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Is the mergers and acquisitions market susceptible to geopolitical tensions? Cross-sectional analysis of the relationship between the M&A market and the political and economic situation.

Abstract: This paper examines the impact of geopolitical risk on mergers and acquisitions (M&A) activity across a broad group of countries. The study used the three-quarter weighted moving average change of the World Uncertainty Index (WUI) given for 40 countries from the 2008 to 2023. The data on M&A, which included more than 400,000 transactions, were retrieved from the Refinitiv Eikon & Datastream database (2024). The results show that WUI change and real GPD value significantly impact the number of transactions in a buyer country for both cross-border and domestic deals. However, an addtional aspect that emerged from the study is the possibility that for foreign investors, inflation in the target country may play a lesser role and may be more dependent on the overall economic situation, as indicated by the significance of stock exchange index change. The most significant finding is the reverse effect of WUI: it discourages foreign investment for acquirers, while for targets, increasing geopolitical risk in the country boosts foreign transactions within that country. This article serves as a valuable source of knowledge for researchers in this field and practitioners in the mergers and acquisitions market, especially those dealing with the international aspect.

Keywords: mergers and acquisitions, geopolitical risk, macroeconomic, panel regression, transactions

JEL Classification: Q34, E44, E71

1. Introduction

Risk is a significant factor influencing investment decisions among all participants in the financial market. Its level is considered in the context of investment decisions, with risk being highlighted as the reward for capital providers who bear it but expect returns on their investments (Baker et al., 1977). The fields of economics and finance analyse risk from various perspectives, distinguishing between microeconomic risks associated with specific entities or assets and macroeconomic risks linked to entire markets or multiple markets. Various macroeconomic risks can be identified, such as economic, political, and financial risks (Erb et al., 1996). While there are numerous categories, divisions, and classifications, this article will focus on geopolitical risk, which has gained significant importance in recent years despite being somewhat overlooked during quieter periods in global political situations. Geopolitical risk has again become one of the fundamental issues subject to analysis by both investors and scholars alike within the global financial market. Conflicts such as the Russian involvement in Ukraine (Derindere et al., 2024), tensions in the China-Taiwan relationship (Liber, 2023), and the Israel-Palestine conflict (Wambrauw et al., 2024) cause concern not only among directly involved parties but also among investors and institutions worldwide. Additionally, the significant intensification of social polarisation (Diamant, 2024) has notably increased the impact of geopolitical situations and politics on the economy.

Geopolitical risk has always been a significant consideration for investors, both individual and institutional (Wang et al., 2019). While in the stock market (Salisu et al., 2022), cryptocurrencies (Long et al., 2022; Kyriazis, 2020), or precious metals (Baur & Smales, 2018; Triki & Maatoug, 2021), risk is typically immediately visible through

changes in public market quotations, for other economic phenomena, the impact of such situations is not immediately apparent. Due to a lack of transparency or reporting delays, these impacts can be challenging to discern. While stock prices and currency values dynamically respond to geopolitical changes and are highly exposed, in the case of mergers and acquisitions, estimating changes is practically impossible outside of reports mainly accessible to specialists or database access.

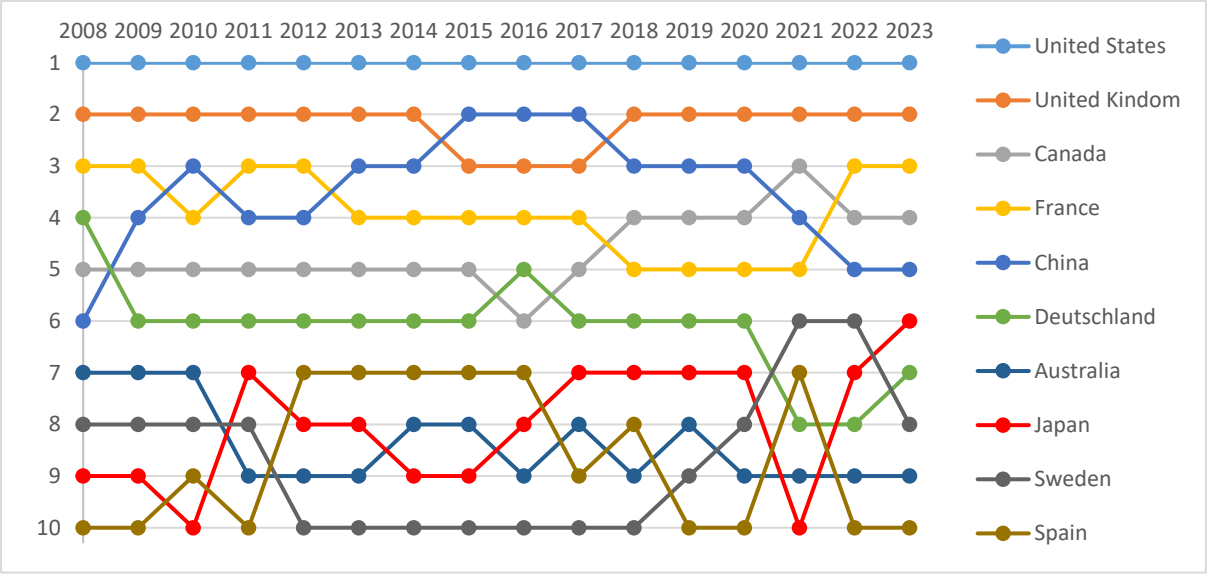
The number of mergers and acquisitions has grown dynamically in recent decades, and their professional nature adds to their significance (Galpin, 2021). While stock prices or cryptocurrencies react dynamically to geopolitical tensions, the effect is less evident for mergers and acquisitions because these transactions have distinct characteristics that suggest a different response. Firstly, mergers and acquisitions are time-consuming (Adelaja & Mukhopadhyay, 2022; Roh et al., 2023), typically taking several months to complete from initiation to closure. Therefore, from the decision to proceed with a transaction to its completion, a significant amount of time elapses, during which many developments can occur. Consequently, geopolitical instability may deter initiation or prompt withdrawal from transactions. On the other hand, because mergers and acquisitions are time-consuming, they are also capital-intensive (Koo et al., 2020). High costs mean that abandoning such transactions results in the loss of substantial investments already made, potentially leading to investor withdrawal only in the face of significant, prolonged geopolitical issues. The decision-making process contrasts with individual investors in public markets, who often make abrupt and emotional moves.

Moreover, entities and institutions conduct mergers and acquisitions with higher levels of professionalism and access to expert and non-public information (Song et al., 2021). This professionalism suggests that the reaction of these transactions to geopolitical influences may differ. Furthermore, speculation does not significantly impact this market, distinguishing its behaviour from public markets, which is crucial for other markets such as commodities (Wimmer et al., 2021).The number of mergers and acquisitions in the target country reflects a certain level of investor confidence (Schmid et al., 2012) and the perceived economic potential in that economy. It also indicates the maturity level of the financial market (Choi et al., 2020; Hossain, 2021). On the other hand, companies participating as investors in such transactions are typically from developed countries with high economic potential (Mendlelker, 1974), often representing more developed nations than others.

It is not without reason that major global corporations dominate the mergers and acquisitions market, with the most active countries historically being the United States, United Kingdom, Canada, France, Japan, Sweden, Germany, and, more recently, China. The United States, for instance, significantly surpasses other economies in terms of transaction volume, conducting approximately four times more deals than the second-ranked country, which is usually the United Kingdom.

Below is a chart illustrating the number of transactions conducted between 2008 and 2023 by the top 10 acquirer countries in the global mergers and acquisitions market. The position of the remaining nine countries varies over different periods.

Graph 1. Ranking of TOP 10 acquiring countries in the M&A market.



Source: Own elaboration

Even on this simplified chart, certain geopolitical phenomena influencing a country's mergers and acquisitions activity are noticeable. For instance, in the case of China, its position in the M&A market was significantly strengthened from 2008 to 2017. However, the onset of the trade war around 2017-2018 (Li et al., 2018) led to a significant decrease in China's M&A activity. There is also evidence of France strengthening its economic position at the expense of its main competitor, Germany, which is evident across various economic sectors in both countries.

This article also references other studies concerning the impact of macroeconomic factors on mergers and acquisitions activity, examining the relationship between these variables and the M&A market. The most frequently considered control factors influencing M&A activity include GDP (Kumar, 2023; Vozarowa et al., 2022; Hasudungan & Pulungan, 2021; Håndstad & Solbøe, 2021; Very et al., 2012), inflation (Kumar, 2023; Håndstad & Solbøe, 2021; Very et al., 2012), and stock indices (Chiriac, 2021; Very et al., 2012).

The continuation of this article is as follows. Section two presents existing research directly related to the analysis of geopolitical risk's impact on mergers and acquisitions activity, as well as studies that informed the framework and hypotheses of this research. Section three outlines the data and their sources. Section four presents the results of the empirical analysis. Finally, part five summarises the study.

2. Literature Review and hypothesis development

The analysis of the impact of geopolitical situations on the mergers and acquisitions market has been a topic discussed previously by researchers. This issue can be explored in various ways and from many perspectives. Shen et al. (2021) examined the influence of local geopolitical risk on the acquisitions of listed companies in the energy sector in China. Most scholars also focus on the energy sector (Reddy & Xie, 2017; Butler, 2011; Guo et al., 2021; Özgür & Wirl, 2020) or exclusively on cross-border deals (Khan & Yamamoto, 2023; Özgür & Wirl, 2020). Xie et al. (2017) studied the impact of cross-border acquisitions, focusing mainly on qualitative macroeconomic, political, and legal factors, demonstrating that political situations can affect a country's decline in M&A activity. Rao et al. (2023) verified the impact of geopolitical risk across a broader group of 19 emerging countries,

investigating the role of state institutions in mitigating this risk. Li et al. (2023) examined how geopolitical and climatic risks of the target country influence investor activity, primarily focusing on climate risk and highlighting that geopolitical risk reduces corporations' focus on climate risk for investors from the UK. The broadest study was conducted by Cao et al. (2023), who analysed 59 countries over a 20-year research period. However, they focused exclusively on cross-border transactions and concentrated on the impact of military and strategic alliances between countries.

After analysing articles verifying geopolitical risk, the Author identified the potential for developing a research gap. Most previous studies focus on the energy sector or a single country, making it difficult to draw general conclusions about the relationship between geopolitical risk and the mergers and acquisitions market. Therefore, the Author examined the 40 most active countries regarding M&A activity during the analysed period. Additionally, more cross-sectional studies need to be conducted to analyse datasets that cover more recent statistics. This article focuses on a more contemporary period (2008-2023) and uses quarterly data, allowing for the detection of more dynamic changes in the M&A market.

Furthermore, most studies omit entirely the aspect of domestic acquisitions. Hence, the Author also decided to verify whether geopolitical risk better explains changes in the domestic acquisitions market. This is not necessarily a matter to be overlooked, as domestic investors, especially institutional investors or entrepreneurs, have the opportunity to diversify the geographic risk of their investments. Additionally, access to data and information in M&A databases is another issue. Researchers often define cross-border acquisitions by determining whether the investor and target country in the database are identical. However, this approach has several significant drawbacks despite lacking a better alternative. Often, even though the entity is registered in the country, it may have capital, so the decision-makers are foreign. Secondly, geopolitical risk often concerns a specific region or the entire world, and as a result, the differences between countries, especially those located in a similar region or closely cooperating blur.
For this reason, to have the appropriate image of the phenomena studied, it is necessary to verify the general number of transactions in a given market and not just focus on transactions made by foreign investors. However, differences between domestic and cross-border acquisitions have also been verified. Apart from this issue, it was also decided to verify the activity of investors in the mergers and acquisitions market and thus check whether geopolitical risk concerning the investor market impacts transactions. On the one hand, investors affected by geopolitical risk should be willing to invest abroad to protect their assets, but on the other hand, a difficult situation can also paralyse decision-makers and suspend any significant decisions in the market. The Author assumes that high geopolitical risk may promote foreign investment by investors from high-risk countries while reducing the willingness to invest and overall M&A activity in a given country. The article will likely be the first to use a geopolitical risk measurement index proposed by Ahir et al. (2022).

3. Data and variable definitions

In this section, the Author describes the data, the sample, and the key variables of interest.

3.1. Geopolitical uncertainty index

In this article, the Author utilised the World Uncertainty Index (WUI) proposed by Ahir et al. (2022): "The WUI is computed by counting the per cent of the word "uncertain" (or it is variant) in the Economist Intelligence Unit country reports. The WUI is then rescaled by multiplying by 1,000,000. A higher number means higher uncertainty and vice versa. For example, an index of 200 corresponds to the word uncertainty accounting for

0.02 percent of all words, which—given the EIU reports are about 10,000 words long—means about two words per report." In this research, the Author used the three-quarter weighted moving average of the World Uncertainty Index (WUI) given for 143 countries from the 1950s onwards. The 3-quarter weighted moving average is computed as follows: 1996Q4= (1996Q4*0.6) + (1996Q3*0.3) + (1996Q2*0.1)/3. This smoothed index version is the preferred measure for country-level data for index authors. For the study, the Author utilised the quarterly percentage change of the quarterly WUI index. This approach assumes that short-term shocks will significantly impact the number of transactions more than a permanent geopolitical situation.

$$\Delta\, WUI\% = ((WUI_{q+1}/WUI_q) - 1)$$

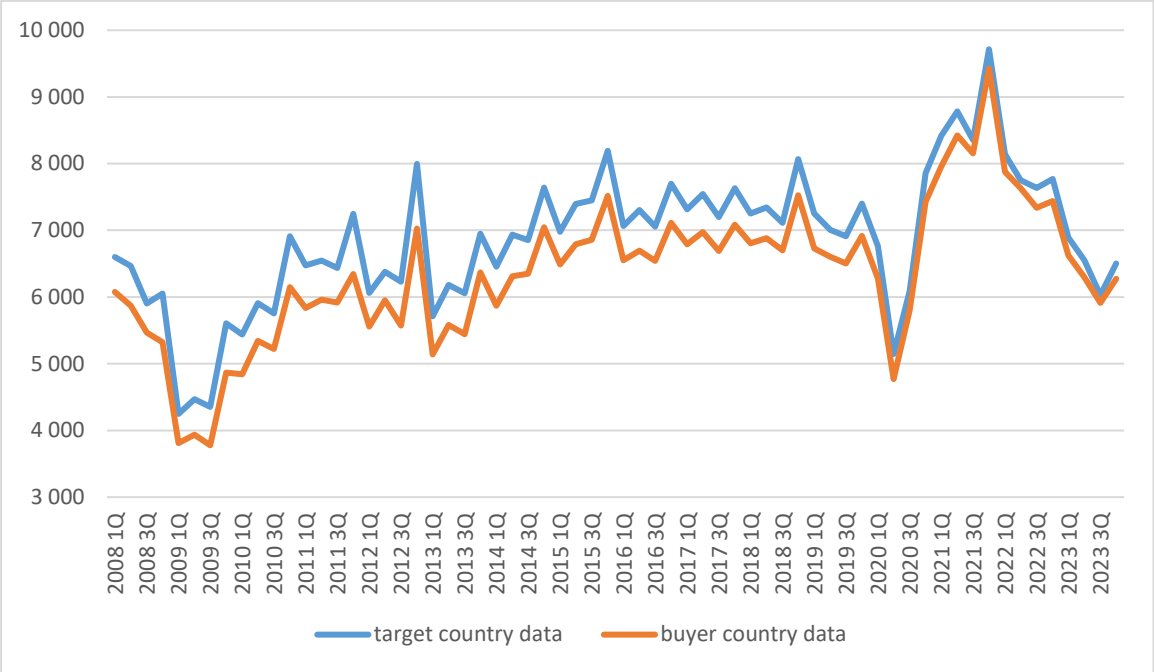
The Author proceeded with the assumption that in the case of long-term exposure to significant geopolitical risk, lower investor interest would be reflected in control variables such as GDP or increased inflation (Jha et al., 2024). Therefore, to reduce the correlation among variables while still addressing geopolitical risk, the decision was made to focus on geopolitical shocks and their impact on the initiation/suspension of transactions.

3.2. M&A Transactions

The data on M&A transactions were retrieved from the Refinitiv Eikon & Datastream database (2024). 652,913 transactions worldwide conducted between 1965 and 2023 across 210 countries were analysed. Only transactions labelled as "completed" and involving the acquisition of the entirety of a company or a majority stake were selected. However, due to the small number of transactions in some countries and incomplete information in the database, the study was limited to countries where the number of transactions as a target from that country was at least 1000 from 2008 to 2023. This restriction narrowed the study to 40 countries (the list included in the study is provided in the appendix).

Consequently, the number of transactions was limited to 439,445, where the target was a country from the analysed list, and to 407,349, where the buyer was a company from that country (for a more significant number of transactions, information on the country of origin of the buyer was missing or difficult to identify). Based on information about the target country, buyer, and transaction announcement dates, indexes of the number of transactions completed each quarter from 2008 to 2023 were created. As a result, the final dataset included 40 countries and 64 quarters. The chart below presents the total number of transactions from the perspective of both buyers and sellers:

Graph 1. The number of transactions in the final dataset



Source: Own elaboration

Limiting the number of countries also allowed for the preparation of a high-quality dataset encompassing complete statistics of control variables, as for smaller countries some quarterly statistics were impossible to obtain.

The possibility of using transaction value as a variable was also verified, but it was abandoned because this information was available for only about 40% of the transactions in the database. Additionally, after detailed verification, it was found that this information significantly distorts the structure of the analysed group and leads to overrepresentation of public companies compared to private ones, as this information was more often available for them. Moreover, transactions in the public market tend to be higher in value, shifting the focus towards the behaviour of public firms, which may only be representative of some of the M&A markets.

Table 1. Number of deals in each country 2008 – 2023.

Country	Number of deals					
	As target (total)	**As target (domestic)**	**As target (cross-border)**	**As buyer (total)**	**As buyer (domestic)**	**As buyer (cross-border)**
United States	156 056	131 610	24 446	154 203	131 610	22 593
United Kingdom	44 071	28 037	16 034	38 256	28 037	10 219
China, Mainland	29 312	22 081	7 231	24 966	22 081	2 885
France	22 089	15 228	6 861	21 119	15 228	5 891
Canada	19 104	12 568	6 536	18 723	12 568	6 155
Germany	17 017	9 404	7 613	14 669	9 404	5 265
Australia	13 425	9 017	4 408	11 404	9 017	2 387
Spain	12 288	8 689	3 599	10 411	8 689	1 722
Japan	11 123	9 890	1 233	12 208	9 890	2 318
Russian Federation	9 058	5 773	3 285	6 318	5 773	545
Sweden	8 697	5 969	2 728	10 337	5 969	4 368
Italy	8 114	4 910	3 204	6 591	4 910	1 681

India	7 952	5 707	2 245	6 822	5 707	1 115
Netherlands	7 641	3 807	3 834	7 339	3 807	3 532
Brazil	5 767	3 830	1 937	4 217	3 830	387
Switzerland	4 778	2 414	2 364	5 466	2 414	3 052
Malaysia	4 708	3 225	1 483	3 927	3 225	702
South Korea	4 518	3 531	987	4 333	3 531	802
China, HK	4 411	1 643	2 768	5 628	1 643	3 985
Finland	4 201	2 691	1 510	3 777	2 691	1 086
Norway	4 127	2 464	1 663	3 905	2 464	1 441
Denmark	3 913	1 928	1 985	3 225	1 928	1 297
Singapore	3 806	1 774	2 032	4 216	1 774	2 442
South Africa	3 536	2 453	1 083	2 944	2 453	491
Poland	3 208	1 859	1 349	2 280	1 859	421
Belgium	3 034	1 211	1 823	2 753	1 211	1 542
New Zealand	2 641	1 370	1 271	1 698	1 370	328
Ireland	2 553	927	1 626	2 571	927	1 644
Israel	2 155	1 062	1 093	1 714	1 062	652
Indonesia	2 038	1 215	823	1 341	1 215	126
Austria	1 898	771	1 127	1 978	771	1 207
Thailand	1 813	1 204	609	1 461	1 204	257
Czech Republic	1 687	866	821	1 224	866	358
Ukraine	1 652	615	1 037	689	615	74
Türkiye	1 277	572	705	769	572	197
Portugal	1 219	521	698	768	521	247
Mexico	1 208	457	751	766	457	309
Vietnam	1 165	513	652	568	513	55
UAE	1 132	519	613	1 225	519	706
Romania	1 053	469	584	540	469	71

Source: Own elaboration

To maintain the linearity of the positive variable, the number of transactions, a natural logarithm transformation of the transaction count for each quarter was used to create a variable for the Model.

$$M\&A_{it} = \ln\left(number\ of\ deals_{it}\right)$$

3.3. Control variables

As control variables, the most frequently appearing macroeconomic variables influencing M&A market activity were selected: real GDP value (GDP) (Kumar, 2023; Vozarowa et al., 2022; Hasudungan & Pulungan, 2021; Håndstad & Solbøe, 2021; Very et al., 2012), inflation rate (CPI) (Kumar, 2023; Håndstad & Solbøe, 2021; Very et al., 2012), stock index change (INDEX) (Chiriac, 2021; Very et al., 2012), and population growth (POP) (Wang et al., 2009).

Inflation, GDP data, and population change were obtained from the International Monetary Fund database. For GDP, the natural logarithm of the nominal GDP value expressed in dollars was used:

$$GDP = \ln\left(GDP\ in\ \$\right)$$

The quarterly percentage change was utilised for the CPI variable and population growth. In cases where quarterly data was unavailable for some countries, the average quarterly change was calculated based on the annual rate.

Regarding the INDEX variable, the decision was made to use the quarterly change value for the S&P 500 index independently of the analysed country. This decision was driven by several factors: some analysed countries lack their stock market index or have indices composed of a specific or limited number of firms. Moreover, many studies have demonstrated significant correlations between the movements of other stock market indices and the S&P 500 index (Song et al., 2011; El Hedi et al., 2010; Rua & Nunes, 2009). Therefore, the informational value gained from using other country-specific variables would be minimal while potentially limiting the number of countries studied.

3.4. Empirical models and hypothesis

Five models were created to examine the number of mergers and acquisitions (M&A) transactions from five perspectives:

- Total number of M&A transactions in a country (as a target) (Model 1)
- Number of domestic M&A transactions in a country (as a target) (Model 2)
- Number of cross-border M&A transactions in a country (as a target) (Model 3)
- Total number of M&A transactions conducted by buyers from a country (Model 4)
- Number of cross-border M&A transactions conducted by buyers from a country (Model 5)

The number of domestic M&A transactions from the perspective of the acquirer was omitted from the analysis, as these are precisely the duplicate transactions analysed in Model 2. For each Model, a random effects panel regression was performed, and the characteristics were analysed based on the addition of specific variables. Therefore, four additional models were created for each primary Model. The base model includes the variables WUI and GDP, and each subsequent Model adds one additional variable: CPI, followed by INDEX, and then POP.

The first Model is based on the total number of transactions from the perspective of the target country. For each quarter from 2008 to 2023, the number of transactions conducted in one of the 40 analysed countries was determined. Then, the WUI variable and the macroeconomic control variables GDP, CPI, INDEX, and POP were assigned to the respective quarters and countries. Their calculation method was detailed earlier. The Author hypothesised that the activity in the M&A market is dependent on economic conditions and geopolitical risk in the target country. Hence, H1: Geopolitical risk is a significant variable in explaining the total number of mergers and acquisitions in a given market.

$$M\&A_{it}\ by\ target\ country\ (total) = \alpha_0 + \alpha_1 * WUI_{it} + + \alpha_2 * GDP_{it} + \alpha_3 * CPI_{it} + \alpha_4 * INDEX_{it} + \alpha_5 * POP_{it} + yZ_i + e_{it} \quad (1)$$

The second and third models are based on the total number of transactions from the perspective of the target country. However, they differentiate between domestic M&A transactions and those conducted by foreign investors (cross-border M&A). For each quarter from 2008 to 2023, the number of transactions conducted in one of the 40 analysed countries was determined, along with verification of the origin of the acquiring entity and the

target entity. The transaction was considered domestic if the target and buyer countries were the same. If the countries were different, it was considered cross-border. Then, the WUI and macroeconomic control variables GDP, CPI, INDEX, and POP were assigned to the respective quarters and countries, similar to Model 1.

The Author hypothesised that activity in the M&A market depends on economic conditions and geopolitical risk in the target country, and the strength of the effects and the types of explanatory variables may differ. Hence, H2: Geopolitical risk is a significant variable in explaining the total number of mergers and acquisitions in a given market, and it is more significant from the perspective of foreign investors.

$$M\&A_{it}\ by\ target\ country\ (domestic) = \alpha_0 + \alpha_1 * WUI_{it} + + \alpha_2 * GDP_{it} + \alpha_3 * CPI_{it} + \alpha_4 * INDEX_{it} + \alpha_5 * POP_{it} + yZ_i + e_{it}$$

(2)

$$M\&A_{it}\ by\ target\ country\ (cross\ border) = \alpha_0 + \alpha_1 * WUI_{it} + + \alpha_2 * GDP_{it} + \alpha_3 * CPI_{it} + \alpha_4 * INDEX_{it} + \alpha_5 * POP_{it} + yZ_i + e_{it}$$

(3)

The fourth Model is based on the total number of transactions, but this time, it examines the impact of variables on M&A market activity from the perspective of the buyers. For each quarter from 2008 to 2023, the number of transactions conducted by one of the 40 analysed countries was determined. Then, the WUI variable and the macroeconomic control variables GDP, CPI, INDEX, and POP were assigned to the respective quarters and countries.

The Author hypothesised that activity in the M&A market depends on economic conditions and geopolitical risk in the target country, and the strength of the effects and the types of explanatory variables may differ. Hence, H3: Geopolitical risk is a significant variable in explaining the total number of mergers and acquisitions conducted by entities from a given market.

$$M\&A_{it}\ by\ buyer\ country\ (total) = \alpha_0 + \alpha_1 * WUI_{it} + + \alpha_2 * GDP_{it} + \alpha_3 * CPI_{it} + \alpha_4 * INDEX_{it} + \alpha_5 * POP_{it} + yZ_i + e_{it}$$

(4)

The fifth Model also relies on the total number of transactions conducted by investors from buying countries, but it analyses only cross-border transactions as the dependent variable. The WUI and control variables assignment follows the same approach as in previous models. Similarly, transactions are divided into domestic and cross-border, with the Model focusing exclusively on cross-border transactions. From the buyer's perspective, the Model excludes domestic transactions because they are identical to those in Model (2) due to identical countries. The Author hypothesised that activity in the M&A market depends on economic conditions and geopolitical risk in the target country, and the strength and type of explanatory variables may differ. Hence, H4: Geopolitical risk is a significant variable in explaining the total number of mergers and acquisitions conducted by entities from a given market, and it has a different character compared to its role in the perspective of the target country.

$$M\&A_{it}\ by\ buyer\ country\ (cross\ border) = \alpha_0 + \alpha_1 * WUI_{it} + + \alpha_2 * GDP_{it} + \alpha_3 * CPI_{it} + \alpha_4 * INDEX_{it} + \alpha_5 * POP_{it} + yZ_i + e_{it}$$

(5)

4. Empirical results

4.1. Descriptive statistics of the dataset

This table provides descriptive statistics for various variables related to the number of deals by target and buyer countries, both domestically and cross-border. It includes 2560 observations for each variable. For example, the mean number of total deals by target country is 4.258, with a standard deviation of 1.183, ranging from 0 to 8.353. The GDP variable averages 6.628, with a standard deviation of 1.132 and values between 4.693 and 10.055. Other economic indicators include an S&P quarter value change (INDEX), quarter CPI change (CPI), quarter population growth (POP), and uncertainty index (WUI), with varying means and standard deviations.

Table 2. Results of descriptive statistics

Variable	Obs	Mean	Std. dev.	Min	Max
num deals by target country (total)	2560	4.258	1.183	0.000	8.353
num deals by target country (domestic)	2560	3.649	1.391	0.000	8.196
num deals by target country (cross-border)	2560	3.333	1.000	0.000	6.428
num deals by buyer country (total)	2560	4.056	1.329	0.000	8.366
num deals by buyer country (domestic)	2560	3.649	1.391	0.000	8.196
num deals by buyer country (cross-border)	2560	2.791	1.359	0.000	6.509
GDP	2560	6.628	1.132	4.693	10.055
INDEX	2560	0.000	0.001	-0.002	0.002
CPI	2560	0.892	1.586	-3.446	28.287
POP	2560	0.171	0.318	-3.564	4.350
WUI	2560	0.002	0.015	-0.010	0.230

This table presents the results of the mean, standard deviation, minimum and maximum of all observations.
Source: Own elaboration

4.2. GLS Panel Regression

For the analysis using the data presented in Table 1., a panel regression model with random effects was employed. This method is particularly suitable for handling the unobserved heterogeneity across countries by assuming that individual-specific effects are uncorrelated with the independent variables. The random effects model is advantageous in this context as it allows for the inclusion of time-invariant variables and provides more

efficient estimations under the assumption of homogeneity. The Hausman test justified the use of random effects, which indicated that the random effects model is more appropriate than the fixed effects model for our dataset. This approach aligns with the methodologies recommended by Baltagi (2008) and Greene (2012) for panel data analysis in econometrics.

4.2.1. Model (1) - the total number of mergers and acquisitions in a given country

Table 3 provides the results of GLS panel regressions examining the total volume of M&A deals. The table presents the results of GLS panel regressions that examine the total volume of mergers and acquisitions across countries. Four models (columns 1 to 4) are shown, each including various independent variables: WUI (World Uncertainty Index), GDP, CPI, INDEX, and POP. The coefficients for WUI are consistently positive and significant at the 1% level across all models. This suggests that an increase in geopolitical risk may lead to an increase in the number of deals in the country. GDP also shows a positive and highly significant relationship at the 1% level in all models. This variable serves as a control variable and reflects the market size, which, as previously determined, is significantly correlated with the number of transactions. Conversely, the relationship with the stock market index growth (INDEX) is negative and significant.

The adjusted R-squared values are approximately 0.61 for all models, indicating a good fit of the models to the data.

Table 3. Coefficients of Model for the number of mergers and acquisitions in a target country depending on macroeconomic variables and geopolitical risk.

Model (1)	**1**	**2**	**3**	**4**
WUI	1.37***	1.33***	1.32***	1.32***
	(0.44)	(0.43)	(0.42)	(0.43)
GDP	0.65***	0.66***	0.66***	0.68***
	(0.17)	(0.17)	(0.17)	(0.17)
CPI		-0.01	-0.01	-0.01
		(0.01)	(0.01)	(0.01)
INDEX			-0.22***	-0.21***
			(0.07)	(0.06)
POP				0.07
				(0.09)
constant	-0.04	-0.09	-0.13	-0.24
	(1.13)	(1.1)	(1.1)	(1.11)
n. obs	2560	2560	2560	2560
adj. R^2	0.6094	0.6126	0.6131	0.6126

The table reports the GLS panel regressions of M&A volume in each country. The dependent variable ln of the quantity of *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively. Robust-standard errors are presented in parentheses. The table also provides the number of observations for each Model and adjusted R^2.
Source: Own elaboration

The observations from Table 3 confirm hypothesis 1, posited by the Author, as they demonstrate the explanatory power of WUI (World Uncertainty Index). The direction of the increasing political risk's impact may be surprising.

However, this aligns with findings from Shen (2021) and Rao (2023), among others, who have also noted a positive influence of political risk on the number of transactions in a given market.

4.2.2. Model (2) and (3) – the number of domestic and cross-border mergers and acquisitions in a given country

Tables 4 and 5 provide the results of GLS panel regressions examining the total volume of mergers and acquisitions across countries. The data and methods are the same as in model (1). The results show that WUI and GDP are significant and positively impact M&A activity for both cross-border and domestic deals. CPI is insignificant in any model in both tables, indicating a negligible impact on M&A activities. INDEX has more impact on cross-border deals. The CPI growth in domestic deals has an impact even though it does not show any significance in domestic deals.

The adjusted R^2 values are higher for domestic M&A (around 0.62) than for cross-border M&A (around 0.43), suggesting that the models better explain the variability in domestic M&A.

Table 4. Coefficients of the Model for the number of domestic (Model (2)) and cross-border (Model (3)) mergers and acquisitions in a target country depending on macroeconomic variables and geopolitical risk

Model (2)	**1**	**2**	**3**	**4**
WUI	1.48**	1.38**	1.37**	1.38**
	(0.61)	(0.59)	(0.59)	(0.59)
GDP	0.65***	0.67***	0.67***	0.69***
	(0.19)	(0.18)	(0.18)	(0.18)
CPI		-0.02*	-0.02**	-0.02**
		(0.01)	(0.01)	(0.01)
INDEX			-0.14*	-0.13
			(0.08)	(0.08)
POP				0.11
				(0.13)
constant	-0.65	-0.77	-0.81	-0.94
	(1.27)	(1.22)	(1.21)	(1.23)
n. obs	2560	2560	2560	2560
adj. R^2	0.6141	0.6213	0.6215	0.6211

Model (3)	**1**	**2**	**3**	**4**
WUI	1.15***	1.16***	1.15***	1.16***
	(0.45)	(0.45)	(0.45)	(0.45)
GDP	0.58***	0.58***	0.58***	0.60***
	(0.18)	(0.18)	(0.18)	(0.18)
CPI		0.00	0.00	0.00

		(0.01)	(0.01)	(0.01)
INDEX			-0.29***	-0.28***
			(0.08)	(0.08)
POP				0.06
				(0.08)
constant	-0.5	-0.49	-0.54	-0.63
	(1.18)	(1.17)	(1.18)	(1.19)
n. obs	2560	2560	2560	2560
adj. R^2	0.4320	0.4314	0.4323	0.4323

The table reports the GLS panel regressions of M&A volume in each country. The dependent variable ln of the quantity of *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively. Robust-standard errors are presented in parentheses. The table also provides the number of observations for each Model and adjusted R^2.
Source: Own elaboration

Observations from Table 4 partially confirm hypothesis 2, proposed by the Author. They confirm the explanatory power of WUI in both cases, but it is difficult to determine which plays a more important role due to its significance in both models. However, an interesting aspect that emerged from the study is the possibility that for foreign investors, inflation in the target country may play a lesser role and may be more dependent on the overall economic situation, as indicated by the significance of INDEX.

4.2.3. Model (4) - the total number of mergers and acquisitions by investor country.

Table 5 provides the results of GLS panel regressions examining the total volume of mergers and acquisitions conducted by buyers from different countries. The data and methods are the same as in previous models. The results show that, again, GDP is significant and has a positive impact on M&A activity. What could be expected is that the WUI in the buyer's country is insignificant for buyers. CPI is insignificant in any model, indicating a negligible impact on M&A activities. INDEX has an impact on activities. The adjusted R^2 values are approximately 0.57 for all models, indicating a good fit but worse than in the case of target country analysis.

Table 5. Coefficients of Model for the number of mergers and acquisitions in a buyer country depending on macroeconomic variables and geopolitical risk.

Model (4)	**1**	**2**	**3**	**4**
WUI	0.96	0.92	0.91	0.92
	(0.62)	(0.60)	(0.60)	(0.60)
GDP	0.69***	0.7***	0.71***	0.73***
	(0.18)	(0.18)	(0.18)	(0.18)
CPI		-0.01	-0.01	-0.01
		(0.01)	(0.01)	(0.01)
INDEX			-0.23***	-0.22***
			(0.07)	(0.07)

POP				0.12
				(0.1)
constant	-0.5	-0.58	-0.62	-0.79
	(1.19)	(1.17)	(1.17)	(1.19)
n. obs	2560	2560	2560	2560
adj. R^2	0.5671	0.5707	0.5712	0.5735

The table reports the GLS panel regressions of M&A volume in each country. The dependent variable ln of the quantity of . *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively. Robust-standard errors are presented in parentheses. The table also provides the number of observations for each Model and adjusted R^2.
Source: Own elaboration

The Model (5) observations do not confirm hypothesis 3, as they indicate the insignificance of the WUI variable for the acquiring country.

4.2.4. Model (5) - the total number of cross-border mergers and acquisitions by buyer country.

Table 6 provides the results of GLS panel regressions examining the total volume of cross-border mergers and acquisitions conducted by buyers from different countries. The data and methods are the same as in previous models. The results show that, again, GDP is significant and has a positive impact on M&A activity. What is quite surprising is that the WUI in the buyer's country is slightly significant for buyers and, for the first time, has a negative impact. What suggests that local problems discourage investors from conducting M & A. CPI is significant in all models, and INDEX impacts activities. The adjusted R^2 values are lower than in other models, 0.29 for all models, and worse than in the case of the target country analysis.

Table 6. Coefficients of Model for the number of cross-border mergers and acquisitions in a buyer country depending on macroeconomic variables and geopolitical risk.

Model (5)	**1**	**2**	**3**	**4**
WUI	-1.32*	-1.17*	-1.19*	-1.18*
	(0.73)	(0.71)	(0.71)	(0.71)
GDP	0.63***	0.59***	0.61***	0.62***
	(0.19)	(0.18)	(0.18)	(0.18)
CPI		0.04***	0.04***	0.04***
		(0.01)	(0.01)	(0.01)
INDEX			-0.48***	-0.48***
			(0.1)	(0.09)
POP				0.06
				(0.06)
constant	-1.44	-1.25	-1.34	-1.44
	(1.2)	(1.12)	(1.13)	(1.13)
n. obs	2560	2560	2560	2560
adj. R^2	0.2967	0.2805	0.2829	0.2851

The table reports the GLS panel regressions of M&A volume in each country. The dependent variable ln of the quantity of . *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively. Robust-standard errors are presented in parentheses. The table also provides the number of observations for each Model and adjusted R^2.
Source: Own elaboration

To draw interesting conclusions, comparing Model (5) with Model (2) can also be insightful. Both models examine cross-border transactions, but they differ in that Model (2) assesses explanatory variables from the perspective of the target country, whereas Model (5) does so from the perspective of the acquiring country. The most significant finding is the reverse effect of WUI: it discourages foreign investment for acquirers, while for targets, increasing geopolitical risk in a country boosts the number of foreign transactions in that market. This confirms hypothesis four, highlighting the significant impact of geopolitical risk on cross-border acquisitions and its directional influence
on the acquiring market.

GDP and INDEX are significant and in the same direction in both analysed models. Differences also arise with CPI, which was not significant for the target market but positively impacted the acquiring market. This may be linked to a decreasing currency value incentivising investment in other markets to preserve its value.

4.2.5. Robustness check

To confirm the GLS random effects model's robustness in the analysis. The Hausman (1978) test was applied to determine whether the random effects model was more appropriate than the fixed effects model, with the results indicating that the random effects model was indeed suitable. Robust standard errors were also employed to account for any heteroskedasticity and autocorrelation within the panel data, ensuring that the coefficient estimates were reliable and efficient. These tests collectively affirm the robustness and appropriateness of the GLS random effects model for this study.

Additionally, based on the study by Cao et al. (2023), it was decided to verify the robustness of the results by excluding the two most active entities from the analysis. The results for the final versions of models (1) to (5) after excluding the UK and US have been presented in Table 7.

Table 7. Coefficients of Model for models (1) – (5) excluding the United Kingdom and the United States.

Dep. Var = M&A	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)
WUI	1.33***	1.39***	1.16***	0.92	-1.21*
	(0.43)	(0.59)	(0.45)	(0.60)	(0.71)
GDP	0.64***	0.64***	0.56***	0.69***	0.57***
	(0.17)	(0.19)	(0.19)	(0.18)	(0.18)
CPI	-0.01	-0.03**	0.00	-0.01	0.04***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
INDEX	-0.20***	-0.12	-0.28***	-0.22***	-0.48***
	(0.07)	(0.09)	(0.09)	(0.08)	(0.10)
POP	0.07	0.11	0.06	0.12	0.06
	(0.09)	(0.13)	(0.08)	(0.11)	(0.06)
constant	-0.05	-0.71	-0.47	-0.59	-1.19
	(1.11)	(1.25)	(1.20)	(1.20)	(1.13)
n. obs	2432	2432	2432	2432	2432
adj. R^2	0.5029	0.5162	0.3031	0.4599	0.1645

The table reports the GLS panel regressions of M&A volume in each country. The dependent variable ln of the quantity of . *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively. Robust-standard errors are presented in parentheses. The table also provides the number of observations for each Model and adjusted R^2.
Source: Own elaboration

The analysis results confirm that excluding the USA and UK from the sample did not alter the fundamental conclusions drawn from the analyses. The Model coefficients still exhibit similar relationships, significances, and directions of effects. Excluding the two largest countries from the analysis led to a slight decrease in the R-squared fit of the models, but they remained at a satisfactory level in most cases.

5. Conclusion

The analysis of the models yielded intriguing conclusions, often from perspectives overlooked by authors of similar studies. The cross-sectional perspective allowed for verification of the geopolitical factor and other macroeconomic variables and their impact on the number of transactions. The study's most significant finding is that geopolitical risk, measured by the World Uncertainty Index (WUI), is relevant both in the seller's and buyer's regions. It affects both domestic and cross-border investments. According to the analysis, an increase in risk in the target country leads to a rise in the number of transactions within that country – an effect observed in domestic and cross-border acquisitions. This may seem counterintuitive, but it aligns with the findings of Shen (2021) and Rao (2023), who also demonstrated this directional relationship. The Author suggests that this situation may have various causes, though further research is necessary to address this question comprehensively. One explanation could be that changes in geopolitical risk increase market liquidity (Hentov et al., 2018), making sellers more inclined to engage in transactions. Sellers are often more knowledgeable about the impact of geopolitical risk on their business, while buyers might be less informed. On the other hand, buyers are frequently professional entities surrounded by professional advisors, so it is also possible that such entities take advantage of the opportunity to acquire a target at a favourable price and wait out the period of uncertainty, as they can afford to do so.

An interesting topic for further consideration would be to verify the valuations of companies acquired in markets of increased and decreased uncertainty and the actual value of transactions in the market. However, significant data gaps in this area, which are already large for transaction values and even more significant for valuations, necessitate limiting such verification to publicly listed companies, as such information is most often available for them. Moreover, information in databases regarding valuations has many things that could be improved, as their calculation method is often simplified and not necessarily accurate. In the database used, about 30% of transactions had information on transaction value, and only 3% had information on transaction multiples at which the transaction was conducted. Analysis of the database suggests that they also distort the structure of transactions, as they are mainly available for the most significant public companies, completely overlooking a portion of the market that drives activity, namely smaller entities of lesser value. For these reasons, the focus was placed on the number of transactions rather than their value. However, the issues of value and valuation are important enough to warrant focusing on this topic in the future. However, it is necessary to design a study that bypasses these problems. It would also be interesting to analyse the impact of these variables on different industries or types of investors (strategic and financial).

An intriguing side effect of this study is the difference in the impact of control variables, which vary between the analysed types of transactions. While GDP and stock market behaviour were relatively stable in their impact, CPI

was significant only for cross-border transactions and had an opposite direction of impact for sellers and buyers, which is in line with expectations.

This study is undoubtedly a good starting point for further research and articles. M&A transaction databases are rich in information, though sometimes challenging to utilise correctly. Most previous studies significantly limited the research group, focusing on a single country, public companies, or one industry. This article aimed to examine the issue of geopolitical risk across a broad group of countries. Additionally, it investigates not only the conditions of the target countries but also those of the buyers, an approach that had yet to be verified on such a scale before.

This article serves as a valuable source of knowledge for researchers in this field and practitioners in the mergers and acquisitions market, especially those dealing with the international aspect.

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