International Economic Policy Uncertainty and Properties of Analysts' Earnings Forecasts

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Abstract

We investigate the extent to which international and domestic economic policy uncertainty (EPU) impacts analysts' earnings forecasts for Australian Securities Exchange (ASX) listed firms. Over a twenty-year period, we demonstrate that EPU is positively associated with the size of forecast errors, as well as 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 foreign EPU, most notably Chinese and United States EPU. Additional analysis shows that the association between EPU and forecast accuracy and dispersion is stronger for firms in the resources and mining industries, and for longer forecast horizons. Our results are consistent with predictions that heightened EPU is associated with a decline in firms' information environment, with a reduction in the quality of information provided by information intermediaries such as sell-side analysts.

1. Introduction

Although there is an extensive literature examining the effect of economic policy uncertainty (EPU) on corporate investment decisions (Julio and Yook, 2012; Gulen and Ion, 2016; Jens, 2017; Chen, Le, Shan and Taylor, 2020), the manner in which EPU impacts the quality of information available to capital market participants (i.e., investors) is not well understood. Although there is evidence that uncertainty surrounding government policies aggravates existing information asymmetries between investors and firms (Brogaard and Detzel, 2015; Kelly, Pastor and Veronesi, 2016), there is also evidence that corporate managers respond to heightened policy uncertainty by increasing their voluntary disclosures (Nagar, Schoenfeld and Wellman, 2019). More generally, there is very limited evidence of how changes in EPU impact important financial intermediaries such as sell-side analysts, yet EPU is likely an important source of uncertainty which is largely independent of actions taken by managers or investors (Chourou, Purda and Saadi, 2021). We address this gap by examining the association between changes in EPU and properties of analysts' earnings forecasts for Australian firms.

Sell-side financial analysts are important information intermediaries (Baloria and Mamo, 2017; Mikhail, Walther and Willis, 2007). During times of uncertainty, when the cost of information production is high, demand for analysts' services may increase (Lehavey, Li and Merkley, 2011; Loh and Stulz, 2018). Yet, other studies demonstrate that many sources of uncertainty have a negative impact on analysts' performance. Examples include the volatility of a firm's underlying fundamentals (Zhang, 2006), accrual quality and operating uncertainty (Lobo, Song and Stanford, 2012), investor sentiment (Hribar and McInnis, 2012) and uncertainty related to intangible assets (Barth, Kasznik and McNichols, 2001; Barron, Byard, Kile and Riedl, 2002). This study adds to such evidence by considering how EPU influences analyst performance.

Intuitively, EPU may adversely impact analysts' forecast performance, possibly due to the greater complexity of earnings forecasting tasks. Bottom-line earnings become less predictable because heightened EPU increases uncertainty about future cash flow of assets that are already in place. For example, uncertainty about regulatory and tax policies can increase the difficulty of predicting operating costs, while uncertainty about policies related to government expenditures and trade policy can increase the difficulty of estimating revenues for firms with greater reliance on government purchases and international trade. Next, EPU may alter corporate real decisions due to the real options value of 'wait and see'. Firms respond to EPU by holding more cash, paying less taxes, reducing investment and hiring, and delaying financing (Julio and Yook, 2012; Li, Luo and Chan, 2018; Baker, Bloom and Davis, 2016; Gulen and Ion, 2016). EPU also has a direct effect on firms' financial reporting choices. As policy uncertainty rises, firms become more conservative in their accounting choices (Dai and Ngo, 2020). Taken together, we conjecture that policy-based uncertainty is likely to have meaningful economic consequences on analyst performance, of which analyst forecast errors and analyst forecast dispersion increase with EPU.

Using the Baker, Bloom and Davis (2016) newspaper-based index as a proxy for the degree of economic policy uncertainty in Australia, empirical investigation begins at the analyst-level using a sample comprising 217,959 analyst-firm-month observations, comprising 2,365 unique analysts for Australian firms listed on the Australian Securities Exchange (ASX) over the period from January 1998 to December 2019. Analyst-level analysis is premised on the assumption that EPU could impact individual analysts to a varying extent.[1] Examination is initially made of the extent to which changes in Australian domestic EPU are associated with the extent of analyst coverage, as well as forecast error and dispersion. However, we also

[1] When empirical analysis is conducted at the firm-level using consensus analyst forecasts, the results remain quantitatively similar.

recognize that Australia is a relatively small and open, export-oriented economy, such that investment decisions are more likely to be affected by foreign EPU compared to say, the United States. Motivated by the emerging literature on the cross-country spillover effect (Colombo, 2013; Chen et al., 2022), we therefore extend the analysis of local EPU impact to also consider how foreign EPU simultaneously impacts sell-side analysts covering ASX-listed firms.

When initially restricting our analysis to the impact of changes in Australian domestic EPU, the study finds that increased EPU is associated with a significant increase in analyst coverage. In terms of economic magnitude, when EPU doubles, analyst coverage increases by 2.8 percent. This result is consistent with investors' demand for external information such as analysts' forecasts increasing with EPU. The empirical tests also confirm the conjecture that EPU is positively associated with analysts' forecast errors and forecast dispersion. A doubling of Australian EPU leads to a 22% increase of the average forecast error in the sample and an 18% increase in average forecast dispersion. Given that significant increases in EPU do occur (i.e., EPU is far from stable), these results suggest that the properties of analysts' forecasts will also change over time. In all the baseline regression models, the incremental effect of EPU is measured after controlling for macroeconomic factors, differences in analysts' attributes and firm-level variables. When we extend our analysis to include the effects of EPU changes in the major economies with which Australia trades, the results indicate that both US and Chinese EPU exert a strong positive and incremental effect on analyst forecast errors for Australian firms, even after controlling for local EPU and other macro- and micro-factors. However, only Chinese EPU has a significant impact on forecast dispersion, beyond that captured in Australian EPU. Overall, our study confirms the existence of significant spill over effects of foreign EPU on sell-side analysts covering ASX-listed firms.

To address concerns about omitted variables bias and endogeneity, we use fixed effects at the firm-level and analyst-level for all specifications, and employ a battery of robustness tests. These tests indicate that the EPU effect is concentrated in earnings forecasts for mining and resources firms, with the EPU effect increasing as the forecast horizon is lengthened. 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 provide better forecasts with fewer errors and less degree of dispersion in the periods of elevated policy uncertainty.

Our study makes several contributions. First, we provide novel evidence of the impact of EPU on analysts' performance for Australian listed firms, while also contributing to the existing EPU literature by identifying EPU as a significant determinant of analysts' forecast accuracy. While extant studies confirm how firm-specific information impedes analysts' accuracy (Zhang, 2006; Lobo, Song and Stanford, 2012; Barth, Kasznik and McNichols, 2001; Barron et al., 2002), little is known about how analysts incorporate economy-wide news into their evaluations despite the important associations between macroeconomic shocks and firm-level earnings. Hence, we contribute to an absence of research directed at understanding how financial intermediaries are impacted by EPU, and more broadly, the capital market consequences of policy uncertainty.

Second, we extend prior analysis restricted to domestic effects of United States EPU (Chorou et al. 2021) to the way in which both domestic and overseas EPU impacts analysts in a smaller, open economy (i.e., Australia). We provide novel evidence of cross-country spillover effects of policy-related uncertainty on analyst-level performance. This evidence supports analysis using the real decision channel that indicates external uncertainty shock is a key driver of macro-uncertainty in small open economies such as Australia (Cardia, 1991; Fernandez-Villaverde et al., 2011).

The remainder of the paper proceeds as follows. Section 2 discusses the literature review and develops the hypotheses and empirical predictions. Section 3 explains the measurement of EPU and research methodology. Section 4 describes data sources and provides summary statistics of key variables. Section 5 presents empirical results and robustness tests. Section 6 concludes and discusses possible avenues for future research.

2. Literature review and hypothesis development

2.1. Economic policy uncertainty, corporate disclosure and analysts forecast

An emerging stream of literature examines the effect of economic policy uncertainty on firms' financial reporting policies and financial intermediaries. Nagar, Schoenfeld and Wellman (2019) use a large sample of US public firms from 2003 to 2016 and find a positive effect of EPU on voluntary management disclosures related to management forecasts and 8-K filings, which alleviate the increased information asymmetry between investors and managers in higher uncertainty periods. Further, Boone, Kim and White (2018) examine US-based firms and find that firms in states experiencing gubernatorial elections provide more frequent and informative 8-K filings, containing additional information about product development, customers, and key employees. Their cross-sectional analyses show that these increased disclosures are concentrated in firms with more investment, higher information demand, and lower proprietary disclosure costs.

Financial analysts are information intermediaries who facilitate the transfer of information from firms to the market, as well as potentially identifying novel information beyond that sourced from firms and market participants (i.e., analysts' forecasts reflect both public and private information sources). Prior research has examined the impact of various information uncertainties on analyst performance, including the volatility of firms' underlying fundamentals (Zhang, 2006), accrual quality and operating uncertainty (Lobo, Song and

Stanford, 2012), investor sentiment (Hribar and McInnis, 2012), and uncertainty related to intangible assets (Barth, Kasznik and McNichols, 2001; Barron et al., 2002). These studies generally find that information uncertainty reduces forecast accuracy. The underreaction to new information is often attributed to analysts' judgement heuristics and biases under uncertainty, such as conservatism (Edwards, 1968) or overconfidence (Daniel, Hirshleifer, and Subrahmanyam, 1998). However, uncertainty in the abovementioned literature usually measures historical or backward-looking variability and is not concerned with the future.

More recent research has been directed at understanding how analysts are impacted by sources of uncertainty that extend beyond corporate-specific (i.e., idiosyncratic) risk (Bird, Karolyi and Ruchti, 2017; Hassan, Hollander, Van Lent and Tahoun, 2017; Baloria and Mamo, 2017). Using conference call scripts, Hassan et al. (2017) document that managers and analysts devote more time to discussing topics directly related to political risks prior to or during presidential and congressional election quarters. Baloria and Mamo (2017) show that the quality of analysts forecast declines during periods of high policy uncertainty, with reduced analyst coverage (i.e., reduced following), larger forecast errors, and greater forecast dispersion.

Sell-side analysts are considered among the most important groups of information intermediaries. Their views are generally taken to represent those of investors, and they are typically viewed as sophisticated users of accounting information (Schipper, 1991; Brown, 1993). Furthermore, accounting academics often use their earnings forecasts as a proxy for the market's earnings expectations (Kothari, So and Verdi, 2016). Therefore, investigating factors that impact analysts' earnings forecasts is of interest not only to academia and researchers but also to practitioners, investors and corporate managers. While the extant literature suggests that a wide range of firm-specific factors significantly affect analyst forecast performance, little attention has been paid to how macroeconomic factors are associated with analyst forecast

accuracy. This is surprising given the central role of sell-side analysts in reducing information asymmetry between firms and investors, and enhancing the overall efficiency of capital markets. This study attempts to fill this gap by investigating variation in two dimensions of analysts' behaviour – *the number of analysts following a firm* and the properties of analysts' forecast, i.e., *forecast accuracy* and *forecast dispersion*, in the presence of heightened policy uncertainty.

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 impacts for firm profitability (Pastor and Veronesi, 2012, 2013) and, thus, can plausibly complicate individual analysts' earnings forecast tasks. Tests of these hypotheses are also at the analyst level, although some complementary tests are conducted at the firm level. Firms are frequently exposed to greater uncertainty when it comes to the timing, content, and potential impact of economic policy decisions made by politicians and regulatory institutions, and this significantly affects corporate decisions. An increase in policy uncertainty can cause firms to hold more cash, reduce investment, mergers and acquisitions, labour hiring, and delay the raising of finance (Julio and Yook, 2012; Gulen and Ion, 2016; Nguyen and Phan, 2017; Li et al., 2018).

The first hypothesis examines whether EPU leads to greater analyst coverage. Bhushan (1989) and Lang and Lundholm (1996) suggest that the number of analysts following a specific firm is a function of analysts' benefits and costs. Intuitively, when EPU is high, there is less reliable information available for investors to predict firm earnings. This intuition is supported by Chen, Chen, Wang and Zheng (2018), documenting evidence suggesting that firms react to

political uncertainty by reducing the amount and the quality of information provided to investors. They also find that financial analysts and media increase the production of information during periods of local government leaders' turnover in China. In contrast, Nagar et al. (2019) find that the US managers respond to EPU by increasing their voluntary disclosures; however, these disclosures only partly alleviate the level of information asymmetry. Therefore, it is arguable that the worse information environment associated with high policy uncertainty will increase investor demand for analyst coverage, which leads to an increase in the benefits gained by sell-side analysts. In other words, investors may demand timelier information, regardless of its accuracy during the period of high EPU. The potential higher benefit of increased investor demand may outweigh the higher cost of assimilating information.

When EPU is high, an increase in analyst coverage may partly reduce information asymmetry between investors and firms and facilitates firms' better access to capital market. Further, Lang and Lundholm (1996) find that analyst following is positively associated with managerial disclosure quality. Nagar et al. (2019) and Chahine et al. (2021) document evidence of the increase in the managerial supply of voluntary and corporate social responsibility disclosures in periods of heightened EPU. Taken together, this could result in higher analyst coverage. The first hypothesis is formalized in the alternative form as follows:

Hypothesis 1: Australian EPU is positively associated with analysts' coverage for Australian firms.

The second and third hypotheses examine the association between EPU and the properties of analysts' earnings forecasts. The first property to be examined is earnings forecast accuracy. There are several reasons to expect that increased EPU will result in less accurate earnings forecasts. First, EPU increases volatility about future firm economic outcomes, such as profitability, cash flow or valuation of fixed assets already in place. In periods of prolonged

political risks, analysts are required to comprehend the likelihood of future policy outcomes and estimate how these outcomes will differentially influence individual firms. Policy-related uncertainty, stemming from fiscal policy choices, taxation decisions and other regulations, can challenge the prediction of corporate expenditure, and the resulting economic benefits. Furthermore, policy uncertainty regarding trade policies or government spending can increase the difficulty of predicting revenues for firms with greater exposure to international trade and higher reliance on government spending.

Second, EPU also has first order effects on the overall economy, especially corporate real decisions. The unexpected changes in real investment and financing decisions together with the greater fluctuations in firms' operating activities following an increase in EPU (Gulen and Ion, 2016; Chen et al., 2020) may well complicate and dampen forecasting tasks as analysts are required to estimate the earnings implication for the real effect of EPU on firm-level decisions.

Third, EPU has a direct effect on firms' financial reporting choices. Dai and Ngo (2020) investigate the impact of political uncertainty on accounting conservatism using the US sample from 1963 to 2016. They document evidence of an increase in the asymmetric timeliness of bad news recognition in earnings in periods leading up to US gubernatorial elections, and attribute this result to higher political risks leading to an increased contracting demand for accounting conservatism.

Fourth, prior evidence suggests that analysts tend to overweight their private information and underweight readily available public information. Early research finds that analysts systematically underreact to public information, such as the news in stock prices (Abarbanell, 1991) and earnings (Abarbanell and Bernard, 1992). More recently, Zhang (2006) and Hann, Ogneva and Sapriza (2012) show that when analysts face increased uncertainty, they

systematically fail to incorporate publicly available information, resulting in higher forecast errors.

Of course, to the extent that analysts have sophisticated macroeconomic knowledge and sources of information related to economic policies which are not publicly available, any effect on forecast accuracy of increasing EPU may be attenuated. Hutton, Lee and Shu (2012) suggest that analysts' information advantage resides at the macroeconomic level since they have access to macroeconomic expertise providing them information advantage over managers in terms of forecast the earnings implication of macroeconomic factors. Moreover, individual analyst characteristics, such as experience or compensation, influence forecast performance (Brown, Call, Clement and Sharp, 2015; Cao, Guan, Li and Yang, 2020; Kumar, 2010) in addition to high degree of political connection well maintained by certain brokerage houses (Christensen, Mikhail, Walther and Wellman, 2017). 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 second hypothesis is stated in an alternative form:

Hypothesis 2: Australian EPU is positively associated with analysts' earnings forecast errors for Australian firms.

A second characteristic of analysts' earnings forecasts that may be influenced by EPU is the degree of dispersion surrounding analysts' predictions (i.e., the standard deviation of earnings forecasts all analysts have issued for the same firm in the same period). However, the direction of any association is less clear. On the one hand, there are several possible channels through which dispersion may increase with EPU. First, analysts may assign different probabilities to different policy outcomes even when they are faced with the same information (Harris and Raviv, 1993; Kandel and Pearson, 1995; Varian, 1985). Second, analysts may have different levels of expertise in interpreting or predicting the consequences of government policies. Third, market participants may not share the same information set. Uncertainty may

induce some analysts to seek out additional information (Kim and Verrecchia, 1991), or the private information individual analysts have access to may vary significantly (Diamond and Verrecchia, 1981).

Alternately, an increase in uncertainty surrounding government economic policy may lead to less dispersed earnings forecasts, because of herding behaviours. Prior research documents that analysts manifest herding behaviour (Clement and Tse, 2005; Jegadeesh and Kim, 2010). Zhang (2006) finds that analysts' herding tendency becomes exacerbated when firm-level information uncertainty is high. In addition to market risk and firm-level uncertainty, Lin (2018) suggests that analysts' tendency to herd increases with aggregate uncertainty. In an uncertain information environment, the risk-adverse feeling leads analysts to think that others may be better informed. Increased uncertainty can also enhance analysts' career insecurity in times of economic recessions, motivating them to take part in the herd to avoid individual blame. In short, analysts may have a higher tendency to imitate the actions of their peers during periods of fundamental uncertainty in the economy caused by politicians' indecision.

Taken together, the combination of these observations leads to Hypothesis 3, presented in an alternative form:

Hypothesis 3: Australian EPU is positively (negatively) associated with analysts' earnings forecast dispersions for Australian firms.

3. Research design

3.1. Measuring economic policy uncertainty

In conformity with the EPU literature, we employ the Baker et al. (2016) newspaper-based index as a proxy for the degree of economic policy uncertainty in Australia. For Australian EPU, they use text archives from eight Australian newspapers from January 1998 onwards to construct a policy uncertainty index.

[Figure 1A about here]

Figure 1A plots the Australian EPU index from January 1998 to December 2019. It is evident that about 90 percent (nine out of ten spikes) of uncertainty shocks originate from abroad. While many of the events are foreign shocks that are ex ante expected to generate EPU such as economic crises and wars, local factors such as federal elections, debate about mining and tax policies, and changes in prime ministers also appear to contribute to spikes in uncertainty.

[Table 1 about here]

Panel A of Table 1 presents the descriptive statistics for macroeconomic variables for Australia while Panel B reports their correlation. Australian EPU is only moderately correlated with federal elections and recessions (0.10 and 0.18, respectively). Furthermore, Panel C shows *t*-test difference between the EPU values for months in election versus non-election periods and months in recessions versus expansionary periods. Overall, it suggests that on average, Australian EPU in non-election months is not significantly different from its value in election months, even though the latter tends to be higher. In sharp contrast, the average EPU value of 112 during recessionary months is significantly greater than its mean of 91 in expansionary periods.

[Figure 1B and 1C about here]

Figure 1B and 1C confirm that weak economic periods often coincide with peaks in Australian EPU. However, more recent years have observed prolonged high EPU that is not associated with either federal elections or recessions. In short, while it is true that policy uncertainty tends to be countercyclical and could thus be capturing the effect of poor economic prospects, the Australian text-based EPU index covers incremental sources of information beyond uncertainty surrounding election years and general economic conditions.

3.2. Baseline OLS regression

The analyst-level regression is:

$$Forecast\_Characteristics_{ijt} = \alpha + \beta_1 AUEPU_t + \gamma Macro\_controls_t + \delta Analysts\_attributes_{ijt} + \theta Firm\_controls_{it} + \varepsilon_{ijt} \quad (11)$$

Dependent variables are *COVERAGE* (analyst coverage), calculated as the natural logarithm of the number of analysts following a firm, and the properties of analysts' earnings forecasts, namely *ABS_FE* (absolute earnings forecast errors) and *DISP* (dispersion of analyst earnings forecasts). Following Hong and Kubik (2003) and Loh and Mian (2006), the absolute forecast errors are measured as follows:

$$ABS\_FE_{ijt} = \left| \frac{Actual_{it} - Forecast_{ijt}}{Actual_{it}} \right|$$

where ABS_FE_{ijt} (hereafter *ABS_FE* for simplicity) represents analyst *j*'s absolute forecast error for firm *i* at time *t*. *ABS_FE* is formally defined as the absolute value of the difference between the actual earnings per share and the individual analyst earnings forecast for a firm within a calendar month, scaled by the absolute value of actual earnings at the end of the firm's fiscal year.[2]

In addition, *DISP* is defined as the standard deviation of earnings forecasts issued by individual analysts during a calendar month and is deflated by the absolute value of actual earnings at the end of the firm's fiscal year. Both scaled *ABS_FE* and *DISP* are expressed as percentages. To reduce the impact of extreme outliers on the regression results, analyst forecast error and forecast dispersion are winsorized at the 1% and 99% level.

The main variable of interest is Australian policy uncertainty (*AUEPU*), measured as the natural logarithm of the monthly Baker et al. (2016) index values for Australia in a calendar

[2] Alternatively, the methodology of Richardson, Teoh and Wysocki (2004) is to define *ABS_FE* as the absolute value of the difference between 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. The study finds unchanged statistical significance when using this alternative measure of forecast error.

month. In addition to EPU indices, the regression analysis controls for three alternative economy-wide sources of uncertainty that may disrupt analysts' ability to make accurate forecasts. *Quarterly GDP growth* is used as a proxy for the volatility of current demand conditions, while the indicator variable for *federal election* is a proxy for political risks. In identifying election periods, months in election years from January to the month of the occurrence of a specific national election are coded as one, suggesting unresolved election outcomes. The months after an election together with all calendar months in non-election years are coded as zero. *Changes in business cycles* are further controlled by adding the indicator variable for recessionary periods provided by OECD, indicating alternate periods of economic expansions and recessions. A value of one indicates a recessionary period, while a value of zero is an expansionary period.[3]

In determining the properties of analyst forecast accuracy, analyst-specific control variables include the logarithm of *the number of analysts following a firm*, as greater analyst coverage is positively associated with an improved information environment for the firm (Barron et al., 2008), and *brokerage house size*, since analysts from larger brokerage house size may benefit from having access to improved information, especially with regard to factors underlying EPU. Further, from the supply-side perspective, economies of scale mean that the research cost per firm declines with *the number of firms* for which an analyst provides coverage (O'Brien and Bhushan, 1990). Finally, because longer forecast horizons are associated with less forecast accuracy, this study controls 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.

[3] As defined by 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.

The key firm-level control is *firm size*, defined as the natural logarithm of market capitalisation. *Firm size* has a mixed effect on analyst earnings forecast accuracy (Duru and Reeb, 2002). Larger firms have more complex operations, which may result in higher earnings forecast errors. In contrast, there are more information disclosures by larger firms, which helps analysts make more accurate forecasts. Additionally, this study controls for firm growth proxied by *market-to-book ratio* and financial distress proxied by the *Altman Z-score* because analysts, intuitively, find it more difficult to accurately forecast earnings for firms with high growth and with financial distress.

DeFond and Hung (2003) suggest the subjectivity and uncertainty associated with accruals have a negative impact on earnings quality as perceived by market participants. Therefore, lower earnings quality resulting from the larger magnitude of accruals may reduce the accuracy of analyst earnings forecasts. Taken together, the magnitude of *absolute accruals* is added to the baseline regression, as a proxy for earnings quality. Further, the earnings-related variables to be controlled include an indicator variable for negative earnings (*loss*), the absolute value of the difference between this year's and last year's earnings, scaled by share price (*abs_earnings_surprise*), and earnings volatility, measured as historical standard deviation of accounting return on equity over the last five years (*sd_ROE*).

All accounting variables are winsorized at 1% and 99% level and normalized by their sample standard deviation. All models include firm-fixed effects and analyst-fixed effects to control for unobservable firm and analyst characteristics, while standard errors are clustered by firm and by calendar months. Similar to Gulen and Ion (2016) and Chen et al. (2020), the study does not include time-fixed effects, since doing this absorbs all the explanatory power of the monthly EPU.

4. Sample selection and data description

Data for analyst forecast properties and the extent of 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 is sourced from the SIRCA Share Price and Price Relative (SPPR) file. The sample period starts from January 1998 to December 2019. This sample period is selected to match the availability of the newspaper-based EPU index for Australia.

From the initial sample of 280,863 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. Additionally, the sample is restricted to forecasts for annual earnings made no later than the end of the accounting period and no earlier than a full year prior to fiscal year-end. As a result, the maximum forecast horizon is 365 calendar days. Those requirements result in a final sample of 217,959 analyst-firm-month observations with 1,531 unique firms and 2,365 unique analysts (from 190 brokerage houses).

Summary statistics for forecast accuracy and forecast dispersion are reported in Table 2. Panel A1 of Table 2 reports the summary statistics of *ABS_FE* for the pooled sample of 217,959 analyst-firm-month observations. The first row reports unscaled *ABS_FE*, while the second and third rows report *ABS_FE* scaled by stock price at the beginning of the fiscal year and the absolute value of actual earnings, respectively. The unscaled average *ABS_FE* is \$0.162. The average *ABS_FE* scaled by absolute actual earnings (price) is 54.65% (9.19%). Similar patterns can be seen for forecast dispersion measures reported in Panel A3. Panel A2 of the table reports corresponding statistics for the signed forecast errors. It can be seen from Panel A2 that all the mean and median values of the forecast errors are negative, consistent with analysts issuing optimistic forecasts on average.

[Table 2 about here]

In the sample, mining firms are firms operating in GICS Sector: Energy and GICS Sector: Material (GICS industry: Metals and Mining). In total, there are 70,261 analyst-firm-month observations for mining firms and 147,698 observations for non-mining firms. The descriptive statistics shown in Panels B1-B3 of Table 2 indicate significant differences in forecast characteristics for mining and non-mining industries. Firms operating in mining and resources industries have much higher average values of forecast errors and greater forecast dispersion.

[Table 3 about here]

Table 3 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 per year, and brokerage houses have an average of 25 analysts. On average, approximately 12 analysts provide a forecast for each firm during a year, and (partly by construction) the median forecast horizon is 163 days (around 5.3 months). More than half of the sample observations report a loss for the year, which is much higher than the equivalent value reported using US data (around 15% of loss-making firm-years) in Chourou, Purda and Saadi (2021).

5. Empirical results

5.1. The average effect of EPU on analyst behaviours

5.1.1. EPU and analyst earnings forecast characteristics

Table 4 shows the results from the regression of analyst coverage on the text-based economic policy uncertainty index for Australia and other control variables using the analyst-firm-month sample from 1998 to 2019. These results give empirical support for *Hypothesis 1*,

indicating that a doubling of Australian EPU is significantly associated with a 2.8 percentage points increase in analyst coverage, ceteris paribus.[4]

[Table 4 about here]

Tables 5 and 6 report similar regression-based evidence of the association between Australian EPU and analyst earnings forecast characteristics (i.e., forecast error and forecast dispersion). Table 5 and 6 support *Hypothesis 2* and *Hypothesis 3*, namely that Australian EPU is associated with higher analysts' earnings forecast errors and greater forecast dispersion. Table 5 examines the effect of Australian EPU on individual analyst forecast errors, while Table 6 presents regression results using analyst forecast dispersion as the dependent variable. The two tables further control for firm characteristics and other analyst attributes.

[Table 5 about here]

[Table 6 about here]

Specifically, column (1) in Table 5 (Table 6) reports the most parsimonious model by regressing forecast error (forecast dispersion) on the natural logarithm of the monthly value for Australian EPU, and firm-level determinants of analyst accuracy. In column (2), the control variables for three competing sources of uncertainty are added, that is, political risks of unresolved election outcomes, weak economic conditions during recessions, and the volatility of GDP growth. Finally, column (3) further includes analyst characteristics such as forecast horizon, the number of analysts following a firm, the number of firms covered by one analyst, and brokerage house size. In all specifications, firm fixed effects and analyst fixed effects are employed to control for firm and analyst heterogeneity. Overall, there is strong evidence of a positive association between analysts' forecast error, forecast dispersion and EPU in Australia (i.e., the relevant coefficients are statistically significant at the one percent level).

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

In terms of economic magnitude, Table 5 indicates that when Australian EPU increases by 100%, individual analyst forecast error increases by 0.089 standard deviations. This equates to an increase of around 22.50% of the average forecast error. Meanwhile, Table 6 shows that when Australian EPU doubles, it leads to a rise in the degree of forecast dispersion of 0.072 standard deviations, which is equivalent to a 18.27% increase in average forecast dispersion. The impact is relatively large, keeping in mind that Figure 1A demonstrates that Australian EPU doubled during the global financial crisis (2008) and more than tripled in periods of Chinese leadership transition and the US fiscal crises (2011).

5.1.2. Long and short forecast horizon

Table 7 examines the role of *forecast horizon* on the association between Australian EPU and analyst forecast properties. Table 7 categorizes the sample into short and long horizon forecasts (greater or less five months prior to a specific firm's financial year-end date) and examines whether economic policy uncertainty continues to contribute to greater forecast error and dispersion significantly. Columns (1), (2) and (3) of the table present results associated with forecast errors while columns (4), (5) and (6) examine forecast dispersion as the dependent variables. In the same manner as the baseline regression, the tests control for competing sources of uncertainty, as well as firm-level and analyst attributes, and find that for both long and short-term forecast subsamples, EPU remains positively associated with an increase in both forecast error and dispersion.

[Table 7 about here]

Long horizon forecasts show larger coefficient estimates relating EPU to analyst forecast characteristics, statistically significant at the one percent level. In contrast, short horizon forecasts show that the negative association between EPU and analyst forecast accuracy is much weaker, and is only statistically significant at the 10 percent level. This is consistent with

the literature that analyst forecast accuracy improves as the earnings announcement date approaches (De Bondt and Thaler, 1990; Dhaliwal et al., 2012).

As can be observed from column (3) and column (6), the interaction terms between long horizon and Australian EPU suggest that long-horizon earnings forecast accuracy is more adversely impacted when policy uncertainty is high, whereas there is no difference between the dispersion level of long- and short-horizon forecasts during periods of intensified policy uncertainty in Australia.

5.2. Cross-country impacts of policy uncertainty on analysts' earnings forecasts

Next, we examine whether policy uncertainty originating from the US and China significantly impedes analysts' earnings forecast performance for Australian listed firms. Table 8 reports the regression results of the impact of foreign policy uncertainty on the level of analyst forecast error and forecast dispersion in Australia.

[Table 8 about here]

Panel A suggests that both the US and Chinese EPU sources exert strong negative influence on analyst earnings forecast accuracy, even after controlling for local EPU in Australia. In terms of economic significance, when US EPU increases by 100 percent, the absolute forecast errors for Australian firms increases by 0.073 standard deviations or 18.43% of the sample average forecast error (column 2). In comparison, a doubling of the Chinese EPU is significantly associated with a rise of 0.043 standard deviations or 10.85% of the sample forecast error (column 4). However, Panel B shows that only the policy uncertainty originating from China has a significant impact on forecast dispersion levels, beyond that captured in Australian EPU. In sharp contrast, the US EPU has no incremental effect on the degree of forecast dispersion for Australian firms' profitability.

5.3. Cross-sectional heterogeneity

5.3.1. Mining and non-mining firms

Given the central role of mining industries in Australia, Table 9 shows regression results that investigate the impact of *EPU* on the properties of earnings forecasts for mining and non-mining firms in Australia, while controlling for other firm-specific and analyst-related factors.

[Table 9 about here]

Generally, the results confirm a negative association between EPU and forecast accuracy. Nevertheless, some differences can be observed between the results for mining firms (columns 1 and 2) and those for non-mining firms (columns 3 and 4). A doubling of Australian EPU is significantly associated with an increase in average forecast error of 29.54% among mining firms' earnings, which is much higher than an equivalent increase of 17.63% among sample forecast error for non-mining firms.

5.3.2. Heterogeneity in analyst experience

Following Chourou et al. (2021), additional consideration is given to the possible effect of analysts' experience on the relation between forecast properties and EPU. Three measures of analyst experience (i.e., overall experience, experience within an industry and experience in forecasting results for a specific firm) are considered. First, each experience measure is included in the baseline regression independently to assess the influence of the average level of analyst experience on forecast error and dispersion. Next, the experience measure is interacted with the contemporaneous value of Australian EPU to establish whether forecasts made by more experienced analysts have smaller error and dispersion in times of heightened policy uncertainty. Table 10 reports the results of these tests.

[Table 10 about here]

It can be seen from Table 10 that there is no evidence that more experienced analysts are able to issue earnings forecasts with less error in the Australian setting. Analysts' overall years of experience and their industry-specific expertise are not significantly associated with more accurate earnings forecasts. Notably, firm-specific experience is positively associated with forecast dispersion, consistent with the findings of Hutton et al. (2012) and Chourou et al. (2021) that earnings can be difficult for analysts to predict if they are driven primarily by managerial decisions rather than external trends.

Regardless of the inclusion of measures of analyst experience, the influence of EPU remains strong. Across all columns of Panels A and B of Table 10, EPU remains positively and significantly associated with an increase in forecast error and forecast dispersion either at the one percent or five percent level. When the interaction terms between national EPU and analyst experience are included, there is no evidence of any statistically significant incremental association with forecast error or dispersion.

5.4. Robustness analysis

5.4.1. Progressive effect of EPU on analyst forecast performance

Following Gulen and Ion (2016) and Biswas (2019), we run the baseline regressions in iterations by increasing the timing difference between analyst forecast error (dispersion) and Australian EPU by one month in each iteration. Table 11 reports the empirical results of these tests. In general, the effects of EPU on analyst forecast error and dispersion are positive and significant for all four lagged regressions.

[Table 11 about here]

In untabulated tests, the regressions are processed in 24 iterations. The results reveal not only that policy uncertainty has a significant positive effect on forecast error levels up to four months into the future, but also that this relationship weakens for longer lags, becoming

significantly negative after one year and staying that way for lags of up to 24 months. These results lend support to the notion that the degree of analyst forecast error reduces over time with decreased uncertainty about future economic policy.

5.4.2. Alternative measures of analyst performance at consensus level

The primary results reported above are based on analyst-level analysis. However, to further assess the robustness of these results, we conduct additional tests based on consensus forecast values. Hence, tests are based on firm-month observations as the unit of analysis. These tests are restricted to measures of forecast error. Absolute forecast error (*ABS_FE*) is calculated as:

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

Formally, *ABS_FE* is defined as the absolute value of the difference between actual annual earnings per share (EPS) and analysts' earnings forecast for firm *i*, where the earnings forecast is measured by (1) the mean consensus forecast (*ABS_FE_MEAN*), (2) the median consensus forecast (*ABS_FE_MEDIAN*), and (3) the most recent forecast (*ABS_FE_LATEST*) during a specific calendar month. A new forecast error is calculated each month and the value deflated by the absolute value of actual earnings.

[Table 12 about here]

Table 12 reports the results of tests using the consensus measures of forecast error. These results indicate that the positive association between Australian EPU and the degree of forecast error remain statistically and economically significant. In terms of economic magnitude, a doubling of Australian EPU leads to an increase in the *consensus* forecast error by 0.065 standard deviations. This equates to an increase of around 15.77% of the average forecast error level in the sample. However, the coefficients relating Australian EPU to forecast error in *consensus* forecasts indicate less economic magnitude in comparison with those observed in

tests based on *individual* analyst forecasts (i.e., Tables 5). Such a result is consistent with the literature suggesting that subsets of individual forecasters are generally inferior to the consensus forecast in terms of accuracy, especially in periods of enhanced uncertainty (Clemen, 1989; McNees, 1992).

6. Conclusions

Using a newspaper-based index of policy uncertainty, we find strong evidence that EPU is associated with increased analyst coverage, and an increase in the magnitude of analysts' earnings forecast errors and forecast dispersion for Australian listed firms. These findings are robust to alternative proxies for forecast accuracy, as well as controlling for other potentially confounding sources of macroeconomic uncertainty, analysts' attributes, and firm-level characteristics. Further analysis also indicates that *foreign* EPU, especially policy uncertainty originating from China, has an incremental adverse effect on analysts' earnings forecast accuracy in Australia. Further, the effects of EPU on analyst forecast performance is not uniform cross-sectionally, being stronger for long-horizon forecasts and for firms operating in mining and resources industries.

Overall, uncertainty surrounding government policies leads to a decline in the quality of information environment for firms and thus increases the complexity of the forecasting task for sell-side analysts. Given the increasing prevalence of policy uncertainty shocks in recent years and the vital moderating role played by financial analysts, these findings have implications for financial analysts, investors, corporate managers and policy makers. The results suggest that in order to improve forecasting accuracy, analysts should pay close attention to not only domestic uncertainty but also external economic policy shocks. Moreover, investors and corporate managers should be more cautious when using analyst earnings forecasts during periods of heightened uncertainty induced by government policies.

One limitation of this study is that changes in corporate disclosure by Australian firms during periods of high policy uncertainty are not evaluated. Voluntary information disclosures and mandatory financial reporting are the fundamental supply of value relevant information for capital market participants. Empirical evidence on the association between corporate disclosure and EPU is mixed. While Chen et al. (2018) suggest that Chinese firms respond to political shocks by reducing the amount and quality of corporate disclosures, Nagar et al. (2019) find that the US managers react to EPU by increasing their voluntary disclosures. It is unclear whether firm disclosure increases or decreases with EPU and how it ultimately impacts the forecasting performance of sell-side analysts. Hence, a possible avenue for future research is to identify the dynamic relationship and interdependency between analyst forecast characteristics and corporate disclosure during periods of high uncertainty and to assess whether the relationship facilitates or impedes the overall quality of information environment for investors and other market participants in Australia.

Tables

Table 1. Descriptive statistics and correlation matrix of macroeconomic measures

Panel A: Descriptive statistics

	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
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

Panel B: Correlation matrix

	AUEPU	Election	Recession	ΔQuarterly GDP
Australian EPU	1.000			
National Election	0.101	1.000		
Recession	0.181***	-0.193***	1.000	
Quarterly GDP Growth	-0.074	0.107*	-0.283***	1.000

Panel C: *t*-test for difference between sub-periods: election years and recessionary period

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

The table presents summary statistics for the monthly newspaper-based EPU index (Baker et al., 2016) and other macroeconomic measures used in our analysis for the years 1998-2019. Panel A presents descriptive statistics for Australian EPU index, quarterly GDP growth rate and two indicator variables for federal election and recessionary periods, while Panel B illustrates the correlation matrix of these variables. All variables are measured at the monthly frequency, except for the GDP growth rate on a quarterly basis.

Panel C presents a comparison of EPU levels for the Australian economy across various sub-periods. *Election* is identified by coding one for the months between January and the month of the occurrence of federal elections in election years, suggesting unresolved election outcomes. The months after elections and all other calendar months in non-election years are coded to be zero. The indicator variable for *Recessions* is based on OECD database, indicating alternate periods of expansion and recession. A value of 1 is a recessionary period, while a value of 0 is an expansionary period. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Table 2. Summary statistics of forecast accuracy and forecast dispersion

Panel A: The total sample

	N	Mean	Median	SD	Min	P25	P75	Max
Panel A1: Overall sample absolute forecast error ABS_FE								
Unscaled ($)	217,959	0.162	0.041	0.455	0.000	0.013	0.119	3.746
Scaled by price (%)	217,959	9.185	0.851	49.949	0.000	0.280	2.511	458.278
Scaled by the absolute actual earnings (%)	217,714	54.654	13.281	137.955	0.000	4.566	39.434	1012.121
Panel A2: Overall sample signed forecast error FE								
Unscaled ($)	217,959	-0.064	-0.009	0.337	-2.433	-0.068	0.020	0.770
Scaled by price (%)	217,959	-3.623	-0.182	22.941	-202.532	-1.418	0.406	25.414
Scaled by the absolute actual earnings (%)	217,714	-32.301	-3.077	120.213	-822.222	-25.449	6.250	172.289
Panel A3: Dispersion of analyst forecasts DISP								
Unscaled	196,971	0.079	0.029	0.184	0.001	0.012	0.070	1.509
Scaled by price (%)	196,971	2.866	0.503	12.768	0.019	0.235	1.223	115.432
Scaled by the absolute actual earnings (%)	196,787	27.846	7.850	70.667	0.354	3.795	18.948	533.605

Panel B: The subsamples of mining and non-mining firms

	Mining firms				Non-mining firms			
	N	Mean	Median	SD	N	Mean	Median	SD
Panel B1: Subsample absolute forecast error ABS_FE								
Unscaled ($)	70,261	0.237	0.075	0.539	147,698	0.126	0.031	0.404
Scaled by price (%)	70,261	13.743	1.743	60.683	147,698	7.017	0.593	43.765
Scaled by the absolute actual earnings (%)	70,131	95.088	30.137	185.989	147,583	35.441	9.160	102.429
Panel B2: Subsample signed forecast error FE								
Unscaled ($)	70,261	-0.098	-0.024	0.423	147,698	-0.048	-0.005	0.287
Scaled by price (%)	70,261	-5.613	-0.580	28.515	147,698	-2.676	-0.107	19.674
Scaled by the absolute actual earnings (%)	70,131	-55.037	-10.920	161.908	147,583	-21.497	-1.796	92.191
Panel B3: Dispersion of analyst forecasts DISP								
Unscaled	66,100	0.122	0.054	0.222	130,871	0.057	0.022	0.158
Scaled by price (%)	66,100	4.355	1.088	15.168	130,871	2.114	0.346	11.290
Scaled by the absolute actual earnings (%)	65,995	52.961	18.174	99.674	130,792	15.174	5.381	44.965

Panel A1 and A2 report the summary statistics for the absolute forecast error (ABS_FE) and signed forecast error (FE) for the total sample of 217,959 analyst-firm-month observations, respectively. Panel A3 presents the descriptive statistics for the dispersion among individual analyst forecast. Meanwhile, Panel B provides

descriptive statistics for the subsample of mining firms (first four columns) and non-mining firms (last four columns).

In each panel, the first row reports the statistics for unscaled data (in dollar). The last two rows report the statistics for *ABS_FE, FE, and DISP* (in percentage) after scaling these measures with the stock price at the beginning of the firm's fiscal year (11 months prior to the fiscal year end) and the absolute value of the actual earnings per share, respectively.

Table 3. Descriptive statistics for analyst-related and firm-level variables

	N	Mean	Median	SD	Min	P25	P75	Max
Panel A: Firm-level control variables (annual data)								
Firm size	24,739	4.230	4.035	2.224	-0.105	2.587	5.695	9.849
Market-to-book ratio	24,549	2.243	1.369	3.722	-11.618	0.794	2.640	22.370
Loss	24,739	0.514	1.000	0.500	0.000	0.000	1.000	1.000
Absolute Earnings surprise	23,192	96.108	9.217	320.614	0.000	1.955	42.943	2451.400
Z-score	21,623	6.225	2.711	29.072	-140.994	0.616	7.093	150.646
Absolute Accruals	24,585	0.193	0.057	0.563	0.001	0.021	0.134	4.602
Stdev of ROE	23,460	0.888	0.156	2.427	0.005	0.054	0.545	17.915
Panel B: Analyst-related variables								
Number of analysts following a firm in year	217,959	12.334	13.000	5.607	1.000	8.000	16.000	30.000
Number of firms covered by an analyst in a year	217,959	13.455	10.000	21.963	1.000	7.000	14.000	237.000
Brokerage house size	217,959	25.138	25.000	12.163	1.000	17.000	33.000	70.000
Horizon (days)	217,959	176.775	163.000	93.192	1.000	112.000	258.000	365.000
General experience	217,959	6.128	5.000	5.094	0.000	2.000	9.000	20.000
Firm experience	217,959	2.542	1.000	3.034	0.000	0.000	4.000	14.000
Industry experience	217,959	4.558	3.000	4.586	0.000	1.000	7.000	19.000

Table 3 presents summary statistics for the firm-level control variables as well as analyst characteristics used in the regression models for testing the determinants of analysts' forecast accuracy. All variables are defined in the Appendix.

Table 4. Australian economic policy uncertainty and analyst coverage

	(1) COVERAGE	(2) COVERAGE	(3) COVERAGE
Australian EPU	0.049***	0.028**	0.028**
	(3.80)	(2.03)	(2.07)
Firm size	0.349***	0.371***	0.378***
	(15.15)	(16.19)	(16.50)
Market-to-book ratio	-0.026**	-0.024**	-0.026**
	(-2.57)	(-2.40)	(-2.51)
Loss indicator	-0.014	-0.012	-0.010
	(-0.77)	(-0.66)	(-0.55)
Absolute earnings surprise	-0.013*	-0.011	-0.010
	(-1.67)	(-1.48)	(-1.34)
Z-Score financial distress	-0.022***	-0.022***	-0.022***
	(-2.83)	(-2.96)	(-3.02)
Absolute accruals	-0.004	-0.003	-0.003
	(-0.57)	(-0.48)	(-0.43)
Standard deviation of ROE	-0.011	-0.011	-0.011
	(-1.29)	(-1.31)	(-1.25)
National election		0.010	0.009
		(0.80)	(0.77)
OECD recession		0.141***	0.136***
		(8.45)	(8.40)
Quarterly GDP growth		5.715***	5.467***
		(4.21)	(4.13)
Number of firms following			-0.007
			(-1.07)
Brokerage house size			0.047***
			(4.12)
Forecast horizon			-0.004
			(-0.80)
Firm fixed effect	Yes	Yes	Yes
Analyst fixed effect	Yes	Yes	Yes
Cluster by firm	Yes	Yes	Yes
Cluster by time	Yes	Yes	Yes
N	179,731	179,731	179,731
Adjusted *R*-squared	0.167	0.203	0.206

This table presents the results for regressing analyst coverage (i.e., the natural logarithm of the numbers of individual analyst forecasts following a firm) on Australian EPU and other determinants of analyst forecast behaviors for Australian firms for the period from 1998 to 2019. Those variables are defined in Appendix.

All specifications include firm fixed effects and analyst fixed effects. All continuous variables are normalized by their sample standard deviation. Standard errors are clustered by calendar-month and by firm. *t*-statistics are reported below the coefficients. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Table 5. Australian economic policy uncertainty and analyst forecast error

	(1) ABS_FE	(2) ABS_FE	(3) ABS_FE
Australian EPU	0.097***	0.094***	0.089***
	(4.03)	(3.89)	(3.81)
Firm size	-0.060	-0.055	-0.064
	(-1.05)	(-1.00)	(-1.02)
Market-to-book ratio	-0.055***	-0.052***	-0.050***
	(-3.21)	(-3.03)	(-2.93)
Loss indicator	0.095	0.095	0.095
	(1.58)	(1.58)	(1.58)
Absolute earnings surprise	-0.002	-0.002	-0.002
	(-0.14)	(-0.09)	(-0.14)
Z-Score financial distress	-0.041*	-0.041*	-0.040*
	(-1.67)	(-1.68)	(-1.66)
Absolute accruals	-0.018	-0.018	-0.018
	(-0.92)	(-0.92)	(-0.96)
Standard deviation of ROE	-0.003	-0.004	-0.004
	(-0.49)	(-0.53)	(-0.55)
National election		-0.064***	-0.050**
		(-2.80)	(-2.37)
OECD recession		0.064**	0.061**
		(2.15)	(2.08)
Quarterly GDP growth		0.460	-1.267
		(0.22)	(-0.63)
Number of analysts coverage			0.005
			(0.11)
Number of firms following			-0.015
			(-0.95)
Brokerage house size			0.005
			(0.29)
Forecast horizon			0.107***
			(10.44)
Firm fixed effect	Yes	Yes	Yes
Analyst fixed effect	Yes	Yes	Yes
Cluster by firm	Yes	Yes	Yes
Cluster by time	Yes	Yes	Yes
N	179,497	179,497	179,497
Adjusted *R*-squared	0.272	0.273	0.280

This table presents the results for regressing the absolute forecast errors on Australian EPU and other determinants of analyst forecast accuracy for Australian firms for the period from 1998 to 2019. Those variables are defined in Appendix.

All specifications include firm fixed effects and analyst fixed effects. All continuous variables are normalized by their sample standard deviation. Standard errors are clustered by calendar-month and by firm. *t*-statistics are reported below the coefficients. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Table 6. Australian economic policy uncertainty and analyst forecast dispersion

	(1) DISP	(2) DISP	(3) DISP
Australian EPU	0.080***	0.075***	0.072***
	(3.06)	(2.81)	(2.68)
Firm size	-0.107	-0.098	-0.112
	(-1.33)	(-1.25)	(-1.32)
Market-to-book ratio	-0.080***	-0.078***	-0.076***
	(-2.99)	(-2.93)	(-2.82)
Loss indicator	0.226***	0.227***	0.228***
	(2.89)	(2.90)	(2.89)
Absolute earnings surprise	0.010	0.010	0.010
	(0.34)	(0.38)	(0.37)
Z-Score financial distress	-0.089**	-0.089**	-0.087**
	(-2.29)	(-2.30)	(-2.30)
Absolute accruals	0.008	0.008	0.008
	(0.27)	(0.28)	(0.26)
Standard deviation of ROE	0.010	0.010	0.010
	(0.98)	(0.97)	(1.04)
National election		-0.038	-0.034
		(-1.61)	(-1.45)
OECD recession		0.070**	0.065**
		(2.07)	(1.99)
Quarterly GDP growth		2.511	1.825
		(1.10)	(0.83)
Number of analysts coverage			0.039
			(0.70)
Number of firms following			-0.002
			(-0.13)
Brokerage house size			-0.007
			(-0.31)
Forecast horizon			0.036***
			(4.24)
Firm fixed effect	Yes	Yes	Yes
Analyst fixed effect	Yes	Yes	Yes
Cluster by firm	Yes	Yes	Yes
Cluster by time	Yes	Yes	Yes
N	163,297	163,297	163,297
Adjusted *R*-squared	0.326	0.327	0.328

This table presents the results for regressing the degree of dispersion of individual analyst forecasts on Australian EPU and other determinants of analyst forecast performance for Australian firms for the period from 1998 to 2019. Those variables are defined in Appendix.

All specifications include firm fixed effects and analyst fixed effects. All continuous variables are normalized by their sample standard deviation. Standard errors are clustered by calendar-month and by firm. *t*-statistics are reported below the coefficients. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Table 7. Long and short forecast horizon

	ABS_FE			DISP		
	(1)	(2)	(3)	(4)	(5)	(6)
	Long Horizon	Short Horizon	Full	Long Horizon	Short Horizon	Full
Australian EPU	0.117***	0.040*	0.064***	0.075**	0.063**	0.068**
	(3.74)	(1.70)	(2.87)	(2.24)	(2.00)	(2.46)
Forecast horizon	0.219***	0.040***	0.047***	0.055	0.024***	0.026***
	(5.67)	(7.67)	(8.40)	(1.49)	(2.75)	(3.02)
Dummy_Horizon x AUEPU			0.032***			0.006
			(9.32)			(1.63)
National election	-0.048	-0.028	-0.034*	-0.014	-0.047	-0.031
	(-1.43)	(-1.28)	(-1.65)	(-0.52)	(-1.48)	(-1.32)
OECD recession	0.087**	0.057**	0.064**	0.072*	0.072**	0.066**
	(2.05)	(2.20)	(2.26)	(1.72)	(2.07)	(2.00)
Quarterly GDP growth	-3.159	1.344	-1.715	2.739	1.019	1.749
	(-1.08)	(0.69)	(-0.97)	(0.84)	(0.31)	(0.80)
Number of analysts coverage	0.015	-0.013	0.005	0.034	0.034	0.039
	(0.27)	(-0.32)	(0.12)	(0.59)	(0.56)	(0.69)
Number of firms following	-0.033	0.003	-0.012	-0.010	0.003	-0.001
	(-1.61)	(0.22)	(-0.79)	(-0.59)	(0.20)	(-0.10)
Brokerage house size	-0.019	0.021	0.006	-0.015	-0.003	-0.006
	(-0.74)	(1.49)	(0.34)	(-0.62)	(-0.15)	(-0.31)
Firm size	-0.020	-0.093*	-0.064	-0.116	-0.093	-0.112
	(-0.27)	(-1.71)	(-1.01)	(-1.20)	(-1.19)	(-1.32)
Market-to-book ratio	-0.053**	-0.044***	-0.050***	-0.075**	-0.080***	-0.076***
	(-2.29)	(-3.19)	(-2.91)	(-2.21)	(-3.40)	(-2.82)
Loss indicator	0.098	0.091*	0.096	0.278***	0.182**	0.228***
	(1.29)	(1.88)	(1.58)	(3.46)	(2.33)	(2.89)
Absolute earnings surprise	-0.003	0.002	-0.002	0.011	0.011	0.010
	(-0.14)	(0.15)	(-0.11)	(0.37)	(0.46)	(0.38)
Z-Score financial distress	-0.053	-0.029	-0.040	-0.070	-0.104***	-0.087**
	(-1.54)	(-1.38)	(-1.64)	(-1.52)	(-2.96)	(-2.29)
Absolute accruals	-0.029	-0.015	-0.019	0.000	0.012	0.008
	(-1.19)	(-0.93)	(-0.99)	(0.00)	(0.42)	(0.26)
Standard deviation of ROE	-0.001	-0.003	-0.003	0.018	0.007	0.010
	(-0.13)	(-0.48)	(-0.50)	(1.49)	(0.56)	(1.04)
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Analyst fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
N	89,173	89,936	179,470	81,426	81,619	163,274
Adjusted *R*-squared	0.316	0.281	0.283	0.361	0.330	0.328

This table reports the effect of EPU on forecast error and forecast dispersion for long and short-term forecasts. Long (short) horizon forecasts are those corresponding to earnings that will be reported in more (less) than the sample median of 162 days (approximately 5 months). All the variables are defined in Appendix.

All specifications include firm fixed effects and analyst fixed effects. All continuous variables are normalized by their sample standard deviation. Standard errors are clustered by calendar-month and by firm. *t*-statistics are reported below the coefficients. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Table 8. Cross-country effect of EPU and analyst forecast performance

Panel A: The EPU effect on analyst forecast error

	(1) ABS_FE	(2) ABS_FE	(3) ABS_FE	(4) ABS_FE
US EPU	0.124***	0.073**		
	(3.93)	(2.13)		
Chinese EPU			0.067***	0.043***
			(4.41)	(3.45)
Australian EPU		0.056**		0.065***
		(2.15)		(2.95)
National election	-0.041**	-0.047**	-0.030	-0.042**
	(-2.06)	(-2.27)	(-1.51)	(-2.01)
OECD recession	0.072**	0.064**	0.095***	0.077***
	(2.50)	(2.18)	(3.27)	(2.61)
Quarterly GDP growth	-1.078	-1.220	0.211	-0.419
	(-0.53)	(-0.62)	(0.10)	(-0.21)
Number of analysts coverage	0.012	0.007	0.022	0.013
	(0.27)	(0.16)	(0.49)	(0.29)
Number of firms following	-0.017	-0.016	-0.019	-0.019
	(-1.08)	(-1.06)	(-1.23)	(-1.20)
Brokerage house size	0.012	0.009	0.024	0.017
	(0.70)	(0.51)	(1.37)	(0.96)
Forecast horizon	0.105***	0.105***	0.103***	0.104***
	(10.51)	(10.49)	(10.32)	(10.39)
Firm size	-0.066	-0.067	-0.078	-0.077
	(-1.05)	(-1.07)	(-1.22)	(-1.20)
Market-to-book ratio	-0.050***	-0.049***	-0.050***	-0.049***
	(-2.90)	(-2.86)	(-2.96)	(-2.86)
Loss indicator	0.095	0.094	0.095	0.093
	(1.59)	(1.56)	(1.58)	(1.55)
Absolute earnings surprise	-0.003	-0.002	-0.003	-0.003
	(-0.15)	(-0.14)	(-0.16)	(-0.14)
Z-Score financial distress	-0.039	-0.040	-0.038	-0.039
	(-1.61)	(-1.64)	(-1.54)	(-1.60)
Absolute accruals	-0.019	-0.018	-0.019	-0.018
	(-0.97)	(-0.96)	(-0.98)	(-0.96)
Standard deviation of ROE	-0.003	-0.004	-0.003	-0.004
	(-0.51)	(-0.58)	(-0.48)	(-0.60)
Firm fixed effect	Yes	Yes	Yes	Yes
Analyst fixed effect	Yes	Yes	Yes	Yes
Cluster by firm	Yes	Yes	Yes	Yes
Cluster by time	Yes	Yes	Yes	Yes
N	179,497	179,497	179,497	179,497
Adjusted *R*-squared	0.280	0.281	0.280	0.281

Panel B: The EPU effect on analyst forecast dispersion

	(1) DISP	(2) DISP	(3) DISP	(4) DISP
US EPU	0.068**	0.007		
	(2.24)	(0.21)		
Chinese EPU			0.051***	0.032**
			(3.43)	(2.52)
Australian EPU		0.069**		0.054**
		(2.27)		(2.04)
National election	-0.026	-0.033	-0.018	-0.028
	(-1.18)	(-1.42)	(-0.87)	(-1.23)
OECD recession	0.075**	0.065**	0.092***	0.077**
	(2.29)	(1.97)	(2.78)	(2.35)
Quarterly GDP growth	2.023	1.829	2.972	2.432
	(0.87)	(0.83)	(1.29)	(1.11)
Number of analysts coverage	0.046	0.039	0.055	0.045
	(0.83)	(0.70)	(0.98)	(0.80)
Number of firms following	-0.002	-0.002	-0.005	-0.005
	(-0.17)	(-0.14)	(-0.39)	(-0.34)
Brokerage house size	-0.002	-0.006	0.008	0.002
	(-0.10)	(-0.30)	(0.39)	(0.10)
Forecast horizon	0.035***	0.036***	0.034***	0.034***
	(4.22)	(4.29)	(3.90)	(4.01)
Firm size	-0.111	-0.113	-0.122	-0.121
	(-1.30)	(-1.32)	(-1.41)	(-1.41)
Market-to-book ratio	-0.077***	-0.076***	-0.077***	-0.075***
	(-2.85)	(-2.81)	(-2.84)	(-2.79)
Loss indicator	0.229***	0.227***	0.228***	0.226***
	(2.92)	(2.89)	(2.90)	(2.88)
Absolute earnings surprise	0.010	0.010	0.010	0.010
	(0.36)	(0.37)	(0.36)	(0.37)
Z-Score financial distress	-0.087**	-0.087**	-0.085**	-0.086**
	(-2.27)	(-2.30)	(-2.22)	(-2.26)
Absolute accruals	0.007	0.008	0.007	0.008
	(0.25)	(0.26)	(0.25)	(0.26)
Standard deviation of ROE	0.011	0.010	0.011	0.010
	(1.12)	(1.03)	(1.08)	(0.99)
Firm fixed effect	Yes	Yes	Yes	Yes
Analyst fixed effect	Yes	Yes	Yes	Yes
Cluster by firm	Yes	Yes	Yes	Yes
Cluster by time	Yes	Yes	Yes	Yes
N	163,297	163,297	163,297	163,297
Adjusted *R*-squared	0.327	0.328	0.328	0.328

This table presents the average estimated coefficients from the regressions of measures of analyst performance, that is, forecast errors (Panel A) and forecast dispersion (Panel B) on US EPU, Chinese EPU, and Australian EPU. All variables are defined in Appendix. *t*-statistics are reported below the coefficients. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 9. Subsampling: Mining and non-mining firms

	Mining firms		Non-mining firms	
	(1)	(2)	(3)	(4)
	ABS_FE	DISP	ABS_FE	DISP
Australian EPU	0.151***	0.133**	0.061***	0.046***
	(2.84)	(2.08)	(3.46)	(2.79)
National election	-0.107***	-0.066	-0.021	-0.013
	(-2.66)	(-1.30)	(-0.98)	(-0.84)
OECD recession	0.094	0.105	0.036*	0.032*
	(1.34)	(1.27)	(1.80)	(1.89)
Quarterly GDP growth	5.663	5.490	-4.966**	-0.165
	(1.48)	(1.15)	(-2.57)	(-0.15)
Number of analysts coverage	0.027	0.067	-0.019	0.006
	(0.32)	(0.57)	(-0.41)	(0.14)
Number of firms following	-0.043	-0.028	0.006	0.014
	(-1.25)	(-0.93)	(0.55)	(1.51)
Brokerage house size	0.037	-0.007	-0.017	-0.005
	(1.00)	(-0.15)	(-1.07)	(-0.49)
Forecast horizon	0.186***	0.097***	0.063***	-0.000
	(8.98)	(6.59)	(8.94)	(-0.03)
Firm size	-0.077	-0.176	-0.068	-0.085**
	(-0.56)	(-0.98)	(-1.59)	(-1.97)
Market-to-book ratio	-0.073*	-0.151***	-0.040***	-0.033**
	(-1.90)	(-2.90)	(-2.75)	(-2.10)
Loss indicator	0.146	0.329**	0.024	0.075
	(1.43)	(2.58)	(0.49)	(1.56)
Absolute earnings surprise	-0.023	-0.002	0.017	0.024
	(-0.72)	(-0.04)	(1.12)	(1.08)
Z-Score financial distress	-0.063*	-0.109**	0.002	-0.035*
	(-1.85)	(-2.00)	(0.22)	(-1.67)
Absolute accruals	-0.016	0.008	-0.028	-0.017
	(-0.50)	(0.16)	(-1.43)	(-0.94)
Standard deviation of ROE	0.034	0.176**	-0.011	-0.002
	(0.79)	(2.01)	(-1.57)	(-0.20)
Firm fixed effect	Yes	Yes	Yes	Yes
Analyst fixed effect	Yes	Yes	Yes	Yes
N	67,685	63,842	111,754	99,412
Adjusted *R*-squared	0.264	0.291	0.251	0.306

This table reports the effect of EPU on forecast error and forecast dispersion for the subsamples of mining and non-mining firms, respectively. All the variables are defined in Appendix.

All specifications include firm fixed effects and analyst fixed effects. All continuous variables are normalized by their sample standard deviation. Standard errors are clustered by calendar-month and by firm. *t*-statistics are reported below the coefficients. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Table 10. Economic policy uncertainty, forecast performance and analyst experience

Panel A: The EPU effect on analyst forecast error

	(1) ABS_FE	(2) ABS_FE	(3) ABS_FE	(4) ABS_FE	(5) ABS_FE	(6) ABS_FE
Australian EPU	0.101***	0.115***	0.103***	0.112***	0.106***	0.116***
	(3.81)	(2.97)	(3.92)	(3.32)	(3.81)	(3.39)
General experience	-0.011	0.030				
	(-1.01)	(0.40)				
Gen_exp x AUEPU		-0.009				
		(-0.59)				
Firm experience			0.006	0.052		
			(0.58)	(0.68)		
Firm_exp x AUEPU				-0.010		
				(-0.62)		
Industry experience					-0.006	0.026
					(-0.61)	(0.40)
Ind_exp x AUEPU						-0.007
						(-0.52)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
N	167,481	167,481	134,621	134,621	153,924	153,924
Adjusted *R*-squared	0.261	0.261	0.270	0.270	0.268	0.268

Panel B: The EPU effect on analyst forecast dispersion

	(1) DISP	(2) DISP	(3) DISP	(4) DISP	(5) DISP	(6) DISP
Australian EPU	0.084***	0.095**	0.083***	0.116***	0.090***	0.089**
	(2.74)	(2.00)	(2.79)	(2.85)	(2.76)	(2.26)
General experience	-0.003	0.030				
	(-0.19)	(0.34)				
Gen_exp x AUEPU		-0.007				
		(-0.42)				
Firm experience			0.012	0.172**		
			(0.99)	(2.07)		
Firm_exp x AUEPU				-0.035**		
				(-1.99)		
Industry experience					0.000	-0.003
					(0.03)	(-0.04)
Ind_exp x AUEPU						0.001
						(0.05)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
N	152,696	152,696	124,614	124,614	141,184	141,184
Adjusted *R*-squared	0.307	0.307	0.313	0.313	0.310	0.310

This table reports the effect of analyst experience on the association between EPU and forecast error (Panel A) and between EPU and forecast dispersion (Panel B). All variables are defined in Appendix. *t*-statistics are reported below the coefficients. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 11. Progressive effect of EPU on analyst forecast performance

Panel A: The lagged EPU effect on analyst forecast error

	(1)	(2)	(3)	(4)
	ABS_FE	ABS_FE	ABS_FE	ABS_FE
	$Month_{t+1}$	$Month_{t+2}$	$Month_{t+3}$	$Month_{t+4}$
Australian EPU	0.087***	0.078***	0.065***	0.054**
	(4.12)	(3.46)	(2.88)	(2.13)
National election	-0.039*	-0.032	-0.026	-0.022
	(-1.94)	(-1.59)	(-1.22)	(-1.01)
OECD recession	0.064**	0.067**	0.064**	0.063**
	(2.19)	(2.33)	(2.22)	(2.24)
Quarterly GDP growth	-1.041	-0.882	-1.537	-1.796
	(-0.51)	(-0.41)	(-0.69)	(-0.82)
Number of analysts coverage	0.004	0.003	0.005	0.006
	(0.08)	(0.07)	(0.12)	(0.13)
Number of firms following	-0.016	-0.016	-0.016	-0.017
	(-0.99)	(-1.03)	(-1.00)	(-1.04)
Brokerage house size	0.006	0.006	0.007	0.007
	(0.35)	(0.31)	(0.40)	(0.38)
Forecast horizon	0.107***	0.104***	0.105***	0.109***
	(10.74)	(10.25)	(10.34)	(10.49)
Firm size	-0.062	-0.059	-0.056	-0.053
	(-0.98)	(-0.93)	(-0.89)	(-0.84)
Market-to-book ratio	-0.050***	-0.050***	-0.051***	-0.051***
	(-2.92)	(-2.94)	(-2.97)	(-2.96)
Loss indicator	0.094	0.094	0.094	0.094
	(1.56)	(1.55)	(1.54)	(1.55)
Absolute earnings surprise	-0.002	-0.002	-0.002	-0.002
	(-0.13)	(-0.14)	(-0.13)	(-0.12)
Z-Score financial distress	-0.040	-0.040	-0.040	-0.040
	(-1.65)	(-1.63)	(-1.63)	(-1.62)
Absolute accruals	-0.018	-0.018	-0.018	-0.019
	(-0.96)	(-0.96)	(-0.95)	(-0.96)
Standard deviation of ROE	-0.004	-0.003	-0.003	-0.003
	(-0.54)	(-0.51)	(-0.49)	(-0.41)
Firm fixed effect	Yes	Yes	Yes	Yes
Analyst fixed effect	Yes	Yes	Yes	Yes
N	179,193	178,791	178,296	177,700
Adjusted *R*-squared	0.281	0.281	0.281	0.281

Panel B: The lagged EPU effect on analyst forecast dispersion

	(1)	(2)	(3)	(4)
	DISP	DISP	DISP	DISP
	$Month_{t+1}$	$Month_{t+2}$	$Month_{t+3}$	$Month_{t+4}$
Australian EPU	0.067***	0.065**	0.054**	0.063**
	(3.14)	(2.57)	(2.19)	(2.20)
National election	-0.026	-0.021	-0.015	-0.009
	(-1.16)	(-0.97)	(-0.70)	(-0.41)
OECD recession	0.069**	0.071**	0.069**	0.065**
	(2.10)	(2.21)	(2.13)	(2.08)
Quarterly GDP growth	2.155	2.275	1.778	1.420
	(0.97)	(0.99)	(0.75)	(0.61)
Number of analysts coverage	0.038	0.037	0.039	0.037
	(0.68)	(0.67)	(0.70)	(0.67)
Number of firms following	-0.002	-0.002	-0.002	-0.002
	(-0.12)	(-0.16)	(-0.12)	(-0.16)
Brokerage house size	-0.005	-0.006	-0.005	-0.005
	(-0.26)	(-0.28)	(-0.22)	(-0.24)
Forecast horizon	0.036***	0.034***	0.035***	0.038***
	(4.24)	(4.03)	(4.04)	(4.39)
Firm size	-0.111	-0.109	-0.106	-0.103
	(-1.30)	(-1.27)	(-1.23)	(-1.20)
Market-to-book ratio	-0.077***	-0.076***	-0.077***	-0.076***
	(-2.83)	(-2.81)	(-2.84)	(-2.78)
Loss indicator	0.228***	0.227***	0.228***	0.228***
	(2.90)	(2.88)	(2.87)	(2.86)
Absolute earnings surprise	0.010	0.010	0.010	0.010
	(0.37)	(0.37)	(0.37)	(0.38)
Z-Score financial distress	-0.087**	-0.087**	-0.087**	-0.088**
	(-2.29)	(-2.29)	(-2.28)	(-2.28)
Absolute accruals	0.008	0.007	0.007	0.007
	(0.26)	(0.24)	(0.23)	(0.23)
Standard deviation of ROE	0.010	0.011	0.011	0.011
	(1.06)	(1.08)	(1.09)	(1.13)
Firm fixed effect	Yes	Yes	Yes	Yes
Analyst fixed effect	Yes	Yes	Yes	Yes
N	163,025	162,650	162,179	161,606
Adjusted *R*-squared	0.328	0.328	0.328	0.328

This table reports the progressive effect of EPU on forecast error (Panel A) and forecast dispersion (Panel B) up to four months into the future for the sample. All the variables are defined in Appendix.

All specifications include firm fixed effects and analyst fixed effects. All continuous variables are normalized by their sample standard deviation. Standard errors are clustered by calendar-month and by firm. *t*-statistics are reported below the coefficients. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Table 12. Alternative measures of analysts' performance at firm-level analysis

Panel A: Descriptive statistics of firm-level aggregate sample

	N	Mean	Median	SD	P25	P75
Absolute forecast error ABS_FE						
Unscaled ($)	57,882	0.148	0.028	0.501	0.009	0.082
Scaled by the absolute actual earnings (%)	57,769	57.793	13.603	140.291	4.441	44.083
Signed forecast error FE						
Unscaled ($)	57,882	-0.063	-0.006	0.343	-0.046	0.014
Scaled by the absolute actual earnings (%)	57,769	-34.291	-2.885	122.556	-28.053	6.169

Panel B: The EPU effect on consensus forecast error

	(1)	(2)	(3)
	ABS_FE_MEAN	ABS_FE_MEDIAN	ABS_FE_LATEST
Australian EPU	0.065***	0.067***	0.062***
	(3.59)	(3.62)	(3.50)
National election	-0.045**	-0.044**	-0.037*
	(-2.24)	(-2.19)	(-1.90)
OECD recession	0.039*	0.039*	0.041*
	(1.75)	(1.72)	(1.85)
Quarterly GDP growth	-0.509	-0.578	-0.351
	(-0.31)	(-0.34)	(-0.22)
Number of analysts coverage	-0.006	-0.008	0.003
	(-0.18)	(-0.25)	(0.09)
Number of firms following	0.006	0.010	0.014
	(0.39)	(0.65)	(0.88)
Brokerage house size	-0.007	-0.006	0.002
	(-0.40)	(-0.33)	(0.11)
Forecast horizon	0.081***	0.083***	0.073***
	(11.53)	(11.58)	(11.00)
Firm size	-0.014	-0.016	-0.022
	(-0.38)	(-0.42)	(-0.58)
Market-to-book ratio	-0.036**	-0.035*	-0.034*
	(-2.04)	(-1.97)	(-1.92)
Loss indicator	0.079*	0.079*	0.095**
	(1.68)	(1.68)	(1.99)
Absolute earnings surprise	0.002	0.004	0.004
	(0.14)	(0.27)	(0.27)
Z-Score financial distress	-0.005	-0.005	-0.004
	(-0.24)	(-0.29)	(-0.22)
Absolute accruals	-0.016	-0.016	-0.018
	(-1.12)	(-1.10)	(-1.22)
Standard deviation of ROE	-0.011	-0.010	-0.008
	(-1.39)	(-1.19)	(-0.97)
Firm fixed effect	Yes	Yes	Yes
Analyst fixed effect	Yes	Yes	Yes
N	45,768	45,783	45,783
Adjusted *R*-squared	0.277	0.280	0.263

This table reports the effect of EPU on forecast error with aggregated sampling, that is, a sample of firm-month observations (rather than analyst-firm-months) by using the consensus of individual analyst forecast in a specific calendar month. Panel A presents descriptive statistics of earnings forecast properties for the aggregate firm-level sample, while Panel B shows the regression results. All the variables are defined in Appendix.

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

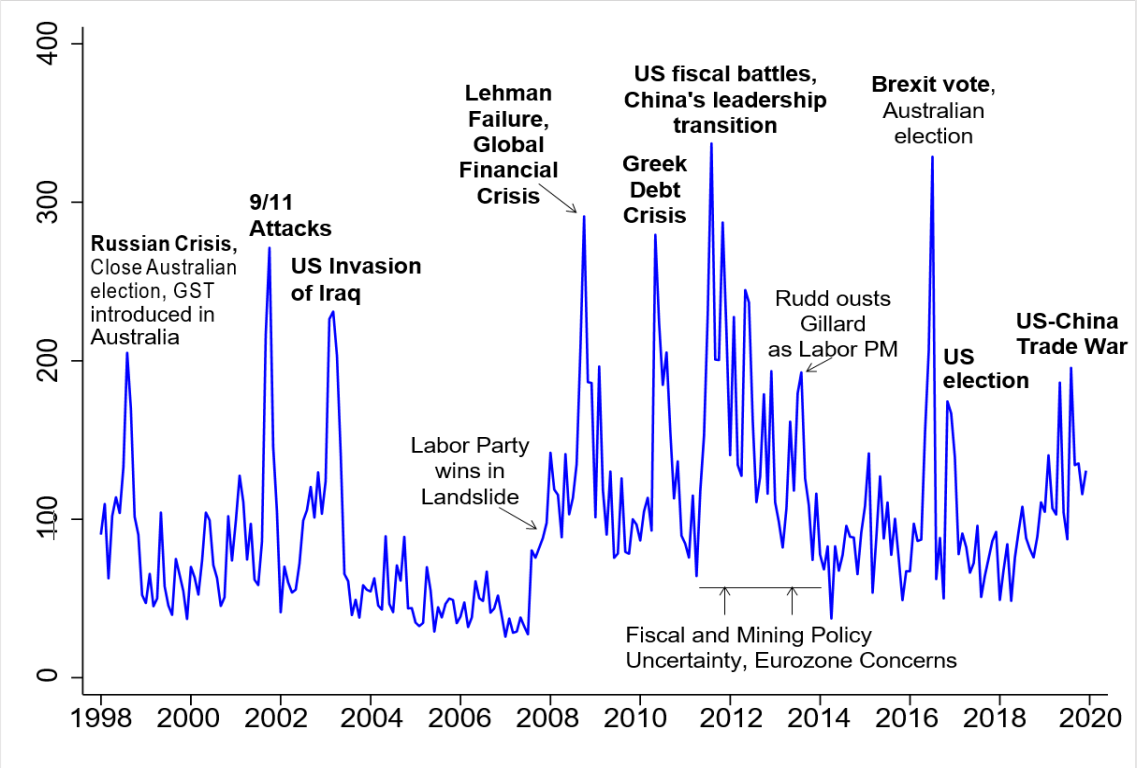
In Panel B, Column (1), (2), and (3) show the regression results for each of the alternative forecast error measures, being one of the following: the mean consensus forecast (*ABS_FE_MEAN*), the median consensus forecast (*ABS_FE_MEDIAN*), and the most recent forecast (*ABS_FE_LATEST*) during a specific calendar month.

All specifications include firm fixed effects and analyst fixed effects. All continuous variables are normalized by their sample standard deviation. Standard errors are clustered by calendar-month and by firm. *t*-statistics are reported below the coefficients. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

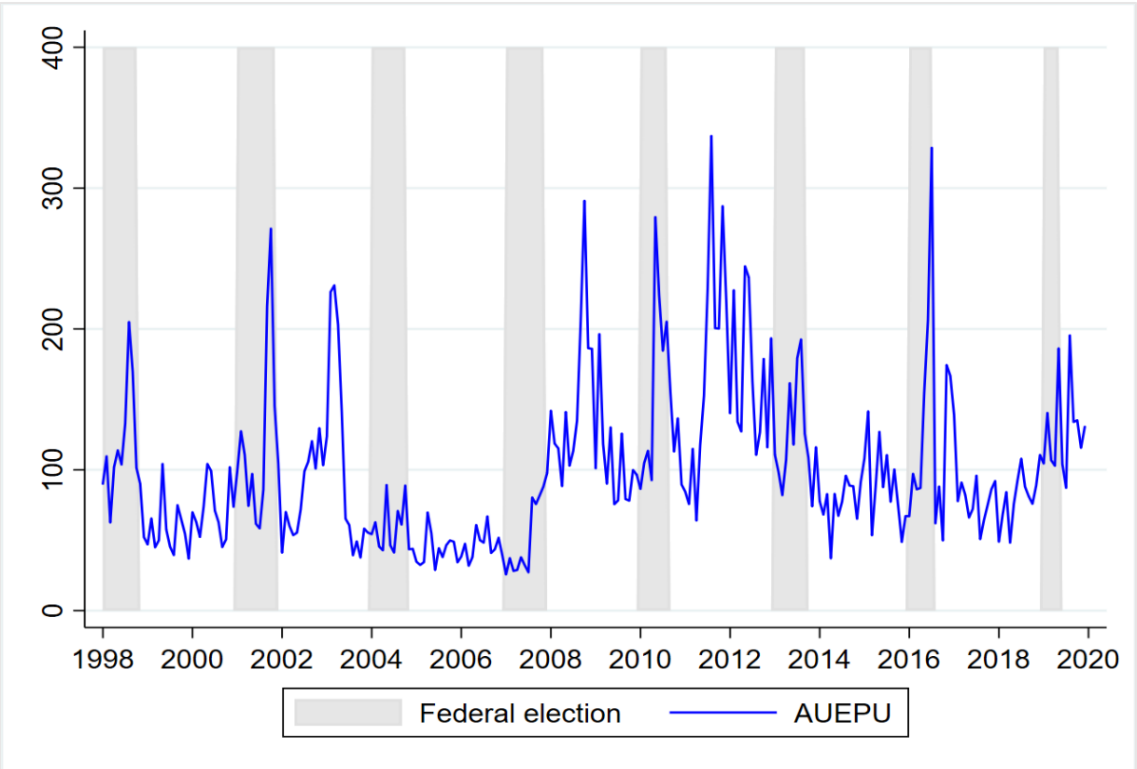
Figures

Figure 1. Australian EPU, federal election and recessions

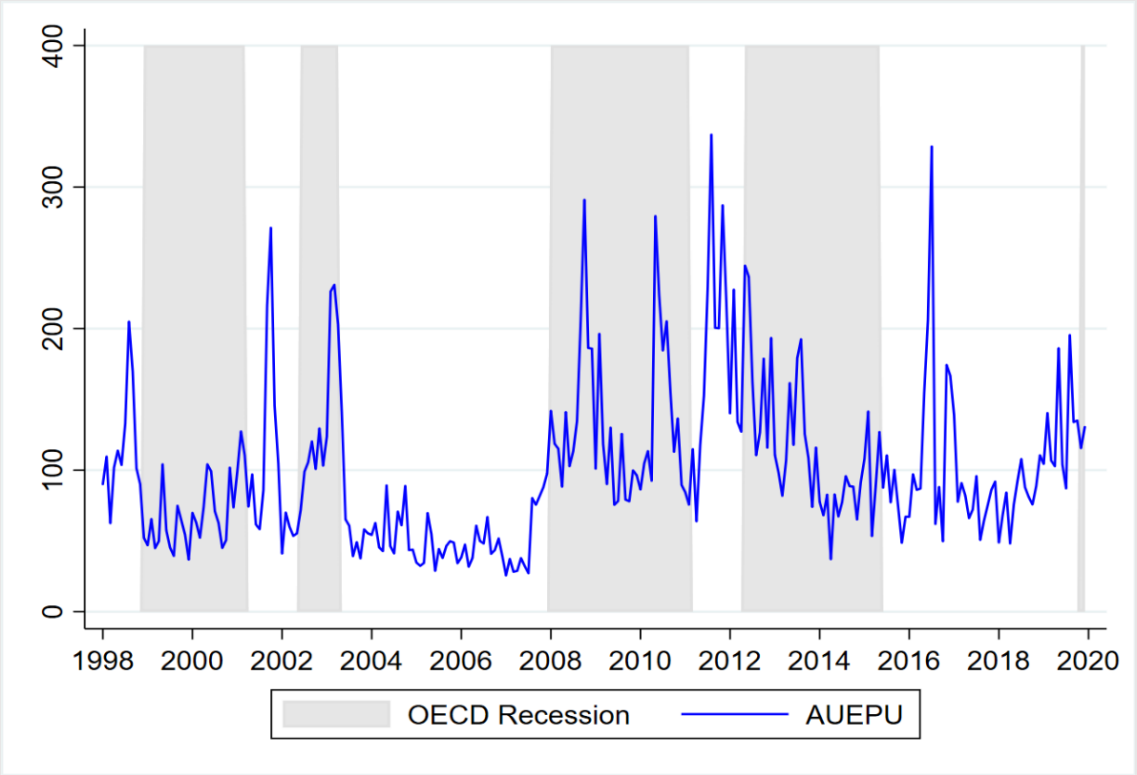
1A. Australian EPU index, where *9* out of *10 spikes* are *foreign*



1B. Australian EPU and national elections



1C. Australian EPU and recessionary periods



Panel A 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. A number of major events and shocks have been identified in accordance with sizeable spikes in uncertainty. Index reflects scaled monthly counts of articles in eight Australian newspapers containing the key terms, such as uncertain or uncertainty, economic or economy, and one or more policy-relevant terms: regulation, Reserve Bank of Australia, RBA, deficit, tax, taxation, taxes, parliament, senate, cash rate, legislation, tariff, war. Data are available at www.policyuncertainty.com.

Panel B plots the time series of Australian economic policy uncertainty and the years with federal elections, while panel B plots the same series with recessionary periods defined by OCED. Recessionary periods include December 1998 – March 2001, June 2002 – April 2003, January 2008 – February 2011, May 2012 – May 2015, and November – December 2019.

Appendix

Variable Definitions

Variables	Description	Data source
Dependent variables		
ABS_FE	Absolute value of the difference between the actual earnings per share (EPS) and the individual analyst forecast of EPS at time *t*, 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 deflated by the absolute value of actual earnings per share.	I/B/E/S Database
ABS_FE_ALT	Absolute value of the difference between the actual earnings per share and the individual analyst forecast, scaled by stock price at the beginning of the firm's fiscal year *t*, i.e., 11 months before the financial year end month.	I/B/E/S Database and SPPR for security price
DISP_ALT	Standard deviation of individual analyst earnings forecast during a month and is deflated by stock price at the beginning of the firm's fiscal year *t*.	I/B/E/S Database SPPR for security price
Economic policy uncertainty		
AUEPU	Natural logarithm of the weighted average of the Baker et al. (2016) newspaper-based monthly index for Australia over a given month in the year *t*.	Policyuncertainty.com
Macroeconomic uncertainty variables		
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). The months after elections in the election years and other calendar months in non-election years are coded with the value of zero.	UWA Australian Politics and Elections Database
Quarterly GDP Growth	Quarterly growth rate of Australian gross domestic product.	Australian Bureau of Statistics
Analyst forecast attributes		
Ln_N_analysts	The natural logarithm of the number of analysts following a firm *i* during the year *t*.	I/B/E/S Database
Ln_Horizon	The 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	The natural logarithm of the number of firms analyst *j* follows in year *t*.	I/B/E/S Database
Brokerage house size	The size of the brokerage house employing analyst *j* in year *t*, measured by the number of analysts employed by the brokerage house.	I/B/E/S Database
General experience	General experience measured as the number of prior years the analyst has issued annual forecasts for any firm in the sample.	I/B/E/S Database
Industry experience	Industry experience measured as the number of prior years the analyst has issued annual forecasts for any firm in the same six-digit GICS industry classification in the sample.	I/B/E/S Database
Firm experience	Analyst's firm-specific experience measured as the number of prior years the analyst has issued annual earnings forecasts for a given firm in the sample.	I/B/E/S Database
Firm-level controls		
Firm size	The 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 absolute value of the difference 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	An indicator 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 absolute value of the difference 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

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