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The Impact of Economic Policy Uncertainty on Corporate Investment Decisions

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Abstract The purpose of this research work is to explore the impact of economic policy uncertainty on corporate investment across developed and developing economies. The study also investigates the impact on investment of firms having different ownership arrangements, financial system development, leadership status and capital intensity. The study employs Generalised Method of Moments technique to analyse a comprehensive dataset of 25 countries for the period from 2008 to 2021, comprising 11,718 firm-level observations. The results show that EPU has a significant negative effect on corporate investment, particularly in developed countries, developed financial systems, non-state-owned enterprises, capital-intensive entities, and firms with CEO duality and dispersed ownership structures. On the other hand, EPU has an insignificant impact on investment made by firms in developing economies, underdeveloped financial markets, firms with state and concentrated ownership, and non-CEO duality. The results accentuate the complex interaction between EPU and firms' investment, indicating the need for customised policy approaches to mitigate the negative effects across diverse economies, markets, ownership, and leadership structure.

Keywords Economic policy uncertainty · corporate investments · developed and developing economies · ownership structure · capital intensity

JEL Classification E22 · G18 · G30

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The Impact of Economic Policy Uncertainty on Corporate Investment Decisions

Economic policy uncertainty (EPU) is the risk of inconsistency in government economic policies, including monetary, regulatory, trade, and fiscal policies. The key drivers of EPU include high inflation, negative economic growth, volatility of the foreign exchange market, and a sudden change in monetary policy. Furthermore, certain national and regional events also contributed to the EPU. Such as September 11, 2001, the terrorist attacks on World Trade Centre, The economic downturn of 2008, the Arab Spring, Russia's invasion and annexation of the Crimea and Brexit. The global economy is now dealing with a combination of various shocks that are increasing EPU; for example, the COVID-19 pandemic, the Russia-Ukraine war, the US-China trade dispute, and the Israel-Hamas conflict. EPU has negative effects on purchasing power, financial markets, job creation, investment, and economic growth.

Empirical research has underlined the harmful effects of EPU in various contexts. Davis, (2016) posits that the EPU stems from a complicated governmental framework. EPU intensifies corruption levels (Goel & Ram, 2013). It also raises unemployment and decreases investments (Bernanke 1983). Furthermore, it has deleterious consequences on the production of goods and a nation's overall wealth (Nicholas 2009). Consequently, EPU have adverse consequences on economic activities, as they negatively affect exchange rates, financial markets, production, unemployment, and investments (Dai et al., 2021; Fernández-Villaverde et al., 2015; Mueller et al., 2017; Phan et al., 2021). Additionally, an empirical study highlights that EPU raises the risk premium, thereby making the borrowing costly for businesses (J. Liu & Wang, 2022). Moreover, it has an adverse impact on firms' productivity (Brunnermeier, 2009), profits (Balcilar et al., 2016) and corporate investments (Gulen & Ion, 2016).

The small, however, growing literature exploring the impact of EPU and CI has concentrated on certain industries or nations. The countries that have been exclusively focused include Australia (X. Chen et al., 2020), the US (Christidou & Fountas, 2018; De la Horra et al., 2022; Lee et al., 2021), China (Ho et al., 2018; Makosa et al., 2021; Xie et al., 2021; Yan & Shi, 2021), Norway and Germany (Bakke et al. 2016), Indonesia (Aldata & Wijaya, 2020) and Switzerland (Dibiasi et al., 2018). Moreover, researchers also focused on certain industries such as housing (Ho et al., 2018), power and energy (Detemple & Kitapbayev, 2020; R. Liu et al., 2020), oil (Ilyas et al., (2021), mining (Foo, Bloch, and Salim 2017), and hospitality (Akron et al., 2020). Furthermore, the literature also incorporates certain economic and firm-specific characteristics to explore the contextual impact of EPU on CI. For instance, the level of a firm's internal control, financial constraints, intellectual property (Dou et al., 2021), characteristics of the CEO (Gupta, 2022), firm profitability (Jia & Li, 2020), degree of investor protection, and state of the economy (Drobetz et al., 2018). Although the existing literature has thoroughly investigated the relationship between EPU and CI; however, there are still some significant gaps that require further attention. Therefore, our study contributes to the area of research by filling these research gaps as follows.

To begin with, our study encompasses a diverse array of companies that operate in either a developed economy or a developing economy, which have received relatively little attention from researchers. These economies exhibit significant disparities in their economic environments, regulatory institutional frameworks, access to capital, and risk tolerance. Consequently, our first contribution encompasses a nuanced analysis to draw precise conclusions regarding the effect of EPU on CI of both developed and developing economies. Second, we attempted to contribute by incorporating various ownership arrangements of firms that had not been previously examined in the literature. We analysed the diverse effect of EPU on corporate investments, categorised by their ownership structure as dispersed, concentrated, SOEs and non-SOEs.

Ownership concentration brings distinct incentives, goals, and risk tolerances, and state ownership carries varying degrees of market discipline, government subsidies, and capital availability, thereby affecting decision making. Therefore, our goal is to highlight the multifaceted effects of EPU on CI in the context of various ownership arrangements.

Third, the study further contributes by classifying the firms into two categories according to the financial system development under which they operate. The degree of financial system development has a substantial impact on company investments. It influences the corporate investment's risk and return profiles by influencing the nature, cost, and accessibility of capital. Therefore, the purpose of this classification is to study the distinctive impacts of EPU on CI on both types of firms operating in the developed and underdeveloped financial systems. The study's fourth contribution is the division of firms based on their leadership status. The leadership status of a firm, whether it has CEO duality or not, significantly influences investment decisions. The firms' decisions are greatly shaped by their leadership status; hence, it is crucial to investigate the association between EPU and CI of firms having separate and dual leadership roles. Lastly, the study's contribution comprises categorisation of the firms into capital-intensive and non-capital-intensive, which is also a gap in the existing literature. Capital-intensive firms necessitate substantial financial resources to set up and replace physical assets, while non-capital-intensive firms do not require significant investments at the outset or subsequently. The investment behaviour of firms with varied capital intensity is probably heterogeneous during EPU. Thus, it is imperative to explore how the link between EPU and CI differs for enterprises of varying capital intensity.

The findings from our baseline regression analysis demonstrate that firms reduce their investments during EPU. Furthermore, our findings signify that EPU has a profound adverse effect on firms' investment in developed economies, developed financial systems, non-SOEs, capital-intensive firms, and firms with CEO duality and dispersed ownership structures. However, no significant impact was observed for firms' investment in developing economies, under-developed financial systems, SOEs, non-capital-intensive firms, and entities with separate leadership and concentrated ownership structures.

This paper is organised into the following five sections: Section 2 encapsulates a review of the literature and formulates the hypothesis; Section 3 presents the data and methodology; Section 4 presents the research findings; and Section 5 concludes the paper.

Literature Review and Hypothesis Development

The theories-underpinning the relationship between EPU and CI are inconclusive. According to Knight (1921), firms avoid selecting uncertain projects. Hartman (1972) argued that uncertainty can have a positive effect on CI until a certain threshold is reached; beyond this point, it becomes negative. According to (Myers 1977), a substantial amount of sunk cost associated with CI makes them irreversible. Moreover, Kelly (1991) suggested that uncertainty forces managers to adopt a "wait and see' approach towards CI. Abel, (1983) highlighted that uncertainty raises the borrowing cost, which causes a decrease in CI. Caballero (1991) underlines that uncertainty significantly impacts CI, specifically when the assumptions of Hartman's (1972) and Abel's (1983) model emphasising perfect symmetrical adjustment costs, constant return to scale, and perfect competition, are relaxed.

EPU has a substantial impact on CI decisions. Empirical evidence (Bernanke, 1983; Brennan & Schwartz, 1985; Caballero & Pindyck, 1996; McDonald & Siegel, 1986; Titman, 1985) supports the theoretical foundations of (Knight, 1921; Hartman, 1972; Kelly, 1991; Myers, 1977) regarding the impact of EPU on CI. These theoretical assertions are valid at the industry (Caballero & Pindyck, 1996; Leahy & Whited, 1996) and firm levels (Bond & Cummins, 2011). Policy uncertainty can inflate production costs and decrease CI and firm output

(Jeong 2002). Gulen and Ion (2015) found that higher levels of EPU repress CI. Hence, based on the insights discussed above, it is evident that the consequences of EPU on CI are adverse and can be attributed to several key factors. First, investor confidence is negatively affected due to the uncertain economic policy. Secondly, companies become hesitant to invest in costly projects if they are concerned about government laws, regulations, or policies. Third, the impact of EPU on CI may differ depending on the diversity of the economy, market, and industry in which a firm operates. Based on the above literature, the first hypothesis of the study is articulated as follows:

H1: The impact of economic policy uncertainty on corporate investment is negative.

The empirical evidence indicates that EPU undermines the value protection measures that governments provide to financial markets, leading to fluctuations in stock returns (Pástor & Veronesi, 2012). In underdeveloped economies, the response of the typical entrepreneur to policy changes is rational and substantial, leading to a delay in investment until policy uncertainty is diminished (Rodrik, 1991). Calomiris et al., (2012) examined the influence of credit provision and liquidity shocks in connection to the 2008 financial crisis. The study elucidates that the impact was negligible for developing economies, including Brazil, China, UAE, and Iran. However, substantial effects were observed in developed economies, including the US, Japan, and the UK. According to the literature, there is a significant disparity in economic development among countries worldwide, which can be generally classified as developed and developing economies. Similarly, firms in both categories confront distinct economic policy uncertainties that have divergent effects on their investments. Drawing on the existing literature, the second hypothesis is formulised as

H2: EPU has a greater influence on CI for firms operating in developed economies than for those operating in developing ones.

The literature underscores the substantial negative impact of EPU on CI for businesses without state ownership (non-SOEs) relative to those with state ownership (SOEs). The nature and extent of agency conflict differ between SOEs and non-SEOs, which leads them to over-invest in the pursuit of satisfying their interests in the case of non-SOEs (Jensen, 1986). The government may interfere with CI decisions of SOEs to attain certain objectives, leading them to overinvest during EPU (Chen et al., 2011). Feng et al., (2021) suggest that EPU has a negative effect on employment, sales growth, and CI; however, this influence is insignificant for SOEs. Gu et al., (2018) and Yan and Shi (2021) outline that the impact of EPU on non-SOEs investment is significant. Khan et al., (2019) accentuated the substantial negative impact of leverage on the investment of non-SOEs at the firm and market levels during EPU. Therefore, the third hypothesis described in the study asserts:

H3: EPU has a negligible influence on SOEs' investment compared to non-SOEs.

The empirical evidence demonstrates a substantial impact of EPU on firms with varying ownership concentrations. Specifically, higher levels of concentration are associated with higher firm profitability (Claessens and Djankov, 1999; Demsetz and Lehn, 1985). On the other hand, Han and Suk, (1998) found that concentrated ownership has a unfavourable impact on profitability. R. Liu et al. (2020) argued that a concentrated ownership structure diminishes the adverse impact of the EPU. Alimehmeti and Paletta (2009) postulate a favourable influence of ownership concentration on the link between EPU and CI, however, except for the period during the 2008 financial crisis. Demsetz and Villalonga (2001) contend that the maximisation of shareholder value intentions should have an impact on the ownership structure; consequently, changes in the ownership structure should not be systematically linked to changes in the corporate value. Jensen and Meckling (1976) elucidated that ownership concentration has a significant influence on a firm's investment choices. This is because managers with less concentration have an incentive to diversify their

holdings, as they would personally benefit from over-investment. The empirical results lead us to propose the following hypothesis of this study:

H4: EPU has asymmetrical impacts on the investment of firms operating under different ownership structures.

The literature shows that CI of capital-intensive firms is costly and therefore irreversible as a major portion of it is used to purchase physical assets; consequently, the firms delay their investments. This situation eventually leads to lower levels of economic growth and productivity (Gulen & Ion, 2016). X. Chen et al., (2020) argued that the adverse effect of EPU is especially obvious for the resource and mining industries. Moreover, it is argued that EPU causes a significant decrease in investments of traditional energy firms yet, renewable energy firms exhibit minimal impact (R. Liu et al., 2020). Although a limited number of studies have investigated the effects of EPU on CI in the context of capital intensity, it is essential to investigate how capital-intensive and non-capital-intensive firms react during a period of high EPU. Based on the above analysis, our fifth hypothesis is as follows:

H5: EPU has a substantial effect on the investment of capital-intensive firms compared to non-capital-intensive firms.

The CEO of the firm plays an important role in the strategic decisions of a firm. Various empirical studies have highlighted a positive association between firm performance and CEO duality (Alexander et al., 1993; Coles et al., 2001; Donaldson & Davis, 1991; Haniffa & Cooke, 2002). Conversely, a detrimental relationship between CEO status and company performance has also been extensively documented in the literature (Fama & Jensen, 1983; Michael, 1993; Rechner & Dalton, 1991). Dual leadership helps firms address agency problems, but opponents argue that giving extensive powers to a single individual can lead to under-monitoring by the board, which affects the internal control system and compromises the board's powers. The executive ladder theory (Hambrick & Mason, 1984) contends that the strategic decisions made by top management are significantly influenced by economic conditions. As a result, the performance of a firm can be predicted by evaluating the characteristics of its executives. Moreover, the impacts become significant in an environment of high uncertainty (Herrmann & Datta, 2002; Hsu et al., 2013; Nielsen & Nielsen, 2011). Although prior studies demonstrate a significant impact of CEO's status and firm performance, how CEO status influences the relationship between EPU and CI is unexplored. Thus, the study's sixth hypothesis is expressed as follows:

H6: EPU has a significant impact on corporate investment of the firms operating under separate leadership compared to dual leadership.

Data and Methodology

Population and Sample

The sample for this research study includes 2647 companies from 27 countries, for which the EPU index was developed up to the end of 2022 for the period from 2008 to 2021. These firms were publicly traded on major stock exchanges in their respective countries. Initially, we identified 1424 firms by conducting a thorough examination using a stringent data-filtration process to ensure the accuracy and reliability of the dataset. We removed companies that had missing data for more than 5 years in a row. Ultimately, our final dataset consists of 837 firms from 25 countries containing 11,738 firm-level observations.

Variables of the Study and Data Source

The study's dependent variable is corporate investment, and the variable of interest is EPU. Sales revenue, leverage, cash flow, cash holding, and growth opportunities are the control variables incorporated based on

firm-specific financial characteristics affecting corporate investment. The literature indicates a well-established association between CI and a firm's financial characteristics; therefore, we have included cash flow (Wang et al., 2014), Tobin's Q (Fazzari et al., 1988), and leverage ratio (Chava and Robert, 2008; Duchin et al., 2010) as control variables. More sales generate more funds (Aivazian et al., 2005) for corporate investments, whereas leverage is another important source to finance investments (Gatchev et al., 2011). Cash flow is positive (Almeida et al., 2003), whereas cash holding has an adverse effect on CI. More growth opportunities may lead to substantial investment in R&D, product line extension and geographical expansion (Fazzari et al., 1988). The study variables and their measurements are presented below.

Dependent and Independent Variables

i. **Corporate Investment:** Referred to as the acquisition of plant and machinery or similar assets. It is calculated by dividing capital expenditures by the lagged total assets. The data for this variable were sourced from Thomson Reuters Data Stream.

ii. **Economic Policy Uncertainty (EPU):** A situation characterised by uncertainty in governmental policies, specifically regarding monetary and regulatory frameworks, is referred to as policy uncertainty. The data of this variable were obtained from http://www.policyuncertainty.com, which draws upon the EPU Index of Baker et al. (2016). The website provides monthly data for each country. We transformed the monthly EPU index into years using the weighted average method because firm-level data are available annually.

Control Variables

The control variable data is derived from Thomson Reuters DataStream.

i. **Tobin Q (TQ):** The indicator used to determine whether a company is overvalued or undervalued is Tobin's Q, which is calculated as [Market value of total shares + Total Debt] / Total Assets.

ii. **Cash flow (CF):** The calculation of a company's CF is determined by dividing its net operating CF by the previous period's total assets.

iii. **Cash holdings (CH):** The term "cash in hand" refers to the firm's cash holdings, which can be calculated by dividing the total assets by the sum of cash and short-term investments.

iv. **Leverage (LEV):** The measure of the proportion of debt in a company's capital structure is known as leverage, which is calculated by dividing the sum of long-term and short-term debt by the total assets.

v. **Sales Growth (SG):** Revenue generated from sales can be assessed in terms of sales growth, which is calculated as the natural logarithm of the current sales figure minus the natural logarithm of the previous sales figure.

Dummy Variables

i. **Developed and Developing Economies (Deve):** Firms operating in developed and developing economies are divided based on the World Bank countries classification. A dummy variable, where a value of "1" signifies representation of a developed economy and "0" denotes otherwise.

ii. **Firms operating in developed and underdeveloped financial systems (DIVS):** The present study used the International Monetary Fund (IMF) index to classify countries' financial markets as either developed or underdeveloped. A country's financial market is considered developed if it has a high financial development index (FDI) as follows. Countries with FDI scores greater than 0.70 are considered to be developed financial markets, while nations with FDI scores less than 0.70 are considered to be underdeveloped financial markets. A dummy variable was created to represent a developed financial market, with a value of "1" and "0" as an underdeveloped financial market.

iii. **SOEs and Non-SOEs (SOE):** A company is generally classified as a state-owned enterprise (SOE) if the government holds at least 50% of its stock, as indicated by the (International Monetary Fund, 2020). For this, a dummy variable is created, where a value of "1" indicates SOE and "0" non-SOE.

iv. **Capital-intensive and non-capital-intensive firms (CPI):** Firms characterised by a substantial outlay for fixed assets are often categorised as capital-intensive. A dummy variable is used to denote this characteristic, with a value of "1" indicating capital intensity and "0" otherwise.

v. **Leadership Structure (DUAL):** This variable is commonly referred to as a "dual CEO" structure, whereby an individual holds both the roles of CEO and Chairperson within a firm. A dummy variable for firm leadership is employed, which assumes a value of "1" when a Dual CEO is present, and "0" otherwise.

vi. **Ownership Structure (DIVS):** Following (Han & Suk, 1998), our ownership concentration criterion is set at 10%. A firm is considered to be concentrated if 10% or above of its shares belong to a family member, group, or institution. A dummy variable is employed with a value of "1" specifies the concentration ownership and "0" indicates the dispersed ownership.

Econometric Model

Baseline Analysis

To investigate the impact of EPU on CI, we follow our baseline regression models (i) static model and (ii) dynamic model, respectively, are as follows:

$$INV_{i,j,t} = \alpha_1 + \beta_1 EPU_{i,t} + \beta_2 TQ_{i,j,t} + \beta_3 CF_{i,j,t} + \beta_5 SG_{i,j,t} + \beta_6 Lev_{i,j,t} + \beta_7 CH_{i,j,t} + GDP_t + f_i + f_t + \in_{i,j,t} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (i) \quad (1)$$

Where 'i.'',''j' and 't" denote firm, country, and time,, respectively. The dependent variable is the investment and EPU variables of interest. The following control variables are included: Tobin's Q, cash flow, sales growth, and cash holdings. The annual GDP growth rate was used to capture the macroeconomic effects. Further, $f_{,i}$ $f_{,t}$ are the firm and time fixed effects and $\in_{i,j,t}$ is the error term.

$$INV_{i,j,t} = \alpha_1 + \beta_1 INV_{i,\mathrm{j},\mathrm{t}-1} + \beta_2 EPU_{i,\mathrm{t}} + \beta_3 Q_{i,j,t} + \beta_4 CF_{i,\mathrm{jt}} + \beta_6 sales_{i,\mathrm{jt}} + \beta_7 Lev_{i,j,\mathrm{t}} + \beta_8 Cash_{i,j,\mathrm{t}} + GDP_t + \in_{i,j,\mathrm{t}} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (ii) \quad (2)$$

Model (ii) is a dynamic model where INV $i, \mathrm{j}t-1$ is lagged dependent variable, whereas all other variables are the same as in model (i).

To investigate the heterogeneity of impact in the context of the economy and firm-level characteristics, the following dummy variables are included in models (i) and (ii). $DEVE_{i,\mathrm{t}}$ is a dummy representing the firms operating in developed economies, $SOE_{i,j,t}$ state owned enterprise, $DIVS_{i,t}$ dispersed ownership, $CPI_{i,t}$ capital intensive firm, $DUAL_{i,t}$ CEO duality and $DIVS_{i,t}$ dispersed ownership structure.

This research used fixed effect and dynamic panel data models to gain a deeper understanding of the phenomena under inquiry, validate the findings, and ensure that the conclusions were not influenced by the model selection. The fixed-effects model is static, capturing within-entity variation over time but ignoring cross-sectional variation. It views time as a fixed dimension; therefore, its effects are not explicitly expressed or analysed. Instead, the emphasis is on comparing observations within each entity (firm) over time. To deal with complex difficulties including time dynamics, lagged effects, endogeneity, and autocorrelation, a dynamic model was used because the static model does not cater to these problems. Hence, the following econometric problems led us to use the Arelano & Bond (1991) system GMM. First, the explanatory variables are assumed to be endogenous; however, reverse causation may persist between firm investment and

leverage (Gatchev et al., 2011; Sean Clearly, 2016) as well as firm investment and sales growth (Bukvič & Tekavčič, 2024; Fazzari et al., 1988; Grazzi et al., 2013; Heshmati & Lööf, 2008), which means that regressors may correlate with the error term. Second, the firm-specific fixed effect (Time invariant) may be correlated with regressors. Third, due to the lagged dependent variable, there is a chance of high autocorrelation and the lag dependent variable also correlates with unobserved firm-specific effects. Lastly, the panel dataset has a small-time dimension (T) and a large entity dimension (N).

Results and Discussion

Summary Statistics

The variables' summary statistics are shown in Table 2. Panel A shows the descriptive statistics. The mean results highlight the diversity in investment practices, indicating different risk appetites or investment strategies among firms. The standard deviation results show that the sample firms have comparatively small levels of capital investment variation. Furthermore, the findings show significant variation in EPU, suggesting that some firms operate under conditions of substantially more uncertainty than others.

Table 1

Summary Statistics

Panel A: Descriptive Statistics							
Variable	Obs	Mean	Std. dev.	Min	Max		
CI	10,374	0.055	0.063	0.0005	1.398		
EPU	11,520	162.629	87.201	27.001	588.373		
TQ	10,918	0.758	1.192	0.000	23.013		
CF	10,419	0.097	0.105	−3.254	1.958		
SG	10,403	0.067	0.273	−6.215	3.916		
LEV	11,281	0.469	0.377	0.00004	34.650		
CH	11,234	0.122	0.113	0.00	1.00		
GDP Growth	11,718	1.741	3.437	−11.33	24.37		
Panel B: Correlation Matrix							
	1	2	3	4	5	6	7	8
CI	1.000							
EPU	−0.007	1.000						
TQ	0.000	0.268***	1.000					
CF	0.160***	0.001	0.105***	1.000				
SG	0.200***	0.0147	0.053***	0.084***	1.000			
LEV	−0.07***	−0.009	0.037***	−0.07***	−0.024**	1.000		
CH	−0.02***	−0.037***	0.060***	0.085***	0.063***	−0.040***	1.000	
GDP Grow	0.11***	−0.11***	−0.037***	0.058***	0.21***	−0.033***	0.039***	1.000

Panel B of Table 1 presents a pairwise correlation matrix. EPU displays an insignificant negative correlation with CI, indicating that CI is inhibited by EPU. Since summary statistics can only compare differences in panel data between firms, an empirical analysis is required to determine how EPU affects CI. Therefore, a more thorough and nuanced approach to evaluate the relationships in the panel data is carried out by employing sophisticated econometric techniques including Two-Way Fixed effect models and two-step system GMM. By using these methods, researchers attempt to infer the relationship between variables, test hypotheses, and account for confounding variables as follows.

Impact of EPU on Corporate Investment

Table 2 shows our baseline regression analysis of the full sample, developed economies and developing economies. Presented in columns (2), (4) and (6) are the findings of the fixed effect model estimating Equation (i), while in columns (3), (5) and (7) are results of GMM estimating equation (ii). The results of the GMM model were preferred for inferences because the GMM provided better coefficient values and significance levels than the FEM. Moreover, the Sargan test yielded insignificant results. Additionally, the AR-I test revealed significant serial correlations, whereas the AR-II tests did not. The coefficient for lagged corporate investment was found to be statistically significant at 1%, validating the use of the dynamic panel estimation.

Baseline Regression Results

The results of our baseline model in columns (2) and (3) of Table 2 demonstrate that EPU has a significant adverse impact on CI. These findings align with Hypothesis H1, which states that the impact of EPU on CI is negative. Moreover, the results also corroborate the prominent theories of Abel, (1983), Knight (1921) and Myers (1977) and previous empirical research (Akron et al., 2020; X. Chen et al., 2020; Foo et al., 2017). The results imply that EPU compels firms to avoid undertaking investments with unpredictable outcomes, prompting them to adopt and follow the "wait and see" approach. Firm choose real options in response to EPU due to the irreversibility of business investments and associated sunk cost. Therefore, governments should develop and implement transparent economic policies. Ensuring stability in economic policies and avoiding frequent, unexpected changes will create an environment conducive to profitable corporate investments.

The control variables of the study demonstrate the following impact on CI: Tobin's Q has a positive impact and the result is consistent with the prior results of the empirical studies (Fazzari et al., 1988; R. Liu et al., 2020). The cash flow impact is positive and in line with earlier studies (Gatchev et al., 2011; Martinez-Carrascal & Ferrando, 2011). The negative is the impact of cash holding on CI, aligned with empirical research (Almeida et al., 2003; Duchin et al., 2010; Opler et al., 1999). The negative link between leverage and corporate investment corroborates the empirical findings (G. Liu & Zhang, 2020; Wang et al., 2014; Wu et al., 2020). With regard to the macro-economic impact on corporate investment, our finding underscores that GDP growth has a positive influence on CI. This outcome was already anticipated, given that numerous studies have underscored the positive connection between GDP growth and firms' investment activity (Becker and Mauro, 2006; Farooq et al., 2021). The reason is that business activities are interconnected. As GDP increases, so does per capita income, increasing consumer demand. Consequently, firms invest in expanding their operations to meet the rise in consumer demand.

Developed and Developing Economies

Table 2–columns (4), (5), (6) and (7) reports the regression results for the developed and developing economies on the impact relating to EPU on CI. The results of the Two-Way Fixed Effect Model are shown in columns 4 and 6, while in columns 5 and 7, the results of the two-step system GMM are presented. The results indicate that the overall impact of EPU on CI in developed economies is negative; however, it is insignificant for developing economies.

Table 2

Impact of EPU on Corporate Investment—Full sample and Economy Development

Variables (1)	Full Sample		Developed Economies		Developing Economies	
	Fixed effect (2)	GMM (3)	Fixed effect (4)	GMM (5)	Fixed effect (6)	GMM (7)
L.inv	—	0.449***	—	0.423***	—	0.485***
	—	(0.03)	—	(0.040)	—	(0.050)
EPU	-3.88e-05***	-2.16e-05***	-5.78e-05***	-4.03e-05***	2.63e-05	1.63e-05
	(1.18e-05)	(8.00e-06)	(1.18e-05)	(7.86e-06)	(3.51e-05)	(1.88e-05)
TQ	0.008***	0.0040**	0.008***	0.006**	0.008***	0.004**
	(0.002)	(0.002)	(0.001)	(0.003)	(0.002)	(0.002)
CF	0.0510***	0.0858***	0.0494**	0.0991**	0.0528***	0.0377**
	(0.014)	(0.019)	(0.020)	(0.046)	(0.018)	(0.019)
SG	0.026***	0.011***	0.034***	0.018***	0.011**	0.008
	(0.007)	(0.004)	(0.010)	(0.006)	(0.006)	(0.007)
Lev	-0.034**	-0.039*	-0.008	0.031*	-0.077**	-0.039*
	(0.017)	(0.023)	(0.019)	(0.0190)	(0.031)	(0.020)
CH	-0.036	-0.032*	-0.026	-0.036	-0.054*	-0.016
	(0.0283)	(0.0169)	(0.0406)	(0.0222)	(0.0284)	(0.0217)
GDP growth	0.000	0.00033*	0.0007**	0.0002	0.00213***	0.0001*
	(0.000)	(0.00018)	(0.0003)	(0.0002)	(0.0007)	(0.0005)
Constant	0.070***	0.037***	0.058***	0.007	0.103***	0.033***
	(0.009)	(0.010)	(0.011)	(0.009)	(0.016)	(0.011)
Test Statistics						
Hensen Test	—	25.11(0.345)	—	4.59(0.800)	—	26.97(0.357)
AR_I	—	-5.57(0.000)		-4.41(0.000)	—	-3.71(0.000)
AR -II	—	-1.22(0.223)	—	-0.34(0.735)	—	-1.57(0.117)
R-squared	0.066	—	0.084	—	0.073	—
F stat.(P.Value)	13.56(0.000)	—	10.61(0.000)	—	7.51(0.0000)	—
Time Effect	Yes	Yes	Yes	Yes	Yes	Yes
Observations	9194	9,260	7,057	7,096	2,137	2,164
Number of IDs	836	836	633	633	203	203

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

The results support our hypotheses H2 and align with the empirical findings of (Calomiris et al., 2012; Farooque et al., 2023; Pástor and Veronesi, 2012), who contend that EPU impacts on developed countries are significant as compared to developing economies. The findings are also consistent with the World Bank (2020) statistics, according to which economic activity has decreased by 7% in developed economies compared to 2.5% in developing economies because of the EPU generated by COVID-19. The influence of EPU on developed economies is notably pronounced, attributable to their higher levels of economic integration, complex financial systems, and extensive interconnectedness with other countries. Conversely, developing economies exhibit inadequate financial development and limited global interconnection, rendering them less susceptible to EPU shocks. The results articulate that firms in developing countries should enhance their risk management capabilities. On the other hand, developed economies should reduce regulatory uncertainty, increase economic stability, and simplify the financial system.

Impact of EPU on Corporate Investment in Developed and Underdeveloped Financial Systems

Table 4 displays the findings of our regression analysis regarding the effect of EPU on CI of firms operating under the developed and underdeveloped financial systems. The table's columns 3 and 5 display the finding of the Two-Step System GMM, while in columns 2 and 4, the results of the two-way fixed effect model are presented. The GMM provided better coefficient values and significance levels than the FEM; therefore, it was preferred for inferences. The GMM model's Sargan test yielded insignificant results. Additionally, the AR-I test revealed significant serial correlations, whereas the AR-II tests did not. The coefficient for lagged corporate investment was found to be statistically significant at 1%, validating the use of the dynamic panel estimation.

The findings determine the negative and significant impact of EPU on CI in developed financial systems; however, it is insignificant for underdeveloped financial systems. The results support our hypotheses H3, which state the heterogeneous effect of EPU on CI in developed and underdeveloped financial systems. Our study findings are in line with previous empirical evidence (Arouri et al., 2016; Chang et al., 2015; Converse, 2018; Handley & Limão, 2015; Pástor & Veronesi, 2012; Rodrik, 1991). Literature portrays that EPU has significant and multi-faceted impacts on firms, investors, and consumers because it deters the earlier from taking new investments and later from spending (Converse, 2018; Handley & Limao, 2015; Rodrik, 1991). The negative impact of EPU is documented for lenders because it leads them to become more conservative towards lending practices, consequently driving to a higher level of interest rates. Hence, the EPU produced economy-wide impacts directly reflected in the financial system (Arouri et al., 2016; Chang et al., 2015; Pástor & Veronesi, 2012). Later research, built on previous work, has confirmed a negative relation between EPU and stock markets, thereby making them more volatile (Arouri et al., 2016; Arouri & Roubaud, 2016; Chang et al., 2015; Pástor & Veronesi, 2012). The studies underline the negative impact of EPU on lenders because it leads them to become more conservative towards lending practices, consequently driving to a higher level of interest rates.

Empirical research has shown a significant impact of EPU on firms' investment in developed financial systems compared to those in underdeveloped financial systems. The differential impact of EPU can be attributed to various factors. For instance, firms in developed financial systems rely heavily on capital markets to finance their investments. Therefore, an increase in EPU can amplify risk perception, raise the risk premium, increase borrowing costs, and reduce credit availability.

Table 3

Impact of EPU on Corporate Investment–Financial System Development

Variables (1)	Developed Financial Systems		Underdeveloped Financial System	
	Fixed Effect (2)	GMM (3)	Fixed Effect (4)	GMM (5)
Linv		0.437*** (0.042)		0.468*** (0.049)
EPU	−6.39e-05*** (1.36e-05)	−4.15e-05*** (8.37e-06)	1.69e-05 (2.75e-05)	1.20e-06 (1.55e-05)
TQ	0.007*** (0.002)	0.006** (0.003)	0.007*** (0.002)	0.004*** (0.002)
CF	0.050** (0.021)	0.093** (0.0451)	0.052*** (0.016)	0.042*** (0.016)

Variables (1)	Developed Financial Systems		Underdeveloped Financial System	
	Fixed Effect (2)	GMM (3)	Fixed Effect (4)	GMM (5)
SG	0.041*** (0.012)	0.022*** (0.007)	0.010*** (0.0039)	0.005 (0.005)
Lev	−0.008 (0.022)	0.0294 (0.020)	−0.0630** (0.027)	−0.0136 (0.020)
CH	−0.024 (0.046)	−0.042* (0.023)	−0.045* (0.024)	−0.007 (0.017)
GDP growth	0.0007** (0.0003)	7.93e-05 (0.0002)	0.0016*** (0.0006)	0.0009** (0.0004)
Constant	0.057*** (0.013)	0.009 (0.0095)	0.096*** (0.013)	0.023** (0.010)
Test Statistics				
Hensen Test	—	4.57(0.802)	—	25.10(0.457)
AR -I	—	-4.27(0.000)	—	-3.97(0.000)
AR -II	—	-0.89(0.372)	—	-0.65 (0.517)
R-squared	0.090	—	0.068	—
F stat.(P.Value)	10.38(0.000)	—	8.01(0.000)	—
Time Effect	Yes	Yes	Yes	Yes
Observations	6,401	6,432	2,793	2,828
Number of IDs	575	575	261	261

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

On the other hand, firms in underdeveloped financial systems largely depend on equity financing because of the lack of access to financial markets and inadequate financial systems to support their financing needs. Consequently, they are less influenced by EPU. Additionally, investors in developed financial systems tend to be more risk-averse and favour low-risk investments, while those in underdeveloped financial systems are less risk-averse and have fewer investment options, making EPU less significant for their investments. Moreover, developed financial systems are globally integrated, making them vulnerable to global EPU shocks and affecting investors and capital flows. However, underdeveloped financial systems have limited integration, which limits the impact of the global EPU.

Impact of EPU on Corporate Investment of SOEs and non-SOEs

Table 5 reports the findings in the context of state ownership. The results of the two-way fixed effect model are in 2 and 4, while in columns 3 and 5, the results of the two-step system GMM are presented. The GMM provided better coefficient values and significance levels than the FEM; therefore, it was considered for interpretation. The Sargan test yielded insignificant results, the AR-I test revealed significant serial correlations, whereas the AR-II tests did not. The coefficient for lagged corporate investment was found to be statistically significant at 1%, validating the use of the dynamic panel estimation.

Table 4
Impact of EPU on Corporate Investment–State Ownership

Variables (1)	SOE		Non-SOE	
	Fixed Effect (2)	GMM (3)	Fixed Effect (4)	GMM (5)
L.inv	— —	0.371** (0.169)	— —	0.427*** (0.0336)
EPU	-1.13e-05 (3.56e-05)	1.78e-0 (3.46e-05)	-4.00e-05*** (1.24e-05)	-3.08e-05*** (8.41e-06)
TQ	0.0148* (0.00832)	0.00309 (0.0109)	0.00805*** (0.00124)	0.00669*** (0.00233)
CF	0.0769** (0.0334)	0.115*** (0.0291)	0.0505*** (0.0145)	0.0753*** (0.0271)
SG	0.0110 (0.0101)	-0.00218 (0.0197)	0.0262*** (0.00706)	0.0153*** (0.00464)
Lev	-0.0222 (0.0485)	0.0593 (0.0675)	-0.0338* (0.0177)	0.0197 (0.0145)
CH	-0.0867** (0.0386)	-0.0401 (0.0525)	-0.0340 (0.0295)	-0.0198 (0.0239)
GDP growth	0.00127 (0.000969)	0.00157 (0.00141)	0.000239 (0.000266)	0.000165 (0.000192)
Constant	0.0786*** (0.0206)	-0.0178 (0.0476)	0.0698*** (0.00992)	0.00923 (0.00705)
Test Statistics				
Hensen Test	—	4.35 (0.361)	—	5.00(0.757)
AR -I	—	-1.97(0.049)	—	-5.799 0.000)
AR -II	—	-0.77(0.442)	—	-1.27(0.203)
R-squared	0.201	—	0.065	—
F stat.(P.Value)	2.63(0.0153)	—	12.96(0.000)	—
Time Effect	Yes	Yes	Yes	Yes
Observations	262	266	8,932	8,994
Number of IDs	24	24	812	812

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

The results show that the influence of EPU on non-SOEs is negative and statistically significant; however, the impacts are insignificant for SOEs. Our results corroborate the study hypothesis H4 and align with prior empirical analysis. To begin with, Feng et al., (2021) demonstrated that EPU has a substantial impact on the employment, sales growth, and business investment of SOEs. Gu et al. (2018) emphasised the significant negative effect of EPU on non-SOEs' investment. Moreover, the substantial detrimental impact of EPU on the CI of non-SOE is highlighted by Khan et al., (2019). Yan and Shi, (2021) found statistical significance in non-SOEs investment during the episodes of EPU.

The findings demonstrate that non-SOEs are significantly susceptible to the influence of EPU compared to SOEs. The reasons being non-SOEs' greater risk aversion, limited access to financial resources, and vulnerability to policy changes. This necessitated non-SOEs to develop effective risk management strategies, maintain strong financial reserves, and diversify their investments. Additionally, advocacy campaigns can be a valuable approach for non-SOEs to promote favourable policy changes by engaging with policymakers.

Impact of EPU on the Corporate Investment of Capital-Intensive and Non-Capital-Intensive Firms

Table 06 reports the findings for the capital-intensive and non-capital-intensive firms. The results of the Two-Way Fixed Effect Model are given in columns 2 and 4, whereas columns 3 and 05 show the results of the two-step system GMM. The GMM provided better coefficient values and significance levels than the FEM; therefore, it was preferred for interpretation. The Sargan test yielded insignificant results, the AR-I test revealed significant serial correlations, whereas the AR-II tests did not. The coefficient for lagged corporate investment was found to be statistically significant at 1%, validating the use of the dynamic panel estimation.

The results determine the overall negative and significant effect of EPU on CI in capital-intensive firms; however, it is insignificant on non-capital-intensive firms. The results support our hypotheses H5 and align with the empirical results of (Akron et al., 2020; X. Chen et al., 2020; Gulen & Ion, 2016; R. Liu et al., 2020). Research emphasises that investments of capital-intensive firms have an irreversible nature due to a significant chunk of associated sunk cost; therefore, uncertainty shocks force the firms to consider wait and see options, leading to a drop in investment, in turn, indicating low economic growth and productivity. X. Chen et al., (2020) contend that the detrimental effect of EPU is especially obvious for the resource and mining industries. Moreover, It is argued that EPU causes a significant decrease in investments of traditional energy firms yet, renewable energy firms exhibit minimal impact (R. Liu et al., 2020). Furthermore, the relationship is pronounced for the corporations having high intensity of investment irreversibility and reliance upon government spending (Gulen & Ion, 2016).

There may be various factors involved in the different significance of EPU's impact on investments of capital-intensive firms and non-capital-intensive firms. To begin with, the investment of capital-intensive firms is long-term, costly, and irreversible . A significant chunk of such a firm's investment is made in terms of physical assets, including machinery, infrastructure, and other facilities. They require a substantial amount of funds from external sources to finance their investments; hence , they are exposed to changes in interest rates and the cost of capital.

Table 5

Impact of EPU on Corporate Investment – Capital Intensity

Variables (1)	Capital Intensive		Non-capital Intensive	
	Fixed Effect (2)	GMM (3)	Fixed Effect (4)	GMM (5)
L.inv	— —	0.446*** (0.038)	— —	0.411*** (0.084)
EPU	-4.42e-05*** (1.57e-05)	-2.07e-05* (1.08e-05)	-2.01e-05 (1.60e-05)	-7.13e-06 (1.03e-05)
TQ	0.009*** (0.002)	0.002 (0.003)	0.007*** (0.001)	0.003* (0.002)
CF	0.045** (0.021)	0.094*** (0.020)	0.056*** (0.015)	0.051** (0.023)
SG	0.031*** (0.010)	0.008 (0.006)	0.017*** (0.005)	0.009** (0.005)
Lev	-0.053** (0.024)	-0.044 (0.033)	0.0006 (0.015)	0.036* (0.020)
CH	-0.045 (0.041)	-0.050* (0.029)	-0.022 (0.017)	-0.006 (0.014)

Variables (1)	Capital Intensive		Non-capital Intensive	
	Fixed Effect (2)	GMM (3)	Fixed Effect (4)	GMM (5)
GDP growth	0.0007** (0.0003)	0.0003 (0.0002)	0.001** (0.0005)	0.0002 (0.0003)
Constant	0.085*** (0.014)	0.043*** (0.014)	0.050*** (0.008)	−0.004 (0.011)
Test Statistics				
Hensen Test	—	25.69(0.219)	—	29.64(0.238)
AR -I	—	−4.51(0.000)	—	−3.11(0.002)
AR -II	—	−2.51(0.120)	—	1.53(0.126)
R-squared	0.067	—	0.097	—
F stat.(P. Value)	8.98(0.000)	—	7.07(0.000)	–
Time Effect	Yes	Yes	Yes	Yes
Observations	6,592	6,634	2,602	2,626
Number of IDs	596	596	240	240

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

EPU leads to interest rate volatility, affecting the cost of capital and influencing the overall climate of investment having a prolonged nature. Conversely, non-capital-intensive firms normally rely on human capital and technological and intellectual property. Their investments are short-term, flexible, and adaptive to changes in economic policies. Hence, they require less amount of funds for investment in physical assets; therefore, the impact of EPU is insignificant.

Impact of EPU on the Corporate Investment of Firms with Dual CEO and Non-Dual CEO

Table 7 reports the results of the heterogeneity impact on the context of ownership concentration. Table 8 displays the effects of ownership concentration on the relationship between EPU and CI. The GMM provided better coefficient values and significance levels than the FEM; therefore, it was considered for interpretation. Columns 2 and 4 of the table display the results of the two-way fixed effect model, and in Columns 3 and 5, the results of the two-step system GMM are presented. The Sargan test yielded insignificant results, the AR-I test revealed significant serial correlations, whereas the AR-II tests did not. The coefficient for lagged corporate investment was found to be statistically significant at 1%, validating the use of the dynamic panel estimation.

Table 6

Impact of EPU on Corporate Investment–CEO Duality

Variables (1)	Dual CEO		Non-Dual CEO	
	Fixed Effect (2)	GMM (3)	Fixed Effect (4)	GMM (5
L.inv		0.448*** (0.0352)		0.429*** (0.0902)
EPU	−3.68e-05*** (1.29e-05)	−2.28e-05*** (8.72e-06)	−4.69e-05 (3.13e-05)	−2.86e-05 (1.86e-05)
TQ	0.007*** (0.003)	0.004** (0.002)	0.011*** (0.004)	−0.002 (0.003)
CF	0.047*** (0.014)	0.047*** (0.015)	0.060 (0.045)	0.230*** (0.054)

Variables (1)	Dual CEO		Non-Dual CEO	
	Fixed Effect (2)	GMM (3)	Fixed Effect (4)	GMM (5
SG	0.025*** (0.007)	0.010** (0.004)	0.031 (0.021)	0.006 (0.006)
Lev	−0.032 (0.019)	−0.025 (0.024)	−0.043* (0.024)	0.075** (0.030)
CH	−0.033 (0.035)	−0.004 (0.022)	−0.050* (0.028)	−0.041* (0.022)
GDP growth	0.0008*** (0.0003)	0.0003* (0.0002)	0.001** (0.0005)	0.0003 (0.0003)
Constant	0.072*** (0.011)	0.030*** (0.011)	0.080*** (0.012)	−0.017 (0.015)
Test Statistics				
Hensen Test	—	29.72 (0.235)	—	8.47(0.389)
AR -I	—	−4.94(0.000)	—	−3.11(0.002)
AR -II	—	−1.08(0.281)	—	−0.06(0.954)
R-squared	0.067	—	0.078	
F stat.(P.Value)	11.95(0.0000)	—	3.00(0.0001)	
Time Effect	Yes	Yes	Yes	Yes
Observations	7390	7,447	1804	1,813
Number of IDs	673	673	165	165

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

The results demonstrate that the impact of EPU on investments of the firms having CEO duality is negative and statistically significant; however, the impacts are insignificant for firms having a separating CEO and chairman. Our findings support our hypothesis H6 and align with previous studies. According to agency theory (Fama & Jensen, 1983), dual leadership is employed by firms to mitigate the adverse impact of agency problems, hence experiencing significant performance improvement. The researcher provides unambiguous support for this claim for proprietorships, limited partnerships, and corporations having small-scale manufacturing and service operations. Giving enormous powers to one person raises the problem of undermonitoring of management by the board in large corporations. Therefore, duality significantly affects the internal control system and compromises the board's powers. Pertinently, according to Executive Ladder theory (Hambrick & Mason, 1984), top management strategic decisions are impacted by economic conditions, which means that the performance of the firm can be forecasted by looking at the attributes of the firm's executives. Moreover, the impacts become significant in an environment of high uncertainty (Herrmann & Datta, 2002; Hsu et al., 2013; Nielsen & Nielsen, 2011).

There may be various factors that lead to the heterogeneity of EPU impact on firms having CEO duality versus non-CEO duality. The concentration of power in dual leadership might lead to a conservative risk management approach. The single decision-maker may choose risk-averse strategies towards firms' investment during EPU to safeguard the firm's stability. Conversely, the separate roles involved more collaborative decision making, a nuanced risk management approach and different perceptions of investments during the EPU. Moreover, dual CEOs may follow governance practices that are more tilted towards stability and continuity, and firms having non-dual CEO may prioritise transparency and accountability, which leads to a more measured response to EPU.

Impact of EPU on the Corporate of Firms with Concentrated Ownership and Dispersed Ownership

Table 8 displays the effects of ownership concentration on the association between EPU and CI. The results of the Two-Way Fixed Effect Model are given in columns 2 and 4, whereas columns 3 and 05 show the results of the two-step system GMM. The GMM provided better coefficient values and significant levels than the FEM, therefore, taken for inferences. The Sargan test yielded insignificant results, the AR-I test revealed significant serial correlations, whereas the AR-II tests did not. The coefficient for the lagged CI was statistically significant at 1%, validating the use of the dynamic panel estimation.

The impact of EPU on corporate investments with dispersed ownership structures is negative and significant. However, this impact is insignificant for firms with concentrated ownership structures. Our results align with previous studies and support hypothesis H7. Empirical research has shown that ownership concentration leads to high firm performance (Alimehmeti & Paletta, 2009; Claessens & Djankov, 1999; Demsetz & Lehn, 1985). Moreover, R. Liu et al. (2020) highlighted that ownership concentration mitigates the adverse impact of EPU on CI.

The study findings demonstrate that entities with less ownership concentration are more exposed to EPU shocks because of prudent leadership and inadequate monitoring. Concentrated ownership, on the other hand, buffers against the negative consequences of EPU shocks due to the dominant shareholders' monitoring and management. Therefore, to mitigate the risk of EPU, entities with dispersed ownership should adopt robust strategies for risk management. Furthermore, enhancing corporate governance through improved monitoring tools and better communication with shareholders might help mitigate the detrimental impact of EPU on CI in companies with dispersed ownership.

Table 7

Impact of EPU on Corporate Investment – Ownership Concentration

Variables (1)	**Concentrated Ownership**		**Dispersed Ownership**	
	Fixed Effect (2)	**GMM (3)**	**Fixed Effect (4)**	**GMM (5)**
L.inv	— —	0.446*** (0.042)	— —	0.452*** (0.048)
EPU	-1.03e-05 (1.70e-05)	-3.91e-06 (1.07e-05)	-7.43e-05*** (1.92e-05)	-4.88e-05*** (1.24e-05)
TQ	0.009*** (0.002)	0.005** (0.002)	0.007*** (0.001)	0.004 (0.003)
CF	0.060*** (0.015)	0.067** (0.026)	0.0217 (0.036)	0.057** (0.024)
SG	0.017*** (0.005)	0.012*** (0.003)	0.045*** (0.016)	0.028*** (0.007)
Lev	-0.048** (0.020)	-0.055* (0.028)	-0.011 (0.026)	0.029 (0.030)
CH	-0.060*** (0.016)	-0.036*** (0.013)	0.005 (0.069)	-0.0049 (0.036)
GDP growth	0.001*** (0.0004)	0.0004* (0.0002)	0.0004 (0.0002)	3.81e-06 (0.0002)
Constant	0.085*** (0.011)	0.049*** (0.014)	0.056*** (0.016)	0.009 (0.013)
Test Statistics				
Hensen Test	—	23.05 (0.458)	—	2.45(0.874)

Variables (1)	Concentrated Ownership		Dispersed Ownership	
	Fixed Effect (2)	GMM (3)	Fixed Effect (4)	GMM (5)
AR -I	—	-4.80(0.000)	—	-2.93(0.003)
AR -II	—	-1.14(0.254)	—	-0.98(0.325)
R-squared	0.071	—	0.098	—
F stat.(P.Value)	9.98 (0.000)	—	6.72 (0.000)	—
Time Effect	Yes	Yes	Yes	Yes
Observations	5068	5,109	4126	4,151
Number of IDs	468	468	368	368

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Conclusion

The literature is crowded with studies that have examined the impact of EPU on CI at the firm, market, and economy level. Moreover, research has also been conducted to examine the factors, mitigate, or intensify the relationship between both the variables. However, the current study explored the relationship between EPU and CI on a broader scale, incorporating a range of firms from both developed and developing economies has been examined. Moreover, the study also analyzes how ownership concentration, state ownership, capital intensity and CEO duality influence the relationship between EPU and CI. Our study utilised Two-Way Fixed-Effect and Generalised Method of Moment econometric models on a sample of 11,718 firm-level observations from 25 developing and developed economies. Our baseline analysis confirms that EPU has a significant negative impact on firm investments. Our research determines that the negative impact of EPU on CI is particularly pronounced for firms in developed economies, developed financial systems, non-SOEs, capital-intensive firms, and firms with CEO duality and dispersed ownership structures. However, the insignificant is the impact for firms' investment in developing economies, under-developed financial systems, state-owned enterprises, non-capital-intensive firms and firms with separate leadership and concentrated ownership.

The research findings have significant implications for both policy makers and firms. First, the results imply that policy makers maintain policy stability through the formulation and implementation of transparent economic policies through long-term planning spanning 5 to 10 years. The policies should have a clear vision, strategies, goals, and predictable outcomes to ensure consistency even upon a change in government. They must seek broader support from key stakeholders, including chambers of commerce, industry associations, and economic experts. Second, the findings show that the impact of EPU on CI is heterogeneous for firms having differences in ownership structure, ownership type, and the economy in which the firm operates. Therefore, the industries that are likely to be exposed to EPU should be provided with incentives and regulatory flexibility without compromising the broader economic ecosystem.

Firms, particularly developed economies and developed financial systems, should prepare a contingency plan to mitigate the negative consequences of EPU on their investments. These firms should conduct a thorough risk assessment, stress testing, and scenario analysis. Furthermore, entities may implement diversification and hedging measures to mitigate the risks of EPU. Furthermore, during EPU, liquidity may offer flexibility; hence, businesses should ensure that they have enough reserves to cover unforeseeable investment expenses. Furthermore, non-SOEs can engage in advocacy efforts to influence beneficial policy changes that benefit their interests. Furthermore, they should enhance their financial reserves to safeguard their investments. Non-duality firms can mitigate the impact of EPU by increasing collaboration in decision-making, which promotes transparency and long-term strategic planning. Firms with a dispersed ownership

structure can use effective risk management tools, improve corporate governance, and use advanced monitoring systems to mitigate the negative effects of EPU on investment.

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