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GEOPOLITICAL RISK AND THE EFFECTS ON COMPANIES' FINANCIAL PERFORMANCE

Stoyan Borisov Stoyanov[1*]

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[1] University of national and world economy, Sofia, Bulgaria

***Corresponding Author:**
Stoyan Borisov Stoyanov

Email: stoyan.b.stoyanov@unwe.bg

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ABSTRACT

The global environment is increasingly unstable. Recent Middle East conflicts and the ongoing war in Eastern Europe pose geopolitical risks that disrupt resource prices, supply chains and markets, affecting businesses and individuals alike. The goal of this study is to analyse if there is a relationship between these geopolitical risks and the fluctuations of a company's financial performance. This is done through a test of five ratio-specific hypotheses using a yearly panel GLS model for 40 NASDAQ firms, for the period 2017–2024.

The results in this study found that there are rare occasions of statistical significance regarding some of the company's financials and geopolitical risk, but they are later ruled out when introducing control variables. There are only individual cases in which geopolitical risks are shown to effect company financials, specifically in the cases of the firms' net margins and earnings per share. This finding signifies that geopolitical risk is not directly correlated with variations in company financials, apart from some specific cases. The practical implications of these findings highlight the necessity of understanding the indirect connection between company financials and geopolitical risk as well as certain ways to hedge the effects of these risks on certain areas like creating "EPS buffers", integrating GPRI into stress tests for EPS, creating a threshold of GPRI variance specific for each company, based on which to prompt a reassessment of earnings forecasts and prepare companies for the potential impacts.

Keywords: *geopolitical risk, financial performance, financial ratios, empirical analysis*

1. INTRODUCTION

The beginning of the 2020s marked a key turning point in the world. Technological advancement and ever-increasing automation of processes, efficiency and improvements, coupled with a very unstable and volatile political and economic landscape. The most recent conflicts in the Middle East, as well as the continued military conflict in Eastern Europe, are geopolitical risks, which impact both the countries directly in the conflict, as well as the global landscape and markets. Understanding these factors is important for the stable development of every economic subject.

This research focuses on the influence of geopolitical risk on corporate financial performance. Specifically, it investigates whether fluctuations in geopolitical risk indices are associated with changes in key firm-level financial ratios. The central scientific hypothesis is that elevated geopolitical risk negatively affects core corporate financial metrics. This hypothesis is grounded in established economic theory on how firms respond to uncertainty and aims to test the underlying causal mecha-

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nisms linking geopolitical instability to corporate outcomes. To evaluate this, five empirical hypotheses are formulated based on identified research gaps, further explained in the literature review.

This structure of the paper is as follows:

- The second section consists of a literature review and formulation of hypothesis.
- The third section encompasses a detailed description of the utilized methodology, and the data used for the analysis.
- The fourth shows the executed empirical analysis and interpretation of the results.
- The fifth section is a conclusion which summarizes the findings and potential future research possibilities.

2. LITERATURE REVIEW

The first key point to note is that in order for there to be any sort of possible statistical analysis, it's important to be able to measure all the variables. In the case of this research paper there are two main elements: geopolitical risk and the financial performance of companies.

Geopolitical risk encompasses adverse events like wars, terrorism, interstate tensions, etc. that heighten economic, social, and political uncertainty and spur market volatility (Caldara & Iacoviello 2022; Fang et al. 2024; Almansour et al., 2025). Scholars also underscore that "extreme" shocks not only generate immediate geopolitical uncertainty but cascade into broader economic and policy uncertainty (Kim & Lee 2024; Kuai & Wang 2024).

Different authors have noted that geopolitical risks have both a macro and micro impact. At the macro level, elevated geopolitical risk drives capital-market volatility and disrupts international capital flows, slowing economic recovery (Apergis et al. 2018; Bouri et al. 2019; Caldara & Iacoviello 2022). On the other hand, on a micro-level, studies reveal firm-specific responses. Examples of such reactions are heightened M&A activity, as companies seek synergies in uncertain times (Shen et al. 2021), increased cash holdings for precautionary motives (Cho 2023), and broader shifts in corporate decision-making under uncertainty (Li & Cheng 2024).

The second element, which needs to be defined is the financial performance of companies (Aryati & Susilawati, 2025). Damayanti and Assagaf (2021) mention in their paper, that the assessment of a company's well-being is done through the analysis of its financial statements and financial reports, which serve as an extremely important and key indicator of its performance. Financial performance is the evaluation of a company's profitability and stability over time. This is typically performed using key financial ratios. As Kusumawardani et al. (2021) and Putri et al. (2024) note, these ratios distil a firm's revenue-generation and cost-management efficiency, while Hartoyo et al. (2023) emphasize their role in investor decisions and long-run sustainability. In this paper, the focus is on Current Ratio, ROE, Net Margin, EPS and Debt-to-equity as the primary performance metrics.

In order to understand the interaction between these two elements, it is necessary to quantify the geopolitical risk. This is done through the use of geopolitical risk indices. These indices are derived in different ways. One way is the proposed by Caldara and Iacoviello, who analyse and construct the index based on media reports in newspapers, containing discussions about geopolitical threats (Caldara & Iacoviello, 2022). Another interesting methodology is that of BlackRock, which they use in their "Global Risk Dashboard". In it they quantify geopolitical risk based on two different measures of risk:

- based on the market attention to risk events
- based on the market movement related to these events.

The methodology described by Caldara and Iacoviello is a "text-based" approach, where specific key words are searched for in articles, news, etc. This methodology is taken in the first measure used by Blackrock, but as per information from their geopolitical risk dashboard it is further improved by including a language-based machine learning model (Blackrock investment institute, 2025). Both these indices are used in this paper to compare the significance related to a company's financial performance.

After analysing these two elements, it is important to understand how other authors have compared and analysed the interaction between them and what conclusions they have come to. Firstly, on a firm level, single-firm and sectoral papers establish that quantified geopolitical risk indices appear to influence the corporate world and changes in the indices are meaningful to companies. Kejriwal (2024) uses Caldara & Iacoviello's index to show a predominantly negative effect on IBM's profit margins over 2009–2023, though he cautions that company-specific factors and time-varying correlations may limit generalizability. Shen et al. (2021) find that elevated GPRI boosts M&A activity in the energy and power industries - particularly for firms with lower leverage. This suggests a "refuge in consolidation". Cho (2023) documents precautionary cash hoarding across firms during certain "high-risk episodes", and Li & Cheng (2024) demonstrate shifts in broader corporate decision-making under elevated geopolitical stress.

On a more macro perspective, specifically on a market level, Jia Ji (2025) links geopolitical risk index spikes to increased investor risk aversion, distorted risk-return trade-offs, and market hesitancy. However, this leaves unresolved how firm-level financial ratios themselves respond.

Most current research on the topic of geopolitical risk defends the understanding that geopolitical risk does influence margins, cash holdings, and M&A, but they are confined to single firms or industries and cover at most two metrics (e.g., only the profit margins for IBM; M&A for activity in energy firms, etc.). This shows a lack of an in-depth look on company financial statements and whether this effect is directly associated with geopolitical risk, or the effects are more on a macro-level and don't affect companies directly. The studies which highlight statistical significance between the geopolitical risk indices and financial ratios, capital structure, etc. are very limited to the number of firms and ratios utilized. No study to date has conducted a multi-industry panel analysis to quantify how GPRI fluctuations translate into changes in key financial ratios – Current ratio, ROE, net margin, EPS, and Debt-to-equity, across diverse firm sizes.

To fill this research gap and address these untested dimensions, a yearly panel of 40 NASDAQ companies has been assembled with data from 2017 to 2024 and several GLS models are applied to quantify how GPRI fluctuations translate into core financial ratios. Each of these ratios is selected, because macro-level uncertainty shocks - like spikes in the geopolitical risk prompts firms to delay investment and hoard cash (Opler et al., 1999), while at the same time, elevated geopolitical risk increases required risk premia (Pástor & Veronesi, 2013). This usually leads to eroding net profit margins and EPS via higher financing costs and lower sales. Finally, under greater uncertainty, firms may deleverage to avoid covenant violations (Myers, 1977), leading to reductions in Debt-to-Equity. Despite theory predicting liquidity hoarding, margin compression, and deleveraging under uncertainty, no study has tested these channels jointly in a multi-industry panel, which helps further with the derivation of the hypothesis, which will be tested.

Each ratio is selected with the purpose of testing the classic understanding and to cover a broader spectre of firm financials. The analysis includes:

- One Liquidity ratio (Current ratio) – the main reason for selecting this ratio is to see how the company's ability to pay off its short-term liabilities changes because of geopolitical risks and also based on the analysis of Li and Cheng and the effects on the behavioural decisions of a company, in this case maintaining higher current ratio. (Li & Cheng, 2024).
- Two Profitability ratios (Return on equity and Net profit margin) – the reason for selecting these ratios is because Return on equity is, as described by Nenkov and Hristozov, a fundamental ratio (Nenkov & Hristozov, 2024) and it can provide information on the efficiency of the company. The net profit margin would give information that would build upon the knowledge in the article by Kejriwal (Kejriwal, 2024), by assessing the impact on various companies and not just one.
- One Market ratio (Earnings per share) – once again is selected, as it is stated to be a fundamental ratio for companies (Nenkov & Hristozov, 2024) and will provide information how the net income earned for each share outstanding changes based on the geopolitical risks and also provide a view of the companies' market performance.

- One Leverage ratio (Debt-to-Equity) – this ratio is selected to check if companies are more inclined to increase their debt during times of high geopolitical risks and would broaden the knowledge of the impacts these risks could have on capital structure as well.

Through the help of the literature review, the main scientific hypothesis is established, in order to address the gaps in previous research.

"Geopolitical risk negatively effects core corporate financial ratios and does indeed follow the classical understanding"

The literature review helps formulate the following hypothesis, with which to test whether a multi-industry panel will follow the classic understanding of geopolitical effects on company ratios and performance:

H_1: A one-point increase in the geopolitical risk index lowers the companies' Current Ratio, diminishing the company's ability to pay its short-term debts.

H_2: A one-point increase in the geopolitical risk index lowers the companies' ROE, evidencing diminished overall profitability and efficiency.

H_3: A one-point increase in the geopolitical risk index lowers the companies' Net Profit Margin, reflecting squeezed operating performance under heightened uncertainty.

H_4: A one-point increase in the geopolitical risk index lowers the companies' EPS Ratio, indicating direct earnings erosion during geopolitical shocks.

H_5: A one-point increase in the geopolitical risk index lowers the companies' Debt-to-Equity Ratio, portraying a lower reliance on debt during geopolitical shocks.

3. RESEARCH METHODOLOGY

For the purpose of the below analysis, the geopolitical risk indices used will be the one provided by Caldara and Iacoviello, as well as the one provided by the BlackRock Investment institute. This will act as both a comparison between the two indices and analyse what impact they would show regarding the company's financial performance. This will also provide a more solid basis on which to make conclusions regarding said impact.

The selected ratios will give an overview of the firm's financial performance in a few different areas of its financial statements and also possibly broaden understanding and provide information on the significance of the effect of geopolitical risk in these areas. The analysis will include 40 companies chosen at random from the Nasdaq-100 index, the 100 largest companies listed on the Nasdaq Stock Market. The companies selected span over 10 total industries (Information technology; Communication services; Consumer discretionary; Consumer staples; Healthcare; Financial industry; Industrial materials; Real estate; Utilities). There are three main reasons for using this list of enterprises:

- They are firms which span across multiple industries.
- They operate in the USA, which is a big market and has much more reliable data.
- They have available and up-to-date data in their financial reports, allowing for a more current view of the analysed relationship.

The period in which the empirical analysis is performed will include 2017 to 2024. The data for the companies is collected from the audited consolidated financial reports, as well as trading platforms, which have listed financial ratios for each company. The full list of selected companies and their average financial ratios for the period 2017-2024 is included in an appendix to this research. The average value for the ratios is given for the sake of brevity and representation (Appendix 1), while the analysis is done on the basis of annual data, as mentioned below. They are selected randomly by giving each company an index from 1 to 100 and using software, which randomly selects a number between 1 and 100. On the other hand, the data used for the geopolitical risk index is summarized in the tables below as follows:

Table 1. Geopolitical risk index as per BlackRock Investment Institute

	BlackRock Geopolitical Risk Indicator							
	2017	2018	2019	2020	2021	2022	2023	2024
Max	1.22	0.90	0.93	0.68	0.10	0.80	0.31	0.81
Min	0.01	-0.41	0.53	0.08	-0.20	-0.05	-0.11	0.20
Average	0.62	0.32	0.71	0.44	-0.09	0.26	0.07	0.40

Source: BlackRock Investment Institute, personal calculations

Table 2. Geopolitical risk index as per Caldara and Iacovello

	Geopolitical Risk Indicator as per Caldara and Iacovello							
	2017	2018	2019	2020	2021	2022	2023	2024
Max	138.53	125.67	106.59	138.42	105.35	318.95	197.89	163.74
Min	82.72	64.49	73.08	64.07	58.42	111.20	98.63	92.39
Average	107.38	98.55	90.95	77.29	82.07	157.58	121.71	134.19

Source: Dario Caldara and Matteo Iacovello, personal calculations

The two indices are different in terms of value, but this is due to the different methodology used in both cases. The BlackRock index encompasses an analysis market attention and market movement by grading the likelihood and impact of 10 main geopolitical risks and how they could affect the markets. The index by Caldara and Iacovello is calculated by counting the number of published articles, which are related to the occurrence of adverse geopolitical events in newspapers for each month.

The data presented from the two indices has been aggregated and calculations were performed to show their maximum, minimum and average values for the specific year, based on the monthly data. This is performed in order to create homogeneity in the dataset, as the data for the companies is on a yearly basis. Averaging the amounts for the indices for each year encompasses the geopolitical landscape throughout the entirety of the specific year and would allow for a better analysis when paired with the company data. For the sake of brevity, the term geopolitical risk index has been shortened to the abbreviation – GPRI.

The analysis is done through a panel data (Random effects Generalized Least Squares) regression model. The panel data regression model is performed using specialized statistical software. The chosen methodology for regression is the Random effects (GLS) regression method, with the main goal of this being to illustrate the causal relationship between the financial ratios and geopolitical risk. It is chosen over the Fixed effect (FE) model, as for each individual regression a Hausman test is performed to compare whether using a Fixed effects model or Random effects would be more appropriate, and in every case the null hypothesis could not be rejected, showing that the Random effects is the better choice, and there is no benefit to using the more restrictive FE model. For every regression, the difference in coefficients is not systematic and the test summary for each ratio is as follows:

Table 3. Hausman test for each ratio for the BlackRock GPRI

Financial ratio	Hausman test probability and χ^2	Hypothesis
Current ratio	P=0.9931; χ^2=0.09	H0 – cannot be rejected
ROE	P=0.9302; χ^2=0.45	H0 – cannot be rejected
Net margin	P=0.9995; χ^2=0.02	H0 – cannot be rejected
EPS	P=0.4162; χ^2=2.84	H0 – cannot be rejected
Debt-to-Equity	P=1.0000; χ^2=0.00	H0 – cannot be rejected

Source: Company financials and personal calculations

Table 4. Hausman test for each ratio for the Caldara and Iacovello GPRI

Financial ratio	Hausman test probability and χ^2	Hypothesis
Current ratio	P=0.9967; χ^2=0.05	H0 – cannot be rejected
ROE	P=0.9409; χ^2=0.40	H0 – cannot be rejected
Net margin	P=0.9951; χ^2=0.07	H0 – cannot be rejected
EPS	P=0.5679; χ^2=2.02	H0 – cannot be rejected
Debt-to-Equity	P=0.9999; χ^2=0.00	H0 – cannot be rejected

Source: Company financials and personal calculations

The tables summarized that there is no statistical reason to prefer the Fixed effects model and that every ratio is more efficient under H_0.

The analysis is done by selecting the financial ratios as dependent variables and each of the indices separately as an independent variable. For every regression model the number of observations is 320, split into groups of 40, which is the number of companies, each with data for 8 years, split in equal intervals, creating a strongly balanced panel dataset. Each regression is performed twice, where the first instance is with the only independent variable being the geopolitical risk index and the second instance with the inclusion of 2 control variables. These control variables are "company size (based on market capitalization in billions USD)", because the size of companies very often is a driver for their control over their financials and "inflation rate", because it is a key driver for margins, it is closely related to the geopolitical landscape and it is often a problem faced by each and every company. The models were also tested with 2 more control variables ("GDP growth rate" and "Foreign direct investments"), but they showed no statistical significance and after performing a Wald test, the 2 variables were not contributing in any way to the model and were removed from testing. The inclusion of industry dummy variables to control for unobserved, time-invariant differences across sectors was considered, however, with 40 firms spanning across ten sectors, it would create a risk of over-parameterizing the panel. This would create a potential risk of multicollinearity. Instead, the random-effects GLS model includes a firm-level random intercept that subsumes both individual and industry fixed effects. Tables with descriptive statistics and a correlation matrix can be found in Appendix 2 and Appendix 3. Future research could benefit from the inclusion of other control variables, such as supply-chain exposure, clusters of companies, etc.

Of course, it is important to consider the limitations of this analysis. The main one is the statistical group. It is a rather small group of sizeable companies. They are only 40, over diverse industries. Utilizing smaller companies could yield different results. Another limitation is the usage of aggregated annual indexes rather than monthly could also be creating a distortion of results. Analysing the data on a monthly basis, could show results, which are hidden in the annual data. The lack of more control variables, which could further improve the results of the analysis or potentially uncover omitted variables, could also be treated as an important limitation. The lack of cluster testing could also be hiding potential relationships, currently not visible.

4.EMPIRICAL ANALYSIS OF A COMPANY'S FINANCIAL PERFORMANCE AND ITS INTERACTION WITH GEOPOLITICAL RISKS

The first ratio analysed is the current ratio. The table with the main outcomes from the statistical analysis can be found below as follows:

Table 5. Random effects panel regression for the financial ratio – Current ratio

Current ratio					
	Coeff.	Std. Error	z	p-value	R - Squared
GPRI as per BlackRock	2.44	1.65	1.48	0.14	0.0048
Constant	1.95	1.04	1.88	0.06	
GPRI as per Caldara and Iacovello	-0.02	0.02	-1.42	0.16	0.0044
Constant	5.23	1.93	2.71	0.01	

Source: Company financials, GPRI as per both sources, personal calculations

There are a few main points to note from this analysis. The first and most important is that there is no statistical significance for either of the two indices. This suggests that the model is missing key determinants, which better explain the variation of the selected ratio. This is further proven by the significantly low R-squared value of just 0.0048 in the first case and 0.0044 in the second. This means that only 0.48% or 0.44% of the variance in this ratio is explained by the selected independent variables. Due to the lack of statistical significance and negligible explanatory power, the relationship between GPRI and the current ratio cannot be supported. In order to check whether there is a possible omitted variable bias, a second panel regression is performed with the above specified control variables.

Table 6. Random effects panel regression for the financial ratio – Current ratio with control variables

Current ratio					
	Coeff.	Std. Error	z	p-value	R - Squared
GPRI as per BlackRock	2.21	2.27	0.97	0.33	0.0072
Company size (market cap)	-0.00	0.00	-0.33	0.74	
Inflation rate	-3.08	33.50	-0.09	0.93	
Constant	3.08	2.12	1.45	0.15	
GPRI as per Caldara and Iacovello	-0.02	0.02	-0.79	0.43	0.0067
Company size (market cap)	-0.00	0.00	-0.42	0.67	
Inflation rate	-2.94	36.24	-0.08	0.94	
Constant	5.53	2.71	2.04	0.04	

Source: Company financials, GPRI as per both sources, Macrotrends, personal calculations

As seen in the table, even after adding control variables, the results still show a lack of statistical significance, which prevents the further validation of this relationship between the indices and the liquidity ratio. The derived conclusion is that this model does not explain any variances in the current ratio of the selected companies and there is no visible direct effect of geopolitical risks on the companies' ability to pay off their short-term debts. Therefore, it appears to be unnecessary for firms to focus on their liquidity during periods of geopolitical instability. When comparing these findings with those of Cho (2023), it appears that the hoarding, documented by him is more likely based on management decisions, rather than being affected by the geopolitical risk directly. Further research should include a qualitive study, together with a quantitive, in order to understand the reasons for these changes from the firms themselves. This means that the first hypothesis H_1, could be ruled out, as no such effect is visible

The next two ratios analysed are the Return on Equity (ROE) and the Net profit margin ratios. The table with the main outcomes from the statistical analysis can be found below:

Table 7. Random effects panel regression for the financial ratio – Return on Equity

Return on Equity					
	Coeff.	Std. Error	z	p-value	R - Squared
GPRI as per BlackRock	-0.07477	0.03	-2.61	0.01	0.0237
Constant	0.27	0.01	22.04	0.00	
GPRI as per Caldara and Iacovello	0.00072	0.00	2.59	0.01	0.0235
Constant	0.16	0.03	5.30	0.00	

Source: Company financials, GPRI as per both sources, personal calculations

Upon analysing the GLS panel regression model there are some key points to note. In both cases there is statistical significance when using either of the two geopolitical risk indexes. The p-value is significantly lower than 0.05 in both cases, which would indicate that on average, a one-point increase in the geopolitical risk index provided by BlackRock would decrease the ROE with -0.075 percentage points, while on the other hand the same change in the index provided by Caldara and Iacovello, would increase the ROE with 0.00072 percentage points. In both cases the R-squared is

around 0.024, which would mean that only 2.4% of the variance in ROE is explained by this model. Similarly to the previous ratio, a second regression with the introduction of control variables is performed. The results can be found in the table below as follows:

Table 8. Random effects panel regression for the financial ratio – Return on Equity with control variables

Return on Equity					
	Coeff.	Std. Error	z	p-value	R - Squared
GPRI as per BlackRock	0.02	0.03	0.47	0.64	0.3352
Company size (market cap)	0.0001	0.00	11.8	0.00	
Inflation rate	0.70	0.48	2.10	0.04	
Constant	0.17	0.04	4.43	0.00	
GPRI as per Caldara and Iacovello	-0.02	0.02	0.48	0.64	0.3353
Company size (market cap)	-0.00	0.00	-0.42	0.67	
Inflation rate	0.49	0.40	2.02	0.04	
Constant	0.17	0.04	3.88	0.00	

Source: Company financials, GPRI as per both sources, personal calculations

The second regression shows an interesting change in the results. A substantial increase in explanatory power, but the GPRI is no longer statistically significant. This means that in the first regression there is an omitted variable bias and after adding the two control variables, we see that GPRI loses significance. The loss of GPRI significance and jump in explanatory power after adding control variables suggests that inflation and company size partially account for the previously attributed statistically significant effect. GPRI likely does not have an independent or direct effect on ROE. The two GPRI show an opposite correlation, but the lack of statistical significance limits this analysis in deriving any conclusions. With a degree of caution, the second hypothesis H_2, could be ruled out due to a lack of proof regarding the relationship of the two variables.

The analysis of the net profit margin ratio yielded the following results:

Table 9. Random effects panel regression for the financial ratio – Net Profit margin

Net profit margin					
	Coeff.	Std. Error	z	p-value	R - Squared
GPRI as per BlackRock	-0.06311	0.0125	-5.06	0.00	0.0840
Constant	0.18	0.01	33.39	0.00	
GPRI as per Caldara and Iacovello	0.00034	0.0001	2.78	0.01	0.0269
Constant	0.12	0.01	8.45	0.00	

Source: Company financials, GPRI as per both sources, personal calculations

Once again both cases are statistically significant, when using both geopolitical risk indices separately. And as seen in the ROE, there is an opposite impact on the net profit. Following the data from the empirical analysis, based on the geopolitical risk index provided by BlackRock, a one-point increase in the index would lead to -0.06311 percentage points decrease in the net profit margin. The R-squared for this model is 0.084, which means that 8.4% of the variance in the net profit margin is explained by this variable. On the other hand, there is a significantly lower R-squared for the second index, with a value of 0.0269, which means that only 2.69% are explained. The second regression, including the control variables, yielded the following:

Table 10. Random effects panel regression for the financial ratio – Net Profit margin with control variables

Net profit margin					
	Coeff.	Std. Error	z	p-value	R - Squared
GPRI as per BlackRock	-0.003	0.02	-2.25	0.025	0.1754
Company size (market cap)	0.0001	0.00	5.37	0.00	
Inflation rate	0.387	0.17	2.22	0.027	
Constant	0.13	0.02	7.39	0.00	
GPRI as per Caldara and Iacovello	-0.00	0.00	-0.79	0.432	0.1624
Company size (market cap)	0.00	0.00	5.86	0.00	
Inflation rate	0.719	0.21	3.53	0.00	
Constant	0.13	0.02	6.18	0.00	

Source: Company financials, GPRI as per both sources, Macrotrends, personal calculations

There is statistical significance when utilizing the GPRI provided by BlackRock, while no significance is visible when using the GPRI from Caldara and Iacovello. The explanatory power is 17.54%, which, although small, leads to the assumption, that the GPRI, which the BlackRock calculates, could potentially be used further to describe variation in the net profit margin, although, as seen in the model, the effect is very minor. A one-point increase in GPRI, would lead to a 0.003 percent decrease in the net profit margin. While statistical significance does exist between the ratio and the BlackRock GPRI, the effect is economically negligible. The mean value of the net profit margin of the group is 15.43% and the median is 14.00% (Appendix 2), therefore a change of 0.003% could easily be treated as irrelevant. This shows an opposing result to Kejriwal (2024) and his findings about IBM's profit margins and opens the question whether there is a squeezed operating performance under heightened uncertainty and the results show that this is most likely not the case, at least in the selected sample. Therefore, with a great deal of caution, the third hypothesis H_3 could be ruled out, as although there is statistical significance, there is no economic significance, and geopolitical risk cannot be treated as a direct driving factor in diminishing company margins and operating performance.

The penultimate financial coefficient that is analysed is the earnings per share. The results from the test can be seen in the table below as follows:

Table 11. Random effects panel regression for the financial ratio – Earnings per share

Earnings per share					
	Coeff.	Std. Error	z	p-value	R - Squared
GPRI as per BlackRock	-5.22413	1.5644	-3.34	0.001	0.0384
Constant	8.52	0.6604	12.90	0.00	
GPRI as per Caldara and Iacovello	-0.00130	0.0154	-0.08	0.93	0.000
Constant	6.88	1.716	4.01	0.00	

Source: Company financials, GPRI as per both sources, personal calculations

The financial ratio's correlation with both indexes is negative in this case, as seen in Table 11, once again, one of the two indices is statistically significant (the index provided by BlackRock) and the second is not (the index provided by Caldara and Iacovello). The statistical significance of the first shows an R-squared of 0.0384, which means that this model explains 3.84% of the total variance in the EPS. Economically, it could be treated that a one-point increase in the geopolitical risk index would mean a -5.22 USD decrease in the earnings per share. On the other hand, the index by Caldara and Iacovello, shows a R-squared of 0, which means that there is no visible relationship between the two variables. The second regression yielded the following result:

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Table 12. Random effects panel regression for the financial ratio – Earnings per share with control variables

Earnings per share					
	Coeff.	Std. Error	z	p-value	R - Squared
GPRI as per BlackRock	-3.91	1.92	-2.04	0.042	0.1196
Company size (market cap)	0.003	0.001	3.22	0.001	
Inflation rate	8.73	2.99	2.38	0.004	
Constant	6.68	1.87	3.58	0.00	
GPRI as per Caldara and Iacovello	-0.05	0.021	-2.45	0.014	0.1269
Company size (market cap)	0.004	0.001	3.78	0.00	
Inflation rate	80.16	26.46	3.03	0.002	
Constant	8.33	2.19	3.80	0.000	

Source: Company financials, GPRI as per both sources, Macrotrends, personal calculations

The second regression yielded an interesting result. With the addition of the control variables, both indices show statistical significance, with a substantial change visible in the index of Caldara and Iacovello's. The GPRI coefficients are now both statistically significant at the 5% level, but their economic impacts differ greatly. When looking at the GPRI as per BlackRock, a one-point increase would lead to 3.91 USD decrease in the earnings per share, while the GPRI from Caldara and Iacovello show a decrease of only 0.05 USD. The explanatory power of the model is still rather low – around 12%. The mean value of the EPS for the selected sample is 6.73 USD, while the median is 4.76 USD (Appendix 2). A one-point rise in BlackRock's GPRI predicts a 3.91 USD drop in EPS or roughly a 58% fall from the mean and an 82% fall from the median, which could be considered an economically large effect. By contrast, Caldara & Iacoviello's GPRI implies only a 0.05 USD decrease of the EPS or around 0.74% fall from the mean and 1.05% fall from the median. Overall, considering the modest explanatory power, these GPRI measures alone explain little of the variation in short-term profitability. It is noteworthy to discuss the set hypothesis in the beginning. In the case of the Earnings-per-share ratio, although with caution, based on the results, the fourth hypothesis H4 is supported in the case of BlackRock's GPRI and can be accepted. For the Caldara & Iacoviello index, the result is statistically significant but economically weak, and may be driven by omitted variable bias in the unadjusted model. This highlights the superior sensitivity of the market-based GPRI to short-term earnings volatility. Therefore, the result is statistically significant but economically negligible and H_4 is supported only in the case of the BlackRock GPRI.

The final ratio to be analysed is the Debt-to-Equity ratio. The results from the test are as follows:

Table 13. Random effects panel regression for the financial ratio – Debt-to-Equity

Debt-to-Equity					
	Coeff.	Std. Error	t	p-value	R - Squared
GPRI as per BlackRock	-0.00963	0.2009	-0.05	0.962	0.000
Constant	0.89	0.0848	10.54	0.00	
GPRI as per Caldara and Iacovello	-0.00223	0.0019	-1.16	0.25	0.0027
Constant	1.13	0.216	5.25	0.00	

Source: Company financials, GPRI as per both sources, personal calculations

In both cases there is no statistical significance and nearly no impact from either of the two indices on the debt-to-equity ratio. The first index, provided by BlackRock, shows an R-squared of 0, which would signify no apparent relationship between the variables, while the second shows an R-squared of 0.0027, which means that only 0.27% of the variance in the debt-to-equity ratio could be explained by this model. The lack of statistical significance prevents reaching any conclusions regarding the relationship between these variables.

Table 14. Random effects panel regression for the financial ratio – Debt-to-Equity with control variables

Debt-to-Equity					
	Coeff.	Std. Error	z	p-value	R - Squared
GPRI as per BlackRock	-0.024	0.25	-0.10	0.924	0.0019
Company size (market cap)	0.00	0.001	-0.49	0.622	
Inflation rate	0.05	2.96	0.02	0.985	
Constant	0.91	0.209	4.28	0.00	
GPRI as per Caldara and Iacovello	-0.05	0.021	-1.65	0.100	0.0066
Company size (market cap)	0.000	0.001	-0.38	0.704	
Inflation rate	4.12	3.40	1.21	0.226	
Constant	1.25	0.26	4.80	0.000	

Source: Company financials, GPRI as per both sources, Macrotrends, personal calculations

In the case of the Debt-to-equity ratio, no obvious relationship can be found through the use of this model, and it is highly likely that other variables are necessary in order to explain these variances. Geopolitical risk appears to have no statistically significant effect on the ratio or the any changes to the companies' reliance on debt during geopolitical shocks. This means that the fifth hypothesis H5 can be ruled out, as there is no significance and no statistically or economically meaningful effect is detected in either model.

In summary, the empirical analysis reveals that geopolitical risk indices have limited explanatory power over firm-level financial ratios. Among the five tested ratios, only Earnings-Per-Share (EPS) showed both statistical and economic significance, particularly when using the BlackRock index. Net Profit Margin exhibited statistical but not economic significance, while the remaining ratios (Current Ratio, Return on Equity, and Debt-to-Equity) demonstrated no robust relationship with geopolitical risk. These findings suggest that geopolitical risk, as measured here, may affect firms indirectly through market channels, managerial decisions or rather than through direct financial ratio distortion.

Furthermore, the BlackRock index consistently outperformed the one provided by Caldara & Iacoviello, likely due to its market-based methodology that incorporates investor sentiment and market movements. The Caldara & Iacoviello index, being solely text-based, may lack sensitivity to real-time financial impacts.

It is also important to consider the hypothesis set at the beginning. Only one hypothesis could not be ruled out - the fourth H_4 (A one-point increase in the geopolitical risk index significantly lowers the companies' EPS, indicating direct earnings erosion during geopolitical shocks). Geopolitical risk showed a direct impact on EPS, which had both statistical and economic significance, unlike in the case of H3, related to the net margin, where there is visible statistical significance, but almost not economic. This could be used to derive several practical implications, which could be useful for firm management, CFOs, risk-assessment departments and parties interested in precautionary methods, with which to mitigate the impact of geopolitical risk in the areas where it seems to have an effect, more specifically EPS. A number of recommendations are given as follows:

- Companies could establish a threshold for GPRI changes, based on which to build an "EPS buffer" in their dividend policies. For example, during calm periods they could cushion dividends against GPRI-driven EPS dips, reducing the likelihood of occurrence of major fluctuations.
- Firms might benefit from integrating GPRI into stress tests for EPS. This would work by adding a "what if" scenarios in quarterly stress-testing models to quantify potential EPS decreases caused by changes in GRPI. This could help ensure capital plans remain robust under heightened geopolitical risk.
- It would benefit both companies and industries as a whole to establish a threshold of GPRI variance. For example, if there is a 5-point rise in GPRI, that would automatically prompt a reassessment of earnings forecasts and prepare companies for the potential impacts.

However, these applications should be approached with caution due to the limited explanatory power of the models used. Further research could be improved by adding multiple richer control variables, as well as comparing with different time periods, executing clustered analysis, monthly data granularity, adding qualitive studies, which could describe the reasons for deviations and compare them to the quantitive results, etc.

5. CONCLUSION

The growing scholarly interest in geopolitical risk highlights the need to understand its potential impact on corporate financial performance. This study aimed to investigate whether geopolitical risk indices meaningfully influence firm-level financial ratios. While the literature often supports a connection, particularly at the firm or industry level, prior research has been limited in scope, typically focusing on individual companies or a small set of performance metrics.

This paper addressed that gap by conducting a multi-industry panel analysis of 40 NASDAQ-listed firms from 2017 to 2024, using both the BlackRock and Caldara & Iacoviello geopolitical risk indices. Contrary to much of the existing literature, the empirical findings suggest that geopolitical risk,

In contrast, the selected geopolitical risk indices, as currently quantified, do not exert a consistent or robust influence on most firm-level financial indicators. Only in the individual cases of analysing the variation in the market ratio EPS and the profitability ratio Net profit margin did the GPRI show statistical significance, and economic significance only in the EPS ratio. Based on this analysis, geopolitical risks do not seem to show apparent influence on company performance.

Only one of the five tested hypotheses (H_4), related to the EPS ratio could be supported, and only when using the BlackRock index. The other ratios (Current Ratio, Return on Equity, Net Profit Margin, and Debt-to-Equity) showed either no statistical significance or negligible economic impact. Of course, this is all done with a substantial degree of caution, due to the limitations of this analysis. It is also noteworthy that the models' explanatory power was consistently low, reinforcing the conclusion that GPRI alone cannot explain variation in corporate performance.

Two indices, quantifying geopolitical risk, were included in the analysis in order to show a comparison between them and if there is any merit to using one over the other. The results of the analysis were somewhat similar, with some outliers (The significantly higher economic impact in the EPS ratio and the statistical significance in the net margin ratio). Solely based on this, the GPRI provided by BlackRock seems to show more potential for this specific type of analysis, related to company financials. This is due to the fact that the index is extrapolated through an in-depth analysis of the geopolitical landscape and how it reflects on the markets by considering both market attention and market movement.

The main takeaway from this analysis is that while geopolitical risk may play a role in shaping company performance particularly through its effect on EPS, this influence is highly dependent on other factors. Without appropriate controls, models have a risk of attributing false significance to GPRI measures, as observed in the Return on Equity results. Thus, geopolitical risk should be viewed as one contributing factor among many, and not a standalone driver of financial outcomes.

Some noteworthy practical implications of this analysis are potential precautionary methods, that could be used to mitigate the impact of geopolitical risk in the areas where it seems to have an effect, more specifically EPS. These include establishing an "EPS buffer" in company dividend policies, integrating GPRI into stress tests for EPS, creating a threshold of GPRI variance specific for each company, based on which to prompt a reassessment of earnings forecasts and prepare companies for the potential impacts. Of course, the limited explanatory power of the models used should also be taken into account and interested parties should proceed with caution.

The main recommendations for future analysis on the topic would be to deepen the analysis by including more companies, from different markets through different or longer periods of time. Also, it is necessary to identify the proper factors related to company financial performance which would further be able to explain the variances through the incorporation of geopolitical risks, minimizing the risk of an omitted variable bias or "fictional" significance of the analysed geopolitical risks and increasing the explanatory power of the utilized models. An empirical analysis using monthly data,

rather than aggregated, could provide a more profound look on the changes in the financial performance, based on the geopolitical risk indices.

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Appendix 1. List of companies used for the analysis and their average financial ratios for the period 2017-2024

Company name	Current Ratio	Net Margin	ROE	Debt-to-Equity	EPS
Apple	1.16	23%	108%	140%	$ 4.46
Microsoft	2.15	31%	38%	57%	$ 6.90
Nvidia Corp	6.66	35%	45%	22%	$ 4.90
Amazon	1.07	5%	18%	95%	$ 20.53
Alphabet Inc.	3.23	22%	22%	4%	$ 55.17
Tesla	1.36	3%	2%	105%	$ -0.27
Berkshire Hathaway	1.15	13%	13%	33%	$ 16.17
JPMorgan & Chase	1.04	27%	14%	145%	$ 8.77
General Electric and Co	1.06	5%	11%	96%	$ 1.41
AT&T	0.73	7%	10%	117%	$ 2.11
Merck & Co Inc	1.43	20%	25%	75%	$ 3.21
PepsiCo Inc	1.01	9%	27%	236%	$ 4.11
Workday Inc	1.68	-6%	-1%	44%	$ 0.15
Paypal Holdings Inc.	1.34	16%	18%	63%	$ 2.34
Mariott International	0.88	9%	28%	234%	$ 4.20
AutoZone Inc (AZO)	0.94	13%	57%	166%	$ 13.29
CoStar Group Inc	8.83	16%	12%	12%	$ 1.62
IDEXX Laboratories Inc	1.35	21%	31%	55%	$ 6.60
Old Dominion Freight Line Inc	1.61	16%	24%	12%	$ 4.63
Willis Towers Watson Plc	1.24	11%	16%	65%	$ 5.57
Fair Isaac Corp	1.76	24%	29%	43%	$ 5.75
Kimberly-Clark Corp	0.85	13%	24%	53%	$ 6.64
Fastenal Co	4.35	18%	33%	8%	$ 1.83
Exelon Corp	0.91	11%	13%	148%	$ 2.32
Fiserv, Inc.	1.15	18%	22%	85%	$ 3.83
Boeing Co	1.43	7%	28%	-28%	$ 5.14
Accenture plc	1.53	11%	28%	18%	$ 5.64
Verizon Communications Inc	0.85	13%	27%	202%	$ 4.50
American Express Co	1.75	16%	29%	263%	$ 8.76
Morgan Stanley	1.11	20%	12%	246%	$ 5.96
Intuitive Surgical Inc	10.34	25%	15%	1%	$ 10.22
Raytheon Technologies Corp	1.27	8%	14%	67%	$ 5.35
Newmont Corp	1.74	9%	11%	52%	$ 1.77
Vulcan Materials Co	2.11	11%	15%	48%	$ 4.80
Paccar Inc	2.17	12%	19%	41%	$ 4.93
Hershey Co	0.86	16%	50%	186%	$ 7.04
Hartford Financial Services Group Inc	0.29	8%	10%	94%	$ 4.97
Vici Properties Inc	34.23	52%	7%	57%	$ 1.57
Constellation Brands Inc	1.24	23%	17%	132%	$ 9.98
Tjx Companies Inc	1.40	7%	47%	67%	$ 2.55

Appendix 2. Descriptive Statistics Table for all five ratios

The descriptive statistics are calculated as a summary, after analysing the mean, median, min, 1st and 3rd quartile, max and standard deviation for each year in the period and aggregated in 1 table for the sake of space and brevity.

Descriptive statistics	Current Ratio	ROE	Net Margin	EPS	Debt-to-Equity
Mean	2.78	24%	15.43%	6.73 USD	89%
Median	1.32	21%	14%	4.76	69%
Min	0.27	-37%	-18%	-18.36	1%
1st Quartile	1.04	13%	9%	2.48	38%
3rd Quartile	1.80	29%	20%	7.36	144%
Max	139.40	175%	70%	112.20	316%
Standard deviation	8.76	22%	11%	10.98	111%

Appendix 3. Correlation matrix of all 5 ratios

Correlation matrix	Current Ratio	ROE	Net Profit Margin	EPS	Debt-to-Equity	GPRI as per BlackRock	GPRI as per Caldara and Iacovello
Current Ratio	1.0000	-0.0819	0.3522	-0.0307	-0.0872	0.0691	-0.0664
ROE	-0.0819	1.0000	0.2664	0.0841	0.0873	-0.0844	0.0839
Net Profit Margin	0.3522	0.2664	1.0000	0.1709	0.0305	-0.1396	0.0790
EPS	-0.0307	0.0841	0.1709	1.0000	0.0243	-0.1182	-0.0031
Debt-to-Equity	-0.0872	0.0873	0.0305	0.0243	1.0000	-0.0022	-0.0519
GPRI as per BlackRock	0.0691	-0.0844	-0.1396	-0.1182	-0.0022	1.0000	-0.0880
GPRI as per Caldara and Iacovello	-0.0664	0.0839	0.0790	-0.0031	-0.0519	-0.0880	1.0000

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