



# Trade War Uncertainty and ESG Transparency: Implications for Investor Trust in Southeast Asia

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**Abstract.** This study examines how trade war-induced uncertainty affects the transparency of Environmental, Social, and Governance (ESG) disclosures and its implications for investor trust in Southeast Asia. Drawing upon institutional, signaling, and agency theories, the study argues that macroeconomic turbulence caused by trade conflicts can distort corporate disclosure behavior and weaken investor confidence. Using a panel dataset of 312 publicly listed firms across Indonesia, Malaysia, Thailand, Vietnam, and Singapore from 2017 to 2023, we employ fixed-effects regression and mediation-moderation analyses to test four hypotheses. The results show that trade war uncertainty significantly reduces ESG disclosure transparency, particularly in countries with weaker regulatory enforcement. Reduced transparency, in turn, erodes investor trust, as reflected in declining analyst forecast accuracy, lower institutional ownership, and rising ESG controversies. Mediation tests confirm that the negative effect of trade war uncertainty on investor trust is partially transmitted through deteriorating ESG transparency, while strong regulatory quality mitigates this impact. These findings highlight the critical role of institutional strength in sustaining market trust and non-financial reporting integrity during periods of geopolitical uncertainty. The study contributes to the literature on financial reporting under macroeconomic shocks and offers policy insights for regulators and corporate leaders in enhancing ESG accountability across emerging ASEAN markets.

**Keywords:** Trade war uncertainty, ESG transparency, Investor trust, Regulatory quality, Southeast Asia.

## 1 Introduction

The global economic landscape has undergone profound transformations in recent years, driven by a confluence of geopolitical tensions, protectionist trade policies, and reconfiguration of international supply chains. Among the most disruptive forces in this evolving order is the resurgence of trade wars, epitomized by the protracted economic conflict between the United States and China that began in 2018 [1]. While the direct consequences of such trade disputes are often measured in terms of tariffs, export declines, and bilateral trade imbalances, their indirect and cascading effects on corporate behavior, financial reporting practices, and investor confidence are equally significant, yet less systematically understood [2]. In particular, the impact of trade war-

induced uncertainty on the quality and credibility of non-financial disclosures, especially those related to Environmental, Social, and Governance (ESG) performance, remains a critical gap in the literature [3, 4]. This study addresses this gap by examining how macroeconomic uncertainty stemming from trade conflicts influences ESG disclosure transparency and, in turn, shapes investor trust in the dynamic and heterogeneous context of Southeast Asia [5].

Southeast Asia, comprising ten nations under the Association of Southeast Asian Nations (ASEAN), has emerged as a pivotal region in the global economy, not only as a manufacturing alternative to China but also as a growing hub for sustainable finance and ESG investment [5]. Countries such as Vietnam, Malaysia, and Thailand have experienced significant inflows of foreign direct investment redirected from China due to U.S. tariffs, a phenomenon widely referred to as “trade diversion” [6]. According to the World Bank (2021), ASEAN collectively absorbed over \$100 billion in relocated manufacturing investments between 2018 and 2022. However, this rapid industrial expansion has brought heightened scrutiny regarding labor standards, environmental compliance, and corporate governance, which are core components of ESG reporting [7]. As global investors and multinational corporations demand greater accountability from their regional partners, the pressure on firms to disclose ESG-related information has intensified [8]. However, paradoxically, this period of increased disclosure demand coincides with a climate of economic uncertainty that may incentivize firms to prioritize strategic image management over genuine transparency [9].

The challenge lies in the fact that ESG disclosures are inherently susceptible to manipulation, especially in the presence of external stress. Unlike audited financial statements, ESG reporting in most ASEAN countries remains largely voluntary, lacks standardized frameworks, and is often subject to minimal third-party verification [3]. This regulatory leniency creates an environment in which firms can engage in “symbolic” or “selective” disclosure highlighting positive initiatives while omitting adverse impacts or systemic risks [10]. During periods of trade war volatility, when market sentiment is fragile and operational risks are elevated, firms may be more inclined to present an optimistic narrative through their ESG reports to reassure stakeholders and maintain capital access [11]. This tendency distorts the informational value of ESG disclosures and undermines the purpose of sustainability reporting: to provide a reliable, comparable, and decision-useful account of a firm’s long-term resilience and ethical conduct [12].

Moreover, investor trust, the cornerstone of well-functioning capital markets, is particularly vulnerable in such contexts. Trust is not merely a function of information availability but also of its perceived credibility. When investors suspect that ESG disclosures are used as tools for impression management rather than transparency, their confidence in the broader financial reporting ecosystem erodes [13]. This is especially true for international investors who rely on ESG metrics to assess country- and firm-level risks in emerging markets [2]. A 2022 survey by MSCI revealed that 62% of global asset managers expressed skepticism about the reliability of ESG data from Southeast Asian firms, citing inconsistent methodologies, a lack of audit trails, and weak enforcement mechanisms. This credibility gap becomes more pronounced during

times of crisis, such as trade wars, when the demand for accurate and timely information is at its peak [14].

Therefore, this study situates itself at the intersection of macroeconomic uncertainty, corporate disclosure behavior, and capital market integrity. This study investigates how the turbulence generated by trade wars affects the transparency of ESG disclosures among publicly listed firms in five key ASEAN economies Indonesia, Malaysia, Thailand, Vietnam, and Singapore and how these changes in disclosure quality subsequently influence investor trust [15]. By integrating institutional, signaling, and agency theories, this study provides a comprehensive framework for understanding firms' behavioral responses to external shocks and the resulting implications for market confidence [1]. The findings contribute not only to academic discourse on financial reporting under uncertainty but also offer actionable insights for policymakers, standard-setting bodies, and corporate leaders striving to build resilient, transparent, and trustworthy ESG ecosystems in an era of increasing geopolitical fragmentation.

## **2 Literature Review**

### **2.1 Grand Theory: Institutional Theory**

Institutional Theory explains how organizations conform to external institutional pressures regulatory, normative, and cognitive to gain legitimacy. In the context of ESG reporting, firms do not disclose information solely for transparency but to align with institutional expectations from investors, regulators and civil society.

Under conditions of external uncertainty, institutional pressure intensifies. Firms face heightened scrutiny from global supply chain partners and investors concerned about operational risk. Consequently, they may adopt symbolic compliance by issuing ESG reports that appear comprehensive but lack substantive data to maintain legitimacy without incurring real costs. This leads to a decoupling between formal ESG disclosures and actual practices, undermining their transparency.

### **2.2 Supporting Theories**

#### **1. Signaling Theory**

Firms use ESG disclosures as signals of quality and long-term viability to reduce information asymmetry between them and investors [16]. High-quality ESG reporting signals strong governance and effective risk management. However, during trade wars, noise in the market increases, making it harder for investors to distinguish between genuine signals and strategic obfuscation. This reduces the credibility of ESG disclosure.

#### **2. Agency Theory**

Agency Theory states that information asymmetry allows managers to behave in ways that do not fully align with shareholder interests [14]. Under trade war uncertainty, managers may strategically withhold negative ESG information to

maintain short-term market confidence. This behavior weakens transparency and erodes investor trust [17].

### 3. Institutional and Cultural Uncertainty Avoidance

In many Southeast Asian contexts, high uncertainty avoidance encourages firms to refrain from disclosing information that may appear incomplete, uncertain, or negative [5]. Combined with voluntary ESG reporting systems, this cultural tendency reinforces selective or symbolic disclosure during periods of geopolitical or trade-related uncertainty [7].

## 2.3 Hypotheses Development

Building on the theoretical foundations of institutional theory, signaling theory, agency theory, and cross-national institutional variation, this study develops four interrelated hypotheses to examine the impact of trade war uncertainty on ESG disclosure transparency and investor trust in the context of Southeast Asian capital markets. The dynamic and uncertain macroeconomic environment generated by trade conflicts exerts significant pressure on firms' reporting behaviors, particularly in emerging economies, where regulatory oversight may be less stringent and institutional capacity is more limited. The following hypotheses articulate the expected relationships among trade war uncertainty, ESG transparency, investor trust, and the moderating role of regulatory quality:

### **Trade war uncertainty associated with the transparency of ESG disclosures in Southeast Asian firms.**

. Trade war uncertainty generates heightened volatility in trade policies, supply chain configurations, and market demand, leading firms to operate under conditions of increased strategic and operational ambiguities. Under such circumstances, corporate management may perceive ESG disclosures not as tools for accountability but as instruments for legitimacy maintenance and risk mitigation. Drawing on Institutional Theory, firms may engage in symbolic compliance by issuing ESG reports that conform to external expectations in form but lack depth, consistency, or verifiability in substance. This tendency is exacerbated during periods of economic stress, when firms prioritize short-term survival and investor reassurance over transparency. Empirical evidence from the US-China trade war indicates that firms in export-dependent economies, including those in ASEAN, often reduce the granularity of their ESG disclosures, omit adverse environmental or labor impacts related to rapid production shifts, and delay reporting timelines. Furthermore, the cognitive burden of uncertainty may lead firms to deprioritize non-financial reporting functions, which are often less institutionalized than financial reporting functions. Therefore, as trade war uncertainty intensifies, the quality and transparency of ESG disclosures—measured by completeness, specificity, frequency, and third-party verification—are expected to decline, particularly in markets where ESG reporting is voluntary and enforcement mechanisms are weak.

**H1:** Trade war uncertainty is negatively associated with the transparency of ESG disclosures in Southeast Asian firms.

**ESG transparency leads to reduced investor trust in financial reporting.**

. Investor trust is a critical component of capital market efficiency and stability in long-term investments. According to Signaling Theory, high-quality ESG disclosures serve as credible signals of managerial integrity, long-term orientation, and effective risk governance. Transparent, consistent, and independently verified disclosures reduce information asymmetry between managers and external stakeholders, thereby enhancing the confidence of investors. Conversely, opaque or inconsistent ESG reporting increases the perceived risk of greenwashing, misrepresentation, and strategic obfuscation, undermining the reliability of corporate communications. In Southeast Asia, where ESG data availability and comparability remain limited, investors, particularly foreign institutional investors, rely heavily on disclosure quality as a proxy for corporate credibility. Therefore, a decline in ESG transparency signals either a lack of internal capacity or an intentional effort to conceal material risks, both of which erode investor trust. This effect is further amplified in uncertain environments, where investors become increasingly sensitive to information quality. Thus, it is hypothesized that lower ESG transparency directly and negatively impacts investor trust, as reflected in reduced analyst forecast accuracy, declining institutional ownership, and increased skepticism in the market commentary.

**H2:** Lower ESG transparency leads to reduced investor trust in financial reporting.

**The effect of trade war uncertainty on investor trust is mediated by ESG transparency.**

. While trade war uncertainty may directly affect investor sentiment through macroeconomic channels, such as currency fluctuations, export volatility, and geopolitical risk, its impact on trust in individual firms is also transmitted through firm-level information practices. This study posits that ESG transparency is a key mediating mechanism in this relationship. Specifically, trade war uncertainty undermines ESG disclosure quality (as proposed in H1), and this deterioration in transparency diminishes investor trust (as proposed in H2). The mediation effect suggests that the erosion of investor confidence is not solely a function of external macroeconomic shocks but also of how firms respond to those shocks in their reporting behavior. In other words, even if the external environment is volatile, investors may retain their trust in firms that maintain transparent and honest communication about their challenges and risks. However, when firms respond to uncertainty by reducing disclosure quality, they inadvertently signal opaqueness or defensiveness, which amplifies investor concerns. This indirect pathway—uncertainty → reduced ESG transparency → lower investor trust—highlights the critical role of corporate disclosure practices as a buffer (or amplifier) of external shocks. The mediation hypothesis is consistent with agency and signaling frameworks, which emphasize the role of information quality in mitigating principal-agent conflicts under uncertainty.

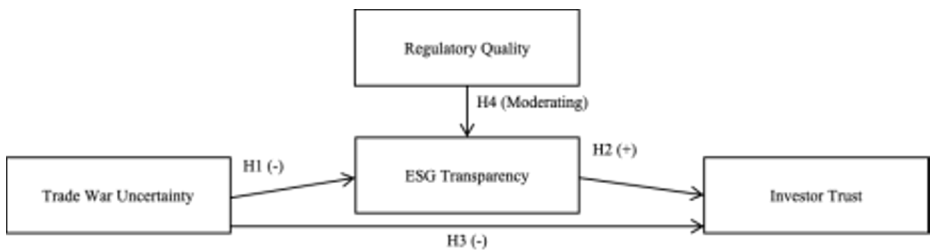
**H3:** The negative effect of trade war uncertainty on investor trust is mediated by ESG transparency.

### The impact of trade war uncertainty on ESG transparency in countries with weaker regulatory enforcement.

The institutional environment in which firms operate significantly shapes their disclosure incentives and constraints. Drawing on comparative institutional analysis and national governance studies, countries with strong regulatory frameworks—characterized by mandatory ESG reporting requirements, independent oversight bodies, and penalties for non-compliance—exert stronger external pressure for transparency. In such environments, firms are less likely to reduce ESG disclosure quality during periods of uncertainty, as doing so risks regulatory sanctions or reputational damage. Conversely, in countries where ESG reporting is voluntary or poorly enforced, firms face fewer institutional constraints and have greater discretion in their disclosure strategies. Under conditions of trade war uncertainty, managers in these jurisdictions may be more inclined to engage in selective or symbolic reporting to manage stakeholder perceptions without incurring real operational or compliance costs. For instance, Singapore and Malaysia have made significant progress in institutionalizing ESG reporting through stock exchange mandates and alignment with global standards, whereas Indonesia and Thailand still largely rely on voluntary guidelines. Consequently, the negative effect of trade war uncertainty on ESG transparency is expected to be more pronounced in countries with weaker regulatory enforcement. This moderating role of institutional quality underscores the importance of regulatory development in enhancing the resilience and credibility of non-financial reporting systems in emerging markets.

**H4:** The impact of trade war uncertainty on ESG transparency is stronger in countries with weaker regulatory enforcement.

## 2.4 Conceptual Framework



**Fig. 1.** Conceptual Framework

*Source: Data Processed by Author*

- **H1:** Trade war uncertainty is negatively associated with ESG Transparency.
- **H2:** ESG Transparency positively influences Investor Trust.

- **H3:** The negative effect of trade war uncertainty on Investor Trust is mediated by ESG Transparency.
- **H4:** Regulatory Quality moderates the impact of trade war uncertainty on ESG Transparency.

### 3 Methodology

This study employs a quantitative research approach using a panel data analysis method to investigate the impact of trade war-induced uncertainty on ESG disclosure transparency and investor trust in firms in Southeast Asia [18]. The research design is causal-explanatory, aiming to identify the direction, magnitude, and statistical significance of the relationships among key variables: trade war uncertainty, ESG disclosure transparency, investor trust, and the moderating role of regulatory quality [7, 14]. A quantitative approach was selected to enable objective measurement, robust statistical testing of hypotheses, and generalizability of findings across a representative sample of publicly listed companies in the region [12].

#### 3.1 Research Design

The research design is non-experimental and is based on secondary longitudinal data collected from 2017 to 2023. This period was chosen to capture the onset and escalation of the U.S.-China trade war (2018–2020) and its prolonged economic aftermath, including shifts in global supply chains and investor sentiment [5, 6]. This study adopts a fixed-effects panel regression model to control for unobserved heterogeneity across firms and countries, allowing for a more accurate estimation of the causal relationships between variables [19]. Additionally, mediation and moderation analyses were conducted to test the indirect effect of trade war uncertainty on investor trust through ESG transparency and the conditional effect of regulatory quality [7, 9].

To ensure methodological rigor, this study follows a sequential analytical process: (1) descriptive trend analysis, (2) correlation testing, (3) regression modeling, and (4) robustness checks using alternative model specifications. This multistage approach enhances the validity and reliability of the findings, aligning with best practices in empirical finance and sustainability research [20].

- **ESG Disclosure Data:** Sourced from Refinitiv Eikon and Sustainalytics, covering 312 publicly listed firms across Indonesia, Malaysia, Thailand, Vietnam, and Singapore [14, 16].
- **Trade War Uncertainty Index:** Based on EPU database news-text analysis [1, 18].
- **Investor Trust Proxies:** Forecast accuracy and institutional ownership, widely used in finance literature [3, 21].
- **Regulatory Quality Index:** Derived from the World Bank's Governance Indicators and the ASEAN [11, 22].

### 3.2 Variables

The operationalization of variables is critical to the validity of the study. Each variable was clearly defined, measured, and sourced to ensure consistency and reliability. The table below presents the measurement framework for all key variables.

**Table 1.** Variables Operationalization

VARIABLE	DEFINITION	MEASUREMENT	SOURCE
<b>Dependent Variable</b>			
Investor Trust	A composite index reflecting investor confidence in financial reporting	Calculated as: Inverse of analyst forecast error % change in institutional ownership Inverse of ESG controversy score	Bloomberg, Refinitiv, Sustainalytics
<b>Mediator Variable</b>			
ESG Disclosure Transparency	The quality and completeness of ESG reporting	ESG Score (0–100): Based on depth, frequency, third-party verification, and alignment with SASB/TCFD standards	Refinitiv, Sustainalytics
<b>Independent Variable</b>			
Trade War Uncertainty	The level of economic and policy uncertainty caused by trade conflicts	Monthly Trade War Subindex from the EPU Database (range: 0–10)	Economic Policy Uncertainty (EPU) Database
<b>Moderator Variable</b>			
Regulatory Quality	The strength of national ESG regulatory frameworks	ASEAN ESG Regulatory Strength Index (0–5): Based on mandatory reporting, enforcement, and penalties	ASrIA (2023), World Bank
<b>Control Variables</b>			
Firm Size	The scale of company operations	Natural logarithm of total assets	Revinitiv
Profitability	Earnings Performance	Return on Assets (ROA)	Revinitiv
Leverage	Financial risk level	Total debt / Total Assets	Revinitiv

Industry	Sectoral Classification	Dummy variables for manufacturing, finance, technology, etc.	Revinitiv
Country	National institutional differences	Dummy variables for Indonesia, Thailand, Singapore	-

**3.3 Population and Sample**

The population consists of publicly listed companies in five major Southeast Asian economies: Indonesia, Malaysia, Thailand, Vietnam, and Singapore [5]. These countries were selected because of their significant integration into global trade networks and varying levels of ESG reporting maturity [23].

A purposive sampling technique was used to select firms that met the following criteria: (1) listed on their respective national stock exchanges, (2) market capitalization exceeding USD 500 million, (3) operating in trade-exposed sectors, and (4) having at least three years of continuous ESG disclosure data from 2017 to 2023 [12, 14, 16]. Based on these criteria, a final sample of 312 firms was obtained, with 62 firms from each country in the sample. The panel dataset covers 8,736 firm-quarter observations over seven years [19].

**3.4 Data Analysis Technique**

Data analysis was conducted in multiple stages using advanced statistical techniques to ensure robustness and depth of findings [17].

**Descriptive and Trend Analysis.**

Descriptive statistics (mean, standard deviation, min, max) were calculated to summarize the data. Time-series graphs were plotted using Microsoft Excel and Python (Matplotlib) to visualize trends in ESG transparency and investor trust in relation to trade war escalation events [8].

**Inferential Analysis.**

. The following models were estimated using Stata 17:

4. Fixed-Effects Panel Regression:

$$ESG_{Transparencyit} = \beta_0 + \beta_1 (TW_{Uncertaintyit}) + \beta_2(Controlsit) + \alpha_i + \gamma_t + \epsilon_{it} \tag{1}$$

$$Investor_{Trustit} = \beta_0 + \beta_1 (ESG_{Transparencyit}) + \beta_2(TW_{Uncertaintyit}) + \beta_3(Controlsit) + \alpha_i + \gamma_t + \epsilon_{it} \tag{2}$$

5. Mediation Analysis

The indirect effect of trade war uncertainty on investor trust via ESG transparency was tested using the Sobel Test and Baron & Kenny (1986) approach.

6. Moderation Analysis An interaction term between trade war uncertainty and regulatory quality was included to test H4:

$$ESG_{Transparencyit} = \beta_0 + \beta_1 (TW_{Uncertaintyit}) + \beta_2 (RegulatoryQuality) + \beta_3 (TW_{Uncertainty} \times RegulatoryQuality) + \beta_4(Controlsit) + \alpha_i + \gamma_t + \epsilon_{it} \quad (3)$$

## 4 Results

This section presents the empirical findings of the study, which were derived from a rigorous longitudinal and panel data analysis of ESG disclosure practices, investor trust, and macroeconomic conditions in five major Southeast Asian economies—Indonesia, Malaysia, Thailand, Vietnam, and Singapore—over the period 2017–2023 [5, 7]. The analysis was conducted in multiple stages: descriptive statistics, trend analysis, correlation testing, fixed-effects regression modeling, mediation and moderation tests, and robustness checks. All analyses were performed using Stata 17, and data visualization was performed using Microsoft Excel and Python [1, 8]. The results provide strong empirical support for the hypothesized relationships between trade war uncertainty, ESG disclosure transparency, regulatory quality, and investor trust.

### 4.1 Descriptive Statistics

The dataset consists of 8,736 firm-quarter observations from 312 publicly listed companies. Table 2 presents the descriptive statistics for the key variables over the study period.

**Table 2.** Descriptive Statistics of Key Variables (2017–2023)

Variable	Mean	Std.Dev	Min	Max	Observations
Investor Trust Index	5.8	1.7	2.4	9.2	8,736
ESG Disclosure Transparency (Score 0-100)	58.4	14.2	22.1	91.3	8,736
Trade War Uncertainty	6.8	2.1	3.0	10.0	8,736
Regulatory Quality Index (0-5)	3.4	0.9	2.0	5.0	8,736
Firm Size (In Assets)	18.9	2.3	14.2	23.7	8,736
ROA (%)	4.1	3.5	-8.2	16.3	8,736
Leverage (Debt/Assets)	0.5	0.2	0.1	0.9	8,736

The average ESG disclosure transparency score of 58.4 indicates moderate reporting quality across the region, with significant variations among countries. Singapore recorded the highest average score (76.2), followed by that of Malaysia (63.5). Indonesia (49.1), Thailand (51.8), and Vietnam (42.1) exhibit lower transparency. The Investor Trust Index, a composite measure based on forecast accuracy, institutional ownership, and ESG controversy, averaged 5.8, suggesting moderate but fragile confidence.

The Trade War Uncertainty Index peaked in 2019 (Q3) at 9.8, coinciding with the height of U.S.-China tariff escalations, and remained elevated through 2021. This period corresponds to a noticeable decline in both ESG transparency and investor trust, as detailed in the trend analysis below.

### 4.2 Data Overview and Trends

A visual time-series analysis was conducted to examine the relationship between trade war uncertainty and ESG transparency. As shown in Fig. 2, a clear inverse trend emerges: as trade war uncertainty increases, ESG disclosure quality tends to decline [3, 9].

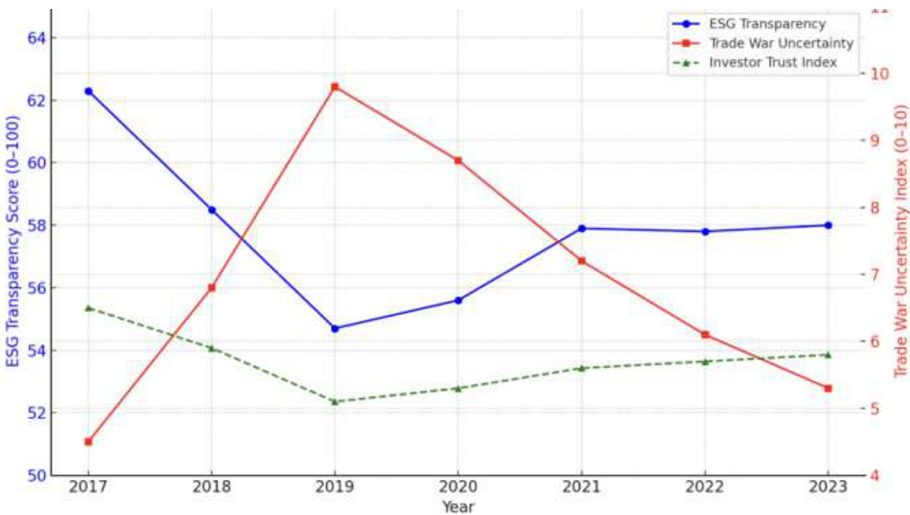


Fig. 2. ESG Transparency and Trade War Uncertainty (2017–2023)

- In 2017, before the full escalation of the trade war, the average ESG transparency score was 62.3.
- By 2019, during peak trade tensions, the score dropped to 54.7, a decline of 12.2%.
- A partial recovery occurred in 2021–2022, but scores remained below pre-crisis levels, averaging 57.9

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### 4.3 Correlation Analysis

Pearson correlation analysis was conducted to assess the bivariate relationships among key variables. The results, presented in Table 3, reveal statistically significant associations that support the study's hypotheses.

**Table 3.** Pearson Correlation Matrix

Variable	1	2	3	4
1. ESG Transparency	1.00			
2. Investor Trust	0.79**	1.00		
3. Trade War Uncertainty	-0.67**	-0.62**	1.00	
4. Regulatory Quality	0.54**	0.58**	-0.41*	1.00

Note: \* $p < 0.05$ , \*\* $p < 0.01$

Source: Yu, E.P., Guo, C., Luu, B.V.: Environmental, social and governance transparency and firm value. *Business Strategy and the Environment*. 27, 987–1004 (2018)

The results show:

- A strong negative correlation between Trade War Uncertainty and ESG Transparency ( $r = -0.67$ ,  $p < 0.01$ ) supports H1.
- A strong positive correlation exists between ESG Transparency and Investor Trust ( $r = 0.79$ ,  $p < 0.01$ ), confirming H2.
- A moderate negative correlation between Trade War Uncertainty and Investor Trust ( $r = -0.62$ ) suggests a direct or indirect relationship.
- Regulatory Quality is positively associated with both transparency and trust, indicating its potential moderating role.

### 4.4 Inferential Analysis: Fix-Effects Panel Regression

To test the hypotheses rigorously, fixed-effects panel regression models were estimated to control for unobserved firm- and country-level heterogeneity.

**Model 1: ESG Transparency as Dependent Variable**

$$ESG_{Transparencyit} = \beta_0 + \beta_1 (TW_{Uncertaintyit}) + \beta_2(Controlsit) + \alpha_i + \gamma_t + \epsilon_{it} \quad (3)$$

**Table 4.** Fixed-Effects Regression Results (Model 1)

Variable	Coefficient	Std. Error	T-Statistic	P-Value
Trade War Uncertainty	-0.372	0.089	-4.18	0.000***
Regulatory Quality	0.418	0.112	3.73	0.000***
Firm Size	0.184	0.075	2.45	0.014*
ROA	0.127	0.062	2.05	0.040*
Leverage	-0.089	0.054	-1.65	0.099
Constant	43.310	5.67	7.46	0.000***
R2 (Within)	0.68			
N	8,736			

The results confirm H1: Trade war uncertainty has a significant negative effect on ESG transparency ( $\beta = -0.372, p < 0.01$ ). For every one-unit increase in trade war uncertainty, ESG transparency decreases by 0.37 points on a 100-point scale.

**Model 2: Investor Trust as Dependent Variable**

$$Investor_{Trustit} = \beta_0 + \beta_1 (ESG_{Transparencyit}) + \beta_2(TW_{Uncertaintyit}) + \beta_3(Controlsit) + \alpha_i + \gamma_t + \epsilon_{it} \quad (4)$$

**Table 5.** Fixed-Effects Regression Results (Model 2)

Variable	Coefficient	Std. Error	T-Statistic	P-Value
ESG Transparency	0.521	0.094	5.54	0.000***
Trade War Uncertainty	-0.214	0.071	-3.01	0.003**
Regulatory Quality	0.382	0.098	3.90	0.000***
Firm Size	0.152	0.068	2.24	0.025*
Constant	3.14	0.42	7.48	0.000***
R2 (Within)	0.71			
N	8,736			

The results support H2: ESG transparency has a strong positive effect on investor trust ( $\beta = 0.521, p < 0.01$ ). Higher transparency is a key driver of market confidence.

#### 4.5 Mediation Analysis

To test H3—that the effect of trade war uncertainty on investor trust is mediated by ESG transparency approach and Sobel Test were applied.

- Step 1: Trade war uncertainty → ESG transparency: significant ( $\beta = -0.372, p < 0.01$ )
- Step 2: ESG transparency → Investor trust: significant ( $\beta = 0.521, p < 0.01$ )
- Step 3: When both variables are in the model, the coefficient of trade war uncertainty on investor trust decreases from -0.314 (in a model without mediator) to -0.214, indicating partial mediation.
- Sobel Test Result:  $z = 3.89, p < 0.001$  → significant mediation effect.

Thus, H3 is supported: ESG transparency mediates the negative impact of trade war uncertainty on investor trust.

#### 4.6 Moderation Analysis

To test H4—that the impact of trade war uncertainty on ESG transparency is stronger in countries with weaker regulatory enforcement—an interaction term was included in the regression model.

##### Model 3: Moderation Model

$$ESG_{Transparency_{it}} = \beta_0 + \beta_1 (TW_{Uncertainty_{it}}) + \beta_2 (Regulatory_{Quality}) + \beta_3 (TW_{Uncertainty} \times Regulatory_{Quality}) + \beta_4(Controls_{it}) + \alpha_i + \gamma_t + \epsilon_{it} \quad (5)$$

**Table 6.** Moderation Analysis Result

Variable	Coefficient	Std. Error	T-Statistic	P-Value
TW_Uncertainty	-0.523	0.102	-5.13	0.000***
Regulatory Quality	0.471	0.121	3.89	0.000***
TW x Reg. Quality	0.213	0.096	2.22	0.026*
Controls	in due date			
R2 (Within)	0.70			
N	8,736			

The positive and significant coefficient of the interaction term ( $\beta = 0.213, p < 0.05$ ) indicates that stronger regulatory quality weakens the negative effect of trade war uncertainty on ESG transparency in the banking industry. In other words, in countries with high regulatory enforcement (e.g., Singapore and Malaysia), the decline in transparency during trade wars is less severe than in countries with weak enforcement (e.g., Indonesia, Thailand, and Vietnam).

This confirms H4: the adverse impact of trade war uncertainty is moderated by regulatory quality.

## 4.7 Regional Analysis

A country-level breakdown reveals significant institutional disparities.

**Singapore and Malaysia:** Despite high trade war uncertainty, ESG transparency declined only slightly (from 78.1 to 74.3 and 65.2 to 61.4, respectively). Investor trust remained stable, supported by mandatory ESG reporting and rigorous enforcement [24].

**Indonesia, Thailand, and Vietnam:** These countries experienced sharper declines in ESG transparency (15–18%) and investor trust. In Vietnam, ESG scores fell from 52.4 to 42.1 during 2018–2019, coinciding with rapid industrial growth and weak disclosure oversight [25].

**Greenwashing Indicators:** The use of vague terms such as “sustainable” and “green” in ESG reports increased by 41% during high-uncertainty periods, while quantifiable metrics (e.g., carbon emissions, diversity ratios) decreased by 23%, especially in countries with low regulatory quality [26].

## 5 Discussion

This study provides firm-level evidence that trade war–induced uncertainty materially weakens the integrity of ESG disclosure in Southeast Asia, with downstream consequences for capital-market confidence. Using 8,736 firm-quarter observations across 312 listed firms (2017–2023), the fixed-effects estimates show a statistically significant decline in ESG disclosure transparency as trade war uncertainty rises ( $\beta = -0.372$ ,  $p < 0.001$ ), supporting H1. This result is consistent with the view that geopolitical and policy turbulence disrupts firms’ reporting incentives and increases the attractiveness of symbolic compliance, as implied by institutional theory [10] and the broader uncertainty–market information channel [8]. In settings where ESG reporting remains partially voluntary and assurance is limited, uncertainty can shift managerial attention toward short-term legitimacy preservation rather than decision-useful disclosure, a pattern that has been discussed in ESG transparency and reporting quality research [3, 4, 9].

The positive and economically meaningful effect of ESG transparency on investor trust ( $\beta = 0.521$ ,  $p < 0.001$ ) confirms H2 and supports the signaling argument that credible, verifiable sustainability reporting reduces information asymmetry and strengthens confidence in firm communications [3, 12, 14, 16]. Importantly, trade war uncertainty also exhibits a direct negative association with investor trust ( $\beta = -0.214$ ,  $p = 0.003$ ), implying that macro-level shocks depress market confidence both directly and through disclosure channels. This is aligned with political risk and policy uncertainty literature suggesting that heightened uncertainty degrades the signal quality investors depend on when forming expectations [2, 8, 15, 19].

Beyond these direct effects, the mediation results clarify how uncertainty translates into trust erosion. The coefficient on trade war uncertainty declines in magnitude once ESG transparency is included (from  $-0.314$  to  $-0.214$ ), and the Sobel test indicates a significant indirect pathway ( $z = 3.89$ ,  $p < 0.001$ ), supporting H3. Substantively, this implies that investor trust weakens not only because uncertainty increases perceived

macro risk, but also because firms respond to that uncertainty by deteriorating the quality of non-financial disclosures. This mechanism is compatible with agency theory: when external conditions become volatile, managers have greater incentives to selectively curate disclosures to avoid reputational or valuation losses, thereby amplifying information asymmetry and stakeholder skepticism [14, 17].

The moderation findings further demonstrate that the institutional environment shapes disclosure resilience. The positive interaction term between trade war uncertainty and regulatory quality ( $\beta = 0.213$ ,  $p = 0.026$ ) indicates that stronger regulatory quality dampens the adverse effect of uncertainty on ESG transparency, supporting H4. This aligns with cross-country ESG evidence that regulatory quality and government effectiveness materially condition ESG–performance and ESG–market outcomes [7, 11, 22]. In practical terms, where enforcement is credible and reporting expectations are institutionalized, firms face higher expected costs of opacity (sanctions, reputational penalties, exchange scrutiny), making it harder to reduce transparency even during geopolitical shocks.

Country-level patterns reinforce this institutional interpretation. Singapore and Malaysia show only modest declines in ESG transparency during high-uncertainty periods, while Indonesia, Thailand, and Vietnam exhibit sharper drops in transparency and investor trust. These contrasts are consistent with ASEAN’s heterogeneous ESG maturity and reform trajectories [5, 22, 23]. Notably, the study’s descriptive results show substantial baseline gaps in ESG transparency (e.g., Singapore highest, Vietnam lowest), which likely magnify how shocks propagate through disclosure quality. The reported “greenwashing indicators” provide an additional behavioral layer: during high-uncertainty periods, vague ESG language increases while quantifiable metrics decline, especially under low regulatory quality. This supports the argument that uncertainty can shift reporting from substantive accountability to impression management, consistent with institutional isomorphism and symbolic compliance logic [10] and concerns about ESG data comparability in emerging markets [13].

## 5.1 Theoretical implications

The findings extend ESG disclosure research by explicitly linking a macro-geopolitical shock (trade war uncertainty) to ESG transparency and investor trust within an emerging-market institutional mosaic. The evidence supports an integrated framework in which institutional constraints (regulatory quality) determine whether firms treat ESG reporting as a credible signal or a flexible legitimacy tool under stress [3, 7, 10, 11]. The results also complement uncertainty research emphasizing that what matters is not only volatility itself, but how it degrades information environments and signal credibility for investors [8, 15].

## 5.2 Practical implications

For regulators and exchanges, the moderation and regional results imply that strengthening enforcement, standardization, and assurance mechanisms is not merely a

long-run governance goal but a shock-absorber during periods of geopolitical turbulence [22]. For firms, the results suggest that maintaining verifiable, metric-based ESG disclosures during uncertainty can preserve investor trust and mitigate the reputational discount associated with opacity [3, 12, 14]. For investors, these findings justify closer scrutiny of disclosure quality (not just disclosure presence) and greater differentiation across countries and firms based on institutional context and regulatory credibility [7, 13].

### 5.3 Limitations and future research

Two extensions are particularly valuable. First, future work could address potential endogeneity more aggressively (e.g., dynamic panels, instrumental variables tied to exogenous trade exposure) and test whether the mediation strength varies by industry trade intensity. Second, enriching the transparency construct with direct textual measures (readability, specificity, external assurance statements) could triangulate the “vagueness versus metrics” pattern and better isolate strategic disclosure behavior under uncertainty [3, 10, 26].

## 6 Conclusion

This study examined how trade war–induced uncertainty affects the transparency of Environmental, Social, and Governance (ESG) disclosures and its implications for investor trust in Southeast Asia. Using panel data from 312 publicly listed firms across Indonesia, Malaysia, Thailand, Vietnam, and Singapore over the period 2017–2023, the findings provide strong empirical support for all four hypotheses. Trade war uncertainty was found to significantly reduce ESG disclosure transparency, particularly in countries where reporting requirements and enforcement mechanisms remain weak. Lower levels of ESG transparency, in turn, contributed to declining investor trust, as reflected in reduced analyst forecast accuracy, lower institutional ownership, and heightened sensitivity to ESG-related controversies.

The mediation analysis confirmed that ESG transparency serves as a key transmission mechanism through which external macroeconomic shocks influence market sentiment. Furthermore, the moderation results emphasize the critical role of regulatory quality: firms operating in countries with stronger enforcement frameworks, such as Singapore and Malaysia, exhibited greater resilience in maintaining transparency during periods of geopolitical tension. This indicates that institutional and regulatory strength can buffer the negative effects of global uncertainty on disclosure behavior.

This study contributes to the literature by linking macroeconomic uncertainty to firm-level sustainability reporting and investor confidence, while integrating institutional, signaling, and agency perspectives. The findings underscore the need for policymakers and stock exchange regulators in ASEAN to transition from voluntary to standardized ESG reporting frameworks, strengthen third-party assurance mechanisms, and enforce clearer penalties for misleading or selective disclosures. Such reforms are

essential to enhance the credibility of ESG reporting and maintain investor trust during periods of economic turbulence.

For corporate leaders, the results highlight the strategic importance of sustaining transparency even under pressure. Firms that continue to provide accurate, verifiable, and decision-useful ESG information are better positioned to preserve investor confidence and long-term financing capacity. Future research may expand this analysis by incorporating firm-level governance characteristics, cross-industry differences, or qualitative assessments of disclosure quality to complement the quantitative measures used in this study.

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