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International economic policy uncertainty and analysts' earnings forecasts☆

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ABSTRACT

We investigate the extent to which international economic policy uncertainty (EPU) impacts analysts' earnings forecasts. Using a sample of Australian firms, we demonstrate that EPU is positively associated with the size of forecast errors and the extent of forecast dispersion. Consistent with Australia being a relatively small but open economy, we show that this EPU effect extends beyond domestic EPU to include global and country-specific EPU, most notably Chinese and US EPU. The effect of international EPU is stronger for short-term forecasts, and for firms with higher growth prospects and profitability. However, the effect of Australian EPU is more pronounced for longer horizon forecasts and for firms in the resources and mining industries, and those with lower growth and profitability. Our results are consistent with heightened international EPU negatively impacting firms' information environment, with increased variation in market participants' beliefs.

1. Introduction

The extant literature on economic policy uncertainty (EPU) has established that such uncertainty can have significant effects on stock prices, corporate investment behaviors and firm disclosure practices (Brogaard and Detzel, 2015; Gulen and Ion, 2016; Nguyen and Phan, 2017; Jiang et al., 2022). The interpretation of these effects relies on the rationale that EPU leads to a deteriorated information environment and thus less informed decisions made by economic agents (Baker et al., 2016; Nagar et al., 2019). However, there is relatively limited research that provides direct evidence in support of this rationale. In this study, we investigate the extent to which international EPU impacts market participants' beliefs, an important channel through which EPU may lead to less informed decisions. To capture market participants' beliefs, we use analysts' forecasts as a proxy because they can reflect the market's expectations about a firm's future performance (Joos et al., 2016) and their accuracy is useful for investors' and corporate managers' decisions (Altınkılıç et al., 2013; Kothari et al., 2016).

Our analysis of the informational role of international EPU in shaping analysts' forecasts focuses on the Australian market because

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of its unique position in the global economy. First, Australia's close economic ties with both China and the US make it an ideal setting to investigate the effects of international EPU, particularly given the significant influence these two economies have on global economic dynamics (Chang et al., 2022).[1] The global composite EPU and the country-level EPU of China and the US are of particular interest due to their significant impact on international trade, economic sanctions, and macroeconomic variables (Kang et al., 2020).

Second, the substantial size of Australia's economy and financial market relative to similar countries provides a robust context for examining the relationship between EPU and various economic and financial variables.[2] Australia is an open and export-oriented economy (Nimark, 2009) such that local economic agents are more likely to be susceptible to foreign sources of EPU (Fernández-Villaverde et al., 2011). The study of Australian firms can therefore provide valuable insights into how international EPU affects analyst behavior, which is crucial for understanding market efficiency and financial decision-making in an interconnected global economy.

Finally, despite evidence that information intermediaries receive more attention during periods of greater uncertainty (such as increases in EPU), there is only limited evidence on how changes in EPU impact sell-side analysts' forecasts (Chourou et al., 2021; Chen et al., 2022), despite widespread acceptance of their importance as information intermediaries (Baloria and Mamo, 2017; Mikhail et al., 2007). However, existing studies have primarily focused on the largest economies and capital markets, such as the UK (Chen et al., 2022) and US (Chourou et al., 2021). We extend this research by examining the association between changes in international EPU and properties of analysts' earnings forecasts for Australian firms.

Using the Baker et al. (2016) newspaper-based index as a proxy for the degree of EPU and a sample of Australian firms listed on the Australian Securities Exchange (ASX), we examine the effects of domestic and international EPU on analysts' forecast errors and forecast dispersion. Existing studies document evidence that the spillovers of policy uncertainty among countries are substantial (Baker et al., 2016). Accordingly, international EPU, especially that arising from policy unpredictability in major economies, can have far-reaching implications for global financial markets, capital flows, investor sentiment, and ultimately, the accuracy and dispersion of analysts' forecasts (Brogaard and Detzel, 2015). This is because uncertainty in foreign economic policies can cloud the forecasts made by financial analysts, who rely on a stable policy environment to make accurate predictions about future performance.

We anticipate that increased EPU will lead to less accurate earnings forecasts for several reasons. First, EPU increases the volatility of a firm's future economic outcomes, such as revenues, profitability and cash flow. This increased volatility poses a challenge for analysts in predicting economic outcomes, especially for firms with high exposure to international trade and reliance on government spending. Second, the effect of EPU on corporate investment and financing decisions (Gulen and Ion, 2016) likely complicates forecasting tasks, as analysts need to estimate the real effect of EPU. Third, previous research shows that analysts tend to underutilize publicly available information when faced with heightened uncertainty, thereby resulting in greater forecast errors (Zhang, 2006; Hann et al., 2012).

Our empirical tests confirm that Australian EPU is positively associated with analysts' forecast errors. A doubling of Australian EPU leads to an 18% increase in the average forecast error. When we extend our analysis to include the effects of EPU changes in the major economies with which Australia trades, the results indicate that US, Chinese and global EPU exert a strong positive and incremental effect on analyst forecast errors, even after controlling for local EPU and other macro and micro factors.

Next, we consider the impact of EPU on forecast dispersion. Forecast dispersion may increase with EPU because (1) analysts assign different probabilities to different macroeconomic events (Harris and Raviv, 1993; Kandel and Pearson, 1995); (2) analysts have different levels of expertise in forecasting the outcomes and consequences of economic policies; and (3) analysts have different access to additional public or private information (Kim and Verrecchia, 1991). On the other hand, an increase in EPU may also increase analysts' tendency to imitate the actions of their peers (Zhang, 2006; Lin, 2018), leading to less dispersed earnings forecasts. Hence, we view the expected effect of heightened EPU on the dispersion of analysts' earnings forecasts as an empirical question.

Our results confirm a positive association between EPU and forecast dispersion. A doubling of Australian EPU leads to a 16% increase in average forecast dispersion. However, when we extend our analysis to include international EPU, only Chinese EPU and a measure of global EPU have incremental and significantly positive impacts on forecast dispersion. In contrast, the incremental impact of US EPU is statistically insignificant. This suggests that the impact of US EPU has been largely absorbed by Australian EPU; thus, the US EPU has a limited and marginally incremental effect.

To address concerns about omitted variable bias, we control for macroeconomic factors, differences in analyst attributes and other forms of economy-wide and firm-level uncertainty. We also include firm fixed effects for all specifications and conduct a battery of robustness tests. These tests indicate that the international EPU effects are more pronounced for short-horizon forecasts and firms with higher growth prospects and higher profitability. In comparison, the Australian EPU effect is much stronger for earnings forecasts issued for firms in the mining and resources sector, firms with lower growth opportunities and lower profitability, and the EPU effect increases as the forecast horizon lengthens. These results indicate that heightened EPU is associated with greater uncertainty and disagreement among sell-side analysts. However, there is no significant evidence of heterogeneity in analyst experience. In other words, analysts with better overall, industry- and firm-specific experience do not produce better forecasts with lower errors and lower

[1] Australia has strong bilateral relationships with China and the United States regarding economic and trade complementarities. China is the biggest two-way trading partner of Australia with 28.8% share of the total two-way trading, followed by the United States with 9.3% share (Australian Trade and Investment Commission, 2020).

[2] Australia is consistently ranked between the 10th and 20th largest international economies, well below the US and UK economies where previous research on the impact of EPU on sell-side analysts has been considered. It is also widely considered to be a very open, trade-oriented economy (Nimark, 2009; Australian Trade and Investment Commission, 2023).

degree of dispersion during periods of elevated policy uncertainty.

Finally, we test the association between EPU and analyst coverage, as the initiation of analyst coverage reflects the information demands by market participants in times of uncertainty. Our results show that, when Australian EPU doubles, analyst coverage increases by 3.9%. However, when controlling for the effects of international EPU, we observe a negative association between *Chinese* EPU and analyst coverage of Australian firms. These results are in sharp contrast to those reported by Chen et al. (2022) for UK firms, which show that UK domestic EPU has no discernible impact on analyst coverage.

Our study makes important contributions. First, we extend the literature investigating the effects of EPU to further our understanding of how EPU impacts information intermediaries and hence, the broader information environment. There is only limited prior evidence linking EPU with the attributes of sell-side analysts' forecasts (Chourou et al., 2021; Chen et al., 2022). Such evidence is based solely on the effects of EPU in the US or UK capital markets. In contrast, we examine the effect of both domestic and international EPU on analyst performance in a smaller and more open economic environment (i.e., Australia), where international EPU effects are most likely to arise. In doing so, we extend prior analysis suggesting that EPU effects are not limited to domestic EPU alone (Colombo, 2013). We provide novel evidence on the cross-country spillover effects of policy-related uncertainty on analyst-level performance, in particular the differential effects of Australian, Chinese, and US EPU on analyst coverage and dispersion. Our results suggest that researchers interested in EPU effects in countries that are relatively small and open should consider the impact of EPU attributable to major trading partners (and larger economies) so as to gain a more comprehensive understanding of EPU effects.

Second, by demonstrating that changes in EPU have a significant effect on analysts' forecast accuracy, we further expand our understanding of the specific issue of how uncertainty impacts the quality of the information produced by sell-side analysts. Prior studies indicate that many sources of firm-specific uncertainty have a negative impact on analyst performance. Examples include the volatility of a firm's underlying fundamentals (Zhang, 2006), investor sentiment (Hribar and McInnis, 2012), the quality of accruals and operational uncertainty (Lobo et al., 2012), and uncertainty related to intangible assets (Barth et al., 2001; Barron et al., 2002). However, little is known about how analysts incorporate economy-wide news into their evaluations, despite the importance of economy-wide shocks to firm-level earnings (Jackson et al., 2018). This study adds to this body of evidence by considering how EPU influences analyst forecast accuracy and consensus. In identifying such an effect, the plausibly exogenous nature of changes in EPU avoids many of the endogeneity issues associated with other studies examining the impact of firm-level or industry-specific uncertainty on analysts' forecasts and helps expand our understanding of the process by which analysts' forecasts are produced (Brown et al., 2015). Given our evidence of a modest positive association between domestic EPU and the extent of analyst coverage, the results also further our understanding of how information volume does not necessarily lead to an improvement in the information environment (Nagar et al., 2019).

The remainder of the paper proceeds as follows. Section 2 discusses prior research and develops empirical predictions. Section 3 explains the measurement of EPU, the research methodology, and our sample. Section 4 presents empirical findings and robustness tests. Section 5 summarizes and discusses possible avenues for future research.

2. Background and hypothesis development

2.1. Background

A growing body of literature investigates how EPU affects financial reporting decisions of firms and financial intermediaries. Nagar et al. (2019) use a large sample of US public companies from 2003 to 2016 and find that EPU is positively associated with the extent of voluntary management disclosures related to 8-K filings and management forecasts. However, such increased voluntary disclosure appears to only partially reduce the negative consequences of increased information asymmetry between investors and managers (e.g., higher bid-ask spreads). Although focusing on gubernatorial elections (rather than EPU), Boone et al. (2020) find that increased local political uncertainty is likewise associated with more informative and regular 8-K filings. Bird et al. (2023) find similar results with respect to disclosure quantity. However, Jiang et al. (2022) show that although increased EPU is associated with an increase in textual disclosures, these disclosures tend to be less readable than those made during periods of lower EPU. Hence, although it may be reasonable to conclude that voluntary disclosure increases during periods of higher political and economic uncertainty, the effect of such increased disclosure is less clear. Moreover, corporate disclosure is only one of many sources of information used by investors. The effect of EPU on the demand for other financial intermediaries (such as sell-side analysts) is even less clear, as is the direct impact of heightened uncertainty on the accuracy of the information they provide.

Financial analysts play a crucial role as information intermediaries in the transfer of information from firms to the market (Kothari, 2001). They have the potential to uncover novel information beyond what is publicly available and to improve the efficiency of the information transmission process. However, prior research has shown that analysts' forecasting performance is impacted by various information uncertainties, such as the volatility of firms' underlying fundamentals (Zhang, 2006), investor sentiment (Hribar and McInnis, 2012), the quality of accruals and operational uncertainty (Lobo et al., 2012), and the volatility pertaining to intangible assets (Barth et al., 2001; Barron et al., 2002). In general, these studies suggest that information uncertainty decreases forecast accuracy and can hinder the ability of financial analysts to effectively communicate information to the market.

Although prior studies identify a wide range of firm-specific factors that significantly affect analyst forecast performance, relatively little attention has been paid to how macroeconomic factors are associated with analyst forecast accuracy. Using conference call scripts, Hassan et al. (2019) suggest that managers and analysts spend more time on issues directly related to political uncertainty before or amid presidential and congressional election quarters. Baloria and Mamo (2017) show that the quality of analysts' forecasts is negatively impacted by US presidential election cycles, with reduced analyst coverage (i.e., less following), larger forecast errors, and

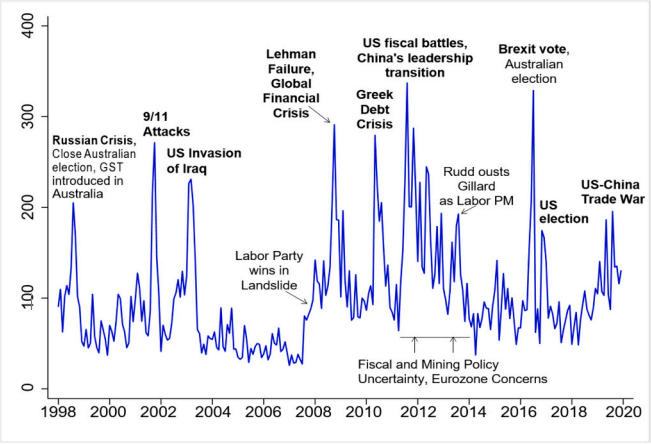

Fig. 1. Australian EPU index.
Plots the time series of Australian economic policy uncertainty (Baker et al., 2016) over the period from January 1998 to December 2019, with *foreign* originating events shown in bold. Data are available at www.policyuncertainty.com.

greater forecast dispersion. However, previous research has focused primarily on firm-specific or even analyst-specific attributes that are associated with the quality of the information they subsequently provide. In contrast, our focus is on the effect of EPU on the quality (i.e., accuracy) of analysts' earnings forecasts and the extent to which they reflect a consensus view.

2.2. Hypothesis development

An implicit assumption underlying any expected association between EPU and properties of analysts' forecasts is that individual analysts with heterogeneous characteristics and expertise may understand and predict economic events differently. Political uncertainty has significant implications for firm profitability (Pastor and Veronesi, 2012, 2013) and, thus, can plausibly complicate the earnings forecasting tasks of individual analysts. Tests of these hypotheses are also conducted at the analyst-firm level. Firms are often exposed to greater uncertainty about the content, timing, and potential impact of economic policy decisions made by politicians and institutional regulators. This has a significant impact on corporate decisions. An increase in policy uncertainty can lead firms to hold more cash, reduce investment, mergers and acquisitions, and labor hiring, and delay capital raising (Julio and Yook, 2012; Gulen and Ion, 2016; Nguyen and Phan, 2017; Li et al., 2018).

Our first hypothesis addresses the effect of EPU on analysts' forecast accuracy. There are several reasons to expect that increased EPU will result in less accurate earnings forecasts. First, EPU increases the volatility of a firm's future economic outcomes, such as profitability, cash flow or the valuation of fixed assets already in place. In periods of prolonged political risks, analysts must estimate the likelihood of future policy outcomes and then consider how those outcomes will differentially influence individual firms. Policy-related uncertainty, stemming from fiscal policy choices, taxation decisions and other regulations, can increase the difficulty of predicting corporate expenditure, and the resulting economic benefits. Uncertainty regarding trade policy or government spending can increase the difficulty of forecasting revenues for firms with greater exposure to international trade and greater reliance on government spending.

Second, EPU also has first order effects on the overall economy, particularly on corporate decision-making. Unexpected changes in real investment and financing decisions, together with larger fluctuations in corporate operating activities, have been shown to follow an increase in EPU (Gulen and Ion, 2016; Chen et al., 2020). Such changes are likely to complicate forecasting tasks, as analysts are required to estimate the earnings implication of the real impact of EPU on the firm-level decision-making process.

Third, EPU has a direct effect on firms' financial disclosure choices. Although there is evidence that increased EPU is associated with increased disclosure (Nagar et al., 2019; Jiang et al., 2022), it is unclear whether such increased disclosure frequency and quantity successfully mitigates the effects of increased information asymmetry such as higher bid-ask spreads. Hence, it is also unclear whether the accuracy or consensus reflected in analysts' forecasts would be improved by such disclosures. Finally, and relatedly, prior evidence suggests that analysts often underweight publicly accessible information such as the news in share prices (Abarbanell, 1991) and earnings (Abarbanell and Bernard, 1992), and overweight their private sources of information. More recently, Zhang (2006) and Hann et al. (2012) show that when face with increased uncertainty, they systematically fail to incorporate publicly available information, resulting in higher forecast errors.

However, while increased EPU may be expected to result in less accurate forecasts, there is also some tension in this expectation. To the extent that analysts have access to sophisticated macroeconomic expertise, the effect of increased EPU on forecast accuracy may be attenuated. Hutton et al. (2012) suggest that analysts' information advantage lies primarily in the field of macroeconomics, because their macroeconomic expertise gives them an information advantage over corporate managers in forecasting the impact of economy-wide fluctuations on earnings. Hence, it is ultimately an empirical question as to whether variation in EPU is associated with the accuracy of analysts' earnings forecasts for Australian firms. The first hypothesis is stated in the null form as:

Table 1
Summary statistics and correlation matrix.

Panel A: Summary statistics of macroeconomic uncertainty

Descriptive statistics of macroeconomic measures

	N	Mean	Median	SD	Min	P25	P75	Max
Australian EPU	264	100.573	88.375	57.256	25.662	60.898	118.482	337.044
US EPU	264	122.841	111.162	47.793	44.783	87.512	150.701	284.136
Chinese EPU	264	185.761	116.408	188.506	9.067	77.991	215.785	970.830
Global EPU	264	117.110	102.922	55.611	49.352	75.554	142.712	339.797
National Election	264	0.269	0.000	0.444	0.000	0.000	1.000	1.000
Recession	264	0.439	0.000	0.497	0.000	0.000	1.000	1.000
Quarterly GDP Growth	264	0.007	0.008	0.005	−0.004	0.004	0.010	0.019

Mean of Australian EPU between sub-periods: election years and recessionary period

	Non-election			Election			
	N	Mean	SD	N	Mean	SD	*t*-test for difference
Australian EPU	193	97.082	54.730	71	110.061	63.056	−1.6383
	Non-recession			Recession			
	N	Mean	SD	N	Mean	SD	
Australian EPU	148	91.403	59.096	116	112.271	52.791	−2.9830***

Panel B: Summary statistics of dependent, firm-level and analyst-related measures

	N	Mean	Median	SD	Min	P25	P75	Max
Dependent variables								
Forecast errors	58,226	−0.343	−0.027	1.289	−8.854	−0.275	0.061	2.000
Absolute forecast errors	58,226	0.587	0.134	1.496	0.000	0.043	0.433	11.000
Forecast Dispersion	36,936	0.275	0.070	0.711	0.000	0.031	0.182	5.303
Analyst Coverage	58,226	8.933	8.000	5.581	1.000	4.000	13.000	30.000
Firm-level control variables (annual data)								
Firm size	9820	5.908	5.696	1.762	2.900	4.631	7.034	11.022
Market-to-book ratio	9820	2.665	1.684	2.894	0.205	1.028	3.020	16.813
Loss	9820	0.268	0.000	0.443	0.000	0.000	1.000	1.000
Earnings surprise	9820	49.245	5.937	150.649	0.000	1.297	24.696	1101.765
Z-score	9820	5.572	2.634	10.431	−1.194	0.909	5.008	61.574
Absolute Accruals	9820	0.065	0.040	0.079	0.000	0.016	0.081	0.414
Stdev of ROE	9820	0.224	0.074	0.458	0.000	0.031	0.189	2.719
Analyst-related characteristics								
Number of firms followed	58,226	14.040	10.000	22.048	1.000	7.000	15.000	143.000
Brokerage house size	58,226	24.254	24.000	13.035	1.000	14.000	33.000	70.000
Horizon (days)	58,226	165.083	156.000	94.527	1.000	92.000	246.000	365.000

(*continued on next page*)

Table 1 (*continued*)

Panel B: Summary statistics of dependent, firm-level and analyst-related measures

	N	Mean	Median	SD	Min	P25	P75	Max
General experience	58,226	5.743	4.000	4.977	0.000	2.000	9.000	20.000
Firm experience	58,226	1.984	1.000	2.655	0.000	0.000	3.000	14.000
Industry experience	58,226	4.051	2.000	4.374	0.000	1.000	6.000	19.000

Panel C: Pairwise correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) ABS _FE	1															
(2) DISP_EARN	0.687***	1														
(3) COVERAGE	−0.110***	−0.062***	1													
(4) AUEPU	0.040***	0.071***	0.083***	1												
(5) USEPU	0.058***	0.070***	−0.039***	0.715***	1											
(6) CNEPU	0.037***	0.021	−0.104***	0.228***	0.532***	1										
(7) GEPU	0.056***	0.059***	−0.076***	0.529***	0.784***	0.903***	1									
(8) SIZE	−0.157***	−0.135***	0.766***	0.010	−0.007	0.059***	0.035***	1								
(9) MTB	−0.043***	−0.048***	0.025**	−0.051***	−0.012	0.072***	0.042***	0.101***	1							
(10) LOSS	0.162***	0.284***	−0.268***	0.034***	0.075***	0.066***	0.102***	−0.346***	0.027***	1						
(11) EARN_SUR	0.055***	0.080***	0.008	0.028***	0.018*	0.025**	0.049***	0.007	−0.113***	0.180***	1					
(12) ZSCORE	0.042***	0.074***	−0.150***	0.020**	0.038***	0.027***	0.051***	−0.102***	0.380***	0.239***	−0.052***	1				
(13) ACCRUALS	0.102***	0.133***	−0.186***	−0.002	0.014	0.034***	0.039***	−0.258***	0.175***	0.244***	0.123***	0.051***	1			
(14) ROE_sd	0.094***	0.121***	−0.196***	−0.006	0.025**	0.070***	0.074***	−0.225***	0.182***	0.284***	0.274***	0.083***	0.275***	1		
(15) ELECTION	−0.035***	−0.003	0.045***	0.135***	−0.064***	−0.205***	−0.162***	−0.015	−0.010	−0.041***	0.002	−0.029***	−0.013	−0.024**	1	
(16) RECESSION	0.055***	0.064***	0.097***	0.155***	−0.090***	−0.260***	−0.192***	−0.059***	−0.085***	0.045***	0.058***	0.008	0.009	−0.015	−0.114***	1
(17) ΔGDP	−0.040***	−0.024*	0.045***	0.063***	0.054***	−0.188***	−0.137***	0.015	−0.008	−0.083***	−0.073***	−0.044***	−0.034***	−0.055***	0.180***	−0.385***

The table presents summary statistics for Australian, US, Chinese and the global EPU index (Baker et al., 2016) and other macroeconomic measures, a comparison of Australian EPU levels across different sub-periods (Panel A), descriptive statistics for analyst-related variables and firm-level control variables (Panel B), and Pearson correlation matrix among the main variables used in our analysis (Panel C). The data extends from January 1998 to December 2019. All variables are defined in Appendix. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Hypothesis 1. EPU is not associated with analysts' earnings forecast errors for Australian firms.

Another aspect of analysts' earnings forecasts that EPU might affect is the degree of dispersion (i.e., the standard deviation of earnings forecasts issued by all analysts for the same firm and period). However, the relationship between EPU and analyst forecast dispersion is not entirely clear. On the one hand, there are several possible reasons why forecast dispersion might increase with EPU. These include the different probabilities assigned by analysts to various policy outcomes, even when they have access to the same information, differences in the analysts' levels of expertise in estimating policy consequences, and variations in the information sets used by market participants (Harris and Raviv, 1993; Kandel and Pearson, 1995; Varian, 1985). In addition, uncertainty can prompt some analysts to seek additional information or may result in individual analysts having access to unique private information (Kim and Verrecchia, 1991; Diamond and Verrecchia, 1981).

Alternatively, an increase in EPU may encourage herding behavior (Clement and Tse, 2005; Jegadeesh and Kim, 2010). Zhang (2006) finds that analysts' propensity to herd is further aggravated in periods of high firm-level information uncertainty. In conjunction with firm-level uncertainty and market risk, Lin (2018) suggests that aggregate uncertainty increases herding among analysts. In an uncertain information environment, risk-averse analysts might fear that others are better informed, motivating them to herd so as to avoid individual blame. In short, as fundamental uncertainty increases, analysts may be more likely to imitate their peers' actions. The second hypothesis is stated in the null form as follows:

Hypothesis 2. EPU is not associated with analysts' earnings forecast dispersion for Australian firms.

3. Research design and sample

3.1. Measuring economic policy uncertainty

Australia's significant trade relationships and financial linkages mean that international policy shocks can have direct and indirect effects on the Australian economy, influencing exchange rates, commodity prices, and investment flows (Fernández-Villaverde et al., 2011; Smales, 2022). These factors, in turn, affect the operating environment of Australian firms and the forecasts that financial analysts make about these firms. Therefore, we conduct all of our tests on both domestic (i.e., Australian) and international EPU.

We use the Baker et al. (2016) newspaper-based index as a proxy for the degree of economic policy uncertainty. To construct an index of EPU for Australia, they collect text archives from eight Australian news outlets since January 1998.[3] Fig. 1 plots the Australian EPU index from January 1998 to December 2019, and notes significant international and local developments during that time period. From Fig. 1, it is evident that most large uncertainty shocks have come from abroad, reflecting events such as financial crises and international conflicts. However, domestic factors, such as mining and tax policy debates, federal elections and changes in prime ministers, are also associated with spikes in uncertainty. Nevertheless, Fig. 1 suggests the potential importance of international sources of EPU within a smaller, open economy such as Australia. Therefore, we extend the analysis of Australian EPU to also include US and Chinese EPU, as well as a measure of broad international EPU.[4]

Table 1 provides further evidence on the extent to which the EPU measure is independent of time-varying circumstances such as electoral cycles and macroeconomic factors. Panel A of Table 1 shows descriptive statistics for macroeconomic variables, while Panel C reports correlations. The Australian EPU is only moderately correlated with federal elections and the occurrence of recessions (0.135 and 0.155, respectively). Additional evidence is provided in Panel A, which presents *t*-tests of the differences between the EPU values for election versus non-election months and months in recessions versus expansionary periods. Although Australian EPU in non-election months is not significantly different from its value in election months, the average EPU value during recessionary months significantly exceeds the average value for expansionary periods. Panel C of Table 1 further shows the pairwise Pearson correlations between Australian EPU and various measures of international EPU. Notably, the correlation coefficient between Australian EPU and its US counterpart (around 0.72) is far higher than the corresponding correlation with Chinese EPU (only 0.23).

3.2. Baseline OLS regression

In order to identify the contribution of EPU variation to the accuracy and dispersion of analysts' forecasts, we estimate the following regression:

$$Forecast\_Characteristic_{it} = \alpha + \beta_1 EPU_t + \gamma Macro\_controls_t + \delta Analysts\_attributes_{it} + \theta Firm\_controls_{it} + \varepsilon_{it} \quad (1)$$

where the dependent variable is either *ABS_FE* (absolute earnings forecast errors) or *DISP* (dispersion of analysts' earnings forecasts). Following Loh and Mian (2006), the absolute forecast errors are measured as follows:

[3] A detailed discussion of the Baker et al. (2016)'s EPU measure for Australia is provided by Chen et al. (2020), along with an analysis of how Australian EPU shocks align with changes in political and economic circumstances. They show that there is only limited overlap between federal elections and EPU shocks, and also that EPU shocks occur in periods of both strong and weak economic performance.

[4] For a detailed discussion of how US, and Chinese EPU are measured, as well as an aggregate measure of global EPU, see Baker et al. (2016) and Davis (2016).

Table 2
International EPU and analysts' forecast error.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE
Australian EPU	0.069***				0.050***	0.041**	0.036**	0.036**
	(4.28)				(3.23)	(2.23)	(1.98)	(2.06)
Chinese EPU		0.050***			0.032***		0.024**	
		(4.43)			(3.07)		(2.23)	
US EPU			0.098***			0.060**	0.041	
			(4.55)			(2.47)	(1.62)	
Global EPU				0.114***				0.073**
				(4.46)				(2.56)
Firm size	−0.016	−0.036	−0.022	−0.038	−0.033	−0.022	−0.031	−0.030
	(−0.51)	(−1.13)	(−0.70)	(−1.20)	(−1.02)	(−0.71)	(−0.98)	(−0.94)
Market-to-book ratio	−0.033**	−0.032**	−0.031**	−0.028*	−0.031*	−0.031**	−0.030*	−0.030*
	(−2.11)	(−1.99)	(−1.98)	(−1.78)	(−1.94)	(−1.97)	(−1.89)	(−1.86)
Loss indicator	0.091**	0.089**	0.090**	0.087**	0.088**	0.089**	0.088**	0.088**
	(2.11)	(2.05)	(2.08)	(2.00)	(2.03)	(2.06)	(2.02)	(2.02)
Absolute earnings surprise	−0.003	−0.003	−0.003	−0.004	−0.004	−0.003	−0.004	−0.004
	(−0.25)	(−0.25)	(−0.26)	(−0.36)	(−0.28)	(−0.27)	(−0.29)	(−0.33)
Z-Score financial distress	−0.018	−0.014	−0.017	−0.015	−0.016	−0.017	−0.016	−0.016
	(−0.81)	(−0.64)	(−0.75)	(−0.67)	(−0.72)	(−0.77)	(−0.72)	(−0.74)
Absolute accruals	−0.015	−0.016	−0.015	−0.016	−0.015	−0.015	−0.015	−0.015
	(−0.97)	(−1.03)	(−0.99)	(−1.03)	(−1.00)	(−0.98)	(−1.00)	(−1.00)
Standard deviation of ROE	0.014	0.012	0.013	0.012	0.012	0.013	0.012	0.012
	(0.67)	(0.60)	(0.65)	(0.56)	(0.59)	(0.64)	(0.59)	(0.59)
National election	−0.033*	−0.016	−0.028	−0.022	−0.026	−0.031	−0.027	−0.029
	(−1.67)	(−0.83)	(−1.46)	(−1.16)	(−1.32)	(−1.58)	(−1.39)	(−1.46)
National recession	0.038*	0.069***	0.048**	0.059***	0.052**	0.042**	0.050**	0.046**
	(1.80)	(3.47)	(2.33)	(2.92)	(2.51)	(2.02)	(2.41)	(2.25)
Australian GDP growth	−0.538	0.639	−0.378	0.212	0.217	−0.419	0.028	−0.107
	(−0.29)	(0.34)	(−0.21)	(0.12)	(0.12)	(−0.24)	(0.02)	(−0.06)
Number of analysts coverage	−0.007	0.005	−0.004	−0.000	−0.001	−0.005	−0.002	−0.004
	(−0.24)	(0.16)	(−0.12)	(−0.01)	(−0.04)	(−0.18)	(−0.07)	(−0.14)
Number of firms following	0.008	0.006	0.007	0.006	0.007	0.007	0.006	0.007
	(1.10)	(0.80)	(0.89)	(0.76)	(0.87)	(0.92)	(0.81)	(0.88)
Brokerage house size	−0.011	−0.007	−0.010	−0.007	−0.009	−0.011	−0.009	−0.009
	(−1.30)	(−0.81)	(−1.17)	(−0.82)	(−0.98)	(−1.20)	(−1.03)	(−1.03)
Forecast horizon	0.072***	0.070***	0.070***	0.071***	0.071***	0.071***	0.070***	0.071***
	(11.25)	(11.12)	(11.35)	(11.39)	(11.21)	(11.34)	(11.29)	(11.36)
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm and time clustering	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	58,103	58,103	58,103	58,103	58,103	58,103	58,103	58,103
Adjusted *R*-squared	0.251	0.250	0.251	0.251	0.251	0.251	0.251	0.251

This table presents the results for regressing analyst forecast error on Australian, Chinese, United States, and global EPU indices while controlling for other determinants of analyst forecast performance for Australian firms during the period from January 1998 to December 2019. Those variables are defined in Appendix. We include firm fixed effects in all specifications. We cluster standard errors by firm and calendar-month. All continuous variables are normalized by their sample standard deviation. *t*-statistics are reported below the coefficients. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

$$ABS\_FE_{it} = \left| \frac{Actual_{it} - \overline{Forecast}_{it}}{Actual_{it}} \right|$$

where ABS_FE_{it} (hereafter *ABS_FE* for simplicity) represents the absolute forecast error for firm *i* at time *t*. ABS_FE_{it} is formally defined as the difference in absolute terms between the actual earnings per share and the median of individual analyst forecasts for firm *i* within a calendar month *t*, scaled by the absolute value of actual earnings at the firm's fiscal year-end.[5,6] Individual analyst forecasts are obtained from the Detailed IBES files. *DISP* is the standard deviation of earnings forecasts provided by individual analysts over a given calendar month, scaled by the absolute value of actual earnings at the firm's fiscal year-end. To lessen the effect of extreme

[5] Apart from using the median of individual analyst forecasts in the baseline regressions, we also use other definitions of consensus forecasts, including the mean of individual forecasts and the most recent forecast in a given month. For each month, an updated forecast error is calculated, and then the value is scaled by the absolute actual earnings. In unreported tests we confirm that different consensus measures of forecast error yield near identical conclusions.

[6] An alternative measure suggested by Richardson et al. (2004) is to define *ABS_FE* as the difference in absolute terms between the actual annual EPS and the forecast EPS for firm *i* in year *t*, deflated by company *i*'s share price 11 months before the fiscal year-end month. In unreported tests we confirm that our results are not sensitive to this choice.

Table 3
International EPU and analysts' forecast dispersion.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP
Australian EPU	0.062***				0.048**	0.053**	0.049**	0.037*
	(3.07)				(2.59)	(2.43)	(2.29)	(1.78)
Chinese EPU		0.036***			0.018*		0.019*	
		(2.94)			(1.76)		(1.73)	
US EPU			0.060***			0.011	−0.003	
			(2.62)			(0.44)	(−0.13)	
Global EPU				0.090***				0.047*
				(3.34)				(1.74)
Firm size	−0.029	−0.042	−0.028	−0.048	−0.039	−0.029	−0.039	−0.039
	(−0.83)	(−1.17)	(−0.81)	(−1.29)	(−1.07)	(−0.83)	(−1.08)	(−1.04)
Market-to-book ratio	−0.051***	−0.051***	−0.052***	−0.047**	−0.050**	−0.051***	−0.050***	−0.049**
	(−2.68)	(−2.62)	(−2.70)	(−2.46)	(−2.59)	(−2.68)	(−2.60)	(−2.52)
Loss indicator	0.246***	0.245***	0.247***	0.242***	0.244***	0.246***	0.244***	0.244***
	(4.40)	(4.38)	(4.41)	(4.33)	(4.36)	(4.39)	(4.36)	(4.34)
Absolute earnings surprise	0.007	0.007	0.007	0.005	0.006	0.007	0.006	0.006
	(0.28)	(0.28)	(0.29)	(0.23)	(0.27)	(0.28)	(0.27)	(0.25)
Z-Score financial distress	−0.081**	−0.078**	−0.080**	−0.079**	−0.080**	−0.081**	−0.080**	−0.080**
	(−2.28)	(−2.19)	(−2.25)	(−2.20)	(−2.25)	(−2.28)	(−2.25)	(−2.26)
Absolute accruals	0.006	0.005	0.006	0.005	0.006	0.006	0.006	0.006
	(0.24)	(0.20)	(0.22)	(0.20)	(0.23)	(0.24)	(0.23)	(0.23)
Standard deviation of ROE	0.032	0.032	0.033	0.031	0.031	0.032	0.031	0.031
	(1.24)	(1.23)	(1.29)	(1.18)	(1.20)	(1.25)	(1.20)	(1.20)
National election	−0.017	−0.003	−0.010	−0.007	−0.013	−0.017	−0.013	−0.014
	(−0.99)	(−0.16)	(−0.59)	(−0.44)	(−0.77)	(−0.98)	(−0.76)	(−0.83)
National recession	0.057**	0.082***	0.068***	0.075***	0.065***	0.057**	0.065***	0.063***
	(2.52)	(3.66)	(3.04)	(3.35)	(2.91)	(2.52)	(2.95)	(2.76)
Australian GDP growth	1.857	2.718	1.977	2.500	2.268	1.856	2.320	2.130
	(1.02)	(1.43)	(1.04)	(1.35)	(1.26)	(1.02)	(1.29)	(1.17)
Number of analysts coverage	0.037	0.050	0.043	0.045	0.041	0.037	0.041	0.039
	(1.05)	(1.40)	(1.21)	(1.27)	(1.15)	(1.05)	(1.15)	(1.10)
Number of firms following	0.003	0.002	0.003	0.001	0.002	0.003	0.002	0.002
	(0.31)	(0.16)	(0.26)	(0.09)	(0.20)	(0.30)	(0.21)	(0.19)
Brokerage house size	−0.019*	−0.017*	−0.019*	−0.016*	−0.018*	−0.019*	−0.018*	−0.018*
	(−1.94)	(−1.66)	(−1.91)	(−1.66)	(−1.80)	(−1.94)	(−1.78)	(−1.83)
Forecast horizon	0.023***	0.022***	0.022***	0.022***	0.022***	0.023***	0.022***	0.023***
	(4.37)	(4.09)	(4.33)	(4.30)	(4.22)	(4.39)	(4.23)	(4.34)
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm and time clustering	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	36,776	36,776	36,776	36,776	36,776	36,776	36,776	36,776
Adjusted *R*-squared	0.285	0.284	0.284	0.284	0.285	0.285	0.285	0.285

This table presents the results for regressing analyst forecast dispersion on Australian, Chinese, United States, and global EPU indices while controlling for other determinants of analyst forecast performance for Australian firms during the period from January 1998 to December 2019. Those variables are defined in Appendix. We include firm fixed effects in all specifications. We cluster standard errors by firm and calendar-month. All continuous variables are normalized by their sample standard deviation. *t*-statistics are reported below the coefficients. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

outliers on the regression results, analyst forecast error and forecast dispersion are winsorized at the 1% and 99% levels.

To reduce the likelihood that the EPU results reflect other forms of uncertainty, our regression analysis also includes controls for three macroeconomic sources of uncertainty that could disrupt analysts' capability to make precise forecasts and/or result in increased dispersion. *Quarterly GDP growth* is used as a measure of the volatility of current demand conditions, while an indicator variable for *federal election* is used as a proxy for political risk. In identifying election periods, months in election years from January to the month in which a particular national election is held are coded as one, suggesting unresolved election outcomes. The months following an election, as well as any calendar month in non-election years, are coded as zero. *Changes in business cycles* are further controlled by including an indicator variable for recessionary periods, as defined by the OECD. A value of one indicates a recessionary period, while a value of zero indicates an expansionary period.[7]

In determining the effect of EPU on the properties of analysts' forecasts, we further control for analyst and firm-specific effects. Our choice of firm-specific variables is consistent with previous research on the properties of analysts' earnings forecasts for Australian firms (Chalmers et al., 2012; Cotter et al., 2012; Matolcsy and Wyatt, 2006). *Firm size* is defined as the natural logarithm of market capitalization. Although larger firms have more complex operations, which may lead to higher earnings forecast errors, firm size is also

[7] As defined by the OECD, Australian recessionary periods include December 1998–March 2001, June 2002–April 2003, January 2008–February 2011, May 2012–May 2015, and November–December 2019.

Table 4
EPU effects with forecast horizon.

Panel A: EPU effect on analyst forecast error

	Long Horizon						Short Horizon						Difference in coefficients		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(4) vs. (10)	(5) vs. (11)	(6) vs (12)
	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE			
Australian EPU	0.081***			0.055**	0.046	0.038	0.037**			0.023	−0.001	−0.002	0.032**	0.047***	0.040***
	(3.34)			(2.25)	(1.52)	(1.27)	(2.26)			(1.35)	(−0.04)	(−0.12)	[0.042]	[0.005]	[0.006]
Chinese EPU		0.062***		0.039**		0.032*		0.032***		0.025***		0.010	0.014		0.022
		(3.52)		(2.25)		(1.75)		(3.38)		(2.60)		(0.94)	[0.956]		[0.213]
US EPU			0.109***		0.065*	0.041			0.092***		0.093***	0.083***		−0.028*	−0.042**
			(3.67)		(1.85)	(1.15)			(3.91)		(3.29)	(2.66)		[0.066]	[0.036]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
N	28,851	28,851	28,851	28,851	28,851	28,851	29,040	29,040	29,040	29,040	29,040	29,040			
Adjusted *R*-squared	0.268	0.268	0.268	0.269	0.269	0.269	0.252	0.253	0.253	0.253	0.253	0.253			

Panel B: EPU effect on analyst forecast dispersion

	Long Horizon						Short Horizon						Difference in coefficients		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(4) vs. (10)	(5) vs. (11)	(6) vs (12)
	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP			
Australian EPU	0.064***			0.044*	0.049	0.042	0.061***			0.052**	0.067**	0.063**	−0.008	−0.018	−0.021
	(2.70)			(1.78)	(1.62)	(1.39)	(2.79)			(2.22)	(2.57)	(2.45)	[0.997]	[0.722]	[0.761]
Chinese EPU		0.049***		0.031*		0.030*		0.031***		0.016		0.023*	0.015		0.007
		(2.99)		(1.89)		(1.75)		(2.62)		(1.33)		(1.68)	[0.952]		[0.793]
US EPU			0.074***		0.027	0.006			0.047		−0.014	−0.037		0.041	0.043
			(2.77)		(0.85)	(0.17)			(1.55)		(−0.40)	(−0.98)		[0.739]	[0.701]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
N	18,162	18,162	18,162	18,162	18,162	18,162	18,419	18,419	18,419	18,419	18,419	18,419			
Adjusted *R*-squared	0.301	0.301	0.301	0.301	0.301	0.301	0.278	0.278	0.277	0.278	0.278	0.278			

The table presents the effects of EPU on analyst forecast error in Panel A and forecast dispersion in Panel B for both long-horizon forecasts and short-horizon forecasts. Long (short) horizon forecasts are those corresponding to earnings that will be reported in more (less) than the sample median of 156 days (approximately 5 months). For expositional clarity, we report only the coefficient estimates of the variables of interest. *Controls* are consistent with those used in previous tables. The sample covers the period from 1998 to 2019. Those variables are defined in Appendix. We include firm fixed effects in all specifications. We cluster standard errors by firm and calendar-month. *t*-statistics are reported in parentheses. For tests of difference in coefficients, *p*-values are reported in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Table 5
EPU effects on forecast performance for mining versus other firms.

Panel A: EPU effect on analyst forecast error

	Mining firms						Non-mining firms						Difference in coefficients		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(4) vs. (10)	(5) vs. (11)	(6) vs (12)
	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE			
Australian EPU	0.151***			0.140***	0.159***	0.144***	0.044***			0.012	−0.006	−0.014	0.128***	0.165***	0.158***
	(3.24)			(2.72)	(3.25)	(2.80)	(2.67)			(0.75)	(−0.34)	(−0.76)	[0.001]	[0.005]	[0.004]
Chinese EPU		0.056***		0.051***		−0.023		0.046***		0.038***		0.038***	0.013**		−0.061
		(4.47)		(4.22)		(−0.73)		(3.81)		(3.08)		(3.09)	[0.049]		[0.194]
US EPU			0.152**		0.025	0.045			0.097***		0.103***	0.069***		−0.078*	−0.024
			(2.58)		(0.42)	(0.66)			(4.26)		(3.93)	(2.67)		[0.081]	[0.488]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
N	13,836	13,836	13,836	13,836	13,836	13,836	44,261	44,261	44,261	44,261	44,261	44,261			
Adjusted *R*-squared	0.228	0.226	0.227	0.228	0.228	0.228	0.213	0.215	0.214	0.215	0.214	0.215			

Panel B: EPU effect on analyst forecast dispersion

	Mining firms						Non-mining firms						Difference in coefficients		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(4) vs. (10)	(5) vs. (11)	(6) vs (12)
	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP			
Australian EPU	0.168***			0.168***	0.190**	0.189**	0.031**			0.015	0.022	0.017	0.153**	0.168**	0.172**
	(2.82)			(2.65)	(2.56)	(2.53)	(2.01)			(1.07)	(1.48)	(1.15)	[0.020]	[0.017]	[0.016]
Chinese EPU		0.054*		0.001		0.011		0.030***		0.024**		0.025**	−0.023		−0.014
		(1.67)		(0.02)		(0.31)		(2.76)		(2.44)		(2.55)	[0.308]		[0.797]
US EPU			0.125*		−0.049	−0.058			0.039**		0.018	−0.004		−0.067*	−0.054
			(1.89)		(−0.63)	(−0.69)			(2.00)		(1.06)	(−0.28)		[0.086]	[0.155]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
N	9654	9654	9654	9654	9654	9654	27,119	27,119	27,119	27,119	27,119	27,119			
Adjusted *R*-squared	0.239	0.237	0.237	0.239	0.239	0.239	0.230	0.230	0.229	0.230	0.230	0.230			

The table presents the effect of EPU on analyst forecast error in Panel A and forecast dispersion in Panel B for the subsamples of mining firms (Columns 1–6) and other firms (Columns 7–12). Mining firms are identified as those firms operating in the GICS Energy and Materials sectors (GICS industry: Metals and Mining). For expositional clarity, we report only the coefficient estimates of the variables of interest. *Controls* are consistent with those used in previous tables. The sample covers the period from 1998 to 2019. Those variables are defined in Appendix. We include firm fixed effects in all specifications. We cluster standard errors by firm and calendar-month. *t*-statistics are reported in parentheses. For tests of difference in coefficients, *p*-values are reported in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Table 6
Cross-sectional analyses based on different firm characteristics.

Panel A: Firm Growth

Panel A1:	Low MTB						High MTB						Difference in coefficients		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(4) vs. (10)	(5) vs. (11)	(6) vs (12)
	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE			
Australian EPU	0.080***			0.071***	0.058**	0.057*	0.060***			0.038**	0.017	0.013	0.033*	0.041*	0.044**
	(2.99)			(2.66)	(1.99)	(1.94)	(3.26)			(2.19)	(0.84)	(0.64)	[0.065]	[0.051]	[0.036]
Chinese EPU		0.039**		0.014		0.007		0.050***		0.036**		0.023	−0.022		−0.016
		(2.26)		(0.89)		(0.43)		(3.44)		(2.58)		(1.51)	[0.200]		[0.371]
US EPU			0.100***		0.047	0.041			0.104***		0.087***	0.068**		−0.040	−0.027
			(2.93)		(1.33)	(1.13)			(4.21)		(3.09)	(2.24)		[0.173]	[0.379]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
N	28,999	28,999	28,999	28,999	28,999	28,999	29,018	29,018	29,018	29,018	29,018	29,018			
Adjusted *R*-squared	0.290	0.289	0.289	0.290	0.290	0.290	0.342	0.342	0.342	0.342	0.342	0.342			

Panel A2:	Low MTB						High MTB						Difference in coefficients		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(4) vs. (10)	(5) vs. (11)	(6) vs (12)
	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP			
Australian EPU	0.087**			0.085**	0.109***	0.106***	0.053***			0.043**	0.040*	0.038*	0.042*	0.069**	0.068**
	(2.55)			(2.38)	(2.94)	(2.81)	(2.96)			(2.40)	(1.75)	(1.67)	[0.070]	[0.011]	[0.011]
Chinese EPU		0.033		0.004		0.015		0.032**		0.016		0.013	−0.012		0.002
		(1.61)		(0.23)		(0.78)		(2.38)		(1.21)		(0.90)	[0.565]		[0.920]
US EPU			0.050		−0.049	−0.061			0.063***		0.026	0.015		−0.075**	−0.076**
			(1.18)		(−1.15)	(−1.44)			(2.81)		(0.91)	(0.48)		[0.038]	[0.048]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
N	17,919	17,919	17,919	17,919	17,919	17,919	18,767	18,767	18,767	18,767	18,767	18,767			
Adjusted *R*-squared	0.297	0.296	0.295	0.297	0.297	0.297	0.395	0.395	0.395	0.395	0.395	0.395			

Panel B: Firm profitability

Panel B1:	Low ROE						High ROE						Difference in coefficients		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(4) vs. (10)	(5) vs. (11)	(6) vs (12)
	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE			
Australian EPU	0.091***			0.077***	0.059*	0.057*	0.052***			0.034**	0.021	0.017	0.043**	0.038*	0.040*
	(3.23)			(2.76)	(1.91)	(1.84)	(3.38)			(2.24)	(1.29)	(1.05)	[0.016]	[0.065]	[0.057]
Chinese EPU		0.049***		0.024		0.013		0.042***		0.029***		0.021*	−0.005		−0.008
		(2.66)		(1.38)		(0.72)		(3.67)		(2.65)		(1.76)	[0.714]		[0.639]
US EPU			0.123***		0.069*	0.058			0.083***		0.063**	0.044*		0.006	0.014
			(3.58)		(1.96)	(1.55)			(3.81)		(2.57)	(1.73)		[0.816]	[0.661]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			

(*continued on next page*)

Table 6 (*continued*)

Panel B: Firm profitability

Panel B1:	Low ROE						High ROE						Difference in coefficients		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(4) vs. (10)	(5) vs. (11)	(6) vs (12)
	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE			
N	28,898	28,898	28,898	28,898	28,898	28,898	29,157	29,157	29,157	29,157	29,157	29,157			
Adjusted *R*-squared	0.269	0.268	0.269	0.269	0.269	0.269	0.386	0.386	0.386	0.386	0.386	0.386			

Panel B2:	Low ROE						High ROE						Difference in coefficients		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(4) vs. (10)	(5) vs. (11)	(6) vs (12)
	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP			
Australian EPU	0.092**			0.081**	0.112**	0.105**	0.028**			0.019	0.014	0.012	0.062***	0.098***	0.093***
	(2.44)			(2.07)	(2.50)	(2.38)	(2.13)			(1.39)	(1.01)	(0.84)	[0.009]	[0.001]	[0.001]
Chinese EPU		0.047**		0.021		0.033		0.021**		0.014		0.010	0.007		0.023
		(2.07)		(0.95)		(1.48)		(2.35)		(1.52)		(1.12)	[0.740]		[0.280]
US EPU			0.056		−0.043	−0.071			0.042**		0.028	0.020		−0.071*	−0.091**
			(1.31)		(−0.91)	(−1.48)			(2.26)		(1.43)	(0.98)		[0.054]	[0.025]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
N	17,237	17,237	17,237	17,237	17,237	17,237	19,451	19,451	19,451	19,451	19,451	19,451			
Adjusted *R*-squared	0.293	0.293	0.292	0.293	0.293	0.293	0.406	0.406	0.406	0.406	0.406	0.406			

Panel C: Firm size

Panel C1:	Larger firms						Smaller firms						Difference in coefficients		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(4) vs. (10)	(5) vs. (11)	(6) vs (12)
	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE			
Australian EPU	0.088***			0.064***	0.046**	0.041*	0.052**			0.034	0.023	0.018	0.030*	0.023**	0.023*
	(4.52)			(3.24)	(2.04)	(1.82)	(2.09)			(1.37)	(0.80)	(0.65)	[0.093]	[0.049]	[0.084]
Chinese EPU		0.061***		0.038***		0.026*		0.043**		0.031*		0.024	0.007		0.002
		(4.46)		(2.87)		(1.83)		(2.41)		(1.80)		(1.27)	[0.673]		[0.165]
US EPU			0.129***		0.086***	0.063**			0.084**		0.063*	0.043		0.023	0.020
			(5.06)		(2.95)	(2.01)			(2.52)		(1.68)	(1.11)		[0.579]	[0.229]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
N	29,167	29,167	29,167	29,167	29,167	29,167	28,930	28,930	28,930	28,930	28,930	28,930			
Adjusted *R*-squared	0.263	0.263	0.264	0.264	0.264	0.264	0.265	0.265	0.266	0.266	0.266	0.266			

Panel C2:	Larger firms						Smaller firms						Difference in coefficients		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(4) vs. (10)	(5) vs. (11)	(6) vs (12)
	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP			

(*continued on next page*)

Table 6 (*continued*)

Panel C2:	Larger firms						Smaller firms						Difference in coefficients		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(4) vs. (10)	(5) vs. (11)	(6) vs (12)
	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP			
Australian EPU	0.059***			0.053**	0.064**	0.061**	0.073**			0.058*	0.071*	0.065	−0.005	−0.007	−0.004
	(2.64)			(2.10)	(2.37)	(2.21)	(1.99)			(1.70)	(1.73)	(1.65)	[0.845]	[0.797]	[0.882]
Chinese EPU		0.029**		0.011		0.015		0.048*		0.028		0.032	−0.017		−0.017
		(2.11)		(0.70)		(0.91)		(1.78)		(1.19)		(1.24)	[0.414]		[0.459]
US EPU			0.050**		−0.009	−0.022			0.069		0.004	−0.021		−0.013	−0.001
			(1.99)		(−0.32)	(−0.76)			(1.55)		(0.08)	(−0.43)		[0.759]	[0.985]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
N	18,453	18,453	18,453	18,453	18,453	18,453	18,269	18,269	18,269	18,269	18,269	18,269			
Adjusted *R*-squared	0.314	0.313	0.313	0.314	0.314	0.314	0.313	0.313	0.313	0.313	0.313	0.313			

The table presents the cross-sectional analyses based on different firm characteristics, including firm growth (Panel A), firm profitability (Panel B) and firm size (Panel C). In each panel, our sample are categorized using the following dummy variables. In Panel A, *Low_MTB* is an indicator variable that equals one if *MTB* is below the sample median and zero otherwise. In Panel B, *Low_ROE* is an indicator variable that equals one if *ROE* is below the sample median and zero otherwise. In Panel C, *High_ TotalAssets* is an indicator variable that equals one if *total assets* are above the sample median and zero otherwise. Then, our baseline regressions are replicated for these sub-samples. For expositional clarity, we report only the coefficient estimates of the variables of interest, that is, the three EPU measures for Australia, China and the United States. *Controls* are consistent with those used in previous tables. The sample covers the period from 1998 to 2019. All variables are defined in Appendix. We include firm fixed effects in all specifications. We cluster standard errors by firm and calendar-month. *t*-statistics are reported in parentheses. For tests of difference in coefficients, *p*-values are reported in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

positively correlated with the level of voluntary disclosure (Brown et al., 1999), which likely helps analysts make more accurate forecasts and potentially reduces the extent to which analysts' forecasts differ (i.e., forecast dispersion). We also control for the following firm-specific characteristics: firm growth prospects (*market-to-book ratio*), financial distress (*Altman Z-score*), earnings quality (*absolute accruals*), a dummy variable for negative earnings (*loss*), the difference in absolute terms between this year's earnings and the previous year's earnings scaled by the stock price (*abs_earnings_surprise*), and earnings volatility calculated as the standard deviation of return on equity over the past five years (*sd_ROE*).[8] In tests of forecast accuracy and dispersion, we also control for the extent of analyst following (*the number of analysts following a firm*), as greater following is positively associated with a better information environment for the firm (Barron et al., 2008).

Although our analysis uses the median forecast error based on all relevant forecasts for a given firm-month, analyst-related characteristics could also influence variation in forecast attributes. Hence, we also include the following controls (using the firm-month average value): *brokerage house size*, and *the number of firms* covered by an analyst (O'Brien and Bhushan, 1990). Finally, because longer forecast horizons are associated with lower forecast accuracy, we control for *forecast horizon*, which is defined as the natural logarithm of the number of days between the forecast announcement date and the financial year-end date.

All accounting variables are winsorized at the 1% and 99% levels and normalized by their sample standard deviation. All models include firm fixed effects to control for unobservable firm characteristics.[9] We cluster standard errors by calendar month and by firm. We use two-way clustering to deal with the dependence of residuals arising from time-series dependence across calendar months for a given firm and cross-sectional dependence across firms in a given month (Petersen, 2008). Similar to Gulen and Ion (2016) and Chen et al. (2020), we do not include time fixed effects, as this would absorb all the explanatory power of the monthly EPU.

3.3. Sample selection and data

Data on analyst forecast characteristics and analyst coverage is obtained from the I/B/E/S database. Accounting and other firm-specific data are obtained from the Morningstar DatAnalysis database, while stock price data are sourced from the SIRCA Share Price and Price Relative (SPPR) file. The sample period starts from January 1998 and ends in December 2019.[10] From the initial sample of 64,550 analyst-firm-month observations over the given period, firm-months with (i) missing variables, (ii) negative sales or (iii) negative or zero total assets are removed. Firms with a listing history of less than three consecutive years and foreign firms listed in Australia are also excluded. We restrict our analysis to earnings forecasts issued no earlier than the beginning of the financial year and no later than the end of the financial year. The longest forecast horizon is therefore 365 calendar days. These requirements result in a final sample of 58,226 analyst-firm-month observations with 1575 unique firms and 2050 unique analysts (from 168 brokerage firms).[11]

Summary statistics for forecast accuracy, forecast dispersion and analyst coverage are reported in Panel B of Table 1. In particular, forecast errors have negative mean (−0.343) and median values (−0.027), consistent with analysts generally making optimistic forecasts. The median *ABS_FE* deflated by the actual earnings is 13.4%, while the mean (median) scaled forecast dispersion is 27.5% (7.0%). On average, approximately nine analysts provide earnings forecasts for a firm over a given period.

Panel B of Table 1 also presents descriptive statistics for the firm-level and analyst-related control variables. Each analyst in the sample provides forecasts for an average of 14 firms, and brokerage houses have an average of 24 analysts, and (partly by construction) the median forecast horizon is 156 days (around five months). Nearly 27% of the sample observations incur a year-end loss, which is much higher than the corresponding figure reported in Chourou et al. (2021) using US data (about 16% of loss-making firm-years).

Interestingly, Panel C of Table 1 indicates that the Australian EPU index is positively correlated with analyst coverage, while foreign (i.e., external) EPU is negatively correlated with the number of analysts following Australian firms. However, all values are relatively small (i.e., less than 0.1). This is consistent with the expectation that any direct EPU effect on the extent of analyst coverage is likely substantially attenuated. In contrast to the mixed correlations for analyst coverage, we note from Panel C that our measures of absolute forecast error and dispersion are consistently positively correlated with both Australian and foreign EPU measures, although most of these correlations are, in isolation, also relatively small.

4. Results

4.1. Effects of domestic and international EPU on analysts' forecast properties

Table 2 and Table 3 present the empirical results of regressing forecast errors and forecast dispersion on domestic and international EPU, respectively. For international EPU, we first consider EPU originating from China and the US, and also use a composite measure of

[8] Full details of all variable definitions are provided in the appendix.

[9] The inclusion of firm fixed effects is intended to remove the impact of firm-specific variables that we cannot observe. For example, firms in a specific industry or at a particular development stage may attract more analyst attention.

[10] Our sample period ends in 2019 to avoid any confounding effect of the COVID pandemic.

[11] As a smaller economy, the Australian market has fewer brokerage houses and a limited number of analysts covering companies. However, in terms of market value, the majority of market capitalisation on the ASX is encapsulated by listed firms followed by analysts. While we acknowledge that larger firms are more likely to receive analyst attention, analyst coverage for Australia firms in our sample extends well beyond the top 300 Australian listed firms in the ASX300 index.

Table 7
EPU effects with analyst experience.

Panel A: EPU effect on analyst forecast error

	Less-experienced analysts						More-experienced analysts						Difference in coefficients		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(4) vs. (10)	(5) vs. (11)	(6) vs (12)
	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE			
Australian EPU	0.053**			0.035	−0.001	−0.002	0.075***			0.058***	0.051**	0.046**	−0.023	−0.052	−0.048
	(2.37)			(1.51)	(−0.02)	(−0.08)	(3.92)			(3.01)	(2.37)	(2.14)	[0.256]	[0.276]	[0.348]
Chinese EPU		0.045***		0.034**		0.016		0.048***		0.026*		0.019	0.008		−0.003
		(3.01)		(2.25)		(0.96)		(3.43)		(1.91)		(1.34)	[0.635]		[0.195]
US EPU			0.114***		0.114***	0.100**			0.098***		0.051*	0.035		0.063	0.065
			(3.37)		(2.72)	(2.24)			(3.98)		(1.95)	(1.28)		[0.140]	[0.171]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
N	29,102	29,102	29,102	29,102	29,102	29,102	28,870	28,870	28,870	28,870	28,870	28,870			
Adjusted *R*-squared	0.305	0.305	0.306	0.305	0.306	0.306	0.249	0.248	0.249	0.249	0.249	0.249			

Panel B: EPU effect on analyst forecast dispersion

	Less-experienced analysts						More-experienced analysts						Difference in coefficients		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(4) vs. (10)	(5) vs. (11)	(6) vs (12)
	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP	DISP			
Australian EPU	0.046*			0.041*	0.066**	0.064**	0.063***			0.054**	0.054**	0.050*	−0.013	0.012	0.014
	(1.92)			(1.77)	(2.49)	(2.46)	(2.72)			(2.05)	(1.99)	(1.79)	[0.382]	[0.655]	[0.577]
Chinese EPU		0.021		0.009		0.020		0.035**		0.014		0.012	−0.005		0.008
		(1.35)		(0.61)		(1.23)		(2.43)		(0.88)		(0.73)	[0.615]		[0.690]
US EPU			0.016		−0.044	−0.062			0.069**		0.019	0.010		−0.063	−0.072
			(0.51)		(−1.26)	(−1.60)			(2.57)		(0.68)	(0.33)		[0.826]	[0.976]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
N	18,378	18,378	18,378	18,378	18,378	18,378	18,232	18,232	18,232	18,232	18,232	18,232			
Adjusted *R*-squared	0.301	0.300	0.300	0.300	0.300	0.301	0.305	0.304	0.304	0.304	0.305	0.305			

The table presents the effect of EPU on analyst forecast error in Panel A and forecast dispersion in Panel B for the subsamples of earnings forecasts made by analysts with less or more than the sample median of *analyst experience*. *Analyst experience* is measured as the first principal component of the following three variables, that is, general experience, industry and firm-specific experience. For expositional clarity, we report only the coefficient estimates of the variables of interest, that is, the three EPU measures for Australia, China and the United States. *Controls* are consistent with those used in previous tables. The sample covers the period from 1998 to 2019. Those variables are defined in Appendix. We include firm fixed effects in all specifications. We cluster standard errors by firm and calendar-month. *t*-statistics are reported in parentheses. For tests of difference in coefficients, *p*-values are reported in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Table 8
Robustness tests by the inclusion of additional macroeconomic controls.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	ABS_FE	DISP	DISP	DISP	DISP	DISP	DISP
Australian EPU	0.090***			0.063***	0.043**	0.033*	0.048***			0.035**	0.047**	0.040**
	(5.00)			(3.75)	(2.19)	(1.76)	(2.62)			(2.07)	(2.39)	(2.11)
Chinese EPU		0.065***		0.040***		0.027**		0.033**		0.019		0.021*
		(4.96)		(3.42)		(2.22)		(2.38)		(1.56)		(1.68)
US EPU			0.136***		0.098***	0.080***			0.043*		0.001	−0.013
			(5.37)		(3.40)	(2.68)			(1.83)		(0.06)	(−0.51)
Global GDP growth	−0.763***	−0.875***	−0.871***	−0.803***	−0.823***	−0.839***	−0.754***	−0.812***	−0.809***	−0.770***	−0.755***	−0.765***
	(−3.21)	(−3.70)	(−3.77)	(−3.42)	(−3.53)	(−3.61)	(−3.23)	(−3.48)	(−3.46)	(−3.30)	(−3.25)	(−3.29)
US Fed Funds rate	0.017**	0.006	0.012	0.014*	0.016**	0.014*	−0.011	−0.017**	−0.015*	−0.012	−0.011	−0.012
	(2.07)	(0.71)	(1.58)	(1.75)	(2.04)	(1.82)	(−1.36)	(−1.98)	(−1.77)	(−1.50)	(−1.36)	(−1.51)
Chinese prime rate	−0.049***	−0.037**	−0.039***	−0.046***	−0.044***	−0.043***	0.003	0.009	0.008	0.004	0.003	0.004
	(−3.35)	(−2.55)	(−2.69)	(−3.17)	(−3.12)	(−3.02)	(0.18)	(0.65)	(0.60)	(0.31)	(0.19)	(0.28)
Australian cash rate	0.017*	0.036***	0.028***	0.027***	0.024**	0.029***	0.014	0.024*	0.019	0.019	0.014	0.018
	(1.75)	(3.41)	(2.73)	(2.64)	(2.31)	(2.82)	(1.28)	(1.89)	(1.60)	(1.58)	(1.27)	(1.55)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	58,103	58,103	58,103	58,103	58,103	58,103	36,776	36,776	36,776	36,776	36,776	36,776
Adjusted *R*-squared	0.252	0.252	0.253	0.253	0.253	0.253	0.285	0.285	0.285	0.286	0.285	0.285

The table replicates the baseline analyses of Table 2 and Table 3 but includes additional control variables for macroeconomic uncertainty. Columns 1–6 shows the effects of EPU on forecast errors, while Columns 7–12 presents the impact of EPU on forecast dispersion. *Global GDP growth* is a measure of the volatility of current demand on an international scale. *US Federal Funds interest rate* is used as money market rate in the US. *Chinese prime rate* is loan prime rate set by The People's Bank of China. *Australian cash rate* is the rate set by Reserve Bank of Australia as a monetary policy instrument. *Controls* are consistent with those used in previous tables. The sample covers the period from 1998 to 2019. All variables are defined in Appendix. We include firm fixed effects in all specifications. We cluster standard errors by firm and calendar-month. *t*-statistics are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

global EPU weighted by the purchasing power parity adjusted GDP of 21 countries.[12] The results in Table 2 provide consistent evidence of a positive association between EPU and analyst forecast errors, suggesting that analysts' earnings forecast errors increase with elevated policy uncertainty. In terms of economic magnitude, a 100% increase in the Australian EPU increases analyst forecast errors by 0.069 standard deviations (column 1 of Table 2). This corresponds to an increase in the average forecast error of around 17.58%.[13] The impact is relatively large, given that Fig. 1 shows that Australian EPU doubled during the global financial crisis (2008) and more than tripled during the Chinese leadership transition and the US fiscal crisis (2011).

In addition, the results in Table 2 indicate that both US and Chinese EPU are positively associated with the size of analysts' forecast errors, even after controlling for Australian domestic EPU, which itself is likely to reflect at least some degree of foreign influence. In terms of economic significance, a doubling of Chinese EPU is associated with an increase of 0.032 standard deviations or 8.16% of the sample mean forecast error (column 5). In comparison, when US EPU doubles, analyst forecast error for Australian firms incrementally increases by 0.060 standard deviations or 15.29% of the sample mean (column 6). However, when we control for Australian, Chinese and US EPU in the same model (column 7), the coefficient on US EPU is only marginally statistically significant. Column 8 reveals that a doubling of the aggregate global EPU leads to an average increase in forecast errors of 18.60%.

With respect to the degree of forecast dispersion, the results in Table 3 show a positive association between EPU and forecast dispersion. A doubling of the Australian EPU leads to an increase in forecast dispersion of 0.062 standard deviations, equivalent to a 16.03% increase in average forecast dispersion (column 1 of Table 3). In addition, policy uncertainty originating from China has a significant impact on the level of forecast dispersion beyond that directly attributable to Australian EPU. In contrast to the results using absolute forecast error, US EPU has no statistically significant incremental effect on the degree of forecast dispersion once we control for Australian EPU. This is in contrast to Chinese EPU and the global EPU measure, each of which retains at least a modest level of statistical significance after the inclusion of Australian EPU.

Overall, our baseline results highlight the importance of *foreign* uncertainty shocks in influencing analysts' forecast performance for Australian firms. International EPU has a greater incremental impact on forecast accuracy than forecast dispersion. Because we focus on a trio of countries: Australia, China and the United States, we present models using the three EPU indices for these countries for most of our additional tests.

4.2. Cross-sectional analysis

4.2.1. Forecast horizon

Table 4 examines the role of forecast horizon in the association between domestic and international policy uncertainty and analysts' forecasts issued for Australian listed firms. Table 4 categorizes the sample into long and short horizon forecasts and examines whether EPU still makes a significant contribution to increasing forecast error in Panel A and level of dispersion in Panel B. Long (short) horizon forecasts are those corresponding to earnings that would be reported in more (less) than the sample median of 156 days (approximately 5 months before a given firm's financial year-end). In the same manner as the baseline regression, the tests control for other sources of uncertainty together with firm-level and analyst attributes.

A larger coefficient estimate linking *Australian* EPU to analyst forecast error is observed for long-term forecasts (column 1), and this is statistically significant at the 1 % level. In contrast, short-term forecasts indicate that the negative association between *Australian* EPU and analyst forecast accuracy is much weaker (column 7). Our tests of difference in coefficients also confirm that the impact of Australian EPU is much stronger for long-horizon forecasts. This finding is consistent with prior evidence showing that the accuracy of analysts' forecasts improves with their proximity to the earnings announcement date (De Bondt and Thaler, 1990; Dhaliwal et al., 2012).

Beyond Australian EPU, we find that *US* EPU has a more profound influence on short-horizon forecast errors (columns 11–12). This suggests that analysts may face difficulties in predicting short-term outcomes due to the unpredictable nature of international policy changes. As a result, short-term forecasts are more susceptible to sudden changes in regulations or economic policies emanating from abroad.

The results in Panel B of Table 4 use analyst forecast dispersion as the dependent variable and confirm that increases in EPU are generally associated with greater dispersion. However, the effect of splitting the sample into long-horizon and short-horizon is relatively limited, with most tests indicating similar effects for both short and long-run forecasts.

4.2.2. Mining and non-mining firms

Given the central role of the mining industries in Australia and previous evidence suggesting that EPU exerts a far stronger impact on the investment decisions made by mining companies than other firms (Chen et al., 2020), we investigate the extent to which the results reported in Tables 2 and 3 differ between these two groups of firms.[14] The results are reported in Table 5. In general, the results

[12] Since both US EPU and Chinese EPU are highly correlated with the global composite EPU (the correlation coefficients being 0.78 and 0.90, respectively), we do not control for three of external EPU sources in a regression model to avoid multicollinearity.

[13] The coefficient on the logged EPU variable can be interpreted as the number of standard deviations change in the independent variable value for each 100% increase in policy uncertainty.

[14] Mining firms are identified as those firms operating in the GICS energy and materials sectors (GICS industry: Metals and Mining). Untabulated tests of the descriptive statistics show significant differences in the forecast characteristics for mining compared to other firms. Firms operating in mining and resources industries have much higher average values of absolute forecast errors and greater forecast dispersion.

Table 9
Additional analyses based on analyst coverage.

	(1)	(2)	(3)	(4)	(5)	(6)
	COVERAGE	COVERAGE	COVERAGE	COVERAGE	COVERAGE	COVERAGE
Australian EPU	0.039**			0.066***	0.042**	0.057***
	(2.25)			(4.59)	(2.58)	(3.31)
Chinese EPU		−0.038***		−0.062***		−0.067***
		(−3.40)		(−5.15)		(−5.29)
US EPU			0.012		−0.027	0.025
			(0.61)		(−1.09)	(0.98)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
N	58,103	58,103	58,103	58,103	58,103	58,103
Adjusted *R*-squared	0.271	0.273	0.269	0.280	0.272	0.280

This table presents the results for regressing analyst coverage on Australian, Chinese, and United States EPU indices, controlling for other determinants of analysts following for Australian firms during the period from January 1998 to December 2019. *Controls* are consistent with those used in previous tables. Those variables are defined in Appendix. We include firm fixed effects in all specifications. We cluster standard errors by firm and calendar-month. All continuous variables are normalized by their sample standard deviation. *t*-statistics are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

confirm a negative association between EPU and forecast accuracy.

However, there are some differences in the results between mining firms (columns 1–6) and non-mining firms (columns 7–12). In economic terms, a doubling of *Australian* EPU is associated with a 28.06% increase in the average forecast error for mining firms, which is more than double of the corresponding 12.66% increase in forecast error for non-mining firms. *Chinese* EPU effects are strongly evident among both mining and non-mining firms, as shown in Table 5. In contrast, *US* EPU is incrementally associated with larger forecast errors and dispersion for non-mining firms (columns 11 and 12), beyond what has been captured in Australian EPU.

4.2.3. The impact of domestic and international EPU across different firm characteristics

In this section, we investigate the impact of domestic and international EPU on analyst forecast performance based on various firm characteristics. Table 6 presents our empirical results for firm growth in Panel A, profitability in Panel B, and firm size in Panel C.[15] To test whether firm characteristics have a significant impact on the association between EPU and analyst forecast, we run our baseline regressions for each subsample. For ease of presentation, the table only reports the coefficient estimates of the variables of interest, that is, the three EPU measures for Australia, China and the United States, but these OLS regressions control for macroeconomic factors as well as firm- and analyst-level variables. In the last three columns of each panel, we also show the tests of difference in coefficients on domestic and foreign EPU across the two relevant subsamples.

Panel A indicates that analyst forecasts for firms with lower market-to-book ratios are more affected by *Australian* EPU. During periods of elevated policy uncertainty in Australia, more mature firms with fewer growth opportunities are more likely to be associated with higher forecast errors and forecast dispersion due to increased information asymmetry (Nagar et al., 2019; Guedhami et al., 2021; Michaely et al., 2024). Beyond domestic EPU effects, *foreign* EPU leads to higher forecast errors and more dispersed earnings forecasts for firms with higher market-to-book ratios. These firms may be particularly vulnerable to the impacts of foreign EPU due to their growth-oriented profiles, reliance on external financing, and exposure to foreign regulatory uncertainty (Fernández-Villaverde et al., 2011; Smales, 2022).

Panel B of Table 6 shows significant evidence that the relationship between *Australian* EPU and analyst forecasts are stronger for firms with lower ROE, as higher Australian EPU leads to higher forecast errors and greater forecast dispersion. This suggests that the notion that firms with lower ROE may have limited resources available for investment and growth initiatives. Domestic EPU may exacerbate these constraints by discouraging investment or expansion plans due to increased uncertainty (Gulen and Ion, 2016; Chen et al., 2020), which makes firms' future earnings more unpredictable. In contrast, the impact of *foreign* EPU on forecast accuracy is significantly stronger for firms with higher profitability. Given that firms with higher ROE are often perceived as high-performing and are more favored by international investors, the results indicate that international EPU may lead to increased market volatility and fluctuations in investor sentiment (Pastor and Veronesi, 2012; Pastor and Veronesi, 2013), which impacts earnings forecasts as financial analysts adjust to changing market conditions.

Panel C of Table 6 investigates the relationship between firm size and analyst forecast properties. We find a larger and more significant impact of *domestic* and *foreign* EPU on forecast errors for large firms in Panel C1, while the impact on forecast dispersion is not significantly different between large and small firms. The results suggest that, in the presence of policy uncertainty, large firms may experience more severe changes in forecast accuracy due to their higher exposure to international operational risk and investor sentiment.

[15] Our sample is categorized based on the following indicators. *Low_MTB* takes a value of one if a firm's market-to-book ratio is below the sample median, and zero otherwise. *Low_ROE* equals one if a firm's return on equity is below the sample median, and zero otherwise. *High_TotalAssets* equals one if total assets are above the sample median, and zero otherwise.

4.2.4. Heterogeneity in analyst experience

Following Chourou et al. (2021), we examine the possible effects of analysts' experience. Three potentially relevant measures of analyst experience are general experience, experience in a particular industry, and experience in forecasting results for a particular firm. We consider the impact of all of these in the estimates reported in Table 7. The main variable of interest is *analyst experience*, measured as the first principal component of the following three variables, that is, general experience, industry and firm-specific experience.[16] Table 7 categorizes the full sample into the two sub-samples for analyst forecasts made by more or less experienced analysts (higher or less than the sample median of the first principal component).

Overall, the results reported in Table 7 indicate that there is no evidence that more experienced analysts are able to produce more accurate earnings forecasts during periods of high policy uncertainty, with all tests for differences in the coefficients being insignificant. In other words, analysts' industry and firm expertise is not significantly associated with their ability to produce more accurate or less dispersed earnings forecasts for Australian listed firms during periods of elevated local and international EPU.

4.3. Additional analysis

4.3.1. Inclusion of international macroeconomic controls

Given the focus of our study is on international EPU, it is important to control for the confounding effects of foreign macroeconomic factors. Table 8 replicates the main results from Tables 2 and 3 by including additional macroeconomic variables. In particular, we include *global GDP growth* as an indicator reflecting the overall condition of the global economy; and *short-run interest rates*, including the US Federal Funds effective rate, the Chinese lending prime rate, and the Australian cash rate, as key instruments of each country's monetary policy. The results in Table 8 provide supportive evidence that international and domestic EPU is strongly associated with increased forecast errors and dispersion for Australian firms, even after controlling for possible confounding macroeconomic factors.

4.3.2. Test of analyst coverage

Finally, we test the association between EPU and analyst coverage, as the initiation of analyst coverage reflects the information demands by market participants in times of uncertainty. The expected direction of any association between EPU and the extent of analyst coverage is unclear. On the one hand, heightened levels of EPU can result in less reliable information available to investors and a reduction in the quantity and quality of information provided by firms to the public (Chen et al., 2020). This leads to increased information uncertainty and asymmetry, resulting in greater information processing costs for financial analysts and thus less analyst following during times of increased EPU. On the other hand, during times when EPU is elevated, the potential benefits of analyst following may increase substantially as investors typically seek out analyst research to help inform their investment decisions (Barniv and Cao, 2009; Nagar et al., 2019). Thus, it is plausible that a negative shift in a firm's information environment due to elevated EPU could lead to an increase in demand for analyst output and, consequently, analyst following. However, given significant costs of re-assigning analysts and/or initiating coverage, it is not surprising that prior research indicates that analyst following is relatively sticky (Bhushan, 1989; Lang and Lundholm, 1996). Such stickiness is likely to attenuate any observable impact of changes in EPU.

Table 9 shows the results of the regression of analyst coverage on Australian, Chinese, and US EPU. The results show that the coefficient on Australian EPU is positive and statistically significant, although the economic effects are relatively limited. A doubling of Australian EPU implies only a 3.9 percentage point increase in analyst coverage, ceteris paribus.[17] While domestic EPU is positively related to analyst coverage, *Chinese* EPU exhibits a negative association with analyst coverage for Australian firms (columns 2, 4, 6). In contrast, the *United States* EPU has an insignificant effect on analyst following (columns 3, 5, 6). These findings have two important implications. First, they suggest that analysts are indeed less likely to cover a firm when Chinese EPU is heightened. Given that China is Australia's largest export market for the mining and resources industries, this result points to a negative spillover effect of Chinese EPU on Australian capital market participants. Second, the finding that analyst coverage increases with local EPU but decreases with Chinese EPU indicates that, from a demand perspective, the services of financial analysts may be more useful in the presence of domestic uncertainty but less valuable to their clients in the presence of heightened external EPU. However, as we noted earlier, the results on analyst coverage are relatively small in terms of economic significance and likely attenuated by the stickiness of analyst coverage decisions.

5. Conclusions

Using a newspaper-based index of Australian EPU (Baker et al., 2016), we find evidence of a significant negative association between Australian EPU and the accuracy of analysts' earnings forecasts (i.e., EPU and the absolute forecast error are positively related). In addition, we show that the dispersion among analysts' forecasts increases with EPU. These findings are robust to controlling for other potentially confounding sources of macroeconomic uncertainty, analyst attributes, and firm-level characteristics. Given that Australia is a relatively small (compared to countries such as the US, China, UK or Japan) and open economy, we explicitly consider whether increased foreign EPU is associated with analyst forecast error and dispersion. We consider separate measures of both US and Chinese

[16] Since three measures of individual analyst experience are highly correlated, principal component analysis can help mitigate multicollinearity by transforming the original variables into an orthogonal component.

[17] Since both the independent variable *AUEPU* and the dependent variable *Analyst Coverage* are log-transformed, the coefficient is interpreted as the percentage increase in the dependent variable for every 1% increase in *AUEPU*.

EPU, as well as a measure of overall global EPU, consistent with Baker et al. (2016). Our results suggest that foreign EPU, particularly policy uncertainty originating from China and the United States, has an incrementally negative effect on the accuracy of analysts' earnings forecasts in Australia.

We also find that the effects of EPU in Australia are cross-sectionally heterogeneous. In particular, we observe a stronger impact of Australian EPU on analysts' forecasts for long-horizon forecasts, firms operating in mining and resources industries, firms with lower market-to-book and lower profitability. In contrast, the international EPU effects are much stronger for short-horizon forecasts, non-mining firms, firms with higher growth prospects and higher profitability. These additional findings increase confidence in our conclusion that EPU is positively related to the size of forecast error and the extent of dispersion among individual analysts, with some sectors being more affected than others.

Overall, our results are consistent with the view that uncertainty surrounding government policies leads to a decline in the quality of firms' information environment. In the period of heightened policy uncertainty, the quality of information supplied by analysts appears to decline (i.e., forecasts are less accurate and more dispersed). These results are broadly consistent with prior (US-based) evidence that EPU is positively associated with the quantity of voluntary disclosure by firms, but the quality of this information is arguably lower. It is therefore not surprising that existing research concludes that EPU shocks are associated with indicators of increased information asymmetry, such as higher bid-ask spreads (Nagar et al., 2019).

We acknowledge that it is unclear how mandatory and voluntary corporate disclosure interact with EPU shocks to influence analysts' expectations. In the absence of direct evidence, it is unclear whether voluntary disclosure increases or decreases with EPU, whether the quality of such disclosure is impacted, and how this ultimately impacts the forecasting performance of sell-side analysts. Therefore, a possible avenue for future research is to identify and contrast the interdependency between analyst forecast characteristics and corporate disclosure during periods of high versus low uncertainty, and to assess whether this relationship facilitates or impedes the overall quality of the information environment for investors and other market participants.

CRediT authorship contribution statement

Cao Hoang Anh Le: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft, Writing – review & editing. **Yaowen Shan:** Conceptualization, Funding acquisition, Investigation, Methodology, Project administration, Resources, Supervision, Writing – review & editing. **Stephen Taylor:** Conceptualization, Funding acquisition, Investigation, Project administration, Supervision, Writing – review & editing.

Declaration of competing interest

We declare that we have no financial and personal relationship with other people or organizations that can inappropriately influence our work, there is no professional or other personal interest of any nature of kind in any product, service and/or company that could be construed as influencing the position presented in, or the review of, the manuscript entitled.

Appendix A. Variable definitions

Variables	Description	Data source
Dependent variables		
ABS_FE	The difference in absolute terms between the actual earnings per share (EPS) and the consensus median analyst forecast of EPS in a given month, scaled by the absolute value of actual EPS.	I/B/E/S Database
DISP	Standard deviation of individual analyst earnings forecast during a month and is scaled by the absolute value of actual earnings per share.	I/B/E/S Database
COVERAGE	Natural logarithm of the number of analysts following a given firm.	I/B/E/S Database
Economic policy uncertainty		
Australian EPU	Natural logarithm of the Baker et al. (2016) newspaper-based economic policy uncertainty index for Australia.	Policyuncertainty.com
US EPU	Natural logarithm of the Baker et al. (2016) newspaper-based economic policy uncertainty index for the United States.	Policyuncertainty.com
Chinese EPU	Natural logarithm of the Baker et al. (2016) newspaper-based economic policy uncertainty index for China.	Policyuncertainty.com
Global EPU	Natural logarithm of the weighted average of the Baker et al. (2016) monthly index for the global economy over a given month. The GEPU Index is a GDP-weighted average of national EPU indices for 21 countries: Australia, Brazil, Canada, Chile, China, Colombia, France, Germany, Greece, India, Ireland, Italy, Japan, Mexico, the Netherlands, Russia, South Korea, Spain, Sweden, the United Kingdom, and the United States (PPP-adjusted).	Policyuncertainty.com
Macroeconomic uncertainty variables		

(*continued on next page*)

(*continued*)

Variables	Description	Data source
Recessions	A dummy variable that takes the value of one for the periods from the peak through the trough of business cycles, and zero otherwise.	OECD Statistics
Election	Dummy variable takes a value of one for the months from January to the month of federal elections in election years, proxied for political risks (unresolved election outcomes). Every calendar month in non-election years and months after elections in election years are classified as zero.	UWA Australian Politics and Elections Database
Australian GDP Growth	Quarterly growth rate of Australian gross domestic product.	Australian Bureau of Statistics
Australian cash rate	Reserve Bank of Australia (RBA)'s cash rate is proxied for money market rate in Australia, measured in percent (monthly).	Reserve Bank of Australia
Chinese prime rate	Loan prime rate set by The People's Bank of China, measured in percent (monthly).	OECD Statistics
US Federal Funds rate	Effective federal funds rate is proxied for money market rate in the US, measured in percent (monthly).	Federal Reserve Economic Data
Global GDP Growth	Global gross domestic product's annual growth rate.	World Bank database
Analyst forecast attributes		
Ln_Horizon	Natural logarithm of the number of days between the forecast announcement date and the financial year-end date.	I/B/E/S Database
Ln_N_firms	Natural logarithm of the number of firms a given analyst follows in one year.	I/B/E/S Database
Brokerage house size	Size of the brokerage house, measured by the number of analysts employed by the brokerage house.	I/B/E/S Database
General experience	Overall experience, calculated by the number of previous years an analyst provided earnings forecasts for any company in the sample.	I/B/E/S Database
Industry experience	Industry-specific experience, calculated by the number of previous years an analyst provided earnings forecasts for any company in the same six-digit GICS industry classification in the sample.	I/B/E/S Database
Firm experience	Firm-specific experience, calculated by the number of previous years an analyst provided earnings forecasts for a particular firm.	I/B/E/S Database
Firm-level controls		
Firm size	Natural logarithm of market capitalization at fiscal year *t-1*.	Morningstar
MTB Ratio	Market-to-book ratio at fiscal year *t-1*.	Morningstar
Financial distress score	Altman's *Z*-score, measured at year *t-1*, equals 1.2 x (Net working capital/Total assets) + 1.4 x (Retained earnings/Total assets) + 3.3 x (Earnings before interest and taxes/Total assets) + 0.6 x (Market value of equity/Book value of liabilities) + 1.0 x (Sales/Total assets).	Morningstar
Absolute Accruals	The difference in absolute terms between net income before extraordinary items and operating cash flows, deflated by total assets at the end of year *t-1*.	Morningstar
Earnings-related attributes		
Loss	A dummy variable coded 1 if a firm makes loss in the fiscal year *t-1*, and 0 otherwise.	Morningstar
Absolute Earnings Surprise	Earnings surprise, calculated as the difference in absolute terms between the year's earnings minus last years' earnings, deflated by stock price at time *t-1*.	Morningstar
Standard deviation of ROE	Standard deviation of ROE over the previous five years.	Morningstar

References

Abarbanell, J.S., 1991. Do analysts' earnings forecasts incorporate information in prior stock price changes? J. Account. Econ. 14 (2), 147–165.

Abarbanell, J.S., Bernard, V.L., 1992. Tests of analysts' overreaction/underreaction to earnings information as an explanation for anomalous stock price behavior. J. Financ. 47 (3), 1181–1207.

Altınkılıç, O., Balashov, V.S., Hansen, R.S., 2013. Are analysts' forecasts informative to the general public? Manag. Sci. 59 (11), 2550–2565.

Australian Trade and Investment Commission, 2020. Australia's Export Performance in the Financial year 2020.

Australian Trade and Investment Commission, 2023. Why Australia: Benchmark Report 2023. Australian Government, Canberra.

Baker, S.R., Bloom, N., Davis, S.J., 2016. Measuring economic policy uncertainty. Q. J. Econ. 131 (4), 1593–1636.

Baloria, V.P., Mamo, K., 2017. Policy uncertainty and analyst performance. In: Working Paper. Available at. https://ssrn.com/abstract=2533049 (Accessed: 22 February 2023).

Barniv, R.R., Cao, J., 2009. Does information uncertainty affect investors' responses to analysts' forecast revisions? An investigation of accounting restatements. Journal of Accounting and Public Policy 28 (4), 328–348.

Barron, O.E., Byard, D., Kile, C., Riedl, E.J., 2002. High-technology intangibles and analysts' forecasts. J. Account. Res. 40 (2), 289–312.

Barron, O.E., Byard, D., Yu, Y., 2008. Earnings surprises that motivate analysts to reduce average forecast error. Account. Rev. 83 (2), 303–325.

Barth, M.E., Kasznik, R., McNichols, M.F., 2001. Analyst coverage and intangible assets. J. Account. Res. 39 (1), 1–34.

Bhushan, R., 1989. Firm characteristics and analyst following. J. Account. Econ. 11 (2–3), 255–274.

Bird, A., Karolyi, S.A., Ruchti, T., 2023. How do firms respond to uncertainty? Evidence from U.S. gubernatorial elections. J. Account. Res. 61 (4), 1025–1061.

Boone, A.L., Kim, A., White, J.T., 2020. Local policy uncertainty and firm disclosure. In: Vanderbilt Owen Graduate School of Management Research Paper. Available at. https://ssrn.com/abstract=3003157 (Accessed: 22 February 2023).

Brogaard, J., Detzel, A., 2015. The asset-pricing implications of government economic policy uncertainty. Manag. Sci. 61 (1), 3–18.

Brown, P., Taylor, S.L., Walter, T.S., 1999. The impact of statutory sanctions on the level and information content of voluntary corporate disclosure. Abacus 35 (2), 138–162.

Brown, L.D., Call, A.C., Clement, M.B., Sharp, N.Y., 2015. Inside the "black box" of sell-side financial analysts. J. Account. Res. 53 (1), 1–47.
Chalmers, K., Clinch, G., Godfrey, J.M., Wei, Z., 2012. Intangible assets, IFRS and analysts' earnings forecasts. Account. Finance 52, 691–721.
Chang, B.H., Derindag, O.F., Hacievliyagil, N., Canakci, M., 2022. Exchange rate response to economic policy uncertainty: evidence beyond asymmetry. Human. Soc. Sci. Commun. 9 (1), 1–14.
Chen, X., Le, C.H.A., Shan, Y., Taylor, S., 2020. Australian policy uncertainty and corporate investment. Pac. Basin Financ. J. 61, 101341.
Chen, M., Zhu, Z., Han, P., Chen, B., Liu, J., 2022. Economic policy uncertainty and analyst behaviours: evidence from the United Kingdom. Int. Rev. Financ. Anal. 79, 101906.
Chourou, L., Purda, L., Saadi, S., 2021. Economic policy uncertainty and analysts' forecast characteristics. J. Account. Public Policy 40 (4), 106775.
Clement, M.B., Tse, S.Y., 2005. Financial analyst characteristics and herding behavior in forecasting. J. Financ. 60 (1), 307–341.
Colombo, V., 2013. Economic policy uncertainty in the US: does it matter for the euro area? Econ. Lett. 121 (1), 39–42.
Cotter, J., Tarca, A., Wee, M., 2012. IFRS adoption and analysts' earnings forecasts: Australian evidence. Account. Finance 52, 395–419.
Davis, S.J., 2016. An Index of Global Economic Policy Uncertainty. Working Paper. National Bureau of Economic Research.
De Bondt, W.F., Thaler, R.H., 1990. Do security analysts overreact? Am. Econ. Rev. 52–57.
Dhaliwal, D.S., Radhakrishnan, S., Tsang, A., Yang, Y.G., 2012. Nonfinancial disclosure and analyst forecast accuracy: international evidence on corporate social responsibility disclosure. Account. Rev. 87 (3), 723–759.
Diamond, D.W., Verrecchia, R.E., 1981. Information aggregation in a noisy rational expectations economy. J. Financ. Econ. 9 (3), 221–235.
Fernández-Villaverde, J., Guerrón-Quintana, P., Rubio-Ramirez, J.F., Uribe, M., 2011. Risk matters: the real effects of volatility shocks. Am. Econ. Rev. 101 (6), 2530–2561.
Guedhami, O., Mansi, S., Reeb, D., Yasuda, Y., 2021. Economic policy uncertainty and allocative distortions. J. Financ. Stab. 56.
Gulen, H., Ion, M., 2016. Policy uncertainty and corporate investment. Rev. Financ. Stud. 29 (3), 523–564.
Hann, R.N., Ogneva, M., Sapriza, H., 2012. Forecasting the macroeconomy: Analysts versus economists. In: Working Paper. Available at. https://ssrn.com/abstract=2194179 (Accessed: 22 February 2023).
Harris, M., Raviv, A., 1993. Differences of opinion make a horse race. Rev. Financ. Stud. 6 (3), 473–506.
Hassan, T.A., Hollander, S., Van Lent, L., Tahoun, A., 2019. Firm-level political risk: measurement and effects. Q. J. Econ. 134 (4), 2135–2202.
Hribar, P., McInnis, J., 2012. Investor sentiment and analysts' earnings forecast errors. Manag. Sci. 58 (2), 293–307.
Hutton, A.P., Lee, L.F., Shu, S.Z., 2012. Do managers always know better? The relative accuracy of management and analyst forecasts. J. Account. Res. 50 (5), 1217–1244.
Jackson, A.B., Plumlee, M.A., Rountree, B., 2018. Decomposing the market, industry and firm components of profitability: implications for forecasts of profitability. Rev. Acc. Stud. 23 (3), 1071–1095.
Jegadeesh, N., Kim, W., 2010. Do analysts herd? An analysis of recommendations and market reactions. Rev. Financ. Stud. 23 (2), 901–937.
Jiang, L., Pittman, J.A., Saffar, W., 2022. Policy uncertainty and textual disclosure. Account. Horiz. 36 (4), 113–131.
Joos, P., Piotroski, J.D., Srinivasan, S., 2016. Can analysts assess fundamental risk and valuation uncertainty? An empirical analysis of scenario-based value estimates. J. Financ. Econ. 121 (3), 645–663.
Julio, B., Yook, Y., 2012. Political uncertainty and corporate investment cycles. J. Financ. 67 (1), 45–83.
Kandel, E., Pearson, N.D., 1995. Differential interpretation of public signals and trade in speculative markets. J. Polit. Econ. 103 (4), 831–872.
Kang, W., Ratti, R.A., Vespignani, J., 2020. Impact of global uncertainty on the global economy and large developed and developing economies. Appl. Econ. 52 (22), 2392–2407.
Kim, O., Verrecchia, R.E., 1991. Trading volume and price reactions to public announcements. J. Account. Res. 29 (2), 302–321.
Kothari, S.P., 2001. Capital markets research in accounting. J. Account. Econ. 31 (1–3), 105–231.
Kothari, S.P., So, E., Verdi, R., 2016. Analysts' forecasts and asset pricing: a survey. Annu. Rev. Financ. Econ. 8, 197–219.
Lang, M.H., Lundholm, R.J., 1996. Corporate disclosure policy and analyst behavior. Accounting review 467–492.
Li, X., Luo, J., Chan, K.C., 2018. Political uncertainty and the cost of equity capital. Financ. Res. Lett. 26, 215–222.
Lin, M.C., 2018. The impact of aggregate uncertainty on herding in analysts' stock recommendations. Int. Rev. Financ. Anal. 57, 90–105.
Lobo, G.J., Song, M., Stanford, M., 2012. Accruals quality and analyst coverage. J. Bank. Financ. 36 (2), 497–508.
Loh, R.K., Mian, G.M., 2006. Do accurate earnings forecasts facilitate superior investment recommendations? J. Financ. Econ. 80 (2), 455–483.
Matolcsy, Z., Wyatt, A., 2006. Capitalized intangibles and financial analysts. Account. Finance 46, 457–479.
Michaely, R., Rubin, A., Segal, D., Vedrashko, A., 2024. Do differences in analyst quality matter for investors relying on consensus information? Manag 70 (2), 751–772.
Mikhail, M.B., Walther, B.R., Willis, R.H., 2007. When security analysts talk, who listens? Account. Rev. 82 (5), 1227–1253.
Nagar, V., Schoenfeld, J., Wellman, L., 2019. The effect of economic policy uncertainty on investor information asymmetry and management disclosures. J. Account. Econ. 67 (1), 36–57.
Nguyen, N.H., Phan, H.V., 2017. Policy uncertainty and mergers and acquisitions. J. Financ. Quant. Anal. 52 (2), 613–644.
Nimark, K., 2009. A structural model of Australia as a small open economy. Aust. Econ. Rev. 42 (1), 24–41.
O'Brien, P.C., Bhushan, R., 1990. Analyst following and institutional ownership. J. Account. Res. 28, 55–76.
Pastor, L., Veronesi, P., 2012. Uncertainty about government policy and stock prices. J. Financ. 67 (4), 1219–1264.
Pastor, L., Veronesi, P., 2013. Political uncertainty and risk premia. J. Financ. Econ. 110 (3), 520–545.
Petersen, M.A., 2008. Estimating standard errors in finance panel data sets: comparing approaches. Rev. Financ. Stud. 22 (1), 435–480.
Richardson, S., Teoh, S.H., Wysocki, P.D., 2004. The walk-down to beatable analyst forecasts: the role of equity issuance and insider trading incentives. Contemp. Account. Res. 21 (4), 885–924.
Smales, L.A., 2022. The influence of policy uncertainty on exchange rate forecasting. J. Forecast. 41 (5), 997–1016.
Varian, H.R., 1985. Divergence of opinion in complete markets: a note. J. Financ. 40 (1), 309–317.
Zhang, X.F., 2006. Information uncertainty and analyst forecast behavior. Contemp. Account. Res. 23 (2), 565–590.