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Economic and political uncertainty and firm-level stock returns in Vietnam: The moderating role of leverage

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ABSTRACT

This study examines the impact of economic and political uncertainty on firm-level stock returns in Vietnam and explores the moderating role of financial leverage. Using a dynamic panel dataset of 380 Vietnamese listed firms, the study employs the System Generalized Method of Moments (SGMM) to address endogeneity concerns. The findings reveal a significant negative relationship between uncertainty, measured by the World Uncertainty Index (WUI), and annual stock returns. However, firms with higher leverage experience a weaker negative effect, indicating that financial leverage serves as a buffer against uncertainty-driven stock fluctuations. Other firm-specific characteristics, including firm size, liquidity, and state ownership, do not exhibit consistent moderating effects. These results highlight the importance of capital structure in mitigating the adverse effects of uncertainty on stock market performance. The study provides practical implications for investors, policymakers, and corporate managers, suggesting that leverage can be strategically managed to reduce vulnerability to economic and political uncertainty. Investors should consider firms' leverage when making decisions during volatile periods, while policymakers can implement measures to support financial stability in uncertain environments. Corporate managers may leverage financial strategies to enhance firms' resilience to uncertainty.

Contribution/Originality: This study is the first to examine the impact of economic and political uncertainty on stock returns in Vietnam using a firm-level approach. It uniquely explores the moderating role of leverage in this relationship, providing novel insights that contrast with prior market-wide studies focused on advanced economies.

1. INTRODUCTION

In recent years, uncertainty has become a well-known phenomenon among researchers because of its capability in predicting stock returns (e.g., (Batabyal & Killins, 2021; Idnani, Adil, Mal, & Kolte, 2023)), investment decisions (e.g., (Bloom, Bond, & Van Reenen, 2007; Rashid & Saeed, 2017)) and risk management strategies of firms (e.g., (Doshi, Kumar, & Yerramilli, 2018)). Among uncertainty-related indices, the World Uncertainty Index (WUI) computed by Ahir, Bloom, and Furceri (2022) has gradually been recognized as a valuable indicator for uncertainty by capturing both economic and political aspects. The comprehensive scope of WUI slightly differentiates itself with the Economic Policy Uncertainty (EPU) index of Baker, Bloom, and Davis (2016) which focuses solely on uncertainties caused by changes in economic policies. While the EPU has been widely used as an indicator for uncertainty, recent studies such as that of Yu (2023) demonstrated the predictive power of the WUI in anticipating stock market performance during periods of heightened political and economic turmoil.

As suggested by Chatterjee (2019), emerging markets such as Vietnam are extremely vulnerable due to their weak financial systems and high dependence on foreign trade. Furthermore, the country has also been developing rapidly into a global manufacturing hub, which might make it vulnerable to both local policy turbulence and international economic shocks, as highlighted by Nguyen and Vo (2024). Hence, it can be inferred that uncertainties related to the economic and political aspects impose unique challenges for Vietnam, making it an ideal case for examining how uncertainty related to these aspects affects financial market performance.

Although substantial research has explored the impact of uncertainty on financial markets, significant gaps still exist, particularly for emerging markets such as Vietnam. Existing studies, to the best of our knowledge, mainly focus on advanced economies, possibly because of the wide availability of data, while the effort is neglected in markets where weaker financial systems and institutional frameworks could exponentially amplify the effects of uncertainty shocks. As Carrière-Swallow and Céspedes (2013) demonstrated, emerging economies experienced more severe declines in investment and consumption under uncertainty due to their credit constraints.

Similarly, Pitterle, Haufler, and Hong (2015) attributed emerging markets as being particularly vulnerable to global financial crises, where the effects of global financial turmoil could be much more detrimental and prolonged compared to their advanced counterparts. Furthermore, while Economic Policy Uncertainty (EPU) has been widely utilized in previous studies, the World Uncertainty Index (WUI), despite its broader focus, remains relatively under-researched.

The utilization of WUI is particularly suitable for the case of Vietnam, where both changes in political and economic policies are critically relevant to financial market performance (Nguyen & Vo, 2024). Moreover, the moderating roles of firm-level characteristics, such as leverage, liquidity, and state ownership in shaping firm responses to uncertainty have not been examined yet, despite their potential to reveal heterogeneity in the effects of uncertainty for different firms (Baker et al., 2016; Bloom, 2009).

This study seeks to address the gaps in existing literature by examining the impact of local uncertainty indicated by WUI on firm-level stock returns in Vietnam. Further, by scrutinizing firm-level data, this study aims to uncover heterogeneity in the responses of firms to heightened uncertainty, hence providing more nuanced and deeper insights that could have been overlooked when adopting a market-level approach in analysis. Specifically, whether firm-specific characteristics, such as leverage, firm size, and liquidity level, moderate the relationship between uncertainty and stock returns or not will be fully evaluated. The projected findings are of great relevance and importance, especially when there is a growing need for empirical research on emerging markets like Vietnam, where both the nexus between uncertainty and stock returns as well as the moderating roles of firm-level factors remain understudied. Through dynamic panel data analysis, the study aims to expand the current understanding of how local uncertainty influences the stock performance of firms in emerging markets and whether firms' attributes modulate this effect.

The significance and urgency of this study are threefold. First, it is one of the few studies to utilize the predictive capability of WUI in the context of an emerging market like Vietnam, where both political and economic uncertainty could significantly alter stock market outcomes. By adopting a firm-level approach, this paper provides additional empirical evidence from a different perspective regarding how uncertainty affects annual stock returns in Vietnam. Second, the study also clarifies the moderating role of firm-specific characteristics such as leverage, size, and liquidity in shaping the nexus between uncertainty and annual stock return. This aspect of the study is of significant novelty as it is the first study to integrate firm-level heterogeneity, as suggested by Bloom (2009) and Baker et al. (2016) to offer a more nuanced understanding of uncertainty's effects on stock return and thus address limitations in prior studies adopting a market-level approach. Third, by focusing on Vietnam, this study contributes to the currently limited body of literature on the impacts of uncertainty in Southeast Asia, thereby providing practical insights for policymakers, investors, and firms operating within Vietnam and the Southeast Asia region in general.

The structure of this paper is organized as follows. Section 2 provides a review of the existing literature and theoretical framework to explain the influence of uncertainty on stock return. Section 3 provides information about

data sources, description, and proposed approaches for calculating annual firm-level stock returns in a detailed manner while incorporating the empirical models and the application of the System Generalized Method of Moments (SGMM) estimation method to account for dynamic panel data in the study. Section 4 is dedicated to present the empirical results and a thorough discussion of the findings. Section 5 summarizes the findings and presents practical implications for investors and policymakers and suggestions for future research.

2. LITERATURE REVIEW

Economic Policy Uncertainty (EPU) and the World Uncertainty Index (WUI) are the most popular indices indicating the level of uncertainty within a nation. The EPU was developed by Baker et al. (2016) to measure turmoil related to economic policy, calculated based on the frequency of news regarding economic policy changes, and computed mainly for developed nations. On the other hand, the WUI index by Ahir et al. (2022) focuses more on country-level and region-level uncertainties on a global scale, with an emphasis on both political and economic aspects. In contrast to the EPU, the WUI was developed for various types of economies, and emerging markets like Vietnam were also considered.

As for financial markets, empirical evidence showed that the increase of uncertainties often led to higher risk-averse behaviors of investors and forced them to reallocate their financial resources to less risky assets, which might result in increased volatility in stock prices and decreased stock returns.

For instance, Antonakakis, Chatziantoniou, and Filis (2013) assessed the relationship between policy uncertainty and volatility in the US stock market and confirmed the capability of Economic Policy Uncertainty (EPU) in predicting stock market performance during uncertain contexts in the US.

A mechanism through which uncertainty affects the stock market could be through increased risk premiums, as Brogaard and Detzel (2015) indicated that Economic Policy Uncertainty (EPU) could be regarded as a risk in asset valuation, as higher exposure to uncertainty is associated with a negative return on stocks. Specifically, Brogaard and Detzel (2015) proposed that EPU can predict short-term excess returns as a risk premium since higher compensation is demanded during such uncertain periods. Furthermore, the effect was recorded to impact stocks through their rate of discount rather than flows of cash, i.e., dividends.

This nexus is believed to be especially significant in emerging economies, where both policy and regulatory uncertainties can disrupt stock market performance, as proposed in the study by Kang and Ratti (2015), which assessed the disruption to the stock market in China caused by turmoil in the economic environment.

Along with the general negative effects of uncertainty on stock market returns, the frequency and length of such effects have also been widely investigated. For instance, Ko and Lee (2015), utilizing wavelet analysis, demonstrated that EPU significantly impacts stock prices in a low-frequency manner, with negative effects existing over a period; however, such effects were intensified when policy uncertainty in the US intersected with other nations' turbulence. Such findings indicate that the source of disruption could be from both internal and external environments.

Further, such impact on stock returns was also recorded to vary across different time frames and market conditions. For instance, Li, Balcilar, Gupta, and Chang (2016) found the time-varying nature of such effects in China and India and argued that EPU did not accurately predict stock returns across different periods. Indeed, significant impacts were only pronounced during specific intervals within the recorded time frame, and the effect was generally weak for these two countries when considering the entire research period. In other words, the findings suggested the time-varying nature of the relationship between uncertainty and stock market performance, and that the effects might be amplified if there was global turbulence occurring alongside local turmoil.

Asafo-Adjei et al. (2020) also found a time-varying nature, as global EPU was found to be associated with African stock returns in the long term, while short-term investments remained relatively unaffected. Their analysis across eight African countries diverged from other studies during that period by indicating that EPU affects African stock markets mostly in the long term, while the nexus was quite weak in the short term. This further confirms the possibility of the divergence of the effects of uncertainty over different periods of time, where the impacts could be severe depending on the recorded period and the interaction of uncertainty in different regions or countries.

Furthermore, the impact of EPU on the stock market is also divergent for different sectors of the market, as Kundu and Paul (2022) found that the effects of EPU vary in bullish versus bearish markets, with investor reactions being particularly stronger during downturns as risk aversion intensifies. Jiang, Tian, Wu, and Mo (2022) added that sectoral differences in sensitivity to EPU are explained by the structural characteristics of different sub-sectors within the tourism industry, where certain sectors could be more vulnerable to changes in EPU compared to their counter-sectors.

Apart from the turmoil originating from the economic realm, an uncertain political framework could be utilized to explain the reduced stock market performance, as well as in the study of Souffargi and Boubaker (2024), where political turbulence in Tunisia is considered to explain the reduction in stock returns. Such a case could be linked to Vietnam as an emerging market as well, where both changes in the economic and political environment could cause fluctuations in stock returns. In general, existing studies imply that both political and economic policy uncertainty have a negative impact on stock returns, primarily due to an increase in stock price volatility resulting in adjusted risk premiums (e.g., Chen & Chiang, 2020) or changes in investor behavior (e.g., Batabyal & Killins, 2021; Idnani et al., 2023).

Further, the impact is also recorded to be divergent for different time frames or sectors within the market, which indicates that the impact of economic-related uncertainties might differ depending on the characteristics of the market. On the other hand, the current literature largely focuses on such effects on a market-wide scale rather than a firm-specific scale. Further investigation into the effects at the firm level could potentially generate more insightful findings that could not be assessed under a market-wide approach.

While existing studies have examined the effects of uncertainty on stock returns at a market-wide level, limited attention has been given to a firm-level approach when it comes to assessing the impact of heightened uncertainty, particularly in the context of emerging markets. By investigating the effects from a firm-level perspective, the heterogeneity of the impacts that may arise due to firm-level characteristics could be explored. As indicated in initiative studies regarding uncertainty, such as those by Bloom (2009) and Baker et al. (2016), firm-related elements such as firm size, leverage, liquidity, structure, or even industry could potentially modify the nexus between policy uncertainty and stock returns. This theoretical insight remains under-studied, indicating a need for studies from this approach. The gap, however, could be even more significant in emerging markets in Southeast Asia, a region that has become increasingly integrated into the global value chain and supply chain. Vietnam has rapidly grown as an essential hub for manufacturing and as an active trading partner with some of the most advanced economies, making it a relevant country for deeper insights.

Given the unique economic and political characteristics of Vietnam, local uncertainty may impact firms differently than in more economically advanced economies, since emerging markets like Vietnam are equipped with distinctively unique economic and political frameworks, which might have been neglected by previous studies that focused mainly on developed economies. Further, existing studies primarily utilized the EPU as the predictor of stock market performance, while a more comprehensive index such as the WUI has not been utilized. The broader scope of the WUI makes it particularly suitable for the case of Vietnam, where stock market performance might be influenced by turmoil in both economic and political frameworks. Therefore, we believe that there is an urgent necessity to examine these unique dynamics in the context of Vietnam. Further, the study also aims to investigate whether firm-specific factors as indicated by Bloom (2009) and Baker et al. (2016) alter the nexus between economic and political

uncertainty and stock market performance of firms. Such investigation is enabled by using a firm-based analysis approach. By taking a firm-level approach, this research contributes to current literature by providing a more nuanced understanding of how uncertainty affects stock market returns of firms in Vietnam. Such a firm-level approach could offer more insights by incorporating potential moderating roles of firm-level characteristics that could reveal valuable knowledge to investors and policymakers in Vietnam and in other emerging markets with identical contexts. In general, the findings of the study not only expand the empirical evidence regarding the nexus between turbulence and financial market performance in the context of emerging markets but also indicate the roles of firm-related attributes in the nexus, which are then used to generate practical insights for practitioners.

3. METHODOLOGY

3.1. Data Sources, Description, and Preparation

The data for this study were collected from four main sources. First, financial reports of 380 companies listed on the Ho Chi Minh Stock Exchange (HOSE) were used for firm-related data. Second, historical stock prices at the beginning of each month from January 2014 to January 2024 for these 380 companies were collected from HOSE. Third, the WUI index of Vietnam was collected from the work of Ahir et al. (2022). Fourth, macroeconomic data were collected from the World Bank and the International Monetary Fund (IMF) for country-level control variables. As for the independent variables, they can be classified into two categories: the main independent variable and control variables. The main independent variable is the WUI of Vietnam (denoted as WUI), which captures the level of political and economic uncertainty within the country. The control variables include firm-related and macroeconomy-related variables. The firm-related control variables include firm leverage (e.g., (Ramlah, 2021)), which is measured by the debt-to-equity ratio and denoted as LEV; firm size (e.g., (Yuliarti & Diyani, 2018)), which is measured by total assets and denoted as $SIZE$; liquidity (e.g., (Chabachib, Setyaningrum, Hersugondo, Shaferi, & Pamungkas, 2020)), which is calculated as the ratio of short-term assets to total assets and denoted as LIQ; and state ownership (e.g., (Zhou, 2017)), which is indicated by a dummy variable and denoted as $STATE$. The macroeconomic control variables include the lending interest rate (e.g., (Ahmad, Rehman, & Raoof, 2010)), which is denoted as INT; national GDP level (e.g., (Singh, Mehta, & Varsha, 2011)), which is denoted as GDP; the COVID-19 pandemic period (e.g., (Xu, 2021)), which is represented by a dummy variable denoted as $COVID$; and exchange rate (e.g., (Ahmad et al., 2010)), which is measured as the USD/VND exchange rate and denoted as EX. These variables provide a comprehensive control framework to account for both firm-specific and macroeconomic factors that may influence firm-level stock returns. Further, we converted $SIZE$, GDP, and EX to natural logarithmic forms to address potential heteroscedasticity in the dataset. Converting the variables to their natural logarithm helps stabilize variances and allows the coefficients to be interpreted in relative terms, which is particularly useful for these three continuous variables.

The main dependent variable in this study is annual stock return and is denoted as $RETURN$. This study employs four distinctive calculation methods to measure annual stock returns that could be named as Basic Annual Return, Logarithmic Annual Return, Geometric Mean of Monthly Returns, and Cumulative Monthly Returns. Even though the terms used could be slightly divergent, all these four approaches are common in the field of finance which could be found in foundational works in finance such as those of Bodie, Kane, and Marcus (2014); Campbell, Lo, MacKinlay, and Whitelaw (1998); Reilly and Brown (2003) and Strong (2007). By calculating annual stock returns using four distinct proxies, both proportional changes and compounding effects, as well as intra-year fluctuations are fully captured, thereby ensuring the robustness of our subsequent analysis and aligning our study with best practices in financial research. The four proxies are denoted as $BASIC$, LOG, GEO and $CMLT$ respectively. In addition, we also employ the price-to-book ratio being a fifth proxy, which is calculated by dividing firm's total market capitalization by its corresponding book value of equity based on data from latest financial report and is denoted as PB. Before proceeding, we would like to explain briefly the four approaches that we use to calculate annual stock return for

analysis in this study. The first approach to calculate annual stock return is by measuring the proportional change of stock price over a year, which we term as Basic Annual Return and illustrate in Equation 1.

$$Basic\ Annual\ Return = \frac{Price_{end\ of\ year} - Price_{start\ of\ year}}{Price_{start\ of\ year}} \quad (1)$$

In Equation 1, $Price_{start\ of\ year}$ of current year is assumed to be $Price_{end\ of\ year}$ for previous year and the result is demonstrated as decimal number. The approach offers a basic calculation of annual stock returns by measuring the gain or loss over the year using only two points of prices. The second approach, which we term as Logarithmic Annual Return and demonstrate as in Equation 2, is used to measure the compounding effect of returns.

$$\text{Logarithmic Annual Return} = \ln\left(\frac{Price_{end\ of\ year}}{Price_{start\ of\ year}}\right) \quad (2)$$

The third approach we use can be called Geometric Mean of Monthly Returns, which is used to calculate the average compounded stock price growth rate per month over a year and is demonstrated through Equations 3 and 4.

$$Monthly\ Return_t = \frac{Price_{t+1} - Price_t}{Price_t} \quad (3)$$

$$Geometric\ Mean\ of\ Monthly\ Returns = \left[\prod_{t=1}^{12}(1 + Monthly\ Return_t)\right]^{\frac{1}{12}} - 1 \quad (4)$$

In Equations 3 and 4 t runs from January to December within a year and the price is taken at the first trading day of each month for the research period. Finally, the Cumulative Monthly Returns is the fourth approach utilized to capture the aggregate effect of monthly stock price fluctuations on the overall annual stock return and is calculated as in Equation 5.

$$Cumulative\ Return = \prod_{t=1}^{12}(1 + Monthly\ Return_t) - 1 \quad (5)$$

3.2. Estimation Method

This study utilizes the System Generalized Method of Moments (SGMM) method, which is developed by developed by Arellano and Bover (1995) and Blundell and Bond (1998) as the main estimation method because of the panel data structure of the dataset that often contains potential issues such as unobserved firm-specific effects and endogeneity. SGMM is particularly appropriate to address these potential issues as the method utilizes several internal instruments in lagged forms to control for the issue of endogeneity while simultaneously maintaining firm-related fixed effects. To ensure the robustness of the results from SGMM, fundamental GMM-related diagnostic tests such as the Arellano-Bond test for serial correlation and the Hansen test for over-identifying restrictions are also conducted. Together, these two tests simultaneously ensure the absence of second-order serial correlation as well as the suitability of the instruments used, which are central to the reliability and robustness of the results (Roodman, 2009).

Furthermore, we also applied winsorization at the 1st and 99th percentiles for all variables used in the study to mitigate the potential influence of extreme outliers, which could lead to biased results. By replacing extreme values with more reasonable values, this technique could enhance the overall robustness of the results without removing the extreme outliers from the observations, thus maintaining the original observations. This technique is particularly useful for financial-related data, where extreme values may cause noise and arise because of measurement errors, firm-level anomalies, or distinct incidents (Campbell et al., 1998). The two basic empirical models for this study are given as in Equation 6 and Equation 7.

$$RETURN_{i,t} = \beta_0 + \beta_1 RETURN_{i,t-1} + \beta_2 WUI_{t-1} + \beta_3 LEV_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LIQ_{i,t} + \beta_6 STATE_{i,t} + \beta_7 GDP_t + \beta_8 COVID_t + \beta_9 EX_t + \beta_{10} INT_t + \varepsilon_{i,t} \quad (6)$$

$$RETURN_{i,t} = \beta_0 + \beta_1 RETURN_{i,t-1} + \beta_2 WUI_{t-1} + \beta_3 (WUI_{t-1} \times LEV_{i,t}) + \beta_4 LEV_{i,t} + \beta_5 SIZE_{i,t} + \beta_6 LIQ_{i,t} + \beta_7 STATE_{i,t} + \beta_8 GDP_t + \beta_9 COVID_t + \beta_{10} EX_t + \beta_{11} INT_t + \varepsilon_{i,t} \quad (7)$$

In Equation 6 and Equation 7 $Return_{i,t}$ whose proxies consist of $BASIC_{i,t}$, $LOG_{i,t}$, $GEO_{i,t}$, $CMLT_{i,t}$ and $PB_{i,t}$ that represents annual stock return of firm i at year t. The corresponding lagged form of dependent variable being $Return_{i,t-1}$ is also included along with the main independent variable being $WUI_{i,t-1}$ representing one-year lagged value of the World Uncertainty Index for Vietnam. Control variables included are $LEV_{i,t}$, $SIZE_{i,t}$, $LIQ_{i,t}$, $STATE_{i,t}$, GDP_t, $COVID_t$, EX_t, INT_t as previously mentioned and are identical for Equation 6 and Equation 7.

Equation 7, however, is included to capture the potential moderating effects of leverage on the nexus between annual stock return and local uncertainty in Vietnam, as hypothesized from the study of Bloom (2009) and Baker et al. (2016), suggesting that firm characteristics can alter the effects of uncertainty. This aspect is an advantage of utilizing firm-specific panel data since such a moderating role of firm-level characteristics cannot be thoroughly analyzed using market-based data or time-series datasets. The error term $\varepsilon_{i,t}$, which is consistent among two models, is included to indicate unobserved factors that may impact annual stock return but are not included in the model.

4. EMPIRICAL RESULTS AND DISCUSSION

To maintain focus on the study's main findings, the descriptive statistics are therefore omitted from this section. Instead, this section is fully dedicated to the presentation and discussion of empirical results that are directly related to the research objectives. For those who are particularly interested, however, comprehensive descriptive statistics are still available upon request.

Table 1. The impact of WUI on annual stock return across five proxies.

	$BASIC_{i,t}$	**$LOG_{i,t}$**	**$GEO_{i,t}$**	**$CMLT_{i,t}$**	**$PB_{i,t}$**
$BASIC_{i,t-1}$	-0.621***				
$LOG_{i,t-1}$		-0.764***			
$GEO_{i,t-1}$			-0.724***		
$CMLT_{i,t-1}$				-0.675***	
$PB_{i,t-1}$					1.890***
WUI_{t-1}	-45.758*	-34.486***	-1.509**	-22.236***	-17.105*
$SIZE_{i,t}$	7.727***	3.664***	0.410***	4.404***	6.919***
$LEV_{i,t}$	-0.006	-0.152*	-0.013*	-0.185**	-0.115
$LIQ_{i,t}$	6.773	18.135**	1.417**	17.119***	5.996
$STATE_{i,t}$	6.363	38.055	2.914	1126.45	46.676***
GDP_t	-5.755	-9.190***	-0.686***	-5.543***	-17.987***
EX_t	-46.178	-29.474	-0.048	-17.803	36.310**
INT_t	1.323*	2.704***	0.058**	0.775***	1.668***
$COVID_t$	0.288	0.685***	0.016	0.440***	0.301*
AR (2)	0.765	0.164	0.616	0.183	0.196
Sargan	0.111	0.407	0.225	0.164	0.543
Hansen	0.326	0.443	0.402	0.096	0.733
Difference-in-Hansen	0.492	0.506	0.792	0.587	0.733
Observations	2,915	2,537	3,007	3,007	3,251

Note: Significance levels at 1%, 5%, and 10% are denoted by ***, **, and *, respectively. The figures corresponding to the diagnostic tests are their p-values.

The results shown in Table 1 illustrate the impact of WUI on annual stock returns, as measured by five proxies. The dynamic nature of stock returns is evident since the coefficients of lagged dependent variables are statistically significant among all used proxies. For four direct annual return-related proxies (BASIC, LOG, GEO, and CMLT), the coefficients of the lagged variable are negative, suggesting that firms with higher returns in one year will experience lower returns in the following year. This finding resembles the mean-reversion phenomenon in stock markets as indicated in the studies of Poterba and Summers (1988) and Chaudhuri and Wu (2003). In contrast, the coefficient for lagged PB is positive, which suggests a positive causal relationship between the current year's PB and the previous year's PB. The statistically significant coefficients of WUI indicate that the main independent variable, i.e., WUI, demonstrates a negative effect on stock returns across all five proxies.

However, the magnitude of the impact varies across five proxies, with the highest negative coefficient observed for BASIC at -45.758, while the respective coefficients for LOG, GEO, CMLT, and PB are lower but still negative. The effects of WUI on different proxies of stock return can provide some insightful findings if the nature of the methods used to calculate annual stock return in these models is considered. Specifically, each of the chosen approaches measures a specific facet of stock return, and the variations in the impact of WUI on the proxies reflect the divergence in the magnitude of the nexus between uncertainty and annual stock return based on different dimensions. The coefficient of WUI in the model using BASIC as a proxy, for instance, suggests that increased uncertainty significantly reduces the relative price change on an annual basis. The highly negative coefficient of the WUI model with LOG as the proxy, on the other hand, suggests that economic-related and political-related uncertainty not only causes a reduction in annual stock return but also affects the compounded rate of stock return throughout the whole year. This finding is of great relevance, especially in extremely volatile stock markets in emerging countries like Vietnam, where the negative impact of uncertainty could be significantly amplified by the market's characteristics and by the compounding effect of the logarithmic approach, where annual stock return is measured in a continuous manner throughout the year. As for the model utilizing GEO as the main proxy, the high negative coefficient of WUI indicates that a heightened level of uncertainty consistently reduces monthly stock return across the whole year. This result suggests that uncertainty creates a consistently negative effect on stock performance over the year rather than considering for stock prices at the beginning and at the end of year like the basic approach. Similarly, the substantial negative effect of WUI in the model using CMLT as a proxy also indicates the negative effect of WUI on annual stock return through consistent monthly disruptions for the whole year. Lastly, the negative coefficient of WUI in for the PB proxy also proves the negative relationship but with much smaller magnitude compared to other four proxies. In general, the homogeneity and consistency in the coefficients of WUI across the five proxies indicate a robust negative nexus between uncertainty and firm-level annual stock return in Vietnam. The variation in the magnitude of the coefficients of WUI, however, reflects the complexity of the magnitude of the relationship between WUI and different stock return indicators. These findings, which are assessed based on a firm-level approach, fully align with the findings from previous studies of Chen, Jiang, and Tong (2017); Demir and Ersan (2018) and Li et al. (2016) that used a market-based approach where a negative causal relationship between economic, political uncertainty and stock return was found. Among the firm-related control variables, firm size demonstrates a positive and highly significant impact on annual stock return across all five models. This finding suggests that larger firms with greater financial resources would be corresponding with higher annual stock return. Leverage shows consistent negative effects on stock return which indicates that leverage reduces stock return and could be considered as a risk factor. Such negative coefficients of leverage indicate that investors might not be equivalently compensated for the extra risk they could have bear when investing in high-leveraged firms. This negative effect of leverage is consistent with previous studies of Acheampong, Agalega, and Shibu (2014). Liquidity, while not consistently significant across all empirical models, shows a positive impact on annual stock return in empirical models with LOG, GEO, and CMLT as proxies for yearly stock return. The state ownership variable, on the other hand, is only statistically significant only for the model utilizing PB as a proxy, which indicates that state-owned firms might witness higher rate of return, but the effect is not confirmed since the results are not uniform among all proxies. The results of control variables related to macroeconomic environment show mixed results. GDP, for instance, suggests a negative and statistically significant impact on stock returns across four out of five empirical models, indicating the negative association between economic growth and firm-level stock performance. Exchange rate, however, is only statistically significant in the empirical model using PB as a proxy, which suggests an inconsistent influence of fluctuations in exchange rate on annual firm-level returns. The lending interest rate consistently shows a positive and significant relationship with stock returns across all proxies, indicating that increase in interest rate may improve yearly stock performance during the study period. The COVID dummy variable indicates a marginal impact of the COVID-19 on firm-level stock return with limited significance observed in the empirical

models using LOG, CMLT and PB as proxies for stock return. This result, however, is in stark contrast with the study of Lee, Lee, and Wu (2023) where COVID-19 was argued to be associated with reduced stock market return. The divergence in the findings could be due to the differences in the estimation methods used and the difference between firm-level and market-wide approaches. Therefore, further research on the nexus between future pandemics and stock market performance could be considered based on different approaches and various estimation methods to provide a more comprehensive understanding of such relationships. The performed diagnostic tests confirm the robustness and reliability of the SGMM estimations and the corresponding results. Specifically, the Arellano-Bond (2) test for second-order serial correlation generates p-values that are higher than conventional significance levels, confirming the absence of second-order autocorrelation in the residuals of the empirical models used. Additionally, both the Sargan and Hansen tests produce p-values above the conventional thresholds, which further validates the appropriateness of the utilized instruments. Finally, the difference-in-Hansen test results further confirm the reliability of the estimation results.

After having examined the negative nexus between WUI and firm-level annual stock return ($RETURN$), we would like to turn our attention to examining the interaction effects of firm-specific characteristics with local uncertainty, which is the advantage of utilizing panel data in this study. By adding interaction variables into our existing empirical model in Equation 6 such as the interaction variables between WUI and firm-level characteristics such as state ownership ($STATE$), leverage (LEV), firm size ($SIZE$), and liquidity (LIQ), we aim to explore the potential moderating role of these elements in the relationship between WUI and $RETURN$. Specifically, we added four interaction variables in our baseline empirical model that are $WUI_{t-1} \times STATE_{i,t}$; $WUI_{t-1} \times LEV_{i,t}$; $WUI_{t-1} \times SIZE_{i,t}$ and $WUI_{t-1} \times LIQ_{i,t}$ for further analysis. The preliminary results show that while interaction terms such as $WUI_{t-1} \times STATE_{i,t}$; $WUI_{t-1} \times SIZE_{i,t}$ and $WUI_{t-1} \times LIQ_{i,t}$ exhibit some degree of significance in certain models, these effects are not consistent or robust across all five stock return proxies. This lack of coherence suggests that the moderating roles of state ownership, size, and liquidity in the relationship between WUI and stock return are not robust, at least in the case of Vietnam. In other words, firms in Vietnam generally experience reduced stock returns when the degree of local uncertainty related to economic and political factors increases, regardless of their size, state ownership, or degree of liquidity. Regarding the lack of robustness in the moderating role of STATE, it could be explained that Vietnamese state-owned enterprises (SOEs) may face inefficiencies and bureaucratic constraints that could offset any potential moderating or harnessing effects from their state-owned status, despite being subjected to a higher degree of governmental support. This result contrasts with the study of Zhou (2017) where the buffering role of state-ownership in the relationship of political uncertainty and stock return was found in China. However, such effects might not exist in Vietnam because of the unique political and economic landscape of Vietnam. Regarding the lack of robustness in the moderating role of SIZE, it could be attributed to the fact that larger firms in Vietnam might still face the same level of vulnerabilities compared to their smaller counterparts amidst a volatile economic and political business environment. Similarly, the lack of robustness in the moderating role of LIQ suggests that the short-term financial liquidity of Vietnamese firms might not be sufficient to counter the negative effects of macro-level uncertainties. The final interaction term in our analysis (i.e., $WUI_{t-1} \times LEV_{i,t}$), however, provides consistent and statistically significant results across all five proxies, highlighting the robustness of the moderating effect of leverage in the relationship between stock market performance of firms and the amount of volatility in business environment that firms are exposed to.

The final interaction term in our analysis (i.e., $WUI_{t-1} \times LEV_{i,t}$) provides consistent and statistically significant results across all five proxies, highlighting the robustness of the moderating effect of leverage in the relationship between the stock market performance of firms and the amount of volatility in the business environment to which firms are exposed.

The SGMM results for the empirical model as comprehensively indicated in Equation 7, which incorporates the interaction variable $WUI_{t-1} \times LEV_{i,t}$ to analyze the moderating role of leverage, are presented below.

Table 2. The impact of WUI and the moderating role of leverage on annual stock returns utilizing five proxies.

	$BASIC_{i,t}$	$LOG_{i,t}$	$GEO_{i,t}$	$CMLT_{i,t}$	$PB_{i,t}$
$BASIC_{i,t-1}$	0.114				
$LOG_{i,t-1}$		-0.435			
$GEO_{i,t-1}$			-0.612***		
$CMLT_{i,t-1}$				-0.522***	
$PB_{i,t-1}$					-0.173
WUI_{t-1}	-20.543***	-31.723***	-1.028**	-12.579*	-14.382*
WUI_{t-1}*$LEV_{i,t}$	1.413*	1.141*	0.116*	1.639*	2.890**
$SIZE_{i,t}$	7.498***	3.004***	0.346***	5.058***	1.856*
$LEV_{i,t}$	-0.279**	-0.159**	-0.015*	-0.217**	-0.287
$LIQ_{i,t}$	10.438***	20.632***	1.364***	18.138***	27.981***
$STATE_{i,t}$	-0.096	-168.111	-2.546	-35.157	23.907
GDP_t	-15.489***	-10.553***	-0.674***	-8.181***	-5.730***
EX_t	17.340	-10.811	0.912	7.541	11.409
INT_t	1.631***	2.785**	0.044	0.544	0.434
$COVID_t$	0.485***	0.684***	0.023**	0.252	0.231
AR (2)	0.136	0.143	0.525	0.546	0.167
Sargan	0.276	0.843	0.135	0.313	0.105
Hansen	0.563	0.729	0.217	0.448	0.534
Difference-in-Hansen	0.685	0.630	0.130	0.217	0.290
Observations	2,915	2,537	3,007	3,007	3,251

Note: Significance levels at 1%, 5%, and 10% are denoted by ***, **, and *, respectively. The figures correspondent with the diagnostic tests are their p-values.

The results from Table 2 indicate that LEV consistently moderates the nexus between WUI and $RETURN$ regardless of the proxy used. Specifically, the coefficients of $WUI \times LEV$ being positive and statistically significant in all five models confirms the moderating role of LEV. For instance, when using $BASIC$ as a proxy for stock return, the coefficient of WUI is -20.543 while corresponding interaction variable $WUI \times LEV$ having a positive coefficient of 1.413. This suggests that firms with higher debt-to-equity ratio witness a reduced negative effect of uncertainty on their stock market performance. Such patterns are also found in other empirical models, regardless of the proxy used for stock returns. Specifically, when using LOG as a stock return's proxy, WUI possesses a coefficient of -31.723, while the coefficient of $WUI \times LEV$ is 1.141, confirming the existence of the moderating effect of leverage even though the magnitude could be quite different compared to when using $BASIC$ as a proxy. Similarly, when PB is used as the proxy, the positive interaction effect is also found as $WUI \times LEV$ possessing a positive coefficient of 2.890. The results suggest that leverage not only moderates the adverse impact of uncertainty on stock returns across four calculation methods but also moderates the nexus between uncertainty and another valuation proxy being the price-to-book ratio. Such finding could be because of investors being more confident in highly leveraged firms' strategic responses amidst turmoil. The relationship between LEV and $RETURN$, however, is negative and significant for all proxies but PB, which indicates the hampered effect associated with using more financial leverage for corporate-level stock performance. In general, the positive interaction between LEV and WUI found across five models suggests that during periods of increased uncertainty, leveraged firms may potentially benefit from their unique highly leveraged financial structure to mitigate the overall negative impact of WUI on their stock market performance. These results reveal that while local uncertainty in Vietnam negatively affects firm-level performance in stock market, the degree of leverage of firms is found to play a crucial role in moderating this negative effect. The results of the diagnostic tests, including the AR(2) test, Hansen test, Sargan test, and Difference-in-Hansen, confirm the reliability of the findings and the appropriateness of the utilized instrumental variables, with p-values of all the tests being higher than the conventional threshold of 0.05.

The main finding of this study highlights the significant role of economic and political aspects of local uncertainty, which is indicated by the WUI, in shaping annual firm-level stock returns in Vietnam. Across all five chosen proxies of stock returns (i.e., BASIC, LOG, GEO, CMLT, PB), WUI consistently imposes its negative impacts. Even though a firm-based approach is chosen for this paper, the result still aligns with existing studies on relationship

between uncertainty and stock market performance adopting a market-based approach, such as the studies of Chen et al. (2017); Demir and Ersan (2018) and Li et al. (2016). Such findings reinforce the notion that heightened political and economic uncertainty diminishes stock performance, possibly through the disruption of investors' sentiment, as suggested by Idnani et al. (2023).

On the one hand, the novel contribution of the main finding of this study lies in the additional empirical evidence that is analyzed for the case of Vietnam, which is an emerging market that has become increasingly integrated into global supply and value chains, regarding the nexus between uncertainty and stock returns. By assessing firm-level stock returns of Vietnamese firms, this study adds to the growing body of evidence on the effects of uncertainty in emerging markets with unique economic and political characteristics that remain under-researched compared to advanced economies. On the other hand, another key contribution of the paper that could be considered a minor finding is the examination of firm-level characteristics as potential moderating factors in the relationship between WUI and stock returns. Specifically, we are unable to confirm the moderating roles of liquidity, firm size, and state ownership in the causal relationship between WUI and firm-level stock returns, which is in stark contrast to the study of Zhou (2017), where the moderating role of state ownership was confirmed.

The divergence of our findings from the findings of Zhou (2017) could be attributed to distinct characteristics between Vietnamese firms and Chinese firms, which might have diluted the moderating effects of state ownership in the case of Vietnam. The amount of leverage that firms utilize, however, could play a central role in moderating the magnitude of such negative effects. Particularly, the moderating role of leverage has been confirmed as the coefficients of the interaction term of WUI and leverage remain positive regardless of the proxy used. Contrary to the finding of Gunarathna (2016) where leverage was identified as a main contributor to financial risk, the findings in our study stresses the role of leverage as a buffer against political-driven and economic-driven uncertainty risks.

Regarding the mechanism through which highly leveraged firms countered the negative effects of uncertainty, it could be because they effectively adopted strategic measures such as improved financial discipline or restructuring to navigate local turbulence, thereby partially offsetting the detrimental influence of heightened local uncertainty on their stock performance during the research period. Besides, a high level of leverage established by firms might have raised investors' confidence in the firm's growth prospects as well as its capability to manage debt, even during politically and economically uncertain times. This signaling effect can help alleviate the negative effects of local turmoil on investors' sentiment, as indicated in the studies of Batabyal and Killins (2021) and Idnani et al. (2023), thus stabilizing the stock performance of firms during the research period. In addition, highly leveraged firms generally rely more on debt financing, which typically involves fixed obligations. During periods of heightened uncertainty, increased risk premiums cause the cost of equity to rise. Leveraged firms might have benefited from being subjected to relatively stable debt costs that could have protected them from volatility in a dynamic business environment.

Our findings in this study, indeed, align with theoretical insights from Baker et al. (2016) and Bloom (2009) regarding the complex role of firm-related characteristics in lessening or amplifying the effects of uncertainty. The robustness and reliability of both the main and minor findings have been fully validated by the p-values of the diagnostic tests.

The results from the AR(2), Sargan, and Hansen tests confirm the absence of second-order autocorrelation as well as the appropriateness of the instrument set, thereby providing strong support for the reliability of the empirical findings of the study. In general, the minor finding of the paper implies the importance of firm-specific characteristics in explaining the divergence in the effects of uncertainty for individual firms. While WUI exerts a consistently negative and detrimental influence on firm-level annual stock returns, a key factor moderating this relationship could be attributed to the debt-to-equity ratio of firms (i.e., leverage). This study, therefore, contributes to the existing body of literature by emphasizing the need for firm-level analyses, especially in emerging markets, to uncover insightful knowledge that could have been neglected in market-based studies.

5. CONCLUSION

This study aims to examine the causal relationship between local uncertainty and firm-level annual stock returns in Vietnam, while also incorporating the role of firm-level characteristics such as leverage, state ownership, size of firms, and liquidity as potential moderating elements. Our main finding implies a negative causal relationship between WUI and firm-level annual stock returns across all five proxies during the research period. Such findings provide additional empirical evidence of the detrimental effects of uncertainty in emerging markets, which have been neglected in the flourishing body of literature. Regarding the moderating roles of firm-level variables, leverage was the only element found to moderate the negative effect of uncertainty in a positive manner, which indicates that highly leveraged firms were able to counter the diminishing effects of increased uncertainty. This minor finding related to firm-related attributes highlights the nuanced role of firm-specific factors in moderating the impacts of heightened uncertainty in the business environment, particularly in the case of Vietnam.

Based on this study, several theoretical implications can be drawn. First, by focusing on Vietnam, an emerging market with unique economic and political dynamics, the study expands the empirical evidence on the effects of uncertainty beyond the widely focused contexts of advanced economies. Second, by incorporating the World Uncertainty Index (WUI), the study captures uncertainties related to both economic and political aspects, thereby providing a broader perspective on how various aspects of uncertainty affect firm-level outcomes. Third, the chosen firm-level approach highlights how leverage influences firms' resilience amidst uncertainty, thereby addressing current gaps existing in studies utilizing a market-wide approach.

Regarding the implications for investors, managers, and policymakers, several practical contributions could be drawn from our study. Specifically, our minor finding stresses the role of both firm-related elements, such as leverage, in protecting firms amidst national turbulence. Therefore, focusing on optimizing capital structures to reduce firm-level vulnerability to a fluctuating business environment should be thoroughly considered by both managers and policymakers. Furthermore, investors can utilize these insights to refine their risk assessment and portfolio strategies, particularly when conducting their evaluations for firms in emerging markets where uncertainty plays a significant role in predicting firm-level outcomes, such as in Vietnam. Leverage, when utilized effectively, could be a useful buffer against certain types of existing risks in the market, which is contrary to the general perception of leverage as a main risk-contributing factor.

Despite its significant theoretical and practical contributions, this study is also prone to specific limitations that warrant thoughtful interpretation of the results. First, while the World Uncertainty Index (WUI) provides a comprehensive measure of both economic and political uncertainty in the context of Vietnam, the potential spillover effects of countries on which Vietnam is highly dependent have not been considered. In practice, firm-level stock market outcomes in Vietnam could be dependent on uncertainty from both local and global dynamics; hence, focusing only on local turmoil could be a profound limitation. Therefore, it is suggested that future studies consider firm-level stock market performance in the context of both local and global uncertainty. Second, our findings, even though significant, are specifically tied to Vietnam; therefore, any attempt to generalize the results to other emerging markets possessing divergence in institutional and economic contexts should proceed with caution. Third, when analyzing the potential moderating roles of firm-related factors, we only focused on a few elements, including state ownership, firm size, liquidity, and leverage levels, which was obviously not comprehensive. In future studies, this scope could be expanded to include other elements as potential moderators to generate more comprehensive insights regarding the moderating roles of firm-level elements.

In conclusion, our study makes a significantly novel contribution by expanding the current literature regarding how uncertainty affects the stock market performance of firms by taking a firm-level stance in an emerging market context. While the detrimental impact of local uncertainty on firm-level stock returns is implied in our main finding, our minor finding stresses the role of leverage in countering such negative effects. By incorporating the inherent moderating roles of firm-specific characteristics and expanding additional empirical evidence for emerging markets

as suggested by Baker et al. (2016) and Bloom (2009) a foundation for future research in other emerging markets utilizing a firm-level approach to generate valuable insights for investors, managers, and policymakers when navigating uncertain environments has been laid out.

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