Relações Internacionais no Mundo Atual - unicuritiba

Submetido em: 27/02/2025
Aprovado em: 22/03/2025
Avaliação: Double Blind Review
ISSN: **2316-2880**

DECOUPLING GEOPOLITICS AND MARKETS: RETHINKING DRIVERS OF FINANCIAL VOLATILITY, 1999-2024

SEPARANDO GEOPOLÍTICA E MERCADOS: UMA REAVALIAÇÃO DAS CAUSAS DA VOLATILIDADE FINANCEIRA, 1999–2024

LEANDRO TERRA ADRIANO
Centro Universitário de Belo Horizonte – UniBH. E-mail: leandro.adriano@animaeducacao.com.br . ORCID: 0000-0001-6035-4271. The authors would like to thank the institutional and financial support of the Ânima Scientific Initiation Program – Pró-Ciência (Notice 2024) for the development of this research.

GIOVANNA CARMONE DORNELAS
Centro Universitário de Belo Horizonte – UniBH. E-mail: giovannacarmoneuni@gmail.com

LARISSA SOUZA OLIVEIRA
Centro Universitário de Belo Horizonte – UniBH. E-mail: souzalarissa2209@gmail.com

Abstract: This study investigates the correlation between major geopolitical events, such as wars and diplomatic turmoil, and extreme fluctuations in global stock markets from 1999 to 2024. Using an econometric approach, we analyze 250 instances of significant index depreciation to assess whether geopolitical crises serve as primary drivers of financial volatility. Contrary to the initial hypothesis, the results indicate that domestic private sector-related events exhibit the strongest correlation with sharp market declines, while international political crises show no statistically significant relationship with major stock market drops. These findings challenge conventional assumptions linking geopolitical instability. Nevertheless, geopolitics are still important drivers of financial crises in the 21st centuries for countries like Brazil, Poland, Italy, South Korea, Ukraine, Sweden and Turkey. Some insights were also taken from stressful events related to domestic politics and multinational and transnational private business, with results largely varied among the sampled countries.

Keywords: Geopolitics, Stock Markets, Index Depreciations

Resumo: *Este estudo investiga a correlação entre grandes eventos geopolíticos – como guerras e crises diplomáticas – e flutuações extremas nos mercados acionários globais entre 1999 e 2024. Utilizando uma abordagem econométrica, analisamos 250 casos de depreciação significativa de índices para avaliar se crises geopolíticas atuam como principais motores da volatilidade financeira. Contrariando a hipótese inicial, os resultados indicam que eventos relacionados ao setor privado doméstico apresentam a correlação mais forte com quedas acentuadas dos mercados, enquanto crises políticas internacionais não demonstram relação estatisticamente significativa com grandes recuos nos mercados de ações. Esses achados desafiam suposições convencionais que vinculam instabilidade geopolítica à volatilidade financeira. Ainda assim, a geopolítica continua sendo um fator relevante nas crises financeiras do século XXI em países como Brasil, Polônia, Itália, Coreia do Sul, Ucrânia, Suécia e Turquia. Algumas percepções também foram extraídas de eventos estressantes ligados à política doméstica e a empresas privadas multinacionais e transnacionais, com resultados amplamente variados entre os países da amostra.*

Palavras-chave: *Geopolítica, Mercados de Ações, Depreciações de Índices*

Submetido em: 27/02/2025
Aprovado em: 22/03/2025
Avaliação: Double Blind Review
ISSN: 2316-2880

1 INTRODUCTION

Geopolitical conflicts, diplomatic crises, and wars are traditionally assumed to be among the most powerful drivers of financial volatility. From oil shocks triggered by wars in the Middle East to currency devaluations following diplomatic sanctions, market analysts and speculators often react strongly to international political instability. This perceived correlation has led to the widespread belief that global stock markets are highly sensitive to geopolitical developments. However, is this perception substantiated by empirical evidence?

This study questions the preeminence of geopolitical events in causing major stock market depreciations. By assembling and analyzing 250 of the largest daily downturns across 40 stock indexes from 1999 to 2024, we assess the underlying causes of each crash through a systematic review of media coverage. Each event was categorized into one of four types: domestic political, domestic private, international political (geopolitical), and transnational private business-related events. The research employed linear and logistic regression models to identify patterns and test the hypothesis that geopolitical shocks are the leading source of market distress.

The results challenge conventional wisdom. Our analysis reveals that domestic private sector-related events show the strongest statistical correlation with sharp market declines. Geopolitical events, although emotionally and symbolically powerful, do not exhibit a significant correlation with extreme market movements in most cases. Nonetheless, some countries – including Brazil, Poland, Italy, South Korea, Ukraine, Sweden, and Turkey – do exhibit a stronger association with international political events, pointing to regional nuances.

By quantitatively testing widely held assumptions, this paper offers a more nuanced understanding of what drives market panic in contemporary times. The findings have implications for investors, policymakers, and scholars seeking to refine risk analysis in an era marked by both geopolitical uncertainty and complex domestic economic dynamics.[1]

[1] This research is inspired, in part and with major changes, by the preliminary surveys and preparations that have been carried out in the doctoral thesis in progress since 2022 by co-author Leandro T. Adriano,

Submetido em: 27/02/2025
Aprovado em: 22/03/2025
Avaliação: Double Blind Review
ISSN: 2316-2880

2 THE CONCEPT OF POLITICAL RISK FOR PRIVATE BUSINESS

Generally speaking, political risk is the risk government actions pose to markets, or state decisions that lead to investor losses. It involves state interference in business, representing statistical probabilities of events that alter investment behavior.

Luiz Pinto (2014) distinguishes between macro and micro political risks — macro risks affect most foreign investors, while micro risks impact specific sectors, with firms showing varied vulnerabilities. Political risk can decrease sales due to nationalist boycotts and raise R&D costs where intellectual property protection is weak.

According to Pereira (2021), the International Country Risk Guide (ICRG) evaluates political risk using 12 socio-political variables[2] and also analyzes financial (debt repayment capacity) and economic (economic structure/growth) risks. Economic risk, or market risk, affects returns through changes in national growth or structure and is systemic. Financial risk, in turn, relates to leveraging equity with borrowed funds (Pereira, 2021, p. 10).

Geopolitical risk — defined by Bossman and Gubareva (2023) as investor uncertainty caused by wars and local political violent conflicts — leads to market volatility.[3] Caldara and Iacoviello (2018) associate it with actual or potential wars and terrorist events disrupting international relations. The Ukraine War illustrates how geopolitical events cause global market disruptions. A Yale School of Management (2024) survey found over a thousand companies reducing Russian ties, contributing to currency devaluation and declining Russian stock prices. Civil wars also affect markets and bilateral trade. Foreign investment drops during conflicts, while peace talks boost

within PPGCP-UFMG, under the supervision of Prof. Dawisson Belém Lopes, PhD, to whom we are grateful.

[2] Namely: government stability; socioeconomic conditions; investment profile; internal conflict; external conflict; corruption; military in politics; religious tensions; law and order; ethnic tensions; democratic accountability and bureaucratic quality (Pereira, 2021).

[3] In the field of International Relations, the concept of geopolitics can be narrower and more focused on material assets present in the territories governed by Nation-States, and the conflicts for them. Nevertheless, in the general jargon observed in the Political Risk Analysis area, geopolitics as seem in “geopolitical risk”, is a broader concept and encompasses basically most phenomena understood as “international politics”, in its material and symbolic or communicational aspects alike, including the growing importance of transnational political action by sub-state actors, like terrorist groups, etc.

Submetido em: 27/02/2025
Aprovado em: 22/03/2025
Avaliação: Double Blind Review
ISSN: 2316-2880

market confidence (Bayer and Rupert, 2004). Neighboring states also experience changes due to refugee flows.

Despite evolving forms, wars still impact markets in the 21st century. Mignon and Saadaoui (2023) link political tension to price fluctuations in oil and gas. Maia (2023) cites Iraq and the "war on terror" as examples of market disruption and social dislocation. Wars also influence aviation, tourism, and, obviously, arms industries. The U.S. earns US$ 237 million annually in arms sales to Israel amid Gaza conflicts (Teodoro, 2023), while Gaza's economy collapsed and Israel lost investor confidence (Davies, 2024). During the Ukraine War, arms sales surpassed US$ 1 trillion by April 2024, with a 13% rise in related company values (Barini, 2024). Ukraine's grain exports fell nearly 30%, worsening the global food crisis, while Russia's economy dropped 1.2% in the first war year but rebounded 5.5% in 2023 (Léon, 2024; European Council, 2025).

Contrary to Montesquieu's *The Spirit of the Laws* (1989 [1750]), war does not halt trade, but it affects profits and exchange dynamics (Howse, 2006). The Russia-Ukraine conflict disrupted global commodity, energy, and food markets (Zaheer et al., 2024). As Schneider and Troeger (2006) argue, market responses depend on the severity of international crises, with war generally triggering negative reactions.

The correlation between global stock market declines and geopolitical events is plausible during conflicts and global economic crises, though the degree varies with each event's scale and duration (Schneider and Troeger, 2006). War, as Mendes (2014) notes, is a tool to impose will – as seen in Iraq (2003) and Ukraine (2022), where psychological impacts outweighed military power. Such conflicts triggered market drops due to heightened uncertainty, oil price spikes, food insecurity, and the energy crisis. The 2001 terrorist attacks, for instance, led the CBOE Volatility Index in the U.S. to drop by -41.26% (Investing.com, 2025), reflecting shifts in investor behavior.

Trade-related diplomatic tensions between the U.S. and China also contributed to volatility. In 2018–2019, Trump's tariff escalations impacted sectors reliant on global trade, notably tech and manufacturing. These tensions were already apparent in the 2016 U.S. elections, with both Trump and Clinton advocating for U.S. centrality and identifying China as a strategic threat (Mendonça et al., 2019). Trump's subsequent

Submetido em: 27/02/2025
Aprovado em: 22/03/2025
Avaliação: Double Blind Review
ISSN: 2316-2880

policies increased uncertainty for firms exposed to both economies through rising tariffs and protectionist trade shifts.

Still, this large collection of anecdotes is enough to consider a hypothetical preeminence of geopolitics over financial panics worldwide? This study proposes that the issue should be submitted to broader econometric tests to assert if geopolitical risks are really to be feared as the most dramatical kind of event, from the financial markets point-of-view, in a complex and multidimensional world. We work with the hypothesis that, indeed, the anecdotes point to an overall pattern.

3 METHODOLOGY

To answer the question proposed in the first sentence of the last paragraph above (and to explore some few others opportunities of inquiry), a dataframe of events[4] from May 1999 to March 2024 was assembled, registering 250 observations on the major daily depreciations on 40 important stock exchanges' indexes around the globe. For each observation, we researched on the available news the probable causes for what was probably a show of panic by speculators, making them sell their stocks to respond to fears of the related companies' future problematic performance. Each probable cause, represented by headlines, was typified to link them to the following categories, trying to grasp the origin and nature of social actors involved: A – Domestic politics; B – Domestic private businesses; C – International politics; and D – Multinational and transnational private businesses. Our aim with this typification was to control geopolitical and diplomatic events as causes for market panics, separating them from the other three generic types of political and private-economic events. Further explanations are going to be offered below. Due to the limitation of our research resources, a wider dataframe was not possible.

Financial information was gathered from the public and free platforms offered by the website Investing.com (2025). The news were taken from national and international newspapers from their websites, as well as from magazines. The timeframe was chosen due to the expansion of the internet in the 1990s, which made

[4] The dataframe in an Excel spreadsheet can be accessed here: < https://doi.org/10.7910/DVN/JZEPUE >.

Submetido em: 27/02/2025
Aprovado em: 22/03/2025
Avaliação: Double Blind Review
ISSN: 2316-2880

global data more accessible — making 1999 a practical starting point for consistent, reliable records. In fact, to find good and available journalistic publications online, before 1999, showed to be very difficult. The dataframe is filled with the following information on each observation: the date of the index drop; the reported percentage variation, the index affected, its name and ticker[5]; the related stock exchange name and its country of origin; then, we cross-referenced the observation date with reports from newspapers, magazines, and websites to determine the probable most meaningful event leading speculators to sell their stocks, causing the drop. The mentioned typology for these events was also recorded in the dataframe in each instance (see Figure 1 below).

Given the wide range of factors that can trigger stock market crashes, identifying and classifying each event was time-consuming and uncertain. Some sources were in unfamiliar languages (e.g., Polish or Hindi), and at times, multiple unrelated events appeared linked to the same drop, complicating the determination of the primary cause. Some reports only vaguely referenced the crash, limiting deeper analysis. Consequently, our typification reflects what we understood to be the primary cause for the market's preoccupation, and we needed to rely on the intellectual authority of the specialized journalism consulted to trust on the importance of events.

This study focused on index variations starting from -9% (in a day), a figure just above the -10% threshold commonly used to activate circuit breakers — mechanisms that suspend trading to prevent excessive volatility — in many stock exchanges. Finally, five bivariate regression models were proposed to explore the dataframe, in order to answer questions on the relationship between major stock market declines and both political and non-political causes:

MODEL 1 - Do the types of event influence more acute depreciation?

Variables (nomenclature in the R script): *x* = event_type; *y* = change_percent

Technique used: Bivariate linear regression

[5] Ticker is the code of an asset on the stock exchange. It is the nomenclature that represents the company on the variable income market.

Submetido em: 27/02/2025
Aprovado em: 22/03/2025
Avaliação: Double Blind Review
ISSN: 2316-2880

MODEL 2 - Do the countries in the stock market indices have an influence on sharp depreciations?

Variables (nomenclature in the R script): *x* = country; *y* = change_percent

Technique used: Bivariate linear regression

MODEL 3 - Does the progression of time (from the earliest to the latest dates) influence more acute depreciation?

Variables (nomenclature in the R script): *x* = days; *y* = change_percent

Technique used: Bivariate linear regression

MODEL 4 - Do stock market index countries influence the Event Types identified?

Variables (nomenclature in the R script): *x* = country; *y* = event_type

Technique used: Multinomial logistic regression

MODEL 5 - Does the progression of time (from older to newer dates) influence specific Event Types?

Variables (nomenclature in the R script): *x* = days; *y* = event_type

Technique used: Multinomial logistic regression

In the models that will use bivariate linear regression (1, 2 and 3), the percentage variation is affected by a compound error term (v), which includes both random errors (ε) and idiosyncratic errors (α), where there is no correlation between these errors. In it, each stock market index (i) is observed on a specific date (t) of the trading session, so we can see the equation arranged as follows:

$$y_{it} = \beta_1 A_{it} + \beta_2 B_{it} + \beta_3 C_{it} + \beta_4 D_{it} + \upsilon_{it} + \alpha \quad (1)$$

The estimators obtained will be subjected to a Hypothesis Test according to Bailey (2014), in which the working hypothesis (H_1) suggests that international/ geopolitical events (Type C) play a significant role in major market crashes and cannot be ignored as major influencers.

Submetido em: 27/02/2025
Aprovado em: 22/03/2025
Avaliação: Double Blind Review
ISSN: 2316-2880

Models 4 and 5 will require the multinominal logistic regression technique. In it, we consider a dependent variable *Y* with *K* categories (or classes), and a vector of independent variables:

$$x = (x_1, x_2, \dots, x_p)^T \quad (2)$$

Multinomial logistic regression models the probability of *Y* = *k* as:

$$P(Y = k \mid x) = \frac{\exp(\beta_k^T x)}{\Sigma_{j=1}^{K} \exp(\beta_j^T x)}, \quad para\ k = 1, 2, \dots, K-1 \quad (3)$$

To ensure model identification, β*K* = 0 is generally set, i.e. the K^{th} category is used as the reference category. So, there we have it:

$$P(Y = K \mid x) = \frac{1}{1 + \sum_{j=1}^{K-1} \exp(Tx)} \quad (4)$$

Each vector β*k* contains the coefficients associated with category *k* in relation to the reference category *K*. The coefficients are interpreted as relative log-odds:

$$log\ (\frac{P(Y = k \mid x)}{P(Y = K \mid x)}) = \beta_k^T x, \ \ para\ k = 1, \dots, K-1 \quad (5)$$

3.1 THE EMERGENCE OF A TYPOLOGICAL MATRIX

To create a typological matrix, it is essential to first understand its concept. A typology is an analytical tool in the social sciences, built through an organized system of types to help form and refine concepts. Measuring multidimensional typologies is complex, as it requires balancing qualitative and quantitative factors at appropriate levels of aggregation for effective analysis (Collier, Laporte and Seawright, 2011).

The 2x2 matrix leverages conceptual typology, which serves four goals in qualitative and quantitative research: clarifying and refining concepts, linking terms, grouping concepts in constellations, and identifying hierarchical relationships (*ibid.*). Based on these elements, the 2x2 matrix functions as a model for constructing multidimensional typologies. It is formed by cross-tabulating components, with row

Submetido em: 27/02/2025
Aprovado em: 22/03/2025
Avaliação: Double Blind Review
ISSN: 2316-2880

and column divisions defined by subcategories or proportion and scale intervals. Additional dimensions may be represented through branching diagrams or squared formats. The matrix title should reflect its analytical scope, while variables should label the vertical and horizontal axes clearly (*ibid.*). Figure 1 illustrates the matrix developed in this research:

Figure 1 - 2x2 matrix used to determine the "Event Type"

	(1) Is the event political in nature (at least predominantly) or does it stem from public sector actors?	(1) Is the event private (at least predominantly)?
(2) Is the event (at least predominantly) domestic in origin?	x_1 1 = public, 2 = domestic **Type A:** Domestic policy, politics, or internal action by or against the national state (including social movements and paramilitary conflicts). i. e. Fiscal or monetary policy changes, political crises, privatizations, internal regulation, etc.	x_2 1 = private, 2 = domestic **Type B:** Domestic private businesses (industry, commerce, finance, etc.). i. e. National financial crises, bankruptcies, technological change, corporate management changes, private corruption scandals, etc.
(2) Does the event originate (at least predominantly) from abroad? Both in an international sense and in terms of foreign policy.	x_3 1 = public, 2 = foreign/ international. **Type C:** International politics and foreign policy (diplomacy, wars, etc.). i. e. Wars, sanctions, treaty violations, transnational terrorism, diplomatic uneasiness and escalation, etc.	x_4 1 = private, 2 = foreign/ international **Type D:** Multinational and transnational private businesses (trade, investments and others). i. e. Global financial crises, transnational mergers, global tech shifts, offer and demand unbalances, etc.

Source: prepared by the authors.

Below, we explain how the matrix axes generate the proposed differentiations.

3.2 *DOMESTIC* VERSUS *INTERNATIONAL*

According to Chaudoin, Milner and Pang (2015), global politics is shaped by both domestic and international dynamics. For many scholars, national interest links these two levels, though with varying intensity. Before comparing them, it is essential

Submetido em: 27/02/2025
Aprovado em: 22/03/2025
Avaliação: Double Blind Review
ISSN: 2316-2880

to define each. Domestic policy refers to decisions by a government that directly affect its population (Cambridge, 2024). At this level, interest groups and political leaders pursue national goals and build coalitions (Putnam, 2010). International or systemic policy involves the pursuit of state power within the global system. It is driven by diplomacy and international institutions, seeking to maximize national gains and reduce external impacts (Putnam, 2010).

Though distinct, the two are interdependent. Structural or systemic conditions influence domestic policymaking (Fearon, 2011), and international relations often treat states as rational actors affected by each other's choices. Chaudoin, Milner and Pang (2015) identify five interaction types: independence (domestic and systemic levels act separately); direct effects (both levels influence the outcome); indirect effects (systemic factors shape domestic factors); moderation (one level moderates the effects of the other); and interdependence (mutual influence between actors).

3.3 PUBLIC VERSUS PRIVATE

Jarvis (2005) distinguishes the public and private sectors in international business: the public sector comprises state institutions, while the private sector includes businesses and individual investors. Both shape the global economy but have different goals and respond differently to events. The public sector serves collective interests and manages public goods under state control. The private sector, driven by profit, manages private goods and investments. Events affecting the private sector include privatizations, regulatory changes, and national financial crises. The public sector is influenced by political instability, pandemics, and social crises. Keohane and Nye (2011) argue that globalization has increased interdependence, amplifying and spreading the effects of public and private actions globally.

We now turn to the results and analysis of the econometric test based on this typology.

Submetido em: 27/02/2025
Aprovado em: 22/03/2025
Avaliação: Double Blind Review
ISSN: 2316-2880

4 RESULT ANALYSIS

We will start with the descriptive statistics made possible by the database we created and worked with. Our sample consists of 250 observations, collected between 12/05/1999 and 12/03/2024. There are 9,071 calendar days in total (which makes up our statistical "population"), almost 25 years. With a sample of 203 to 265 observations for the same population, we have statistical results with an adjusted degree of confidence of 85% and a margin of error of 5%. The frequency of events, according to the typological matrix proposed above, results in the following distribution of observations within the sample:

- D (International Private Business): 80
- A (Domestic policy): 63
- C (International politics): 59
- B (Private domestic business): 48

Depreciation on the stock market indices present in the sample generated the following data (%, day):

- Minimum: -59.02
- 1st Quartile: -12.93
- Median: -10.76
- Average: -12.26
- 3rd Quartile. -9.61
- Maximum: -9.01

The three most frequent stock exchanges in the sample, with their respective indices representing them, were:

1. Chicago Board Options Exchange (CBOE) - VIX index: 100 obs.
2. Moscow Stock Exchange - IMOEX and IRTS indices: 37 obs.
3. B3 - IBOVESPA Index: 16 obs.

The most frequent single date was 12/03/2020, with twenty-five observations in

Submetido em: 27/02/2025
Aprovado em: 22/03/2025
Avaliação: Double Blind Review
ISSN: 2316-2880

the sample: one day after the WHO considered COVID-19 a "pandemic".

We created five bivariate linear regression models[6], which we summarize below in the form of questions, followed immediately by the statistically demonstrated result:

MODEL 1 – Do the types of event influence more acute depreciation?

Yes, in the case of Type B (domestic private business), and not the others. Type B events (domestic private business) with a very high correlation coefficient (-11.5275) that is statistically significant. Type A, C and D events have a low correlation coefficient and are not statistically significant. The coefficient of the intercept (-11.5275), which represents Type B Events, indicates that when B occurs, the average change in the dependent variable (% change in stock market indices) is approximately -11.53. This value is statistically significant ($p < 0.001$), which suggests that, at the standard confidence level, we have evidence that event type B has a real and negative effect on the variation of indices. In other words: In the sample, Type B events are the most important.

MODEL 2 – Do the countries in the stock market indices have an influence on sharp depreciations?

Yes, but only Italy. The model shows that, although the country of the stock exchange in the sample can have an overall significant influence on the percentage variation of the indices, the specific effect of each country, with the exception of Italy (-15.1975), is not statistically significant. In terms of explanatory power, the model is weak, suggesting that other factors or variables may be better suited to explaining write-downs. Brazil, China, the EU, Germany, India, Poland, Russia, Spain, Turkey and the USA also have high coefficients (closer to Italy is Poland with -8.8380), but not statistically significant coefficients.

MODEL 3 – Does the progression of time (from the oldest to the newest dates) influence more acute depreciation?

No. This model did not find a statistically significant relationship between the

[6] The model execution memories in the R language (script and outputs) and the dataframe (Excel) can be accessed here: <https:/doi.org/10.7910/DVN/JZEPUE >.

Submetido em: 27/02/2025
Aprovado em: 22/03/2025
Avaliação: Double Blind Review
ISSN: 2316-2880

progression of calendar days and the percentage changes in the indices. The model also shows an extremely poor fit to the data.

MODEL 4 – Do stock market index countries influence the Event Types identified?

The multinomial logistic regression model estimates the effect of country of origin on the likelihood of observing different event types (A, C, D), with one of the categories (B, domestic private business) implicitly used as the reference.[7] The model shows good convergence and a stable solution, indicating reliable estimates. Below are the key results, which are more varied than the previous models:

Event Type A (Domestic politics)

- Austria: Strongly positive coefficient (26.91), statistically significant ($p \approx 0$), indicating a much higher likelihood of event type A relative to the baseline.
- Brazil: Strongly negative and significant effect (-37.67, $p \approx 0$), suggesting Brazil is much less likely to be associated with event type A.
- Germany and EU: Both show large and significant negative effects (-40.75 and -39.47, respectively), indicating lower odds of event A.
- India, Indonesia, and Japan: High positive and significant coefficients (all > 28, $p \approx 0$), increasing the likelihood of type A events.
- United Kingdom: Very large positive effect ($\beta = 47.17$, $p \approx 0$), again pointing to a strong association with event type A.

Event Type C (International politics)

- Brazil: Positive and statistically significant (2.55, $p < 0.05$), showing a modest increase in the likelihood of type C events.
- Germany and France: Large and significant negative effects (-31.17 and -9.25), reducing the probability of event C.

[7] Category B was automatically chosen as the reference by the statistical software because it is the most prone to higher index depreciations in the data, as shown by Model 1. This automatic selection helps provide a stable baseline for comparison across other categories. The choice of reference does not affect the overall model fit, only the interpretation of coefficients relative to this baseline.

Submetido em: 27/02/2025
Aprovado em: 22/03/2025
Avaliação: Double Blind Review
ISSN: 2316-2880

- Poland and Italy: Large and significant positive effects (36.81 and 34.31), increasing the odds of event C.
- South Korea: Modest positive and significant effect (3.65, $p < 0.01$).
- Ukraine and Sweden: Extremely large and significant positive coefficients (52.35), suggesting strong association with type C events.
- Turkey: Positive and significant (2.96, $p < 0.05$), indicating a mild increase in probability for type C.

Event Type D (Transnational and multinational private business)

- Brazil: Strongly negative and highly significant (-13.68, $p \approx 0$), showing a lower likelihood of event D.
- France: Very large positive and significant coefficient (40.38), suggesting a strong association with event D.
- Germany: Large and significant negative effect (-49.36).
- India, Indonesia, Japan: All exhibit strong and statistically significant positive associations (> 21.0, $p \approx 0$).
- Portugal, Philippines, Russia: Strong and significant negative effects (e.g., Russia -14.75, $p \approx 0$).
- United Kingdom: Negative and significant (-22.52), reducing the probability of event D.
- USA: Also, significant and negative (-15.23), indicating lower odds for type D events.

MODEL 5 – Does the progression of time (from older to newer dates) influence specific Event Types?

Yes, but not much (the effect is there, but small). Over time, the following Event Types have become slightly more frequent, consecutively:

1 - A, Domestic policy

2 - C, International politics

3 - D, International private business

All are statistically significant. The most likely type of event is B (Domestic private

Submetido em: 27/02/2025
Aprovado em: 22/03/2025
Avaliação: Double Blind Review
ISSN: 2316-2880

business) (which is also the intercept - and that's why it was chosen).

In short, we cannot be sure that major depreciations are caused by more serious international political events such as wars. The results are more complex and dispersed. The reader is invited to check our statistical output presented on Tables 1, 2 and 3:

Table 1 – Regression Output for Models 1 to 3 (dependent variable: *Change_Percent*)

Model	Variable	Coefficient (vs. *Type B*)	Std. Error	t-value	p-value	Sig.[8]
1	Intercept	-11.528	0.726	-15.873	<0.001	***
	Event_TypeA	-0.101	0.964	-0.105	0.917	
	Event_TypeC	-0.573	0.978	-0.586	0.559	
	Event_TypeD	-1.790	0.919	-1.949	0.053	.
	Adjusted R^2					0.061
	Residual Std. Error					5.032
2	Intercept	-9.700	4.9015	-1.979	0.049	*.
	Italy	-15.198	5.4800	-2.773	0.006	**
	Poland	-8.838	5.369	-1.646	0.101	.
	Adjusted R^2					0.064
	Residual Std. Error					4.901
3	Intercept	-12.000	0.739	-16.255	<0.001	***
	Days	-0.00005	0.00012	-0.387	0.699	
	Adjusted R^2					-0.003
	Residual Std. Error					5.066

Source: the authors.

[8] Sig.: *** = p < 0,001; ** = p < 0,01; * = p < 0,05; “blank” = p < 0,1.

Submetido em: 27/02/2025
Aprovado em: 22/03/2025
Avaliação: Double Blind Review
ISSN: 2316-2880

Table 2 – Model 4: Multinomial Logistic Regression of Event Type on Country[9]

Country	Event	Coef.	p-value
Austria	A	26.9108	0.000
	C	32.4484	0.000
	D	13.7336	0.000
Brazil	A	-37.6662	NaN
	C	2.5503	0.020
	D	-13.6795	0.000
EU	A	-39.4719	NaN
	C	3.6487	0.006
	D	-46.7347	0.000
France	A	-14.5054	0.000
	C	-9.2455	0.000
	D	40.3833	0.000
Germany	A	-40.7471	0.000
	C	-31.1692	0.000
	D	-49.3568	0.000
India	A	35.3009	0.000
	C	-13.7686	0.000
	D	21.0251	0.000
Indonesia	A	34.5754	0.000
	C	-15.4400	0.000
	D	22.0913	0.000
Italy	A	28.7761	0.000
	C	34.3136	0.000
	D	16.2920	0.000
Japan	A	34.3718	0.000
	C	-12.9866	0.000
	D	22.5809	0.000
Philippines	A	-1.8889	0.146
	C	-31.1606	0.000

[9] In the full dataframe, some standard errors and p-values are reported as NaN or 0, indicating either perfect separation or numerical issues, possibly due to sparse data or multicollinearity. These results should be interpreted with caution.

Submetido em: 27/02/2025
Aprovado em: 22/03/2025
Avaliação: Double Blind Review
ISSN: 2316-2880

Country	Event	Coef.	p-value
Poland	D	-47.1000	0.000
	A	30.5771	0.000
	C	36.8078	0.000
Portugal	D	18.0931	0.000
	A	43.6359	0.000
	C	-9.0853	0.000
Russia	D	-19.6972	0.000
	A	-2.3586	0.000
	C	4.1345	0.000
South Korea	D	-14.7473	0.000
	A	-38.8009	0.000
	C	3.6493	0.006
Sweden	D	-14.3724	0.000
	A	-14.8924	NaN
	C	52.3463	0.000
Turkey	D	-20.9236	0.000
	A	-47.9144	0.000
	C	2.9556	0.010
Ukraine	D	-15.0659	0.000
	A	-14.8924	NaN
	C	52.3463	0.000
United Kingdom	D	-20.9236	0.000
	A	47.1701	0.000
	C	-8.1993	0.000
USA	D	-22.5199	0.000
	A	-1.5913	0.000
	C	3.8566	0.000
	D	-15.2328	0.000

Source: the authors.

Submetido em: 27/02/2025
Aprovado em: 22/03/2025
Avaliação: Double Blind Review
ISSN: **2316-2880**

Table 3 – Model 5: Multinomial Logistic Regression Estimates for the Effect of *DAYS* on *EVENT_TYPE*

Category	Coefficient (vs. Event_TypeB)	SE	z-value	p-value	Odds Ratio
A – Intercept	-1.7196	5.744e-09	-299353306	< 0.001	0.1791
A – DAYS	0.000382	3.684e-05	10.3794	< 0.001	1.0004
C – Intercept	-1.5052	5.945e-09	-253205658	< 0.001	0.2220
C – DAYS	0.000338	3.735e-05	9.0448	< 0.001	1.0003
D – Intercept	-0.2591	6.997e-09	-37037741	< 0.001	0.7717
D – DAYS	0.000171	3.690e-05	4.6275	< 0.001	1.0002

Source: the authors.

Without prejudice to the average-related tests above, some “brutal” drops captured by the dataframe deserve to be mentioned. Among Type B depreciations, the two most severe were -25.91% (June 15, 2006) in the CBOE Volatility Index (VIX) due to the U.S. PPI report (Vieira, 2006), and -19.71% (January 12, 2008) in the Hong Kong 50 Index due to reduced industrial activity (Selko, 2008). In category D, the most notable drops were -24.68% (VIX, October 20, 2008), tied to Lehman Brothers’ collapse and its global credit shock (Notícias Agrícolas, 2008), and -20.01% (VIX, March 18, 2008), after Steinbrück’s call for global financial cooperation (DW, 2008).

In Type A, key cases include a -23.72% drop in China’s FTSE A50 Index (January 3, 2017) after new parity rules by its central bank (Xinhua, 2017), and a -23.37% fall in the VIX (March 13, 2020), following Trump’s COVID-19 emergency declaration (Facher, 2020). Other relevant events include Barcelona’s fiscal instability in 2007 (VIX, -22.48%) (Mars, 2007) and the -18.81% (VIX) fall in January 2021, triggered by the U.S. GDP’s -3.5% contraction during the pandemic (G1, 2021).

In Type C, the biggest drop was -59.02% in the Italy Stock Market Index (IT40, August 15, 2003) after Eurostat’s recession report (Folha de S. Paulo, 2003). Other major events include ethe -38.63% fall in the WIG Ukraine Index and -38.30% in the RTSI (both February 24, 2022) due to Russia’s invasion of Ukraine (Sommer and Granville, 2022; Ferrari, 2022). The Moscow Stock Exchange recorded a -33.28% drop

Submetido em: 27/02/2025
Aprovado em: 22/03/2025
Avaliação: Double Blind Review
ISSN: 2316-2880

on February 24, 2024, also linked to inflation and sanctions from the ongoing conflict (Ferrari, 2022).

Finally, we rewind our opening question: "(could we) consider a hypothetical preeminence of geopolitics over financial panics worldwide? Thinking in the terms of a hypothesis test (Bailey, 2014) derived from our dataframe and the tests made on it, geopolitical factors are not the most preeminent driver of the major busts in the last 25 years. In its place, this is Type B events (domestic private business), showed stronger identification. Events classified as Type B show a very strong and statistically significant negative correlation with index growth (correlation coefficient = -11.5275). In contrast, the correlation coefficient for Type C (geopolitics/ international politics) is weak and lacks statistical significance.

5 Concluding remarks

This study set out to examine whether geopolitical events are truly the leading cause of financial market shocks. Contrary to widespread assumptions, our analysis of 250 major stock index depreciations across 40 markets between 1999 and 2024 reveals that domestic private sector disruptions are more strongly correlated with sharp declines than wars or diplomatic crises. Geopolitical events, while often cited in public discourse, showed limited statistical significance – except in certain country-specific contexts.

Nonetheless, these results must be interpreted with caution. The research faced limitations, including a relatively small sample in statistical terms, language barriers in data collection, and challenges in isolating single causes for complex market behaviors. The typology used also simplified multidimensional events into discrete categories, which, while analytically necessary, may obscure overlaps between public and private, domestic and international dynamics. Further research is needed to refine the typological approach and provide more reliable results in a longer dataframe.

References:

Bailey, M. A. **Real Stats: using Econometrics for Political Science and Public Policy**. New York: Oxford University Press, 2014.

Submetido em: 27/02/2025
Aprovado em: 22/03/2025
Avaliação: Double Blind Review
ISSN: 2316-2880

Barini, Filipe. "*Economia de Guerra: como empresas dos EUA lucram bilhões com o conflito na faixa de Gaza*". **O Globo**. 14 abr. 2024. Available at: https://oglobo.globo.com/mundo/noticia/2024/04/14/economia-de-guerra-como-empresas-dos-eua-lucram-bilhoes-com-o-conflito-na-faixa-de-gaza.ghtml >. Accessed on: Oct. 30 2024.

Bayer, Reşat; Rupert, Matthew C. "*Effects of Civil Wars on International Trade, 1950-92*". **Journal of Peace Research**, v. 41, n. 6, 2004, pp. 669-713. Available at: < https://www.jstor.org/stable/4149713?read-now=1&seq=9#page_scan_tab_contents >. Accessed on: Oct. 27 2024.

Bossman, A; Gubareva, M. "*Asymmetric impacts of geopolitical risk on stock markets: A comparative analysis of the E7 and G7 equities during the Russian-Ukrainian conflict*"**. Heliyon**, v. 9, i. 2, e13626, 2023, pp. 1-15. Available at: < https://www.sciencedirect.com/science/article/pii/S2405844023008332 > Acessed on: May 30 2025.

Caldara, Dario; Iacoviello, Matteo. "*Measuring Geopolitical Risk*"**. International Finance Discussion Papers** 1222 (Board of Governors of the Federal Reserve System), 2018, pp. 1-66. Available at: < https://doi.org/10.17016/IFDP.2018.1222 >. Accessed on: 27 Oct. 2024.

Cambridge. **"***Domestic Policy*". **Cambridge English Dictionary**. Available at: < https://dictionary.cambridge.org/us/dictionary/english/domestic-policy#google_vignette >. Accessed on: Jun 27, 2024.

Chaudoin, Stephen; Milner, Helen V.; Pang, Xun. "*International Systems and Domestic Politics: Linking Complex Interactions with Empirical Models in International Relations*". **International Organization**, v. 69, i. 2, 2015, pp. 275-309. Available at: < https://doi.org/10.1017/S0020818314000356 >. Accessed on: May 30 2025.

Collier, David; Laporte, Jody; Seawright, Jason. "*Putting Typologies to Work: Concept Formation, Measurement, and Analytic Rigor*". **Political Research Quarterly**, v. 65, n. 1, 2012, pp. 217-230. Available on: < https://www.jstor.org/stable/23209571 >. Accessed on: May 30 2025.

Davies, Wyre. "*'Precisamos de um milagre': o impacto da guerra sobre as economias de Israel e de Gaza*". **BBC News Brasil**, Apr. 24 2024. Available at: < https://www.bbc.com/portuguese/articles/c9rz9rlpl7xo >. Accessed on: Oct. 30, 2024.

DW. "*Finanças*". **DW**, Mar. 18 2008. Available at: < https://www.dw.com/pt-br/crise-financeira-norte-americana-repercute-na-europa/a-3200766 >. Accessed on: Dec. 02, 2024.

European Council. "*How the Russian invasion of Ukraine has further aggravated the global food crisis*". **Explainers**, Jan. 31 2025. Available at: < https://www.consilium.europa.eu/en/infographics/how-the-russian-invasion-of-ukraine-has-further-aggravated-the-global-food-crisis/ >. Accessed on: May 30 2025.

Submetido em: 27/02/2025
Aprovado em: 22/03/2025
Avaliação: Double Blind Review
ISSN: 2316-2880

Folha de S. Paulo. "*EUROPA ESTAGNADA*", **Folha de São Paulo**, Aug. 15, 2003. Available at: < https://www1.folha.uol.com.br/fsp/dinheiro/fi1508200316.htm >. Accessed on Nov. 20 2024.

Facher, Lev. **"***President Trump just declared the coronavirus pandemic a national emergency. Here's what that means*". **STAT**, Mar. 13 2020. Available at: https://www.statnews.com/2020/03/13/national-emergency-coronavirus/ . Accessed on: Nov. 29, 2024.

Fearon, James. "*Domestic Politics, Foreign Policy, and Theories of International Relations*". **Annual Review of Political Science**, 1998, pp. 289-313. Available at: < https://doi.org/10.1146/annurev.polisci.1.1.289 >. Accessed on: May 31 2025.

Ferrari, Hamilton**.** "*100 dias de guerra: inflação russa dispara e rublo valoriza*". **Poder 360**, Jun. 4 2022. Available at: < https://www.poder360.com.br/economia/100-dias-de-guerra-inflacao-russa-dispara-e-rublo-valoriza/ >. Accessed on: May 31 2025.

G1**. "***PIB dos EUA fecha 2020 com queda de 3,5%*". **G1**, Jan. 28, 2021. Available at: < https://g1.globo.com/economia/noticia/2021/01/28/pib-dos-eua-fecha-2020-com-queda-de-35 percent.ghtml >. Accessed on Nov. 28, 2024.

Howse, Robert. "*Montesquieu on Commerce, Conquest, War and Peace*". **Brooklyn Journal of International Law**, v. 31, i. 3, 2006. Available at: < https://brooklynworks.brooklaw.edu/cgi/viewcontent.cgi?article=1264&context=bjil >. Accessed on: May 31 2025.

Investing.com. **Major World Market Indices**. Available at: < https://www.investing.com/indices/major-indices >. Accessed on: May 31 2025.

Jarvis, Darryl S. L. "*Multinational enterprises, international relations and international business: reconstituting intellectual boundaries for the new millennium*". **Australian Journal of International Affairs**, v. 59, n. 2, 2005, pp. 201-223. Available at: < https://doi.org/10.1080/10357710500134459 >. Accessed on: May 31 2025.

Keohane, Robert O; Nye, Joseph. **Power and Interdependence**. 4th edition. New York: Pearson, 2011. 368 pp.

León, Lucas Pordeus. "*Ucrânia: guerra completa 2 anos com fracasso de sanções contra Rússia*". **Agência Brasil**, Feb. 02, 2024. Available at: < https://agenciabrasil.ebc.com.br/internacional/noticia/2024-02/ucrania-guerra-completa-2-anos-com-fracasso-de-sancoes-contra-russia >. Accessed on: May 31 2025.

Maia, João J. M. "*Crises do capitalismo global no século XXI: tópicos para uma abordagem estrutural e holística"*. **Cidades, Comunidades e Territórios**. Spring Special Issue, 2023, pp. Available at: < https://doi.org/10.15847/cct.27670 >. Accessed on: May 31 2025.

Mars, A. "*La Cámara cree 'muy tímida' la rebaja fiscal de las herencias*". **El País**, Nov.

Submetido em: 27/02/2025
Aprovado em: 22/03/2025
Avaliação: Double Blind Review
ISSN: 2316-2880

13 2007. Available at: < https://elpais.com/diario/2007/11/14/catalunya/1195006043_850215.html >. Accessed on: December 1, 2024.

Mendes, Flávio P. "*Guerra, Guerrilha e Terrorismo: uma Proposta de Separação Analítica a partir da Teoria da Guerra de Clausewitz*". **Carta Internacional**, v. 9, n. 2, 2014, pp. 96-108. Available at: < https://cartainternacional.abri.org.br/Carta/article/view/70 >. Accessed on: 31 May 2025.

Mendonça, F; Thomaz, L; Lima, T; Vigevani, T. *"'AMERICA FIRST BUT NOT ALONE': UMA (NEM TÃO) NOVA POLÍTICA COMERCIAL DOS ESTADOS UNIDOS COM DONALD TRUMP"*. **Revista Tempo do Mundo**, v. 5, n. 1, 2019, pp. 107-142. Available: < https://doi.org/10.38116/rtmv5n1art4 >. Accessed on: May 31 2025.

Mignon, V; Saadaoui, J. "*How Do Political Tensions and Geopolitical Risks Impact Oil Prices*". **Energy Economics**, v. 129, a. 107219, 2024, . Available at: < https://doi.org/10.1016/j.eneco.2023.107219 >. Accessed on: May 31 2025.

Montesquieu. **Montesquieu: The Spirit of the Laws (Cambridge Texts in the History of Political Thought)**. Edited by Anne M. Cohler, Basia C. Miller and Harold S. Stone. Cambridge: Cambridge University Press, 1989 [1750]. 808 pp.]

Notícias Agrícolas. "*Veja os países e instituições financeiras afetados diretamente pela crise dos EUA*". **Política e Economia**, Oct. 10 2008. Available at: < https://www.noticiasagricolas.com.br/noticias/politica-economia/36148-veja-os-paises-e-instituicoes-financeiras-afetados-diretamente-pela-crise-dos-eua.html >. Accessed on: May 31 2025.

Yale School of Management. "*Over 1,000 Companies Have Curtailed Operations in Russia – But Some Remain*". **Chief Executive Leadership Institute**, Jan. 28 2024. . Available at: < https://som.yale.edu/story/2022/over-1000-companies-have-curtailed-operations-russia-some-remain >. Accessed on: May 31 2025.

Pereira, M. "*Implicações do Risco Político no Investimento Direto Estrangeiro Captado: comparação entre países desenvolvidos e em desenvolvimento*". Thesis (Master's), Instituto Superior de Contabilidade de Administração do Porto, Politécnico do Porto, 2021. 83 pp.

Pinto, Luiz F. S. "*Risco Político e indústria do petróleo: as companhias nacionais de petróleo como variáveis*". Dissertation (Doctorate), **Universidade Federal do Rio de Janeiro**, Instituto de Economia, Programa de Pós-Graduação em Economia Política Internacional, 2014. 185 pp. Available at: < https://www.ie.ufrj.br/images/IE/PEPI/teses/2014/Luiz%20Fernando%20Sann%C3%A1%20Pinto.pdf >. Accessed on: May 31 2025.

Putnam, Robert D. "*Diplomacy and Domestic Politics: The Logic of Two-Level Games*". **International Organization**, v. 42, n. 3, 1988, pp. 427-460. Available: < https://www.jstor.org/stable/2706785 >. Accessed on: May 31 2025.

Submetido em: 27/02/2025
Aprovado em: 22/03/2025
Avaliação: Double Blind Review
ISSN: **2316-2880**

Schneider, G; Tröger, V. "*War and the World Economy: STOCK MARKET REACTIONS TO INTERNATIONAL CONFLICTS*". **Journal of Conflict Resolution**, v. 50, n. 5, 2006, pp. 623-645. Available at: < https://www.jstor.org/stable/27638514 >. Accessed on: May 31 2025.

Selko, A. **"***Manufacturing Index at Lowest Point in 26 Years*". **Industry Week**, Dec. 01 2008. Available at: < https://www.industryweek.com/the-economy/article/21949063/manufacturing-index-at-lowest-point-in-26-years >. Accessed on: May 31 2025.

Sommer, J; Granville, K. "*Stocks and Energy Markets Whipsaw After Russian Attack on Ukraine*". **The New York Times**, Feb. 24 2022. Available at: < https://www.nytimes.com/2022/02/24/business/economy/stock-market-today.html >.. Accessed on: Nov. 22 2024.

Teodoro, Plinio. "*Senhores da guerra: as empresas que lucram com o conflito entre Israel e Palestina*". **Revista Fórum**, Oct. 10 2023. Available at: < https://revistaforum.com.br/economia/2023/10/19/senhores-da-guerra-as-empresas-que-lucram-com-conflito-entre-israel-palestina-146151.html >. Accessed on: Oct. 30 2024.

Vieira, F. **"***Bolsa segue exterior e cai 2,1%; perda no ano é de 1,8%*". **Folha de São Paulo**, Jun. 14 2006. Available at: < https://feeds.folha.uol.com.br/fsp/dinheiro/fi1406200614.htm >. Accessed on: May 31 2025.

Xinhua. **"***China's new rules on cash transactions not capital control: expert*". **China Daily**, Jan. 03 2017. Available at: < https://www.chinadaily.com.cn/business/2017-01/03/content_27841540.htm >. Accessed on: Dec. 01 2024.

Zaheer, Kashif, Aslam, Faheem; Mohmand, Yasir T.; Ferreira, Paulo. "*On the Dynamic Changes in the Global Stock Markets' Network during the Russia-Ukraine War*". Economies v. 12, n. 41, 2024, pp. 1-28. Available at: < https://doi.org/10.3390/economies12020041 >. Accessed on: 27 Oct. 2024.