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**Long-Term Financial Market Reactions to Corporate Decisions  
During the Russia-Ukraine Conflict: Analyzing Ethical Choices and  
Market Performance**

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The views stated in this thesis are those of the author and not necessarily those of the supervisor, second reader, Erasmus School of Economics or Erasmus University Rotterdam.

## **ABSTRACT**

This thesis looks at how financial markets reacted over the long term to companies' decisions to leave or stay in Russia during the Russia-Ukraine war. The research employs methodologies such as Difference-in-Differences analysis, portfolio performance evaluations (market capitalization-weighted and equal-weighted), and T-tests. The study found that in the short term the market reacted significant and varied on news items. However, these effects tended to normalize over time, with market reactions becoming smaller and less statistically significant as the conflict progressed. The results also suggest that larger firms tend to experience higher excess returns and trading volumes, indicating a market preference for bigger companies. Portfolio performance analysis revealed that companies exiting Russia generally outperformed those that remained, showing that ethical decisions were rewarded by the market. T-test results indicated that most differences in returns before and after news announcements were not statistically significant, suggesting specific news events did not have lasting impacts on Remainer portfolios. Moreover, bad news does not necessarily give a stronger reaction in financial markets compared to good news. The study concludes that while immediate market reactions were pronounced, they stabilized over the long term. Overall, the research provides insights into how financial markets respond to corporate decisions in conflict zones.

**Keywords:** Russia, Ukraine, Market reaction, Corporate Decisions

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# 1 Introduction

Since the end of February 2022, Russia's attack on Ukraine has had widespread impacts across the globe, shaking up politics, military matters, and financial markets. Many countries have punished Russia with strong economic sanctions that hit their trade, ability to deal with money, and payment systems. Additionally, several wealthy individuals, thought to be close to the Russian government, have been hit with sanctions, including having their assets frozen or taken away. As things have developed and public sentiment has shifted, a good number of international firms have chosen to either shut down their operations in Russia, this is true for mainly small foreign businesses, or cut back on their investments, this applies in particular for the big global companies (Arapova & Balakhonova, 2023).

This move accelerated after the military actions started. Part of the reason was the push from online campaigns and the fear that customers might start boycotting their products. Other financial consequences are for example foreign capital outflows, decreased exports, increased interest rates, disrupted investment climates, and higher import costs, all of which negatively impact profitability and lead to volatility in equity markets (Hacıoğlu, Dinçer, & Çelik, 2016). Despite these challenges and negative public view, some businesses chose to keep operating in Russia.

Recent studies have focused on market behavior during the Russia/Ukraine war on the short term. Tosun & Eshraghi (2022) found that a portfolio of the companies that stayed ('Remainers') underperform a portfolio of companies that left ('Leavers') and the market benchmark, when exploring the impact of corporate decisions and market behavior made during the Russia/Ukraine War in the short-term period (February 3 till 8 March 2022), immediately following the invasion). They document a penalty imposed by investors on the Remainers, which may be attributed to a negative public sentiment. Another study also found that (Sonnenfeld et al., 2022) companies withdrawing from Russia have significantly outperformed those that remained in the short term. Financial markets have systematically rewarded companies exiting Russia while punishing those staying. The research highlights that financial markets view the reputational risks and potential sanctions associated with remaining in Russia as outweighing the costs of exiting. Thus, withdrawing from Russia has been beneficial for companies from a financial perspective, demonstrating that doing good aligns with doing well financially.

These studies focus on the financial consequences on the companies that were staying in Russia on the short term, just after the invasion. However, these studies have failed to address the long-term impact of corporate decisions of the remainers made during the Russia/Ukraine war. This research attempts to fill this critical knowledge gap by investigating how the decisions of companies to either leave or remain in the conflict zone affect their financial performance and market perception in the long term and therefore shifting the focus from short-term to long-term financial consequences.

The implications of this study are relevant for the Efficient Market Hypothesis (EMH). The strong form of this theory says that all information, both public and private, is already reflected in stock prices (Malkiel, 1989). The decision of companies to stay or to leave should therefore already be priced in if markets are truly efficient. In the context of the semi-strong form of this theory, current stock prices reflect historical price information and public information. If the financial market is efficient in this case, public information is incorporated into stock prices and will not yield abnormal profits (Malkiel, 1989). This study will investigate how quickly and accurately information is embodied in prices and for that reason offer a better understanding of the Efficient Market Theory.

The outcomes of this thesis are also applicable for behavioral finance theories, like investor sentiment and reputational risk. This thesis will investigate if public sentiment and emotional reactions to news events influences investor behavior and lead to price changes (Arvanitis & Bassiliades, 2017) Moreover, the study explores if reputational risks is a significant factor for company's decision making. Ethical behavior could impact investor perceptions and consequently stock prices (Roehrich et al., 2014). As a result, this study seeks to enhance the understanding of these theories, thereby contributing to its scientific relevance.

Besides offering a better understanding to those theories, the purpose of this research is to provide stakeholders, including investors, consumers, and policymakers, with a clearer picture of the long-term consequences of corporate decisions in conflict zones. This enhances transparency and accountability. Moreover, it could detect if there are long-term financial benefits of withdrawing from conflict zones. This could encourage more companies to prioritize ethical decision-making and consequently promoting corporate social responsibility.

Therefore, the research question that this thesis aims to answer is:

What is the long-term impact of financial market reactions during the Russia/Ukraine war?

The rest of the thesis is organized in the following way. In the next section, the theoretical framework will be presented, where the relevant literature, sources and hypotheses will be discussed. The subsequent section provides the data, i.e. the selected companies, financial data and descriptive statistics. After that, the methodology will be discussed, describing the research methods used. The following section provides the results and discussion, where the focus will be on the key results and dive deeper in providing an explanation and discussion for the outcomes. This is lastly followed by a conclusion. This chapter summarizes the main findings, answers the research question and discusses the limitations of the research. A list of all consulted sources and citations can be found in the bibliography.



## **2 Theoretical Framework**

### ***2.1 Financial market reactions in geopolitical conflicts***

Existing literature has shown that geopolitical conflicts, international crises, border disputes and wars have a significantly impact on financial markets (Pandey et al., 2023). A financial market is a market in which people and entities can trade financial securities, commodities, and other fungible items of value at low transaction costs and at prices that reflect supply and demand. Securities include stocks and bonds, and commodities include precious metals or agricultural goods (Burthorn et al., 2015). Financial market reactions refer to the changes in market prices, trading volumes, and volatility in response to new information, events, or announcements that affect the financial markets. These reactions can be immediate or delayed and are influenced by various factors such as investor sentiment, market liquidity, and the nature of the information released. (Barrett et al., 2004; Erdemlioglu et al., 2017)

There is a substantial body of research that examines the effects of World War 2 on equity and debt markets. For example, Frey and Kucher (2000) uncovered that changes in national sovereignty during WWII influenced government bond prices of five European nations. Especially when World War 2 broke officially out, it caused drastic falls in the bond prices. In line with this research Frey & Waldenstorm (2004) analyzed how World War II impacted government bond markets in Zurich and Stockholm, showing also that significant war events influenced bond prices. Zurich bond markets experienced notable price changes, with significant declines during major war events, such as the outbreak of World War II, the invasion of Western Europe and military successes of Germany. In contrast, Stockholm bond markets displayed more stability, because Sweden had a neutral position in the war and therefore lesser direct impact from the conflict. The prices of bonds from countries directly involved in the war, for example Germany and France, showed more volatility compared to those from neutral countries.

World War 2 did not only have an impact on bond prices, but also on stock prices. Hudson & Urquhart (2015) studied the effect of World War II on the British stock market and they found that the British stock market reacted more strongly to major negative events compared to positive events during WWII. Victories by the axis forces typically led to a decrease in stock prices and an increase in volatility. Conversely, successes by de allies generally resulted in

rising stock prices and reduced volatility over the following days. This analysis shows that investors responded more strongly to news suggesting the prolongation of the war.

The same trend has been investigated for the Dow Jones Industrial Index (Choudhry, 2010). However, the effects were not always associated with the most important war events. For example, large negative returns were sometimes linked to significant war events, but large positive returns were less likely to be associated with such events (Hudson & Urquhart, 2015). Also, some major war events did not cause significant shifts in the stock market. This could be because an event may not have had an immediate impact on investor sentiment. For example, early European battles may not have had immediate impacts on US investor sentiment until the US was more directly involved (Choudhry, 2010).

Also, Schneider & Troeger (2006) dived deeper into the relationship between international conflicts and stock market reactions. Their findings suggest that investors become more risk-averse when conflicts arise. This led to declines in stock market values. Moreover, the intensity of the conflict appears to have a direct impact on the magnitude of these market reactions. Essentially, the more severe the conflict, the greater the negative impact on the stock market. This indicates that markets are sensitive not just to the presence of conflict but to its scale and potential impact on global stability. The study also distinguishes between different types of conflicts, such as interstate wars and civil wars. It finds that interstate wars typically have a more pronounced negative impact on stock markets compared to civil wars. This is likely due to the broader geopolitical and economic implications of interstate conflicts. Moreover, conflicts that involve major economic powers or occur in regions crucial to the global economy, for example oil-producing areas, tend to have a larger impact on stock markets worldwide. Also, companies with previous exposure to disasters face significant negative impacts on their financial performance (Tosun et al., 2021). The negative effects are not just immediate but can persist over an extended period. This effect is particularly pronounced for firms operating in industries with high capital intensity and those located in regions prone to natural disasters. The study highlights that investors' risk perceptions are influenced by a company's exposure to prior disasters. Companies with a history of being affected by disasters may be perceived as higher risk, leading to reduced investor confidence and lower stock valuations.

This pattern of negative financial market reactions appears to hold true for more recent geopolitical conflicts as well, such as the Israel-Palestine tensions, the Gulf War, and the

conflicts in the former Yugoslavia (Schneider & Troeger, 2006), as well as for terrorist events like 9/11 (Tosun et al., 2021). The immediate market reaction to the 9/11 attacks was a sharp decline in stock prices, reflecting the heightened uncertainty and fear among investors. Beyond the immediate reaction, the study explores the long-term financial consequences for companies exposed to the 9/11 attacks. It finds that these companies experienced prolonged financial challenges, including reduced profitability and increased risk perceptions among investors.

The destructive impact of geopolitical risk seems to extend beyond just equity markets, as it has also been shown to affect the energy sector as oil market returns decline significantly during periods of heightened geopolitical uncertainty (Antonakakis et al., 2017). Also, geopolitical risk affects commodities, and the overall stability of the financial system as geopolitical risk affects negatively bank stability. Banks in countries experiencing high risks facing more significant instability (Phan et al., 2021). Notably, economic policy uncertainty affects stock markets more adversely compared to geopolitical risks (Kannadhasan & Das, 2020).

## ***2.2 Impact of the Russia-Ukraine war in the short term***

As established in the previous paragraph, conflicts, crises, and wars significantly impact financial markets. Consequently, researchers have been particularly interested in exploring the financial and economic consequences of the ongoing Russia-Ukraine war as it is plausible that this conflict has substantial implications not only for global politics, but also for financial markets.

Firstly, the war impacts the global economy, with inflation rising, uncertainty increasing and potential supply chain disruptions (Mbah & Wasum, 2022). Also, Gaio et al. (2022) noted that overall market efficiency declined during the Russia/Ukraine war. This result show that investors should be alert in periods of strong instability. Moreover, the conflict has an impact on volatility in financial markets. Fizeder & Małecka (2022) examined how markets responded to the Russian invasion of Ukraine. Their research revealed significant variations in volatility and forecasting accuracy across different markets. For instance, the conflict had a strong negative impact on most stock markets, especially the Russian market. The aggregate

stock market analysis indicated significant and negative impacts on the event day and subsequent days (Yousaf et al., 2022). Interestingly, cryptocurrency markets showed minimal changes in reaction to the war. However, the Russia-Ukraine war does have a significantly effect on the return predictability of global commodity prices (Akinyele, 2024). Additionally, Hong et al. (2023) investigated the volatility in the crude oil market in response to the Russia-Ukraine conflict. They developed a new four-factor model that integrates war intensity to better predict stock performance. Notably, the study of Sun & Zhang (2023) found that the Russia-Ukraine war impacts companies differently based on their location, industry, and trade ties with Russia.

The increased volatility of financial markets has become a concern among investors and policymakers. For investors, increased market volatility affects their ability to predict market movements and to develop effective investment strategies. Policymakers are also concerned because financial market stability is crucial for overall economic stability, since volatility could slow down economic growth as it could undermine investor confidence, what could lead to reduced investment (Fiszeder & Malecka, 2022).

Not only investor confidence is essential for accurate investment strategies, but also investor sentiment plays a crucial role in asset allocation. This is seen in a study done by Tosun & Eshraghi (2022). They investigated a portfolio of the companies that stayed in Russia during the Russia-Ukraine war, in other words ‘Remainers’, and compared this with a portfolio of companies that left, so called ‘Leavers’. They found that the portfolio of Remainers underperforms the portfolio of Leavers and the bench market in the short-term period (February 3 till 8 March 2022). They document that investors put a penalty on the Remainers for staying in Russia, which may be attributed to a negative public sentiment.

Another study also found that companies withdrawing from Russia have significantly outperformed those that remained in the short term, since financial markets have punished the companies that stayed in Russia and rewarded the companies that existed (Sonnenfeld e.a., 2022). In that way companies perform a benefit-cost-analyses where existing Russia could outweigh the costs of staying in Russia, because of the reputational risks and potential sanctions associated with remaining in Russia. Thus, withdrawing from Russia has been beneficial for companies from a financial perspective. This demonstrates that doing good aligns with doing well financially (Sonnenfeld et al., 2022).

### **2.3 Financial impact of consumer boycotts**

In addition to the research on the effects of geopolitical conflicts, it is also relevant to examine the literature that investigates the financial impact of consumer boycotts. Boycotts are deliberate actions by individuals, groups, or states to stop buying from or dealing with a company or organization to force a change in behavior or policy. The goal is usually to hurt the company financially to achieve political or social goals (Hyde, 1933). Therefore, consumer boycotts can have significant financial impacts on targeted firms and companies might change their behavior to avoid losing money due to a boycott (Heijnen & Made, 2012). The effectiveness and financial implications of these boycotts are influenced by various factors including consumer sentiment, the perceived success of the boycott, and the firm's response. There are different types of boycotts. Political boycotts are driven by geopolitical conflicts and nationalistic sentiments. Examples include the Arab boycott of Israel (Losman, 1972) and the Chinese boycott of Japanese goods during the Senkaku/Diaoyu Island conflict (Heilmann, 2016). There are also moral and ethical boycotts. These focus on human rights, environmental issues, or ethical standards, often within a socio-political context. The Israeli-Gaza conflicts have led to boycotts motivated by solidarity with Palestinians. This illustrates the role of socio-political contexts in shaping boycott strategies and outcomes (Nasir, 2016).

Consumers decide to join boycotts for different reasons. Some do it for personal benefits, while others do it because they care about fairness and want to punish the company. Those who are strongly reciprocal are more likely to join and keep participating in the boycott, making it more successful and financially impactful for the targeted company (Hahn & Albert, 2017). The chances of someone joining a boycott also depend on how successful they think the boycott will be, how much they are influenced by others, and the personal costs to them. If people believe the boycott will succeed and feel strong social pressure to join, more people will participate, making the boycott more financially impactful (Sen et al., 2001).

What also plays a role, is the fact that people weigh the pros and cons, when deciding to join a boycott. They consider how much they want to make a difference, how good it makes them feel, and the downsides of not buying certain products (Klein et al., 2004). Therefore, boycotts can be hard to organize and may not work well if people don't join in or if some benefit without participating. Moreover, the people who can make the biggest impact might not join because it costs them more to participate (Delacote, 2009).

Boycotts can have significant economic impact as they can lead to substantial economic disruptions, particularly affecting consumer goods and services. For instance, politically motivated boycotts have been shown to disrupt trade by up to 18.8% in certain cases. The study found that boycotts function similarly to economic sanctions, aiming to disrupt the target's economy to force policy changes. The degree of impact varies based on the economic interdependence between the boycotting and boycotted entities. Also, the impact of boycotts is shown to be more pronounced for goods that have readily available substitutes (Heilmann, 2016).

Interestingly, the impacts of actual boycotts and mere threats of boycotts appear to be similar (Koku et al., 1997). Boycotts and threats of boycotts have significant negative impacts on the stock prices of targeted firms. The negative impact is observed immediately following the announcement of the boycott or threat. The study finds that the magnitude of the financial impact varies depending on the size and visibility of the firm. Larger, more visible firms tend to experience a greater negative impact compared to smaller firms. Also, the boycotts can have lasting financial consequences for the targeted firms in the long term.

Furthermore, there is a difference in small and large boycotts. Small and persistent boycotts often target smaller firms, while large, transitory boycotts tend to target larger firms in the industry, with the latter group being more likely to accede to boycott demands more quickly (Innes, 2006). The study also highlights how asymmetric information and imperfect competition affect boycott outcomes. It suggests that boycotts can be effective in reducing the sales of the targeted firms, especially when consumers are well-informed about the boycott and the reasons behind it. The model demonstrates that the success of a boycott depends significantly on the competitive structure of the market; in less competitive markets, boycotts tend to have a more substantial impact on the targeted firms' profits. Moreover, companies that face a lot of competition and spend a lot on advertising are more likely to be affected (Tomlin, 2019).

#### **2.4 Financial market reaction on news events**

Understanding how investors react to news can help us see how it affects their decision-making behavior and sentiment.

People tend to react more strongly to bad economic news than to good news. This negativity bias leads to reduced spending following negative news, while positive news does not have as strong an effect on increasing spending (Nguyen & Claus, 2013). Also, frequent and negative news coverage decreases confidence, contributing to economic pessimism (Doms & Morin, 2004). This was also seen in the Netherlands, where negative news reduced consumer confidence, while positive news created economic bubbles (Hollanders & Vliegthart, 2009). This phenomenon is also seen in correlation with the stock market. Positive news tends to raise stock prices in the short term, while negative news can lead to long-term decreases (He et al., 2021). Moreover, when there is a high investor sentiment and attention, the impact of news about specific companies on their stock prices becomes stronger (Siering, 2012). Positive news becomes more impactful, and negative news less so when sentiment is high (Sankaraguruswamy & Mian, 2008). Furthermore, negative news sentiment is significantly related to the Volatility Index, which measures the market's expectation of volatility based on S&P 500 index options over the next 30 days. This correlation indicates higher market fear and volatility (Smales, 2014). There is also a direct link between headline news sentiment and stock returns. Positive headlines boost stock prices, while negative ones lower them (Alamsyah et al., 2019). Investors do not only react differently to negative and positive news, but also often underreact or overreact, where investors often underreact to single pieces of news and overreact to a series of good or bad news due to psychological factors (Barberis et al., 1997).

Moreover, there is also a difference in local and global news sentiment. Global news sentiment has a larger and more lasting impact on international stock prices compared to local news sentiment. This highlights the significant role of international investors and global news in local market dynamics (Fraiberger et al., 2018).

Thus, news sentiment plays a crucial role in shaping investor sentiment and influencing market movements. Positive and negative news can significantly affect stock prices, market volatility, and overall investor behavior. Understanding the impact of media sentiment helps in predicting market trends and making informed investment decisions. Therefore, models incorporating sentiment analysis outperform traditional models using only past stock prices (Li et al., 2014; Shah et al., 2018).

## 2.5 Hypotheses

Similar to Tosun & Eshraghi (2022), who studied the financial market reactions on companies that stayed and left during a short-term period just after the invasion, my main hypothesis is formalized as followed:

**H<sub>1</sub>:** The Remainers underperform the Leavers

It could be that Remainers outperform Leavers, because some stakeholders might favor Russia for economic, political, or cultural reasons and this enhances the market position of Remainers. Also, the departure of companies from the country results in reduced competition, which may lead to an increase in revenue. Additionally, companies that chose to remain demonstrate resilience and a stronger commitment to their markets. This could foster greater investor confidence and customer loyalty, and this could lead to better long-term financial performance. However, this reasoning is less compelling than the argument that Leavers outperform Remainers since companies that remain in the volatile environment may face significant reputational risks, regulatory challenges, and boycotts. This could undermine investor confidence and customer loyalty. Moreover, the prevailing consensus in the literature suggests that Leavers outperform Remainers (Tosun & Eshraghi, 2022; Sonnenfeld et al., 2022).

I will also test the following hypothesis:

**H<sub>2</sub>:** Financial market reaction on the Remainers is less strong in the long term than in the short term.

This could be due to initial market reactions to geopolitical events being more pronounced when the events are recent, and the public focus on these events is strong. As time goes by, people might start paying less attention to the war and this could mean that the way the stock market reacts might also cool down. Supporting this hypothesis, research by Kim and Jung (2014) indicates that investors' reactions to geopolitical risk events, such as nuclear weapons testing by North Korea, show a permanent negative abnormal return in the South Korean market following the event. However, the market does adjust over time, reflecting the dynamic nature of investor response to such geopolitical events.



My last hypothesis is:

**H<sub>3</sub>:** Bad news, specifically companies staying in Russia, gives a stronger reaction in financial markets compared to good news, such as companies leaving Russia.

This is also well-supported in the literature, which indicates that negative events tend to have a more significant impact on investor behavior and market performance than positive events (Nguyen & Claus, 2013; He et al., 2021; Alamsyah et al., 2019). However, it is possible that the response to good news is more pronounced. Positive news might be perceived as a signal of strong ethical standards and proactive risk management, which can significantly boost investor confidence. Furthermore, good news often has a multiplier effect, where the initial positive reaction is amplified by subsequent favorable media coverage (Solomon, 2010). Nonetheless, I hypothesize that bad news gives a stronger reaction in the context of the Russia/Ukraine conflict as news about escalations, casualties, and humanitarian crises has not only been more prevalent in the media but has also led to significant global responses. These reactions show that negative news about the conflict prompts more action and impacts international relations more strongly than positive news (Johnson & Tierney, 2019).

## **3 Data**

### **3.1 Yale CELI List**

After Russia invaded Ukraine in February 2022, an effort was made by Jeffrey Sonnenfeld to track how 1,588 companies around the world responded on the war. The compilation of this list is being continually updated by the Yale team of 24 experts with diverse backgrounds. Data are gathered from both public and private sources, including government regulatory filings, tax documents, company statements, financial analyst reports, earnings calls, and business media from 166 countries. Additionally, non-public information is acquired from a global network of over 250 company insiders, whistleblowers, and executive contacts.

Initially, the focus was on large American companies with substantial exposure to Russia, but the scope has been expanded to include firms from Europe, Asia, and other regions, encompassing both public and private companies of various sizes and levels of presence in Russia.

#### **3.1.1 Variables**

##### *YaleGrade*

The list is organized into five categories, graded from A to F. The grades are based on the extent of the companies' operational cutback in Russia. Each company's classification is carefully reviewed by the expert team before being finalized and added to the list.

A: withdrawal: companies making a clean break/permanent exit from Russia or and/or leaving behind no operational footprint.

B: Suspension: companies temporarily suspending all or almost all Russian operations without permanently exiting or divesting.

C: Scaling back: companies suspending a significant portion (but not all) of their business in Russia.

D: Buying time: companies pausing new investments/minor operations in Russia but largely continuing substantive business in Russia.

F: digging in: companies defying demands for exit or reduction of activities largely doing business-as-usual.

In these scale A and B will be classified as Leavers and C, D, F as Remainers.

*Industry:* In which industry the company is engaged: Consumer Discretionary, Consumer Staples, Industrials, Information technology, Financials, Health care, Materials, Real estate, Communication services, Utilities, NGO, Energy.

### **3.2 CRSP**

For the analysis of market behavior, daily stock data of the companies on the CELI list is gathered from CRSP on WRDS. Firstly, all publicly traded companies were selected from the CELI list because there is no share price performance data available of private companies. This amounted to 488 companies. Secondly, based on the tickers of the publicly traded companies, CRSP could find financial data for 121 companies, after removing duplicates. This study thus confined to 121 companies (Appendix D).

#### **3.2.1 Variables**

The following variables are used for this research and to handle outliers, all variables are adjusted by winsorizing at the 1st and 99th percentiles:

*Excess Return:* Daily stock return minus the risk-free rate, which is measured by the U.S. one-month Treasury Bill rate.

Market Activity is measured by using three different variables. Firstly, it is measured by traded volume,  $\text{Ln}(\text{TradedVolume})$ . This is the natural logarithm of the daily number of shares traded by a company. Secondly, market activity is measured by the dollar volume,  $\text{Ln}(\text{DollarVolume})$ , which is the natural logarithm of the number of shares traded each day multiplied by the day's closing share price. Lastly, *Signed Volume* is calculated by multiplying the daily stock return by the natural logarithm of the number of shares traded each day (Tosun & Eshraghi, 2022)

The first two variables are useful for comprehending the overall flow of money into the market. However, the last metric provides insight into whether the market is experiencing more buying or selling pressure. Signed Volume can take a positive or negative value, where positive indicates a buying pressure and negative indicates a selling pressuring (Llorente et al., 2002; Tosun, 2021).

##### **3.2.1.1 Control Variables**

To ensure that the observed trends were not skewed by the performance of a few large companies, the analysis of the performance of Remainer versus Leaver companies is segmented by company size. Therefore, the natural logarithm of firm size is taken,

$\ln(\text{MarketValue})$ . This variable is included due to the reason that investors could have a bias towards bigger firms (Dahlquist & Robertsson, 2001). The firm size is calculated by multiplying the share price with the outstanding shares.

### **3.3 Period**

As a starting date, 3 February 2022 is used. This date is chosen, because it provides a baseline period before the full-scale Russian invasion of Ukraine on February 24, 2022, noting that Wednesday February 23<sup>rd</sup> at market close is important as it marks the start of the Russian invasion of Ukraine overnight. This allows to analyze market behavior and corporate decisions in the days leading up to the invasion and to capture the immediate impact of the invasion on the financial market. As an end date December 29<sup>th</sup>, 2023, is chosen. This date is selected as it represents the last date from which financial data could be collected. It serves as a benchmark for assessing the long-term impact of the Russia/Ukraine war.

### **3.4 News announcement dates**

As news announcements dates, dates are selected where companies in various major international news channels were publicly acknowledged for taking actions against Russia or were criticized for not taking a stance. Only dates after the invasion are considered, as an ongoing conflict is necessary for companies to be noted for their decisions to leave or remain in Russia. The media channels consist of CBS News, The Wall Street Journal, Reuters, BBC News, CNN, Washington post and the Guardian. If a news item was published in more than 4 of the media channels, the corresponding date was selected.

This leads to the following dates: 28 February 2022, 3 March 2022, 9 March 2022, 10 March 2022, 17 March 2022, 23 March 2022, 16 May 2022, 23 May 2022, 13 July 2022, 25 August 2023, 7 September 2023, 18 September 2023

#### **3.4.1 Good news and bad news**

In the theoretical framework was explained that people can react differently to bad news and good news (Nguyen & Claus, 2013). This behavior needs to be incorporated into this research by dividing the different news items into these two categories. Good news are the news items that reveal that companies are leaving Russia and bad news are the news items that state that companies are remaining in Russia. For example, on 3 March 2022, it was said in various media outlets that companies like Airbus, ExxonMobil and Boeing are suspending their

operation in Russia. This is classified as good news. On 18 September 2023 news channels mentioned that some companies have not left Russia yet. This is considered bad news.

Therefore, the dates can be categorized as following:

Good news: 28 February 2022, 3 March 2022, 9 March 2022, 10 March, 23 March 2022, 16 May 2022, 13 July 2022, 25 August 2023, 7 September 2022.

Bad news: 17 March 2022, 18 September 2023

### 3.5 Summary Statistics

In figure 1 is the distribution in percentages of the companies by Yale Grade seen. This figure highlights that companies classified as A and B hold the majority share, while Companies classified C, D, and F have relatively smaller portions. Figure 2 shows the distribution of the companies by industry with Industrials, Consumer Discretionary, and Information Technology being the dominant sectors.

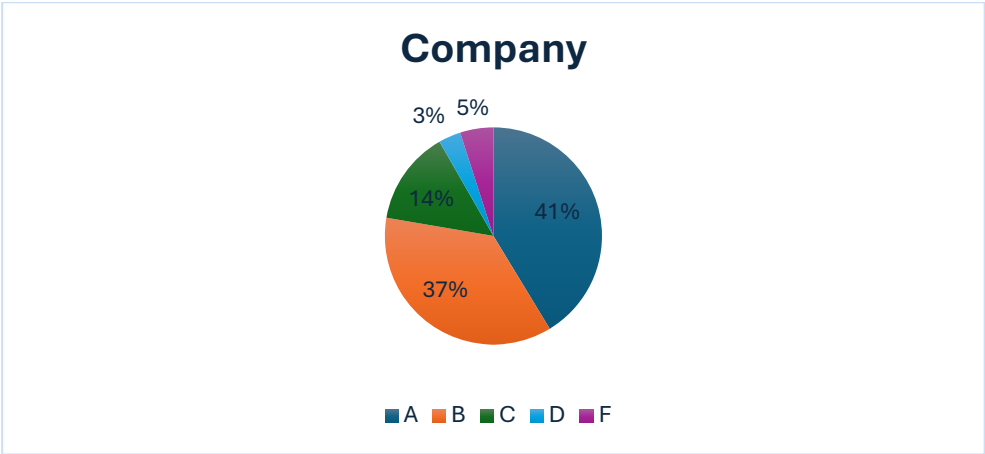


Figure 1 Yale Grade Distribution

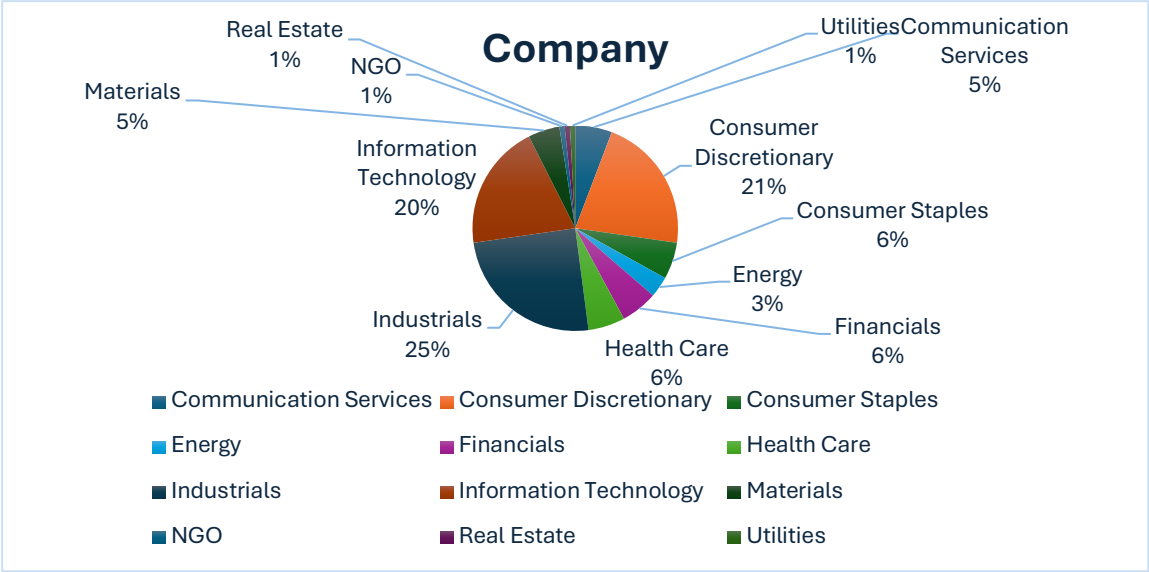


Figure 2 Industry distribution

## 4 Method

### 4.1 Difference in Difference analysis

To examine the performance of firms staying in Russia (Remainers) to those leaving (Leavers) a Difference-in-differences (DID) analysis is conducted. On each of the news announcement dates, the 'Remainer' firms are matched with 'Leaver' firms based on industry classification and size to make a fair comparison of the market's response to both groups' decisions and to control for industry-specific and size-related effects. The matches are made by requiring that each pair operates in the same four-digit SIC industry code. If there are multiple matches, the one closest in size is picked. Eventually, the following DID analysis is conducted:

$$\text{Investor Reaction}_{i,t} = \beta_0 + \beta_1 \text{treatment} + \beta_2 \text{post\_treatment} + \beta_3 \text{treatment} * \text{post\_treatment} + \beta_4 \text{Remainer\_Day\_0} + \beta_5 \text{Marketvalue} + \mu_i + \varepsilon_{i,t}$$

$\tau$  pinpoints the significant news announcement between 3 February 2022 and 29 December 2023.

Investor reaction $_{i,t}$  includes 4 dependent variables: *excessreturn*,  $\text{Ln}(\text{TradedVolume})$ ,  $\text{Ln}(\text{DollarVolume})$  and *Signed Volume*.

*Treatment* is a dummy variable that takes the value 0 if the company is a Remainer and 1 if the company is a Leaver.

*Post\_treatment* is a dummy variable that takes the value 0 or 1 depending on whether the measurement refers to the pre or post treatment period respectively.

*Treatment\_post* is an interaction effect of *Treatment* and *Post\_treatment*

*Remainer\_Day\_0* represents the interaction variable between the Remainer dummy and the dummy variable of the date of the news item,

$\mu_i$  is the firm fixed effect. The standard errors are clustered at the firm level to test the impact of being a Remainer on investor reaction.

## **4.2 Portfolio performance**

Then, the financial performance of companies leaving Russia compared to those staying will be analyzed using by using the performance of the stock portfolios of these companies. For this, the total shareholder returns is used as the metric. When assessing the performance of a group of stocks, two widely accepted methodologies are used. The companies are categorized into five groups based on the letter grade system (A-F) mentioned earlier. The two methodologies that are used for calculating the value of these stock groups are: 1) a market capitalization weighted method, where each company's weight in the basket is proportional to its total market capitalization, giving larger companies a higher weight and smaller companies a lower weight; and 2) an equal weighted method, where each stock is assigned the same weight, regardless of the company's size, when evaluating the overall group's performance. While results for both methods are presented, the market capitalization weighting method offers a more accurate reflection of total category performance as it better represents actual financial market dynamics.

## **4.3 T-test**

A T-test is conducted to determine if there is a significant difference between the means of the daily returns of (1) a market capitalization weighted and (2) an equal weighted portfolio of Remainder firms 3 days before the news announcement and the daily returns of the same portfolio 3 days after the news announcement.

This test is particularly valuable because it compares the same set of data before and after the news announcement and therefore allowing to isolate and evaluate the direct effects of the news item on the model's factors. The critical t-value acts as a benchmark to determine significance.



## **5 Results & Discussion**

### ***5.1 Difference-in-Differences Analysis***

The DiD analysis is used to estimate the treatment effect of certain news items on various financial metrics. The results are presented for multiple news items dated between February 2022 and September 2023. The key metrics analyzed include Excess Return, Ln\_TradedVolume, Ln\_DollarVolume, and Ln\_SignedVolume.

#### ***5.1.1 Excess Return***

The results of the DiD analysis show mixed effects on excess return across different news events. For instance, on July 16, 2022, the post-treatment period indicated a significant positive effect (0.0400) on excess return, suggesting that the market reacted positively after the announcement that a company left (Table 9, Appendix A). However, the interaction term (Treatment\_Post) for the same date had a significant negative effect (-0.0252) (Table 9, Appendix A). This indicates a nuanced market response.

#### ***5.1.2 Traded Volume, Dollar Volume, and Signed Volume***

The DiD analysis revealed also significant variations in traded volume, dollar volume, and signed volume, depending on the date of the news event. For example, on March 9, 2022, there was a significant decrease in traded volume post-treatment (-0.2826) (Table 3, Appendix A). Similarly, on February 28, 2022, Post\_treatment had a significant positive impact (0.1719) on dollar volume while signed volume exhibited a significant negative impact (-0.4950) (Table 1, Appendix A). Also, on this date Treatment\_post had a significant negative effect on Ln\_TradedVolume (-0.2021) (Table 1, Appendix A). These immediate changes suggest that news announcements can trigger short-term reactions in trading behavior and volume.

#### ***5.1.3 Control Variables***

The natural logarithm of market value (Ln\_MarketValue) consistently showed a significant positive effect across all models, suggesting that larger firms tend to experience higher excess returns and trading volumes. This aligns with the expectation that investors might have a bias towards bigger firms. Also, this implies that market value plays a crucial role in short-term

reactions to news. Higher market value stocks might exhibit more pronounced immediate reactions to news, due to their visibility and liquidity.

#### **5.1.4 Differences between Good News and Bad News Events**

The analysis differentiated between good news (e.g., companies leaving Russia) and bad news (e.g., companies remaining in Russia). Good news events generally had more significant impacts on market metrics compared to bad news events, with variations depending on the specific metrics and event dates. This reveals that market reactions are different based on the nature of the news.

#### **5.1.5 Differences between Short-Term and Long-term**

The immediate post-treatment effects in the short term, so during February and March 2022, show more pronounced and significant reactions across various metrics. For instance, 28 February 2022, shows a significant negative excess return (-0.0499), positive Ln\_TradedVolume (0.1919), and negative Ln\_SignedVolume (-0.4950) (Table 1, Appendix A). Also, the effect of treatment\_post on 9 March 2022 is significant and negative on Ln\_TradedVolume (-0.2826), and Ln\_DollarVolume (-0.2830) (Table 3, Appendix A).

In the long term, April 2022 till December 2023, the effects of treatment\_post are smaller and often not statistically significant, indicating more market stabilization over time. For example, on 23 May 2022 there is a positive post-treatment excess return (0.0295), but the Treatment\_Post effect for Ln\_TradedVolume (0.1399) is not significant (Table 8, Appendix A). Also on 25 August 2023, the Treatment\_post effects are minimal and insignificant, e.g., excess return (0.0010) (Table 10, Appendix A). Moreover, both long-term dates in 2023 show decreases in traded volume and dollar volume, which might indicate a reduction in trading activity as the initial market reaction to the news subsides. Also, the treatment\_post effects on excess returns for these dates are positive but small and not statistically significant, suggesting that any initial overreaction or correction has leveled out over time (Table 8 & 10 in Appendix A).

Thus, short-term effects tend to be larger and more varied compared to the long-term effects, which are smaller and more stable. Many short-term effects are statistically significant, reflecting immediate market reactions, while long-term effects tend to lose statistical significance, indicating market normalization over time. The coefficient for Ln\_Marketvalue

remains significant across both short and long terms, highlighting the consistent influence of market value on financial metrics.

## **5.2 Portfolio Performance Analysis**

The analysis of portfolio performance during the Russia-Ukraine war provides a comprehensive view of how companies' decisions to either remain in or exit Russia impacted their financial outcomes. The portfolios were analyzed using both market capitalization-weighted and equal-weighted methods to ensure robustness.

### **5.2.1 Market Capitalization Weighted Method**

The results of the market capitalization weighted method of the portfolio performance show a clear distinction in performance between Leavers and Remainers. Leavers (Grades A and B): Generally outperformed the market, indicating that the market rewarded companies for exiting Russia. For example, on February 28, 2022, the market capitalization-weighted returns for Grade A companies were 0.0000159 and Grade B companies had a return of 0.000102 (Table 1, Appendix B). Also, on March 9, 2022, Grade A companies had a return of 0.0002718 and Grade B companies had a return of 0.0026482 (Table 1, Appendix B). This positive performance reflects the market's favorable view of these companies' decisions to leave Russia.

Remainers (Grades C, D, and F): Showed mixed performance with some significant underperformance. For example, Grade D companies had a negative return of -0.0009201 on February 28, 2022, indicating market penalties for staying in Russia (Table 1, Appendix B). Moreover, on March 3, 2022, Grade C companies had a return of -0.0009271 and Grade F companies -0.0000421 (Table 1, Appendix B).

Thus, the results for the market capitalization weighted method of the portfolio performance indicated that companies classified as Leavers (grades A and B) generally outperformed those classified as Remainers (grades C, D, and F).

### **5.2.2 Equal Weighted Method**

The findings of the equal weighted method confirm the market capitalization-weighted results, showing that Leavers outperformed Remainers. The Leavers outperformed the market in most instances. For example, on March 9, 2022, Grade A companies had an equal-weighted return of 0.0777816 and Grade B companies had a return of 0.0404916 (Table 1, Appendix B). This consistent outperformance highlights the market's positive reaction to the companies' ethical stance.

In contrast on February 28, 2022, Grade A companies had a return of -0.0201765 and Grade B companies -0.0023932, while Grade C companies had a positive return of 0.0193316 (Table 1, Appendix B). This stresses that not in all cases the market has a positive reaction on Leavers. Also on March 17, 2022, Grade A companies had a return of 0.049127 and Grade B companies had a return of 0.0236066. Remainder firms also had a positive return of 0.0280912 for grade C and 0.0156244 for grade F (Table 1, Appendix B). However, the Leavers show a bigger positive return than the Remainers.

Moreover, on March 3, 2022, Grade C companies had an equal-weighted return of -0.0484811 and Grade F companies of -0.0487033 (Table 1, Appendix B). This underperformance suggests that investors viewed the decision to remain in Russia negatively.

### **5.2.3 Differences between Short-term and Long-term**

The performance metrics across different dates show variability, indicating that the long-term performance is influenced by both the nature of the news and the overall market conditions at those times. For instance, portfolios graded A and B showed varying performance metrics on 28 February 2022 and 23 May 2022, reflecting different market conditions and reactions.

In the short term there is a significant variability in performance across different grades and dates. This could be due to different rapid adjustments made to portfolio in response to news announcements. For example, the returns for Grade A show significant variability in the short term. There are notable fluctuations in both MarketCapitalizationWeighted and EqualWeighted returns. Both positive and negative returns are observed. For instance, MarketCapitalizationWeighted returns fluctuate between small positive and negative values, while EqualWeighted returns show a broader range from -0.0857343 (3 March 2022) to 0.0777816 (9 March 2022) (Table 1, Appendix B).

However, the returns for Grade A become more stable in the long term. The magnitude of fluctuations decreases compared to the short term. The MarketCapitalizationWeighted returns are predominantly negative or near zero, indicating a trend of slight declines or minimal gains over the long term. The EqualWeighted returns also tend to be negative or close to zero, showing less variability than in the short term.

### **5.3 T-test Analysis**

The T-test analysis compared the daily returns of portfolios of Remainers before and after news announcements. This test isolated the direct effects of news on the model's factors. For most dates, the returns were higher before the news announcements compared to after. The differences in returns before and after the news announcements were generally small and not statistically significant, as indicated by the p-values being above 0.05 for most cases. This implies that other factors may be more influential in driving returns. The most notable result was on May 16, 2022, where the difference in portfolio returns (0.0614%) before and after the announcement approached significance ( $p=0.0928$ ) (Table 7, Appendix C).

#### **5.3.1 Differences between Good News and Bad News Events**

For the majority of the good news dates, the returns were generally higher before news announcements. For the "bad news" dates, returns showed mixed results with one date having higher returns after the news and the other having lower returns, but again, the differences were not statistically significant. Overall, the news announcements (both good and bad) did not lead to statistically significant changes in portfolio returns, indicating that these specific news events may not have had a strong impact on the "Remainer Portfolio" returns.

#### **5.3.2 Differences in the short-term and long-term**

Most t-tests in the short-term show that differences in returns before and after news announcements are not statistically significant. This suggests that short-term market reactions may not be strong enough to cause significant changes in portfolio returns. The trend of non-significant differences continues in the long term, suggesting that the impact of news announcements does not have a lasting significant effect on returns. Instead, long-term

performance is likely influenced by a combination of factors, including broader market trends and the overall economic environment.

The short-term results show a trend where news announcements often lead to more negative returns after the announcement. Four out of six dates (28 February, 3 March, 10 March, and 23 March 2022) exhibit more negative returns after the news (Appendix C). There are also instances of positive effects (9 March and 17 March 2022), indicating that the short-term reaction to news can vary significantly (Appendix C).

In contrast, the long-term results tend to show more positive returns after the news announcements. Four out of six dates (23 May 2022, 16 July 2022, 25 August and 18 September 2023) exhibit more positive returns after the news (Appendix C). The magnitude of the differences in returns before and after the news is generally smaller in the long term, suggesting market stabilization over time.

## **5.4 Discussion and hypotheses**

### **5.4.1 Similarities**

The literature shows that geopolitical conflicts significantly impact financial markets, affecting market prices, trading volumes, and volatility (Pandey et al., 2023; Erdemlioglu et al., 2017). The DID analysis confirms this, showing significant changes in excess returns, traded volumes, and signed volumes following news announcements related to the Russia-Ukraine conflict.

Also, previous studies indicate that markets tend to reward companies for ethical decisions, such as exiting conflict zones, due to positive public sentiment and reduced reputational risks (Sonnenfeld et al., 2022). The portfolio performance analysis supports this, showing that companies exiting Russia generally outperformed those that remained, reflecting market rewards for ethical stances.

Moreover, while the literature often focuses on short-term reactions, some studies suggest that after an initial overreaction to a geopolitical event financial markets normalize in the long term (Kim & Jung, 2014). The study finds that long-term effects are smaller and less statistically significant than short-term effects, indicating market stabilization.

Lastly, larger firms tend to have more pronounced market reactions due to their visibility and liquidity (Dahlquist & Robertsson, 2001). The control variable analysis confirms that larger firms consistently experienced higher excess returns and trading volumes, indicating a market bias towards bigger companies.

#### **5.4.2 Differences**

Furthermore, negative news is typically associated with stronger adverse market reactions due to heightened risk perceptions (Nguyen & Claus, 2013; Barberis et al., 1997). The study found that bad news (companies remaining in Russia) had less consistent and significant impacts compared to good news. This discrepancy might be due to the unique context of the Russia-Ukraine conflict and varying investor perceptions over time.

Moreover, the literature suggests that investor sentiment heavily influences market reactions to news, with positive news generally boosting stock prices and negative news causing declines (Nguyen & Claus, 2013; Smales, 2014). This pattern is not observed in that way in this research.

Lastly, investor behavior literature suggests that market reactions evolve over time as new information becomes integrated (Barberis et al., 1997). The study observed that the initial strong market reactions to news events gradually normalized, aligning with the theory. However, the degree of normalization and the time frame for stabilization varied more than some theoretical models might predict.

#### **5.4.3 Hypotheses**

Lastly, conclusions regarding the three formulated hypotheses can be drawn after analyzing all the results and after discussing the similarities and differences with the existing literature. The first hypothesis was formulated as followed:

**H<sub>1</sub>:** The Remainers underperform the Leavers

This hypothesis is accepted, since the portfolio performance analysis shows that companies that left Russia generally did better than those that stayed, reflecting that the market favors ethical decisions.

The second hypothesis states that:

**H<sub>2</sub>:** Financial market reaction on the Remainers is less strong in the long term than in the short term.

The study shows that the impact on the market is less pronounced and less significant in the long run compared to the short-term effects, indicating that the market tends to stabilize over time. Therefore, the second hypothesis is accepted.

Lastly, the third hypothesis:

**H<sub>3</sub>:** Bad news, specifically companies staying in Russia, gives a stronger reaction in financial markets compared to good news, such as companies leaving Russia.

From the results can be analyzed that bad news had a less clear and smaller significant impact compared to good news. This might be because of the unique context of the Russia-Ukraine conflict and how investor opinions changed over time. Also, this study does not clearly analyze raising stock prices with good news and dropping stock prices with bad news. Consequently, the last hypothesis is rejected.



## 6 Conclusion

The research examined the long-term financial market reactions to corporate decisions during the Russia-Ukraine war, particularly focusing on companies that either remained in or exited Russia. The analysis utilized Difference-in-Differences (DID) methodology, market capitalization-weighted, and equal-weighted portfolio performance evaluations, and T-tests to derive insights into these reactions.

Firstly, the DID analysis revealed mixed effects on excess returns and trading volumes. Many of the effects were not statistically significant, indicating that market responses varied greatly depending on the specific news event. The study found that short-term news events tend to be larger and more varied compared to the long-term news events, which are smaller and more stable. Also, the long-term events tend to lose statistical significance, indicating market normalization over time. Moreover, positive news events generally had a more significant impact on the market metrics compared to negative news events. Furthermore, larger firms consistently experienced higher excess returns and trading volumes, suggesting a market bias towards bigger companies.

Then, based on the market capitalization weighted method, companies that exited Russia generally outperformed those that remained. Similar to this, the equal weighted method reveals that Leavers showed better performance. This trend suggests that the market rewarded firms for taking a stance against the conflict. In the analysis of the short-term news items, it showed significant variability in market reactions, with both positive and negative fluctuations. Long-term news items, however, were more stable. This stabilization over time suggests that initial market overreactions corrected themselves, leading to normalized trading behaviors.

Moreover, the T-tests comparing pre- and post-news announcement returns indicated that most differences were not statistically significant. This implies that specific news events, both good and bad, did not have a lasting impact on the returns of Remainer portfolios. This highlights the influence of broader market trends and economic conditions over isolated news items. The short-term results show a trend where news announcements often lead to more negative returns and the long-term results tend to show more positive returns after the news announcements.

In conclusion, while in general the leavers outperform the remainers, the long-term effects tend to normalize. The study found that specific news events did not have a lasting impact on the financial performance of companies that stayed in Russia. Also, short-term market reactions were strong and varied, but these effects evened out over time. This indicates that financial market reactions during the Russia/Ukraine war become less strong overtime. Lastly, bad news does not necessarily give a stronger reaction in financial markets compared to good news.

### **6.1 Limitations and future research**

The results obtained from the analysis of short-term and long-term effects of news announcements during the Russia-Ukraine war have several limitations and discussion points that should be considered.

Firstly, the analysis is limited to publicly traded companies, which may not fully represent the entire corporate landscape. Private companies might have different reactions and behaviors that are not captured in this study.

Moreover, the study relies on media-reported news events, which could introduce bias based on the selection and prominence of these events. Not all relevant news might have been captured that could have influenced market behavior. Also, the focus on dates with widespread media coverage might overlook more subtle or equally impactful news events.

Furthermore, this study solely looked at investor reaction in terms of Excess return, Traded Volume, Dollar Volume and Signed Volume. However, it does not consider other metrics to measure performance of a company, like revenue growth. Including these additional metrics could provide a more comprehensive understanding of the company's overall performance and market perception

Also, most results from the DID analysis are not significance at various levels ( $p < 0.10$ ,  $p < 0.05$ ,  $p < 0.01$ ), underscoring the unreliability of observed effects of news events on market metrics. This suggests that the changes observed might not be robust and could be due to random variations. Furthermore, the dummy variable treatment is omitted and some control

variables, such as market risk, unemployment, region and industry, and some dummy variables, which measured the interaction effect between being a Remainer and the days surrounding the news event date, were omitted and therefore left out of the DID analysis. This issue is caused by collinearity in the variables. Collinearity could have existed due to the similarity between some of the variables which often move together in response to broader economic conditions. Even though different control variables were included, their similar effects on the dependent variable made it hard to avoid collinearity. While advanced methods like principal component analysis or ridge regression could help, they might not fully resolve the issue without losing interpretability. Therefore, the collinearity remained a challenge, leading to the need to eliminate some variables. This omission introduces omitted variable bias, potentially leading to biased and inconsistent estimates of other model coefficients. The exclusion results in a loss of direct measurement of the treatment's impact. This complicates the interpretation of the analysis and reduces the model's accuracy and explanatory power. Consequently, this undermines the validity and reliability of the findings since the analysis is less complete.

Future research should expand on the limitations of this study by incorporating the treatment dummy variable or alternative methods to better estimate their effects. This would give more validity and reliability to the current findings and provide an even more comprehensive understanding of the research question. Additionally, future studies could include a broader range of control variables such as market risk, unemployment rates, regional factors, and industry-specific factors to mitigate omitted variable bias and improve the accuracy and explanatory power of the results. Examining the impact on private companies, which were not included in this study, could also provide a more complete picture of the corporate landscape. Furthermore, future research could explore the influence of less prominent but potentially impactful news events that were not captured in this study due to the focus on widely reported media events. Finally, investigating the long-term impacts of corporate decisions in other geopolitical conflicts could help to generalize the findings and enhance the understanding of corporate behavior and market reactions in different conflict scenarios.

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## APPENDIX A Difference in Difference Analysis

Table A.1: Difference in Difference results news item of 28 February 2022

	Excess Return (1)	Ln_TradedVolume (2)	Ln_DollarVolume (3)	Ln_SignedVolume (4)
<b>Treatment</b>	Omitted	Omitted	Omitted	Omitted
<b>Post_treatment</b>	-0.0499*** (0.1277)	0.1919** (0.0800)	0.1719** (0.0803)	-0.4950*** (0.1299)
<b>Treatment_Post</b>	0.0044 (0.0135)	-0.2021** (0.0974)	-0.1915* (0.09847)	0.0277 (0.1408)
<b>Remainer_day_0</b>	-0.0013 (0.0346)	0.0239 (0.1146)	0.0340 (0.1115)	-0.0529 (0.4095)
<b>Ln_Marketvalue</b>	0.2142*** (0.3731)	-1.0071*** (0.3552)	-0.0576 (0.3643)	2.3692*** (0.3731)
<b>Constant</b>	-4.3686*** (0.6030)	26.043 (5.6685)	14.7581** (5.8123)	-37.6076*** (5.9500)
<b>Number of Observations</b>	170	170	170	170

Table A.2: Difference in Difference results news item of 3 March 2022

	Excess Return (1)	Ln_TradedVolume (2)	Ln_DollarVolume (3)	Ln_SignedVolume (4)
<b>Treatment</b>	Omitted	Omitted	Omitted	Omitted
<b>Post_treatment</b>	0.0223 (0.0249)	0.0539 (0.2749)	0.0154 (0.2683)	0.1639 (0.2576)
<b>Treatment_Post</b>	-0.0014 (0.0284)	0.0486 (0.2597)	0.0794 (0.2550)	0.0610 (0.3003)
<b>Remainer_day_0</b>	0.0016 (0.0271)	0.1167 (0.1379)	0.1176 (0.1403)	0.1039 (0.2732)
<b>Ln_Marketvalue</b>	0.3718*** (0.0471)	-0.4977 (0.7020)	0.3595 (0.6621)	3.8240*** (0.4036)
<b>Constant</b>	-6.0117*** (0.7464)	17.9463 (11.1710)	8.1297 (10.5367)	-61.0191*** (6.4241)
<b>Number of Observations</b>	170	170	170	170

**Table A.3: Difference in Difference results news item of 9 March 2022**

	<b>Excess Return (1)</b>	<b>Ln_TradedVolume (2)</b>	<b>Ln_DollarVolume (3)</b>	<b>Ln_SignedVolume (4)</b>
<b>Treatment</b>	Omitted	Omitted	Omitted	Omitted
<b>Post_treatment</b>	0.0115 (0.0199)	-0.2826** (0.1291)	-0.2830** (0.1291)	0.0861 (0.1796)
<b>Treatment_Post</b>	0.00304 (0.0208)	-0.0507 (0.1453)	-0.0500 (0.1453)	0.08914 (0.1919)
<b>Remainer_day_0</b>	-0.0016 (0.02390)	-0.1240 (0.2220)	-0.1239 (0.2220)	0.0304 (0.2630)
<b>Ln_Marketvalue</b>	0.4099*** (0.07421)	0.5746 (0.9539)	1.5717 (0.9548)	4.6643*** (0.7281)
<b>Constant</b>	-6.6651*** (1.1725)	1.1345 (15.0931)	-10.9178 (15.1071)	-74.2779*** (11.5098)
<b>Number of Observations</b>	170	170	170	170

**Table A.4: Difference in Difference results news item of 10 March 2022**

	<b>Excess Return (1)</b>	<b>Ln_TradedVolume (2)</b>	<b>Ln_DollarVolume (3)</b>	<b>Ln_SignedVolume (4)</b>
<b>Treatment</b>	Omitted	Omitted	Omitted	Omitted
<b>Post_treatment</b>	0.0063 (0.0191)	-0.2890** (0.1295)	-0.2902** (0.1295)	0.0489 (0.1858)
<b>Treatment_Post</b>	0.0101 (0.0212)	-0.0407 (0.1484)	-0.0403 (0.1484)	0.1398 (0.2166)
<b>Remainer_day_0</b>	0.0173* (0.0089)	0.0688 (0.1425)	0.0688 (0.1425)	0.1405* (0.0794)
<b>Ln_Marketvalue</b>	0.4088*** (0.0715)	0.5787 (0.9748)	1.5759 (0.9758)	4.6586*** (0.6970)
<b>Constant</b>	-6.6707*** (1.1301)	1.0701 (15.4228)	-10.9837 (15.4387)	-74.1880*** (11.0171)
<b>Number of Observations</b>	170	170	170	170

**Table A.5: Difference in Difference results news item of 17 March 2022**

	<b>Excess Return (1)</b>	<b>Ln_TradedVolume (2)</b>	<b>Ln_DollarVolume (3)</b>	<b>Ln_SignedVolume (4)</b>
<b>Treatment</b>	Omitted	Omitted	Omitted	Omitted
<b>Post_treatment</b>	0.0080 (0.0157)	-0.1841 (0.1399)	-0.1834 (0.1405)	-0.0078 (0.1346)
<b>Treatment_Post</b>	-0.0145 (0.0150)	-0.0469 (0.0955)	-0.0499 (0.0946)	-0.0940 (0.1391)
<b>Remainer_day_0</b>	-0.0076 (0.0119)	0.0252 (0.0851)	0.0240 (0.0851)	-0.0459 (0.1260)
<b>Ln_Marketvalue</b>	0.4598*** (0.0353)	1.9841* (0.7433)	2.9641*** (0.7498)	4.8846*** (0.3198)
<b>Constant</b>	-7.4729*** (0.5585)	-21.3327 (11.7410)	-33.1107*** (11.8426)	-77.4362*** (5.0542)
<b>Number of Observations</b>	170	170	170	170

**Table A.6: Difference in Difference results news item of 23 March 2022**

	<b>Excess Return (1)</b>	<b>Ln_TradedVolume (2)</b>	<b>Ln_DollarVolume (3)</b>	<b>Ln_SignedVolume (4)</b>
<b>Treatment</b>	Omitted	Omitted	Omitted	Omitted
<b>Post_treatment</b>	-0.0127 (0.0131)	-0.1046 (0.1024)	-0.1060 (0.1019)	-0.1366 (0.1319)
<b>Treatment_Post</b>	0.0008 (0.0133)	-0.0171 (0.1111)	-0.0174 (0.1108)	0.0389 (0.1279)
<b>Remainer_day_0</b>	-0.0025 (0.0146)	0.02281 (0.1932)	-0.0414 (0.2389)	-0.0205 (0.1732)
<b>Ln_Marketvalue</b>	0.4104*** (0.0352)	5.4080*** (0.8607)	6.4326*** (0.8423)	4.1575*** (0.3524)
<b>Constant</b>	-6.7199*** (0.5606)	-76.1963*** (13.7092)	-88.6876*** (13.4156)	-66.2551*** (5.6136)
<b>Number of Observations</b>	169	169	169	169

**Table A.7: Difference in Difference results news item of 16 May 2022**

	<b>Excess Return (1)</b>	<b>Ln_TradedVolume (2)</b>	<b>Ln_DollarVolume (3)</b>	<b>Ln_SignedVolume (4)</b>
<b>Treatment</b>	Omitted	Omitted	Omitted	Omitted
<b>Post_treatment</b>	-0.02988 (0.0189)	-0.1780 (0.1484)	-0.1788 (0.1485)	-0.3371* (0.1960)
<b>Treatment_Post</b>	-0.0062 (0.0203)	0.0949 (0.1658)	0.0939 (0.1658)	-0.0351 (0.2124)
<b>Remainer_day_0</b>	-0.01730 (0.0164)	-0.0086 (0.0907)	-0.0090 (0.0907)	-0.1857 (0.1728)
<b>Ln_Marketvalue</b>	0.5561*** (0.1368)	-0.4445 (0.8537)	0.5492 (0.8551)	6.0603*** (1.3634)
<b>Constant</b>	-9.3350*** (2.1612)	17.1199 (13.480)	5.1119 (13.5026)	-94.9746*** (21.5313)
<b>Number of Observations</b>	169	169	169	169

**Table A.8: Difference in Difference results news item of 23 May 2022**

	<b>Excess Return (1)</b>	<b>Ln_TradedVolume (2)</b>	<b>Ln_DollarVolume (3)</b>	<b>Ln_SignedVolume (4)</b>
<b>Treatment</b>	Omitted	Omitted	Omitted	Omitted
<b>Post_treatment</b>	0.0295* (0.0142)	-0.2390*** (0.0529)	-0.2423*** (0.0533)	0.2524* (0.1298)
<b>Treatment_Post</b>	-0.0029 (0.0133)	0.1399 (0.0968)	0.1239 (0.0878)	0.0019 (0.1224)
<b>Remainer_day_0</b>	0.0102 (0.0082)	0.0573 (0.0983)	0.0580 (0.0987)	0.1030 (0.0783)
<b>Ln_Marketvalue</b>	0.5488*** (0.0919)	0.5860 (1.3457)	1.6377 (1.3413)	5.3038*** (0.8985)
<b>Constant</b>	-9.1866*** (1.4500)	0.7596 (21.2429)	-12.1749 (21.1780)	-83.8357*** (14.1812)
<b>Number of Observations</b>	168	168	168	168

**Table A.9: Difference in Difference results news item of 16 July 2022**

	<b>Excess Return (1)</b>	<b>Ln_TradedVolume (2)</b>	<b>Ln_DollarVolume (3)</b>	<b>Ln_SignedVolume (4)</b>
<b>Treatment</b>	Omitted	Omitted	Omitted	Omitted
<b>Post_treatment</b>	0.0400** (0.0150)	-0.1409 (0.1164)	-0.1420 (0.1164)	0.3630*** (0.1250)
<b>Treatment_Post</b>	-0.0252* (0.0130)	-0.0576 (0.1209)	-0.0578 (0.1209)	-0.2664** (0.1190)
<b>Ln_Marketvalue</b>	0.4357*** (0.0513)	2.8582*** (0.6076)	3.8589*** (0.6081)	5.3733*** (0.4823)
<b>Constant</b>	-8.4909*** (0.8050)	-35.2665*** (9.5347)	-47.3863*** (9.5427)	-84.4156*** (7.5625)
<b>Number of Observations</b>	170	170	170	170

Notes: \* indicates significance at a level of  $p < 0.10$ , \*\*  $p < 0.05$  and \*\*\*  $p < 0.01$ .

**Table A.10: Difference in Difference results news item of 25 August 2023**

	<b>Excess Return (1)</b>	<b>Ln_TradedVolume (2)</b>	<b>Ln_DollarVolume (3)</b>	<b>Ln_SignedVolume (4)</b>
<b>Treatment</b>	Omitted	Omitted	Omitted	Omitted
<b>Post_treatment</b>	-0.0033 (0.0118)	-0.0188 (0.1546)	-0.0111 (0.1506)	-0.0394 (0.1213)
<b>Treatment_Post</b>	0.0010 (0.0125)	-0.1855 (0.1487)	-0.1780 (0.1473)	0.0011 (0.1223)
<b>Remainer_day_0</b>	0.0010 (0.0128)	-0.0533 (0.1074)	-0.0556 (0.1081)	-0.0136 (0.1254)
<b>Ln_Marketvalue</b>	0.5878*** (0.0915)	2.0914 (2.1256)	2.8714 (2.0036)	5.7470*** (1.2791)
<b>Constant</b>	-14.815*** (1.4697)	-23.8270 (34.1898)	-32.4854 (32.2222)	-92.2331*** (24.5592)***
<b>Number of Observations</b>	127	127	127	127

Notes: \* indicates significance at a level of  $p < 0.10$ , \*\*  $p < 0.05$  and \*\*\*  $p < 0.01$ .

**Table A.11: Difference in Difference results news item of 7 September 2023**

	<b>Excess Return (1)</b>	<b>Ln_TradedVolume (2)</b>	<b>Ln_DollarVolume (3)</b>	<b>Ln_SignedVolume (4)</b>
<b>Treatment</b>	Omitted	Omitted	Omitted	Omitted
<b>Post_treatment</b>	0.0004 (0.0105)	-0.08706 (0.1263)	-0.0889 (0.1259)	-0.0164 (0.1176)
<b>Treatment_Post</b>	0.0141 (0.0118)	-0.1243 (0.1379)	-0.1269 (0.1369)	0.1463 (0.1368)
<b>Remainer_day_0</b>	0.0208** (0.0080)	-0.1703 (0.1223)	-0.1702 (0.1219)	0.2209** (0.0984)
<b>Ln_Marketvalue</b>	0.5184*** (0.1261)	-2.6418 (2.0906)	-1.7432 (2.045)	5.7184*** (1.5471)
<b>Constant</b>	13.7161*** (2.0305)	52.5233 (33.6476)	41.9625 (32.9074)	-92.0912*** (24.9055)
<b>Number of Observations</b>	127	127	127	127

Notes: \* indicates significance at a level of  $p < 0.10$ , \*\*  $p < 0.05$  and \*\*\*  $p < 0.01$ .



## APPENDIX B Portfolio performance

**Table B.1: Portfolio performance by Yale Grade**

<i>Date</i>	<i>YaleGrade</i>	<i>MarketCapitalizationWeighted</i>	<i>EqualWeighted</i>	<i>Observations</i>
28feb2022	A	.0000159	-.0201765	10
28feb2022	B	.000102	-.0023932	15
28feb2022	C	.0002294	.0193316	5
28feb2022	D	-.0009201	-.1226648	2
28feb2022	F	-2.47e-06	-.0010524	2
03mar2022	A	-.0001331	-.0857343	10
03mar2022	B	-.0012614	-.0227214	15
03mar2022	C	-.0009271	-.0484811	5
03mar2022	D	-.0000244	-.0014576	2
03mar2022	F	-.0000421	-.0487033	2
09mar2022	A	.0002718	.0777816	10
09mar2022	B	.0026482	.0404916	15
09mar2022	C	.0015886	.0793078	5
09mar2022	D	.0001228	-.0011836	2
09mar2022	F	5.83e-06	.0085454	2
10mar2022	A	-.0001484	-.0348811	10
10mar2022	B	-.0008087	-.0091723	15
10mar2022	C	-.0008013	-.0173388	5
10mar2022	D	-.0000577	.00406	2
10mar2022	F	7.26e-06	.009157	2
17mar2022	A	.0001574	.049127	10
17mar2022	B	.0008765	.0236066	15
17mar2022	C	.0002369	.0280912	5
17mar2022	D	.0000904	.0453641	2
17mar2022	F	.0000173	.0156244	2
23mar2022	A	-.0000961	-.0170564	10

23mar2022	B	-.001382	-.0182843	15
23mar2022	C	-.0024683	-.0443954	5
23mar2022	D	.0000101	-.020717	2
23mar2022	F	.000012	.0092148	2
16may2022	A	-.0001109	-.0063567	10
16may2022	B	-.001186	-.0212975	15
16may2022	C	-.0003979	-.0467512	5
16may2022	D	.0000268	.0066524	2
16may2022	F	-.0000452	-.0268216	2
23may2022	A	-.0000145	-.0077296	10
23may2022	B	.0003361	-.0008455	15
23may2022	C	.0006392	.0114001	5
23may2022	D	-.0000221	-.0053654	2
23may2022	F	.0000142	.0109408	2
13jul2022	A	-.000048	-.0064896	10
13jul2022	B	.0001511	-.001347	15
13jul2022	C	-.0003008	-.0118404	5
13jul2022	D	-.0001116	-.0359353	2
13jul2022	F	-.0000155	-.0073297	2
25aug2023	A	.0000151	.0025215	9
25aug2023	B	-.0003948	.0100669	15
25aug2023	C	.0005758	-.0027832	5
25aug2023	D	5.63e-06	.0237338	2
25aug2023	F	.0000634	.0287129	1
07sep2023	A	-.0000665	-.017817	9
07sep2023	B	-.0007371	-.0119486	15
07sep2023	C	-.0000396	.0048186	5
07sep2023	D	-.0000319	-.0062592	2
07sep2023	F	.0000194	.007806	1

## APPENDIX C t-test

Table C.1: T-test 28 February 2022

	Before News Announcement	After News Announcement	Difference	P-value
Remainer Portfolio Return	0.007%	-0.0169%	0.0238%	0.2591

Table C.2: T-test 3 March 2022

	Before News Announcement	After News Announcement	Difference	P-value
Remainer Portfolio Return	-0.01%	-0.0217%	0.0119%	0.5157

Table C.3: T-test 9 March 2022

	Before News Announcement	After News Announcement	Difference	P-value
Remainer Portfolio Return	-0.0170%	0.0008%	-0.0179%	0.6366

Table C.4: T-test 10 March 2022

	Before News Announcement	After News Announcement	Difference	P-value
Remainer Portfolio Return	0.0039%	-0.0216%	0.0255%	0.4899

Table C.5: T-test 17 March 2022

	Before News Announcement	After News Announcement	Difference	P-value
Remainer Portfolio Return	0.0133%	0.0320%	-0.0187%	0.6819

Table C.6: T-test 23 March 2022

	Before News Announcement	After News Announcement	Difference	P-value
Remainer Portfolio Return	0.0051%	-0.0112%	0.0163%	0.5103

**Table C.7: T-test 16 May 2022**

	<b>Before News Announcement</b>	<b>After News Announcement</b>	<b>Difference</b>	<b>P-value</b>
<b>Remainer Portfolio Return</b>	0.0525%	-0.0089%	0.0614%	0.0928

**Table C.8: T-test 23 May 2022**

	<b>Before News Announcement</b>	<b>After News Announcement</b>	<b>Difference</b>	<b>P-value</b>
<b>Remainer Portfolio Return</b>	0.0000%	0.0079%	-0.0079%	0.7538

**Table C.9: T-test 16 July 2022**

	<b>Before News Announcement</b>	<b>After News Announcement</b>	<b>Difference</b>	<b>P-value</b>
<b>Remainer Portfolio Return</b>	-0.0270%	-0.0092%	-0.0178%	0.4664

**Table C.10: T-test 25 August 2023**

	<b>Before News Announcement</b>	<b>After News Announcement</b>	<b>Difference</b>	<b>P-value</b>
<b>Remainer Portfolio Return</b>	-0.0008%	0.0096%	-0.0104%	0.7175

**Table C.11: T-test 7 September 2023**

	<b>Before News Announcement</b>	<b>After News Announcement</b>	<b>Difference</b>	<b>P-value</b>
<b>Remainer Portfolio Return</b>	-0.0040%	-0.0073%	0.0033%	0.7693

## APPENDIX D COMPANY LIST

Company	Industry	Country	YaleGrade	Ticker
<b>Alcoa</b>	Materials	United States	A	AA
<b>Airbnb</b>	Consumer Discretionary	United States	B	ABNB
<b>AECOM</b>	Industrials	United States	A	ACM
<b>Adobe</b>	Information Technology	United States	C	ADBE
<b>Autodesk</b>	Information Technology	United States	B	ADSK
<b>AGCO</b>	Industrials	United States	C	AGCO
<b>Agrana</b>	Consumer Staples	Austria	F	AGR
<b>Air Lease</b>	Industrials	United States	A	AL
<b>Dassault Aviation</b>	Industrials	France	B	AM
<b>Asos</b>	Consumer Discretionary	United Kingdom	B	ASC
<b>Avantor</b>	Health Care	United States	A	AVTR
<b>Avery Dennison</b>	Materials	United States	A	AVY
<b>American Express</b>	Financials	United States	B	AXP
<b>Bruker</b>	Industrials	United States	A	BKD
<b>Bumble</b>	Communication Services	United States	A	BMBL
<b>Bonduelle</b>	Consumer Staples	France	C	BON
<b>Bentley Systems</b>	Information Technology	United States	A	BSY
<b>Cadence</b>	Information Technology	United States	A	CADE
<b>Chemours</b>	Materials	United States	B	CC
<b>Ciena</b>	Communication Services	United States	B	CIEN
<b>Clarivate</b>	Industrials	United Kingdom	A	CLVT
<b>Clorox</b>	Consumer Staples	United States	B	CLX
<b>Cummins</b>	Industrials	United States	A	CMI
<b>Columbia Sportswear</b>	Consumer Discretionary	United States	B	COLM
<b>Compass Mining</b>	Financials	United States	A	COMP
<b>Coty</b>	Consumer Staples	United States	A	COTY
<b>Coursera</b>	Consumer Discretionary	United States	B	COUR
<b>Colgate-Palmolive</b>	Consumer Staples	United States	D	CPA
<b>Salesforce</b>	Industrials	United States	A	CRM
<b>Costco</b>	Consumer Discretionary	United States	B	CTO
<b>DuPont</b>	Materials	United States	B	DD
<b>Danaher</b>	Health Care	United States	B	DHR
<b>KDDI Corp</b>	Communication Services	Japan	D	DIP
<b>Dover Corporation</b>	Industrials	United States	C	DOV
<b>Duolingo</b>	Information Technology	United States	C	DUOL
<b>eBay</b>	Consumer Discretionary	United States	B	EBAY
<b>EDF</b>	Utilities	France	B	EDF
<b>Equinor</b>	Energy	Norway	A	EQNR
<b>ESAB</b>	Industrials	Sweden	C	ESAB
<b>Etsy</b>	Consumer Discretionary	United States	A	ETSY
<b>Flowserve</b>	Industrials	United States	A	FLS
<b>Leonardo</b>	Industrials	Italy	B	FMNB
<b>Valeo</b>	Consumer Discretionary	France	F	FR
<b>Fortive</b>	Industrials	United States	C	FTV

<b>Fiverr</b>	Consumer Discretionary	Israel	B	FVRR
<b>Assicurazioni Generali</b>	Financials	Italy	A	G
<b>GoDaddy</b>	Information Technology	United States	A	GDDY
<b>General Electric (GE)</b>	Industrials	United States	C	GE
<b>DMG Mori</b>	Industrials	Japan	A	GIL
<b>GM</b>	Consumer Discretionary	United States	A	GM
<b>Garmin</b>	Consumer Discretionary	United States	A	GRMN
<b>Goodyear</b>	Consumer Discretionary	United States	B	GT
<b>Halliburton</b>	Energy	United States	A	HAL
<b>Herbalife</b>	Consumer Staples	United States	B	HLF
<b>IBM</b>	Information Technology	United States	A	IBM
<b>IMAX</b>	Consumer Discretionary	Canada	A	IMAX
<b>Intel</b>	Information Technology	United States	B	INTC
<b>Intuit</b>	Information Technology	United States	B	INTU
<b>International Paper</b>	Materials	United States	A	IP
<b>JLL</b>	Real Estate	United States	A	JLL
<b>Kellogg</b>	Consumer Staples	United States	C	KLG
<b>Lear Corporation</b>	Consumer Discretionary	United States	A	LEA
<b>Levi Strauss</b>	Consumer Discretionary	United States	B	LEVI
<b>Logitech</b>	Information Technology	Switzerland	A	LOGI
<b>Mastercard</b>	Information Technology	United States	B	MA
<b>Marubeni</b>	Industrials	Japan	C	MARA
<b>LVMH</b>	Consumer Discretionary	France	A	MC
<b>Moody's</b>	Financials	United States	C	MCO
<b>MongoDB</b>	Information Technology	United States	B	MDB
<b>3M</b>	Industrials	United States	B	MMM
<b>Mod's Hair</b>	Consumer Discretionary	France	F	MOD
<b>MSC</b>	Financials	United States	B	MSC
<b>MSCI</b>	Financials	United States	A	MSCI
<b>Cloudflare</b>	Information Technology	United States	F	NET
<b>Next</b>	Consumer Discretionary	United Kingdom	A	NEXT
<b>Nike</b>	Consumer Discretionary	United States	A	NKE
<b>Nvidia</b>	Information Technology	United States	B	NVDA
<b>Okta</b>	Information Technology	United States	C	OKTA
<b>ON24</b>	Information Technology	United States	B	ONTF
<b>Oracle</b>	Information Technology	United States	B	ORCL
<b>OpenText</b>	Information Technology	Canada	B	OTEX
<b>Otis Worldwide</b>	Industrials	United States	A	OTIS
<b>Paccar</b>	Industrials	United States	C	PCAR
<b>Parker Hannifin</b>	Industrials	United States	A	PH
<b>Primo Water</b>	Consumer Staples	United States	A	PRMW
<b>Qualcomm</b>	Information Technology	United States	B	QCOM
<b>QS</b>	NGO	United Kingdom	B	QS
<b>Ralph Lauren</b>	Consumer Discretionary	United States	B	RL
<b>Roku</b>	Communication Services	United States	A	ROKU
<b>Sabre</b>	Information Technology	United States	C	SABR
<b>Sandvik</b>	Industrials	Sweden	B	SAND
<b>SAP</b>	Information Technology	Germany	C	SAP
<b>Charles Schwab</b>	Financials	United States	A	SCHW

<b>Shell</b>	Energy	United Kingdom	C	SHEL
<b>Sherwin Williams</b>	Industrials	United States	B	SHW
<b>Sylvamo</b>	Materials	United States	A	SLVM
<b>Synopsys</b>	Information Technology	United States	B	SNPS
<b>Sonos</b>	Consumer Discretionary	United States	A	SONO
<b>Sony</b>	Consumer Discretionary	Japan	B	SONY
<b>Sulzer</b>	Industrials	Switzerland	A	SUN
<b>Stryker</b>	Health Care	United States	F	SYK
<b>Teradata</b>	Information Technology	United States	A	TDC
<b>Timken</b>	Industrials	United States	B	TKR
<b>Thermo Fisher</b>	Health Care	United States	B	TMO
<b>Trimble</b>	Information Technology	United States	A	TRMB
<b>Torm</b>	Industrials	Denmark	B	TRMD
<b>Trane Technologies</b>	Industrials	Ireland	A	TT
<b>Unilever</b>	Consumer Staples	United Kingdom	D	UL
<b>Universal</b>	Communication Services	United States	A	UVV
<b>Visteon</b>	Consumer Discretionary	United States	A	VC
<b>Viva</b>	Energy	Australia	B	VEA
<b>Viatis</b>	Health Care	United States	D	VTRS
<b>WPP PLC</b>	Communication Services	United Kingdom	A	WPP
<b>Western Union</b>	Information Technology	United States	B	WU
<b>Zoetis</b>	Health Care	United States	C	ZTS