

Article

Political Regimes, Stock Liquidity, and Information Asymmetry in a Global Context

Jang-Chul Kim , Qing Su and Teresa Elliott

Department of Accounting, Economics, and Finance, Haile College of Business, Northern Kentucky University, Highland Heights, KY 41099, USA; suq1@nku.edu (Q.S.); elliottte@nku.edu (T.E.)

* Correspondence: kimj1@nku.edu

Abstract: This paper investigates the relationship between a country's political governance and financial market dynamics, with a specific focus on non-U.S. stocks listed on the NYSE. Utilizing an ordinary least squares (OLS) regression model with heteroscedasticity-robust (Huber–White) estimators, we analyze the impact of political governance on stock liquidity and information asymmetry. Our analysis shows that stocks from democracies demonstrate improved liquidity and decreased information asymmetry, contrasting with stocks from autocracies that exhibit the opposite trend. Furthermore, shifts in political regimes dynamically impact stock liquidity and information transparency. These findings offer essential insights for investors, policymakers, and regulators, contributing to informed decision making and the formulation of policies that promote market health and transparency. Additionally, these findings underscore the importance of promoting political stability and transparent governance to foster healthy and efficient financial markets.

Keywords: democracy; autocracy; polity; spreads; liquidity; price impact; probability of informed trading

JEL Classification: G14; G15; H11



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1. Introduction

In the ever-evolving global economy, the political regime of a country stands as a dynamic force, influencing economic performance far beyond its borders. Governance style, whether it leans toward democracy or autocracy, does more than shape internal policy environments; its influence extends to the perception and performance of stocks cross-listed on foreign exchanges (Duong et al. 2022; Delis et al. 2020; Lehtonen and Heimonen 2015; Eleswarapu and Venkataraman 2006; Lesmond 2005). Liquidity, a crucial indicator of a stock's marketability and transactional ease, is affected by many factors. Could the governance style of a stock's country of origin be among these determinants? This research aims to investigate this potential relationship, exploring whether and how the nuances of political governance in home countries may influence the trading dynamics of their stocks on the New York Stock Exchange (NYSE).

While there is a lack of theoretical frameworks directly linking political regime types to stock market liquidity, the influence of democracy in shaping economic outcomes has long been debated, offering a backdrop for our exploration. Democracy, often hailed for fostering political equality and informed governance, is thought to create conditions conducive to economic prosperity, such as political stability, the protection of property rights, and encouraging private investment (Basu et al. 2020; Glaeser et al. 2004; Przeworski and Limongi 1993). However, democracy also faces criticism for potentially hindering capital formation and long-term economic growth (Acemoglu and Robinson 2006). Conversely, autocracies, marked by concentrated power and limited, often unequal, political freedoms, are commonly associated with economic challenges like antagonistic growth and conflicts arising from entrenched vested interests (Gwatipedza and Janus 2019; Cramer 2002).

Such characteristics of autocratic regimes suggest potential adverse effects on economic indicators, including, possibly, the liquidity of stocks from these countries.

Our study investigates these contrasting governance styles and their potential influence on the liquidity of non-U.S. stocks on the NYSE, with three interrelated questions. First, we examine the influence of a country's governance quality, as quantified by indices such as the democracy index (DI), autocracy index (AI), and polity index (PI), on the liquidity of its stock market. This inquiry seeks to understand the extent to which the nature of a political regime affects the ease with which stocks are traded, gauged through liquidity measures like quoted and effective spreads.

We also investigate the relationship between a country's governance quality and the prevalence of information-based trading of its stocks on the NYSE. This question aims to discern how varying levels of democracy or autocracy might influence trading activities, specifically looking at the price impact of trades and the probability of informed trading. Such an analysis is crucial for shedding light on information asymmetry and market fairness issues. Lastly, our research addresses the dynamic nature of these interactions by investigating how changes in a country's governance quality over time can affect market behavior. This question intends to offer insights into the fluidity and responsiveness of financial markets to shifts in political landscapes.

To peel back layers of the complex relationship between political governance and financial market dynamics, we focus on non-U.S. stocks traded on the NYSE. The NYSE is an ideal choice due to it offering a diverse array of international stocks and its global prominence as well as influence in the financial world. This selection allows us to investigate the impact of political regimes on stock liquidity within a consistent trading environment, thus avoiding the complexities associated with multiple foreign exchanges' varying costs, rules, and structures. The NYSE's standardized market operations make it an optimal platform for comprehensively and cohesively addressing our inquiries.

Our empirical analysis reveals insights into the interplay between political regimes and financial market dynamics. Our regression results indicate that stocks from countries with higher democracy index (DI) scores exhibit narrower spreads, indicating better liquidity. Conversely, higher autocracy index (AI) scores are associated with wider spreads, suggesting poorer liquidity. The polity index (PI) findings align with those of the DI, reinforcing the positive liquidity implications of democratic governance. Echoing similar patterns in information asymmetry, stocks from countries with higher democracy scores show lower price impacts and a reduced probability of informed trading, suggesting diminished information asymmetry, while stocks from autocratic nations display higher price impacts and PIN, indicating greater information asymmetry.

We also apply a first-difference approach to capture the dynamic effects of changes in political regimes. Our results confirm that positive shifts towards democracy lead to improved stock liquidity and reduced information asymmetry. Conversely, shifts towards autocracy result in decreased liquidity and exacerbated information asymmetry. These findings collectively underscore the significant influence of a country's political governance style on the liquidity and information transparency of its stocks listed on the NYSE. The consistent patterns across different governance metrics and dynamic analysis over time provide robust evidence of the connection between political regimes and key financial indicators measuring stock liquidity and information-based trading.

Among the studies linking democracy (Duong et al. 2022; Delis et al. 2020; Lehkonen and Heimonen 2015) and institutional quality (Eleswarapu and Venkataraman 2006) to stock market outcomes, Lesmond (2005) is the most relevant to our research, despite its focus on liquidity in emerging markets. Beyond evaluating the effectiveness of price-based versus volume-based liquidity measures due to the data restrictions across different exchanges, Lesmond found that stocks suffer higher market liquidity costs if they are from emerging markets with higher political risks and poor legal institutions.

This study diverges from Lesmond (2005) by empirically establishing a direct link between a country's political governance style and the liquidity of its stocks in global

financial markets. Unlike Lesmond, who used low-frequency liquidity measures, our study employs high-frequency transaction data, providing a more granular perspective on market liquidity. Using a larger pool of countries, our study provides new evidence on how variations in democracy and autocracy can influence stock market liquidity, thereby offering insights into the broader implications of political stability and governance quality.

Second, our application of the first-difference approach adds a dynamic dimension to our understanding by revealing how changes in political regimes over time can impact financial markets. This approach allows us to capture the evolving effects of political shifts, providing a deeper understanding of the long-term financial repercussions of changes in governance.

Additionally, this study contributes to the discussion on market transparency and investor confidence by examining the influence of political governance on information asymmetry. Our research enriches the current understanding of market efficiency under varying political conditions by exploring the less-studied connection between political regimes and the probability of informed trading as well as price impacts. Finally, this study goes beyond traditional boundaries between political science and financial economics, offering practical insights relevant to investors, policymakers, and market regulators globally. Highlighting the interdependencies between political regimes and market dynamics, it paves the way for future research efforts to further comprehend the intricate relationships between political governance and global financial markets.

2. Literature Review and Hypothesis Development

As discussed above, the political regime of a country has extensive ramifications, including impacting the economic performance of specific countries, having a ripple effect on the economic performance of all countries engaged in international trade, and, for our purposes, having a ripple effect on countries with stocks cross-listed on others' stock exchanges, such as the NYSE.

For the purposes of our research and our literature review, we examine political regimes using the binary of democratic versus autocratic regimes. Here, we consider democracy as a political system that reflects the will of its citizens through representative government. As discussed above, autocracies, on the other hand, result in power concentrated in a few, and, thus, the citizens of an autocracy do not have much, if any, say in what their government decides. Because these political regimes can affect business transactions, we consider if the political regime of a country impacts how the stocks of that country perform on the U.S. stock exchange.

Our question is relevant because of the wide-ranging research into the effects of democracy on economic development and growth. The connection between democracy and economic factors, such as political stability, has been examined by [Nur-Tegin and Czap \(2012\)](#), [Elbahnasawy \(2020\)](#), [Feng \(1997\)](#), [Aisen and Veiga \(2006\)](#), and [Jong-A-Pin \(2009\)](#). Additionally, the protection of property rights ([Wang et al. 2021](#)) and human as well as physical capital development ([Dinga 2023](#)), which are found in democracies, have been found to contribute to economic growth ([Glaeser et al. 2004](#); [Barro 1996](#)). This research suggests that a political regime, specifically democracy, fosters economic development and growth, which leads to business profits that, in turn, impact the performance of a company's stock.

[Delis et al. \(2020\)](#), [Duong et al. \(2022\)](#), and [Lehkonen and Heimonen \(2015\)](#) also examined the impact of political regimes on corporate outcomes. [Delis et al. \(2020\)](#), for example, examined the impact of democratization on loan spread. Using global syndicated loan data from 80 countries between 1984 and 2014, they found that democratization has a sizable negative impact on loan spreads while autocracy increases spread more substantially. They highlight that democratization contributes to economic development through the mechanism of the lower cost of loans. [Delis et al. \(2020\)](#) also showed the benefit of democratization on banks as informed capital providers. Thus, political regime matters, with democracies seeing more positive impacts due to their political regime. Additionally,

[Duong et al. \(2022\)](#) showed that democracy also benefits less-informed capital providers to IPO firms. Using a global sample of observations from 45 countries from 1990 to 2020, and the measure of democracy from the Polity V Project, they found a negative association between democracy and IPO underpricing, finding that IPO underpricing is more severe for firms with higher agency problems and in countries with a lower level of democracy. They also illuminated the role of reduced information asymmetry, through proxies like media censorship, press censorship, and earnings opacity, as the mechanism through which democracy influences IPO underpricing. This further supports research showing that political regime has a significant impact, by finding that the transparency we see in democracies, versus autocracies, results in more efficient and fair capital markets.

[Lehkonen and Heimonen \(2015\)](#) focused, however, on countries with semi-democracies, instead of democracies or autocracies. Semi-democracies, unlike democracies, have not established strong institutions, and are thus more vulnerable to political instability. Using a panel dataset for 49 emerging markets from 2000 to 2012, they examined the impact of democracy and its interaction with political risk on stock returns, and found that beyond a threshold level of democracy, political risk begins to decrease, which leads to higher stock returns.

Finally, the connection between democracy and the quality of legal and political institutions has also been researched in the literature. [Eleswarapu and Venkataraman \(2006\)](#) examined equity trading costs for American Depositary Receipts (ADRs) listed on the NYSE. This study investigates how macro-level institutions, including judicial efficiency, accounting standards, and political stability, which are all found in democracies, influence trading costs proxied by effective spread and price impact. This study concludes that improvements in these institutions can reduce trading costs in financial markets. While the choice of political regime is not measured in this study, the outcomes they present illuminate the institutional environment, and this institutional environment is positively impacted by the choice of political regime; in this case, democracy.

Our hypothesis is further built upon theories of market structure and empirical evidence in economics and finance. Liquidity, a crucial topic in the market microstructure literature, pertains to the ease of trading securities without substantial price movements. Theories from [Roll \(1984\)](#), [Stoll \(1989\)](#), and [Huang and Stoll \(1997\)](#) reveal a clear negative connection between stock liquidity and informational asymmetry, with the latter being unavoidable in financial markets, but being exacerbated when international stocks are involved. U.S. investors thus face a tradeoff when investing in non-U.S. stocks, as the potential gains from international market growth come with elevated risks due to increased information asymmetry and uncertainty. This is at least partly due to the fact that monitoring these firms' capital usage and verifying information are costlier and more challenging. Also, in some countries, weak enforcement mechanisms can lead to unethical practices, insider trading, and cronyism ([Lavezzolo 2020](#)).

Additionally, political regimes influence stock liquidity by affecting information asymmetry and macroeconomic uncertainty. In democratic societies, the rule of law and a free press reduce information barriers, thus narrowing the gap between insiders and external investors ([Kalenborn and Lessmann 2013](#); [Duong et al. 2021](#)). Conversely, autocratic regimes often suppress unfavorable information and lack effective oversight mechanisms, thus widening the information gap and allowing unethical practices ([Geddes et al. 2014](#)). Additionally, the concentrated power seen in autocracies exacerbates information asymmetry and reduces market transparency ([Kim et al. 2014](#)).

Furthermore, democratic systems also improve investor confidence through political stability and peaceful transitions of power, thereby reducing macroeconomic uncertainty and lowering overall risk perception ([Blau 2017](#)). In contrast, autocratic regimes are prone to higher levels of corruption, which lead to heightened political risks, and potential capital flight ([Gwatipedza and Janus 2019](#); [Basu et al. 2020](#); [Nur-Tegin and Czap 2012](#)). The increased macroeconomic uncertainty thus reduces the overall demand for the stocks from these countries.

Based on the above reasoning, we form our hypothesis that stocks from the countries with higher scores in the DI and PI exhibit higher liquidity and reduced information-based trading.

3. Data and Methodology

We obtained the democracy, autocracy, and polity indices from the Polity Project's comprehensive dataset called POLITY. This dataset provides a valuable resource for studying and comparing political systems, tracking regime changes, and exploring factors influencing transitions among different types of regimes. According to the Center for Systemic Peace, the publisher of the dataset, the democracy index value reflects the extent of democratic features in a country's governance, such as the presence of competitive elections and political freedoms. The autocracy index value reflects the extent of autocratic features, such as the concentration of power, lack of political competition, and suppression of political freedoms. Countries with an autocracy score of 0 exhibit no significant autocratic characteristics. Citizens in those countries can choose their leaders through free and fair elections, and enjoy freedom of expression, association, and the press. They also have legal frameworks that ensure checks and balances, as well as the accountability of leaders under the law. The polity index is the difference between the democracy and autocracy scores, providing a spectrum from full autocracy (−10) to full democracy (+10).

We obtained information from the NYSE's non-U.S. companies database to identify non-U.S. stocks listed on the NYSE. We then merged these data with POLITY data and the NYSE's Trade and Quote (TAQ) database to calculate liquidity measures based on a sample of approximately 420 stocks with 6568 stock-year observations from 43 different countries. Standard data filters from the microstructure literature were applied to ensure data accuracy (see [Huang and Stoll \(1996\)](#) and [Chung et al. \(2010\)](#)). The number of non-U.S. stocks and countries varied each year, but we used data from 2004 to 2019.¹

Table 1 presents the democracy, autocracy, and polity indices for various countries. Notable examples include Australia and Sweden, scoring perfect 10s across all indices, reflecting strong democratic systems. In contrast, China exhibits significant autocratic traits with a polity index score of −7. The United Kingdom demonstrates a high adherence to democratic principles, with a score of 9.54 on the democracy index. Russia and Turkey present mixed regimes, leaning towards autocracy and democracy, respectively. Singapore leans towards autocracy, while Turkey leans towards democracy. These examples illustrate the diverse political landscapes observed worldwide.

To explore the relationship between liquidity and a country's political governance quality, we used the following OLS regression model:

$$Liquidity_{ijt} \text{ or } InfoAsymmetry_{ijt} = a + \beta_1 GOV_{jt} + \sum_{l=2}^k \beta_l X_{jt}^l + \sum_{l=k+1}^n \beta_l Z_{it}^l + \delta_d + \tau_t + \varepsilon_{ijt}$$

where *Liquidity* or *InfoAsymmetry* measure stock liquidity or the information asymmetry of stock, such as the quoted spread, effective spread, price impact, and probability of informed trading (PIN). The subscript *i* represents each stock, *j* represents each country where stock *i* belongs, and *t* represents time. δ is the industry fixed effect and τ is the year fixed effect. *d* denotes each industry. The key variable of interest is *GOV*, which denotes a country's political governance indices, such as democracy, autocracy, and polity index at country *j* and time *t*. In addition, *X* represents country-specific standard control variables, including GDP per capita and GDP growth rate, for country *j* and time *t*, and *Z* represents a set of stock-specific standard control variables, such as stock price, stock return volatility, dollar trading volume, and market value of equity, for firm *i* and time *t*. ε is an error term.

A country's democracy is measured by the democracy index (DI), reflecting the extent of democratic practices and institutions within a country. Autocracy is measured by the autocracy index (AI), which evaluates the presence and concentration of autocratic elements. Both measures range from 0 to 10, with higher values indicating stronger

category characteristics. The polity index (PI) combines these two indices to provide a comprehensive assessment of a country's political regime, ranging from autocracy to full democracy, with various degrees in between. Price is the share price while return volatility is the standard deviation of daily closing quote-midpoint returns. Dollar trading volume is the mean daily dollar trading volume. Market Cap. is the total value of equity.

Table 1. Democracy, autocracy, and polity indices by country.

Country	Democracy	Autocracy	Polity
Argentina	8.41	0.00	8.41
Australia	10.00	0.00	10.00
Austria	10.00	0.00	10.00
Belgium	8.20	0.00	8.20
Brazil	8.00	0.00	8.00
Canada	10.00	0.00	10.00
Chile	9.82	0.00	9.82
China	0.00	7.00	−7.00
Colombia	7.00	0.00	7.00
Denmark	10.00	0.00	10.00
Finland	10.00	0.00	10.00
France	10.00	0.00	10.00
Germany	10.00	0.00	10.00
Greece	10.00	0.00	10.00
Hungary	10.00	0.00	10.00
India	9.00	0.00	9.00
Indonesia	8.59	0.00	8.59
Ireland	10.00	0.00	10.00
Israel	7.00	1.00	6.00
Italy	10.00	0.00	10.00
Japan	10.00	0.00	10.00
Korea	8.00	0.00	8.00
Liberia	7.14	1.00	6.14
Luxembourg	10.00	0.00	10.00
Mexico	8.00	0.00	8.00
Netherlands	10.00	0.00	10.00
New Zealand	10.00	0.00	10.00
Norway	10.00	0.00	10.00
Panama	9.00	0.00	9.00
Papua New Guinea	4.63	0.00	4.63
Peru	9.00	0.00	9.00
Philippines	8.00	0.00	8.00
Portugal	10.00	0.00	10.00
Russia	5.31	0.69	4.63
Singapore	1.92	4.00	−2.08
South Africa	9.00	0.00	9.00
Spain	10.00	0.00	10.00
Sweden	10.00	0.00	10.00
Switzerland	10.00	0.00	10.00
Taiwan	10.00	0.00	10.00
Thailand	0.00	3.00	−3.00
Turkey	5.69	1.56	4.13
United Kingdom	9.54	0.00	9.54
Venezuela	5.67	0.00	5.67

To estimate the equation, we used a heteroscedasticity-robust method, specifically Huber–White estimators.

We measure liquidity and information asymmetry with three variables calculated as below:

$$Quoted\ Spread_{k,t} = (Ask_{i,t} - Bid_{i,t}) / Mid_{i,t}$$

$$\text{Effective Spread}_{i,t} = 2D_{i,t}(P_{i,t} - \text{Mid}_{i,t}) / \text{Mid}_{i,t}$$

$$\text{Price Impact}_{i,t} = 100D_{i,t}(M_{i,t+5} - \text{Mid}_{i,t}) / \text{Mid}_{i,t}$$

where $\text{Ask}_{i,t}$ is the ask price for stock i at time t , $\text{Bid}_{i,t}$ is the bid price for stock i at time t , $\text{Mid}_{i,t}$ is the mean of $\text{Ask}_{i,t}$ and $\text{Bid}_{i,t}$, $P_{i,t}$ is the transaction price for stock i at time t , and $D_{i,t}$ is a binary variable that equals one for customer buy orders and negative one for customer sell orders. We estimate $D_{i,t}$ using the algorithm in Ellis et al. (2000). Price impact is also used as a proxy with which to capture information asymmetry.

Additionally, we incorporate the sequential trade model proposed by Easley, Kiefer, O'Hara, and Paperman (EKOP) in 1996 (Easley et al. 1996), applying it to each firm for each year in our analysis (See Appendix A). (See note 1) In the EKOP model, market makers continuously observe trades, update their beliefs, and establish price quotes. This iterative trading process, coupled with learning from trading activity, leads to prices gradually converging towards their full information values. The EKOP model offers the necessary framework for deducing information-based trading patterns from observable variables, such as the volume of buy and sell orders. The likelihood function representing the EKOP model for stock i on trading day j is expressed as follows:

$$\begin{aligned} L_i(B_{i,j}, S_{i,j} | \theta_i) = & (1 - \alpha_i) e^{\varepsilon_i T_{i,j}} \frac{(\varepsilon_i T_{i,j})^{B_{i,j}}}{B_{i,j}!} e^{\varepsilon_i T_{i,j}} \frac{(\varepsilon_i T_{i,j})^{S_{i,j}}}{S_{i,j}!} \\ & + \alpha_i \delta_i e^{\varepsilon_i T_{i,j}} \frac{(\varepsilon_i T_{i,j})^{B_{i,j}}}{B_{i,j}!} e^{(\mu_i + \varepsilon_i) T_{i,j}} \frac{[(\mu_i + \varepsilon_i) T_{i,j}]^{S_{i,j}}}{S_{i,j}!} \\ & + \alpha_i (1 - \delta_i) e^{(\mu_i + \varepsilon_i) T_{i,j}} \frac{[(\mu_i + \varepsilon_i) T_{i,j}]^{B_{i,j}}}{B_{i,j}!} e^{\varepsilon_i T_{i,j}} \frac{(\varepsilon_i T_{i,j})^{S_{i,j}}}{S_{i,j}!}; \end{aligned}$$

where $B_{i,j}$ is the number of buyer-initiated trades for the day, $S_{i,j}$ is the number of seller-initiated trades for the day, α_i is the probability that an information event has occurred, δ_i is the probability of a low signal given an event has occurred, μ_i is the probability that a trade comes from an informed trader given an event has occurred,² ε_i is the probability that uninformed traders will actually trade, $T_{i,j}$ is the total trading time for the day, and $\theta_i = (\alpha_i, \delta_i, \varepsilon_i, \mu_i)$ represents the vector of the parameters to be estimated. We estimate these parameters, θ_i , for firm i for each year by maximizing the joint likelihood over the j observed trading days in a calendar year:

$$L_i(M_i | \theta_i) = \prod_{j=1}^J L_i(B_{i,j}, S_{i,j} | \theta_i).$$

We then calculate the PIN for stock i for each year as follows:

$$\text{PIN}_i = \frac{\hat{\alpha}_i \hat{\mu}_i}{\hat{\alpha}_i \hat{\mu}_i + 2\hat{\varepsilon}_i}$$

We report the descriptive statistics in Table 2. The democracy index and autocracy index show means of 8.04 and 1.05, with standard deviations of 3.47 and 2.46, respectively. Additionally, the polity index exhibits a mean of 6.98 with a standard deviation of 5.89. Moving to financial metrics, the price averages USD 26.87, with a standard deviation of USD 33.48, while the return volatility presents a mean of 0.0478. Concerning spread measures, both the quoted and effective spreads show means of 0.0052 and 0.0041, respectively. The price impact and PIN exhibit averages of 0.0021 and 0.1688. Lastly, in terms of stock attributes, the trading volume reports an average of USD 27,864,000, and market capitalization showcases an average of USD 4907 million.

Table 2. Descriptive statistics.

Variables	Mean	Standard Deviation	Percentile		
			25	50	75
Democracy index	8.04	3.47	8.00	10.00	10.00
Autocracy index	1.05	2.46	0.00	0.00	0.00
Polity index	6.98	5.89	8.00	10.00	10.00
GDP per capita	31,854	21,417	9313	38,109	46,313
GDP growth rate	2.35	3.48	0.60	1.84	4.01
Price	26.87	33.48	6.84	17.18	36.71
Return volatility	0.0478	0.7158	0.0156	0.0223	0.0332
Quoted spread	0.0052	0.0083	0.0010	0.0022	0.0053
Effective spread	0.0041	0.0073	0.0007	0.0015	0.0039
Price impact	0.0021	0.0036	0.0005	0.0009	0.0022
PIN	0.1688	0.0714	0.1181	0.1498	0.2057
Volume (\$ in thousands)	27,864	96,778	960	5779	24,427
Market Cap. (\$ in millions)	4907	11,997	198	816	3363

4. Regression Results

4.1. Country Governance and Liquidity

To examine the relationship between liquidity and country governance indices, such as democracy index (DI), autocracy index (AI), and polity index (PI) variables, we conducted a regression analysis using the quoted spread and the effective spread as dependent variables. The country governance indices were used as independent variables, along with several standard control variables, such as the GDP per capita (in log) of a country, the GDP growth rate of a country, 1/price, return volatility, dollar trading volume (in log), and market value of equity (in log).³ Our discussion of the results focuses on our variables of interest and country-level controls.

As presented in Table 3, the coefficients for the DI are negative and statistically significant at the 1% level for both quoted spreads (column 1) and effective spreads (column 4). Higher levels of democracy in a country are associated with narrower spreads, indicating better liquidity. This finding suggests that democratic countries provide a more transparent and stable environment, reducing information asymmetry and transaction costs. Consequently, stocks from these countries are easier to trade without significant price impacts, enhancing liquidity.

The coefficients for the AI are positive and statistically significant at the 1% level for both quoted spreads (column 2) and effective spreads (column 5). Higher levels of autocracy are associated with wider spreads, indicating poorer liquidity. This finding suggests that autocratic regimes often lack transparency and have higher levels of political risk, which increases information asymmetry and transaction costs, leading to reduced liquidity.

The coefficients for the PI are negative and statistically significant at the 1% level for both quoted spreads (column 3) and effective spreads (column 6). A higher polity score, indicating a more democratic and less autocratic regime, is associated with narrower spreads and better liquidity. This implies that a combination of greater democratic qualities and a lower concentration of autocratic elements is associated with better liquidity. This further supports the notion that political stability and transparency play crucial roles in enhancing market liquidity.

At the country level, we use GDP per capita to control for the standard of living, general economic conditions, and growth. The coefficients of GDP per capita are consistently negative and significant, suggesting that countries with a higher GDP per capita have narrower spreads, indicating better liquidity. The coefficients are negative, but only statistically significant at the 10% level for the quoted spread.

Table 3. Regression results of the impact of political regimes on the liquidity of non-U.S. stocks.

Dependent Variable	(1) (Quoted Spread)	(2) (Quoted Spread)	(3) (Quoted Spread)	(4) (Effective Spread)	(5) (Effective Spread)	(6) (Effective Spread)
DI	−0.0002 *** (−4.47)			−0.0001 *** (−4.24)		
AI		0.0002 *** (3.00)			0.0001 *** (2.84)	
PI			−0.0001 *** (−3.86)			−0.0001 *** (−3.64)
Log(GDP)	−0.0003 *** (−4.05)	−0.0004 *** (−5.40)	−0.0003 *** (−4.69)	−0.0002 *** (−3.97)	−0.0003 *** (−5.44)	−0.0003 *** (−4.65)
GDP growth rate	−0.0001 ** (−2.46)	−0.0001 * (−1.67)	−0.0001 ** (−2.21)	−0.0000 (−1.62)	−0.0000 (−0.82)	−0.0000 (−1.38)
Price	0.0050 *** (8.28)	0.0050 *** (8.27)	0.0050 *** (8.27)	0.0051 *** (8.52)	0.0051 *** (8.51)	0.0051 *** (8.51)
Volatility	0.0000 (1.38)	0.0000 (1.36)	0.0000 (1.37)	0.0000 (1.55)	0.0000 (1.53)	0.0000 (1.54)
Log(volume)	−0.0022 *** (−24.58)	−0.0022 *** (−24.50)	−0.0022 *** (−24.55)	−0.0019 *** (−24.33)	−0.0019 *** (−24.23)	−0.0019 *** (−24.29)
Log(Mcap)	0.0002 ** (2.42)	0.0002 ** (2.21)	0.0002 ** (2.34)	0.0002 *** (3.15)	0.0002 *** (2.94)	0.0002 *** (3.07)
Constant	0.0384 *** (31.30)	0.0378 *** (31.32)	0.0381 *** (31.43)	0.0309 *** (28.95)	0.0303 *** (28.64)	0.0306 *** (28.92)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6568	6568	6568	6568	6568	6568
Adjusted R ²	0.6414	0.6405	0.6410	0.6321	0.6314	0.6318

t statistics in parentheses; * $p < 0.1$, ** $p < 0.05$ and *** $p < 0.01$.

4.2. Country Governance and Information-Based Trading

We examined the relationship between countries' political regimes and information-based trading proxied by the price impact and probability of informed trading (PIN). The regression results in Table 4 indicate a significant negative relationship between the democracy index (DI) and the polity index (PI), in terms of both the price impact of trades and the probability of informed trading (PIN). The coefficients for the DI are consistently negative and statistically significant at the 1% level, suggesting that non-U.S. stocks from countries with stronger democratic qualities exhibit lower price impacts and lower probabilities of informed trading. A lower price impact means that trades can be executed with minimal influence on stock prices, which is indicative of both better liquidity and a lower level of information-based trading. This finding suggests that, in democratic countries, transparency, the rule of law, and robust regulatory frameworks reduce information asymmetry, diminishing the advantage that informed traders have, and resulting in less price impact from trades. A lower PIN suggests a reduced likelihood of trades being based on private, non-public information. The governance structures in democratic regimes ensure the more comprehensive and timely dissemination of information, making it more difficult for informed traders to exploit private information.

The coefficients for the autocracy index (AI) are positive and statistically significant for both price impact and the PIN, indicating that higher levels of autocracy are associated with an increased price impact and a higher probability of informed trading. Higher price impacts in autocratic countries suggest poorer liquidity and a higher level of information-based trading. Autocracies often lack transparent governance and regulatory oversight, increasing information asymmetry. In such environments, informed traders can exploit their information advantage, leading to larger price movements with each trade. A higher PIN in autocratic countries indicates a greater likelihood of trades being driven by private

information. The concentration of power and limited political freedoms in autocratic regimes create conditions where information is not evenly disseminated, allowing informed traders to capitalize on their informational advantage. These results indicate that the lack of transparency and accountability in these regimes exacerbates information asymmetry, increasing the costs and risks associated with trading.

Table 4. Regression results of the impact of political regimes on the information-based trading of non-U.S. stocks.

Dependent Variable	(4) (Price Impact)	(5) (Price Impact)	(6) (Price Impact)	(7) (PIN)	(8) (PIN)	(9) (PIN)
DI	−0.0001 *** (−4.12)			−0.0017 *** (−4.98)		
AI		0.0001 ** (2.45)			0.0020 *** (4.34)	
PI			−0.0000 *** (−3.40)			−0.0010 *** (−4.75)
Log(GDP)	−0.0001 *** (−4.64)	−0.0002 *** (−6.04)	−0.0002 *** (−5.30)	−0.0024 *** (−3.06)	−0.0032 *** (−4.37)	−0.0027 *** (−3.60)
GDP growth rate	−0.0000 ** (−1.98)	−0.0000 (−0.94)	−0.0000 (−1.62)	−0.0001 (−0.31)	−0.0000 (−0.15)	−0.0001 (−0.34)
Price	0.0015 *** (5.41)	0.0015 *** (5.41)	0.0015 *** (5.41)	−0.0006 (−0.35)	−0.0007 (−0.40)	−0.0007 (−0.38)
Volatility	0.0000 (1.20)	0.0000 (1.18)	0.0000 (1.19)	0.0004 *** (5.02)	0.0004 *** (5.02)	0.0004 *** (5.02)
Log(volume)	−0.0009 *** (−20.04)	−0.0009 *** (−19.96)	−0.0009 *** (−20.01)	−0.0192 *** (−30.28)	−0.0191 *** (−30.16)	−0.0192 *** (−30.24)
Log(Mcap)	0.0001 ** (2.55)	0.0001 ** (2.32)	0.0001 ** (2.46)	−0.0030 *** (−4.55)	−0.0031 *** (−4.70)	−0.0031 *** (−4.59)
Constant	0.0152 *** (25.48)	0.0150 *** (24.71)	0.0151 *** (25.25)	0.5424 *** (56.57)	0.5348 *** (54.75)	0.5388 *** (56.05)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6568	6568	6568	6568	6568	6568
Adjusted R ²	0.5153	0.5144	0.5149	0.5345	0.5341	0.5343

t statistics in parentheses; ** $p < 0.05$, and *** $p < 0.01$.

The regression results also show that the coefficients for the log of GDP per capita are consistently negative and statistically significant across all models. This suggests that higher GDP per capita is associated with lower price impacts and a lower probability of informed trading.

4.3. First-Difference Regressions

Regressions utilizing the first difference of variables, which captures changes in the variables over time, are generally regarded as less susceptible to exhibiting spurious relationships compared to regressions using level variables.⁴ This is because first differencing eliminates time-invariant unobserved heterogeneity, which could otherwise lead to false correlations between variables. Consequently, employing the first differences of variables can provide a more robust method for examining causal relationships.⁵

The first-difference regression results are presented in Tables 5 and 6. For non-U.S. stocks, the coefficients of the changes in the DI and PI are consistently negative and statistically significant. On the other hand, the coefficients of the changes in the AI are positive and statistically significant. These findings emphasize the potential positive impact of democracy and the adverse impact of autocratic elements on market dynamics, and suggest that efforts to enhance governance transparency and accountability are crucial for reducing spreads and limiting information-based trading.

Table 5. First-difference regression results of the liquidity of non-U.S. stocks.

Dependent Variable	(1) (Quoted Spread)	(2) (Quoted Spread)	(3) (Quoted Spread)	(4) (Effective Spread)	(5) (Effective Spread)	(6) (Effective Spread)
Δ DI	−0.0003 ** (−2.16)			−0.0003 ** (−2.50)		
Δ AI		0.0006 *** (3.07)			0.0005 *** (3.25)	
Δ PI			−0.0002 ** (−2.49)			−0.0002 *** (−2.80)
Δ Log(GDP)	−0.0000 (−0.03)	−0.0000 (−0.17)	−0.0000 (−0.07)	0.0001 (0.28)	0.0000 (0.14)	0.0001 (0.25)
Δ GDP growth rate	0.0000 (0.59)	0.0000 (0.48)	0.0000 (0.55)	0.0000 (1.17)	0.0000 (1.04)	0.0000 (1.12)
Δ Price	0.0045 *** (6.36)	0.0045 *** (6.36)	0.0045 *** (6.36)	0.0042 *** (5.95)	0.0042 *** (5.96)	0.0042 *** (5.95)
Δ Volatility	0.0000 *** (3.14)	0.0000 *** (3.14)	0.0000 *** (3.14)	0.0000 *** (4.24)	0.0000 *** (4.24)	0.0000 *** (4.24)
Δ Log(volume)	−0.0016 *** (−12.23)	−0.0016 *** (−12.22)	−0.0016 *** (−12.24)	−0.0014 *** (−10.10)	−0.0014 *** (−10.08)	−0.0014 *** (−10.10)
Δ Log(Mcap)	−0.0006 *** (−3.14)	−0.0006 *** (−3.14)	−0.0006 *** (−3.13)	−0.0004 *** (−2.65)	−0.0004 *** (−2.66)	−0.0004 *** (−2.65)
Constant	0.0000 (0.05)	0.0000 (0.06)	0.0000 (0.05)	−0.0001 (−0.78)	−0.0001 (−0.77)	−0.0001 (−0.78)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5673	5673	5673	5673	5673	5673
Adjusted R ²	0.3385	0.3386	0.3386	0.3262	0.3262	0.3263

t statistics in parentheses; ** $p < 0.05$, and *** $p < 0.01$.

Table 6. First-difference regression results of the information-based trading of non-U.S. stocks.

Dependent Variable	(1) (Price Impact)	(2) (Price Impact)	(3) (Price Impact)	(4) (PIN)	(5) (PIN)	(6) (PIN)
Δ DI	−0.0002 *** (−2.85)			−0.0040 ** (−2.02)		
Δ AI		0.0004 *** (2.95)			0.0083 ** (2.25)	
Δ PI			−0.0002 *** (−2.97)			−0.0030 ** (−2.20)
Δ Log(GDP)	0.0001 (0.81)	0.0001 (0.66)	0.0001 (0.77)	0.0001 (0.02)	−0.0005 (−0.15)	−0.0001 (−0.02)
Δ GDP growth rate	0.0000 (0.65)	0.0000 (0.50)	0.0000 (0.58)	0.0001 (0.39)	0.0001 (0.30)	0.0001 (0.36)
Δ Price	0.0008 *** (2.66)	0.0008 *** (2.66)	0.0008 *** (2.66)	0.0044 * (1.65)	0.0044 * (1.66)	0.0044 * (1.65)
Δ Volatility	0.0000 *** (4.70)	0.0000 *** (4.69)	0.0000 *** (4.70)	0.0003 ** (2.09)	0.0003 ** (2.09)	0.0003 ** (2.09)
Δ Log(volume)	−0.0007 *** (−7.84)	−0.0007 *** (−7.83)	−0.0007 *** (−7.84)	−0.0004 (−0.20)	−0.0004 (−0.19)	−0.0004 (−0.20)
Δ Log(Mcap)	−0.0003 *** (−3.96)	−0.0003 *** (−3.99)	−0.0003 *** (−3.96)	−0.0171 *** (−5.71)	−0.0171 *** (−5.70)	−0.0171 *** (−5.70)
Constant	−0.0001 (−1.16)	−0.0001 (−1.13)	−0.0001 (−1.15)	0.0003 (0.10)	0.0004 (0.11)	0.0003 (0.11)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5673	5673	5673	5673	5673	5673
Adjusted R ²	0.1505	0.1503	0.1506	0.0351	0.0353	0.0352

t statistics in parentheses; * $p < 0.1$, ** $p < 0.05$, and *** $p < 0.01$.

4.4. Robustness Tests

We conducted several robustness checks to ensure our results were not significantly affected by potential omitted-variable bias and were not sensitive to the measures of variables of interest. First, we employed an alternative democracy index from the Economist Intelligence Unit (EIU) from 2006 to 2019. This index provides a comprehensive measure of political governance by assessing factors such as the ability of citizens to freely and fairly elect their leaders, the enjoyment of civil liberties, the preference for democratic systems, active political participation, and the effectiveness of the government in representing its citizens. The EIU democracy index, which ranges from 0 to 10 (with higher values indicating greater democracy), was used to analyze the relationship between political governance and the liquidity of non-U.S. stocks listed on the NYSE. The regression results using the EIU democracy index in Table 7 show that the coefficients for the democracy score are consistently negative and statistically significant at the 1% level for the quoted spread, effective spread, price impact, and probability of informed trading. These results reinforce the notion that robust democratic institutions contribute positively to market liquidity and reduce the potential for information asymmetry in trading.

Table 7. Regression results: robustness test.

Dependent Variables	(1) (Quoted Spread)	(2) (Effective Spread)	(3) (Price Impact)	(4) (PIN)
Democracy score	−0.0004 *** (−4.54)	−0.0003 *** (−4.01)	−0.0001 *** (−3.10)	−0.0040 *** (−5.73)
Log(GDP)	−0.0000 (−0.27)	−0.0000 (−0.22)	−0.0001 (−1.23)	0.0005 (0.47)
GDP growth rate	−0.0001 * (−1.72)	−0.0000 (−0.53)	−0.0000 (−0.57)	−0.0005 * (−1.70)
Price	0.0048 *** (7.40)	0.0049 *** (7.57)	0.0014 *** (4.67)	−0.0011 (−0.62)
Volatility	0.0000 *** (5.07)	0.0000 *** (3.86)	0.0000 *** (3.79)	0.0003 *** (5.78)
Log(volume)	−0.0024 *** (−23.01)	−0.0020 *** (−22.44)	−0.0010 *** (−18.42)	−0.0204 *** (−29.24)
Log(Mcap)	0.0004 *** (3.72)	0.0004 *** (4.39)	0.0002 *** (3.13)	−0.0017 ** (−2.26)
Constant	0.0378 *** (28.31)	0.0307 *** (25.13)	0.0163 *** (21.42)	0.5313 *** (49.44)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	5125	5125	5125	5125
Adjusted R ²	0.6519	0.6359	0.5151	0.5663

t statistics in parentheses; * $p < 0.1$, ** $p < 0.05$, and *** $p < 0.01$.

Second, we divided our sample into two subsamples, covering the periods 2004–2010 and 2011–2019. This division allowed us to evaluate the robustness of our model across different market conditions. By conducting the same analyses for both periods, we found that the results remained consistent with those obtained from the full dataset (2004–2019). This consistency reinforces the validity of our model and addresses concerns regarding its complexity.

Third, we incorporated additional control variables to test the sensitivity of our results to different model specifications. These control variables included various combinations of fixed effects at the firm, industry, and year levels, as well as a country-level variable: the political rating from the [World Governance Indicators \(2004–2019\)](#), which measures a country's political stability. The regression results from this group of robustness tests are consistent with our baseline regressions. For brevity, we only report one test result, which is based on incorporating fixed year and industry effects and political rating, in Table 8.

The results further confirm our findings on the positive impact of political regimes in home countries on the liquidity of non-U.S. stocks.

Table 8. Regression results: robustness test with political rating.

Dependent Variable	(1) (Quoted Spread)	(2) (Effective Spread)	(3) (Price Impact)	(4) (PIN)
DI	−0.0001 *** (−3.66)	−0.0001 *** (−3.66)	−0.0001 *** (−4.12)	−0.0016 *** (−4.70)
Log(GDP)	−0.0000 (−0.36)	−0.0001 (−0.87)	−0.0002 *** (−2.94)	−0.0019 (−1.44)
GDP growth rate	−0.0001 * (−1.87)	−0.0000 (−1.21)	−0.0000 ** (−2.12)	−0.0001 (−0.20)
Political rating	−0.0004 ** (−2.27)	−0.0003 (−1.50)	0.0000 (0.41)	−0.0008 (−0.39)
Price	0.0051 *** (8.28)	0.0051 *** (8.51)	0.0015 *** (5.39)	−0.0006 (−0.33)
Volatility	0.0000 (1.29)	0.0000 (1.49)	0.0000 (1.22)	0.0004 *** (5.03)
Log(volume)	−0.0022 *** (−24.62)	−0.0019 *** (−24.41)	−0.0009 *** (−20.06)	−0.0192 *** (−30.20)
Log(Mcap)	0.0002 ** (2.52)	0.0002 *** (3.21)	0.0001 ** (2.52)	−0.0030 *** (−4.50)
Constant	0.0358 *** (20.68)	0.0294 *** (19.00)	0.0154 *** (18.90)	0.5379 *** (37.59)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	6568	6568	6568	6568
Adjusted R ²	0.6417	0.6322	0.5153	0.5344

t statistics in parentheses; * $p < 0.1$, ** $p < 0.05$, and *** $p < 0.01$.

While the results from the robustness tests are promising, several limitations pave the way for further investigation. First, this study centers on non-U.S. stocks across various sectors listed on the NYSE. While this focus enables a comprehensive analysis, it may limit the applicability of our findings to specific industries. Future research could narrow this scope to offer a more detailed comparative analysis of how political regimes impact stock liquidity and information asymmetry in different sectors. Second, we apply a cross-sectional ordinary least squares (OLS) regression model with heteroscedasticity-robust (Huber–White) estimators to handle the distributional challenges inherent in our dataset. Future research could adopt alternative empirical strategies, such as panel data regression or difference-in-difference analyses, to better address potential omitted-variable bias. Additionally, expanding the sample to include different trading platforms could allow for the application of more sophisticated econometric techniques, providing more robust tests of the relationships among political regimes, liquidity, and information asymmetry. As such, the findings of this study should be interpreted within the context of the data and methodology used. They may not extend universally to all market conditions or regions.

5. Conclusions

This study investigated the relationship between political regimes and financial market dynamics, specifically focusing on stock liquidity and information asymmetry. Our empirical analysis revealed a definitive correlation: stocks from countries with higher democracy index (DI) scores exhibited enhanced liquidity and reduced information asymmetry, while those from autocratic nations displayed contrary trends. Moreover, employing a difference-in-difference approach, we captured the dynamic effects of shifts in political governance. Our findings demonstrate that transitions towards democratic regimes correlate with improvements in stock liquidity and reductions in information asymmetry, while movements towards autocracy yield negative impacts.

The implications of these findings are relevant to diverse stakeholders in the global financial marketplace: investors gain essential insights into the risks and opportunities associated with stocks from countries of varying political regimes, and financial decision makers in banks, investment firms, and other institutions can then leverage this knowledge for more effective evaluations of investment strategies, especially in international contexts. Thus, understanding the influence of governance styles on stock liquidity and transparency is essential for informed decision making, portfolio diversification, and market risk assessment.

Additionally, for policymakers and regulators, the established link between political governance and market dynamics underscores the critical role of political stability and transparent governance in maintaining financial market health. These insights are pivotal for developed and emerging markets in shaping policies that promote political stability and transparency, thereby enhancing market attractiveness and functionality.

Our study thus bridges a significant gap in the literature between political science and financial economics, thereby paving the way for further scholarly inquiry. Future research can extend to other dimensions of how political factors influence financial markets, such as stock volatility, investor behavior, and market predictability. As the global economy evolves, the nexus between politics and finance emerges as an increasingly critical field for ongoing research and comprehension.

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Appendix A. Sequential Trade Model and Recent Improvements

Appendix A.1. Description of the Sequential Trade Model by Easley, Kiefer, O'Hara, and Paperman (EKOP)

The EKOP model, proposed in 1996, is a sequential trade model designed to explain the process of price formation in financial markets. The model assumes that traders arrive at the market sequentially and that each trade contains information. The key features of the EKOP model include information asymmetry, order flow, the probability of informed trading (PIN), and the impact on prices.

Information asymmetry in the EKOP model suggests that some traders are informed, possessing private information about the true value of an asset, while others are uninformed and trade randomly. The model analyzes the sequence of buy and sell orders to infer the likelihood that a given trade is informed. It introduces the concept of the probability of informed trading (PIN), which measures the fraction of trades that are informed. The presence of informed traders influences the bid–ask spread and the overall volatility of prices.

Mathematically, the model can be described through a set of equations that capture the probability of observing different sequences of trades (buys and sells) given the presence of informed traders.

Appendix A.2. Recent Improvements and Clustering Algorithm by [Gan et al. \(2015\)](#)

Since the introduction of the original EKOP model, several advancements have been made to more effectively capture the complexities of modern financial markets. These enhancements integrate various stylized facts observed in empirical market data, including high-frequency trading, detailed market microstructures, volatility clustering, and

liquidity dynamics (Cont 2001). Several stylized facts are outlined that are pertinent to these improvements.

One significant modern technique used to enhance the estimation of the probability of informed trading (PIN) is the clustering algorithm approach introduced by Gan et al. (2015). This approach leverages clustering algorithms for efficiency and accuracy. Gan et al. (2015) developed a method that clusters trading data into three groups: good news, bad news, and no news, based on the mean absolute difference in order imbalance. The order imbalance, X_t , on day t is computed as the difference between buy orders (B_t) and sell orders (S_t):

$$X_t = B_t - S_t$$

This method addresses the limitations of traditional PIN estimation techniques by providing a more efficient and accurate analysis. The clustering algorithm considers various stylized facts observed in empirical market data, such as heavy tails and fat tails, volatility clustering, the volume–volatility relationship, and market impact. Heavy tails and fat tails imply a higher probability of extreme events in the distribution of returns. Volatility clustering indicates that periods of high volatility tend to be followed by high volatility, and periods of low volatility by low volatility. The volume–volatility relationship shows a strong connection between trading volume and volatility, with higher volumes often leading to higher volatility. Market impact suggests that the impact of trades on prices is non-linear and varies with trade size and market conditions.

By incorporating these stylized facts, the clustering algorithm approach enhances the EKOP model's ability to accurately estimate the probability of informed trading, reflecting the real market conditions more effectively.

Notes

- ¹ For the year 2019, we replaced the indices with the values from 2018 due to data availability limitations.
- ² The EKOP model assumes that buy and sell orders from uninformed traders are equally likely.
- ³ We opted against employing firm fixed-effect regression due to limited variation in country governance indices over time (only one value per country per year), which may not yield sufficient within-group variation to estimate the effects of liquidity and information asymmetry variables accurately. Instead, we used industry and year fixed-effect regressions to account for unobserved factors varying by industry and year, thus controlling for industry-specific shocks or economic environment changes affecting all firms in a given year and industry.
- ⁴ Year-to-year changes in variables provide a more robust test for causal relationships compared to levels because variable levels often exhibit cross-sectional correlations without direct causation. While change correlations do not imply causality, a lack of correlation in changes is likely indicative of no causal link.
- ⁵ To control for correlated explanatory variables, control variables are orthogonalized to the democracy index. This involves running a regression using the democracy index and an intercept for each control variable, resulting in residuals that capture all information not explained by a linear function of the democracy index. We then use these residuals in our regression model, as detailed in Harris (1994, pp. 158–59).

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