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Economic Policy Uncertainty and Investment: Cross-Country Evidence

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Abstract

When investment is partially irreversible, uncertainty raises the option value of waiting and can delay investment. Yet evidence on the effects of economic policy uncertainty (EPU) remains predominantly US-based. This paper examines whether the negative EPU-investment relationship generalizes across countries. Using firm-level data for 25 countries from 1991 to 2024, the analysis estimates fixed-effects regressions of subsequent capital expenditures on the EPU index. A doubling in EPU is associated with a 10.8% decline in quarterly investment and a 14.9% decline in annual investment, on average. The negative association is widespread across countries and is particularly strong among firms with more irreversible investment, consistent with real options theory. However, the relationship varies substantially in magnitude across national settings with a minority of countries even exhibiting significant positive associations. These findings suggest that policy uncertainty is a broadly relevant determinant of corporate investment, while indicating that firms' responses depend on country-specific conditions.

Keywords: economic policy uncertainty; corporate investment; real options theory; cross-country evidence

1 Introduction

Investment decisions present a fundamental paradox: should companies act quickly to seize opportunities, or wait for better information? In a world of perfect foresight, the answer would be straightforward as every project with a positive net present value would be undertaken immediately, with early movers capturing returns before competitors eliminate the opportunity. However, reality presents a completely different landscape. Investment decisions are invariably made under uncertainty, where the probabilities of future outcomes cannot be anticipated or quantified with precision. This is the very distinction between true uncertainty and risk, as defined by Knight (1921). Uncertainty creates a critical tension between early investment, which allows companies to capture potential gains sooner, and the irreversible nature of most investments, meaning that acting quickly can lock companies into costly mistakes. When investments cannot easily be undone or resources recovered, the option value of waiting for more information before committing resources increases (Bernanke, 1983; Dixit & Pindyck, 1994). Real options theory formalizes this intuition by treating investment opportunities like financial options, in which case timing becomes crucial.

This theoretical debate has attracted a large body of empirical research. Most of this research verifies the negative relationship between uncertainty and investment as predicted by real options theory (e.g., Leahy and Whited, 1995; Guiso and Parigi, 1999; Bloom, 2009). In the decade following the financial crises, investigations into policy uncertainty as a specific type of uncertainty have increased, validating the negative association by using elections as real-world experiments (Jens, 2017; Julio & Yook, 2012).

Of the many forms of macroeconomic uncertainty, (economic) policy uncertainty deserves particular attention. Unlike market-driven uncertainties such as commodity price volatility or technological disruption, policy uncertainty originates directly from government actions and institutional processes. This distinction is important because policy uncertainty affects the fundamental economic rules, through tax rates, regulatory frameworks, monetary policy, etc., which influence every aspect of corporate operations. Unlike market-driven uncertainties, policy uncertainty is determined by government actions, meaning its investment-dampening effects are a form of self-imposed economic friction. Baker et al. (2016) developed a widely used index of economic policy uncertainty (hereafter EPU), which exhibits sharp spikes around major policy events.

While previous studies have predominantly focused on individual countries, primarily documenting negative relationships between the EPU index and investment (Kang et al., 2014; Wang et al., 2014; Baker et al., 2016; Gulen and Ion, 2016, 2018; Amore and Minichilli, 2018; Cui, Wang, et al., 2021; Fujitani et al., 2023), recent investigations by Azimli

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(2022) and Wu et al. (2020) have found insignificant and even positive associations in other contexts. These diverging findings suggest that the EPU-investment relationship may be contingent on institutional, political, and economic structures that vary significantly across countries, rather than being universal. The dominance of the US and China in existing literature is particularly limiting, given their exceptional positions in the global economy and their unique institutional frameworks, which may not be applicable to other national contexts.

This thesis closes the existing gap by conducting a structured empirical investigation of the relationship between EPU and investment in more than twenty countries. Based directly on the regression framework introduced by Gulen and Ion (2016), the study uses panel regressions to estimate the impact of EPU on leading firm-level capital expenditures (CAPEX), while controlling for standard firm- and country-level variables. Two data panels are constructed to capture both short-term and structural dynamics: a quarterly panel A (1999–2024), which focuses on high-frequency reactions, and an annual panel B (1991–2023), which extends coverage to countries with limited reporting frequencies. Macroeconomic and firm-level controls are included, with careful adjustments made to accommodate international data availability.

The analysis confirms the core patterns observed in previous studies: higher levels of economic policy uncertainty are consistently associated with lower investment levels in most countries. This effect is evident in both the short-run quarterly panel and in the broader annual dataset. While the magnitude of the effect is similar in industrial and emerging markets, there is significant variation between countries. In some economies, such as Spain and Canada, the effect is particularly strong, whereas in others, unclear or even positive associations emerge. This heterogeneity highlights the importance of institutional, structural, and policy-related differences in shaping investment behavior. Furthermore, the irreversibility channel remains central as firms with higher capital rigidity exhibit significantly greater sensitivity to policy uncertainty.

This study contributes to the literature by providing the first comprehensive cross-country mapping of the EPU-investment relationship, encompassing over twenty countries. This gives researchers both empirical insights and a roadmap showing where future investigations into the institutional determinants of EPU's heterogeneous investment effects are needed. The findings also provide policymakers with concrete evidence of how governmental policy uncertainty manifests itself in corporate investment postponement. This emphasizes the vital role of transparent and credible policy communication in fostering investment confidence.

The thesis proceeds as follows. The next section provides a literature review and details the development of the hypothesis. Section three describes the data, variables and methodology, while section four presents the results. Section five discusses these results and section six concludes.

2 Literature Review and Hypothesis Development

The interplay between uncertainty and corporate investment has long intrigued economists, resulting in a wealth of theoretical and empirical research. Wang et al. (2014) point out that already Knight (1921) was among the first to suggest that uncertainty lies at the heart of entrepreneurial activity and therefore of investing activity. Early theoretical models, such as those by Oi (1961), Hartman (1972; 1976) and Abel (1983), also propose a positive relationship under specific conditions. This is sometimes referred to as growth theory. These models argue that, in perfectly competitive markets with convex adjustment costs, heightened uncertainty increases the expected profitability of capital, thereby encouraging investment. Stiglitz and Weiss (1981) suggest that uncertainty, coupled with asymmetric information, makes risky projects more attractive to firms. Bar-Ilan and Strange (1996) contend that investment lags under uncertainty can incentivize investment. Caballero (1991) argues that imperfect competition can bring the relationship "closer to the results of Hartman and of Abel" but decreasing returns to scale make investment deterrence in response to uncertainty more likely. He emphasizes the lack of robustness in the sign of the uncertainty-investment relationship. Real options theory posits that integrating investment irreversibility in the model, a value of waiting under uncertainty to gain additional information and avoid sunk costs gets created (Bernanke, 1983; Dixit and Pindyck, 1994, among others). Rodrik (1991) amplifies the suggestions made for a negative sign. Leahy and Whited (1995) and Guiso and Parigi (1999) provide early empirical support for this irreversibility channel for US and Italian manufacturing firms, respectively. They find that uncertainty dampens investment, particularly for firms with less reversible capital. Bloom (2009) finds that firms pause investments in times of higher uncertainty proxied by stock market volatility. More recent empirical evidence strongly supports this perspective in the case of policy uncertainty. Julio and Yook (2012) and Jens (2017) document reduced investment during election years, with even bigger influence in close elections.

Of the various measures of uncertainty to test these theories, EPU has emerged as particularly influential. Baker et al. (2016) provide an economic policy uncertainty measure through the EPU index. They track the monthly frequency of newspaper articles that mention a combination of "uncertainty" terms (e.g. "uncertain," "ambiguity"), "policy" terms (e.g. "regulation," "fiscal"), and economic references (e.g. "economy," "market"). Counts from leading national newspapers are normalized by total article volume and averaged across sources, then standardized to create a comparable time series. As demonstrated in their original work, the index reliably spikes during major episodes of policy turmoil, such as the oil price shocks of the 1980s, the global financial crisis, and the Covid-19 pandemic. The global "GEPU" index, developed by S. Davis (2016), most recently reached record highs in April 2025, calling for immediate investigation after trade disputes and geopolitical tensions. Thanks to the dedication of many scholars, the EPU index is now published in over 30 countries and publicly available on the EPU index website.[1] In some countries like the Netherlands or China, multiple indices are available. The specific indices used for this analysis are specified in the data section. The methodology slightly differs across countries, but all indices rely mainly on the count of newspaper articles. Detailed construction methods are specified on the website and in the respective papers, which are all mentioned in the references. Throughout the text Baker et al. (2016) are consistently referenced given their pioneering contribution to EPU measurement methodology, which has formed the basis for subsequent scholarly developments in this field.

The EPU index quickly drew a lot of attention to its specific impact on investment. Kang et al. (2014) and Gulen and Ion (2016) found a consistent negative relationship between EPU and investment in the US. Wang et al. (2014) and An et al. (2016) replicated those findings for China. Baker et al. (2016) extended the research onto major economies of Canada, France, Germany, India, Italy, Japan, Spain and the UK. However, they do not account for the high share of US data in their analysis, and their findings could potentially just replicate the US findings. Amore and Minichilli (2018) and Fujitani et al. (2023) reinforced prior findings in Italy and Japan, respectively. Gulen and Ion (2016) demonstrate that the relationship disappears after two to three years and is followed by a rebound period with increased investment. **Gulen.2018<empty citation>** demonstrate that higher EPU is associated with reduced merger and acquisition activity, which is an extreme form of investment. Based on this theoretical and empirical foundation, the following hypothesis is formulated:

> **Hypothesis 1 (H1)**: *EPU has a negative effect on corporate investment in the entire sample.*

The effect of the EPU in emerging markets is more nuanced, warranting further investigation. Rottig (2016) provides an in-depth discussion of the differences in institutional features in emerging markets and their implications for corporate behavior, which could suggest different investment behavior in developing countries. Azimli (2022) found no significant link between EPU and investment in the Czech Republic, Hungary, Poland, Russia, and Turkey hypothesizing that the effects predicted by real options theory and growth theory cancel each other out in emerging markets. Meanwhile, Chen et al. (2020) replicate the findings of Gulen and Ion (2016) in Australia, but Wu et al. (2020) identify a positive relationship between EPU and investment in the same country and year. Azqueta-Gavaldón et al. (2023) find that the effect of EPU on investment often depends on the specific type of uncertainty, which differs across major EU nations. Exploring the heterogeneity of countries and whether emerging markets exhibit distinct responses to EPU compared to developed economies is thus a critical step forward. The following two hypotheses are therefore proposed:

> **Hypothesis 2 (H2)**: *The effect of EPU on corporate investment is weaker in the emerging markets.*

> **Hypothesis 3 (H3)**: *The relationship between EPU and investment varies across countries.*

A key factor shaping the relationship between EPU and investment seems to be the irreversible nature, which is a central tenet of the real options framework. Bernanke (1983) and Dixit and Pindyck (1994), among others, theorize that when investments involve high sunk costs, uncertainty intensifies the incentive to postpone, since firms cannot easily reverse their decisions. Leahy and Whited (1995) and Guiso and Parigi (1999) were among the first to propose investment irreversibility as the primary channel through which uncertainty and investment are linked. Wang et al. (2014) and Gulen and Ion (2016) show that firms with fewer redeployable assets (e.g., those with higher PPE ratios) are more sensitive to EPU. Similarly, Julio and Yook (2012), Baker et al. (2016), Jens (2017), and Dibiasi et al. (2018) find that irreversibility exacerbates the negative impact of uncertainty, and Dibiasi et al. (2018) specify the positive effect of reversibility on the other hand. This study uses the PPE ratio as a proxy for irreversibility to test whether this mechanism applies to a global sample, providing a broader perspective on its moderating role. Accordingly, the following hypothesis is proposed:

> **Hypothesis 4 (H4)**: *Higher investment irreversibility strengthens the negative effect of EPU on investment.*

These hypotheses provide an analytical framework for examining the global impact of EPU on investment, paying particular attention to variations in market type, cross-country heterogeneity, and the role of investment irreversibility. To systematically test these propositions, this study employs a consistent econometric approach in a quarterly and annual panel, utilizing multiple sample splits to rigorously investigate hypotheses H1 through H4 based on both theoretical predictions and empirical evidence from the literature.

3 Data and Methodology

3.1 Data

This study combines firm-level investment data with measures of macroeconomic uncertainty and economic prosperity. It utilizes the EPU index from Baker et al. (2016), LSEG's Worldscope fundamentals database, and publicly available OECD data. Following Gulen and Ion (2016), firm-quarter observations are employed to maximize the detection of fluctuations in the EPU index and to capture short-term variations. However, quarterly financial statement data is not applicable in every country, as major economies such as the UK, Australia, and India do not mandate quarterly reporting, leading to uninformative findings for these jurisdictions.

[1] Economic Policy Uncertainty Index

To address this issue, a complementary analysis based on annual data is conducted. To the author's knowledge, this dual-frequency approach is a novel contribution to the existing literature.

The EPU index covers 31 countries. The United States and Canada have the longest time series, dating back to 1985, while Nigeria has the shortest, beginning in 2016. While most countries' indices are up to date, updates ceased for the Netherlands and Denmark in 2021, Sweden in 2022, and Mexico, Nigeria, and New Zealand in 2023. Data for Colombia and Turkey have not been updated for 2025. The analysis uses a final EPU dataset derived from the "All Country-Level Data" compilation. Missing countries were manually incorporated due to incomplete integration in the global database. Where multiple indices exist for a country, specific selections were made. In China, the index based on two mainland newspapers is used, as Hong Kong is covered by its own index. For the Netherlands, the EBO-NL index, which filters more strictly for economic policy uncertainty than general policy uncertainty, is adopted. In Denmark, the extended index covers more policy-related terms. For Colombia and Mexico, the indices starting in 1990 and 1996 respectively are taken to analyze a longer time horizon. Table 1 summarizes the resulting sample for each country. Since the EPU index is reported monthly while firm-level data are quarterly or annual, the former is aggregated to the latter's frequency using the arithmetic mean and is then log-transformed via its natural logarithm to address extreme outliers.

Data on firm-level investment and control data are sourced exclusively from LSEG's Worldscope database, accessed via Wharton Research Data Services. The quarterly dataset begins in 1990, although observations for each quarter prior to 1998 are scarce. The annual dataset ranges back to 1985, but there are few observations prior to 1990. Consequently, panel A (quarterly) covers the period from 1999 to 2024, and panel B (annual) covers the period from 1991 to 2023. The integration of the growth variables that span over a year causes the drop of the first year in both panels and the applied lead structure causes the drop of 2024 in panel B since annual financial statements for 2025 have not yet been published. The number of observations per quarter and year is visualized in Figure 1, showing the growing sample size in time in both panels. The drop in firm-quarter observations between 2011 and 2013 in panel A is caused by reduced availability of depreciation, amortization and depletion in Japan.[2]

Identical filtering procedures are applied to both panels. Firms are filtered by country codes corresponding to their primary listing. In line with previous investment literature, financial firms with Industry Group values between 4300 and 4400 are excluded (Azimli, 2022; Fujitani et al., 2023; Gulen & Ion, 2016; Jens, 2017; Julio & Yook, 2012; Kang et al., 2014; Wang et al., 2014). Cross-listed companies with mismatched country codes, which refer to primary listing and nation names, which refer to headquarters, are disregarded due to ambiguous country classification. To prevent bias from very small firms, the bottom 1st percentile of total assets (in $) is filtered out, with thresholds of $5,674 in panel A and $9,842 in panel B. All variables must be non-missing for each observation and firms must have at least twelve consecutive quarters in panel A or three consecutive years in panel B of information (Gulen & Ion, 2016). Firms with varying fiscal year-ends may experience misalignment in measuring economic policy uncertainty and lead structure with the annual panel facing greater misalignment due to fiscal years spanning different 12-month periods, potentially shifting variable timing by several months. However, this variation is minimal and neglected, as over 90% of firms' fiscal quarters align with calendar quarters, ensuring consistent timing for analyses. Table 2 summarizes the panel structures after each filtering step, where the last columns present the final panels.

Capital expenditures (CAPEX) serve as a proxy for firm-level investment (e.g. Julio and Yook, 2012; Wang et al., 2014; Baker et al., 2016; Gulen and Ion, 2016; Jens, 2017; Azimli, 2022). It is calculated as the period-on-period change in property, plant, and equipment (PPE) over a given period, plus depreciation, amortization, and depletion, scaled by the total assets at the beginning of the period. However, this measure is an approximation, as the inclusion of amortization accounts for impairments of intangible assets that do not correspond to PPE. Although LSEG provides a direct CAPEX item, the limited availability of data across many countries on a quarterly basis would substantially reduce the size of the panel, undermining the cross-country design. Thus, despite its approximate nature, an indirect method leveraging basic balance sheet and income statement items, instead of cash flow statements and appendix information, is adopted. Coverage on an annual basis is much better. However, the same indirect calculation method is used in panel B to ensure comparability between the two panels. The correlation between the indirect CAPEX measure and LSEG's direct CAPEX is greater than 0.66 (Pearson) and 0.78 (Spearman) in panel A, and greater than 0.83 (Pearson and Spearman) in panel B. It is systematically higher because of the addition of amortization. This validates the approximation despite the loss of observations and comparability across panels.

Standard control variables for firm-level investment opportunities, as defined by Gulen and Ion (2016), have been incorporated. Operating cash flows (OCF) are computed via the indirect method: net income plus depreciation, amortization, and depletion, minus the change in working capital over the period, scaled by total assets at the beginning of the period. The choice of LSEG's directly provided item from the statement of cash flows mirrors the rationale for the CAPEX calculation. Working capital is defined as the difference between current assets and current liabilities. Tobin's Q (TobinQ) is determined as the sum of market capitalization and total liabilities divided by total assets. Annual sales growth (dSales) is calculated manually as a decimal. The PPE ratio, defined as PPE divided by total assets, serves as a proxy for investment irreversibility, consistent with prior studies (e.g. Gulen and Ion, 2016; Azimli, 2022).

[2] Regression results remain robust without Japan in the samples.

Table 1: Country Overview

Country	N - A	N - B	Mean - A	Mean - B	HDI	Classification
Australia	0	26,900	N/A	0.100	0.915	Industrial
Belgium	726	1,812	0.019	0.067	0.907	Industrial
Brazil	16,333	5,276	0.016	0.069	0.721	Emerging
Canada	42,295	15,767	0.024	0.117	0.908	Industrial
Chile	9,520	2,592	0.017	0.069	0.803	Industrial
China	2,755	58,224	0.014	0.064	0.662	Emerging
Colombia	790	402	0.018	0.074	0.714	Emerging
Denmark	3,326	2,888	0.017	0.070	0.912	Industrial
France	1,184	16,664	0.015	0.066	0.873	Industrial
Germany	18,803	14,601	0.016	0.071	0.916	Industrial
Greece	5,948	4,825	0.010	0.064	0.850	Industrial
India	788	27,508	0.013	0.048	0.560	Emerging
Ireland	352	1,104	0.014	0.077	0.886	Industrial
Italy	6,825	5,252	0.015	0.069	0.866	Industrial
Japan	198,680	95,556	0.010	0.040	0.898	Industrial
Korea (South)	92,011	35,722	0.013	0.063	0.861	Industrial
Mexico	6,607	1,410	0.019	0.074	0.735	Emerging
Netherlands	1,657	1,492	0.015	0.064	0.914	Industrial
New Zealand	0	2,017	N/A	0.084	0.903	Industrial
Poland	23,236	6,814	0.016	0.071	0.826	Industrial
Spain	2,684	2,864	0.015	0.073	0.855	Industrial
Sweden	21,557	7,210	0.018	0.079	0.911	Industrial
Turkey	15,867	3,811	0.024	0.138	0.726	Emerging
United Kingdom	1,317	24,124	0.011	0.073	0.893	Industrial
United States	342,439	109,537	0.017	0.080	0.909	Industrial
Total	815,700	474,372	0.015	0.068		

Notes: This table reports the number of firm-quarter (A) observations and firm-year (B) observations for each country in the final samples derived from LSEG's Worldscope database via WRDS. The sample includes all countries with available EPU data from Baker et al. (2016) after all filtering steps applied. The means refer to the average CAPEX in both panels and are computed as the arithmetic means. HDI is sourced from United Nations data, with countries classified as emerging (HDI < 0.8) or industrialized (HDI ≥ 0.8) per United Nations Development Programme (2020) for their average HDI from 1990 to 2023.

Table 2: Sample Construction Summary

Panel A: Quarterly Data	Original sample	Financials	Cross-listed	Bottom 1% assets	Missing values	<12 quarters
Firm-Quarters	3,054,840	2,747,227	2,545,569	1,864,112	882,296	815,700
Firms	64,997	58,825	53,808	50,225	26,289	17,674
Quarters	144	144	144	112	104	104
Panel B: Annual Data	Original sample	Financials	Cross-listed	Bottom 1% assets	Missing values	<3 years
Firm-Years	1,375,192	1,213,598	1,106,734	828,014	486,191	474,372
Firms	85,586	75,935	68,987	63,096	45,905	38,345
Years	37	37	37	36	33	33

Notes: The original sample is defined through LSEG's quarterly/annual fundamentals database filtered for countries with the EPU index available from Baker et al. (2016) through the 'Nation Code'. The quarterly database is available since 1990 and the annual since 1985. All steps in the annual and quarterly data cleaning process are equal. Following the literature financial companies are filtered out defined by 'Industry Group' values between 4,300 and 4,400. Cross-listed observations identified through deviating country codes tracking primary listing and Nation names tracking headquarters are also removed. The bottom 1% of total assets in $ are filtered out. The threshold for the quarterly panel is $5,674 and for the annual $9,842. All variables except for the leads 2,3 and 4 in CAPEX need to be available. In the last step firms are required to have at least twelve consecutive quarters or three consecutive years in the annual panel of these variables available resulting in the final panels A and B in the last column.

Additional controls for economic investment opportunities include real GDP growth (dGDP_Q/dGDP_Y) and the Consumer Confidence Index (CCI), as outlined by Gulen and Ion (2016). Data for both variables were retrieved from the OECD Data Explorer, with GDP growth provided in decimal format at quarterly and annual frequencies, and monthly CCI data aggregated to quarterly and annual levels via its arithmetic mean. Canadian CCI data is manually sourced from the Federal Reserve Economic Data (FRED). Unlike Gulen and Ion (2016), who used forecasted GDP growth, this study uses realized GDP growth due to the unavailability of historic forecasts for non-OECD countries in the database. Croatia, Hong

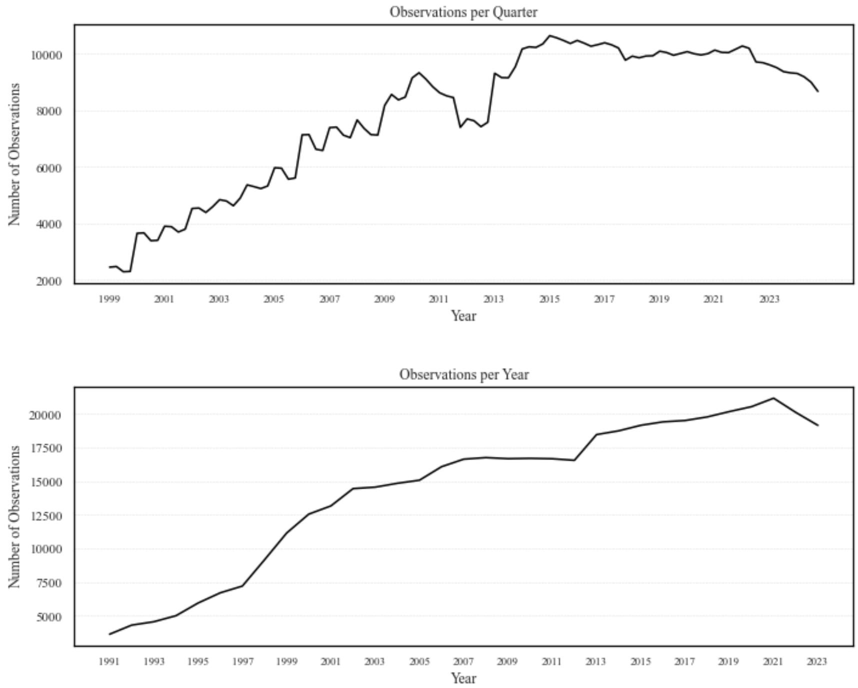

Figure 1: Observations over Time

Notes: Observations per quarter and year in the final panel A (above) and B (below) over time. Note that the first year in both panels is not included due to the integration of growth variables. The years correspond to the independent variables and end in 2023 in the observations per year because of missing annual financial statements for 2025.

Kong, Nigeria, Pakistan, and Singapore are not reported in either database and Russia lacks CCI data. Gulen and Ion (2016) show that these control variables have significant influence on investment. Therefore, the countries are not further considered in the analysis. This leaves 23 and 25 countries in panels A and B, respectively, as Australia and New Zealand fall out of panel A.

Following Gulen and Ion (2016), controls for overall economic uncertainty include profit margin growth volatility (profit_sd) and stock return volatility (stock_sd). These are calculated cross-sectionally as the standard deviation of the growth in the respective measure from one period to the next. To exclude the influence of newly listed firms, only firms with over 80 quarters of data (20 years in panel B) are included in these calculations (Bloom, 2009; Gulen & Ion, 2016). As both variables exhibit significant outliers and are strictly positive, they are log-transformed using their natural logarithm. While this deviates from the approach adopted by Gulen and Ion (2016), the log transformation addresses the considerable right-skewness in these variables and mitigates the influence of extreme outliers in the regression. This appears to be a greater concern in the global sample than in the US. All variables are winsorized at the 1st and 99th percentiles and standardized by their sample standard deviation. Table 3 presents descriptive statistics of all variables in both panels.

For the comparison between emerging and industrial markets, the United Nations' Human Development Index (HDI) is employed, with values above 0.8 classified as very highly developed countries by United Nations Development Programme (2020) here defined as industrial markets. Given the study's time horizon over two decades, the HDI in 2023 alone does not reflect historical development trends; thus, the mean HDI per country from 1990 to 2023 is used for classification, with results reported in Table 1, alongside the number of observations and the average investment rate per country in each panel. The average CAPEX differs significantly across countries ranging from only 1% in Greece to 2.4% in Canada and Turkey in panel A and from 4.8% in India to 13.8% in Turkey in panel B. Panel A has more total observations despite including fewer years and countries than panel B. It also allows for shorter investigations of investment behavior in response to increasing EPU and replicates the design of Gulen and Ion (2016). Nevertheless, panel B offers a more balanced sample. The share of observations from the US and other major economies, such as Japan and South Korea is reduced from 42%, 24% and 11% in panel A to 23%, 20% and 8% in panel B, respectively. Furthermore, the higher coverage of firms in panel B for countries without mandatory quarterly reporting extends the analysis to several countries, such as Australia and the UK. As shown in Table 2, it also includes more firms, which could indicate better representation within countries.

Table 3: Descriptive Statistics

	Count	Mean	Std	Min	25%	50%	75%	Max
Panel A: Quarterly Data								
CAPEX_lead1	815,700	0.015	0.029	-0.070	0.003	0.009	0.019	0.179
EPU_log	815,700	4.838	0.398	4.019	4.572	4.817	5.093	5.996
TobinQ	815,700	1.490	2.028	0.097	0.512	0.882	1.593	14.296
OCF	815,700	-0.002	0.115	-0.762	-0.004	0.012	0.031	0.248
dSales	815,700	0.161	0.658	-0.848	-0.061	0.051	0.196	4.732
dGDP_Q	815,700	0.005	0.012	-0.062	0.001	0.006	0.009	0.053
CCI	815,700	99.724	1.465	95.831	98.746	99.901	100.759	102.797
stock_sd_log	815,700	-0.529	1.537	-2.199	-1.583	-0.999	-0.085	5.716
profit_sd_log	815,700	1.976	2.892	-2.269	-0.829	2.673	4.040	9.211
Panel B: Annual Data								
	Count	Mean	Std	Min	25%	50%	75%	Max
CAPEX_lead1	474,372	0.068	0.123	-0.234	0.013	0.039	0.084	0.768
EPU_log	474,372	4.787	0.456	3.868	4.472	4.755	5.016	5.967
TobinQ	474,372	1.434	1.952	0.104	0.548	0.838	1.481	13.869
OCF	474,372	-0.043	0.456	-3.178	-0.018	0.047	0.108	0.512
dSales	474,372	0.208	0.863	-0.89	-0.047	0.059	0.207	6.686
dGDP_Y	474,372	0.029	0.031	-0.059	0.014	0.027	0.044	0.114
CCI	474,372	99.934	1.733	94.743	98.867	100.05	100.99	103.32
stock_sd_log	474,372	0.489	1.577	-1.501	-0.593	0.039	1.240	6.262
profit_sd_log	474,372	1.900	3.077	-3.022	-0.864	1.821	4.341	11.114

Notes: Observations are firm-quarters in panel A and firm-years in panel B. All firm-level variables are obtained from LSEG's Worldscope quarterly and annual fundamentals databases accessed through WRDS on 10.07.2025. The log-transformed EPU index from Baker et al. (2016) is from the "all-country data", with countries not integrated but individually available, added manually and all values aggregated to the quarter or year. Quarterly and annual real GDP growth and monthly CCI data are from OECD databases. Quarterly and annual CCI data is aggregated by the mean. The uncertainty proxies represent the respective period-on-period log-transformed cross-sectional standard deviations in profit margin growth and stock returns in each panel. The selection of control variables follows Gulen and Ion (2016). Panel A includes 23 countries from 1999 to 2024 and panel B 25 countries from 1991 to 2023. CAPEX_lead1 leads all other variables by one period (quarter or year). All variables are winsorized at the 1st and 99th percentiles. See Appendix A for variable definitions.

3.2 Methodology

This study builds on the regression framework of Gulen and Ion (2016) assessing its applicability within a global sample of quarterly and annual financial statements using a dual panel approach. Having presented their baseline model, the authors introduce controls for macroeconomic investment opportunities and uncertainty to address an omitted variable bias. The cross-country design is constrained by the limited availability of certain variables on a global scale, necessitating a selective inclusion of those controls. Nonetheless, all firm-level controls and the most statistically significant macroeconomic controls are retained. The results in the US closely align with their results from the US, demonstrating the inclusion of the most important variables.

Both panels apply consistent filters: removing financial firms, cross-listed entities with unaligned country codes to nation names, and firms lacking at least twelve consecutive quarters (three years) of observations. Panel A spans 1999-2024, emphasizing short-run reactions, while panel B covers 1991–2023, broadening country coverage and capturing longer-term adjustments. The model is specified as:

$$\text{Investment}_{i,t+l} = \alpha_{i,t} + \beta_1\,\text{EPU}_{c,t} + \beta_2\,X_{i,t} + \beta_3\,Z_{c,t} + \beta_4\,Q_{c,t} + \varepsilon_{i,t}$$

In this equation, (i) and (c) index the firm and country, respectively, (t) denotes the period (year or year-quarter), and ($l = [1, 2, 3, 4]$) represents the lead of the dependent variable, CAPEX, which serves as the proxy for investment. The use of leads for the dependent variable is a standard practice in empirical investment literature to mitigate mechanical correlations between dependent and independent variables (Wang et al., 2014; Gulen and Ion, 2016; Fujitani et al., 2023, among others). Up to four leads are analyzed to replicate the design from Gulen and Ion (2016) and analyze the short-term horizon up to one year. Analyzing leads up to four years ensures insights into the duration of the relationship and the rebound period suggested by Gulen and Ion (2016) after two to three years. However, the lead structure restricts the 2024 analysis in the annual panel, as CAPEX data for 2025 is not yet available. The primary independent variable is the log-transformed Economic Policy Uncertainty (EPU) index from Baker et al. (2016). The log-transformation reduces the influence of extreme outliers and facilitates coefficient interpretation in relative increases. Vectors X and Z encompass firm-level and macroeconomic control variables, respectively, designed to account for investment opportunities and overall economic uncertainty. X includes operating cash flow (OCF) as net income minus the change in working capital plus depreciation, amortization and depletion scaled by beginning of the period total assets, Tobin's Q (TobinQ) as the sum of market capitalization and total liabilities divided by total assets and year-on-year sales growth (dSales) expressed as a decimal. Z includes real period-on-period GDP growth (dGDP_Q/dGDP_Y), the Consumer Confidence Index (CCI) as investment opportunity proxies and the standard deviations of period-on-period profit margin growth (profit_sd) and stock returns (stock_sd). That is only a selection of the macro controls used by Gulen and Ion (2016) and the used variables slightly deviate from theirs to fit the global sample better. First, real GDP growth is used instead of forecasted GDP growth, because of data unavailability in many countries. That leads to a more backward-looking variable than an opportunity variable. Second, stock returns are calculated by period-on-period changes in market capitalization from the Worldscope database instead of daily stock returns. This measure captures only part of stock market dynamics but is used due to global data constraints. Especially in panel B, that variable needs to be examined under caution as it uses year-on-year stock returns. Lastly, both volatility measures are log-transformed to handle outliers. For the quarterly panel, quarter dummies (Q) are included to address seasonality, while standard errors (ε) are clustered at both the firm and time levels to account for potential cross-sectional and serial correlation (Gulen & Ion, 2016). Firm fixed effects (α) are incorporated to control for unobserved heterogeneity, a practice consistent with prior studies (Fujitani et al., 2023; Gulen & Ion, 2016; Jens, 2017; Julio & Yook, 2012; Wang et al., 2014). Numerous studies examine the relationship between EPU, investment and firm characteristics in detail (e.g. Kang et al., 2014; Wang et al., 2014; Gulen and Ion, 2016, Amore and Minichilli, 2018). This study aims to provide an overview of countries where further investigation is needed, which is why only the investment irreversibility channel is explored. Given the absence of further firm-level conditioning, the integration of firm fixed effects is especially important. Following the rationale of Gulen and Ion (2016), time fixed effects are excluded as they would absorb the variation of the EPU index.

This regression model is applied uniformly across all analyses, with variations limited to the composition of the samples. To address H1, the relationship between EPU and corporate investment is examined initially in the full panel. Due to the disproportionate influence of the US, particularly in panel A, the analysis is repeated without the US. A subsequent analysis partitions the panels into industrial and emerging markets to examine H2. The classification is done by the HDI index and summarized in Table 1. The central analysis involves country-specific regressions addressing H3. To explore the irreversibility channel in H4, both panels are split by the sample median of the PPE ratio and analyzed separately for each country. A median split is preferred over an interaction term to avoid potential mechanical correlations between CAPEX, which depends heavily on PPE and total assets, and the PPE to total assets ratio itself.

4 Results

4.1 Panel A

This subsection evaluates the empirical findings from quarterly (1999–2024, 23 countries) panel regressions, testing the hypotheses outlined in Section 2 regarding the impact of Economic Policy Uncertainty (EPU) on firm-level capital expenditures (CAPEX). The analysis considers time trends, correlations, and regression outcomes, emphasizing cross-country heterogeneity and investment irreversibility. Figure 2 demonstrates a clear upward trend in the average EPU since 1999, reflecting increasing policy uncertainty or the heightened media reporting of it. In contrast, CAPEX follows a cyclical trajectory, peaking at 3.29% in Q1 2019. While descriptive, these divergent patterns are consistent with a possible inverse relationship, providing preliminary support for H1. Nevertheless, trend-based inferences must be interpreted with caution. Table 4 presents the correlation matrix of the independent variables, showing Pearson correlations in the lower triangle and Spearman correlations in the upper triangle. EPU_log is negatively associated with all proxies for investment opportunities at both the firm and macro levels, and positively correlated with profit margin volatility, though it shows a slightly negative correlation with stock market volatility. The non-parametric Spearman results confirm the robustness of these patterns, except for stock_sd, which is positively correlated under Spearman. These results support the expectation that higher policy uncertainty is linked to weaker investment conditions. It also suggests low connection to overall economic uncertainty. The low collinearity across independent variables enhances the interpretability of regression coefficients and confirms the model's suitability. The cross-country design also benefits from variation in the EPU across countries because it provides greater variation in the main explanatory variable. Correlations of the country-specific EPU indices (detailed in Table 5) confirm that, despite the co-movement through substantial global shocks, the cross-national panel displays enough diversity. Notably, many indices are highly correlated with the US index.

Table 6 reports the findings of the full panel regression and a robustness test omitting US data, which comprises 42% of the sample. Across all four quarterly leads, EPU_log shows a robust and statistically significant negative association with CAPEX. The non-US sample highlights a slightly greater effect, especially in the fourth quarter. That confirms that results are not driven solely by US dynamics, an important improvement over past studies heavily reliant on US data. A one-standard-deviation increase in the EPU index is associated with a 0.032 standard deviation decline in CAPEX in the full sample and 0.034 decline in the non-US sample within the subsequent quarter. This implies that a doubling of EPU is associated with a 16.2 basis point reduction in CAPEX in the full sample and a 17.2 basis point reduction in the non-US sample, corresponding to 10.8% and 12.29% of the respective average investment rates. Crucially, historical EPU spikes underscore the real-world relevance of these effects: the index tripled during the global financial crisis and doubled during the COVID-19 pandemic. These magnitudes imply that a meaningful share of the observed decline in firm-level investment (Figure 2) during such episodes can be attributed to elevated economic policy uncertainty.

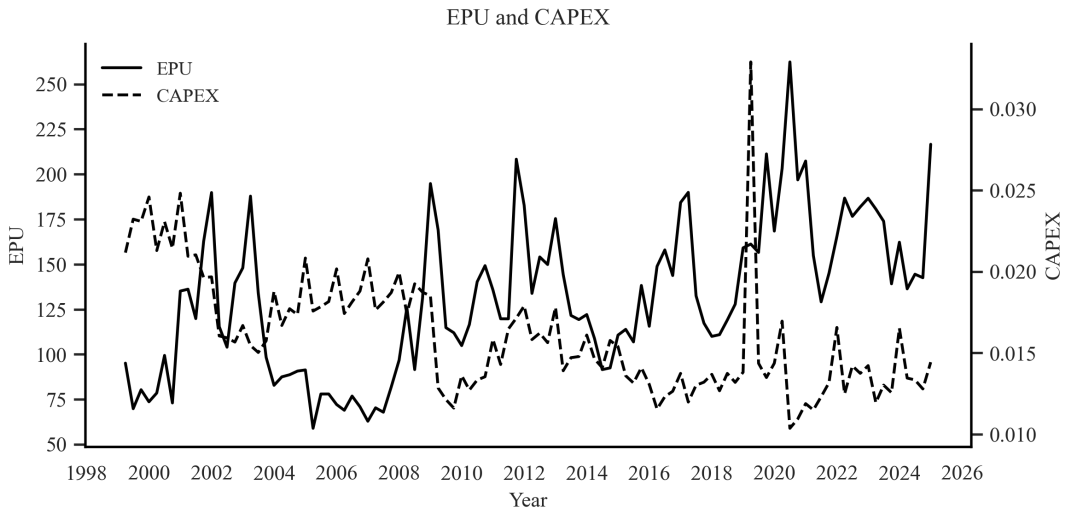

Figure 2: Time Series of Quarterly average EPU and CAPEX

Notes: This figure displays the average EPU index from Baker et al. (2016) and the average capital expenditures by lagged total assets (dotted) per quarter in the entire panel A. Time series graph from panel B is available in Appendix B.

Table 4: Correlation Matrix: Variables – Panel A

	EPU_log	TobinQ	OCF	dSales	dGD_Q	CCI	stock_sd_log	profit_sd_log	PPE_ratio
EPU_log	1	0.008	-0.009	-0.035	-0.075	-0.290	0.014	0.093	0.014
TobinQ	-0.007	1	-0.026	0.113	0.070	0.112	0.550	0.581	-0.114
OCF	-0.007	-0.313	1	0.054	0.003	0.018	-0.047	-0.025	0.168
dSales	-0.005	0.128	-0.073	1	0.039	0.045	0.011	0.057	-0.040
dGDP_Q	-0.117	0.036	-0.004	0.032	1	0.213	0.145	0.101	0.008
CCI	-0.288	0.061	-0.009	0.024	0.245	1	0.147	-0.009	0.013
stock_sd_log	-0.092	0.28	-0.081	0.038	0.078	0.155	1	0.605	-0.045
profit_sd_log	0.049	0.345	-0.091	0.071	0.089	0.032	0.528	1	-0.057
PPE_ratio	0.018	-0.131	0.112	-0.036	0.004	0.016	-0.016	0.006	1

Notes: Pairwise Pearson (lower triangle) and Spearman (upper triangle) correlations between all independent variables in panel A. All variables are winsorized at the 1st and 99th percentiles. See variable definitions in Appendix A and panel B's correlation matrix in Appendix B.

The regression coefficients of the control variables have the expected signs. All firm-level proxies for investment opportunities are positively associated with CAPEX in the full and without US samples for all leads. Only at the three-quarter horizon does OCF not show a significant coefficient. Macro controls, for both economic investment opportunities and uncertainty generally exert little influence, though CCI can be a positive predictor of CAPEX two and three quarters ahead (full sample), while profit volatility is negatively linked to investment in the non-US sample. Real GDP growth exerts little influence on future corporate investment. These results affirm that firm-level factors primarily drive investment, yet that EPU stands out among macro determinants. Worth noting, the model's R-squared is consistently higher when US data is included, suggesting greater explanatory power for US firms than for those from other countries. Together, these findings provide robust empirical support for H1, confirming a persistent negative link between economic policy uncertainty and global capital investment.

To address H2, the regression framework is applied separately to industrial and emerging markets, as specified in Table 7. These are split by the arithmetic mean HDI of 0.8 as defined by United Nations Development Programme (2020) from 1990 to 2023 (overview in Table 1). However, emerging markets account for only 5.3% of firm-quarter observations, which necessarily limits statistical power and robustness in that group. The results in industrial markets mirror those of the full sample almost exactly, with the EPU_log effect remaining negative and statistically significant, and the firm-level determinants positive across all projection horizons, except for OCF. Differently, CCI is now strictly positively associated with future investment in industrial markets. In the emerging markets the EPU_log coefficient is statistically weaker, but economically stronger than for industrial markets, especially at one and four quarters ahead: a doubling in EPU corresponds to a 45.9 bp drop (from a mean CAPEX rate of 1.9%, i.e., a 23.9% decrease) versus 13.1 bp (8.85% reduction of a 1.48% average investment rate) in industrial

Table 5: Correlation Matrix: EPU across Countries – Panel A

	BEL	BRA	CAN	CHL	CHN	COL	DNK	FRA	DEU	GRC	IND	IRE	ITA	JPN	KOR	MEX	NLD	POL	ESP	SWE	TUR	GBR	USA
BEL	1	0.32	0.63	0.55	0.35	0.52	0.59	0.57	0.65	0.02	0.38	0.70	0.52	0.59	0.61	0.00	0.58	0.59	0.74	0.42	0.15	0.34	0.64
BRA	0.28	1	0.54	0.63	0.21	0.67	0.64	0.62	0.65	0.09	-0.13	0.57	0.26	0.35	0.47	-0.03	0.01	0.60	0.47	0.56	-0.25	0.57	0.48
CAN	0.64	0.54	1	0.62	0.66	0.62	0.83	0.89	0.88	0.72	-0.17	0.83	0.62	0.70	0.68	-0.29	0.42	0.59	0.79	0.79	0.08	0.90	0.78
CHL	0.58	0.56	0.61	1	0.55	0.82	0.69	0.72	0.81	-0.10	0.06	0.73	0.40	0.37	0.67	0.14	0.30	0.76	0.69	0.75	-0.05	0.53	0.65
CHN	0.41	0.20	0.61	0.59	1	0.67	0.54	0.45	0.65	-0.53	-0.13	0.61	0.07	0.26	0.66	0.67	-0.04	0.77	0.34	0.25	-0.07	0.39	0.70
COL	0.52	0.67	0.65	0.80	0.68	1	0.7	0.63	0.85	-0.27	0.05	0.76	0.08	0.29	0.72	0.41	-0.02	0.82	0.49	0.59	-0.22	0.41	0.58
DNK	0.66	0.57	0.82	0.72	0.62	0.72	1	0.81	0.84	0.24	0.03	0.77	0.61	0.69	0.64	-0.04	0.31	0.68	0.78	0.70	-0.05	0.75	0.75
FRA	0.58	0.58	0.89	0.68	0.42	0.64	0.74	1	0.85	0.19	0.17	0.78	0.59	0.56	0.74	-0.06	0.27	0.71	0.79	0.74	-0.09	0.81	0.74
DEU	0.66	0.58	0.88	0.83	0.65	0.84	0.82	0.82	1	0	0.07	0.85	0.45	0.53	0.82	-0.01	0.35	0.83	0.80	0.78	-0.02	0.74	0.77
GRC	-0.02	0.10	0.70	-0.19	-0.55	-0.23	0.10	0.25	-0.03	1	0.21	-0.08	0.29	0.32	0.08	-0.09	0.20	-0.23	0.04	0.18	0.05	0.23	0.04
IND	0.38	-0.21	-0.09	0.02	-0.19	-0.09	0.02	0.17	0.08	0.23	1	0.09	0.24	0.14	0.16	-0.04	0.63	-0.08	0.38	0.07	0.28	-0.17	0.01
IRE	0.74	0.51	0.83	0.75	0.61	0.75	0.76	0.78	0.86	-0.06	0.13	1	0.37	0.43	0.70	-0.13	0.32	0.75	0.75	0.63	-0.05	0.70	0.68
ITA	0.54	0.22	0.64	0.37	0.02	0.13	0.63	0.60	0.43	0.31	0.26	0.40	1	0.61	0.52	0.12	0.52	0.42	0.59	0.49	0.02	0.49	0.60
JPN	0.62	0.35	0.74	0.36	0.17	0.30	0.66	0.62	0.53	0.32	0.13	0.52	0.59	1	0.63	0.11	0.49	0.45	0.51	0.54	0.02	0.56	0.67
KOR	0.56	0.43	0.67	0.64	0.65	0.69	0.61	0.69	0.78	0.07	0.11	0.71	0.49	0.61	1	0.25	0.38	0.76	0.68	0.57	0.07	0.65	0.81
MEX	0.06	-0.06	-0.13	0.16	0.62	0.42	0.04	-0.08	-0.01	-0.03	-0.03	-0.09	0.18	0.12	0.25	1	0.02	0.27	-0.14	-0.14	0.11	-0.17	0.25
NLD	0.62	-0.01	0.43	0.33	-0.01	-0.01	0.38	0.28	0.38	0.16	0.73	0.38	0.57	0.50	0.31	0.13	1	0.24	0.42	0.37	0.28	0.21	0.45
POL	0.63	0.55	0.61	0.81	0.81	0.81	0.78	0.66	0.84	-0.28	-0.09	0.75	0.43	0.44	0.73	0.29	0.31	1	0.67	0.56	-0.09	0.56	0.73
ESP	0.75	0.42	0.79	0.67	0.25	0.49	0.79	0.80	0.77	0.10	0.38	0.76	0.63	0.61	0.65	-0.14	0.46	0.66	1	0.66	0.06	0.65	0.70
SWE	0.45	0.49	0.78	0.69	0.22	0.65	0.66	0.73	0.75	0.17	0.06	0.63	0.51	0.61	0.57	-0.03	0.39	0.55	0.68	1	-0.02	0.73	0.69
TUR	0.08	-0.30	-0.04	-0.04	-0.02	-0.23	-0.15	-0.13	-0.03	0.00	0.25	-0.09	-0.01	-0.06	0.07	0.18	0.26	-0.09	-0.01	-0.01	1	-0.18	0.00
GBR	0.46	0.55	0.92	0.54	0.39	0.54	0.69	0.87	0.72	0.25	-0.17	0.75	0.53	0.65	0.67	-0.16	0.26	0.56	0.74	0.74	-0.21	1	0.70
USA	0.70	0.45	0.79	0.64	0.66	0.59	0.83	0.76	0.73	0.02	0.04	0.72	0.63	0.72	0.74	0.23	0.50	0.73	0.75	0.70	-0.09	0.73	1

Notes: Pairwise Pearson (lower triangle) and Spearman (upper triangle) correlations of log transformed EPU indices (Baker et al., 2016), computed on quarterly averages over the panel A. All values are winsorized at the 1st and 99th percentiles. See Appendix B for correlations in panel B.

economies at the four-quarter lead. Yet, no significant relationships are found in the second and third quarters ahead. Notably, CCI has a negative effect in emerging markets, unlike in industrial countries. In the full sample the positive direction in the latter and the negative in the former seem to cancel each other out in part. Future work could dig deeper into the different mechanisms for CCI in the two markets. Firm-level controls have less significant impact in the emerging markets, with sales growth standing out as the strongest determinant over all four quarter leads. Tobin's Q as the primary investment opportunity variable does not seem to predict future investment in the emerging markets. Increasing macroeconomic uncertainty is not associated with decreasing future investment, as in industrial markets. Indeed, stock return volatility is associated with an increase in investment four quarters later in the emerging markets. Interestingly, the R-squared in emerging markets is significantly higher than in industrial markets. Moreover, it stays relatively stable across the leads. That could suggest a better model fit in emerging markets and a longer effect of the independent variables on investment. Overall, the results do not suggest systematic differences between the developed and developing countries. Furthermore, the small emerging market sample precludes confident inference here, and so coefficients need to be interpreted with caution. H2 is not supported by the quarterly evidence. However, this will be re-examined using the more balanced annual panel.

The test of H3, based on country-specific regressions (full sample in Table 8), reveals considerable heterogeneity across countries. While the overall and US findings are not consistently replicated, no country exhibits a statistically significant positive relationship. Significant negative coefficients are found for the United States, Japan, Canada, Poland, and Spain. Notably, four of these five countries rank among those with the largest number of observations, suggesting that insignificant results in other countries may partly reflect limited sample size. However, this cannot be the sole explanation: countries such as South Korea, Sweden, and Germany have many observations, yet show no statistically significant relationship, while Spain does, with only 2,684 observations. In fact, the absolute impact in Spain on investment is over three times that of the US (-0.132 vs.-0.032). That translates into a decline of 66.7 bp versus 16.2 bp. Interpreted as relative reductions in average national investment rates, this shows a reduction of 44.5% in Spain and 9.5% in the US, which is more than four times stronger. Notably, Gulen and Ion (2016) observe a reduction of 12.2 bp in the regression results addressing omitted variable bias, which is closest to this model. This corresponds to a relative reduction of 8.71% from their average CAPEX of 1.4% in 2016. The results presented here are very close to their findings. The relative comparison of coefficients between countries has its limitation, as average CAPEX rates differ substantially across samples. Canada's is 2.4% while the US's average CAPEX is 1.7% in panel A. That results in a discrepancy between 144% higher absolute drop in Canada but only a 73% higher relative reduction in average investment levels. However, the absolute impact on the average investment level is directly comparable. The results discussed above establish heterogeneity (supporting H3), though for countries with smaller samples, confidence intervals and robustness suffer accordingly.

On H4, the irreversibility channel is probed by dividing the sample at the median PPE ratio, as a proxy for investment irreversibility (Table 8). Interestingly, no significant negative coefficient is detected in the low-irreversibility group. Indeed, Germany and Italy yield significant positive coefficients. Conversely, all countries with significant negative re-

Table 6: EPU and Investment Regression – Panel A

	Full Sample				*Excluding US*			
	CAPEX_lead1	CAPEX_lead2	CAPEX_lead3	CAPEX_lead4	CAPEX_lead1	CAPEX_lead2	CAPEX_lead3	CAPEX_lead4
EPU_log	-0.032***	-0.028***	-0.030***	-0.033***	-0.034***	-0.033***	-0.035***	-0.044***
	(0.010)	(0.008)	(0.008)	(0.007)	(0.009)	(0.008)	(0.006)	(0.009)
TobinQ	0.117***	0.111***	0.098***	0.085***	0.150***	0.140***	0.122***	0.100***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.016)	(0.017)	(0.016)	(0.015)
OCF	0.018***	0.010***	0.002	0.006**	0.025***	0.013***	0.003	0.020***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.004)	(0.003)	(0.004)
dSales	0.044***	0.041***	0.033***	0.030***	0.041***	0.041***	0.036***	0.033***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)	(0.005)
dGDP_Q	-0.008	0.005	0.007*	0.007	-0.004	0.009	0.008	0.007
	(0.006)	(0.007)	(0.004)	(0.006)	(0.007)	(0.007)	(0.005)	(0.005)
CCI	0.023	0.022**	0.023**	0.018	-0.005	0.005	0.009	-0.004
	(0.015)	(0.010)	(0.012)	(0.014)	(0.012)	(0.008)	(0.008)	(0.011)
stock_sd_log	-0.021*	0.020	-0.005	-0.018	-0.001	-0.012	0.011	0.019
	(0.012)	(0.022)	(0.006)	(0.014)	(0.013)	(0.011)	(0.017)	(0.015)
profit_sd_log	-0.005	-0.028**	-0.017	0.020	-0.040**	-0.022*	0.012	0.005
	(0.025)	(0.013)	(0.015)	(0.026)	(0.018)	(0.011)	(0.013)	(0.017)
N	815,700	784,165	764,557	747,493	473,261	453,051	440,505	429,482
R^2	0.011	0.010	0.008	0.007	0.006	0.006	0.005	0.005
Firm FE	yes	yes	yes	yes	yes	yes	yes	yes
Quarter dummy	yes	yes	yes	yes	yes	yes	yes	yes
Cluster firm	yes	yes	yes	yes	yes	yes	yes	yes
Cluster quarter	yes	yes	yes	yes	yes	yes	yes	yes

Notes: Regression results for panel A (23 countries, 1999–2024) using firm-quarter observations, reported for the full sample and excluding the United States. The dependent variable, CAPEX_lead{t+l}, is capital expenditures scaled by lagged total assets, measured over one to four quarter leads. The main explanatory variable is the log of the Economic Policy Uncertainty index (EPU_log) from Baker et al. (2016). Firm-level controls, per Gulen and Ion (2016), include Tobin's Q (TobinQ, market capitalization plus liabilities divided by total assets), operating cash flow (OCF, net income plus depreciation minus working capital change, scaled by lagged assets), and year-on-year sales growth (dSales). Macroeconomic controls, also per Gulen and Ion (2016), include real quarterly GDP growth (dGDP_Q) and the Consumer Confidence Index (CCI) from the OECD Data Explorer, capturing investment opportunities, and cross-sectional stock return volatility (stock_sd_log) and profit margin growth volatility (profit_sd_log), capturing uncertainty. Accounting data is from LSEG's Worldscope via WRDS. Specifications include firm fixed effects and quarter dummies for heterogeneity and seasonality. Variables are winsorized at the 1st and 99th percentiles and standardized by their respective sample standard deviation. Standard errors are clustered at the firm and quarter levels and shown in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

sults in the full sample (and Sweden and Germany) retain negative coefficients in the high-irreversibility group, validating the prediction from real options theory that the effect of uncertainty intensifies where investment is less reversible.

Again, relative comparisons of coefficients are not feasible in this context due to the lack of average CAPEX by irreversibility split. The economically higher absolute results could be a consequence of higher impact, but also higher average investment rates. The average investment rates in the high irreversibility sample could be higher, if companies which historically invested proportionally more in PPE continue to do so. For countries with few observations, H4 can hardly be tested, since the sample sizes are even smaller in the two subsamples. However, the uniformity and significance of coefficient signs strongly corroborate H4, even without further considering the economic interpretation and insufficient data in many countries. However, this will be addressed in the following section.

4.2 Panel B

The analysis of panel B both expands and complements the quarterly results. It allows for greater weighting of countries with weaker reporting frequencies in panel A and ensures a more even representation of industrialized and emerging markets. Robustness checks are supported by the inclusion of correlations and trend graphs, which are presented in Appendix B. However, the central results and patterns are detailed below with a focus on differences from panel A results.

The regression estimates for the full and non-US annual samples (see Table 9) confirm a significant and negative link between EPU and CAPEX, which is consistent with H1 and the findings from the quarterly analysis. However, the effect dissipates for time horizons beyond two to three years, which is the same recovery period noted by Gulen and Ion (2016), although no rebound period is observed after that recovery with positive coefficients. In the full sample, a doubling in EPU is associated with a slightly higher reduction in investment of 14.90% one year later (from the 6.78% average investment rate) compared to the sample without the US with a 12.79% reduction. Those are slightly higher, but very similar values compared to panel A. Tobin's Q shows a consistent positive association with investment across all horizons up to four years. In contrast, OCF is negatively correlated throughout, likely influenced by extreme left-tail values in its distribution. Annual GDP growth is positively linked to

Table 7: Industrial and Emerging Markets Comparison – Panel A

	Industrial Markets				*Emerging Markets*			
	CAPEX_lead1	CAPEX_lead2	CAPEX_lead3	CAPEX_lead4	CAPEX_lead1	CAPEX_lead2	CAPEX_lead3	CAPEX_lead4
EPU_log	-0.028***	-0.026***	-0.027***	-0.026***	-0.046*	-0.035	-0.044	-0.091**
	(0.010)	(0.008)	(0.009)	(0.008)	(0.025)	(0.023)	(0.033)	(0.038)
TobinQ	0.118***	0.113***	0.100***	0.087***	-0.008	-0.038	-0.033	-0.023
	(0.005)	(0.005)	(0.005)	(0.005)	(0.043)	(0.053)	(0.048)	(0.041)
OCF	0.018***	0.010***	0.002	0.004	0.039***	0.015	0.006	0.067***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.012)	(0.012)	(0.013)	(0.024)
dSales	0.041***	0.038***	0.028***	0.025***	0.079***	0.084***	0.092***	0.082***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.018)	(0.017)	(0.020)	(0.025)
dGDP_Q	-0.008*	-0.001	0.006**	0.003	-0.006	0.051*	0.017	0.031**
	(0.005)	(0.005)	(0.003)	(0.006)	(0.022)	(0.031)	(0.019)	(0.013)
CCI	0.035**	0.031***	0.033***	0.033**	-0.049	-0.034*	-0.035**	-0.065**
	(0.015)	(0.010)	(0.013)	(0.016)	(0.032)	(0.020)	(0.016)	(0.031)
stock_sd_log	-0.025**	0.018	-0.006	-0.022	0.046	0.023	0.019	0.088**
	(0.012)	(0.022)	(0.006)	(0.014)	(0.045)	(0.043)	(0.032)	(0.038)
profit_sd_log	-0.002	-0.028**	-0.024	0.018	-0.005	-0.012	0.030	0.038
	(0.027)	(0.013)	(0.015)	(0.028)	(0.037)	(0.034)	(0.050)	(0.053)
N	772,560	742,627	723,969	707,744	43,140	41,538	40,588	39,749
R^2	0.012	0.011	0.009	0.007	0.029	0.031	0.029	0.041
Firm FE	yes	yes	yes	yes	yes	yes	yes	yes
Quarter dummy	yes	yes	yes	yes	yes	yes	yes	yes
Cluster firm	yes	yes	yes	yes	yes	yes	yes	yes
Cluster quarter	yes	yes	yes	yes	yes	yes	yes	yes

Notes: Regression results for panel A (23 countries, 1999–2024) using firm-quarter observations, split by emerging (HDI ≤ 0.8) and industrial (HDI > 0.8) markets, as classified in Table 1 per United Nations Development Programme (2020). The dependent variable is CAPEX_lead{t+l}, capital expenditures scaled by lagged total assets, measured over one to four quarter leads. The main explanatory variable is EPU_log, the log of the Economic Policy Uncertainty index from Baker et al. (2016). Firm-level controls include Tobin's Q, operating cash flow, and sales growth, while macroeconomic controls include real quarterly GDP growth and changes in the Consumer Confidence Index, both from the OECD Data Explorer. Uncertainty controls include cross-sectional stock return volatility and profit margin growth volatility, per Gulen and Ion (2016). Accounting data is from LSEG's Worldscope via WRDS. Specifications include firm fixed effects and quarter dummies for heterogeneity and seasonality. Variables are winsorized at the 1st and 99th percentiles and standardized by their respective sample standard deviation. Standard errors are clustered at the firm and quarter levels and shown in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. See Appendix B for annual regression results.

CAPEX at two-year leads, whereas CCI yields no positive coefficients. Despite differences in control variables to panel A, the findings support the acceptance of H1 on EPU.

Panel B offers a more balanced sample, where emerging markets make up 25% of firm-year observations, ensuring a stronger test of market-type effects. Table 10 shows that in both industrial and emerging markets, EPU_log remains negatively associated with subsequent CAPEX, with reductions of 82.3 basis points (an 11.93% decline from a 6.9% investment rate) in industrial economies and 67.3 basis points (10.68% off 6.3%) in emerging markets. Notably, Panel B reverses the quarterly pattern: both average investment rates and the strength of the EPU effect are lower in emerging markets than in industrial ones. CCI continues to be a more reliable predictor in industrial economies. Tobin's Q is positively related to investment in emerging markets, unlike in panel A. The effect fades after two years, in contrast to its persistence over four years in industrial countries. Moreover, profit margin growth volatility shows a significant negative association with investment in industrial economies, but the opposite pattern appears in emerging markets. Higher R-squared values in industrial countries further suggest better model fit. Overall, these findings contradict the quarterly results rather than reveal systematic differences in the EPU-investment relationship, reinforcing the rejection of H2.

A broader set of country-specific regression results (Table 11) becomes available owing to increased observation numbers. Australia and New Zealand are included in panel B and countries previously suffering from sample size constraints yield more meaningful results. Statistically significant negative EPU-CAPEX relationships are established in 11 countries. In addition to the ones specified for panel A, those are: China, South Korea, France, Germany, Denmark, Netherlands and Ireland. Meanwhile the significant effects in Japan and Poland are absent in panel B. Contrasts are notable as positive results appear in India, UK, Sweden, and New Zealand. In many countries, such as Australia or Turkey, no significant results are found at all. That reinforces mixed results in related literature in those countries (Azimli, 2022; Chen et al., 2020; Wu et al., 2020). Coefficients range from -0.158 in Ireland (295 bp or 38.31% reduction) to +0.211 in Sweden (394 bp or 49.87% increase), presenting completely opposing effects from EPU on investment in different countries. The presence of positive coefficients is especially intriguing as they deviate from the norm in the literature and findings in most countries in this study. Uncertainty could here be perceived more as a growth option than as potential sunk costs. A deeper analysis of these countries could im-

Table 8: Country Comparison and Irreversibility – Panel A

	Full Sample			*Low Irreversibility*			*High Irreversibility*		
	EPU_log	N	R^2	EPU_log	N	R^2	EPU_log	N	R^2
United States	-0.032**	342,439	0.019	0.017	201,196	0.018	-0.085***	141,243	0.033
Japan	-0.024***	198,680	0.005	-0.003	89,133	0.002	-0.040***	109,547	0.011
Korea (South)	0.002	92,011	0.003	0.009	33,875	0.002	-0.003	58,136	0.007
Canada	-0.078***	42,295	0.029	0.001	15,390	0.005	-0.109***	26,905	0.054
Poland	-0.040***	23,236	0.009	0.005	10,827	0.006	-0.065***	12,409	0.018
Sweden	-0.034	21,557	0.013	-0.001	16,526	0.019	-0.148*	5,031	0.015
Germany	-0.003	18,803	0.011	0.023*	11,089	0.014	-0.026*	7,714	0.021
Brazil	-0.029	16,333	0.012	0.008	7,420	0.01	-0.043	8,913	0.016
Turkey	-0.057	15,867	0.092	-0.017	6,445	0.074	-0.083	9,422	0.107
Chile	0.049	9,520	0.02	-0.011	1,717	0.008	0.061	7,803	0.027
Italy	0.071	6,825	0.013	0.102*	3,857	0.024	0.065	2,968	0.027
Mexico	-0.055	6,607	0.028	0.115	1,459	0.056	-0.074	5,148	0.03
Greece	-0.063	5,948	0.016	-0.047	1,545	0.014	-0.064	4,403	0.023
Denmark	0.064	3,326	0.018	0.110	1,370	0.04	0.023	1,956	0.023
China	-0.015	2,755	0.017	0.040	1,322	0.019	-0.019	1,433	0.022
Spain	-0.132**	2,684	0.041	-0.034	1,127	0.036	-0.129**	1,557	0.049
Netherlands	-0.054	1,657	0.01	-0.036	1,050	0.012	-0.103	607	0.013
United Kingdom	0.049	1,317	0.035	0.030	512	0.045	0.092	805	0.076
France	-0.018	1,184	0.084	0.021	738	0.216	-0.001	446	0.077
Colombia	0.277	790	0.124	0.385	227	0.252	0.217	563	0.091
India	-0.009	788	0.033	-0.016	549	0.025	0.064	239	0.074
Belgium	-0.013	726	0.022	-0.067	237	0.031	0.011	489	0.044
Ireland	-0.021	352	0.051	-0.004	239	0.042	-0.049	113	0.236

Notes: Regression results for panel A (23 countries, 1999–2024) using firm-quarter observations per country, split by low (below median) and high (above median) PPE ratio, defined as Property, Plant, and Equipment divided by total assets, as a proxy for investment irreversibility per Gulen and Ion (2016). The table is sorted by full sample observations. The dependent variable is CAPEX_lead{t+l}, capital expenditures scaled by lagged total assets, measured over one to four quarter leads. The main explanatory variable is EPU_log, the log of the Economic Policy Uncertainty index from Baker et al. (2016). Firm-level controls include Tobin's Q, operating cash flow, and sales growth, while macroeconomic controls include real quarterly GDP growth and changes in the Consumer Confidence Index, both from the OECD Data Explorer. Uncertainty controls include cross-sectional stock return volatility and profit margin growth volatility, per Gulen and Ion (2016). Accounting data is from LSEG's Worldscope via WRDS. Specifications include firm fixed effects and quarter dummies for heterogeneity and seasonality. Variables are winsorized at the 1st and 99th percentiles and standardized by their respective sample standard deviation. Standard errors are clustered at the firm and quarter levels. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

prove the understanding of how uncertainty influences corporate investment. The heterogeneity strongly supports H3 and merits further inquiry into the roots of national differences.

Analysis of H4 through irreversibility splits (Table 11) reiterates the quarterly finding: high-irreversibility samples generally amplify negative EPU effects, whereas low-irreversibility samples show weaker evidence of the relationship, China and Spain being the only notable exceptions with a persistent but less significant coefficient. In India and New Zealand, the positive relationship from the full sample is statistically strengthened in the high irreversibility sample and lowered in the low irreversibility sample. This suggests that different mechanisms are at play in these countries than those suggested by real options theory and the findings in all other countries. In Sweden and the UK, the positive association is driven by firms facing lower irreversibility. Due to the lack of mean CAPEX data per irreversibility group, the relative interpretation is not extended, but in terms of significance and direction, H4 is again strongly affirmed, if countries with overall positive effects from EPU on investment are excluded as anomalies.

Taken together, these results demonstrate that the negative correlation between economic policy uncertainty and corporate investment is robust and prevalent across nations. This relationship is evident even when the US is excluded, across industrial and emerging markets, and particularly in countries with high statistical power. Investment irreversibility emerges as a key amplifying channel, supporting predictions from real options theory. Meanwhile, the apparent lack of systematic differences between industrial and emerging markets and the clear evidence of country-specific heterogeneity add nuance to findings from panel A. In summary, the available data supports hypotheses H1, H3, and H4, while H2 cannot be confirmed based on the available data. The positive associations observed in India, the United Kingdom, Sweden, and New Zealand are particularly noteworthy. In India and New Zealand, the irreversibility channel is not evident either. These findings suggest that distinct mechanisms may be operating in these countries and warrant further investigation.

5 Discussion

This thesis presents clear empirical findings on the hypotheses. However, they must be interpreted while considering several methodological and conceptual limitations.

Table 9: EPU and Investment Regression – Panel B

	Full Sample				*Excluding US*			
	CAPEX_lead1	CAPEX_lead2	CAPEX_lead3	CAPEX_lead4	CAPEX_lead1	CAPEX_lead2	CAPEX_lead3	CAPEX_lead4
EPU_log	-0.054***	-0.031**	-0.027	-0.022	-0.049***	-0.026**	-0.023	-0.016
	(0.010)	(0.014)	(0.017)	(0.015)	(0.009)	(0.013)	(0.017)	(0.014)
TobinQ	0.201***	0.103***	0.049***	0.027***	0.201***	0.101***	0.051***	0.030***
	(0.010)	(0.008)	(0.007)	(0.006)	(0.011)	(0.014)	(0.010)	(0.008)
OCF	-0.023***	-0.019***	-0.011**	-0.010**	-0.030***	-0.026***	-0.019***	-0.023***
	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)
dSales	0.031***	-0.003	0.000	-0.010*	0.030***	-0.001	0.002	-0.009*
	(0.005)	(0.004)	(0.004)	(0.005)	(0.006)	(0.005)	(0.004)	(0.005)
dGDP_Y	0.029*	0.028**	0.007	0.018	0.026*	0.028**	0.010	0.020
	(0.016)	(0.014)	(0.013)	(0.014)	(0.014)	(0.013)	(0.013)	(0.013)
CCI	0.009	-0.003	-0.006	-0.007	0.004	-0.006	-0.009	-0.013
	(0.010)	(0.008)	(0.009)	(0.011)	(0.010)	(0.008)	(0.008)	(0.011)
stock_sd_log	-0.015	-0.011	-0.018	-0.011	0.013	0.019	0.000	0.004
	(0.011)	(0.012)	(0.018)	(0.018)	(0.012)	(0.012)	(0.015)	(0.014)
profit_sd_log	-0.040**	-0.013	0.024	0.039**	-0.026	-0.001	0.030	0.040**
	(0.017)	(0.017)	(0.023)	(0.019)	(0.019)	(0.016)	(0.022)	(0.020)
N	474,372	413,184	349,558	288,064	364,835	319,883	272,825	225,389
R^2	0.029	0.007	0.002	0.002	0.021	0.006	0.002	0.002
Firm FE	yes	yes	yes	yes	yes	yes	yes	yes
Cluster firm	yes	yes	yes	yes	yes	yes	yes	yes
Cluster year	yes	yes	yes	yes	yes	yes	yes	yes

Notes: Regression results for panel B (25 countries, 1991–2023) using firm-year observations, reported for the full sample and excluding the United States. The dependent variable, CAPEX_lead{t+l}, is capital expenditures scaled by lagged total assets, measured over one to four year leads. The main explanatory variable is the log of the Economic Policy Uncertainty index (EPU_log) from Baker et al. (2016). Firm-level controls, per Gulen and Ion (2016), include Tobin's Q (TobinQ, market capitalization plus liabilities divided by total assets), operating cash flow (OCF, net income plus depreciation minus working capital change, scaled by lagged assets), and year-on-year sales growth (dSales). Macroeconomic controls, also per Gulen and Ion (2016), include real annual GDP growth (dGDP_Y) and the Consumer Confidence Index (CCI) from the OECD Data Explorer, capturing investment opportunities, and cross-sectional stock return volatility (stock_sd_log) and profit margin growth volatility (profit_sd_log), capturing uncertainty. Accounting data is from LSEG's Worldscope via WRDS. Specifications include firm fixed effects and heterogeneity. Variables are winsorized at the 1st and 99th percentiles and standardized by their respective sample standard deviation. Standard errors are clustered at the firm and year levels and shown in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

While these limitations are inherent to cross-country empirical research of this scope, they are presented transparently to contextualize and strengthen the credibility of the results.

A fundamental challenge lies in approximating real economic behavior using published financial statements. While these statements provide structured, standardized, and internationally comparable data, they inherently convert continuous, strategic business processes into discrete, backward-looking periods. Furthermore, firms may engage in earnings management to meet expectations, manage volatility, or influence perceptions. This can result in a discrepancy between a firm's actual financial condition and its reported financial position. Cui, Yao, et al. (2021) demonstrate that earnings management intensifies during periods of high economic policy uncertainty, amplifying this limitation in the empirical setting of this study.

In line with previous studies, this thesis employs capital expenditure (CAPEX) as the primary indicator of investment (Azimli, 2022; Gulen & Ion, 2016; Jens, 2017; Julio & Yook, 2012; Wang et al., 2014). However, two major limitations must be acknowledged. First, CAPEX only captures investment in tangible assets, specifically additions to property, plant, and equipment (PPE). It excludes investments in intangible assets such as R&D, software, or organizational capital, and other non-current investments, such as financial subsidiaries. Consequently, it provides only a partial view of firms' total investment behavior. Secondly, this study uses a self-constructed CAPEX measure, defined as the change in PPE plus depreciation, amortization, and depletion, to maximize data availability and ensure comparability across countries and time. While depreciation and depletion relate to physical capital, amortization is associated with intangible assets. By adding amortization to PPE flows, the measure incorporates impairments of intangible assets, while still excluding actual intangible investment. This constitutes a conceptual inconsistency. Impairments of goodwill can be particularly significant during periods of economic stress, which EPU seems to be correlated with (Table 4). Nevertheless, the constructed CAPEX proxy correlates highly with the directly reported Worldscope CAPEX item in periods and countries where both are available, supporting its validity. Still, it must be emphasized that this study focuses on one dimension of investment. Closely related yet distinct research examines how EPU affects investments or outcomes in innovation. For instance, Atanassov et al. (2024) document a positive association between EPU and R&D, while Cui, Wang, et al. (2021) and Mbanyele and Wang (2022) find negative effects of EPU on patent activity in China and across countries, respectively.

Table 10: Industrial and Emerging Markets – Panel B

	Industrial Markets				*Emerging Markets*			
	CAPEX_lead1	CAPEX_lead2	CAPEX_lead3	CAPEX_lead4	CAPEX_lead1	CAPEX_lead2	CAPEX_lead3	CAPEX_lead4
EPU_log	-0.044***	-0.023	-0.016	-0.021	-0.036**	-0.006	-0.020	-0.008
	(0.015)	(0.021)	(0.024)	(0.017)	(0.017)	(0.021)	(0.020)	(0.031)
TobinQ	0.206***	0.104***	0.049***	0.025***	0.077***	0.068***	0.035	0.039
	(0.010)	(0.008)	(0.007)	(0.007)	(0.022)	(0.024)	(0.024)	(0.029)
OCF	-0.027***	-0.020***	-0.008	-0.011**	0.009	-0.005	-0.027***	0.000
	(0.004)	(0.006)	(0.006)	(0.005)	(0.012)	(0.008)	(0.009)	(0.010)
dSales	0.025***	-0.007*	-0.001	-0.013**	0.057***	0.018	0.005	0.000
	(0.005)	(0.004)	(0.004)	(0.006)	(0.013)	(0.011)	(0.007)	(0.008)
dGDP_Y	0.019	0.004	0.007	0.023*	0.025*	0.048	-0.010	0.014
	(0.014)	(0.010)	(0.011)	(0.013)	(0.013)	(0.030)	(0.016)	(0.034)
CCI	0.029**	0.018	0.013	0.002	-0.003	-0.011	-0.012	-0.021
	(0.014)	(0.015)	(0.019)	(0.015)	(0.014)	(0.014)	(0.013)	(0.018)
stock_sd_log	-0.018	-0.016	-0.021	-0.018	-0.010	0.022	0.015	0.035
	(0.012)	(0.012)	(0.017)	(0.019)	(0.014)	(0.043)	(0.047)	(0.040)
profit_sd_log	-0.089***	-0.069***	-0.016	0.036	0.073*	0.079***	0.097**	0.048
	(0.016)	(0.019)	(0.027)	(0.026)	(0.038)	(0.030)	(0.040)	(0.031)
N	377,741	329,514	279,068	232,644	96,631	83,670	70,490	55,420
R^2	0.035	0.009	0.002	0.001	0.014	0.012	0.008	0.004
Firm FE	yes	yes	yes	yes	Yes	yes	yes	yes
Cluster firm	yes	yes	yes	yes	Yes	yes	yes	yes
Cluster year	yes	yes	yes	yes	Yes	yes	yes	yes

Notes: Regression results for panel B (25 countries, 1991–2023) using firm-year observations, split by emerging (HDI ≤ 0.8) and industrial (HDI > 0.8) markets, as classified in Table 1 per United Nations Development Programme (2020). The dependent variable is CAPEX_lead{t+l}, capital expenditures scaled by lagged total assets, measured over one to four year leads. The main explanatory variable is EPU_log, the log of the Economic Policy Uncertainty index from Baker et al. (2016). Firm-level controls include Tobin's Q, operating cash flow, and sales growth, while macroeconomic controls include real annual GDP growth and changes in the Consumer Confidence Index, both from the OECD Data Explorer. Uncertainty controls include cross-sectional stock return volatility and profit margin growth volatility, per Gulen and Ion (2016). Accounting data is from LSEG's Worldscope via WRDS. Specifications include firm fixed heterogeneity. Variables are winsorized at the 1st and 99th percentiles and standardized by their respective sample standard deviation. Standard errors are clustered at the firm and year levels and shown in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

This underlines that investment responses to uncertainty are multi-faceted, and CAPEX alone does not capture the full behavioral spectrum. Meinen and Röhe (2017) find similar results across EU countries using macroeconomic investment aggregates. Kolev and Randall (2024) reinforce it in the EU with survey data.

Another important limitation is the composition of countries in the dataset. While the sample formally spans over 20 countries, it is heavily concentrated in a small group of large economies. In the quarterly panel, the top five countries account for over 86% of firm-quarters; in the annual panel, the figure is 73%. Conversely, the bottom 50% of countries contribute only 3% and 7% of observations, respectively. Even when the US is excluded, the panels are still dominated by industrial economies, which limits the ability to draw meaningful conclusions about emerging markets or smaller jurisdictions. These imbalances significantly constrain the interpretability of the regression results not split by country. Furthermore, in many countries, the number of observations is simply too low to allow for robust inference.

An additional sampling bias arises from the selection of firms. The study includes only large, listed firms, following standard data quality filters such as exclusion of private and cross-listed companies. This selection bias means that the results reflect the behavior of a specific corporate subset. Many sectors, especially in emerging markets, remain dominated by small or unlisted firms whose responses to policy uncertainty may differ substantially. Indeed, a great body of literature investigates how firm characteristics influence the relationship between EPU and investment. For example, Gulen and Ion (2016) demonstrate that firms with high government contract exposure are more sensitive to EPU. Wang et al. (2014) found that non-state-owned firms, firms with low internal finance, and firms with lower returns on invested capital exhibit greater responsiveness. Kang et al. (2014) highlight that firms facing high internal uncertainty react more strongly as well. Amore and Minichilli (2018) demonstrate that family ownership mitigates the negative effect of EPU on investment in Italy. These findings illustrate the critical role of firm-level heterogeneity in shaping investment behavior under uncertainty. The present study does not directly investigate these dimensions, but addresses unobserved heterogeneity using firm fixed effects, which partially absorb time-invariant structural characteristics. Moreover, the analysis includes investment irreversibility, a key dimension of firm-level heterogeneity, operationalized through a median split on the PPE-to-assets ratio. This reflects its central role in uncertainty-investment models as demonstrated in Leahy and Whited (1995), Wang et al. (2014), Gulen and Ion (2016), Baker et al. (2016), Jens (2017), and Dibiasi et al. (2018).

Another challenge lies in the construction and interpreta-

Table 11: Country Comparison and Irreversibility – Panel B

	Full Sample			*Low Irreversibility*			*High Irreversibility*		
	EPU_log	N	R^2	EPU_log	N	R^2	EPU_log	N	R^2
United States	-0.073**	109,537	0.057	-0.009	64,314	0.065	-0.152***	45,223	0.073
Japan	-0.001	95,556	0.009	0.009	41,714	0.004	-0.005	53,842	0.019
China	-0.073***	58,224	0.019	-0.032**	28,770	0.019	-0.109***	29,454	0.027
Korea (South)	-0.088**	35,722	0.02	-0.046	13,408	0.006	-0.114**	22,314	0.036
India	0.051*	27,508	0.007	-0.026	12,132	0.006	0.087**	15,376	0.011
Australia	-0.054	26,900	0.046	0.017	12,667	0.022	-0.109	14,233	0.072
United Kingdom	0.035*	24,124	0.039	0.049***	14,868	0.035	0.011	9,256	0.068
France	-0.052**	16,664	0.03	-0.032	11,608	0.025	-0.107***	5,056	0.066
Canada	-0.172***	15,767	0.059	-0.065	5,647	0.04	-0.256***	10,120	0.092
Germany	-0.061***	14,601	0.03	-0.028	8,229	0.031	-0.102***	6,372	0.043
Sweden	0.211*	7,210	0.015	0.279**	5,368	0.025	0.091	1,842	0.014
Poland	-0.078	6,814	0.031	-0.036	3,356	0.026	-0.091	3,458	0.052
Brazil	-0.070	5,276	0.024	-0.005	2,150	0.021	-0.116	3,126	0.033
Italy	-0.008	5,252	0.035	0.044	3,154	0.03	-0.030	2,098	0.063
Greece	0.094	4,825	0.086	-0.023	1,653	0.022	0.180	3,172	0.104
Turkey	-0.182	3,811	0.235	-0.022	1,582	0.158	-0.249**	2,229	0.284
Denmark	-0.151**	2,888	0.033	-0.026	1,159	0.06	-0.209**	1,729	0.034
Spain	-0.134**	2,864	0.062	-0.086*	1,280	0.039	-0.164**	1,584	0.087
Chile	-0.019	2,592	0.023	-0.025	509	0.039	-0.012	2,083	0.027
New Zealand	0.122**	2,017	0.035	0.137*	855	0.059	0.112**	1,162	0.048
Belgium	-0.017	1,812	0.035	0.030	894	0.047	-0.025	918	0.046
Netherlands	-0.141*	1,492	0.063	-0.082	929	0.067	-0.288**	563	0.073
Mexico	0.036	1,410	0.023	0.059	317	0.131	0.037	1,093	0.037
Ireland	-0.158***	1,104	0.074	-0.043	521	0.062	-0.142*	583	0.123
Colombia	-0.001	402	0.032	0.325	102	0.097	-0.188	300	0.032

Notes: Regression results for panel B (25 countries, 1991–2023) using firm-year observations per country, split by low (below median) and high (above median) PPE ratio, defined as Property, Plant, and Equipment divided by total assets, as a proxy for low and high investment irreversibility. The table is sorted by full sample observations. The dependent variable is CAPEX_lead{t+l}, capital expenditures scaled by lagged total assets, measured over one to four year leads. The main explanatory variable is EPU_log, the log of the Economic Policy Uncertainty index from Baker et al. (2016). Firm-level controls include Tobin's Q, operating cash flow, and sales growth, while macroeconomic controls include real annual GDP growth and changes in the Consumer Confidence Index, both from the OECD Data Explorer. Uncertainty controls include cross-sectional stock return volatility and profit margin growth volatility, per Gulen and Ion (2016). Accounting data is from LSEG's Worldscope via WRDS. Specifications include firm fixed effects and annual dummies for heterogeneity and seasonality. Variables are winsorized at the 1st and 99th percentiles and standardized by their respective sample standard deviation. Standard errors are clustered at the firm and year levels. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

tion of the EPU index itself. The index is derived from newspaper coverage of uncertainty-related keywords, allowing for systematic tracking of policy-related uncertainty over time and across countries (Baker et al., 2016). However, the number and nature of newspaper sources vary significantly: some indices are based on just one newspaper (e.g., Brazil, Colombia or Ireland), and major European countries such as Germany, France, Italy, and Spain rely on only two. This limited coverage increases the risk of editorial bias, and differences in journalistic style or digitization can affect the volume and tone of published uncertainty. Moreover, the keyword-based methodology may omit articles that discuss uncertainty in broader or indirect terms, potentially underestimating true uncertainty exposure. A particularly important issue is the long-term upward trend in EPU across most countries. This could reflect a genuine increase in economic policy uncertainty, but it may also stem from structural shifts in media ecosystems. The distinction between public and published uncertainty complicates interpretation. The present study uses only the newspaper-based variant of the index, even in countries like the US where broader composite indices exist. This choice follows cross-country comparability and the empirical strategy of Gulen and Ion (2016), who show that the news-based EPU index best captures the uncertainty-investment relationship in the US. The construction of the index is discussed at length in Baker et al. (2016). Azqueta-Gavaldón et al. (2023) investigate the sources of Economic Policy Uncertainty (EPU) in the euro area and their varying impacts on investment across countries. Their findings indicate that while most types of uncertainty affect investment differently from one country to another, political uncertainty and domestic regulatory uncertainty consistently reduce investment throughout the region.

As with all studies of this kind, the risk of omitted variable bias remains a key concern. Investment decisions are shaped by an extensive array of economic, strategic, and institutional factors, many of which are difficult to measure or unavailable in a consistent cross-country format. Although standard controls are included, the relatively low R-squared values across all model specifications underscore the substantial share of unexplained investment variation. This is not a sign of model failure, but a structural reality of this research context.

The included variables also create challenges. The distribution of operating cash flow is notably skewed, particularly in the annual panel, where extreme negative values may disproportionately influence the negative relationship with CAPEX. The volatility measure based on market capitalization changes may also understate true stock market volatility as it is calculated by stock returns at the frequency of the respective panel instead of daily stock returns. The decision to apply a binary irreversibility measure rather than a continuous interaction reflects concerns over mechanical collinearity between CAPEX and the PPE ratio. The use of a global median to split firms by investment irreversibility does not account for structural differences across countries, where fixed asset intensities and capital market constraints may vary substantially.

Moreover, the temporal structure of the model introduces its own limitations. All explanatory variables are lagged relative to the investment outcome to avoid mechanical correlation with financial statement-based controls. This strategy is particularly important given the overlapping components between those variables and CAPEX. However, such lag structures also imply a specific causal direction. In the quarterly panel, where the first lead represents one quarter, this assumption is more plausible. In the annual panel, by contrast, the first lead corresponds to one full year, raising the risk of a simultaneity bias.

Despite these limitations, the results of this study reveal a robust and consistent negative correlation between economic policy uncertainty and corporate investment across a broad set of industrialized and emerging economies. However, several countries deviate from this global pattern. For instance, in the annual panel, statistically significant positive relationships are found in India, the UK, New Zealand and Sweden. South Korea stands out as the only country with many observations but no observed relationship in the quarterly panel, while results for Australia remain inconclusive. These findings underscore the need for deeper national studies.

6 Conclusion

Although economic policy uncertainty and its consequences for corporate investment have attracted considerable scholarly attention, existing evidence remains largely confined to very few countries. This thesis explores this relationship on an unprecedented global scale, by assembling a dual-frequency panel encompassing quarterly data from 23 countries and annual data from 25 countries over more than two decades. In doing so, it addresses a critical gap in the literature by examining the generalizability of the uncertainty-investment relationship across diverse institutional, regulatory, and market environments.

Building on the empirical framework of Gulen and Ion (2016), this study regressed firm-level capital expenditures on the log-transformed index of economic policy uncertainty from Baker et al. (2016), alongside standard firm- and macro-level controls. The design retains their use of firm fixed effects, lead structures, and double-clustered standard errors, while extending the analysis across a much broader set of economies and over both quarterly and annual horizons. This methodology allowed for direct comparison with seminal US- and China-focused results.

Across both frequencies, higher EPU consistently preceded lower investment. That relationship seems to vanish after two to three years, as suggested by Gulen and Ion (2016) for the US, but no observable rebound period was established. Although the negative effect appeared somewhat weaker in emerging markets at the quarterly frequency, the annual panel revealed comparable sensitivity in both industrial and emerging subsamples. A detailed country-by-country examination uncovered substantial heterogeneity. Countries like Spain or Canada displayed particularly strong negative responses, while others showed no discernible effect, and India, the UK, New Zealand and Sweden even exhibited positive associations in the annual analysis. Crucially, firms with greater capital irreversibility proved to be more responsive to uncertainty, except for India and New Zealand. This corroborates real-options theory and underscores the role of sunk-cost intensity in shaping investment behavior.

This thesis makes two primary contributions by documenting these patterns across a wide array of national contexts. Firstly, it demonstrates the robustness of the policy uncertainty effect on corporate investment in many countries other than the US and China, showing that it is relevant in both mature and developing economies. Second, it highlights the importance of country-specific factors that modulate this effect, calling for further research to investigate the sources of cross-country variation. Deeper firm-level investigation through alternative investment measures, including R&D, intangible assets, and firm characteristics could deepen our understanding of the factors through which economic policy uncertainty affects investment and how it is stimulated. This study should particularly call for interest in countries where positive relationships were found.

This work provides policymakers with valuable insights on how companies react to their decisions and communication. It also provides stakeholders involved in investment decisions around the world with knowledge of how others react to policy uncertainty. Most importantly, it offers a structured country overview that highlights where future country-specific research is most needed.

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