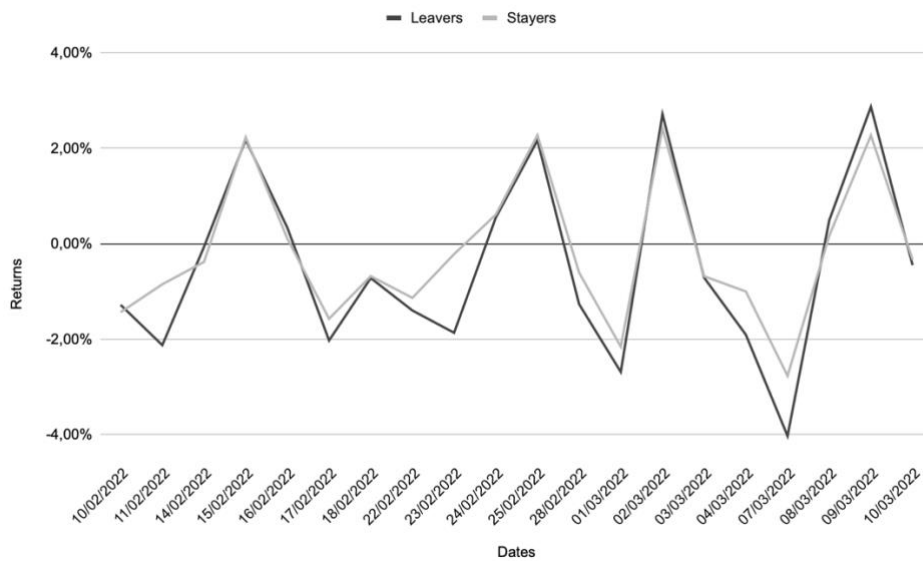
company name	ticker
ORACLE CORP	ORCL
HONEYWELL INTERNATIONAL INC	HON
COCA COLA CO	KO

EATON CORP PLC	ETN
EXXON MOBIL CORP	XOM
GENERAL ELECTRIC CO	GE
GENERAL MOTORS CO	GM
INTERNATIONAL BUSINESS MACHS	IBM
EPAM SYSTEMS INC	EPAM
P V H CORP	PVH
APPLE INC	AAPL
TIMKEN CO	TKR
GOODYEAR TIRE & RUBBER CO	GT
AVAYA HOLDINGS CORP	AVYA
SPOTIFY TECHNOLOGY S A	SPOT
DELL TECHNOLOGIES INC	DELL
CATERPILLAR INC	CAT
DEERE & CO	DE
SYLVAMO CORP	SLVM
P P G INDUSTRIES INC	PPG
3M CO	MMM
HALLIBURTON CO	HAL
FORD MOTOR CO DEL	F
DISNEY WALT CO	DIS
H P INC	HPQ
XEROX HOLDINGS CORP	XRX
BROWN FORMAN CORP	BF
BROWN FORMAN CORP	BF
OMNICOM GROUP INC	OMC
FLOWSERVE CORP	FLS
MATTEL INC	MAT
D X C TECHNOLOGY CO	DXC
CUMMINS INC	CMI
STANLEY BLACK & DECKER INC	SWK
MCDONALDS CORP	MCD
MARSH & MCLENNAN COS INC	MMC
JPMORGAN CHASE & CO	JPM
DANAHER CORP	DHR
LILLY ELI & CO	LLY
BALL CORP	BLL
AMERICAN EXPRESS CO	AXP
INTEL CORP	INTC
FEDEX CORP	FDX
BAKER HUGHES CO	BKR
A G C O CORP	AGCO
YUM BRANDS INC	YUM

METTLER TOLEDO INTERNATIONAL	MTD
AUTODESK INC	ADSK
MARRIOTT INTERNATIONAL INC NEW	MAR
EBAY INC	EBAY
GOLDMAN SACHS GROUP INC	GS
JUNIPER NETWORKS INC	JNPR
BIOMARIN PHARMACEUTICAL INC	BMRN
UNITED PARCEL SERVICE INC	UPS
ACCENTURE PLC IRELAND	ACN
BUNGE LTD	BG
ALPHABET INC	GOOGL
UNDER ARMOUR INC	UAA
MASTERCARD INC	MA
WESTERN UNION CO	WU
BROADRIDGE FINANCIAL SOLUTNS	BR
VMWARE INC	VMW
TERADATA CORP DE	TDC
VISA INC	V
FORTINET INC	FTNT
MICROSOFT CORP	MSFT
COTY INC	COTY
UNIVAR SOLUTIONS INC	UNVR
GRID DYNAMICS HOLDINGS INC	GDYN
CORTEVA INC	CTVA
F M C CORP	FMC
KRISPY KREME INC	DNUT
EMERSON ELECTRIC CO	EMR
SHERWIN WILLIAMS CO	SHW
DIEBOLD NIXDORF INC	DBD
PARKER HANNIFIN CORP	PH
KENNAMETAL INC	KMT
KELLY SERVICES INC	KELYA
NORDSON CORP	NDSN
CISCO SYSTEMS INC	CSCO
I D E X X LABORATORIES INC	IDXX
STARBUCKS CORP	SBUX
JONES LANG LASALLE INC	JLL
AMDOCS LTD	DOX
KORN FERRY	KFY
VISTEON CORP	VC
OWENS CORNING NEW	OC
UNIVERSAL CORP	UVV
OTIS WORLDWIDE CORP	OTIS

BRISTOL MYERS SQUIBB CO	BMY
WHIRLPOOL CORP	WHR
NIKE INC	NKE
THERMO FISHER SCIENTIFIC INC	TMO
CADENCE DESIGN SYSTEMS INC	CDNS
KELLOGG CO	K
AIR PRODUCTS & CHEMICALS INC	APD

Appendix 4. Average abnormal returns of stayers and leavers from 10.02.2022 to 10.03.2022.



Appendix 5

Descriptive statistics of the variables in event study 2.

	Obs	Mean	Std. Dev.	Min	Max
CAR(-1;1)	96	-0.003	0.057	-0.268	0.158
CAR(-1;2)	96	0.001	0.055	-0.194	0.143
CAR(-2;3)	96	0.003	0.062	-0.177	0.194
TradingVol	96	155181.6	314936.7	1013.515	2178889
Ln_Tradingvol	96	10.968	1.416	6.921	14.594
RevRussia	96	0.009	0.022	0.000	0.197
Ln_MarketCap	96	10.361	1.916	6.275	14.856
MarketCap	96	133846.5	379106.4	531.179	2830003

This table reports descriptive statistics for the main variables for event study 2. The number of observations, mean, standard deviation, and maximum, minimum values for 96 US publicly traded stocks prior and after their announcement to leave russia. $\ln(\text{MarketCap})$ is the natural logarithm of the monthly

market capitalization for that firm. LeaveRussia is a dummy variable, 1 if company left, 0 if stayed. *CAR* is the sum of Abnormal returns over a defined time period. RevRussia is the percentage of revenue that the company had in Russia in 2021. $\ln(\text{TradingVol})$ is the natural logarithm of the monthly trading volume at the month of exit announcement.