Endogenous Policy Uncertainty*

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ABSTRACT

We examine the relationship between economic conditions and a wide range of empirical measures of policy uncertainty. Relatively bad economic conditions predict higher future measures of policy uncertainty. More than half of the time series variation in most uncertainty proxies can be explained by lagged macroeconomic factors. We decompose the indices into two parts: a macro component explained by past economic innovations and a residual component containing shocks that are orthogonal to lagged economic activity. We find that the negative relationship between policy uncertainty proxies and corporate investment is driven solely by the macro component. The results suggest policy uncertainty arises endogenously and that text-based proxies for uncertainty include significant first-moment shocks that confound inferences about the causal impact of policy uncertainty on investment.

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1. Introduction

A large and recent literature has examined the importance of government policy uncertainty on investment, asset pricing, and corporate financial policies. There are different theories of how uncertainty affects firm decisions and asset prices, highlighting different mechanisms and directional predictions. For example, Some theories predict a negative relationship between corporate investment and uncertainty based on irreversible investment and the value of waiting (McDonald and Siegel (1986); Dixit et al. (1994)), some predict a positive relationship between uncertainty and investment due to convexity, growth options, and investment lags (Hartman (1972); Abel (1983); Oi (1961); Bar-Ilan and Strange (1996)). Pástor and Veronesi (2013) predict that policy uncertainty commands a risk premium in asset prices. As policy uncertainty is inherently unobservable, testing theories of the impact of policy uncertainty requires the construction of proxies that capture periods when future government policy becomes relatively unpredictable.

The most significant innovation in the measurement of policy uncertainty in recent years is the "text as data" approach (Gentzkow et al. (2019)). In this approach, researchers analyze digital text from media and other sources to construct different proxies of policy uncertainty. The construction of a time-series proxy is generally based on the relative frequency of researcher-specified terms and phrases related to policy uncertainty contained in the text over time. The approach also allows for more specific types of policy uncertainty, such as overall general economic policy uncertainty using general uncertainty-related keywords (Baker et al. (2016))

or a more specific measure of, for example, monetary policy uncertainty (Husted et al. (2018)) using more focused keywords related to monetary policy.

As an example, the most popular measure of policy uncertainty is the Economic Policy Uncertainty (EPU) index of Baker et al. (2016). The EPU is an index of aggregate policy uncertainty based mainly on textual analysis of the digital archives of ten newspapers counting articles that contains certain policy uncertainty-related key words. Baker et al. (2016) present evidence that EPU index is associated with investment and employment at both the firm and aggregate levels. Since the creation of the EPU index, many studies have used it for predicting corporate decisions and stock returns.[1] The conclusions of these studies is that the direction of causality goes from political uncertainty to firm-level decision making.

Another possibility, which we explore in this paper, is that policy uncertainty is a by-product of declining economic activity rather than the cause of it. There are both practical and theoretical reasons to suggest that policy uncertainty, or uncertainty in general, is endogenously determined by economic conditions. Pastor and Veronesi (2013) model the effect of political uncertainty on stock prices in a general equilibrium framework. In their model, the level of political uncertainty is endogenous and depends on economic activity. When the economy is strong, there is very little political uncertainty because the government is expected to keep current policies. However, when economic conditions are bad, political uncertainty is higher because policy is expected to change but the specific policy is unknown. Liu (2023)

[1]Brogaard and Detzel (2015) show that economic political uncertainty, as measured by EPU index, helps forecast log excess returns on stocks and is priced cross-sectionally. Gulen and Ion (2016) find that corporate investment is negatively and persistently related to economic policy uncertainty. Bonaime et al. (2018) find that policy uncertainty is strongly negatively associated with merger and acquisition activity at the macro and firm level.

models the relationship between the debt-to-GDP ratio and fiscal uncertainty and shows that policy becomes more uncertain as government debt levels increase. Bachmann and Moscarini (2012) and Fostel and Geanakoplos (2012) show that general macroeconomic uncertainty can arise from first moment shocks in the economy. Declines in economic activity lead firms to review their strategies and become more risky, leading to higher aggregate uncertainty/volatility. Bachmann et al. (2013) show empirically that a measure of economic uncertainty based on surveys is more likely a by-product of business cycles and that uncertainty is driven by first-moment economic shocks.

In newspapers and other forms of media, writers may be more likely to write about policies and uncertainty during periods of relatively poor economic conditions compared to when economic conditions are relatively strong. Mullainathan and Shleifer (2005) argue that news produced by the media is equilibrium outcome where consumer preferences, competition, and technology determine what news gets reported. The media is then likely to reflect both the state of the economy (Bybee et al. (2020)) and consumer demand for economic policies to address current economic conditions. Thus, discussion of policy uncertainty in the media may arise endogenously from economic conditions. Discussion of policy uncertainty in the media may also arise as responses to unanticipated political events and shocks, such as debt limit debates in congress, elections, wars, and natural disasters.

The fact that policy uncertainty and proxies for policy uncertainty may be partially endogenous creates a difficulty for identifying the effects of policy uncertainty on firm behavior and asset prices. If a rise in a policy uncertainty proxy comes from a shock that is uncorre-

lated with the other determinants of firm investment, then the causal effect is easier to identify. If, however, the rise in the policy uncertainty proxy arises from a contraction in economic activity, then a negative correlation between the proxy and firm investment is difficult to attribute entirely to heightened policy uncertainty. In this paper, we examine the extent to which macroeconomic conditions cause variation in policy uncertainty proxies and whether this relationship confounds inferences about the causal effect of policy uncertainty on corporate investment.

We examine twelve different text-based proxies for different types of policy uncertainty. We begin by examining common variation in the proxies over time. The proxies are are strongly positively correlated with each other, suggesting a high degree of common variation. We find that for most proxies, more than 50% of the time-series variation in the proxy can be explained by a simple set of lagged macroeconomic factors. The proxies tend to be high following relatively weak economic conditions and low when economic conditions are relatively strong. We also find that, using the news topic attention data of Bybee et al. (2020), the proxies are highly correlated with the occurrence of economy-related topics in the news.

To investigate the impact of macroeconomic conditions the proxies and how this affects inferences about the effects of uncertainty on investment, We decompose each proxy into two components. The first component captures the variation in a proxy that is explained by recent economic conditions. We estimate this component by projecting the each proxy onto several lagged macroeconomic variables: wages, the Consumer Price Index (CPI), employment, industrial production, consumer sentiment, and GDP. We obtain the "macro" component of the

index by obtaining the predicted values from the regression. This is the part of the proxy that is explained by recent macroeconomic conditions. The second component represents the residual from the regression, that is, the part of the index that is orthogonal to macroeconomic conditions. The residual component captures shocks that are unrelated to recent macroeconomic conditions. We find that the residual component still captures many of the large uncertainty shocks over time, such as the 9/11 attacks and the debt ceiling dispute, presidential elections, and other political uncertainty shocks.

We then estimate corporate investment regressions using the raw proxy, the macro component of each proxy, and the residual component containing uncertainty shocks unrelated to macroeconomic conditions. Corporate investment is strongly negatively correlated with the raw indices. This effect is persistent, lasting for four quarters into the future. We then repeat the regressions on the macro and residual components and find that the negative relationship between investment and policy uncertainty is driven entirely by the macro component. The shocks contained in the residual component have no effect on investment in most regressions, and sometimes the coefficient turns positive. Note that the regression on the residual component is equivalent to regressing investment on the raw index and lagged macroeconomic controls. This result demonstrates that the partial endogenous nature of the policy uncertainty proxies confounds inferences about the effect of uncertainty on investment. Policy uncertainty that is not related to macroeconomic conditions does not predict changes in corporate investment. We repeat the analysis for merger volume and stock returns. Merger volume is negatively correlated only with the macro component of the proxies but not the residual

component. Likewise, the macro component predicts future stock returns but the residual component does not.

Note that these results do not necessarily imply that policy uncertainty does not matter for corporate decisions and asset prices. Rather, it highlights that the proxies confound uncertainty and macroeconomic conditions so that a regression on the proxy cannot cleanly identify the causal effect of uncertainty on investment. It could be that the macro component of the index contains real uncertainty, but the effect cannot be distinguished from the effects of macroeconomic conditions. Another possibility is that the direction of causality runs in the other direction in that uncertainty shocks lead to deteriorating macroeconomic conditions or perhaps there is a feedback effect between uncertainty and economic conditions.

To investigate the dynamic relationship between macroeconomic conditions and policy uncertainty proxies, we estimate a series of structural vector autoregressions (SVAR) with event-based inequality constraints. Our results are similar in spirit to Ludvigson et al. (2021a) who find that their proxy for macroeconomic uncertainty appears to be an endogenous response to business cycles, while their proxy for financial uncertainty tends to lead business cycles. Our SVAR results suggest that the direction of causality runs from economic conditions to the uncertainty proxies. That is, economic shocks predict significant and persistent increases in the proxies, but shocks to uncertainty proxies do not predict changes in macroeconomic conditions.

We conduct a battery of robustness checks. Since stock returns and consumer sentiment may contain expectations that are affected by uncertainty, we repeat the analysis with these

two factors omitted. Our main findings remain strong and significant with alternative the macroeconomic factors. We also use different lag structures, using information from 12 lags, nine lags, six lags, and three lags. The results are robust to the choice of number of lags.

Our work is related to several papers investigating the the impact of the economic and institutional setting on inferences based on proxies and changes in law, tax and regulation. Jurado et al. (2015) argue that a large amount of variation in popular uncertainty proxies, including those based on textual analysis, is not driven by uncertainty and construct their own measure of macroeconomic uncertainty. Ludvigson et al. (2021a) examine the possible endogeneity of uncertainty and find that macroeconomic uncertainty appears to be an endogenous response to business cycles while their measure of financial uncertainty leads business cycles. Their results also suggest that policy uncertainty may result from business cycles rather than causing them. Karpoff and Wittry (2018) examine antitakeover laws and find that they are largely determined by institutional and political economy factors which are essentially omitted variables, and controlling for these factors can significantly change inferences about the causal effects of antitakeover laws. Carroll et al. (1994) demonstrate that while the Index of Consumer Sentiment (ICS) has strong predictive power for consumption on its own, the predictive power diminishes significantly when controlling for spending growth. Thus, the correlations between sentiment and spending may reflect that people cut spending and also report low sentiment responses when economic conditions are poor.

We contribute to the literature on the effects of political uncertainty by showing that popular proxies for policy uncertainty confound the effect of first-moment determinants of invest-

ment with second-moment effects. Proxies for policy uncertainty increase when economic conditions are relatively poor. Controlling for lagged economic conditions, the proxies lose their predictive power for investment and stock returns. Therefore, while the proxies do contain useful information about levels of uncertainty and how uncertainty evolves over time, they are not suitable for identifying the effects of uncertainty on investment because they are largely confounded with other important determinants of investment.

The rest of the paper is organized as follows. We introduce the various policy uncertainty proxies and other data using in the analysis in section 2. In section 3, we decompose the EPU index into the macro and residual components and and examine which of these two components drives the predictive power for corporate investment. Section 4 presents the results from the SVAR estimation. We conclude in section 5.

2. Economic Policy Uncertainty Indices

We focus our analysis primarily on text-based proxies for policy uncertainty. The proxies differ mainly on the combination of keywords that are used in the textual analysis to categorize an article as being relevant for a particular type of policy uncertainty (general economic policy, monetary policy, trade policy, etc.) and in the digital archives they use as the source data (such as large US newspapers, local newspapers, international newspapers/magazines, etc.). We also include text-based proxies for economic/political uncertainty such as political polarization, geopolitical risk, and financial stress.

Our main analysis is based on the news-based economic policy uncertainty (EPU_News) index developed by Baker et al. (2016), the world uncertainty index (WUI) by Ahir et al. (2022), the newspaper-based equity market volatility index ($Policy-EMV$) by Baker et al. (2019), the climate policy uncertainty index by Gavriilidis (2021), the partisan conflict ($partisan$) index by Azzimonti and Talbert (2014), and the monetary policy uncertainty index (MPU) by Husted et al. (2018). We also examine the geopolitical risk index (GPR) by Caldara and Iacoviello (2022), the news implied volatility ($NVIX$) by Manela and Moreira (2017), the financial stress indicator (FSI) by Püttmann (2018), the trade policy uncertainty index (TPU) by Caldara et al. (2020), the migration fear index (MFU) and the migration policy uncertainty index ($MiPU$) based on Baker et al. (2016). Appendix B provides a description of these economic policy uncertainty measures.

The text-based indices discussed in this study share a common characteristic: they rely heavily on frequency counts of specific keywords in the digital archive of newspaper articles. Take the EPU index developed by Baker et al. (2016) as an example,[2] It is a weighted average of three components. The first component (EPU_News), with the highest weighting, is based on the frequency of keywords in newspaper articles. It is created by searching the digital archives of ten newspapers and monthly counting articles that include the terms "uncertainty" or "uncertain," "economic" or "economy," and one of several policy-related terms such as "Congress" or "White House." The keyword counts are then adjusted based on newspaper volume across newspapers and time, and normalized to a mean of 101.8 from January 1985

[2]Monthly data for the EPU index and its sub-components can be obtained from the author's website: http://www.policyuncertainty.com/.

through December 2009. The other components of the *EPU* index primarily focus on uncertainty surrounding specific types of economic policies: uncertainty about future tax codes, disagreement among professional forecasters over future consumer prices, and disagreement with respect to government purchases. The first component of the *EPU* index (the news-based policy uncertainty index, *EPU_News*) is the most important component in the final version of Baker et al. (2016) and is also widely used as a measure of policy uncertainty in subsequent empirical studies.[3]

As described in Appendix B, most indices examined in this study rely on counting the frequency of specific combinations of keywords. For example, the monetary policy uncertainty (*MPU*) index (Husted et al., 2018) is based on policy-related, monetary-related, and Federal-related keywords. Another commonly used measure of uncertainty related to economic policy is the polarization(*Partisan*) index developed by Azzimonti and Talbert (2014), which evaluates the frequency of news articles reporting disagreements among federal-level politicians within a given month. Although this index is not directly based on counting specific keywords, it assumes that certain patterns, such as an increased prevalence of disagreements or the use of particular keywords in news articles, indicate higher levels of policy uncertainty. This keyword-related construction scheme is used in most of these text-based measures. All indices used in this study are obtained from the Federal Reserve Bank of Philadelphia or the authors' websites. Table 1 presents summary statistics of the policy uncertainty measures.

[*Insert Table 1 Here*]

[3]In addition to being the component with the highest weighting, the news-based measure is also the most direct proxy for economic policy uncertainty in the model of Pástor and Veronesi (2013).

3. Policy Uncertainty and Macroeconomic Conditions

The primary objective of our analysis is to investigate the correlation between macroeconomic conditions and the temporal variation in proxies for policy uncertainty. Therefore, we first employ a graph to provide a comprehensive overview of the fluctuations in political uncertainty alongside major economic events.

Figure 1 provides a comparison of three text-based indices: the news-based economic policy uncertainty index (EPU_News), the partisan conflict ($Partisan$) index, and the monetary policy uncertainty (MPU) index.[4] The figure highlights some similar patterns between these proxies. We observe that the proxies exhibit spikes during events that we would expect periods of high uncertainty, such as during wars, financial crises, elections, and major terrorist attacks (such as the 9/11 attack). We also see an increase in these proxies following the financial crisis in 2008. We also see these measures share similar fluctuations, suggesting that the proxies are correlated due to similar sources of variation.

[*Insert Figure 1 Here*]

To quantitatively investigate the relationship between textural-based policy uncertainty measures and macroeconomic conditions, we examine the correlation between news attention to policy uncertainty and to economic conditions. To do this, we rely on recent studies that use textual analysis techniques to quantify general attention to economic issues. For example, By-

[4]For brevity, only these indices are reported in this figure, but the comparisons of other indices are comparable.

bee et al. (2020) propose indices as a proxy for attention to economic-related topics in business news, such as "economic growth," "recession," and "bond yields." Bybee et al. (2020) estimate a topic model over the content of the Wall Street Journal articles from 1984 to 2017 and create a series of indices for various topics that precisely monitor economic activities. They find this measure performs well in forecasting macroeconomic consequences. Relying on these topic attention proxies, we examine the correlation between text-based policy uncertainty and economic condition measures.

[*Insert Table 2 Here*]

Table 2 presents the correlation between policy uncertainty measures and the attention given to economic-related topics in business news, as outlined by Bybee et al. (2020). Specifically, our focus is on the monthly reported policy uncertainty indices and business news coverage of topics such as "recession," "economic growth," "job cuts," and "bond yields." We find a strong correlation between policy uncertainty indices and attention to specific economic themes. Notably, the correlation coefficients between attention to recession and EPU_News, $Policy-EMV$, and MPU are 0.5287, 0.5844, and 0.1789, respectively, all of which are statistically significant at the 1% level. These findings suggest that policy uncertainty measures tend to rise with increased attention to adverse economic conditions.

[*Insert Figure 2 Here*]

In addition, Figure 2, which displays scatter plots of attention to the recession/economic growth and news-based EPU (EPU_News) in panel A/B, provides additional evidence that

policy uncertainty tends to be higher when people pay more attention to recession and economic growth. Our findings imply that business news tends to cover more policy-related uncertainties when there is greater attention to economic outlooks.

3.1. Policy Uncertainty and Macroeconomic Conditions

In addition to exploring the correlation between policy uncertainty and business news' attention to economic topics, this section investigates whether macroeconomic conditions can explain the time series variation in uncertainty proxies. We start by regressing each policy uncertainty index on individual macroeconomic variables. Here, the R-squared statistic is regarded as a proxy of the proportion of variation that past macroeconomic variables can explain. Empirically, for each uncertainty proxy, we estimate the following regression:

$$Y_t = a + \sum_{i=1}^{i=L} b_i' X_{t-i} + e_t \tag{1}$$

where variable Y_t represents the policy uncertainty proxy, while X_t denotes the macroeconomic variable of interest. L denotes the number of lags, and e_t represents the residual term. In Panel A of Table 3, we conduct regressions of each policy uncertainty index on individual macroeconomic factors. These factors include *GDP*, the industrial production index (*IndPro*), employment, average employee wage (*Wage*), working hours (*Hour*), consumers' sentiment

(*Sentiment*), the S&P 500 index (*SP*500), federal funds rate (FFR), and the consumer price index (*CPI*). We consider lags of 3, 6, 9, and 12 periods[5] for each macroeconomic variable.

[*Insert Table 3 Here*]

The results in Panel A of Table 3 show the results, where columns denote macroeconomic variables, while rows represent policy uncertainty indices. We find that past macroeconomic factors can explain fluctuations in policy uncertainty indices. Specifically, some macroeconomic factors can explain up to 20% of variation in some policy uncertainty measures. For example, *GDP* in the past year explains 22.6% of variation in PU_News, $Employement$ in the past year explains 25.6% of variations in *CPU*, and *Wage* in the past year explains 38.6% of variations in *Partisan*. All other macroeconomic factors can explain a considerable portion of time-series variations in policy uncertainty measures.

Following this logic, we further introduce four sets of macroeconomic factors to examine the explanatory power of macroeconomic conditions to policy uncertainty indices. We start with variable set 1 consisting only GDP and industrial production index, and column (1) reports the results based on the 3, 6, 9, and 12 lags, respectively. Column (2) augments the variable set 1 with employment, Wage, and hour, while column (3) further augments the variable 2 with consumers' sentiment index, S&P500, and CPI. At last, column (4) examines the explanatory power of the first three main principles of all variables in variable 3.[6]

[5]Here, we consider 3, 6, 9, and 12 lags for monthly reported indices, and 1, 2, 3, and 4 lags for quarterly reported indices.

[6]Our selection of variables on the right-hand side is based on previous studies that have examined the relationship between economic variables and uncertainty, such as (Jurado et al., 2015; Bloom, 2009).

Panel B of Table 3 presents the results based on sets of macroeconomic variables. The first column of Panel B displays the results obtained using variable set 1 to explain the proportion of variations in policy uncertainty indices. The R-squared statistics indicate that a significant proportion of the variations in policy uncertainty indices can be attributed to observable macroeconomic factors. For instance, based on twelve-monthly lags of variable set 1, Equation 1 can explain approximately 41.4%, 25.3%, and 39.7% of the variations in the EPU_News index, the TPU index, and the FSI index, respectively. For variable set 2, the proportions of fluctuation explained by the economic condition in the past year significantly increase, while the proportion of fluctuation explained by twelve lags of variable set 3 is nearly double that of variable set 1. For example, in column (3), we find the R-squared statistics of equation 1 based on twelve lags of variable set 2 increase to 72.3%, 71.3%, and 70.0% for the EPU_News index, the TPU index, and the FSI index, respectively.

In column (4), we use the first three main principals of all the variables in variable set 3 as explanatory variables. We find the first three main principals can explain nearly 30% of the variations in policy uncertainty measures. Results in Table 1 suggest that the fluctuation policy uncertainty measures are strongly associated with past economic conditions.

3.2. Policy Uncertainty Index Decomposition

Based on the regression specification of Equation 1, we decompose each economic policy uncertainty index into two components: the macroeconomic-related component (e.g., PU_Macro) and the residual policy uncertainty component (e.g., $PU\_Residual$). The macroeconomic-

related component is calculated as $a + \sum_{i=1}^{i=12} b_i' X_{t-i}$, which represents the proportion of the policy uncertainty index that can be explained by past macroeconomic conditions. Then, the residual policy uncertainty component (e.g., *PU_Residual*) is set to equal e_t, representing the proportion of the policy uncertainty index unrelated to macroeconomic conditions.

In Figure 3, we present a comparison between the policy uncertainty indices (EPU) and its residual policy uncertainty component (*EPU_Residual*). We find that the residual component of the EPU exhibits fluctuations similar to those of the original policy uncertainty measure in terms of response to shocks. Notably, the macroeconomic component is more persistent and follows the general trend of the indices. In contrast, the residual component still captures large uncertainty shocks, such as wars and crises over time.

[*Insert Figure 3 Here*]

4. Empirical Implications

Examining the impacts of uncertainty on investment requires isolating variation in uncertainty (second-moment impact) from variation in economic conditions that may also affect firm decisions (first-moment impact). As previously discussed, policy uncertainty measures are outcomes of prior economic conditions, potentially leading to significant omitted variable issues in empirical tests relying on these indices. In this section, we address this potential omission by empirically assessing whether the observed correlation between corporate invest-

ment and policy uncertainty is attributed to macroeconomic factors, uncertainty, or a combination of both.

Empirical studies assessing the impact of policy uncertainty typically estimate regressions resembling the following:

$$Y_{i,t+l} = \alpha + \beta Index_t + \theta X_{i,t} + e_{i,t} \tag{2}$$

The dependent variable $Y_{i,t+l}$ represents economic outcomes such as corporate investment. $Index_t$ denotes the economic policy uncertainty index at time t, and $X_{i,t}$ is a vector of control variables.[7] If $Index_t$ has explanatory power to economic activities, the coefficient of β should significantly differ from zero. Based on the results in the previous section, a considerable proportion of $Index_t$ can be explained by past macroeconomic factors, suggesting that economic conditions could confound the causal inference between policy uncertainty and corporate investments. Therefore, a better-specified empirical model should incorporate these omitted variables:

$$Y_{i,t+l} = \alpha + \beta Index_t + \theta X_{i,t} + \gamma O_t + e_{i,t+l} \tag{3}$$

where O_t is a vector of macroeconomic variables that contain first-moment effects on economic outcomes. To quantitatively compare the explanatory power attributable to the first-moment shocks from O_t and the explanatory power of economic policy uncertainty, we de-

[7] Depending on the dependent variables, $X_{i,t}$ comprises various control variables at both the firm level (e.g., firm-level characteristics such as cash flows, Tobin's q, etc.) and controls for macroeconomic conditions (e.g., GDP).

compose $Index_t$ into a macroeconomic variable-related component that related to past macroeconomic conditions (Index_Macro) and a residual policy uncertainty component that unrelated to past economic conditions (Index_Residual). Then, instead of the regression as Equation 3, we run the regression below:

$$Y_{i,t+l} = \alpha + \beta_1 Index\_Macro_t + \beta_2 Index\_Residual_t + \theta X_{i,t} + e_{i,t} \tag{4}$$

where β_1 represents the magnitude of effects from the macroeconomic-related component of economic policy uncertainty indices, that is, the marginal effects from the index that could be attributed to past economic conditions, while β_2 represents the magnitude of marginal effects from the residual component of economic policy uncertainty index, i.e., the effect from "residual" uncertainty.

4.1. Policy Uncertainty and Corporate Investment

In this section, we investigate the role of policy uncertainty in affecting corporate activities, focusing on corporate capital investment and merger and acquisition activities[8]. The theory of investment under uncertainty emphasizes the trade-off between the benefits and costs of delaying investment. One line of theory underscores that if investment projects are (partially) irreversible, firms have the incentive to postpone their investment during periods of high uncertainty (Rodrik, 1991; McDonald and Siegel, 1986; Dixit et al., 1994). However, some other

[8]Here, we proxy for corporate M&A activities using the merger and acquisition expenses from the CMPUSTAT dataset

theories argue the reverse. When investment is completed in stages, uncertainty shocks may lead firms to hasten investment rather than delay (Bar-Ilan and Strange, 1996). Many empirical papers have tested these theories in the context of policy uncertainty and have found evidence supporting the notion that policy uncertainty suppresses corporate investment activities (Gulen and Ion, 2016; Bonaime et al., 2018).

We start by demonstrating the depressing impact of policy uncertainty on investment activities. Empirically, following prior studies, we utilize the quarterly Compustat data to estimate the following specifications:

$$Y_{i,t+l} = a + \beta_1 PU_t + \beta_2 TQ_{i,t} + \beta_3 CF_{i,t} + \beta_4 SG_{i,t} + \beta_5 X_t + e_{i,t} \tag{5}$$

where Y represents corporate investment rates. Additionally, PU denotes the policy uncertainty measure. We also include controls consistent with prior studies, such as Tobin's q, cash flow, sales growth, GDP growth, election indicator, and a set of fiscal and calendar quarter indicators. Furthermore, we incorporate firm-fixed effects to account for unobservable firm-level time-invariant factors that may influence corporate investment. To examine the impact of policy uncertainty on M&As, we replace Y with a dummy that equals one if a company engages in M&A activities during the year and zero otherwise.[9] We also include a series of firm-, industry, and aggregate-level control variables that are commonly used in prior studies

[9]Here, we define a firm engages in M&A activities if a firm has a positive expense on merger and acquisitions during the year.

on M&As (Harford, 2005; Bonaime et al., 2018) to control for factors that may influence the likelihood of M&A activities.[10]

[*Insert Table 4 Here*]

In this study, we examine several widely used policy uncertainty indices as proxies for policy uncertainty, including the news-based economic policy uncertainty index (EPU_News), the world uncertainty index (WUI), the policy-related EMV ($Policy-EMV$), the climate policy uncertainty (CPU), the partisan conflict index ($Partisan$), and the monetary policy uncertainty index (MPU). In panel A of Table 4, columns (1)-(4) present results based on the news-based economic policy uncertainty index (EPU_News), columns (5)-(8) report results based on the world uncertainty index (WUI), and columns (9)-(12) report results based on the policy-related EMV ($Policy-EMV$). In Panel B, we examine the climate policy uncertainty (CPU) in columns (1) to (4), the partisan conflict index ($Partisan$) in columns (5) to (8), and the monetary policy uncertainty index (MPU). In all regressions, we include all control variables, calendar quarters dummies, and firm-level fixed effects.

Results in Panel A and B provide evidence that policy uncertainty measures are negatively associated with corporate investment. For instance, in panel A, columns (1) to (4) present

[10]We include firm-level controls such as firm size (log of total assets by the beginning of the period), ROA, sales growth, book leverage, cash-to-asset ratio, market-to-book ratio, past twelve months returns, and firm-level volatility calculated as return volatility during the last twelve months. We also include industry-level controls, including industry-level economic shock, industry median Q, industry stock returns in the past 36 months, and industry σ of past 36 month returns. Additionally, we control for macroeconomic controls for investment opportunities and macroeconomic conditions, such as the investment opportunities, rate spread, and Shiller's PE ratio. Here, following Bonaime et al. (2018), the investment opportunities indicator is proxied by the first main principal component of the consumer confidence index developed by the University of Michigan, the leading economic indicator by the Conference Board, the Chicago Fed National Activity Index, and the Expected GDP growth from the bi-annual Livingstone Survey of Professional Forecasters.

the outcomes based on the news-based policy uncertainty (EPU_News), with coefficients of -0.061, -0.064, -0.058, and -0.060, all of which are significant at the 1% level. Similarly, columns (5) to (8) report coefficients of the world uncertainty index (WUI) as -0.047, -0.055, -0.048, and -0.053, which are also significant at the 1% level. Additionally, we find that the majority of coefficients on policy uncertainty measures are negatively significant. In Panel C, we examine the impact of policy uncertainty on corporate M&As. Based on the six policy uncertainty measures, we also find a negative relation between policy uncertainty and M&A activities. Overall, consistent with the results reported in previous studies, Table 4 provides evidence that policy uncertainty negatively impacts corporate investment activities.

4.2. Decomposition of Economic Policy Uncertainty Indices

In the previous section, we demonstrated that policy uncertainty has a depressing impact on corporate investment and M&As based on various policy uncertainty measures. However, as Table 3 suggests, the depressing impacts of policy uncertainty indices could be driven by first-moment economic shocks. Therefore, the negative coefficient on policy uncertainty measures in Table 4 cannot be interpreted as a causal effect of policy uncertainty on corporate investment and M&As.

In the previous section, we provide evidence supporting the negative impact of policy uncertainty on corporate capital investment and M&As using various policy uncertainty measures. However, as indicated in Table 3, the observed depressing effects of policy uncertainty indices might be attributed to first-moment economic shocks. Therefore, interpreting

the negative coefficients on policy uncertainty measures in Table 4 as a causal effect of policy uncertainty on corporate investment and M&As requires caution.

This section aims to further examine the impact of policy uncertainty by decomposing policy uncertainty indices into their macro and residual components, and then examining their impact separately. Suppose the negative relationship is predominantly driven by the residual component, which is inherently orthogonal to lagged macroeconomic conditions. In that case, concerns about omitted variables are alleviated as the variation in the residual component represents cleaner shocks to policy uncertainty. However, suppose the macro component primarily dominates the negative relationship. In that case, it is plausible that the negative correlation is driven by first-moment macroeconomic shocks that simultaneously lead to higher policy uncertainty and depressed corporate investment activities.

Empirically, rather than relying on the regression specification of Equation 5, we conduct regressions using the specification of Equation 6, where *PU* is replaced by its macroeconomic-related component and residual component. Specifically, we decompose each policy uncertainty measure into components, following the method outlined in Section 3.2. Then, we substitute the original policy uncertainty index in Equation 5 with its macroeconomic-related component and residual component as below:

$$Y_{i,t+l} = a + \beta_1 PU\_Macro_t + \beta_2 PU\_Residual_t + \beta_3 TQ_{i,t} + \beta_4 CF_{i,t} + \beta_5 SG_{i,t} + \beta_6 X_t + e_{i,t} \quad (6)$$

where PU_Macro_t represents the macroeconomic-related component of the policy uncertainty index, and $PU\_Residual_t$ denotes the residual component. All other variables are the same as defined in Equation 5. For this decomposition, we perform the decomposition procedure using twelve monthly lags of the set of variables consisting of *Wage*, *CPI*, *Employment*, *IndPro*, *Sentiment*, and *GDP* to perform policy uncertainty index decomposition.[11] The same approach is employed to examine the role of PU_Macro_t and $PU\_Residual_t$ in determining corporate M&As.

Table 5 presents the results. Panel A and B present the results regarding corporate investments. In Panel A, we use the news-based economic policy uncertainty index (EPU_News) in columns (1)-(4), the world uncertainty index (WUI) in columns (5)-(8), and the policy-related EMV ($Policy-EMV$) in columns (9)-(12) as the main proxies for policy uncertainty. In Panel B, we examine the climate policy uncertainty (CPU) in columns (1) to (4), the partisan conflict index ($Partisan$) in columns (5) to (8), and the monetary policy uncertainty index (MPU).

[*Insert Table 5 Here*]

In Table 5, we observe that the coefficients on the macroeconomic-related components consistently dominate the depressive impact of policy uncertainty. Taking EPU_News as an example, columns (1) to (4) of Panel A presents the results. The coefficients on its macroeconomic component, denoted as EPU_News_Macro, are -0.092, -0.093, -0.093, and -0.079, all of which are significant at the 1% level. Conversely, the coefficients on the residual com-

[11] In the robustness section, we present the results based on macroeconomic factors that are only based on measurement. We also use other combinations of macroeconomic variables, and the results are qualitatively the same.

ponent $EPU\_News_Residual$ are 0.005, 0.002, 0.008, and -0.006, all of which are either statistically insignificant or of much smaller magnitudes. This pattern holds consistently for the macroeconomic-related components of WUI and $Policy - EMV$. Specifically, the macro-related components of WUI and $Policy - EMV$ are statistically negative, while the residual components are either statistically insignificant or significantly smaller in magnitude. Panel B further supports these findings, as the results based on CPU, $Partisan$, and MPU provide additional evidence that macroeconomic-related components play a dominant role in the dampening impact of policy uncertainty on corporate investments.

Panel C of Table 5 investigates the influence of macroeconomic-related components and residual components of policy uncertainty indices on corporate M&As. In line with our findings in Panels A and B, the results in Panel C offer evidence that macroeconomic-related components dominate the dampening impact of policy uncertainty on M&A activities. In summary, Table 5 provides evidence that the first-moment impact of macroeconomic conditions drives the dampening effect we find in the specification as Equation 5.

An alternative approach to examine the role of macroeconomic conditions is to perform regressions using the full model as Equation 3. Specifically, using the investment model as an example, we augment the model in Equation 5 with lagged macroeconomic variables (Z). Through regressions based on this augmented model, we can investigate whether the explana-

tory power of the policy uncertainty measures is partially influenced by macroeconomic conditions.[12]

$$Y_{i,t+l} = a + \beta_1 PU_t + \beta_2 TQ_{i,t} + \beta_3 CF_{i,t} + \beta_4 SG_{i,t} + \beta_5 X_t + \beta_6 Z_t + e_{i,t} \tag{7}$$

where Z represents the set of lagged macroeconomic variables. All other variables are defined the same as in previous sections. We perform this analysis using four quarterly lags of macroeconomic variables, while the results based on three or two lagged macroeconomic variables are qualitatively the same.

Table 6 presents the results. Panel A and B display results on corporate investment, while Panel C presents results on M&As. We observe that coefficients on all policy uncertainty measures become either statistically insignificant or of substantially smaller magnitude compared to those in Table 4. These findings align with those in Table 5, where the explanatory power of economic uncertainty indices is mainly driven by the component related to past macroeconomic conditions. In conclusion, these results raise concerns about using text-based indices to capture exogenous variation in economic policy uncertainty, particularly in empirical studies that seek to draw causal inferences between economic policy uncertainty and its economic outcomes.

[*Insert Table 6 Here*]

[12]The full model for the M&A regressions is similar. We augment the M&A regression model with lagged macroeconomic conditions Z.

However, it is important to note that our results do not imply that policy uncertainty is not a crucial determinant of corporate investment. Our findings suggest only that policy uncertainty is confounded with macroeconomic conditions. It is possible that the macro component contains both genuine policy uncertainty and macroeconomic variation. Our results only indicate that the confounding problem is significant, and the indices, on their own, do not provide causal evidence that policy uncertainty depresses corporate investment. Nor does the lack of correlation between the residual component and corporate investment necessarily imply that policy uncertainty is unimportant. While the residual component is not confounded with macroeconomic conditions, it could be that we simply lack power and don't have enough policy uncertainty shocks in our data to measure a causal relationship between investment and policy uncertainty shocks.

4.3. Aggregate Capital Investment and Economic Policy Uncertainty

Previous sections have demonstrated that causal inferences relying on text-based economic policy uncertainty measures are compromised by the fact that these measures can be predicted by observable macroeconomic conditions. We have shown that text-based economic uncertainty measures are associated with depressed corporate investments in the subsequent periods. To understand the dynamic relationship between economic policy uncertainty and corporate investment, we employ VARs at the aggregate level and construct impulse response functions (IRFs) to qualitatively illustrate how corporate investments are affected by shocks to economic policy uncertainty. Specifically, we estimate a VAR model using the news-based

EPU index, consumers' sentiment, the cross-sectional mean of Tobin's q, operating cash flow to total assets, sales growth, and the aggregated corporate investment. The VAR is based on quarterly data during 1985Q1 and 2022Q3, with four lags.[13]

The IRFs are presented in Figure 4. We find that, at the aggregate level, a one-unit shock to policy uncertainty, as measured by the News-based EPU index, significantly depresses capital investment for up to four quarters into the future. However, by conducting VARs using the macroeconomic-related component and the residual component of News-based EPU, we find that the IRFs based on shocks to the macroeconomic-related component have a significantly negative impact on capital investments for up to four quarters, while no such effect is observed from shocks to the residual component. In panel B and C, we observe a similar pattern in the total number of firms that perform M&A activities and the total value of M&As. These results further provide evidence that macroeconomic factors may compromise the causal inference based on text-based policy uncertainty measures.

[*Insert Figure 4 Here*]

Additionally, we present regression results at the aggregate level to complement the overall Impulse Response Functions (IRFs). Specifically, we aggregate corporate investment, M&As, and all firm-level controls to the aggregate level, then conduct regressions following the specification below:

$$Y_{t+l} = a + \beta_1 PU_t + \beta_2 \Omega_t + \beta_3 X_t + e_t \tag{8}$$

[13]The results of using eight lags are qualitatively the same.

where PU represents the policy uncertainty measure, Y denotes the average investment rate, the total number of firms performing M&As, and the total value of M&As during the year. Ω represents the average firm-level controls during the year, which are calculated as their averages across the economy in the year.

In Table 7, columns (1), (3), and (4) present the results based on aggregate investment, the total number of M&As, and the total value of M&As, respectively. We observe negatively significant coefficients on policy uncertainty, indicating a significant decline in corporate capital investment and M&As following increased policy uncertainty. However, in columns (2), (5), and (6), where PU is replaced with its macroeconomic-related component and residual component, we find that the depressive impact is primarily driven by the macroeconomic-related component. This further supports our earlier findings in the aggregate IRFs.

4.4. Robustness Analysis

4.4.1. Results based on Measurements Only

So far, we have found evidence that policy uncertainty indices are strongly correlated with past economic conditions, confounding the causal inference of empirical findings based on these measures. However, a concern with the above results may be driven by the inclusion of forward-looking macroeconomic factors that incorporate economic prospects, such as Consumer's sentiment and S&P500.

To address this concern, we dropped forward-looking macroeconomic factors from variable set 3 and repeated the analysis presented in Table 5 and Table 6. We find that with only measurement factors, the depressing impacts of policy uncertainty are still driven by their macroeconomic-related components. These findings further confirm the robustness of our results. In unreported results, we find that the results are robust to different combinations of macroeconomic variables and different numbers of lags used to construct the macro and residual components.

[*Insert Table 8 and Table 9 Here*]

4.4.2. Results Based on a Panel VAR framework

Building on the results from pooled regressions using panel data and Impulse Response Functions (IRFs) derived from Vector Autoregressive (VAR) models with aggregated data, our findings suggest that policy uncertainty predominantly hampers corporate investments through its macroeconomic-related component. In this analysis, we employ Panel Vector Autoregressive (PVAR) models, which augment panels with lagged variables to capture the relationship between policy uncertainty and corporate investment. The advantage of using a PVAR model lies in its capability to allow VARs to integrate information from the cross-sectional dimension.

Empirically, we estimate a PVAR model with a structure similar to the VAR model discussed in the above section. The results of the IRFs are presented in Table 5. The top panel

illustrates the response of corporate investment to a shock in policy uncertainty. Our findings indicate that a one-standard-deviation increase in EPU corresponds to a decline in corporate investment lasting approximately 10 quarters. The bottom panel displays the response of corporate investment to shocks in macroeconomic-related policy uncertainty and residual uncertainty, respectively. Consistent with our earlier findings, we find that the decline in corporate investment is primarily driven by the macroeconomic-related component of EPU.

[*Insert Figure 5 Here*]

5. Further Analysis

5.1. Lead-lag Effect between Macroeconomic Condition and Policy Uncertainty

Our study has thus far presented compelling evidence linking fluctuations in policy uncertainty measures to observable macroeconomic variables. In line with existing empirical research focused on understanding the impact of policy uncertainty (Gulen and Ion, 2016), we employ a recursive framework within the Vector Autoregressive (VAR) paradigm to explore the dynamic relationship between policy uncertainty and investment. While Impulse Response Functions (IRFs) derived from VARs are valuable for quantifying the effects of policy uncertainty and macroeconomic variables, the VAR's underlying assumption, where variables respond to others with lags, raises concerns about contemporaneous effects. Specifically, the

VAR assumption precludes the scenario in which policy uncertainty serves as an exogenous driving force on the economy, thereby co-varying contemporaneously with macroeconomic factors. Consequently, we introduce Structural VAR (SVAR) models that permit the consideration of the contemporaneous impact of policy uncertainty alongside first-moment macroeconomic determinants. With this model, we aim to address the question: Is policy uncertainty a source of fluctuation in macroeconomic conditions or a consequence of them?

Empirically, we utilize a Structural Vector Autoregressive (SVAR) model incorporating event-based constraints to analyze the lead-lag dynamics between policy uncertainty and macroeconomic factors. Our model comprises three key indicators: macroeconomic growth (GDP), a financial market proxy ($S\&P500$), and a policy uncertainty proxy (EPU), denoted as $X_t = (GDP_t, EPU_t, S\&P500_t)$. Building on established literature (Mertens and Ravn, 2014; Ludvigson et al., 2021b), we employ two sets of shock-based constraints to refine admissible solutions for a more accurate fit of the SVAR model: first, event constraints align identified shocks with historical data properties, and second, an external variable constraint necessitates a nonzero correlation between policy uncertainty and specific variables.

Constructing Impulse Response Functions (IRFs) based on the SVAR model ($X_t = (GDP_t, EPU_t, S\&P500_t)$) allows us to quantitatively examine the response of variables to shocks in the system. In Figure 6, we construct an SVAR of $X = (GDP, PU, S\&P500)'$, where GDP, PU, and $S\&P500$ represent GDP growth, policy uncertainty (as measured by EPU), and the monthly return of the S&P500, respectively. We impose restrictions such that innovations to macroeconomic variables in the SVAR fall below the 85% of possible values during the financial crisis be-

tween 2007 and 2009, the debt ceiling crisis in 2011, and the Covid-19 pandemic in 2020. We also restrict that policy uncertainty is negatively correlated with market returns.[14]

Panel A presents the resulting Impulse Response Functions (IRFs). The upper panels illustrate how policy uncertainty responds to shocks in *GDP* and *S&P*500. The IRFs reveal that positive shocks to *GDP* and *S&P*500 lead to a decrease in policy uncertainty, persisting for approximately 30 periods. In contrast, the lower panels display the IRFs for shocks to policy uncertainty. These results indicate that *GDP* and *S&P*500 do not exhibit significant changes following shocks in policy uncertainty. These findings lend support to the hypothesis that shifts in macroeconomic conditions precede fluctuations in policy uncertainty.

In panel B, we conduct an analysis based on an alternative SVAR system $X = (IndPro, PU, FFR)$, where $IndPro$, EPU, and FFR represent the industrial production index, policy uncertainty, and federal funds rates, respectively. Employing the same restrictions on macroeconomic variables, the resulting IRFs suggest that positive shocks to $IndPro$ and FFR suppress policy uncertainty, while shocks to EPU do not elicit statistically significant alterations in $IndPro$ and FFR. These results consistently indicate that favorable macroeconomic conditions ($IndPro$ and FFR) lead to a reduction in policy uncertainty, but the reverse does not hold.

[*Insert Figure 6 Here*]

Collectively, these findings imply that policy uncertainty indices derived from textual analysis encompass notable first-moment shocks originating from macroeconomic influences. A

[14] We restrict innovations to macroeconomic variables to be below their fifteenth percentile value, and using twenty-fifth percentile or tenth percentile cutoffs yields similar results.

considerable proportion of the fluctuations in these indices can be forecasted using observable macro variables. One plausible rationale is that PU_Macro and $PU_Residual$ encapsulate distinct sets of information: the macroeconomic-related component of a policy uncertainty index mirrors the information set associated with historical macroeconomic conditions, while the residual policy uncertainty encapsulates unanticipated fluctuations in genuine policy uncertainty.

5.2. Asset Redeployability and Corporate Investment

Previous studies examining the impact of uncertainty on corporate investment often highlight the moderating effect of asset redeployability. According to real options theory, firms may choose to postpone investments during periods of high uncertainty, particularly when investment projects are irreversible (McDonald and Siegel, 1986; Dixit et al., 1994). Subsequent empirical studies using various measures for asset irreversibility have found evidence that asset irreversibility and redeployability mitigate the negative effects of uncertainty (Gulen and Ion, 2016; Kim and Kung, 2017). Therefore, a natural follow-up question is whether the moderating effect of asset deployability is associated with its interaction with macroeconomic-related uncertainty or its correlation with the residual uncertainty component.

To investigate this question, we augment the original specification with a measure for asset redeployability and its interactions with the macro-related and residual components of policy uncertainty as follows:

$$Y_{i,t+l} = a + \beta_1 PU\_Macro_t * Redeployability + \beta_2 PU\_Macro_t + \beta_3 PU\_Residual_t * Redeployability + \beta_4 PU\_Residual_t + \beta_5 Redeployability + \beta_6 TQ_{i,t} + \beta_7 CF_{i,t} + \beta_8 SG_{i,t} + \beta_9 X_t + e_t \tag{9}$$

where Y represents corporate investment rates, PU_Macro and $PU\_Residual$ denote the macroeconomic-related component and residual component of policy uncertainty measures. $Redeployability$ represents asset redeployability, which we construct based on the usability of assets across all industries following Kim and Kung (2017). To construct the macroeconomic-related component and the residual uncertainty component, we perform the regression $Y_t = a + \sum_{i=1}^{i=12} b_i' X_{t-i} + e_t$ based on variable set 1, while results based on variable set 2 are comparable. The results are presented in Table 11.

Table 11 presents the results. Panel A focuses on news-based EPU (columns (1) to (4)), the world uncertainty index (columns (5) to (8)), and the policy-EMV index (columns (9) to (12)). Panel B examines the climate policy uncertainty index (columns (1) to (4)), partisan conflict index (columns (5) to (8)), and the monetary policy uncertainty index (columns (9) to (12)).

The variables of interest in this analysis are the interaction between the macroeconomic-related component and asset redeployability, and the interaction between the residual uncer-

tainty component and asset redeployability. Our results indicate that the coefficients on the interaction between the macroeconomic-related component and asset redeployability are statistically significant for most policy uncertainty measures. In contrast, the coefficients on the interaction between the residual uncertainty component and asset redeployability are all statistically insignificant. These findings further support the argument that the "macro" component of policy uncertainty measures are the driving factor that dampens corporate investment.

[*Insert Table 11 Here*]

6. Conclusion

Innovations in textual analysis have allowed for the construction of proxies for policy uncertainty, based largely on digital text from global media sources. These proxies provide important insights into how perceptions of policy uncertainty change over time. This paper examines the time-series variation in these text-based proxies for policy uncertainty. We find that between 50% and 70% of the variation in the policy uncertainty measures can be explained by lagged macroeconomic conditions, suggesting that a large portion of policy uncertainty is endogenously determined, consistent with Pástor and Veronesi (2013).

Our results suggest that while these proxies contain valuable information about policy uncertainty, they are not suitable for identifying causal effects of uncertainty on firm decisions and asset prices. Statistical inferences about the effect of policy uncertainty are confounded because economic conditions predict future changes in the uncertainty proxies. We decom-

pose the proxies into two components, one explained by recent macroeconomic activity and the other containing variation orthogonal to economic conditions. The macro component is strongly, negatively correlated with corporate investment, merger volume, and stock returns, while the orthogonal component does not predict changes in investment, mergers or returns. In other words, the negative effect of uncertainty disappears when the regression includes lagged macroeconomic conditions as control variables. Note that this does not imply that policy uncertainty is not important. It does however mean that inferences based on the proxies are confounded by other important first-moment determinants of investment and returns.

References

Abel, A. B. (1983). Optimal investment under uncertainty. *American Economic Review*, 73(1):228–233.

Ahir, H., Bloom, N., and Furceri, D. (2022). The world uncertainty index. Technical report, National Bureau of Economic Research.

Azzimonti, M. and Talbert, M. (2014). Polarized business cycles. *Journal of Monetary Economics*, 67:47–61.

Bachmann, R., Elstner, S., and Sims, E. R. (2013). Uncertainty and economic activity: Evidence from business survey data. *American Economic Journal: Macroeconomics*, 5(2):217–249.

Bachmann, R. and Moscarini, G. (2012). Business cycles and endogenous uncertainty. *working paper*.

Baker, S. R., Bloom, N., and Davis, S. J. (2016). Measuring economic policy uncertainty. *The Quarterly Journal of Economics*, 131(4):1593–1636.

Baker, S. R., Bloom, N., Davis, S. J., and Kost, K. J. (2019). Policy news and stock market volatility. Working paper, National Bureau of Economic Research.

Bar-Ilan, A. and Strange, W. C. (1996). Investment lags. *The American Economic Review*, 86(3):610–622.

Bloom, N. (2009). The impact of uncertainty shocks. *Econometrica*, 77(3):623–685.

Bonaime, A., Gulen, H., and Ion, M. (2018). Does policy uncertainty affect mergers and acquisitions? *Journal of Financial Economics*, 129(3):531–558.

Brogaard, J. and Detzel, A. (2015). The asset-pricing implications of government economic policy uncertainty. *Management Science*, 61(1):3–18.

Bybee, L., Kelly, B. T., Manela, A., and Xiu, D. (2020). The structure of economic news. Technical report, National Bureau of Economic Research.

Caldara, D. and Iacoviello, M. (2022). Measuring geopolitical risk. *American Economic Review*, 112(4):1194–1225.

Caldara, D., Iacoviello, M., Molligo, P., Prestipino, A., and Raffo, A. (2020). The economic effects of trade policy uncertainty. *Journal of Monetary Economics*, 109:38–59.

Carroll, C., Fuhrer, J. C., and Wilcox, D. W. (1994). Does consumer sentiment forecast household spending? if so, why? *American Economic Review*, 84(5):1397–1408.

Dixit, R. K., Dixit, A. K., and Pindyck, R. S. (1994). *Investment under uncertainty*. Princeton University Press.

Fostel, A. and Geanakoplos, J. (2012). Why does bad news increase volatility and decrease leverage? *Journal of Economic Theory*, 147(2):501–525.

Gavriilidis, K. (2021). Measuring climate policy uncertainty. *Available at SSRN 3847388*.

Gentzkow, M., Kelly, B., and Taddy, M. (2019). Text as data. *Journal of Economic Literature*, 57(3):535–574.

Gulen, H. and Ion, M. (2016). Policy uncertainty and corporate investment. *The Review of Financial Studies*, 29(3):523–564.

Harford, J. (2005). What drives merger waves? *Journal of financial economics*, 77(3):529–560.

Hartman, R. (1972). The effects of price and cost uncertainty on investment. *Journal of Economic Theory*, 5(2):258–266.

Husted, L., Rogers, J., and Sun, B. (2018). Uncertainty, currency excess returns, and risk reversals. *Journal of International Money and Finance*, 88:228–241.

Jurado, K., Ludvigson, S. C., and Ng, S. (2015). Measuring uncertainty. *American Economic Review*, 105(3):1177–1216.

Karpoff, J. M. and Wittry, M. D. (2018). Institutional and legal context in natural experiments: The case of state antitakeover laws. *Journal of Finance*, 73(2):657–714.

Kim, H. and Kung, H. (2017). The asset redeployability channel: How uncertainty affects corporate investment. *The Review of Financial Studies*, 30(1):245–280.

Liu, Y. (2023). Government debt and risk premia. *Journal of Monetary Economics*, 136:18–34.

Ludvigson, S. C., Ma, S., and Ng, S. (2021a). Uncertainty and business cycles: Exogenous impulse or endogenous response. *American Economic Journal: Macroeconomics*, 13(4):369–410.

Ludvigson, S. C., Ma, S., and Ng, S. (2021b). Uncertainty and business cycles: exogenous impulse or endogenous response? *American Economic Journal: Macroeconomics*, 13(4):369–410.

Manela, A. and Moreira, A. (2017). News implied volatility and disaster concerns. *Journal of Financial Economics*, 123(1):137–162.

McDonald, R. and Siegel, D. (1986). The value of waiting to invest. *Quarterly Journal of Economics*, 101(4):707–727.

Mertens, K. and Ravn, M. O. (2014). A reconciliation of svar and narrative estimates of tax multipliers. *Journal of Monetary Economics*, 68:S1–S19.

Mullainathan, S. and Shleifer, A. (2005). The market for news. *American Economic Review*, 95(4):1031–1053.

Oi, W. Y. (1961). The desirability of price instability under perfect competition. *Econometrica*, 29(1):58–64.

Pástor, L. and Veronesi, P. (2013). Political uncertainty and risk premia. *Journal of Financial Economics*, 110(3):520–545.

Püttmann, L. (2018). Patterns of panic: Financial crisis language in historical newspapers. *Available at SSRN 3156287*.

Rodrik, D. (1991). Policy uncertainty and private investment in developing countries. *Journal of Development Economics*, 36(2):229–242.

Table 1
Summary Statistics

This table presents summary statistics for the main variables used in this study. Panel A presents summary statistics of macroeconomic variables, while Panel B displays summary statistics of firm-level variables. We mainly focus on the economic policy uncertainty (EPU and EPU_News) index (Baker et al., 2016), the polarization (*Partisan*) index (Azzimonti and Talbert, 2014), the geopolitical risk index (*GPR*) (Caldara and Iacoviello, 2022), the monetary policy uncertainty index (MPU) (Husted et al., 2018), the climate policy uncertainty (CPU) Gavriilidis (2021), the news implied volatility ($NVIX$) (Manela and Moreira, 2017), the financial stress indicator (FSI) (Püttmann, 2018), the trade policy uncertainty index (TPU) (Caldara et al., 2020), the US equity market volatility index ($Policy-EMV$) (Baker et al., 2019), the migration policy uncertainty index ($MiPU$), the world uncertainty index (WUI) (Ahir et al., 2022), and the migration fear index (MFU) based on Baker et al. (2016). The sample period covers from January 1985 to September 2022, except for $NVIX$, which concludes in March 2016, FSI, which concludes in December 2016, and CPU which begins April 1987.

VARIABLES	N	Mean	SD
Panel A: Macroeconomic Variables			
EPU	453	114.8	39.78
News-EPU	453	122.4	57.43
Partisan	453	110.7	33.96
GPR	453	100.4	48.15
MPU	453	114.0	62.08
CPU	426	100.2	55.72
NVIX	374	24.48	5.998
FSI	384	101.1	0.794
TPU	453	44.62	34.78
EMV	453	19.89	8.144
Policy-EMV	453	9.623	4.129
MiPU	393	165.0	141.8
WUI	151	0.162	0.155
MFU	131	110.3	40.68
Panel B: Firm-level Variables			
Investment(Capx/Lagged Total Assets)	378,410	0.016	0.021
TQ	378,410	1.988	1.580
CF	378,410	0.008	0.058
SG	378,410	0.200	0.699
PPE (PPE/Lagged Total Assets)	378,410	0.282	0.239

Table 2
Correlation Between Topics Attention and Economic Policy Uncertainty

This table presents the correlations between policy uncertainty measures and business attention on topics in news articles (Bybee et al., 2020). Our main focus is on the monthly reported policy uncertainty measures used in this study and indices that measure business news' attention to economic-related topics, such as "recession," "economic growth," "job cuts," "bond yields," etc. We restrict the sample period to between January 1985 and June 2017 to match the sample period of the topic attention. Asterisks ($*$) indicate significance at the 1% level.

	EPU	News-EPU	Partisan	EMV	MPU	Recession	Growth	JobCuts	BondYields	Elections	FinancialCrisis
EPU	1										
News-EPU	0.9131*	1									
Partisan	0.3013*	0.3463*	1								
EMV	0.3469*	0.4825*	-0.1368*	1							
MPU	0.3644*	0.5244*	0.2323*	0.2606*	1						
Recession	0.4437*	0.5287*	-0.0479	0.5844*	0.1789*	1					
Growth	0.4086*	0.4226*	0.3461*	0.1860*	0.105	0.5477*	1				
JobCuts	0.2943*	0.2395*	0.1445*	-0.110	-0.0512	0.2160*	0.2545*	1			
BondYields	0.2644*	0.3444*	0.5620*	0.117	0.2039*	0.2427*	0.5113*	0.127	1		
Elections	0.1932*	0.2699*	0.4061*	0.114	0.2335*	0.2734*	0.3436*	-0.0419	0.3706*	1	
FinancialCrisis	0.4440*	0.4130*	0.2590*	0.3590*	-0.0247	0.6744*	0.6208*	0.124	0.4592*	0.4138*	1

Table 3
Policy Uncertainty Measures and Macroeconomic Factors

This table presents the results of the regression analysis in which policy uncertainty measures are regressed on macroeconomic variables using the specification as follows: $Y_t = a + \sum_{i=1}^{i=L} b_i' X_{t-i} + e_t$, where Y_t is the policy uncertainty measure, X_t represents macroeconomic variables, L is the number of lags included in the regression, and e_t is the residual.

The reported R-squared statistics represent the variations explained by the macroeconomic variables. Policy uncertainty measures presented in this table are the economic policy uncertainty (EPU and EPU_News) index, the monetary policy uncertainty index (MPU), the trade policy uncertainty index (TPU), the financial stress indicator (FSI), the geopolitical risk index (GPR), the polarization ($Partisan$) index, the news implied volatility ($NVIX$), the US equity market volatility index ($Policy-EMV$), the climate policy uncertainty (CPU), the world uncertainty index (WUI), the migration policy uncertainty index ($MiPU$), and the migration fear index (MFU).

In Panel A performs regressions of each policy uncertainty index on individual macroeconomic factors, with lags of 3, 6, 9, and 12 periods. Panel B performs the same regressions based on sets of macroeconomic variables. Variable set 1 consisting only GDP and industrial production index, and column (1) reports the results based on the 3, 6, 9, and 12 lags, respectively. Column (2) augments the variable set 1 with employment, Wage, and hour, while column (3) further augments the variable 2 with consumers' sentiment index, S&P500, and CPI. At last, column (4) examines the explanatory power of the first three main principles of all variables in variable 3.

Panel A: Explanatory power of individual indicators

Variables	Number of lags	GDP	IndPro	Employment	Wage	Hour	Sentiment	SP500	FFR	CPI
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
EPU	3	0.082	0.041	0.048	0.119	0.021	0.264	0.069	0.191	0.089
	6	0.107	0.082	0.095	0.125	0.022	0.266	0.097	0.209	0.096
	9	0.141	0.119	0.152	0.137	0.025	0.269	0.110	0.228	0.104
	12	0.160	0.141	0.183	0.146	0.028	0.271	0.121	0.248	0.114
EPU_News	3	0.179	0.101	0.137	0.219	0.009	0.142	0.202	0.240	0.185
	6	0.196	0.135	0.172	0.224	0.024	0.150	0.241	0.251	0.188
	9	0.217	0.159	0.211	0.238	0.038	0.154	0.251	0.263	0.194
	12	0.226	0.172	0.228	0.241	0.046	0.161	0.256	0.269	0.202
MPU	3	0.094	0.067	0.106	0.100	0.063	0.033	0.159	0.042	0.106
	6	0.096	0.070	0.110	0.123	0.078	0.065	0.168	0.049	0.122
	9	0.117	0.081	0.131	0.141	0.087	0.096	0.178	0.062	0.131
	12	0.128	0.082	0.136	0.143	0.089	0.107	0.181	0.071	0.139
TPU	3	0.024	0.000	0.022	0.037	0.063	0.039	0.039	0.010	0.028
	6	0.030	0.000	0.024	0.041	0.069	0.048	0.041	0.011	0.035
	9	0.034	0.006	0.029	0.049	0.087	0.055	0.048	0.014	0.038
	12	0.035	0.009	0.033	0.052	0.105	0.065	0.053	0.014	0.040
FSI	3	0.011	0.068	0.215	0.062	0.200	0.013	0.105	0.097	0.033
	6	0.071	0.073	0.216	0.137	0.214	0.024	0.152	0.150	0.037
	9	0.081	0.079	0.217	0.187	0.218	0.047	0.161	0.196	0.051
	12	0.088	0.084	0.219	0.241	0.220	0.110	0.173	0.240	0.061

Table Continued:

Variables	Number of lags	GDP (1)	IndPro (2)	Employment (3)	Wage (4)	Hour (5)	Sentiment (6)	SP500 (7)	FFR (8)	CPI (9)
GPR	3	0.000	0.003	0.000	0.011	0.060	0.039	0.011	0.022	0.004
	6	0.000	0.006	0.001	0.020	0.067	0.042	0.024	0.026	0.020
	9	0.002	0.008	0.002	0.021	0.077	0.049	0.057	0.037	0.029
	12	0.004	0.011	0.002	0.023	0.079	0.056	0.075	0.040	0.034
Partisan	3	0.177	0.094	0.141	0.273	0.274	0.024	0.133	0.235	0.183
	6	0.190	0.108	0.169	0.341	0.277	0.047	0.156	0.248	0.191
	9	0.196	0.113	0.175	0.374	0.286	0.059	0.174	0.264	0.202
	12	0.206	0.119	0.182	0.386	0.294	0.071	0.186	0.282	0.211
NVIX	3	0.063	0.150	0.192	0.085	0.023	0.140	0.094	0.152	0.084
	6	0.186	0.166	0.191	0.086	0.058	0.140	0.133	0.176	0.085
	9	0.200	0.170	0.195	0.099	0.074	0.141	0.147	0.185	0.088
	12	0.216	0.172	0.196	0.121	0.080	0.145	0.155	0.198	0.089
Policy-EMV	3	0.042	0.088	0.080	0.058	0.014	0.012	0.217	0.033	0.053
	6	0.044	0.087	0.084	0.068	0.028	0.029	0.258	0.045	0.054
	9	0.041	0.086	0.088	0.073	0.045	0.041	0.262	0.058	0.052
	12	0.043	0.082	0.089	0.078	0.050	0.070	0.263	0.062	0.052
CPU	3	0.309	0.129	0.235	0.353	0.022	0.106	0.285	0.171	0.328
	6	0.310	0.135	0.236	0.360	0.034	0.110	0.294	0.176	0.349
	9	0.311	0.149	0.249	0.386	0.046	0.115	0.295	0.177	0.364
	12	0.311	0.165	0.256	0.402	0.062	0.120	0.297	0.182	0.376
WUI	3	0.191	0.163	0.184	0.195	0.011	0.013	0.140	0.151	0.185
	6	0.193	0.171	0.181	0.195	0.025	0.013	0.174	0.156	0.202
	9	0.203	0.176	0.183	0.190	0.056	0.016	0.195	0.156	0.197
	12	0.204	0.175	0.184	0.197	0.058	0.030	0.202	0.185	0.197
MiPU	3	0.326	0.086	0.213	0.362	0.136	0.024	0.273	0.209	0.340
	6	0.327	0.089	0.216	0.362	0.140	0.026	0.273	0.210	0.342
	9	0.328	0.095	0.222	0.365	0.142	0.026	0.273	0.211	0.349
	12	0.330	0.102	0.226	0.365	0.146	0.027	0.273	0.218	0.359
MFU	3	0.086	0.046	0.126	0.081	0.086	0.091	0.141	0.009	0.074
	6	0.088	0.046	0.126	0.088	0.094	0.096	0.143	0.018	0.076
	9	0.100	0.047	0.132	0.093	0.097	0.114	0.144	0.018	0.081
	12	0.105	0.048	0.137	0.095	0.103	0.126	0.144	0.029	0.084

Panel B: Explanatory power of variable sets

Variables	Number of lags	Variable Set 1 (1)	Variable Set 2 (2)	Variable Set 3 (3)	Variable Set 4 (4)
PU	3	0.409	0.606	0.673	0.359
	6	0.427	0.619	0.707	0.376
	9	0.443	0.640	0.731	0.397
	12	0.455	0.659	0.754	0.419
PU_News	3	0.379	0.521	0.612	0.323
	6	0.395	0.539	0.662	0.365
	9	0.405	0.569	0.692	0.395
	12	0.414	0.591	0.723	0.417
MPU	3	0.102	0.224	0.286	0.172
	6	0.110	0.262	0.355	0.212
	9	0.133	0.288	0.414	0.251
	12	0.148	0.300	0.465	0.272
TPU	3	0.230	0.554	0.608	0.085
	6	0.241	0.581	0.644	0.095
	9	0.247	0.616	0.681	0.118
	12	0.253	0.633	0.713	0.153
FSI	3	0.210	0.430	0.554	0.316
	6	0.275	0.481	0.603	0.359
	9	0.334	0.516	0.654	0.392
	12	0.397	0.551	0.700	0.443
GPR	3	0.014	0.108	0.253	0.108
	6	0.016	0.170	0.330	0.129
	9	0.032	0.250	0.423	0.178
	12	0.052	0.299	0.476	0.232
Partisan	3	0.363	0.592	0.616	0.468
	6	0.405	0.644	0.662	0.497
	9	0.425	0.676	0.701	0.521
	12	0.451	0.686	0.732	0.544
NVIX	3	0.204	0.593	0.668	0.207
	6	0.235	0.636	0.712	0.292
	9	0.247	0.671	0.752	0.331
	12	0.301	0.690	0.772	0.397
Policy-EMV	3	0.109	0.191	0.350	0.179
	6	0.116	0.224	0.426	0.222
	9	0.119	0.255	0.469	0.262
	12	0.133	0.293	0.513	0.306
CPU	3	0.512	0.578	0.615	0.384
	6	0.517	0.601	0.658	0.417
	9	0.518	0.622	0.683	0.430
	12	0.523	0.633	0.694	0.446
WUI	3	0.192	0.213	0.317	0.186
	6	0.195	0.249	0.362	0.197
	9	0.205	0.280	0.419	0.211
	12	0.206	0.299	0.480	0.224
MiPU	3	0.603	0.677	0.683	0.337
	6	0.610	0.696	0.724	0.360
	9	0.612	0.720	0.749	0.373
	12	0.622	0.730	0.779	0.377
MFU	3	0.100	0.403	0.450	0.194
	6	0.103	0.447	0.512	0.197
	9	0.124	0.471	0.552	0.218
	12	0.139	0.492	0.598	0.225

Table 4
Policy Uncertainty and Capital Investments

This table presents the results of regressions that examine the relationship between policy uncertainty measures and capital investments. Panel A and B examine the impact of policy uncertainty on corporate investment following the specification bellow:

$$Y_{i,t+l} = a + \beta_1 PU_t + \beta_2 TQ_{i,t} + \beta_3 CF_{i,t} + \beta_4 SG_{i,t} + \beta_5 X_t + e_{i,t}$$

where Y represents corporate investment rates, PU denotes the policy uncertainty measure, and TQ, CF, and SG represent firm-level Tobin's Q, cash flow, and sales growth, respectively. The model also includes control variables, including GDP growth, election dummies, and a series of calendar quarter dummies.

In panel A, columns (1)-(4) present results based on the news-based economic policy uncertainty index (EPU_News), columns (5)-(8) report results based on the world uncertainty index (WUI), and columns (9)-(12) report results based on the policy-related EMV ($Policy-EMV$). In Panel B examine the climate policy uncertainty (CPU) in columns (1) to (4), the partisan conflict index ($Partisan$) in columns (5) to (8), and the monetary policy uncertainty index (MPU). In all regressions, we include all control variables, calendar quarters dummies, and firm-level fixed effects. Standard errors are clustered at the firm and year levels, and robust t-statistics are reported in parentheses, with $*$, $**$, and $***$ indicating significance at the 10%, 5%, and 1% levels, respectively.

Panel A:

	Based on News-EPU				Based on WUI				Based on Policy-EMV			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Inv_{t+1}	Inv_{t+2}	Inv_{t+3}	Inv_{t+4}	Inv_{t+1}	Inv_{t+2}	Inv_{t+3}	Inv_{t+4}	Inv_{t+1}	Inv_{t+2}	Inv_{t+3}	Inv_{t+4}
PU_News	-0.061***	-0.064***	-0.058***	-0.060***								
	(-4.76)	(-5.23)	(-4.83)	(-4.73)								
WUI					-0.047***	-0.055***	-0.048***	-0.053***				
					(-4.80)	(-5.31)	(-4.70)	(-4.81)				
Policy-EMV									-0.013	-0.023**	-0.022**	-0.031**
									(-1.26)	(-2.05)	(-2.20)	(-2.54)
Adjusted R-Squared	0.43	0.43	0.43	0.43	0.42	0.43	0.43	0.43	0.42	0.43	0.43	0.43
Number of Obs	378245	361420	345961	333383	378245	361420	345961	333383	378245	361420	345961	333383
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Quarter Dummies	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Cluster	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year

Panel B:

	Based on CPU				Based on Partisan				Based on MPU			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Inv_{t+1}	Inv_{t+2}	Inv_{t+3}	Inv_{t+4}	Inv_{t+1}	Inv_{t+2}	Inv_{t+3}	Inv_{t+4}	Inv_{t+1}	Inv_{t+2}	Inv_{t+3}	Inv_{t+4}
CPU	-0.196***	-0.187***	-0.190***	-0.191***								
	(-6.91)	(-5.91)	(-6.55)	(-6.67)								
Partisan					-0.038***	-0.028**	-0.032**	-0.026*				
					(-3.04)	(-2.27)	(-2.49)	(-1.89)				
MPU									-0.015	-0.015	-0.021	-0.026*
									(-1.18)	(-1.18)	(-1.56)	(-2.00)
Adjusted R-Squared	0.43	0.44	0.44	0.44	0.42	0.43	0.43	0.43	0.42	0.42	0.43	0.43
Number of Obs	366489	350144	335060	322798	378245	361420	345961	333383	378245	378245	345961	333383
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Quarter Dummies	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Cluster	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year

Panel C examines the impact of policy uncertainty on M&As. We replace Y with a dummy that equals one if a company engages in M&A activities during the year and zero otherwise. We also include a series of firm-, industry, and aggregate-level control variables that are commonly used in prior studies on M&As (Harford, 2005; Bonaime et al., 2018) to control for factors that may influence the likelihood of M&A activities. In all regression, industry fixed effects are included, and errors are clustered at the year level. $*$, $**$, and $***$ indicating significance at the 10%, 5%, and 1% levels, respectively.

Panel C: Economic policy uncertainty and M&A

	(1) M&A	(2) M&A	(3) M&A	(4) M&A	(5) M&A	(6) M&A
PU_News	-0.128***					
	(-3.53)					
WUI		-0.010				
		(-0.28)				
Policy-EMV			0.106***			
			(3.73)			
CPU				-0.143***		
				(-4.65)		
Partisan					-0.607***	
					(-6.25)	
MPU						-0.067
						(-1.52)
Controls	Y	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y	Y
Cluster	Year	Year	Year	Year	Year	Year
Number of Obs	125851	125851	125851	125851	125851	125851

Table 5
Components of Policy Uncertainty and Corporate Investments

This table re-examines the relationship between policy uncertainty and capital investments. We repeat the baseline specification the same as that in Table 4, with each economic policy uncertainty measures replaced by their macroeconomic-related component and the residual uncertainty component. To construct the two components, we perform the regression: $Y_t = a + \sum_{i=1}^{i=12} b_i' X_{t-i} + e_t$, where Y_t is the policy uncertainty measure, X_t is a series of macroeconomic variables, and e_t is the regression residual. Then, the e_t is defined as the residual policy uncertainty (*PU_Residual*) and $\sum_{i=1}^{i=12} b_i' X_{t-i}$ is defined as the macroeconomic-related policy uncertainty (*PU_Macro*). We here perform the decomposition procedure using variable set including *Wage*, *CPI*, *Employment*, *IndPro*, *Sentiment*, and *GDP*.

Panel A and B present the results regarding corporate investments. In Panel A, we use the news-based economic policy uncertainty index (*EPU_News*) in columns (1)-(4), the world uncertainty index (*WUI*) in columns (5)-(8), and the policy-related EMV (*Policy−EMV*) in columns (9)-(12) as the main proxies for policy uncertainty. In Panel B, we examine the climate policy uncertainty (*CPU*) in columns (1) to (4), the partisan conflict index (*Partisan*) in columns (5) to (8), and the monetary policy uncertainty index (*MPU*). $*$, $**$, and $***$ indicating significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Policy uncertainty and corporate investment: Based on components

	Based on News-EPU				Based on WUI				Based on Policy-EMV			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Inv_{t+1}	Inv_{t+2}	Inv_{t+3}	Inv_{t+4}	Inv_{t+1}	Inv_{t+2}	Inv_{t+3}	Inv_{t+4}	Inv_{t+1}	Inv_{t+2}	Inv_{t+3}	Inv_{t+4}
PU_News_Macro	-0.092***	-0.093***	-0.093***	-0.079***								
	(-5.19)	(-5.29)	(-5.39)	(-4.99)								
PU_News_Residual	0.005	0.002	0.008	-0.006								
	(0.75)	(0.30)	(1.34)	(-0.82)								
WUI_Macro					-0.153***	-0.152***	-0.153***	-0.152***				
					(-12.22)	(-12.23)	(-10.66)	(-9.34)				
WUI_Residual					-0.006	-0.014**	-0.006	-0.012*				
					(-0.92)	(-2.32)	(-1.07)	(-1.86)				
PolicyEMV_Macro									-0.036***	-0.044***	-0.053***	-0.052***
									(-3.16)	(-4.21)	(-5.83)	(-5.25)
PolicyEMV_Residual									0.013**	0.008	0.017***	0.006
									(2.23)	(1.10)	(3.06)	(0.77)
Adjusted R-Squared	0.43	0.43	0.43	0.44	0.43	0.44	0.44	0.44	0.42	0.43	0.43	0.43
Number of Obs	378245	361420	345961	333383	378245	361420	345961	333383	378245	361420	345961	333383
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Quarter Dummies	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Cluster	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year

Panel B:Policy uncertainty and corporate investment: Based on components

	Based on CPU				Based on MPU				Based on Partisan			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Inv_{t+1}	Inv_{t+2}	Inv_{t+3}	Inv_{t+4}	Inv_{t+1}	Inv_{t+2}	Inv_{t+3}	Inv_{t+4}	Inv_{t+1}	Inv_{t+2}	Inv_{t+3}	Inv_{t+4}
CPU_Macro	-0.124***	-0.126***	-0.131***	-0.122***								
	(-11.89)	(-13.90)	(-12.65)	(-11.31)								
CPU_Residual	0.000	0.003	0.003	-0.005								
	(0.04)	(0.38)	(0.34)	(-0.67)								
Partisan_Macro					-0.047***	-0.041***	-0.036**	-0.029*				
					(-3.35)	(-2.74)	(-2.43)	(-1.81)				
Partisan_Residual					-0.003	0.004	-0.006	-0.005				
					(-0.26)	(0.29)	(-0.55)	(-0.47)				
MPU_Macro									-0.034*	-0.033	-0.049**	-0.051***
									(-1.73)	(-1.63)	(-2.51)	(-2.84)
MPU_Residual									0.003	-0.009	0.002	-0.002
									(0.34)	(-0.89)	(0.24)	(-0.24)
Adjusted R-Squared	0.44	0.44	0.44	0.44	0.42	0.43	0.43	0.43	0.42	0.43	0.43	0.43
Number of Obs	366489	350144	335060	322798	378245	361420	345961	333383	378245	361420	345961	333383
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Quarter Dummies	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Cluster	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year

Panel C investigates the influence of macroeconomic-related components and residual components of policy uncertainty indices on corporate M&As.

Panel C: Economic policy uncertainty and M&A: Based on components

	(1)	(2)	(3)	(4)	(5)	(6)
	M&A	M&A	M&A	M&A	M&A	M&A
PU_News_Macro	-0.152***					
	(-4.75)					
PU_News_Residual	-0.016					
	(-0.54)					
WUI_Macro		-0.008				
		(-0.15)				
WUI_Residual		-0.006				
		(-0.19)				
PolicyEMV_Macro			0.062***			
			(2.84)			
PolicyEMV_Residual			0.062**			
			(2.27)			
CPU_Macro				-0.182***		
				(-4.67)		
CPU_Residual				-0.011		
				(-0.49)		
Partisan_Macro					-0.142***	
					(-4.29)	
Partisan_Residual					-0.077***	
					(-3.67)	
MPU_Macro						-0.143***
						(-3.57)
MPU_Residual						0.009
						(0.35)
Controls	Y	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y	Y
Cluster	Year	Year	Year	Year	Year	Year
Number of Obs	125851	125851	125851	125851	125851	125851

Table 6
Impact of Policy Uncertainty with Lagged Macroeconomic Controls

This table re-examines the relationship between policy uncertainty and capital investments by augmenting the baseline specification with lagged macroeconomic variables. We here augment the baseline specification with four quarterly lags of variables including *Wage*, *CPI*, *Employment*, *IndPro*, *Sentiment*, and *GDP*.

Panel A and B present the results regarding corporate investments. In Panel A, we use the news-based economic policy uncertainty index (*EPU_News*) in columns (1)-(4), the world uncertainty index (*WUI*) in columns (5)-(8), and the policy-related EMV (*Policy − EMV*) in columns (9)-(12) as the main proxies for policy uncertainty. In Panel B, we examine the climate policy uncertainty (*CPU*) in columns (1) to (4), the partisan conflict index (*Partisan*) in columns (5) to (8), and the monetary policy uncertainty index (*MPU*). $*$, $**$, and $***$ indicating significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Economic policy uncertainty and Corporate Investment: With lagged macro controls

	Based on News-EPU				Based on WUI				Based on Policy-EMV			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Inv_{t+1}	Inv_{t+2}	Inv_{t+3}	Inv_{t+4}	Inv_{t+1}	Inv_{t+2}	Inv_{t+3}	Inv_{t+4}	Inv_{t+1}	Inv_{t+2}	Inv_{t+3}	Inv_{t+4}
PU_News	-0.002	-0.012	-0.000	-0.015								
	(-0.31)	(-1.67)	(-0.06)	(-1.64)								
WUI					-0.003	-0.010**	-0.004	-0.012*				
					(-0.82)	(-2.05)	(-0.72)	(-1.97)				
Policy-EMV									0.009**	-0.001	0.009**	-0.000
									(2.39)	(-0.20)	(2.30)	(-0.03)
Adjusted R-Squared	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Number of Obs	305371	292984	281268	271366	305371	292984	281268	271366	305371	292984	281268	271366
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Macro Controls	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags
Quarter Dummies FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Cluster	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year

Panel B: Economic policy uncertainty and Corporate Investment: With lagged macro controls

	Based on CPU				Based on Partisan				Based on MPU			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Inv_{t+1}	Inv_{t+2}	Inv_{t+3}	Inv_{t+4}	Inv_{t+1}	Inv_{t+2}	Inv_{t+3}	Inv_{t+4}	Inv_{t+1}	Inv_{t+2}	Inv_{t+3}	Inv_{t+4}
CPU	-0.012	0.003	-0.026	-0.043**								
	(-0.86)	(0.24)	(-1.18)	(-2.26)								
Partisan					0.009	0.016**	-0.001	-0.005				
					(1.39)	(2.34)	(-0.17)	(-0.62)				
MPU									0.003	-0.013**	-0.004	-0.007
									(0.86)	(-2.66)	(-0.68)	(-1.59)
Adjusted R-Squared	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Number of Obs	303474	291178	279501	269661	305371	292984	281268	271366	305371	292984	281268	271366
Macro Controls	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags
Quarter Dummies FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Cluster	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year

Panel C investigates the influence of macroeconomic-related components and residual components of policy uncertainty indices on corporate M&As.

Panel C: Economic policy uncertainty and M&A: With lagged macro controls

	(1) M&A	(2) M&A	(3) M&A	(4) M&A	(5) M&A	(6) M&A
PU_News	0.032					
	(0.53)					
WUI		-0.014				
		(-0.51)				
Policy-EMV			0.143***			
			(6.26)			
CPU				-0.047		
				(-0.80)		
Partisan					-0.595***	
					(-3.13)	
MPU						-0.009
						(-0.29)
Controls	Y	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y	Y
Cluster	Year	Year	Year	Year	Year	Year
Number of Obs	125851	125851	125851	125851	125851	125851

Table 7
Aggregate regressions

This table presents the results of regressions based on the aggregate corporate investment and M&As. Columns (1), (3), and (4) present the results based on aggregate investment, the total number of M&As, and the total value of M&As, respectively. In columns (2), (5), and (6), *PU* are replaced with its macroeconomic-related component and residual component. $*$, $**$, and $***$ indicating significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)		(3)	(4)	(5)	(6)
VARIABLES	Investment_agg	Investment_agg	VARIABLES	MA_number	MA_value	MA_number	MA_value
EPU	-0.0003*		EPU	-180.6372***	-33.5892***		
	(-1.7996)			(-3.0356)	(-3.9447)		
EPU_Macro		-0.0007***	EPU_Macro			-434.7214***	-57.2388***
		(-3.0537)				(-4.1777)	(-3.3396)
EPU_Residual		-0.0000	EPU_Residual			-36.1854	-10.7403**
		(-0.1386)				(-1.3087)	(-2.3583)
TQ_Agg	-0.0008***	-0.0006***	Inv_opp	16.1233*	2.9393**	16.8876**	3.0178**
	(-4.3617)	(-3.4761)		(1.9557)	(2.4915)	(2.5483)	(2.7646)
CF_Agg	0.0021***	0.0019***	indshock	-2,311.2379	-351.0363	416.7910	-71.0449
	(10.2219)	(8.7676)		(-1.6055)	(-1.7040)	(0.2815)	(-0.2913)
SG_Agg	0.0006***	0.0006***	ratespread	-20.9410	-27.0988**	-169.7432*	-42.3711**
	(3.2860)	(3.0535)		(-0.2384)	(-2.1560)	(-1.9571)	(-2.9659)
QRT	-0.0007*	-0.0007**	CAPE	34.5055***	3.4326**	13.8818	1.3158
	(-1.9248)	(-2.1656)		(3.3697)	(2.3426)	(1.2859)	(0.7400)
Sentiment	0.0001***	0.0001***	TQ_Agg	-598.6383	-151.9692	-1,000.2283	-193.1864*
	(6.3019)	(3.9814)		(-0.8635)	(-1.5318)	(-1.7448)	(-2.0459)
dgdp	-0.0266*	-0.0202	indret36	79.4165	9.1207	101.0921	11.3454
	(-1.8954)	(-1.4375)		(0.2148)	(0.1724)	(0.3403)	(0.2319)
			indretsd36	-90.0271	-13.8429	-105.1785	-15.3980
				(-0.9151)	(-0.9834)	(-1.3283)	(-1.1806)
			macroecon	3.5024	0.6379	1.1160	0.3930
				(1.2199)	(1.5528)	(0.4567)	(0.9763)
			logasset	2.6332	-75.7846	-119.3241	-88.3017*
				(0.0078)	(-1.5740)	(-0.4364)	(-1.9609)
			ROA	1,014.4974	436.5712**	2,363.8695*	575.0639***
				(0.7742)	(2.3284)	(2.0598)	(3.0423)
			salegrow	-66.5570	-8.8498	-89.7524*	-11.2305
				(-1.2098)	(-1.1241)	(-1.9996)	(-1.5191)
			leverage	-9,692.2838***	-690.4442	-4,641.0653	-172.0124
				(-3.2910)	(-1.6383)	(-1.5892)	(-0.3576)
			cashtoasst	824.7188	395.9886	5,037.0852	828.3246
				(0.1525)	(0.5118)	(1.1018)	(1.1000)
			marktobook	-0.1609	0.2367	4.9914	0.7655
				(-0.0252)	(0.2594)	(0.9222)	(0.8587)
			ret12	-211.2664	-27.1580	-152.3010	-21.1061
				(-0.8033)	(-0.7216)	(-0.7178)	(-0.6039)
			firmvol	-8,058.7149	-896.9941	15,597.9824	1,531.0120
				(-0.5182)	(-0.4031)	(1.0507)	(0.6262)
Constant	0.0073***	0.0092***	Constant	3,379.9371	456.4975	2,944.2957	411.7251
	(5.7554)	(6.2532)		(1.6085)	(1.5181)	(1.7378)	(1.4754)
Observations	146	146	Observations	32	32	32	32
R-squared	0.7626	0.7725	R-squared	0.9368	0.9071	0.9622	0.9262

Table 8
Robustness: Components of Policy Uncertainty and Corporate Investments (Measurements only)

This table re-examines the impact of components of policy uncertainty measures on corporate investment and M&As, performing the decomposition procedure using measurement factors including *Wage*, *CPI*, *Employment*, *FFR*, *IndPro*, *Hour*, and *GDP*.
Panel A and B present the results regarding corporate investments. In Panel A, we use the news-based economic policy uncertainty index (*EPU_News*) in columns (1)-(4), the world uncertainty index (*WUI*) in columns (5)-(8), and the policy-related EMV (*Policy−EMV*) in columns (9)-(12) as the main proxies for policy uncertainty. In Panel B, we examine the climate policy uncertainty (*CPU*) in columns (1) to (4), the partisan conflict index (*Partisan*) in columns (5) to (8), and the monetary policy uncertainty index (*MPU*). $*$, $**$, and $***$ indicating significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Policy uncertainty and corporate investment: Based on components

	Based on News-EPU				Based on WUI				Based on Policy-EMV			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Inv_{t+1}	Inv_{t+2}	Inv_{t+3}	Inv_{t+4}	Inv_{t+1}	Inv_{t+2}	Inv_{t+3}	Inv_{t+4}	Inv_{t+1}	Inv_{t+2}	Inv_{t+3}	Inv_{t+4}
PU_News_Macro	-0.089***	-0.086***	-0.091***	-0.080***								
	(-5.28)	(-5.28)	(-5.41)	(-5.04)								
PU_News_Residual	0.007	0.000	0.012*	-0.001								
	(0.93)	(0.03)	(1.91)	(-0.16)								
WUI_Macro					-0.139***	-0.137***	-0.142***	-0.136***				
					(-12.65)	(-12.68)	(-12.73)	(-11.46)				
WUI_Residual					-0.007	-0.015**	-0.007	-0.014*				
					(-1.00)	(-2.29)	(-1.03)	(-1.95)				
PolicyEMV_Macro									-0.031**	-0.038***	-0.049***	-0.049***
									(-2.43)	(-3.22)	(-4.89)	(-4.49)
PolicyEMV_Residual									0.009	0.003	0.014**	0.003
									(1.43)	(0.43)	(2.19)	(0.37)
Adjusted R-Squared	0.43	0.43	0.43	0.44	0.43	0.44	0.44	0.44	0.42	0.43	0.43	0.43
Number of Obs	378245	361420	345961	333383	378245	361420	345961	333383	378245	361420	345961	333383
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Quarter Dummies	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Cluster	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year

Panel B: Policy uncertainty and corporate investment: Based on components

	Based on CPU				Based on Partisan				Based on MPU			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Inv_{t+1}	Inv_{t+2}	Inv_{t+3}	Inv_{t+4}	Inv_{t+1}	Inv_{t+2}	Inv_{t+3}	Inv_{t+4}	Inv_{t+1}	Inv_{t+2}	Inv_{t+3}	Inv_{t+4}
CPU_Macro	-0.113***	-0.112***	-0.118***	-0.115***								
	(-9.83)	(-9.54)	(-10.20)	(-9.52)								
CPU_Residual	-0.003	-0.001	0.001	-0.003								
	(-0.43)	(-0.10)	(0.08)	(-0.47)								
Partisan_Macro					-0.039***	-0.035**	-0.032**	-0.030*				
					(-2.87)	(-2.39)	(-2.15)	(-1.81)				
Partisan_Residual					-0.012	-0.001	-0.010	-0.003				
					(-1.01)	(-0.12)	(-0.92)	(-0.27)				
MPU_Macro									-0.044***	-0.041**	-0.058***	-0.062***
									(-3.09)	(-2.48)	(-3.97)	(-4.26)
MPU_Residual									0.007	-0.006	0.004	0.001
									(0.71)	(-0.54)	(0.43)	(0.14)
Adjusted R-Squared	0.44	0.44	0.44	0.44	0.42	0.43	0.43	0.43	0.42	0.43	0.43	0.43
Number of Obs	366489	350144	335060	322798	378245	361420	345961	333383	378245	361420	345961	333383
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Quarter Dummies	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Cluster	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year

Panel C investigates the influence of macroeconomic-related components and residual components of policy uncertainty indices on corporate M&As.

Panel C: Economic policy uncertainty and M&A: Based on components

	(1)	(2)	(3)	(4)	(5)	(6)
	M&A	M&A	M&A	M&A	M&A	M&A
PU_News_Macro	-0.157***					
	(-5.43)					
PU_News_Residual	0.000					
	(0.01)					
WUI_Macro		-0.020				
		(-0.36)				
WUI_Residual		-0.001				
		(-0.02)				
AvgPred_PolicyEMV4_norm			0.033			
			(1.07)			
AvgRes_PolicyEMV4_norm			0.041			
			(1.54)			
AvgPred_LCPU4_norm				-0.149***		
				(-5.14)		
AvgRes_LCPU4_norm				0.028		
				(1.43)		
Partisan_Macro					-0.175***	
					(-4.74)	
Partisan_Residual					-0.001	
					(-0.03)	
AvgPred_LMPU4_norm						-0.158***
						(-5.31)
AvgRes_LMPU4_norm						-0.028
						(-1.47)
Controls	Y	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y	Y
Cluster	Year	Year	Year	Year	Year	Year
Number of Obs	125851	125851	125851	125851	125851	125851

Table 9
Robustness: Impact of Policy Uncertainty with Lagged Macroeconomic Controls (Measurement Only)

This table re-examines the relationship between policy uncertainty and capital investments by augmenting the baseline specification with lagged macroeconomic variables. We here augment the baseline specification with four quarterly lags of measurement variables including *Wage*, *CPI*, *Employment*, *FFR*, *IndPro*, *Hour*, and *GDP*.

Panel A and B present the results regarding corporate investments. In Panel A, we use the news-based economic policy uncertainty index (*EPU_News*) in columns (1)-(4), the world uncertainty index (*WUI*) in columns (5)-(8), and the policy-related EMV (*Policy−EMV*) in columns (9)-(12) as the main proxies for policy uncertainty. In Panel B, we examine the climate policy uncertainty (*CPU*) in columns (1) to (4), the partisan conflict index (*Partisan*) in columns (5) to (8), and the monetary policy uncertainty index (*MPU*). $*$, $**$, and $***$ indicating significance at the 10%, 5%, and 1% levels, respectively.

Panel A:

	Based on News-EPU				Based on WUI				Based on Policy-EMV			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Inv_t	Inv_t+1	Inv_t+2	Inv_t+3	Inv_t	Inv_t+1	Inv_t+2	Inv_t+3	Inv_t	Inv_t+1	Inv_t+2	Inv_t+3
PU_News	-0.001	-0.012	0.007	-0.013								
	(-0.15)	(-1.60)	(0.86)	(-1.31)								
WUI					-0.002	-0.015***	-0.004	-0.015*				
					(-0.71)	(-3.28)	(-0.74)	(-2.01)				
Policy-EMV									0.006	-0.000	0.011*	0.001
									(1.59)	(-0.06)	(1.89)	(0.19)
Macro Controls	4 lags	4 lags	2 lags	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags
Quarter Dummies FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Cluster	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year
Adjusted R-Squared	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Number of Obs	305371	292984	281268	271366	305371	292984	281268	271366	305371	292984	281268	271366

Panel B:

	Based on MPU				Based on CPU				Based on TPU			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Inv_t+1	Inv_t+2	Inv_t+3	Inv_t+4	Inv_t+1	Inv_t+2	Inv_t+3	Inv_t+4	Inv_t+1	Inv_t+2	Inv_t+3	Inv_t+4
CPU	-0.025*	-0.012	-0.026	-0.040*								
	(-1.89)	(-0.58)	(-1.26)	(-1.82)								
Partisan					-0.008	0.013*	-0.007	-0.000				
					(-1.44)	(1.78)	(-0.64)	(-0.00)				
MPU									0.006	-0.009**	0.001	-0.005
									(1.64)	(-2.08)	(0.16)	(-1.19)
Tobin's q	0.157***	0.151***	0.137***	0.125***	0.158***	0.152***	0.138***	0.126***	0.159***	0.151***	0.138***	0.126***
	(17.13)	(18.88)	(17.72)	(14.99)	(17.13)	(18.99)	(17.79)	(14.93)	(17.20)	(18.83)	(17.73)	(14.82)
Cash Flow	0.066***	0.078***	0.079***	0.070***	0.067***	0.078***	0.079***	0.070***	0.067***	0.078***	0.079***	0.070***
	(15.71)	(15.13)	(14.65)	(13.15)	(15.66)	(14.99)	(14.57)	(13.22)	(15.67)	(14.97)	(14.59)	(13.23)
GDP Growth	0.006**	0.004	-0.002	0.010	0.008***	0.002	0.000	0.012	0.007***	0.004	-0.001	0.012
	(2.57)	(0.52)	(-0.56)	(1.16)	(3.44)	(0.22)	(0.02)	(1.49)	(3.08)	(0.56)	(-0.32)	(1.31)
Election	0.002	-0.001	0.006	0.001	0.003	-0.001	0.004	0.003	0.003	-0.001	0.004	0.003
	(0.38)	(-0.17)	(0.59)	(0.11)	(0.45)	(-0.11)	(0.41)	(0.19)	(0.47)	(-0.13)	(0.42)	(0.19)
Macro Controls	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags	4 lags
Quarter Dummies FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Cluster	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year
Adjusted R-Squared	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Number of Obs	303474	291178	279501	269661	305371	292984	281268	271366	305371	292984	281268	271366

Panel C investigates the influence of macroeconomic-related components and residual components of policy uncertainty indices on corporate M&As.

Panel C: Economic policy uncertainty and M&A: With lagged macro controls

	(1) M&A	(2) M&A	(3) M&A	(4) M&A	(5) M&A	(6) M&A
PU_News	0.028					
	(0.52)					
WUI		0.012				
		(0.47)				
Policy-EMV			0.133***			
			(5.95)			
CPU				0.006		
				(0.10)		
Partisan					-0.444**	
					(-2.03)	
MPU						-0.026
						(-1.21)
Controls	Y	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y	Y
Cluster	Year	Year	Year	Year	Year	Year
Number of Obs	125851	125851	125851	125851	125851	125851

Table 10
Robustness: Unit-root tests on policy uncertainty measures

This table tests whether the macroeconomic-related and residual components of policy uncertainty measures are stationary. We perform Dickey Fuller tests on each variable, and $*$, $**$, and $***$ indicating rejecting the hypothesis that the series is not stationary at the 10%, 5%, and 1% significance levels, respectively.

	p-value for Dickey–Fuller test statistic
PU_News_Macro	0.002***
PU_News_Residual	0.000***
WUI_Macro	0.006***
WUI_Residual	0.000***
Partisan_Macro	0.005***
Partisan_Residual	0.000***
Policy-EMV_Macro	0.000***
Policy-EMV_Residual	0.000***
MPU_Macro	0.001***
MPU_Residual	0.000***

Table 11
Policy Uncertainty and Capital Redeployability

This table examines the impact of asset redeployability on how policy uncertainty depresses corporate investment. We augment Equation 4 with a measure of asset redeployability and its interaction with macro-related components and residual uncertainty components of policy uncertainty indices. We here measure asset redeployability based on the usability of assets across all industries following Kim and Kung (2017).

To construct the two components, we perform the regression: $Y_t = a + \sum_{i=1}^{i=12} b_i' X_{t-i} + e_t$, where Y_t is the policy uncertainty measure, X_t is a series of macroeconomic variables, and e_t is the regression residual. Then, e_t is defined as the residual policy uncertainty (e.g., PU_Residual) and $\sum_{i=1}^{i=12} b_i' X_{t-i}$ is defined as the macroeconomic-related policy uncertainty (e.g., PU_Macro). We perform the decomposition procedure using variable set 1, which includes wage, CPI, employment, IndPro, Sentiment, and GDP. Performing the decomposition based on variable set 2 provides similar results.

In panel A, columns (1)-(4) present results based on the news-based economic policy uncertainty index (*EPU_News*), columns (5)-(8) report results based on the world uncertainty index (*WUI*), and columns (9)-(12) report results based on the policy-related EMV (*Policy − EMV*). In Panel B examine the climate policy uncertainty (*CPU*) in columns (1) to (4), the partisan conflict index (*Partisan*) in columns (5) to (8), and the monetary policy uncertainty index (*MPU*). All control variables, calendar quarter dummies, and firm-level fixed effects are included in all regressions, and standard errors are clustered at the firm and year levels. Robust t-statistics are reported in parentheses, with *, **, and *** indicating significance at the 10%, 5%, and 1% levels, respectively.

Panel A:

	Based on News-EPU				Based on WUI				Based on Policy-EMV			
	(1) Inv_{t+1}	(2) Inv_{t+2}	(3) Inv_{t+3}	(4) Inv_{t+4}	(5) Inv_{t+1}	(6) Inv_{t+2}	(7) Inv_{t+3}	(8) Inv_{t+4}	(9) Inv_{t+1}	(10) Inv_{t+2}	(11) Inv_{t+3}	(12) Inv_{t+4}
PU_News_Macro	-0.214***	-0.227***	-0.224***	-0.179***								
	(-5.36)	(-6.10)	(-5.58)	(-5.00)								
PU_News_Macro*Redeployability	0.443***	0.485***	0.456***	0.384***								
	(4.53)	(5.43)	(4.68)	(3.79)								
PU_News_Residual	0.014	0.003	0.009	-0.013								
	(0.69)	(0.18)	(0.40)	(-0.43)								
PU_News_Residual*Redeployability	-0.010	0.015	0.014	0.043								
	(-0.22)	(0.37)	(0.25)	(0.59)								
WUI_Macro					-0.233***	-0.235***	-0.220***	-0.205***				
					(-5.40)	(-5.50)	(-4.62)	(-3.48)				
WUI_Macro*Redeployability					0.257**	0.272**	0.217*	0.186				
					(2.09)	(2.33)	(1.90)	(1.44)				
WUI_Residual					-0.026	-0.040**	-0.023	-0.044				
					(-1.33)	(-2.25)	(-1.30)	(-1.61)				
WUI_Residual*Redeployability					0.056	0.081	0.055	0.102				
					(0.99)	(1.51)	(1.07)	(1.36)				
PolicyEMV_Macro									-0.035	-0.062**	-0.092***	-0.089***
									(-1.26)	(-2.35)	(-3.41)	(-3.05)
PolicyEMV_Macro*Redeployability									0.020	0.077	0.130*	0.128
									(0.30)	(1.16)	(1.76)	(1.60)
PolicyEMV_Residual									0.015	-0.002	0.015	0.008
									(0.88)	(-0.09)	(0.99)	(0.40)
PolicyEMV_Residual*Redeployability									0.014	0.044	0.019	0.010
									(0.28)	(0.92)	(0.40)	(0.18)
Redeployability	-0.591***	-0.613***	-0.658***	-0.653***	-0.745***	-0.780***	-0.846***	-0.832***	-0.767***	-0.804***	-0.829***	-0.803***
	(-3.59)	(-3.76)	(-3.91)	(-3.88)	(-4.11)	(-4.51)	(-4.76)	(-4.61)	(-4.69)	(-5.24)	(-5.29)	(-5.18)
Adjusted R-Squared	0.43	0.43	0.43	0.44	0.43	0.44	0.44	0.44	0.43	0.43	0.43	0.44
Number of Obs	325648	316007	305839	296405	325648	316007	305839	296405	325648	316007	305839	296405
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Quarter Dummies	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Cluster	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year

Panel B:

	Based on CPU				Based on Partisan				Based on MPU			
	(1) Inv_{t+1}	(2) Inv_{t+2}	(3) Inv_{t+3}	(4) Inv_{t+4}	(5) Inv_{t+1}	(6) Inv_{t+2}	(7) Inv_{t+3}	(8) Inv_{t+4}	(9) Inv_{t+1}	(10) Inv_{t+2}	(11) Inv_{t+3}	(12) Inv_{t+4}
CPU_Macro	-0.257***	-0.267***	-0.296***	-0.208***								
	(-3.87)	(-4.65)	(-4.14)	(-3.17)								
CPU_Macro*Redeployability	0.379**	0.466**	0.476**	0.348*								
	(2.07)	(2.67)	(2.45)	(1.83)								
CPU_Residual	0.005	0.005	0.005	-0.010								
	(0.24)	(0.22)	(0.20)	(-0.41)								
CPU_Residual*Redeployability	-0.011	-0.004	-0.010	0.018								
	(-0.19)	(-0.07)	(-0.16)	(0.27)								
Partisan_Macro					-0.052	-0.035	-0.032	-0.022				
					(-1.07)	(-0.68)	(-0.59)	(-0.36)				
Partisan_Macro*Redeployability					0.079	0.058	0.061	0.070				
					(0.62)	(0.45)	(0.45)	(0.47)				
Partisan_Residual					-0.032	0.000	-0.031	-0.013				
					(-1.29)	(0.01)	(-1.20)	(-0.56)				
Partisan_Residual*Redeployability					0.081	0.022	0.075	0.051				
					(1.37)	(0.37)	(1.14)	(0.97)				
MPU_Marco									0.067	0.025	-0.051	-0.065
									(1.14)	(0.43)	(-0.86)	(-1.24)
MPU_Macro*Redeployability									-0.151	-0.048	0.082	0.118
									(-1.06)	(-0.33)	(0.55)	(0.89)
MPU_Residual									-0.027	-0.054*	-0.013	-0.017
									(-0.80)	(-1.74)	(-0.42)	(-0.57)
MPU_Residual*Redeployability									0.069	0.113	0.037	0.038
									(0.87)	(1.61)	(0.53)	(0.51)
Redeployability	-0.637***	-0.650***	-0.674***	-0.692***	-0.743***	-0.793***	-0.817***	-0.782***	-0.827***	-0.828***	-0.804***	-0.763***
	(-3.40)	(-3.58)	(-3.65)	(-3.47)	(-4.42)	(-4.82)	(-4.73)	(-4.58)	(-4.79)	(-4.87)	(-4.59)	(-4.32)
Adjusted R-Squared	0.44	0.44	0.44	0.44	0.43	0.43	0.43	0.44	0.43	0.43	0.43	0.44
Number of Obs	314280	304944	295062	285919	325648	316007	305839	296405	325648	316007	305839	296405
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Quarter Dummies	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Cluster	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year

Figure 1. Economic Policy Uncertainty Indices

This figure depicts the comparison of several representative policy uncertainty indexes. Here we present the *EPU_News* index (Baker et al., 2016), the partisan conflict index (*Partisan*) (Azzimonti and Talbert, 2014), and the monetary policy uncertainty index (*MPU*) by (Husted et al., 2018) during January 1985 to September 2022.

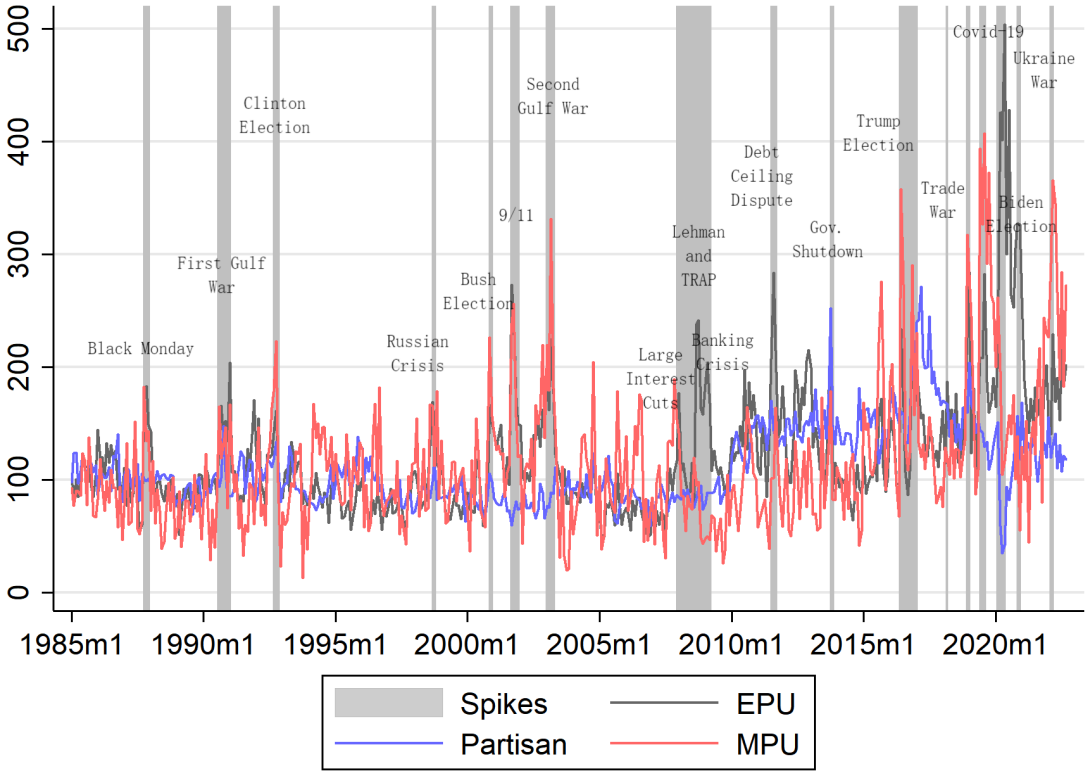
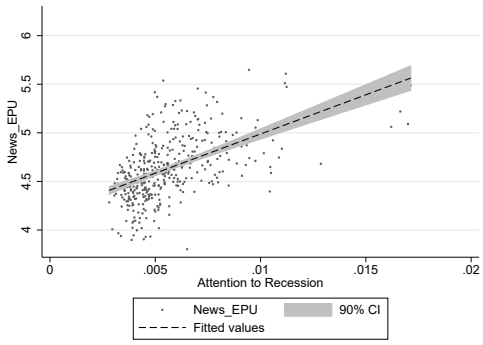


Figure 2. Attention to Topics and Economic Policy Uncertainty

This figure depicts the relationship between policy uncertainty and the attention given to specific topics in business news. Here we rely on measures for business news' attention on specific economic topics proposed by Bybee et al. (2020). Panel A examines the correlation between news articles' attention to "recession" and news-based economic policy uncertainty, while Panel B focuses on the correlation between news articles' attention to "economic growth" and news-based economic policy uncertainty. To ensure consistency in the sample period for topic attention, we restrict the sample to January 1985 to June 2017.

Panel A: Attention to recession and policy uncertainty



Panel B: Attention to growth and policy uncertainty

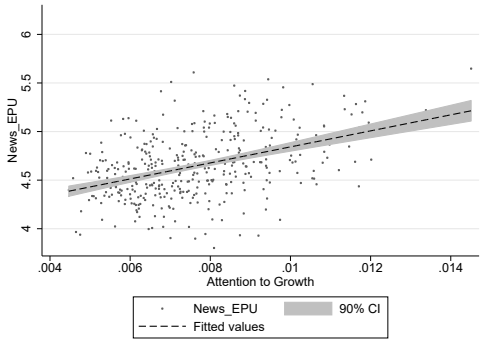
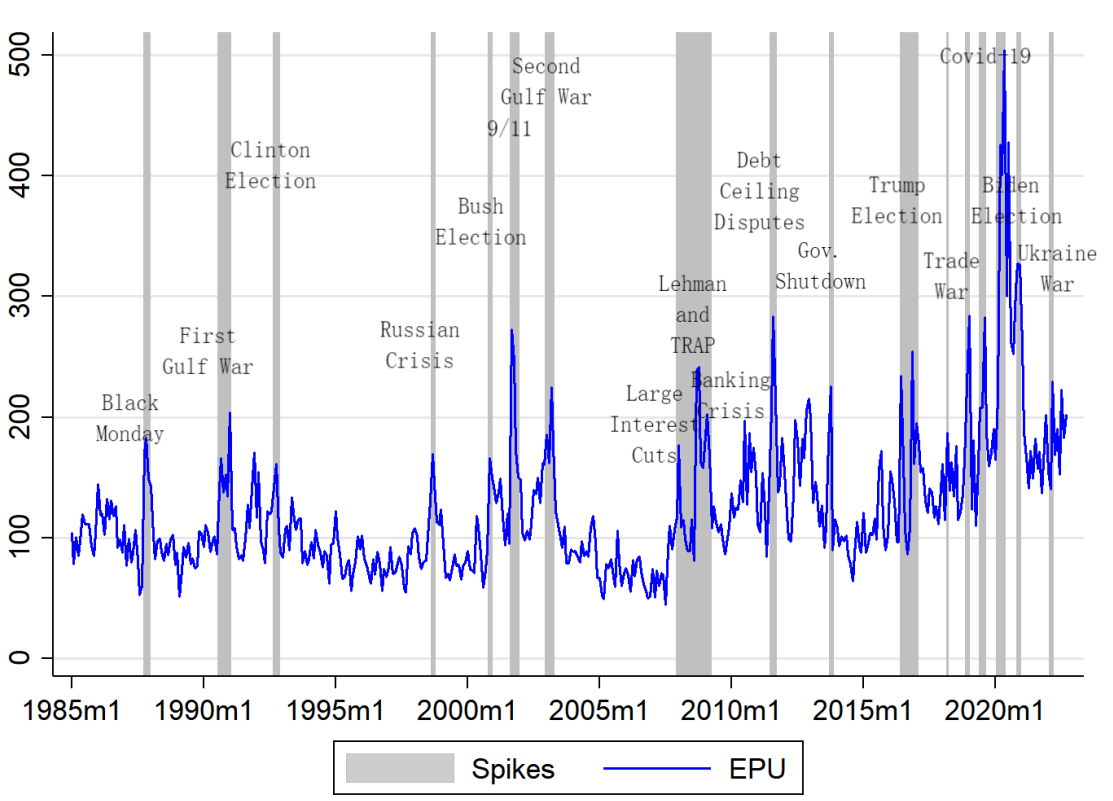


Figure 3. Residual Economic Policy Uncertainty

The graph compares the economic policy uncertainty measure ($News - EPU$) (Baker et al., 2016) and its residual component. To construct the residual policy uncertainty component, we perform the regression: $Y_t = a + \sum_{i=1}^{i=12} b_i' X_{t-i} + e_t$, where Y_t represents EPU_News. X_t is a series of macroeconomic variables, and e_t is the regression residual. Here, we define the e_t as the residual policy uncertainty. We perform the decomposition procedure using variables including *wage*, *CPI*, *employment*, *IndPro*, *Sentiment*, and *GDP*.

Panel A: News-EPU



Panel B: The residual policy uncertainty

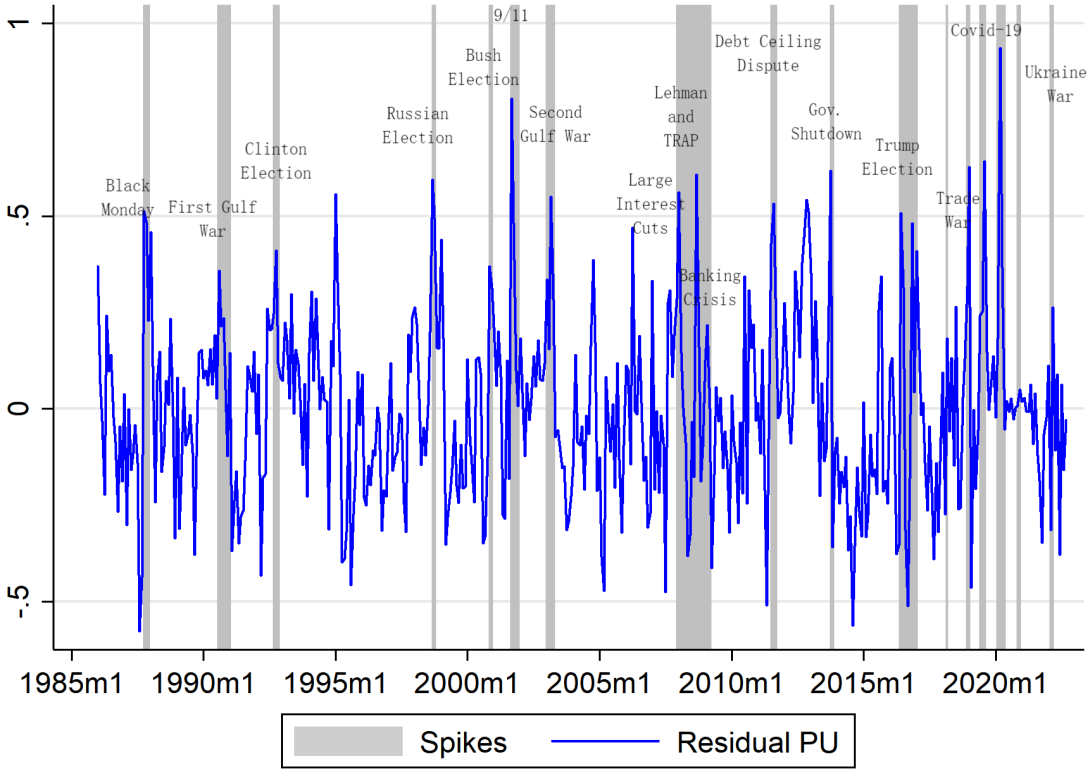
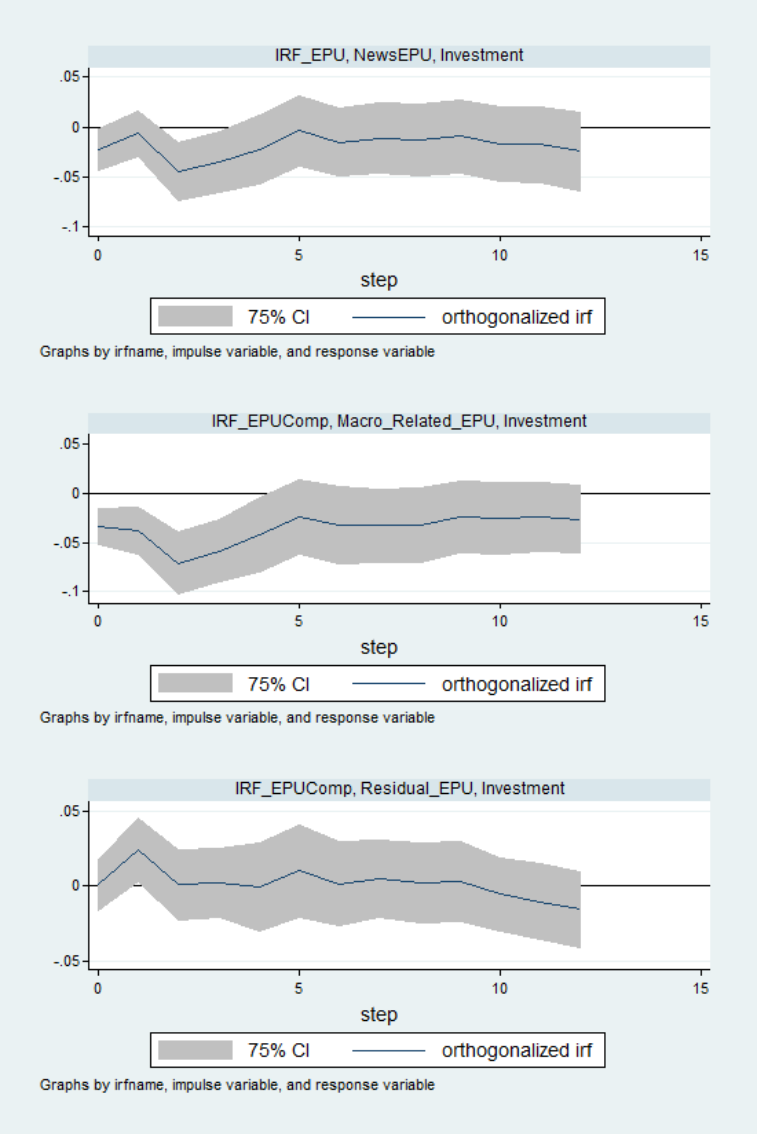
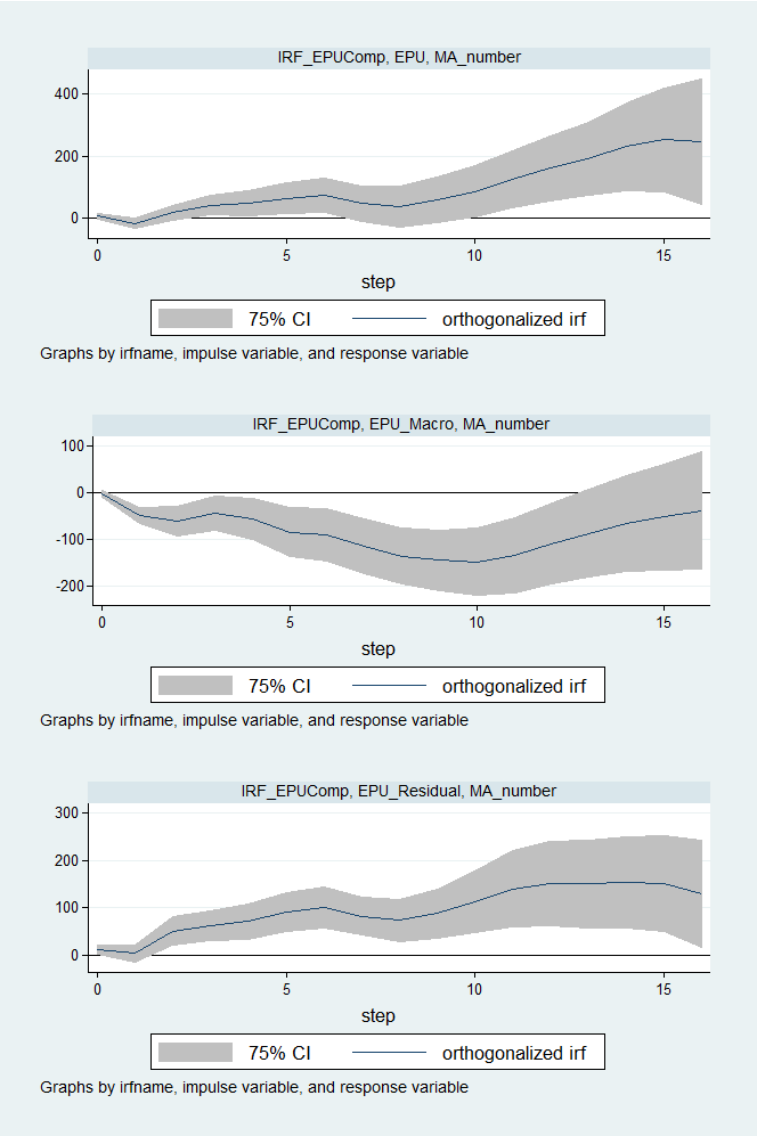


Figure 4. Aggregate IRFs

Panel A: Aggregate corporate investment
This figure presents the impulse response function (IRF) that quantifies the impact of increasing policy uncertainty on aggregate investment. The IRFs are obtained by estimating vector auto-regressions (VARs) using the following variables: policy uncertainty (*EPU_News*), the Michigan Consumer Confidence Index, aggregate measures of Tobin's q, operating cash flows to total assets, sales growth, and capital investment to total assets. Aggregate measures are obtained by taking an average of firm-level proxies.



Panel B: Aggregate number of M&A
This figure presents the impulse response function (IRF) that quantifies the impact of increasing policy uncertainty on aggregate number of firms with M&A activities.



Panel C: Aggregate value of M&A
This figure presents the impulse response function (IRF) that quantifies the impact of increasing policy uncertainty on aggregate value of corporate M&As.

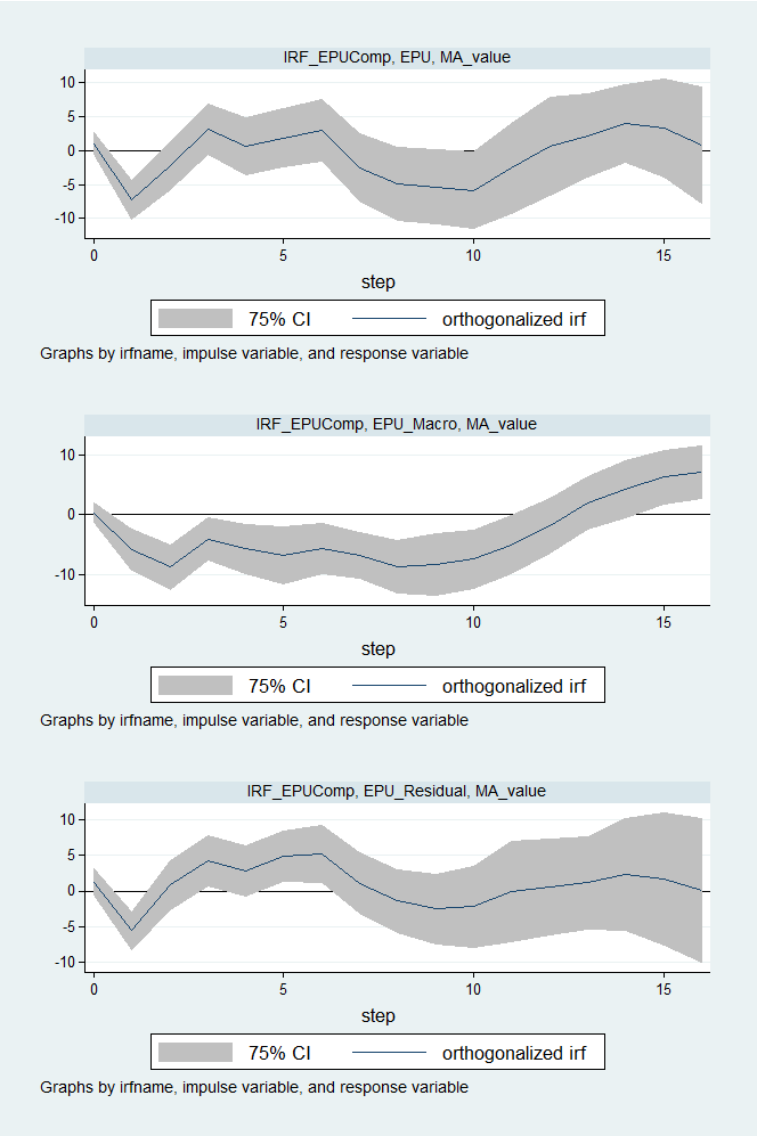
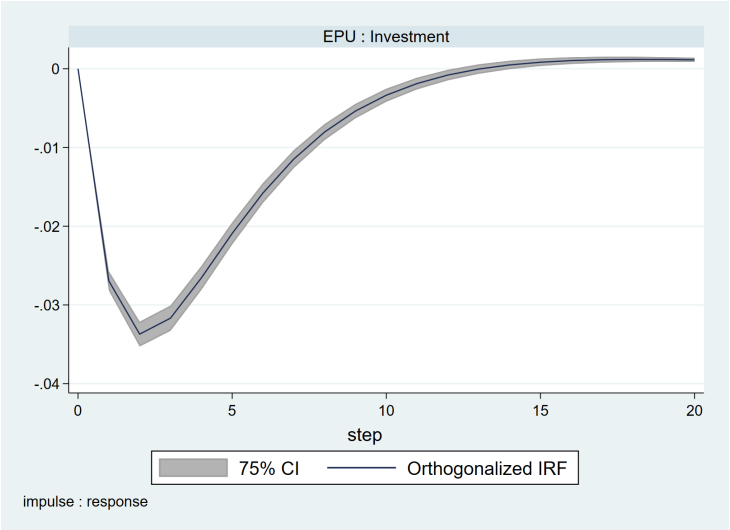


Figure 5. IRFs based on Panel VAR Model

Based on a PVAR model, this figure presents the impulse response function (IRF) that quantifies the impact of increasing policy uncertainty on aggregate investment. The IRFs are obtained by estimating vector auto-regressions (PVARs) using the following variables: policy uncertainty (*EPU_News*), the Michigan Consumer Confidence Index, GDP growth, Tobin's q, operating cash flows to total assets, sales growth, and capital investment to total assets.



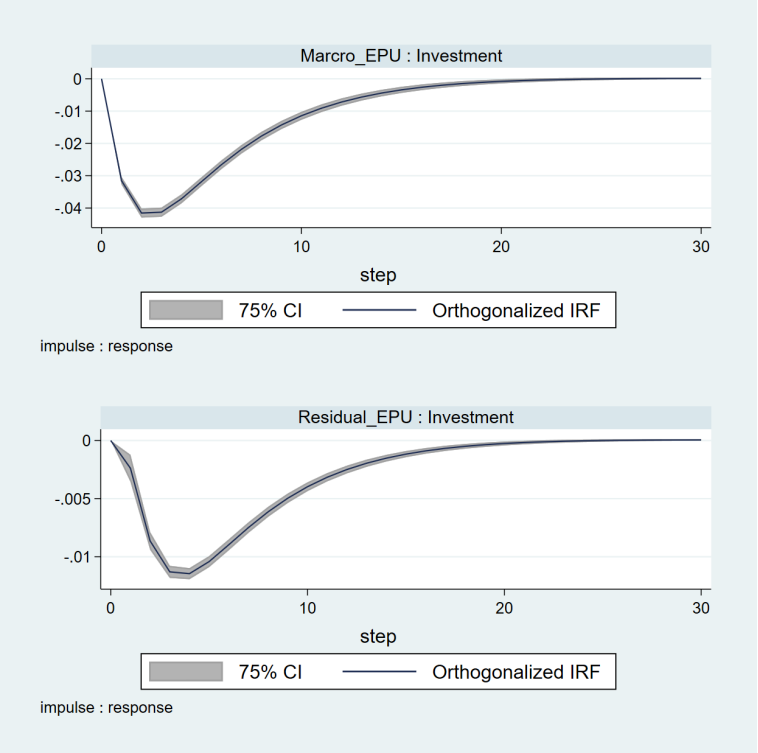
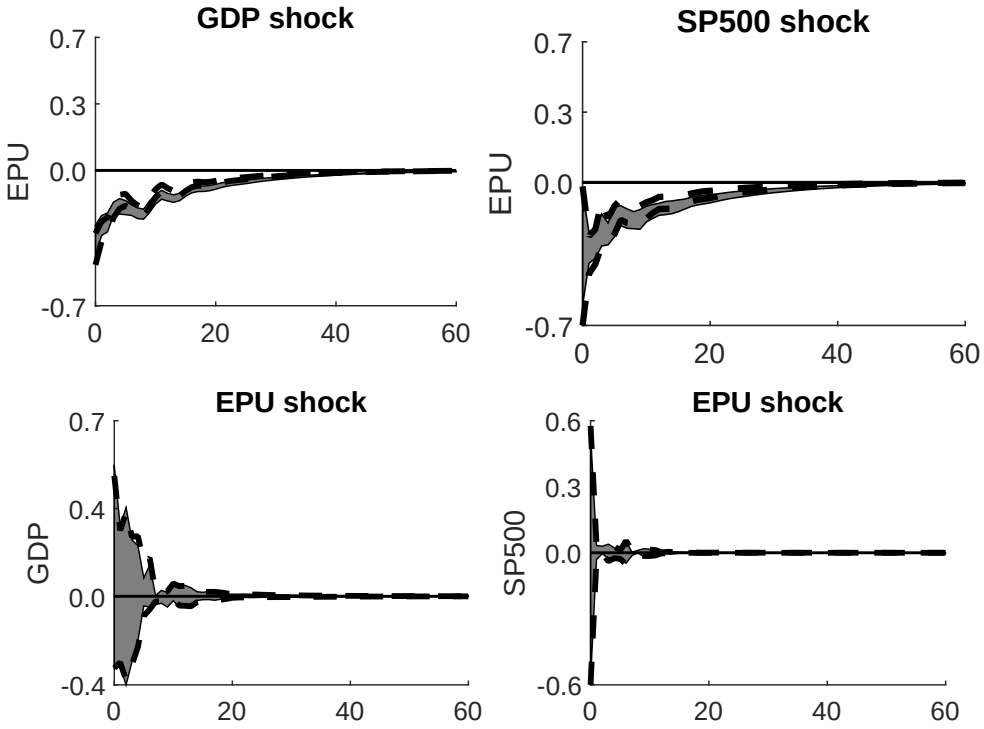


Figure 6. IRFs with Event Constraints

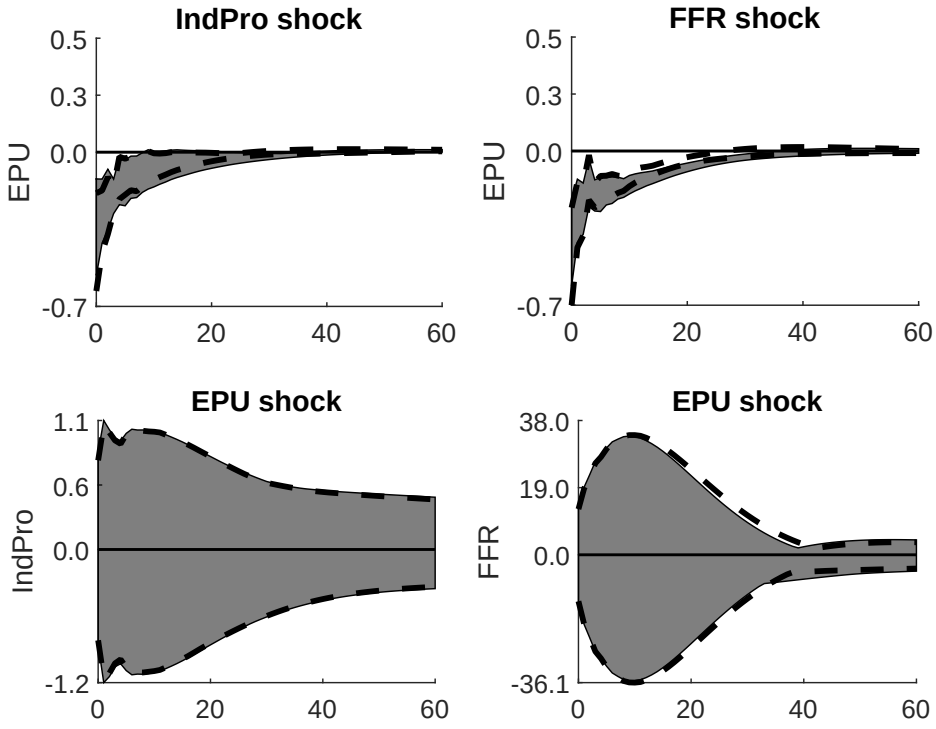
This figure examines the dynamic relationship between macroeconomic conditions and economic policy uncertainty. We use structural vector auto-regressions (SVARs) with event constraints to construct impulse response functions (IRFs) that depict the dynamic responses of economic policy uncertainty indices to innovations in macro variables. Specifically, we construct a VAR system with $X_t = (M_{1t}, U_t, M_{2t})'$, where M_{1t} and M_{2t} represent macroeconomic variables and U_t denotes the measure for policy uncertainty. We use six lags in the VARs. Additionally, we restrict innovations to macroeconomic variables in the VARs to fall below 85% of possible values during the financial crisis of 2007-2009, the debt ceiling crisis in 2011, and the COVID-19 pandemic in 2020.

In Panel A, we construct the IRFs based on $X = (GDP, PU, S\&P500)'$, where GDP, PU, and $S\&P500$ represent GDP growth, policy uncertainty, and the monthly return of the $S\&P500$ index, respectively. Panel B presents IRFs based on $X = (IndPro, PU, FFR)'$, where $IndPro$, PU, and FFR represent the industrial production index, policy uncertainty, and Federal funds rates, respectively. The sample period spans from January 1985 to September 2022.

Panel A: This figure reports an identified set of the impulse response to positive, one standard deviation shocks for system $X = (GDP, PU, S\&P500)'$, where GDP, PU, and $S\&P500$ represent GDP growth, policy uncertainty, and monthly return of the $S\&P500$ index, respectively.



Panel B: This figure reports identified set of impulse response to positive, one standard deviation shocks for system $X = (IndPro, PU, FFR)'$, where $IndPro$, PU, and FFR respresent industrial production index, policy uncertainty, and Federal funds rates, respectively.



Appendix B: Variable Descriptions

Table B1: Uncertainty indices used in the study
This table lists and describes the main text-based economic policy uncertainty indices in the prior literature.

Variable	Description
Economic Policy Uncertainty Index (EPU)	The index of economic policy uncertainty based on the counting of the frequency of joint occurrences of the economy policy-related keywords and uncertainty across major newspapers (Baker, Bloom, and Davis (2016)). In this paper, the data for EPU Index spans from 1985:m1 to 2022:m9.
News-based Economic Policy Uncertainty ($News\_EPU$)	The news component of the EPU index by Baker, Bloom, and Davis (2016). In this paper, the data for this index spans from 1985:m1 to 2022:m9.
Monetary policy uncertainty Index (MPU)	The monthly index constructed by scaling frequency counts of newspaper articles that discuss monetary policy uncertainty across major newspapers (Husted, Rogers, and Sun (2017)). In this paper, the data for this index spans from 1985:m1 to 2022:m9.
Trade policy uncertainty (TPU)	The monthly index of trade policy uncertainty by counting the frequency of joint occurrences of the trade policy and uncertainty terms across major newspapers (Caldara et al. (2020)). In this paper, the data for this index spans from 1985:m1 to 2022:m9.
Financial stress indicator (FSI)	A monthly index of financial stress that is based on occurrences of financial stress-related keywords and uncertainty across five major US newspapers (Püttmann (2018)). In this paper, the data for this index spans from 1985:m1 to 2016:m12.
Geopolitical Risk Index (GPR)	A monthly index that is based on an automated text search of geopolitical risk-related articles across 11 national and international newspapers (Caldara and Iacoviello (2018)). In this paper, the data for this index spans from 1985:m1 to 2022:m9..
Partisan conflict (Polarization) index ($Partisan$)	Partisan Conflict Index from Federal Reserve Bank of Philadelphia

Table Continued

Variable	Description
News implied volatility ($NVIX$)	A uncertainty tracker based on the counts of articles on the WSJ that related to policy uncertainty (Manela and Moreira (2017)). In this paper, the data for this index spans from 1985:m1 to 2016:m3.
US equity market volatility index (EMV)	A news paper-based equity market volatility tracker based on the counting of keywords in the economic, stock market, and volatility categories (Baker et al. (2019)). In this paper, the data for this index spans from 1985:m1 to 2022:m9..
Policy-Related EMV tracker ($Policy-EMV$)	The measure that is constructed using the same approach to the EMV, but only focuses on the policy-related keywords. In this paper, the data for this index spans from 1985:m1 to 2022:m9.
World uncertainty index (WUI)	The quarterly index of economic uncertainty based on frequency counts of uncertainty-related keywords in the quarterly Economist Intelligence Unit country reports (Ahir, Bloom, and Furceri(2018)). In this paper, the data for this index spans from 1985:Q1 to 2022:Q3.
Migration policy uncertainty index ($MiPU$)	The quarterly index of migration fear intensity based on frequency counts of "migration", "fear", "economy", "policy", "uncertainty", and their related keywords in major news articles. In this paper, the data for this index spans from 1990:Q1 to 2022:Q3.
Migration fear index (MFU)	A measure constructed by the same approach to MiPU, except that a different scaler is used. In this paper, the data for this index spans from 1990:Q1 to 2022:Q3.
Climate policy uncertainty (CPU)	A measure constructed by the same approach with EPU_News, based on frequency counts of climate policy related keywords in major newspapers. In this paper, the data for this index spans from 1987:Q2 to 2022:Q3.

Table B2: Macroeconomic variables used in the study

Variable	Description
Wage	The natural logarithm of the average hourly wage of nonsupervisory workers. According to the Federal Reserve Bank of St. Louis, "Nonsupervisory employees include those individuals in private, service-providing industries who are not above the working-supervisor level." In this paper, the data for this index spans from 1985:m1 to 2022:m9.
CPI	The natural logarithm of the consumer price index for all urban consumers. Here, we calculate the consumer price index as the relative prices of goods and services from 1982 through 1984. In this paper, the data for this index spans from 1985:m1 to 2022:m9.
Sentiment	The natural logarithm of the consumer sentiment index developed by the University of Michigan. In this paper, the data for this index spans from 1985:m1 to 2022:m9.
GDP	The natural logarithm of real gross domestic product. In this paper, the data for this index spans from 1985:Q1 to 2022:Q3.
IndPro	The natural logarithm of the industrial production index. We calculate the industrial production index based on the real output in the US relative to the condition in 2007. In this paper, the data for this index spans from 1985:m1 to 2022:m9.
*S&P*500	The natural logarithm of the S&P 500 index by the end of each month. In this paper, the data for this index spans from 1985:m1 to 2022:m9.
FFR	The federal funds rate, FFR, represents the overnight interest rate at which depository institutions trade federal funds with each other. In this paper, the data for this index spans from 1985:m1 to 2022:m9.
$Hour$	$Hour$ represents the average weekly working hours per worker in the manufacturing industry. In this paper, the data for this index spans from 1985:m1 to 2022:m9.
Employment	*Employment* is the natural logarithm of the total nonfarm workers in the economy. According to the Federal Reserve Bank of St. Louis, it accounts for approximately 80 percent of the workers that contribute to GDP. In this paper, the data for this index spans from 1985:m1 to 2022:m9.