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ECONOMIC POLICY UNCERTAINTY AND FIRM VALUE: THE MODERATING ROLE OF ESG PERFORMANCE

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Abstract

This study examines whether environmental, social, and governance (ESG) activities can alleviate the negative impact of economic policy uncertainty on firm value. Using an unbalanced panel of 6,451 firm-year observations of U.S. non-financial firms from 2018 to 2024, we find that strong ESG performance mitigates the negative effect of EPU on firm value. Our results remain robust when controlling for firm-year fixed effects. To address potential endogeneity and correct for heteroskedasticity and autocorrelation, we employ instrumental-variable estimation and feasible generalized least squares. Further analysis reveals that ESG's moderating effect is especially significant during periods of heightened regulatory uncertainty, supporting the stakeholder reputation theory. Overall, ESG acts as a credibility-enhancing mechanism, offering insurance-like benefits that stabilize firm value and boost investor confidence in uncertain policy environments. These findings offer important insights for managers, investors, and regulators focused on corporate resilience and market stability.

1. INTRODUCTION

Over the past decade, particularly in the last five to six years the global economic environment for businesses has been characterized by heightened volatility and increased uncertainty. The US-China trade conflict, COVID-19 pandemic, and Russian invasion of Ukraine have worsened economic instability due to energy and food shortages. These developments have aggravated several adverse economic trends (Bekkers & Schroeter, 2020; Naseer et al., 2025). The governments typically respond to this volatility by modifying their policies there by producing economic policy uncertainty. This is especially significant, given that EPU not only has a role in influencing overall economic performance, but also, more directly, on the firms' financial and strategic decisions (Al-Thaqeb & Algharabali, 2019). Simultaneously, increasing focus on environmental, social, and governance (ESG) activities has raised serious concerns over the efficacy of sustainability-oriented strategies in enabling firms to endure the negative financial impacts of unpredictable policy landscapes.

Following the global financial crisis that occurred in 2007-2008, researchers have increasingly focused on the effects of EPU both across countries and industries. Baker, (2016) noted that policy uncertainty increased after the crisis due to the concerns among households and businesses regarding the government spending, taxation, and regulations. They find that EPU hinders post-recession recovery as companies and households postpone investment and consumption decisions. Effects of EPU are reported to be extensive and multifaceted. Tajaddini & Gholipour, (2021) shows that an increase in EPU discourages firms from engaging in innovation activities. Uncertainty can arise from various sources, which may be either short-term or long-term in essence. As an example, short-term volatility can be caused by fluctuations in oil prices, whereas currency instability and sudden changes in corporate leadership will cause long-term effects (Al-Thaqeb & Algharabali, 2019).

Existing studies provide valuable but partial insights, leaving critical gaps. To be specific Ahsan, (2022) finds that intense EPU negatively impacts sustainable growth, particularly on businesses with weaker strategic foundations. Prior research has largely examined EPU's direct impact on investment, financial constraints, and innovation (Gulen & Ion, 2016; Tajaddini & Gholipour, 2021), whereas ESG studies have emphasized its effects on the improvement of financial performance or mitigation of firm-specific risks (Albuquerque et al., 2020). High levels of EPU are also associated with investment delays, increased debt, stricter financial constraints, and lower returns (Bernanke, 1983). Despite these contributions, these literatures have evolved largely independently, resulting in limited understanding of ESG's moderating role in the EPU–firm value relationship. Empirical evidence on U.S. non-financial firms remains scarce, even though these firms are particularly vulnerable to policy shocks. This study addresses this gap by integrating ESG performance into the analysis of EPU's effect on firm value, highlighting how sustainability initiatives can mitigate the negative effects of policy uncertainty.

This study employs 6451 firm-year observations of U.S. companies from 2018 to 2024. Policy uncertainty is measured using the Economic Policy Uncertainty index (Baker et al., 2016), while Refinitiv's standardized ESG scores serve as a proxy for ESG performance. Firm value is captured by Tobin's Q, a widely used measure of market valuation relative to asset base. We conduct panel regressions that include fixed effects for firms and years to account for unobserved differences and time-varying shocks. We cluster standard errors at the firm level to address potential serial correlation. This empirical approach allows us to make reliable inferences about the moderating role of Environmental, Social, and Governance (ESG) factors in the relationship between policy uncertainty and firm value.

The paper makes two main contributions. First, strong ESG performance mitigates the negative effects of increased policy uncertainty on the valuation of non-financial firms, extending previous research on EPU, ESG, and firm value and providing an extension to prior research on EPU, ESG, and firm value. Second, the paper underscores the strategic importance of having sustainability initiatives in maintaining firm value where the future is uncertain, a managerial learning point that sustainability initiatives are represent worthwhile investments, both socially and strategically.

The remainder of this paper is organized as follows: Section 2 reviews the relevant literature and formulates the hypotheses. Section 3 presents the data, sample, variables, and research methodology. Section 4 reports and discusses the empirical results. Section 5 highlights the implications and offers recommendations. Finally, the paper concludes in Section 6.

2. Theoretical Review and Hypothesis Development

This study draws on signaling theory Spence, (1978) and stakeholder theory Freeman, (1984) to explain how ESG performance moderates the relationship between economic policy uncertainty and firm value. These perspectives provide a coherent framework for understanding how ESG reduces information frictions, shapes investor perceptions, and enhances firm resilience under uncertain policy environments.

Economic policy uncertainty increases ambiguity regarding future cash flows, regulatory conditions, and macroeconomic outcomes. As a result, investors face greater difficulty in assessing firm fundamentals, which elevates information asymmetry and perceived risk (Easley & O'hara, 2004; Ellahie et al., 2022). This uncertainty leads capital providers to demand higher risk premiums, thereby reducing firm valuation. Voluntary corporate disclosures play a central role in mitigating these frictions by conveying firm-specific information to external stakeholders (Bourveau et al., 2022; Healy & Palepu, 2001).

From a signaling theory perspective, ESG performance functions as a credible and costly signal of firm quality, risk management capability, and long-term orientation. High ESG engagement requires substantial organizational commitment, monitoring systems, and reporting structures, making it difficult for lower-quality firms to imitate. As a result, ESG disclosures convey reliable information regarding firm transparency and stability. Investors interpret such disclosures as indicators of lower risk and stronger governance, which reduces information asymmetry and perceived uncertainty (Kothari et al., 2009). This signaling role becomes particularly valuable during periods of elevated policy uncertainty, when traditional financial indicators are less informative. Consequently, firms with stronger ESG performance are better able to mitigate the negative valuation effects associated with EPU.

Stakeholder theory complements this mechanism by emphasizing the importance of maintaining strong relationships with a broad set of stakeholders, including investors, creditors, regulators, employees, and the public (Crifo et al., 2015; Donaldson & Preston, 1995). Firms operate within a network of stakeholder relationships, and their long-term success depends on meeting stakeholder expectations and securing continued access to critical resources. ESG performance reflects a firm's commitment to environmental responsibility, social engagement, and sound governance, which enhances stakeholder confidence and trust. By aligning corporate behaviour with stakeholder expectations, ESG reduces perceived risk and improves stakeholders' ability to assess firm stability and long-term prospects (Hoskisson et al., 2018). This alignment is particularly important under conditions of policy uncertainty, where stakeholder trust becomes a key determinant of financial resilience.

Taken together, signaling theory explains how ESG reduces information asymmetry and risk perception, while stakeholder theory highlights how ESG strengthens trust and stability across stakeholder groups. These complementary mechanisms suggest that ESG performance attenuates the adverse effect of economic policy uncertainty on firm value.

2.1: Impact of Economic Policy Uncertainty on Firm Value

Substantial empirical literature exists on economic policy uncertainty and its impacts on firm-level decisions, valuations, and performance. For instance, Athari & Bahreini, (2023) who investigated the association between EPU and firm results using a news uncertainty index. Their results indicate that high EPU deteriorates investment, revenues, and employment but state-owned enterprises seem to be less susceptible to this. Iqbal, (2020) and Zhou, (2022) who examined 296 American tourism companies, reported the tendencies similar to those established in previous studies, again confirming the fact that firm performance suffers when the policy uncertainty is on the rise. All in all, the emerging scholarly consensus in recent years appears to be that greater EPU is the factor that firms should anticipate will have resulted in heightened negative performance implications and that the firm needs to base its strategic planning effectively around those heightened implications to ensure that the firm benefits strategically as a result.

Beyond accounting measures and market performance indicators, EPU influences wider financial behavior. One such channel is the effect found in precautionary motives of saving which often come in the form of increased cash holding. Firms that do not have ready access to external funding, become particularly vulnerable to increase liquidity buffers as uncertainty rises (Valencia, 2016). While larger cash reserves do reduce financing risks, they also limit investment at the same time since the liquid assets serve as substitutes of productive capital. Therefore, the relationship between EPU and the corporate investment decision has increasingly attracted investigations among scholars (Jackson & Orr, 2019; Zhou et al., 2022). The evidence generally suggests that policy uncertainty will lead to weaker investment and this will also reduce growth and firm value.

Olalere & Mukuddem-Petersen, (2022) conducted a cross-country study and examined the EPU-firm value association on 105 banks in BRICS countries. Using panel vector autoregressive and GMM models and reaffirmed a strong negative correlation, which was remained consistent across institutional and regional variations. This relationship is also largely due to the increasing cost of external financing. As Zhang, (2015) note, when uncertainty is high, the firms tend to reduce leverage as a result of the policy changes worsen financing conditions. Uncertainty in the market also investors demand higher risk premiums, and borrowing costs increase, and new projects become unfavorable. This is why managers, in the case of increased expenses on financing channels, prefer to limit investments and build precautionary reserves to protect themselves against the adverse impact of the financing expenses (Demir & Ersan, 2017).

These forces do not only bring down future cash flows but these also encourage risk-averse behavior. Research indicates that managers under EPU will favor low-risk, safe projects, further hurting the firm value (Chatjuthamard et al., 2020; Vural-Yavaş, 2020). The uncertainty also contributes to increasing the information asymmetry between lenders and borrowers which in turn can cause default risk premium levels to rise, and overall reduced performance (Mirza & Ahsan, 2020).

Collectively, this body of literature can be said that high EPU will reduce the value of firms by discouraging investment, increasing the cost of firm financing and prompting risk-averse behavior. Because of this, we hypothesize the following: firm value reduces during a time of high policy uncertainty.

H1: There is a negative and significant association between EPU and firm value.

2.2: The Moderating Role of ESG in the EPU–Firm Value Relationship

A growing body of research highlights the negative effects of economic policy uncertainty Healy & Palepu, (2001) on firm valuation. Two primary channels explain this effect, the first channel being the behavior of economic individuals Gomes, (2012) and the second being that of higher risk premia required by the investors. The first channel claims that people would reduce their spending and shift their portfolios to safer ones as the level of uncertainty around the macroeconomic environment and the performance of businesses in the future increases. Such a change weighs down on corporate profits and, by extension, the price of stock. The second channel focuses on the fact that policy uncertainty affects the expectations of investors in macroeconomic fundamentals which include interest rates and inflation. Investors are unable to project corporate earnings with accuracy under such uncertainty and hence require an extra uncertainty compensation. Pastor & Veronesi, (2012) created an equilibrium model with a positive policymaking uncertainty and greater investor risk aversion.

Based on the news-driven EPU index of Chen, (2017); Das & Kumar, (2018); Yung & Root, (2019) present empirical evidence demonstrating the negative relationship between policy uncertainty and firm value. Similarly, the reporting of environmental, social, and governance (ESG) data is growing to increase stakeholders' trust (Albuquerque et al., 2019). Research by Borghesi, (2019) and Vural-Yavaş, (2021) indicate that, in an environment of high uncertainty, disclosure of ESG leads to significant impacts on firm performance given that reputation capital developed through sustainable practices that serves as a form of insurance that helps protect the wealth of shareholders. It is no wonder that as ESG practices grew, so did voluntary disclosure of ESG activities that has only grown since the mid-1990s (Stolowy & Paugam, 2018). Additional evidence also shows that non-financial disclosure requirements can enhance firm valuation, as is often represented by the Tobin's Q (Ioannou & Serafeim, 2019).

The observations are confined by empirical studies during the crisis periods Lins, (2017) observed that the more a company performed in terms of its ESG practices, the higher the returns it earned, profitability, and growth during the 2008-09 financial crisis as compared to its low-ESG-performing rivals. More recently, Azimli, (2023) demonstrated that companies with better ESG records succeeded in maintaining the value of the enterprise in the case of climate-related policy uncertainty. A similar finding is reported by Ahsan, (2022); Jia & Li, (2020), and Rjiba, (2020) who also used the Baker, (2016) EPU index as an uncertainty proxy. These researches, in combination, underline the significance of trust between the firms and their stakeholder in lessening the negative effects of uncertainty.

However, much of the literature excludes financial institutions completely or studies financial/non-financial firms collectively, and these omissions leave us with a gap in our knowledge of the particular role of ESG in non-financial companies. In the Chinese case study Broadstock, (2021) demonstrated that ESG stocks performed significantly better than the non-ESG stocks throughout the COVID-19 pandemic. Equally Pástor & Vorsatz, (2020) have shown that strong mutual funds in terms of sustainability, and especially environmental sustainability attributes performed better during the same timeframe. All this evidence suggests that investors are ready to pay a premium on firms that show responsible behavior during a period of uncertainty. Yet, current literature does not explicitly refer the ESG relationship with performance to policy uncertainty.

With increased regulatory uncertainty, this study aims to bridge the gap by examining the influence of ESG reporting on the valuation of non-financial U.S. companies. Therefore, the following working hypothesis is proposed.

H2: ESG performance alleviates the impact of economic policy uncertainty on Firm valuation.

3. Data and methodology

3.1 Sample and Data

The sample includes non-financial firms from the USA, chosen for its comprehensive ESG reporting dataset. The period from 2018 to 2024 was selected based on the availability of ESG reporting data. The accounting data comes from the Eikon database and is expressed in US dollars. The environmental, social, and governance scores for the sampled firms are simply averaged to create the ESG index, which is derived from the same source (Rjiba et al., 2020; Yeh et al., 2020). Following the past work, Ahsan & Qureshi,(2021), We utilized the Economic Policy Uncertainty index of Baker, (2016) as a proxy for policy uncertainty. According to research by Ottenstein, (2022), there is a favorable correlation between sustainability reporting and the directive. Based on the correlation coefficients among independent variables, multicollinearity appears to be an unlikely issue. We initially use a fixed effects model to account for the unobservable heterogeneity of firms and time effects to address the empirical objectives.

3.2 Variable Construction

3.2.1 Independent Variable: Economic Policy Uncertainty

Economic Policy Uncertainty serves as this study's independent variable. The EPU index, developed by Baker, (2016), is reported monthly. It is converted to annual values by averaging the 12 monthly observations for each year and then matched with firm-year data.

3.2.2 Dependent Variable: Firm Value

Firm value is measured using Tobin’s Q, a well-established measure in financial literature. It is calculated as the ratio of the market value of equity plus total liabilities to the replacement cost of assets. The formula is:

$$\textit{Tobin's Q} = \frac{\textit{Market Value of Equity} + \textit{Total Liabilities}}{\textit{Total Assets}}$$

3.2.3 Moderating Variable: ESG Performance

The moderator variable in this case is ESG performance, which is measured using the Refinitiv ESG Score. The score is the aggregate performance in three environmental, social, and governance pillars. It is a scale of 0 to 100, with the higher the values, the better the sustainability practices. The ESG scores of the companies used in this study are obtained on Refinitiv Eikon.

3.3 Econometric Models and Methods

To empirically test the impact of ESG performance on firm value, while accounting for the moderating effect of EPU, we specify the following regression models. We track the works of (Ahsan & Qureshi, 2021; Barth & Clinch,

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2009) and (Rjiba et al., 2020) include firm-level control variables such as the debt-to-equity ratio.

3.3.1 Baseline Model: Firm Value and ESG Performance

The first model estimates the direct effect of ESG performance on firm value, as measured by Tobin's Q. The model includes firm-level control variables such as the debt-to-equity ratio (DERATIO). The baseline model is specified as:

$$\boldsymbol{Tobin's\,Q_{i,t} = \beta_0 + \beta_1 EPU_{i,t} + \beta_2 ESG_{i,t} + \sum \beta_n X_{i,t} + \gamma_i + \delta_t + \varepsilon_{i,t}}$$

Where: $Tobin's\, Q_{i,t}$ is the firm value for firm i at time t. $ESG_{i,t}$ is the ESG performance score for firm $i$at time t. $X_{i,t}$ is a vector of firm-level control variables (e.g., leverage, firm size, firm age), γ_i and δ_t are firm and time fixed effects, respectively, $\epsilon_{i,t}$ is the error term.

3.3.2 Moderating Effect Model: EPU and ESG Performance

The second model introduces an interaction term between ESG performance and EPU to explore the moderating role of EPU in the relationship between ESG and firm value. The model is specified as:

$$\boldsymbol{Tobin's\,Q_{i,t} = \beta_0 + \beta_1 EPU_{i,t} + \beta_2 ESG_{i,t} + \beta_3 (EPU_{i,t} * ESG_{i,t}) + \sum \beta_n X_{i,t} + \gamma_i + \delta_t + \varepsilon_{i,t}}$$

Where: $ESG_{i,t}$ represents the ESG performance score for firm i at time t. The interaction term $ESG_{i,t} \times EPU_{i,t}$ captures the moderating effect of ESG on the relationship between EPU and firm value.

3.4 Endogeneity Concerns

Endogeneity is a critical concern when examining the relationship between economic policy uncertainty and firm value, as reverse causality and omitted variables could bias the estimates. We employ a Two-Stage Least Squares (2SLS) estimation strategy to address these concerns. We use the one-period lagged value of EPU as an instrumental variable, which satisfies the relevance condition by being strongly correlated with current EPU, while meeting the exclusion restriction by being unlikely to directly influence contemporaneous firm value except through current EPU. This approach effectively mitigates potential endogeneity bias. We conduct diagnostic tests, including the Anderson canonical correlation LM test and the Cragg-Donald Wald F-statistic, to assess the relevance and strength of our instrument. The Anderson LM statistic confirms that the instrument is not under-identified, while the Cragg-Donald F-statistic, far exceeding the Stock-Yogo critical threshold of 10, confirms that our instrument is not weak, thus enhancing the reliability of our causal inference.

3.5 Robustness Checks

To guarantee the soundness of our findings, various checks are carried out to determine how sensitive our findings are to various model assumptions. We use Feasible generalized least squares (FGLS) to adjust for heteroskedasticity and autocorrelation, giving more accurate estimates than ordinary least squares (OLS). Additionally, we test the temporal stability of the results by lagging both ESG and EPU in some regressions, ensuring that short-term fluctuations do not drive the observed effects. Finally, a sub-sample analysis is conducted to re-estimate the models for periods of high and low EPU, allowing us to examine whether the impact of

ESG performance varies depending on the level of policy uncertainty.

4. Empirical results and discussion

Table 4.1 reports the descriptive statistics for the study variables. The sample consists of 6,451 firm-year observations. The average Tobin's Q is 2.421, indicating that firms in the sample generally have positive market valuation and growth prospects, while its standard deviation shows meaningful variation across firms. The mean ESG score is 39.903, with a wide range from 0.647 to 91.428, suggesting substantial differences in firms' sustainability performance and disclosure practices. Economic policy uncertainty has an average value of 32.942, indicating that firms operate under varying levels of policy-related uncertainty. The control variables, including firm age, inflation, GDP growth, debt-to-equity ratio, board size, and firm size, also show sufficient variation, reflecting differences in firm maturity, macroeconomic conditions, capital structure, governance characteristics, and organizational scale. Overall, the descriptive statistics indicate that the dataset contains adequate variation across firm-level and macroeconomic variables, making it suitable for examining the relationship among economic policy uncertainty, ESG performance, and firm value.

Table 4.1: Descriptive Statistics and Variance Inflation Factors

Table 4.2 presents the pairwise correlation matrix for the study variables. Tobin's Q is positively correlated with ESG performance (0.274), firm age (0.144), board size (0.196), and firm size (0.427), suggesting that firms with stronger ESG performance, greater maturity, larger boards, and larger organizational scale tend to have higher market valuation. In contrast, Tobin's Q is negatively correlated with economic policy uncertainty (-0.025) and inflation (-0.041), indicating that uncertainty and adverse macroeconomic conditions may be associated with lower firm value. ESG is strongly correlated with firm size (0.661) and board size (0.509), implying that larger firms and firms with broader governance structures are more likely to have higher ESG performance. Economic policy uncertainty is negatively correlated with inflation (-0.438) and GDP growth (-0.154), reflecting its association with macroeconomic conditions. The VIF values range from 1.002 to 2.192 with a mean of 1.597, well below the threshold of 5, confirming that multicollinearity is not a concern in this study.

Table 4.1: Descriptive Statistics

Variables	N	Mean	Std. Dev.	Min	Max	VIF
TOBINSQ	6451	2.421	1.400	1.026	5.354	
EPU	6451	32.942	6.493	22.36	40.94	1.253
ESG	6451	39.903	19.377	0.647	91.428	1.893
AGE	6451	26.313	19.91	4.000	68.00	1.022
INF	6451	3.321	2.334	1.230	8.000	1.522
GDP	6451	2.370	2.327	-2.200	6.100	1.229
DERATIO	6451	0.145	0.806	-0.997	1.595	1.002
BS	6451	8.905	2.195	1.000	51.00	1.661
FIRMSIZE	6451	21.176	1.854	14.611	26.86	2.192
Mean VIF						**1.597**

Table 4.2: Pairwise Correlation

Variables	TOBINSQ	EPU	ESG	AGE	INF	GDP	DERATIO	BS	FIRMSIZE
TOBINSQ	1.000								
EPU	-0.025	1.000							
ESG	0.274	0.010	1.000						
AGE	0.144	0.016	0.134	1.000					
INF	-0.041	-0.438	0.089	-0.024	1.000				
GDP	0.018	-0.154	0.019	0.000	0.427	1.000			
DERATIO	0.022	0.015	0.026	0.007	-0.025	0.003	1.000		
BS	0.196	-0.026	0.509	0.108	-0.006	0.017	0.011	1.000	
FIRMSIZE	0.427	-0.017	0.661	0.115	-0.002	0.010	0.029	0.613	1.000

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

The regression results in Table 4.3 reveal that economic policy uncertainty has a substantial negative influence on company value, as evidenced by a negative coefficient (-0.164, p<0.1). ESG performance is also adversely connected with Tobin's Q (-0.252, p<0.01), demonstrating that higher ESG scores are linked to lower company value in this sample. The debt-to-equity ratio (DERATIO) has a positive and substantial influence (0.004, p<0.05), whereas board size (BS) is adversely associated to company value (-0.465, p<0.01). Firm size is highly and positively linked with Tobin's Q (1.864, p<0.01). Other control factors, including company age, inflation, and GDP growth, do not reveal significant impacts. The model incorporates both firms fixed effects and year fixed effects. The total model fit is strong, with a R^2 of 0.688, suggesting that nearly 69% of the variance in firm value is explained by the included variables.

Table 4.3: Baseline Regression

Variables	*TOBINSQ*
EPU	*-0.164***
	(-2.15)
ESG	*-0.252****
	(-4.31)
AGE	*0.001*
	-1.26

INF	*-0.225*
	(-0.15)
GDP	*-0.134*
	(-1.24)
DERATIO	*0.004***
	-2.54
BS	*-0.465****
	(-3.38)
FIRMSIZE	*1.864****
	-6.88
Firm fixed effect	*Yes*
Year fixed effect	*Yes*
Constant	*-27.295****
	(-6.33)
N	*6451*
F-stat	*325.056****
R^2	*0.688*

*** $p<.01$, ** $p<.05$, * $p<.1$

4.4 - Endogeneity tests (2SLS)

Table 4.4 provides the results of instrument testing economic policy uncertainty, where lagged EPU is used as an instrument. The Anderson canonical correlation LM statistic (LM = 3745.983, p = 0.000) confirms that the instrument is highly relevant, whilst the Cragg-Donald Wald F statistic (F = 790,000) indicates that the instrument is not weak. These diagnostics determine the reliability of the 2SLS estimates. At the second level, EPU negatively influences firm performance with a coefficient of -0.166 (z = -3.56), indicating that an increase in policy uncertainty negatively impacts profitability. The control variables work as anticipated since the firm age, GDP growth, and firm size positively impact Tobin's Q. In contrast, inflation, board size, and market capitalization are negatively correlated. Overall, these results demonstrate that economic policy uncertainty negatively affects firm performance and support the significance of developing a stable policy.

Table 4.4: Instrument Testing

	EPU
Anderson canon. corr. LM statistic	*3745.983*
P-Value	*0.000*
Cragg-Donald Wald F	*790000*

Table 4.5 reports the second-stage results of the IV 2SLS regression used as a robustness check, with lagged EPU employed as the instrumental variable. The coefficient of EPU is negative and statistically significant (-0.177), indicating that economic policy uncertainty continues to reduce firm value after addressing potential endogeneity concerns. This result supports the main finding that policy uncertainty weakens market valuation by increasing risk, reducing investor confidence, and creating an unstable business environment. ESG performance shows a positive and

significant coefficient (0.035), suggesting that firms with stronger ESG performance tend to have higher Tobin's Q. Among the control variables, firm age (0.048), GDP growth (0.441), debt-to-equity ratio (0.004), and firm size (6.448) are positively associated with firm value, while inflation (-0.826) and board size (-1.307) are negatively associated with Tobin's Q. The inclusion of firm and year fixed effects further strengthens the reliability of the results by controlling for unobserved firm-specific characteristics and time-related shocks. Overall, the IV 2SLS results confirm that the negative relationship between economic policy uncertainty and firm value remains robust.

Table 4.5: Two-Stage Least Squares (2SLS) Regression

Variables	*TOBINSQ*
	Second Stage
EPU	−0.177***
	(−3.72)
ESG	0.035**
	(2.10)
AGE	0.048**
	(2.88)
INF	−0.826***
	(−5.68)
GDP	0.441***
	(3.30)
DERATIO	0.004**
	(2.05)
BS	−1.307***
	(−6.51)
FIRMSIZE	6.448***
	(17.53)
Firm fixed effect	Yes
Year fixed effect	Yes
Constant	−122.849***
	(-17.57)
Observations	6451
R^2	0.218

*** *p*<.01, ** *p*<.05, * *p*<.1

The results of the baseline 2SLS illustrated that Economic Policy Uncertainty has a substantial negative impact on the firm's value, and ESG performance mitigates this impact. To establish the strength of these results, we adopt a separate estimation method of Feasible Generalized Least Squares (FGLS).

The findings of the FGLS robustness test are indicated in Table 4.6. The results still stand with the baseline regressions and the fact that Economic Policy Uncertainty has a significant negative impact on the firm value, and ESG performance has a positive and highly significant impact. Firms demonstrating a more substantial commitment to ESG principles are positioned to mitigate the adverse effects of policy uncertainty. The control variables have a positive effect on the firm's value, including firm age, GDP growth, and firm size, and adverse effects on this value are found in the control variables of inflation, board size, and firm-specific effects. All in all, the strong findings in the robustness outcomes support the key finding that the performance of ESG is a useful moderating factor that contributes to the EPU-Firm value relationship.

Table 4.6: Feasible Generalized Least Squares (FGLS) Regression

Variables	*TOBINSQ*
EPU	*−0.149****
	(−9.08)
ESG	*0.036****
	(6.98)
AGE	*0.060****
	(22.75)
INF	*−0.702****
	(−15.18)
GDP	*0.374****
	(9.97)
DERATIO	*0.006*
	(0.97)
BS	*−0.883****
	(−17.30)
FIRMSIZE	*4.693****
	(56.74)
Firm fixed effect	*Yes*
Year fixed effect	*Yes*
Constant	*−90.325****
	(-52.72)
Observations	*6451*

**** p<.01, ** p<.05, * p<.1*

Table 4.7 presents the moderating effect of ESG performance on the relationship between economic policy uncertainty and firm value. The coefficient of EPU is negative and statistically significant (-0.131), indicating that higher economic policy uncertainty is associated with lower Tobin's Q. This suggests that policy uncertainty may reduce firm value by increasing market risk, weakening investor confidence, and discouraging long-term investment. More importantly, the interaction term between ESG performance and EPU is positive and statistically significant (0.016), suggesting that ESG performance weakens the negative effect of policy uncertainty on firm value. This finding implies that firms with stronger ESG performance are more resilient during periods of policy uncertainty, possibly because ESG practices enhance stakeholder trust, improve governance quality, and reduce perceived risk. Among the control variables, firm age (0.048), debt-to-equity ratio (0.004), and firm size (-6.715) are negatively associated with Tobin's Q, while inflation (-0.684), GDP growth (-0.427), and board size (-1.339) are negatively associated with firm value. The model explains 20.7% of the variation in Tobin's Q, and the F-statistic indicates that the overall regression model is statistically valid.

Table 4.7: Moderating Effect of ESG Performance

Variables	*TOBINSQ*
EPU	*-0.131***
	(-2.13)
*ESG*EPU*	*0.016***
	(2.35)
ESG	*0.035***
	(2.10)
AGE	*0.048****
	(2.89)
INF	*-0.684****
	(-3.82)
GDP	*-0.427****
	(-3.19)
DERATIO	*0.004***
	(1.97)
BS	*-1.339****
	(-6.59)
FIRMSIZE	*-6.715****
	(-16.88)
Constant	*-130.169****
	(-16.88)
Observations	*6451*
F-stat	*76.176****
R^2	*0.207*

*** $p<.01$, ** $p<.05$, * $p<.1$

5. Conclusion & Recommendations

This study examines the relationship between economic policy uncertainty, ESG performance, and firm value in U.S. non-financial firms. The findings show that economic policy uncertainty negatively affects firm value, suggesting that uncertain policy conditions increase business risk, weaken investor confidence, and reduce market valuation. More importantly, the results show that ESG performance moderates this relationship. Firms with stronger ESG performance are less negatively affected by policy uncertainty, indicating that ESG can help firms build resilience during unstable economic and policy conditions. These findings suggest that ESG is not only a social or ethical activity, but also a strategic business tool. Strong ESG performance may improve stakeholder trust, corporate reputation, governance quality, and market confidence. Therefore, managers should treat ESG investment as part of long-term corporate strategy. Investors should also consider

ESG performance when evaluating firm value and risk, especially during periods of high uncertainty. Policymakers and regulators should encourage transparent and reliable ESG disclosure to support better investment decisions and more stable capital markets. This study has some limitations. It focuses only on U.S. non-financial firms, so the findings may not apply to financial firms or firms in other countries. In addition, potential endogeneity and omitted variable bias cannot be fully ruled out. Future research could examine the separate effects of environmental, social, and governance dimensions, compare firms across countries or industries, and explore how firm size, ownership structure, and corporate governance influence the relationship between ESG performance, policy uncertainty, and firm value.

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