

Impact of Economic Policy Uncertainty on Firm Performance: Evidence from India

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Abstract

This study examines the impact of economic policy uncertainty (EPU) on firm performance in India from 2003–04 to 2023–24. Employing the two-step system Generalised Method of Moments, we find that EPU significantly reduces firm performance, with stronger effects during the global financial crisis. Subsample results indicate that private-sector and foreign firms are more adversely affected. The findings suggest that policymakers should promote stability and transparency, while managers should incorporate EPU into risk management strategies. This study offers two novel contributions. First, it fills a gap in the literature by being the first to examine the role of crisis and ownership heterogeneity in the EPU–firm performance relationship, enabling the identification of periods and firm groups most vulnerable to uncertainty and facilitating targeted policy support. Second, by covering more than two decades, we provide evidence from a more comprehensive dataset than prior studies, thereby improving the generalisability of the findings. Overall, this study offers a new perspective on the EPU–firm performance nexus.

JEL Classification: C23, D80, E60, G01, G30, L25

Keywords: Economic policy uncertainty, Firm performance, Global financial crisis, India, System GMM

El impacto de la incertidumbre de la política económica en el desempeño empresarial: evidencia de la India

Resumen

Este estudio examina el impacto de la incertidumbre de la política económica (EPU) en el desempeño de las empresas en India durante el período 2003–04 a 2023–24. Empleando el método generalizado de momentos en dos etapas para sistemas, se encuentra que la EPU reduce significativamente el desempeño empresarial, con efectos más pronunciados durante la crisis financiera global. Los resultados por submuestras muestran que las empresas del sector privado y de capital extranjero son más afectadas. Los hallazgos sugieren que los responsables de políticas deben promover estabilidad y transparencia, mientras que los directivos deben incorporar la EPU en la gestión de riesgos. Este estudio ofrece dos contribuciones novedosas. Primero, llena un vacío en la literatura al analizar el papel de las crisis y la heterogeneidad en la propiedad en la relación EPU–desempeño, permitiendo identificar los períodos y tipos de empresas más vulnerables y facilitando políticas focalizadas. Segundo, al cubrir más de dos décadas, proporciona evidencia más amplia que estudios previos, mejorando la generalización de los resultados. En conjunto, aporta una nueva perspectiva sobre la relación EPU–desempeño Empresarial.

Clasificación JEL: C23, D80, E60, G01, G30, L25

Palabras clave: Incertidumbre de política económica, desempeño de las empresas, Crisis financiera mundial, India, Sistema GMM

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1. Introduction

Global uncertainties have been on the rise due to events like the Global Financial Crisis (GFC), Brexit, the Sino-US trade war, the COVID-19 pandemic, geopolitical tensions in Ukraine, and the Middle Eastern crisis (Baker et al., 2016; Davis, 2019). These events have turned economic policy uncertainty (EPU) into a topic of discussion. According to Wen et al. (2021), “EPU is the inability to precisely predict whether, when, and how the government will alter current economic policy.” Since policies govern businesses, any ambiguity surrounding them would affect the firms’ strategic decisions and operations. For instance, the unstable policy environment in the US in recent times has disrupted firms’ long-term planning as they struggle to anticipate future developments (Siriopoulos et al., 2025). As pointed out by Al-Thaqeb and Algharabali (2019), globalisation and technological advancements have interconnected the world, making EPU more important than ever before. Therefore, understanding its repercussions is essential in order to respond effectively. However, since EPU cannot be observed directly, measuring EPU is a daunting task. Several studies have attempted to measure uncertainty using various proxies, such as natural disasters, elections, political shocks, disagreements in firms’ expectations from surveys, and stock return volatility (Bachmann et al., 2013; Baker and Bloom, 2013; Gao et al., 2018; Im et al., 2017, 2020; Julio and Yook, 2012). The issue with these proxies is that they reflect uncertainty from a specific source, but in reality, several things contribute to uncertainty. So, these proxies cannot be considered as a comprehensive EPU measure. However, Baker et al. (2016) overcame this issue through the construction of an EPU index that captures uncertainty from various sources. Thereafter, this index has been prominently used by researchers to measure EPU (Borthwick et al., 2020; Gong et al., 2023; Liu and Dong, 2020).

Recently, EPU has been widely discussed in relation to various factors. For instance, at the macro level, it has been shown to affect consumption, employment, industrial output, and economic growth (Eksi and Onur Tas, 2022; Nilavongse et al., 2020; Wang et al., 2025; Wu and Zhao, 2022). Similarly, with respect to financial markets, studies demonstrated that EPU influences stock prices, heightens equity and bond market volatility, and raises the chances of stock price crashes (Du et al., 2023; Gong et al., 2023; Ko and Lee, 2015; Liu and Zhang, 2015). Further, EPU’s effects on the Bitcoin market (Wang et al., 2020), gold returns (Zhang et al., 2021), and oil prices (Qin et al., 2020) have also been established by prior research. Other studies have examined how EPU influences various corporate decisions and have linked EPU to leverage (Im et al., 2020), cash holdings (Li, 2019), investment (Gulen and Ion, 2016), dividends (Sarwar and Hassan, 2021), innovation (Lou et al., 2022), trade credit (Liu and Dong, 2020), and risk-taking (Zhang et al., 2021). Additionally, Liu and Wang (2022) and Tran (2021) have shown that the cost of debt and equity is increased by EPU.

Although interest in assessing the influence of EPU on various factors has been rising, the majority of these studies are concentrated in advanced economies. But lately, emerging economies (especially India) have started gaining attention. Bajaj et al. (2021) highlighted the reforms and policy shifts that India has undergone in recent years, including the adoption of the Goods and Services Tax, demonetization, the implementation of the Insolvency and Bankruptcy Code in 2016, adherence to the Basel III guidelines, and mergers of public-sector banks. Additionally, they emphasised how these developments make India an interesting setting for EPU research. Furthermore, the International Monetary Fund (IMF, Asia and Pacific Department, 2025) noted that

policy uncertainty in India has started to increase since late 2023. Figure 1 depicts the trend in India's EPU index from 2004 to 2024, highlighting noticeable fluctuations. The rise in 2008–2009 reflects uncertainty during the GFC, while the peak around 2012–2013 is associated with the Taper Tantrum in India. The increase around 2020 corresponds to disruptions from the COVID-19 Pandemic, following which the index recovered and has started to rise again since 2023. These developments further reinforce that India is an important setting to study EPU. Consequently, studies have begun investigating EPU's effect on various corporate and economic decisions in India, including investment (Bagow and Altaf, 2024), leverage (Bajaj et al., 2021), institutional ownership (Chada, 2023), the stock market (Simran and Sharma, 2024), imports (Sharma and Reddy, 2021), and investor sentiment (Idnani et al., 2023).

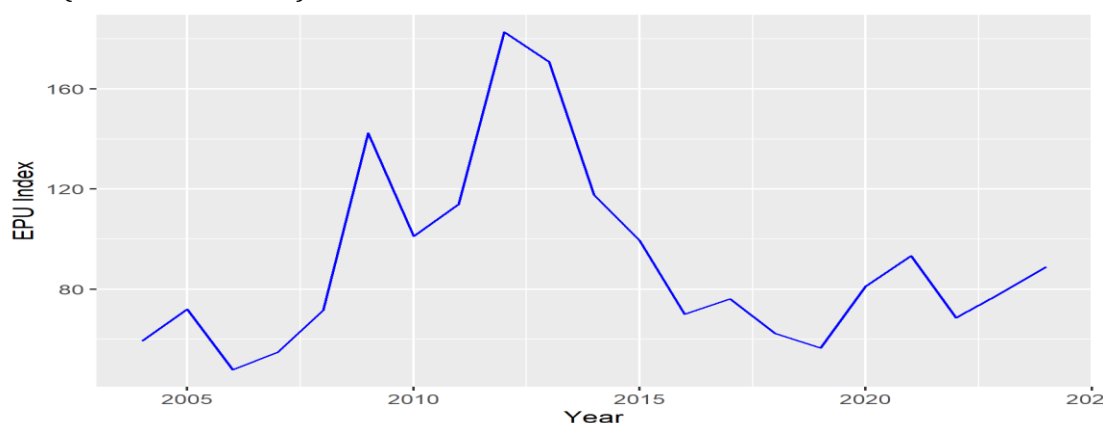


Figure 1. Economic Policy Uncertainty Index in India (2004–2024).

Note: The EPU index is calculated as the fiscal year average (April–March) of monthly values. Source: EPU index data from <https://www.policyuncertainty.com/>.

However, the EPU–firm performance nexus is relatively underexplored in the Indian context. Since firm performance represents management success, shareholder value, investor confidence, and a company's long-term survival (Alarussi and Alhaderi, 2018), it becomes important to understand this relationship. Nevertheless, this relationship has been explored by some studies (Ajay and Ingole, 2025; Chakradhar and Gupta, 2024; Mitra et al., 2025) in India, but they suffer from critical limitations. For instance, Mitra et al. (2025) focused only on the manufacturing sector, while the sample periods of Ajay and Ingole (2025) and Chakradhar and Gupta (2024) are not comprehensive, as they left out two important crisis periods: the GFC and the COVID-19 pandemic. Furthermore, existing research has not explored how the GFC moderates the EPU–firm performance relationship in the Indian context. In addition, previous studies have not considered whether EPU's impact on firm performance differs across firms' ownership types in India.

Therefore, to bridge the gap, the present study uses the two-step system generalised method of moments and explores how EPU influences firm performance in India for the period 2003–04 to 2023–24, with a comprehensive sample of BSE 500 companies. In addition, since the GFC was a major global shock that disrupted economic activity and imposed severe financial constraints on firms, we argue that the GFC could have amplified EPU's influence on firm performance. Therefore, we examine how the GFC alters the EPU–firm performance relationship. Furthermore, as opposed to previous studies, this study considers firm heterogeneity with respect to ownership type by conducting a subsample analysis comparing public-sector and private-sector firms, and foreign and domestic

firms. Our findings indicate a detrimental effect of EPU on firm performance, which is more severe during the GFC. Further, our findings indicate that EPU influences the private sector and foreign firms' performance more greatly than that of their counterparts. Also, our findings hold true across alternative specifications of EPU and other econometric techniques.

Our research makes the following important contributions. First, our study supports the claim that EPU reduces firm performance, highlighting the need to see EPU as a threat and devise countermeasures. Second, we provide novel evidence on how the GFC influences the EPU and firm performance nexus, which has so far been largely unexplored. The results emphasise that the government must provide a stable policy environment, particularly during crisis periods, in order to protect firms. Third, we consider firms' heterogeneity in terms of ownership type, particularly comparing public-sector and private-sector firms, and foreign and domestic firms, which have not been examined in the Indian context. This helps to identify the firms that are more vulnerable to EPU. We structure our paper as follows. Section 2 presents a review of the relevant literature. Section 3 describes the data and methodology adopted in the study. In Section 4, the model specification is explained. In Section 5, we report and discuss the findings. Section 6 covers the conclusion, implications, and possible avenues for future studies.

2. Literature review

The recent rise in uncertainties has ignited interest among researchers around the globe to study EPU's effect on a broad spectrum of macroeconomic and corporate outcomes. According to the studies in the macroeconomic context, Policy uncertainty has caused higher unemployment, lower aggregate output, and a detrimental effect on economic growth (Bloom, 2009; Leduc & Liu, 2016; Perales et al., 2024). At the market level, studies demonstrated that EPU affects equity market volatility and return and can even forecast them (Liu and Zhang, 2015; Phan et al., 2018).

At the firm level, studies extensively apply the real options theory, developed from the works of Bernanke (1983), Dixit and Pindyck (1994) and McDonald and Siegel (1986) to study the EPU's effect on firm-level decisions. The theory proposes that the option value of waiting increases as uncertainty rises, causing firms to defer irreversible decisions. Consistent with this view, studies document that EPU adversely affects investment (Wang et al., 2014), innovation (Lou et al., 2022), and mergers and acquisitions (Borthwick et al., 2020). Other studies explain EPU's effects through precautionary saving theory, suggesting that higher EPU increases firms' cash holdings (Demir & Ersan, 2017) while households reduce consumption and increase savings during uncertain periods (Aaberge et al., 2017; Wu and Zhao, 2022). Financial friction provides another channel through which uncertainty affects financial decisions. For example, studies showed that EPU increases information asymmetry and raises capital costs (Liu and Wang, 2022; Nagar et al., 2019), raises risk premium (Pástor & Veronesi, 2013), and widens credit spreads (Gilchrist et al., 2014) thereby making the external financing conditions more stringent and potentially harming firm performance.

Even though there is growing interest in evaluating EPU's influence on various outcomes of firms, less emphasis has been placed on assessing how EPU affects firm performance, with studies concentrated in developed countries. Iqbal et al. (2020) were among the first to assess EPU's effect

on firm performance and documented that EPU adversely affects firm performance. Subsequent studies focusing on specific sectors like hospitality and tourism (García-Gómez et al., 2022; Ozdemir et al., 2023), textiles (Çakır & Ova, 2024), and energy (Tarzibash & Ozyapici, 2024) also reported similar negative effects. These findings indicate that the EPU's effect on firm performance remains negative regardless of the sector a firm belongs to. Furthermore, studies have shown that firms can reduce EPU's negative effect through ESG disclosure and CSR activities, which represent responsible practices (Ahsan and Qureshi, 2021; Borghesi et al., 2019).

However, studies on developing economies, specifically India, are scarce. Only three studies have been conducted in India that directly examine how EPU influences firm performance. Chakradhar and Gupta (2024) reported that EPU exerts an unfavourable effect on firm performance employing a sample of NIFTY 100 companies from 2011 to 2019 and highlighted that the adverse impact of EPU is greater for highly leveraged firms. In a similar vein, Ajay and Ingole (2025) concluded that EPU adversely affects firm value. Additionally, they found that while increased cash holdings impair firm value during periods of higher EPU, leverage and business group affiliation help enhance firm value during uncertain times. Also, the most recent study by Mitra et al. (2025) reports a similar negative impact of EPU on the performance of the firm.

However, these studies suffer from certain limitations. First, the sample period of Ajay and Ingole (2025) and Chakradhar and Gupta (2024) was not comprehensive, as they did not include major crisis periods such as the GFC (2008–2009) and the COVID-19 pandemic (2020–2021). EPU is usually anticipated to rise during crisis periods, and therefore, when we omit such periods, it may not reflect EPU's actual impact on firm performance. Baker et al. (2016) also documented that EPU rises during a crisis period, nearly doubling during the 2008–2009 crisis. Additionally, Gulen and Ion (2016) in a counterfactual analysis revealed that investments were reduced by 32 per cent between 2007 and 2009, and one-third of this reduction could be accounted for by the rise in EPU during the same time. These findings highlight why it is important to include such periods. Second, the study by Chakradhar and Gupta (2024) is based on 100 companies only, which might limit the study's generalizability in a big economy like India. Third, only the manufacturing firms were considered by Mitra et al. (2025), limiting the wider application of the study. To address these shortcomings, we investigate the EPU's effect on firm performance in India using BSE 500 companies as a sample from 2003 to 2024, including the crisis periods. By decreasing investment, tightening financial conditions, and increasing managerial caution, we expect the EPU to negatively influence firm performance, as suggested by the theories of real options, financial frictions, and precautionary saving. Hence, we hypothesise: H1: EPU adversely affects firm performance.

The world has gone through several crises in the last two decades, but the GFC was the most catastrophic and triggered global turmoil. GFC caused various difficulties for businesses around the world because it disrupted financial markets, suppressed demand, and impeded business growth. The collapse of the asset market lasted for a long period, and output and employment also saw a major drop (Reinhart and Rogoff, 2009). Campello et al. (2010) reported that getting external finance was very difficult during the GFC, which compelled firms to limit investment, reduce employment, and sell off assets in order to maintain liquidity. Similarly, Ivashina and Scharfstein (2010) noted that lending was reduced by banks during the GFC, indicating credit tightening. These findings indicate that the effect of EPU might be intensified in crisis periods. Furthermore, Gupta et al. (2024) showed that crisis periods increase the investment–cash flow sensitivity caused by EPU, indicating that EPU's

effect may become stronger during such times. We therefore propose that the EPU's harmful effect on firm performance will be stronger during the GFC, and hence, we hypothesise: H2: The effect of EPU on firm performance is amplified during the GFC. These hypotheses are examined with the research methodology adopted as follows.

3. Data and Methodology

Our study spans from the Indian fiscal year 2003–04 to 2023–24 because the EPU index is only available from the year 2003. Initially, our sample companies included in the BSE 500 index, which account for over 93 per cent of the BSE's total capitalization and includes firms from most of the industries. We do not include financial companies in the sample because of their unique financial structure and nature, which might have an impact on the study's outcome. Additionally, we excluded firm-year observations that have negative equity and missing data, leading to a final sample of 7,495 observations across 408 unique firms.

3.1. Study Variables

As we examine the EPU–firm performance nexus, firm performance, the study's dependent variable is proxied by Return on Assets (ROA) and Return on Equity (ROE). They indicate firms' efficiency in employing their assets and equity to earn profits and are widely adopted indicators of profitability and earnings quality. A market-based measure may not fully reflect all available information because the stock market suffers from market inefficiencies; therefore, accounting measures are preferred over market-based measures. Further, the profitability of a firm is directly linked to its survival and not to market-based measures (Joh, 2003).

The Baker et al. (2016) EPU index, which uses newspaper coverage to quantify uncertainty surrounding policies, is used to quantify EPU, our primary explanatory variable. It is extensively adopted in prior studies (Iqbal et al., 2020; Phan et al., 2019) due to its reliability, accuracy, and strong correlation with other proxies of policy uncertainty. Further, it is readily available for the majority of countries. However, EPU index data are reported monthly, whereas the firm-level data are primarily published on a fiscal year basis. Hence, to maintain uniformity, we used the fiscal year average of the monthly EPU data and transformed them into yearly figures. Furthermore, to ensure robustness, we used a one-year lagged value of EPU and the global economic policy uncertainty (GEPU) index as alternative specifications of EPU.

We also include control variables that could possibly influence the performance of firms. Based on previous studies, variables including firm age (Majumdar, 1997), leverage (Danso et al., 2020), size (Hall and Weiss, 1967), liquidity (Ahsan and Qureshi, 2021), and sales growth (Chakradhar and Gupta, 2024) are chosen as control variables, which were shown to affect firm performance significantly. Since macroeconomic factors may also influence firm performance, we also control for GDP and inflation, based on earlier studies (Borghesi et al., 2019; Çakır and Ova, 2024; Chakradhar and Gupta, 2024; Iqbal et al., 2020).

Table 1. Variables Definitions

Variable	Symbol	Definition
Dependent variables		
Return on Assets	ROA	Net Income/Total assets
Return on Equity	ROE	Net Income/Total equity
Independent Variables		
Economic policy uncertainty	EPU	Natural log of annual average of monthly EPU index of India
Global Economic policy uncertainty	GEPU	Natural log of annual average of monthly GEPU index
Control variables		
Size	SIZE	Natural log of total assets
Age	AGE	Sample year less the year of incorporation
Leverage	LEV	Total debt/Total assets
Liquidity	LIQ	Current assets/Current liabilities
Growth	GRW	Year-over-year sales growth
GDP Growth	GDP	Real GDP annual percentage growth
Inflation	INF	Annual variation in the Consumer Price Index (CPI) in percentage

Source: Authors' compilation

3.2. Sources of Data

All our firm-level data are sourced from the CMIE PROWESS database, and data pertaining to macroeconomic variables are gathered from the official website of the Reserve Bank of India (RBI). The EPU index data are taken from the website (<https://www.policyuncertainty.com/>) created by Baker et al. (2016). To reduce the effect of outliers, we winsorized all firm-level financial variables at the 1st and 99th percentiles. Table 1 gives the definitions of the study's variables.

3.3. Model specification

We adopted the following model to assess EPU's impact on firm performance:

$$FP_{it} = \beta_0 + \beta_1 FP_{i,t-1} + \beta_2 EPU_t + \beta_3 SIZE_{it} + \beta_4 AGE_{it} + \beta_5 LEV_{it} + \beta_6 LIQ_{it} + \beta_7 GRW_{it} + \beta_8 GDP_t + \beta_9 INF_t + \mu_i + \varepsilon_{it} \quad (1)$$

Where FP_{it} indicates firm performance operationalised through ROA and ROE; i and t indicate firm and year, respectively. $FP_{i,t-1}$ indicates the lagged value of the corresponding performance measure. μ_i captures the unobservable firm fixed effect, and ε_{it} is the stochastic error term. We do not include year fixed effects because it would result in high correlation between EPU and year dummies and would prevent the estimation of the EPU coefficient, as the year fixed effects would capture all time-series volatility, including the policy uncertainty shocks we aim to identify. Therefore, year fixed effects are excluded to retain the time-series variation required to identify the impact of EPU on firm performance. This approach is widely adopted in the literature (Duong et al., 2020; Zhu et al., 2020). Instead, we control for key time-varying macroeconomic indicators, including GDP growth and inflation, to account for common macroeconomic fluctuations affecting all firms.

Furthermore, the past performance of firms is expected to influence current performance (Çakır & Ova, 2024); hence, the one-year lag of firm performance is incorporated as an independent variable, making the model dynamic and mitigating omitted variable bias. However, this inclusion introduces potential endogeneity, which may arise from three sources: (i) dynamic endogeneity, due to the lagged dependent variable; (ii) unobserved firm-specific heterogeneity, capturing time-invariant characteristics correlated with performance; and (iii) reverse causality.

Our identification strategy relies on the time-series variation in India's EPU index, which varies only over time and is common across firms, to estimate its effect on firm performance. As a macro-level measure, EPU is unlikely to be affected by individual firm performance, supporting the identification of the causal direction from policy uncertainty to firm performance. Nevertheless, endogeneity remains possible due to dynamic effects and unobserved heterogeneity. As a result, estimating a dynamic model using fixed effects and pooled OLS leads to biased and inconsistent estimates (Nickell, 1981).

Therefore, to identify the causal effect of EPU on firm performance while addressing potential endogeneity concerns, we employ the generalised method of moments (GMM), which is well-suited for estimating dynamic panel models. Particularly, we use the two-step system GMM (Blundell and Bond, 1998) over differenced GMM, as it provides more efficient estimates when explanatory variables are highly persistent and addresses the weak instrumentation problem. The system GMM estimator combines a difference equation instrumented with lagged levels of endogenous variables and a level equation instrumented with lagged differences of the same variables, exploiting internal instruments from the panel structure to allow consistent estimation even when lagged firm performance is endogenous. In our specification, the lagged dependent variable is treated as endogenous, while EPU and other control variables are treated as predetermined or strictly exogenous. Identification is achieved because the instruments (lagged values of the dependent variable) are assumed to be uncorrelated with the error term, while lagged differences in the level equation ensure efficient use of the panel variation. Thus, system GMM allows us to isolate the impact of EPU on firm performance by controlling for endogeneity, dynamic effects, and firm-specific heterogeneity. Moreover, panel GMM is specifically suited for small T, large N panels. Therefore, we applied system GMM as our sample fits this structure.

To prevent instrument proliferation, the lag depth is restricted, and the collapse option is applied, particularly given the relatively long-time dimension of the panel (21 years). Furthermore, our panel is unbalanced, with gaps, and if we apply first differences, we would lose too many observations. Hence, we employ the forward orthogonal deviation transformation (Arellano and Bover, 1995), which preserves more observations and minimizes data loss. Additionally, the two-step system GMM standard errors are typically downward biased; So, to correct for this, we use the Windmeijer (2005) correction. Further, system GMM assumes that there should not be second-order correlation in the first-differenced residuals, while there must be first-order autocorrelation. We verify this with the Arellano–Bond test for autocorrelation. Additionally, the Hansen J test of overidentifying restrictions is used to confirm the instruments' validity.

Finally, to see whether the GFC amplifies EPU's impact on firm performance, the following model is adopted:

$$FP_{it} = \beta_0 + \beta_1 FP_{i,t-1} + \beta_2 EPU_t + \beta_3 GFC + \beta_4 EPU * GFC + \beta_5 SIZE_{it} + \beta_6 AGE_{it} + \beta_7 LEV_{it} + \beta_8 LIQ_{it} + \beta_9 GRW_{it} + \beta_{10} GDP_t + \beta_{11} INF_t + \mu_i + \varepsilon_{it} \quad (2)$$

where GFC is specified as a dummy variable that equals 1 during 2008–2009 and 0 for all other years. To create an interaction term, we mean-centered the variable EPU. The coefficient of this interaction term, β_4 , indicates how GFC alters the EPU–firm performance relationship. We expect β_4 to be negative; that is, we expect the GFC to amplify EPU's adverse effect on firm performance.

4. Results and discussion

4.1. Summary Statistics and Correlation Analysis

The summary statistics of the study's variables are presented in Table 2. The means (standard deviations) of ROA and ROE are 0.084 (0.076) and 0.163 (0.158), respectively, which show that, on average, the sample firms are profitable. Both performance measures are widely spread, indicating heterogeneity in firm performance across the sample. Notably, there is higher variation in ROE compared to ROA. Our key explanatory variable, EPU (on a log scale), has an average of 4.44 and ranges from 3.866 to 5.208. Relative to EPU, the mean of GEPU is higher at 4.970, suggesting that, during the sample period, global uncertainties, on average, have been higher than Indian uncertainties. Concerning the control variables, the mean of size (on a log scale) stands at 7.961, while the average age is 36.636 years, ranging from 2 to 160 years. The average leverage ratio is 0.487, meaning, on average, 48.7 per cent of sample firms' assets are funded by debt. Liquidity and sales growth average 1.539 and 0.217, respectively. Regarding macroeconomic variables, inflation has a mean of 6.586 per cent, and average GDP growth is 6.479 per cent.

Table 2. Summary statistics

Variable	Obs	Mean	Median	Std.Dev	Min	Max
ROA	7495	0.084	0.075	0.076	-0.136	0.333
ROE	7495	0.163	0.155	0.158	-0.467	0.766
EPU	7495	4.445	4.363	0.349	3.866	5.208
GEPU	7495	4.970	5.026	0.443	4.146	5.733
SIZE	7495	7.961	7.952	1.654	3.817	12.147
AGE	7495	36.636	30.000	23.778	2.000	161.000
LEV	7495	0.487	0.495	0.196	0.083	0.899
LIQ	7495	1.539	1.213	1.171	0.204	7.398
GRW	7495	0.217	0.142	0.448	-0.514	3.315
INF	7495	6.586	6.100	2.456	3.081	12.400
GDP	7495	6.479	7.661	3.314	-5.778	9.690

Source: Authors' calculation

Table 3. Correlation matrix

Variable	ROA	ROE	EPU	GEPU	SIZE	LEV	LIQ	GRW	AGE	INF	GDP
ROA	1										
ROE	0.845***	1									
EPU	-0.043***	-0.049***	1								
GEPU	-0.047***	-0.145***	0.189***	1							
SIZE	-0.104***	-0.111***	0.049***	0.376***	1						
LEV	-0.369***	-0.001	0.028**	-0.223***	0.021*	1					
LIQ	0.162***	0.009	-0.073***	-0.029**	-0.189***	-0.419***	1				
GRW	-0.014	0.023**	-0.053***	-0.106***	-0.158***	0.039***	0.027**	1			
AGE	0.034***	0.048***	-0.004	0.128***	0.304***	0.019*	-0.101***	-0.173***	1		
INF	-0.010	0.011	0.706***	-0.081***	-0.034***	0.073***	0.047***	-0.017	0.033***	1	
GDP	0.048***	0.072***	-0.284***	-0.421***	-0.069***	0.031***	0.003	0.120***	-0.022*	-0.044***	1

Source: Authors' calculation. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3 gives the correlation matrix of the study variables. EPU exhibits a negative association with ROA and ROE, which means that as EPU rises, firm performance falls. Overall, there is a low correlation among the variables; hence, there may not be a multicollinearity problem. We also computed the Variance Inflation Factor (VIF), whose average is 1.43 and ranges from 1.06 to 2.31. This confirms that significant multicollinearity is not present, as the VIF values are below the standard cutoff of 10.

4.2. Regression results

Table 4 gives the results of equation (1) estimated using System GMM. First, we ran the regression without macroeconomic controls; columns (1)–(2) show the results. We provide the results of our baseline model, in which macroeconomic controls are included, in columns (3)–(4). We can see that the EPU has a consistent negative impact on both performance measures, ROA and ROE, and is highly significant, regardless of whether macroeconomic controls are incorporated in the model. The coefficients of EPU estimated for the four models are -0.0099, -0.0247, -0.0105, and -0.0269. Consistent with our expectations, EPU deteriorates firm performance, and our results align with prior studies (Çakır and Ova, 2024; Chakradhar and Gupta, 2024). Further, in accordance with García-Gómez et al. (2022) and Iqbal et al. (2020), EPU affects ROE more negatively compared with ROA. EPU hurts firm performance as it creates various difficulties for firms. For instance, it makes it harder to obtain finance and also increases capital costs due to information asymmetry (Benlemlih et al., 2024; Liu and Wang, 2022). Furthermore, EPU induces firms to cut down investments, because uncertainty raises the option value of waiting (Wang et al., 2014). As a result, firm performance, which is dependent on those investments, may suffer (Iqbal et al., 2020). Additionally, households cut down their consumption during periods of higher EPU, which in turn might affect firms' demand (Wu and Zhao, 2022). These are some plausible explanations for EPU's unfavourable effect on the

performance of firms. We can also notice that the lagged values of ROA and ROE have a significant and positive coefficient, denoting that both performance measures are highly persistent.

Table 4. Effect of EPU on firm performance

	ROA	ROE	ROA	ROE
Variable	(1)	(2)	(3)	(4)
ROAt-1	0.7148*** (0.0521)		0.6325*** (0.0450)	
ROEt-1		0.7093*** (0.0599)		0.6779*** (0.0594)
EPU	-0.0099*** (0.0014)	-0.0247*** (0.0033)	-0.0105*** (0.0021)	-0.0269*** (0.0053)
SIZE	-0.0023*** (0.0006)	-0.0053*** (0.0014)	-0.0026*** (0.0007)	-0.0054*** (0.0015)
AGE	0.0001*** (0.0000)	0.0003*** (0.0001)	0.0001** (0.0000)	0.0003*** (0.0001)
LEV	-0.0452*** (0.0090)	0.0064 (0.0092)	-0.0582*** (0.0087)	0.0027 (0.0097)
LIQ	-0.0007 (0.0007)	-0.0015 (0.0012)	-0.0006 (0.0009)	-0.0016 (0.0013)
GRW	0.0200*** (0.0037)	0.0480*** (0.0078)	0.0173*** (0.0038)	0.0470*** (0.0077)
INF			0.0006** (0.0003)	0.0012* (0.0007)
GDP			0.0007*** (0.0002)	0.0013*** (0.0004)
Constant	0.1019*** (0.0126)	0.1782*** (0.0232)	0.1126*** (0.0143)	0.1791*** (0.0298)
Observations	7046	7046	7046	7046
No. of Instruments	9	9	12	12
AR(1)	-8.99	-7.21	-8.35	-7.08
AR(1) p-value	0.000	0.000	0.000	0.000
AR(2)	1.55	1.29	1.03	1.15
AR(2) p-value	0.1211	0.1978	0.3009	0.2521
Hansen test	0.0902	0.0756	1.9168	1.1310
Hansen p-value	0.7640	0.7834	0.3835	0.5681

Source: Authors' calculation

Standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01.

Regarding control variables, SIZE adversely affects firm performance, which could be because of the X-inefficiency a firm develops as it grows bigger due to market power (Majumdar, 1997). Similar results were reported by Chakradhar and Gupta (2024), who pointed out coordination difficulties in larger firms as a reason for the negative effect. Likewise, LEV also negatively affects ROA. This is because higher leverage increases bankruptcy costs and financial distress (Dalci, 2018). Conversely, AGE exerts a positive influence on ROA and ROE, consistent with Doan et al. (2020). A possible explanation could be the experience the firms get as they grow older, which helps them make better decisions, and they are also not burdened with the liabilities of newness. Likewise, GRW is positively related to firm performance, echoing the results of Jumah et al. (2024). However, LIQ and firm performance are not significantly related, as shown by Çakır and Ova (2024). Both the

macroeconomic variables, INF and GDP, have a favourable effect on firm performance, which corroborates the results of García-Gómez et al. (2022). This shows that favourable economic conditions are necessary for better performance of firms.

Table 5 reports the model's result, in which we include GFC as an interaction term. The coefficient of the interaction term (EPU*GFC) is -0.0164 for ROA and -0.0357 for ROE, significant at 1 per cent and 5 per cent levels. This indicates that EPU's harmful effect on firm performance is intensified by the GFC. One reasonable argument is that businesses faced severe liquidity problems and credit shortages during the GFC, hampering firms' investment and operational activities, which would have worsened EPU's adverse effects. In support of this, Gupta et al. (2024) showed that financial constraints are increased by EPU and become more severe in crisis times while examining how EPU influences investment-cash flow sensitivity. Similarly, Akbar et al. (2013) noted that firms' investment and performance suffered during the GFC due to credit contraction.

Table 5. Moderating role of the Global Financial Crisis

	ROA	ROE
Variable	(1)	(2)
ROAt-1	0.6329***	
	(0.0495)	
ROEt-1		0.7061***
		(0.0665)
EPU	-0.0091***	-0.0229***
	(0.0021)	(0.0052)
GFC	0.0015	-0.0076
	(0.0024)	(0.0067)
GFC*EPU	-0.0164***	-0.0357**
	(0.0059)	(0.0152)
SIZE	-0.0027***	-0.0053***
	(0.0007)	(0.0014)
AGE	0.0001**	0.0003***
	(0.0001)	(0.0001)
LEV	-0.0578***	0.0059
	(0.0093)	(0.0094)
LIQ	-0.0005	-0.0013
	(0.0009)	(0.0012)
GRW	0.0174***	0.0481***
	(0.0038)	(0.0077)
INF	0.0006**	0.0012
	(0.0003)	(0.0007)
GDP	0.0006***	0.0010**
	(0.0002)	(0.0004)
Constant	0.0662***	0.0557***
	(0.0119)	(0.0202)
Observations	7046	7046
No. of Instruments	14	14
AR(1)	-8.14	-6.85
AR(1) p-value	0.000	0.000
AR(2)	1.03	1.21
AR(2) p-value	0.3034	0.2255

Hansen test	2.0578	1.0398
Hansen test p-value	0.3574	0.5946

Source: Authors' calculation

Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

4.3. Heterogeneity analysis

EPU may not have the same effect on performance across all firms. Therefore, heterogeneity analysis is useful in determining how the impact varies for firms belonging to different groups. We conducted a heterogeneity analysis focusing on ownership type to analyse whether EPU has varying effects on firm performance between public-sector and private-sector firms, and also between foreign and domestic firms. As India is a mixed economy where private and public sectors coexist with different objectives, business environments, and functioning (Thenmozhi and Sasidharan, 2020), it becomes critical to investigate how EPU influences firm performance in these two sectors. Public-sector firms, having more than 50 per cent government stake, may be better aware of policy changes and be prepared, shielding themselves from the adverse effects of EPU. Claessens et al. (2008) and Houston et al. (2014) document that firms can access finance from banks at a lower rate, particularly if they have political connections, which could help them specifically during uncertain times. As public-sector firms are mainly owned by the government, they may also enjoy similar benefits.

Given these things, it is valuable to examine whether EPU's effect on firm performance differs for these two groups. To examine this, our sample is split into private-sector and public-sector firms, and a regression is carried out for each group independently. The results are presented in Table 6. We can notice that EPU adversely affects firm performance in both sectors, but for public sector firms, the effect is insignificant. This is consistent with Zhou (2017), who found that government ownership reduces the political uncertainty exposure. Similarly, studies that have compared EPU's impact on firm performance between private and state-owned enterprises have reported that the former's performance was more greatly affected than the latter's (Feng et al., 2023; Yu and Jin, 2022; Zhu et al., 2020).

Table 6. Heterogeneity analysis: Public sector and private sector

Variable	ROA		ROE	
	Public Sector	Private Sector	Public Sector	Private Sector
	(1)	(2)	(3)	(4)
ROAt-1	0.5182*** (0.1336)	0.6315*** (0.0485)		
ROEt-1			0.5011*** (0.1587)	0.6427*** (0.0875)
EPU	-0.0019 (0.0041)	-0.0112*** (0.0023)	-0.0077 (0.0113)	-0.0299*** (0.0058)
SIZE	-0.0012* (0.0006)	-0.0029*** (0.0009)	-0.0039* (0.0023)	-0.0066*** (0.0020)
AGE	-0.0002** (0.0001)	0.0001*** (0.0001)	-0.0004* (0.0002)	0.0004*** (0.0001)
LEV	-0.0620*** (0.0193)	-0.0587*** (0.0094)	0.0123 (0.0245)	-0.0003 (0.0119)
LIQ	-0.0054* (0.0030)	-0.0002 (0.0009)	-0.0094** (0.0045)	-0.0009 (0.0015)
GRW	0.0228**	0.0164***	0.0554***	0.0417***

	(0.0109)	(0.0040)	(0.0210)	(0.0089)
INF	-0.0005	0.0007**	-0.0011	0.0019**
	(0.0006)	(0.0003)	(0.0016)	(0.0008)
GDP	0.0003	0.0008***	0.0003	0.0016***
	(0.0003)	(0.0002)	(0.0008)	(0.0004)
Constant	0.1013***	0.1156***	0.1700***	0.2007***
	(0.0269)	(0.0160)	(0.0505)	(0.0369)
Observations	810	6236	810	6236
No. of Instruments	12	12	11	11
AR(1)	-2.84	-7.93	-2.67	-5.75
AR(1) p-value	0.005	0.000	0.008	0.000
AR(2)	-1.38	1.20	-1.52	1.19
AR(2) p-value	0.1684	0.2295	0.1289	0.2330
Hansen test	3.7547	1.0992	1.9196	0.2356
Hansen test p-value	0.1530	0.5772	0.1659	0.6274

Source: Authors' calculation. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The distinction between domestic and foreign firms is another significant aspect of ownership heterogeneity. Foreign firms, when operating in a foreign market, incur extra costs because of things like coordination issues, insufficient understanding of the local environment, and lack of legitimacy, which is called the liability of foreignness (Zaheer, 1995). They may suffer due to this liability during uncertain times. For instance, it might be difficult for them to anticipate policy shifts and adapt to evolving policy changes because of a limited information network in the local market (Jordaan, 2023; Zaheer and Mosakowski, 1997). In light of this, we conducted a subsample analysis comparing foreign and domestic firms, and Table 7 shows the results. The EPU coefficient is negative and greater in magnitude for foreign firms than for domestic firms, suggesting that EPU exerts a stronger adverse effect on foreign firms' performance. Yet, the statistical significance is lower for foreign firms, which may be because of their smaller sample size. Nevertheless, our results support the liability of foreignness argument and align with Karna et al. (2022), who showed that foreign firms reacted to EPU more adversely than domestic firms.

Table 7. Heterogeneity analysis: Foreign firms and domestic firms

Variable	ROA		ROE	
	Foreign	Domestic	Foreign	Domestic
	(1)	(2)	(3)	(4)
ROAt-1	0.7572***	0.7334***		
	(0.1287)	(0.0497)		
ROEt-1			0.6816***	0.6894***
			(0.1324)	(0.0733)
EPU	-0.0116*	-0.0106***	-0.0319**	-0.0273***
	(0.0069)	(0.0023)	(0.0134)	(0.0057)
SIZE	-0.0024	-0.0016***	-0.0069*	-0.0043***
	(0.0026)	(0.0005)	(0.0038)	(0.0014)
AGE	0.0003*	0.0001	0.0007**	0.0002*
	(0.0002)	(0.0000)	(0.0003)	(0.0001)
LEV	-0.0017	-0.0464***	0.1039**	-0.0070
	(0.0199)	(0.0089)	(0.0487)	(0.0095)
LIQ	0.0034	-0.0014**	0.0060	-0.0024*
	(0.0029)	(0.0007)	(0.0049)	(0.0013)

GRW	0.0194 (0.0158)	0.0213*** (0.0037)	0.0545* (0.0322)	0.0464*** (0.0082)
INF	-0.0006 (0.0009)	0.0007* (0.0003)	-0.0003 (0.0020)	0.0017** (0.0008)
GDP	0.0017*** (0.0005)	0.0004** (0.0002)	0.0020* (0.0010)	0.0012*** (0.0004)
Constant	0.0717* (0.0373)	0.0932*** (0.0142)	0.1560** (0.0632)	0.1767*** (0.0321)
Observations	977	6069	977	6069
No. of Instruments	12	12	11	11
AR(1)	-3.61	-8.13	-3.94	-6.04
AR(1) p-value	0.000	0.000	0.000	0.000
AR(2)	0.67	1.39	-0.51	1.27
AR(2) p-value	0.5049	0.1656	0.6103	0.2051
Hansen test	2.0174	2.8644	0.5632	0.1129
Hansen test p-value	0.3647	0.2388	0.4530	0.7369

Source: Authors' calculation. Standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01

4.4. Robustness test

To determine whether our results hold up against alternative specifications, following prior studies (Chakradhar and Gupta, 2024; García-Gómez et al., 2022), we used EPU lagged by one year (LEPU) and global economic policy uncertainty (GEPU) as alternative measures of our main explanatory variable, EPU. Table 8 reports the results, indicating that GEPU negatively and significantly affects both performance measures. We can also notice that GEPU's negative effect is lower in magnitude compared to EPU, indicating that country-specific uncertainty affects the firms more than global uncertainty, as observed by Singh et al. (2019). Nevertheless, opposite to the findings of Chakradhar and Gupta (2024) and García-Gómez et al. (2022), although LEPU negatively affects firm performance, the effect is insignificant. This suggests that EPU's effects are felt immediately and are quickly reflected in firm performance. Additionally, to confirm whether our results are consistent under alternative estimation methods, we employed fixed effects, random effects and pooled OLS. Tables 9 and 10 present the results, which depict that EPU has a constant negative impact on firm performance and is significant at the 1 per cent level, offering compelling evidence that firm performance is undermined by EPU. Moreover, we find convincing evidence that the GFC magnifies the EPU's negative effect on firm performance under all estimation methods. These findings altogether show that our results withstand different estimation techniques.

Table 8. Alternative specification of EPU

Variable	ROA		ROE	
	EPUt-1	GEPU	EPUt-1	GEPU
	(1)	(2)	(3)	(4)
ROAt-1	0.7149*** (0.0554)	0.5745*** (0.0513)		
ROEt-1			0.6856*** (0.0605)	0.6234*** (0.0704)
EPUt-1	-0.0024 (0.0021)		-0.0052 (0.0057)	
GEPU		-0.0085*** (0.0022)		-0.0149*** (0.0050)
SIZE	- 0.0022***	-0.0022***	-0.0055***	-0.0052***

	(0.0006)	(0.0008)	(0.0014)	(0.0016)
AGE	0.0001***	0.0001***	0.0003***	0.0004***
	(0.0000)	(0.0001)	(0.0001)	(0.0001)
LEV	-0.0456***	-0.0702***	0.0036	-0.0058
	(0.0097)	(0.0105)	(0.0096)	(0.0120)
LIQ	-0.0006	-0.0007	-0.0015	-0.0015
	(0.0007)	(0.0010)	(0.0012)	(0.0014)
GRW	0.0191***	0.0164***	0.0474***	0.0448***
	(0.0037)	(0.0037)	(0.0078)	(0.0080)
INF	-0.0003	-0.0005**	-0.0010	-0.0015***
	(0.0003)	(0.0002)	(0.0008)	(0.0005)
GDP	0.0009***	0.0006***	0.0019***	0.0013***
	(0.0002)	(0.0002)	(0.0004)	(0.0004)
Constant	0.0645***	0.1233***	0.0917**	0.1617***
	(0.0175)	(0.0176)	(0.0362)	(0.0408)
Observations	7046	7046	7046	7046
No. of Instruments	11	11	12	12
AR(1)	-8.75	-7.83	-7.06	-6.61
AR(1) p-value	0.000	0.000	0.000	0.000
AR(2)	1.35	0.84	1.07	0.97
AR(2) p-value	0.1756	0.3988	0.2850	0.3322
Hansen test	0.3204	0.1005	2.3399	2.9925
Hansen test p-value	0.5713	0.7513	0.3104	0.2240

Source: Authors' calculation

Standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01

Table 9. Impact of EPU on firm performance – Alternative Estimation methods

	Pooled OLS		Fixed effect		Random effect	
	ROA	ROE	ROA	ROE	ROA	ROE
Variable	(1)	(2)	(3)	(4)	(5)	(6)
EPU	-0.0125***	-0.0350***	-0.0077***	-0.0240***	-0.0082***	-0.0257***
	(0.0030)	(0.0072)	(0.0026)	(0.0064)	(0.0026)	(0.0065)
SIZE	-0.0053***	-0.0125***	-0.0118***	-0.0316***	-0.0096***	-0.0237***
	(0.0015)	(0.0028)	(0.0035)	(0.0076)	(0.0018)	(0.0034)
AGE	0.0002**	0.0006**	0.0008	0.0020*	0.0005***	0.0010***
	(0.0001)	(0.0003)	(0.0005)	(0.0011)	(0.0002)	(0.0003)
LEV	-0.1455***	-0.0078	-0.1265***	0.0165	-0.1266***	0.0179
	(0.0120)	(0.0256)	(0.0104)	(0.0262)	(0.0096)	(0.0235)
LIQ	-0.0007	-0.0017	0.0010	0.0017	0.0008	0.0013
	(0.0022)	(0.0035)	(0.0013)	(0.0024)	(0.0013)	(0.0022)
GRW	-0.0019	0.0038	0.0148***	0.0348***	0.0132***	0.0307***
	(0.0047)	(0.0105)	(0.0026)	(0.0069)	(0.0027)	(0.0072)
INF	0.0018***	0.0043***	0.0012***	0.0031***	0.0012***	0.0031***

	(0.0004)	(0.0009)	(0.0003)	(0.0009)	(0.0003)	(0.0008)
GDP	0.0009***	0.0021***	0.0005***	0.0013***	0.0006***	0.0014***
	(0.0002)	(0.0005)	(0.0002)	(0.0004)	(0.0002)	(0.0005)
Constant	0.2276***	0.3589***	0.2297***	0.3999***	0.2234***	0.3764***
	(0.0179)	(0.0406)	(0.0179)	(0.0415)	(0.0173)	(0.0388)
Observations	7495	7495	7495	7495	7495	7495

Authors' calculation

Standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01

Table 10. Moderating Role of the Global Financial Crisis – Alternative Estimation Techniques

	Pooled OLS		Fixed effect		Random effect	
	ROA	ROE	ROA	ROE	ROA	ROE
Variable	(1)	(2)	(3)	(4)	(5)	(6)
EPU	- 0.0125*** (0.0032)	- 0.0345*** (0.0076)	- 0.0072*** (0.0028)	-0.0223*** (0.0067)	-0.0076*** (0.0028)	-0.0239*** (0.0068)
GFC	0.0197*** (0.0030)	0.0435*** (0.0067)	0.0141*** (0.0025)	0.0313*** (0.0058)	0.0138*** (0.0025)	0.0308*** (0.0061)
EPU*GFC	- 0.0165*** (0.0049)	- 0.0416*** (0.0126)	- 0.0224*** (0.0047)	-0.0544*** (0.0123)	-0.0216*** (0.0047)	-0.0520*** (0.0122)
SIZE	- 0.0050*** (0.0015)	- 0.0119*** (0.0028)	- 0.0124*** (0.0035)	-0.0329*** (0.0076)	-0.0093*** (0.0018)	-0.0229*** (0.0034)
AGE	0.0002** (0.0001)	0.0006** (0.0003)	0.0010** (0.0005)	0.0026** (0.0011)	0.0005*** (0.0002)	0.0011*** (0.0003)
LEV	- 0.1478*** (0.0120)	-0.0128 (0.0256)	- 0.1265*** (0.0104)	0.0166 (0.0262)	-0.1277*** (0.0096)	0.0154 (0.0236)
LIQ	-0.0010 (0.0022)	-0.0023 (0.0035)	0.0009 (0.0013)	0.0015 (0.0024)	0.0006 (0.0013)	0.0009 (0.0023)
GRW	-0.0021 (0.0046)	0.0033 (0.0105)	0.0146*** (0.0026)	0.0343*** (0.0069)	0.0130*** (0.0027)	0.0302*** (0.0072)
INF	0.0017*** (0.0004)	0.0040*** (0.0009)	0.0013*** (0.0003)	0.0032*** (0.0009)	0.0012*** (0.0003)	0.0030*** (0.0008)
GDP	0.0010*** (0.0002)	0.0022*** (0.0005)	0.0006*** (0.0002)	0.0013*** (0.0005)	0.0006*** (0.0002)	0.0014*** (0.0005)
Constant	0.1702*** (0.0152)	0.2000*** (0.0291)	0.1900*** (0.0157)	0.2819*** (0.0340)	0.1827*** (0.0150)	0.2535*** (0.0301)
Observations	7495	7495	7495	7495	7495	7495

Source: Authors' calculation

Standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01

5. Conclusions

Given the recent rise in policy uncertainty, we examine how EPU influences Indian firm performance using BSE 500 companies as a sample for the period 2003–04 to 2023–24. This study has the following important findings. First, the results indicate that EPU adversely affects firm performance, and this effect remains robust regardless of whether macroeconomic controls are included or not. Second, we observe that EPU's detrimental effect on firm performance is intensified during the GFC. Third, we notice that the impact of EPU on firm performance varies based on the firm's ownership type. Particularly, we notice that private-sector and foreign firms' performance is more greatly affected by EPU than their counterparts. Further, to check whether our results are consistent, we used alternative EPU specifications and other econometric techniques, and we find that our findings are consistent.

Our study has the following important implications. First, EPU must be considered as a threat by the firms, and they must find ways to deal with it. For instance, one effective way could be to strengthen their internal mechanisms to cope with uncertainty. Especially, the private sector and foreign firms should be cautious, closely monitor what is happening in the policy environment, and build resilience so that they can effectively manage the challenges posed by EPU. Second, firms must also have sound risk management strategies for dealing with uncertainty during crises. Third, though, policy responses are often required during crisis times, communication regarding those responses must be properly made; otherwise, it would add to the uncertainty, and therefore, EPU's negative effect on firm performance would worsen. From the policymaker's perspective, policy uncertainty can be mitigated by providing forward-looking policy roadmaps outlining the potential policy shifts well in advance, which will help firms plan and make informed strategic decisions. In addition, policymakers can further reduce uncertainty by clearly communicating policy objectives, publishing detailed policy guidelines, and providing adequate notice of regulatory changes. Maintaining consistency in policy implementation and avoiding frequent or abrupt policy shifts can also help firms better anticipate future policy directions and make more informed investment and operational decisions. Furthermore, strengthening institutional frameworks and engaging in regular consultations with industry stakeholders during the policy formulation process can enhance policy credibility and reduce informational asymmetries between the government and firms. Finally, since firms make a vital contribution to national economic development, policymakers should provide targeted support mechanisms that help firms navigate uncertain policy environments.

Nevertheless, this study has certain drawbacks. First, our study is based on the BSE 500 companies, and we did not take into account other firms. Second, not all firms may have the same level of exposure to EPU, but we failed to consider this as we used an aggregate measure of EPU. Therefore, all the listed firms can be examined by future studies, which would help improve generalizability. Also, they could first determine each firm's exposure and then assess its impact on their performance. Lastly, conducting a comparative analysis between advanced and emerging nations would be of great value because it would help understand how EPU influences firm performance in different institutional settings.

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