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UNCERTAINTY ABOUT ECONOMIC POLICY AND DECISIONS TO ENGAGE IN REAL EARNINGS MANAGEMENT: EVIDENCE FROM INDONESIA'S CAPITAL MARKET

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ABSTRACT

Introduction/Main Objectives: This study examines whether economic policy uncertainty (EPU) influences managers' choice to engage in real earnings management (EM) in the Indonesian capital market. **Background Problems:** As a major driver of aggregate economic growth and business cycles, EPU may induce information asymmetry, affect the quality of financial reporting, and raise concerns about how macroeconomic conditions may impact how managers behave in managing reported accounting numbers. **Novelty:** This study explains how the lean against the wind theory and the lean with the wind theory affect real EM behavior in emerging markets. In addition, this study considers the endogeneity problem, which has frequently been overlooked in similar studies, and provides a robust analysis utilizing a variety of tests to validate the proposed hypothesis. **Research Methods:** This study investigates 1,800 firm-year observations represented by 200 Indonesian publicly listed firms from all industries that have data available, except the banking and financial industries, from 2012 to 2020.The researchers employ time-series cross-sections, pooled ordinary least squares (OLS),and robust standard errors clustered by years. **Finding/Results:** EPU causes managers to engage in more real EM. This result holds for a series of robustness tests, including testing by using a presidential election for alternative measurements for EPU. From additional analysis, this study reveals that the effect of EPU on real EM is more significant for more profitable firms. **Conclusion:** This study supports the lean against the wind theory for emerging markets. This evidence implies that EPU conditions induce managers to engage in more real earnings management in emerging market firms, and the uncertain environment can reduce the quality of financial information .

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INTRODUCTION

The rising levels of economic policy uncertainty (EPU) following the global financial crisis in 1998 were documented as one of the factors that caused an economic slowdown and affected various aspects of business. Whilst correlations between EPU and corporate behavior or business activities have been examined extensively in empirical studies with cross-country or single-country settings, studies looking at the behavior of managers who manipulate reported accounting numbers during periods of economic policy uncertainty are rare. Furthermore, empirical research on how macroeconomic conditions affect financial reporting quality is limited and there have been calls for more research in this area (Bermmpei et al. 2022; Dechow et al., 2010). This study attempts to fill this gap by examining how managers engage in the manipulation of real activities when reporting earnings during periods of economic policy uncertainty**.** As a major driver of aggregate economic growth and business cycles (Baker & Bloom, 2013; Bloom, 2009), the EPU may induce information asymmetry (Kahn & Watts, 2009), with varying implications for earnings manipulation and financial reporting transparency (Stein, 1989). Hence, it would be logical to evaluate the impact of uncertainty-related concerns on the manipulation of earnings.

The motivation for this study is the fact that previous studies that investigated the effect of EPU on managers' earnings-reporting behavior using multi-country data have produced conflicting results. For example, El Ghoul et al. (2021) investigated the relationship between EPU and accounting quality using data from 19 countries and found that when EPU is high, enterprises reduce their level of earnings management (EM). They suggest that during high-EPU periods, investors pay more attention to firm-specific information, prompting managers to improve accounting quality which decreases the likelihood of them engaging in EM. By contrast, in a study that includes data from multiple countries, Yung and Root (2019) support the view that firms increase EM when EPU is high because such a situation may provide additional opportunities for "window dressing" as information gaps between managers and investors widen. A more recent study by Makarem et al. (2023) supports this viewpoint. Therefore, this study attempts to investigate how EPU may affect managers' EM behavior while focusing on the Indonesian economy. In addition, despite the fact that industry and macroeconomic factors play an important role in determining accounting quality—as highlighted by Dichev et al. (2013)—there is limited empirical research into how macroeconomic conditions affect accounting quality and firms' reporting environments while also focusing on EM. This is one of the reasons why additional research is needed in this area (Bermmpei et al., 2022; Dechow, Ge, & Schrand, 2010). Lastly, in terms of Indonesian characteristics, the country was among those in ASEAN with the highest number of infections during the COVID-19 pandemic, and it also suffered greatly from its other negative effects which included increased economic uncertainty (Sanusi et al, 2023). Previous studies have suggested that these circumstances may have motivated managers to use EM more frequently (Al-Thaqeb et al., 2020; Roma et al., 2021).

To examine the relationship between EPU and real EM, and given the theoretical ambiguity in the extant literature, this study posits two conflicting theories: the lean against the wind and the lean with the wind theory. The researchers argue that clarifying these two theories that are used in the literature to link real EM to EPU is critical for developing a better and more valid understanding. Furthermore, both theories can be utilized to explain the current market and economic

conditions, thereby explaining how EPU may affect real EM.

On one hand, supporters of the lean against the wind theory (Hirshleifer, Hou, & Teoh 2009; Kang, Liu, & Qi 2010) suggest that earnings manipulation may be greater during periods of considerable unpredictability, as managers may be compelled to paint a rosy picture of their companies' finances in order to calm outsiders. For example, during the COVID-19 pandemic in Indonesia, when EPU was high and the composite index dropped significantly, managers may have been more motivated to engage in real EM because they wanted to disguise the real condition of their firms. This is because during the EPU period, the firm's business operations may have been restricted and its debt may have increased, driving the firm to engage in real EM. Satisfying shareholders and meeting their expectations during a period of high uncertainty may be the reason for manipulating earnings because companies do not want to appear to be performing poorly in the eyes of investors. On the other hand, the lean with the wind (or do not lean at all) theory (Cohen & Zarowin, 2011) suggests that the relationship between uncertainty and EM can be non-existent or even negative. In other words, during a period of uncertainty, corporate outsiders are more inclined to attribute a decline in a firm's financial condition to the overall economic circumstances rather than the quality of management. As a result, during periods of high uncertainty, managers would be less motivated to manage earnings.

This study attempts to provide additional empirical evidence on this issue from an emerging market perspective, especially from the context of Indonesia's capital market, which offers a unique setting to investigate the association between EPU and managers' real EM behavior. Leuz et al. (2003) document that the aggregate EM score for Indonesia's capital market is higher than both Malaysia and the Philippines. Januarsi and Yeh (2022), who have gathered more recent empirical evidence, show that the mean value of real EM scores for Indonesia is also bigger than those in Malaysia, the Philippines, and Thailand. In addition, Indonesia is a country with low investor protection. Companies in a country with weak investor protection will be more likely to engage in EM behavior due to the greater benefits of private control. Inadequate corporate governance (CG) and family control are additional characteristics of Indonesia's capital market that encourage firms to engage in EM (Singh, 2009; Pricewaterhouse Cooper, 2014; Dewi, 2016). These unique characteristics indicate that Indonesia suffers from its EM practices and needs to pay more attention to investigating this issue through empirical research. It would be pertinent to use data from Indonesia's capital market to assess the current research gap in order to throw new light on these problems from the perspective of an emerging economy. This study uses real EM as the focus of this investigation. This is not only because few empirical studies have been conducted on the relationship between EPU and real EM, especially in emerging economies, which makes the relationship less clear, but also because real EM has a more severe impact on the future of firms' profitability. As a result, addressing this study's findings on real earnings manipulation is crucial.

This study makes several contributions to the literature. First, it adds to the financial accounting literature in general, and, particularly, the literature on EM that deals with how EPU is an essential determinant of managers engaging in real EM. This study finds that higher EPU induces manager behavior to mask the earnings figures from a company's real activities. Second, this study extends the literature on the consequences of uncertainty about macroeconomy policy in emerging markets. This study provides fresh and

updated empirical findings on how EPU influences manager behavior on engaging in real EM in the setting of an emerging economy. Furthermore, focusing on real EM is also important as it can have a severe effect on a firm's performance in the future. Third, this study provides evidence of how the lean against the wind theory is supported in an emerging market. This study finds that managers tend to engage in more real EM in uncertain conditions which is in line with the claim made by the lean against the wind theory. The current findings can be used as essential references for future research to extend current topics using a broader sample.

LITERATURE REVIEW

1. Economic Policy Uncertainty (EPU) and Real Earnings Management

There is no commonly agreed definition of "economic policy uncertainty". The term often refers to the likelihood that unanticipated movements in the economy will compel authorities to change their policies (Al Taqieb et al., 2020). As a broad definition, EPU refers to uncertainty regarding government activities that affect the economy. It can also be defined as the agents' incapacity to forecast the outcomes of fiscal, regulatory, monetary, and trade policies with consequences for economic activity. The uncertainty will pertain to what economic policy decisions and actions will be undertaken and when, and what the economic effects of policy actions or inaction will be (Baker et al., 2016). EPU can indicate the possibility that economic policies will change in the coming period and alter macroeconomic and microeconomic activity as a consequence (Jiang et al., 2017). EPU reflects the economy's ebbs and flows as a result of the unpredictability of fiscal, political, regulatory, and monetary policies.

EPU differs from firm-level uncertainty. Firm-level uncertainty is caused by variables particular to the firm, such as new product development, merger and acquisition activity, or management turnover. Firm-level uncertainty can be altered by actions taken by management and investors. On the other hand, most managers and investors are unlikely to have an impact on regulatory decisions that are outside of their control, which is primarily the source of uncertainty surrounding government economic policy (Ghoul et al., 2023; Nagar, Schoenfeld, & Wellman 2019).

The extant empirical studies provide evidence regarding how EPU can influence macroeconomic activities and firm-level (micro) activities. How EPU may affect various aspects of the economy at the macro level and this has been documented by many scholars, including the financial market (Yen and Cheng, 2021; Balcilar et al., 2019; Phan et al., 2018), financial stability (Phan et al., 2021), economic fluctuation and growth (Istiak and Serletis, 2018), mergers and acquisitions (Sha et al., 2020), and exchange rates (Kido, 2016). Additionally, at the micro level, a lot of research has investigated how EPU affects a firm's characteristics such as dividend policy (Attig et al., 2021), capital structure (Schwarz and Dalm´acio, 2020), cash holding (Phan et al., 2019; Duong et al., 2020), corporate diversification (Hoang et al., 2021), corporate innovations (Guang et al., 2021), executive turnover (Huang et al., 2021), corporate Investment (Liu and Zang 2020), and corporate risk taking (Wen et al, 2021).

While EPU literature has extensively documented several kinds of impact at the micro level such as firm outcomes and business operations, there is a growing number of studies that examine how the macroeconomics policy uncertainty influences financial reporting quality (Kahloul et al. 2023; Bermpei et al. 2022; Dhole

et al. 2021; Dai and Ngo 2021; Bloom, 2014). For example, Dhole et al. (2021) find that increases in EPU reduce the quality of earnings and the comparability of financial statements, thus supporting the notion that macroeconomic uncertainty lowers the quality of financial reporting. This evidence is supported by Bermpei et al. (2022) and Kahloul et al. (2023). Even though these empirical studies have examined extensively how EPU is associated with the quality of financial reporting, examining how macroeconomic policy uncertainty affects the quality of financial reporting through manager behavior engaging in EM has been overlooked.

In the literature on EM, companies accomplishing the reported earnings target using real EM has been documented by Cohen & Zarowin (2010), Doukakis (2014), Oz and Yelkenci (2018), Roychowdhury (2006), and Zang (2012). Managers can use real EM by changing the timing or structure of commercial transactions to reach or surpass earnings targets (Roychowdhury, 2006). To enhance its current stated earnings target, a company adjusts its actual operations by applying abnormal sales discounts, cutting discretionary spending (research and development, employee training), or having overproduction to reduce its reported cost of goods sold (Roychowdhury 2006). However, these techniques may have a direct effect on a firm's cash flow as well as possible economic implications for a firm's long-term worth (Alhadab et al., 2015; Gunny, 2010). As a result, real EM is considered to be an "expensive" tool to manage the reported earnings numbers (Ipino & Parbonetti, 2017). Furthermore, auditors have more difficulty detecting real EM (Alhadab et al., 2015; Badertscher, 2011; Graham et al., 2005; Gunny, 2010;) as real manipulation incorporates techniques that are allowed according to generally accepted accounting principles.

To justify how EPU is associated with real EM, one can develop an argument explaining this relationship using two conflicting theories. First, the lean against the wind theory adopted by Hirshleifer et al. (2009) in the field of accounting can explain the association between aggregate accruals and aggregate return. This theory suggests that firms are willing to report higher earnings or boost their accruals during periods of market undervaluation, and they may be more sensitive to the leaning effect during periods of industry or market undervaluation (Hirshleifer et al., 2009). In other words, during periods of EPU, managers are more likely to boost the earnings target to meet the expectations of investors and financial analysts in order to mitigate unfavorable forecasts about corporate performance. Managers have the opportunity to do so because, under the pressure of political and economic uncertainty, the information asymmetry is higher (Batta, Heredia, & Weidenmier, 2014; Chaney, Faccio, & Parsley, 2011; Kim, Pantzalis, & Park, 2012; Verrecchia, 2001) and it provides an opportunity for managers to boost the earnings numbers. Hence, the lean against the wind hypothesis suggests there is a positive association between EPU and real EM. Another possible explanation is that, during macroeconomic uncertainty, management discloses their forecasts less frequently and only during a short time horizon when managers may take advantage of this opportunity to engage in more real EM with less scrutiny from outsiders such as auditors and regulators. This argument in line with evidence documented by Kim et al. (2016). In addition, as EPU indicates that economic agents cannot foresee whether, when, and how the government will change its current economic policy (Gulen and Ion, 2016), and this condition generates uncertainty regarding the timing of future cash flows and causes a firm's profitability and cash flow to fluctuate (Jin et al.

2019). This, in turn, creates incentives for engaging in real EM. This justification is in line with Roma et al. (2020) who has found evidence that EPU induces managers to engage in more EM. All the above considerations lead this study to the following hypothesis:

H1a: economic policy uncertainty has a positive relationship with real earnings management.

Contrary to the lean against the wind hypothesis, greater uncertainty about economic conditions may have a negative effect on stock price (Conrad et al., 2002) and EPU may have a restraining effect on firm value (Zhu et al., 2020). Negative performance during periods of higher EPU potentially induces managers to manipulate earnings downwards because markets can attribute negative performance to actual economic conditions, whereas the opposite occurs during periods when firm value is more stable, and markets can attribute positive performance to actual economic conditions (Stein & Wang, 2016). Following this premise, the relationship between EPU and EM led to Cohen & Zarowin's (2011) lean with the wind theory. In other words, during periods of high EPU, that is when the market is undervalued, managers have less of an incentive to manipulate earnings upwards and more of an incentive to manipulate earnings downwards. Hence, according to this theory, the negative association between EPU and EM is more likely to occur. All the above considerations lead this study to the following hypothesis:

H1b: economic policy uncertainty has a negative relationship with real earnings management.

METHOD, DATA, AND ANALYSIS

1. Sample Selection

This study began the sample selection procedure by considering all publicly traded enterprises on the Indonesia Stock Exchange (IDX) but excluding companies from the finance and banking sectors due to differences in their features and regulations that influence EM measurement. Initially, this study documented 4,320 firm-year observations represented by 480 firms during the period 2012 to 2020 as the researchers were only able to access data until 2020. This study choae to start the investigation period in 2012 because there is a significant amount of missing data before 2012, necessitating a large number of samples to be excluded from the sample database. To overcome this problem, this study began the period of investigation in 2012. At least eight firms for each 4-digit GSIC code were needed to compute the abnormal level of real EM. Furthermore, firm years with inadequate data to calculate all of the variables required in the regression model were eliminated. Finally, with the aforementioned selection criteria, 1,800 firm-year observations from 200 IDX-listed companies in the Indonesian capital market were obtained**.** Based on the discussion above, this study follows these criteria to include listed firms in the final sample as follows:

1	All firms are firms listed on the IDX between 2012-2020 from all industrial sectors except banking and finance. At least eight firms in one industry. This study excludes industries for which there are less than eight listed firms	480
2	(-) firms with missing data	(280)
3	Listed firms with all data available for hypothesis testing Total observation period from 2012 to 2020: (9 years)	200
	Total firm-years observations in the final sample: = 200 listed firms x 9 years	**1800** firm-year observations

2. Variable Measurement

2.1. Economic Policy Uncertainty (EPU)

The world uncertainty index (WUI) developed by Hites Ahir (International Monetary Fund), Nicholas Bloom (Stanford University), and Davide Furceri (International Monetary Fund)[1] was used to calculate EPU in this study. Starting in 1996, they have generated quarterly economic uncertainty indices for 143 countries by using frequency counts of "uncertainty" (and its variants) in quarterly country reports by the Economist Intelligence Unit (EIU). Each country's political, policy, and economic changes are analyzed and forecasted in EIU reports. They are created by country-specific analysts and an EIU editorial team. The WUI is more comparable across nations when raw counts are scaled by report word count. Cross-country comparisons demonstrate that uncertainty differs by country, with advanced economies having lower uncertainty than others. For the baseline model, this study uses the natural log of the median value of WUI following Bermpei et al. (2021) and Kim & Yasuda (2021). In addition, a natural log of the average value of WUI also included as an EPU measurement for the robustness test. This study also uses a presidential election as another alternative measurement of EPU following Bermpei et al. (2021). It is a dummy variable that scores the value of one (1) in the year that a presidential election occurred, and zero otherwise. In Indonesia, during 2012 to 2020, presidential elections occurred in 2014 and 2019. Therefore, the years 2012 and 2019 score 1, while any other year scores zero.

2.2. Real Earnings Management (real EM)

To estimate a firm's real EM, this study adopts the model employed by Roychowdhury (2006), which is widely used in the EM literature (Doukakis, 2014; Francis et al., 2016). Real EM activity is represented by abnormal cash flows and discretionary expenses, such as research and development, advertising, selling, general, and administrative (SG&A) expenses. This study measures real EM using abnormal cash flows and abnormal discretionary expenses as follows (Roychowdhury 2006):

$$\frac{CFO_t}{Asset_{t-1}} = \alpha_1 \frac{1}{Asset_{t-1}} + \alpha_2 \frac{\mathrm{Re}v_t}{Asset_{t-1}} + \alpha_3 \frac{\Delta \mathrm{Re}v_t}{Asset_{t-1}} + \varepsilon \quad (1)$$

$$\frac{DisExp_t}{Asset_{t-1}} = \alpha_1 \frac{1}{Asset_{t-1}} + \alpha_2 \frac{\mathrm{Re}v_{t-1}}{Asset_{t-1}} + \varepsilon \quad (2)$$

CFO_t is cash flows from operations in year *t*, and $\Delta Revt$ is the change in revenues over year *t*. The residual values from equation (1) measure firm *i*'s abnormal cash flow. Following Cohen & Zarowin (2010) & Zang (2012), the residual from abnormal cash flow will be multiplied by minus (-1), indicating higher value of abnormal cash flow equal to greater real EM activity. In equation (2), $DisExp_t$ is discretionary expenditures, the sum of research and development, advertising, and SG&A expenses. The negative value of the residual values from the discretionary expense equation is used as a measure of abnormal discretionary expense, with a higher value indicating greater abnormal discretionary expense. A comprehensive measurement of real EM is calculated by summing the above two estimates of abnormal cash flow and abnormal discretionary expenses, following prior studies (Cohen & Zarowin 2010; Francis et al. 2016;

[1] Please see https://www.policyuncertainty.com/wui_quarterly.html

Sohn 2016; Zang 2012). This study uses its absolute value of real EM since managers may engage in real EM by using both income-increasing and income- decreasing earnings management (Francis et al. 2016; Sohn 2016).

3. Model Estimation

Empirical studies that have examined EPU and EM are not that extensive, moreover in the emerging market setting. However, this study documents several similar studies conducted in developed markets and adopts their methodology in examining the current topic. In general, empirical studies that examine the association between EPU and earnings management or accounting quality use pooled cross-sections with robust standard errors with a clustering method as adopted by many empirical studies on finance and financial accounting such as Kim & Yusada (20210), Jang & Kim (2021), Jin et al. (2019), and Ghoul et al. (2023). Following this empirical evidence, this study uses pooled cross-sections and robust standard errors clustered by firm. To address concerns regarding the potential unobservable heterogeneity caused by time and firm, this study includes firm-fixed and year-fixed effects in the following regression.

While traditional assumption tests are important in econometric research, they may not be as exhaustive when dealing with panel data due to the presence of unique traits and specific modeling techniques used in this context. This viewpoint is consistent with recent findings from similar studies in finance or financial accounting, such as Kim & Yusada (20210); Jang & Kim (2021); Jin et al. (2019); and El Ghoul et al. (2023). As a result, this study uses the following assumption while analyzing research data to refute the presented hypothesis:

1. Time-Invariant Individual Effects: Individual-specific effects (or fixed effects) are common in panel data analysis and remain consistent throughout time for each unit (industry, business, country). These effects capture unobserved heterogeneity between units that remain consistent during the panel period. When these fixed effects are included in the model, they can compensate for such individual-specific qualities, reducing the need to thoroughly assess their underlying assumptions (for example, normality and homoscedasticity). Therefore, to address the heteroscedasticity issue, the present study incorporates firm-fixed and year-fixed effects into the regression model, as proposed by Jang & Kim (2021); and Jin et al. (2019). Furthermore, as suggested by Gujarati (2015), White-Huber standards errors which is also known as robust standards errors regression, can be utilized to address the heteroscedasticity problem. As a result, the panel data analysis performed in this study employs robust estimation techniques, namely robust standard error regression, which is less sensitive to specific violations of classical assumptions.
2. Within-Group Correlation and Autocorrelation: Panel data frequently show within-group correlation (correlation of observations within the same unit over time) and possible autocorrelation (correlation of errors over time). Traditional assumption tests for independence and autocorrelation may not be immediately applicable or essential in panel data analysis due to the data's clustered form. Therefore, this study also includes the regression model clustered by firm as suggested by Kim & Yusada (20210) to overcome the autocorrelation problem.
3. Large Sample Characteristics: Panel data analysis frequently makes use of large sample properties, which involve a large number of observations across units and time periods. This might lessen the impact of some breaches

of classical assumptions (such as non-normality) because of the central limit theorem, which implies that sample means are normally distributed even if the underlying data are not. This study employs 1,800 firm-year observations in total as the sample of the study. This means the assumption of the central limit theorem is well met.

In summary, the requirement for comprehensive classical assumption tests in panel data analysis is frequently reduced or modified for a variety of reasons relating to the particular properties and structure of panel data.

To test the main hypothesis, whether the lean with the wind hypothesis or the lean against the wind hypothesis will be supported in the setting of this research, this study uses the following regression model:

$$\boldsymbol{REM}_{it}=\beta_0+\beta_1\boldsymbol{EPU}_{it}+\beta_2\boldsymbol{Controls}_{t,1}+\alpha_i+\mu_t+\boldsymbol{\varepsilon}_{it} \quad (3)$$

The equation (3) also includes several firms-specific control variables and country-control variables ($\boldsymbol{Controls}_{t,}$). This study includes firm-specific control variables as they might influence EM behavior. The control variables are leverage (LEVERAGE), size as measured by the Ln of total assets (SIZE), cash flow from operations (CFO) scaled by total assets, cash flow from operations (CFO) scaled by total assets, free cash flow (FCF) scaled by total assets, and sales growth (SG); then, LIT (litigation) is a dummy variable for litigious industries such as biotechnology, computers, electronics, and retailing (Cohen and Zarowin 2010; Sohn 2016). AEC is the ASEAN economic community that has a dummy variable that scores the value of one (1) after the year that AEC was implemented (after 2015), and zero otherwise. International financial reporting standards (IFRS) is a dummy variable that scores the value of one (1) after significant implementation of IFRS (after 2015), and zero otherwise. This study also includes other macroeconomic county-control variables such as GDP that might have an impact on real EM behavior. In the regression model in equation (3), this study also includes year and firms fixed effect to account for time- specific and firm-specific heterogeneity in the regressions. This study winsorizes all continuous variables above (below) the 99th (1st) percentile of their distributions to mitigate the effect of extreme values (Dhole et al., 2021; Kim and Yasuda, 2021) and reports standard errors clustered by firm.

RESULT AND DISCUSSION

1. Descriptive Statistics and Correlation

Table 1 presents the descriptive statistics for the various key characteristics of firms and several country factors. As indicated in Table 1, the mean value of real EM is 1.6584, with standard deviations of 3.2698, implying that the level of real EM varies considerably. The substantial standard deviations of real EM support the findings of Leuzz et al. (2003) and Januarsi and Yeh (2022) who claim that the EM level in Indonesia is regarded as being high. One probable explanation is that Indonesia, as an emerging market, continues to suffer from low litigation, a lack of investor protection, and inadequate corporate governance (CG), all of which contribute to a higher degree of EM behavior. The mean value of the average EPU index (lnEPU_AV) is -1.93 with a standard deviation of 0.367, which implies that the EPU index during the period from 2012 to 2020 did not fluctuate that much and indicated quite stable economic conditions. A similar interpretation also applies to EPU when measured by using the median value (LnEPU_MED).

Table1: Descriptive Statistics

	N	min	max	Mean	Median	Std. Dev.
Abs_real EM1	1800	0.0004	19.241	1.658	.571	3.27
lnEPU_AV	1800	-2.659	-1.47	-1.93	-1.772	.367
lnEPU_MED	1800	-2.813	-1.514	-2.051	-2.12	.405
LEVERAGE	1800	0.01	3.59	.305	.21	.439
FCF	1800	-.54	.8	.094	.09	.199
LIT	1800	0	1	.085	0	.279
SIZE	1800	8.57	16.21	12.419	12.47	1.653
SG	1800	-.82	2.71	.039	.01	.419
Abs_CFO	1800	0.01	.96	.112	.06	.158
AEC	1800	0	1	.5556	1	.497
IFRS	1800	0	1	.3333	0	.4715
GDP	1800	-2.07	6.03	4.411	5.033	2.317
Real EM	1800	-6.828	3.497	.009	.043	1.303

This table presents descriptive statistics from non-indicator firm-specific variables during 2012-2020 and country variables. Data are winsorized at the 1st and 99th percentiles. Abs_real EM1 represents real earnings management measured by adopting the Roychowdurry model (2016). Ln_WUIAV is a natural logarithm from the average value of the world uncertainty index. Ln_WUIMED is a natural logarithm from the median value of the world uncertainty index. *LEVERAGE* is calculated as total debt divided by total assets. FCF is free cash flow measured by cash flow from operating minus capital expenditure, which is deflated by total assets. LIT (litigation) is a dummy variable for litigious industries such as biotechnology, computers, electronics, and retailing. *CFO* is the absolute value of cash flow from operation divided by total assets. *SIZE* denotes the natural logarithm of total assets. AEC is the ASEAN economic community, a a dummy variable that makes the value of one (1) after the year that AEC was implemented (after 2015), and zero otherwise. International financial reporting standards (IFRS) is a dummy variable that makes the value of one (1) after significant implementation of IFRS adoption (after 2015), and zero otherwise. Sales Growth is sales from current years minus sales from previous years, deflated by total assets. GDP is gross national product measured by GDP growth rate. AEM is accrual earnings management which is measured using the Kothari model (2005)

Table 2 shows the correlation matrix among the major variables used in equation (3). It shows the coefficient correlation between lnEPU_AV (lnEPU_MED) and real EM is -0.076 (-0.061), and significantly negative. This result provides initial support for the hypothesis that this study has proposed; however, this result is not sufficient since it does not include other factors that might be affecting the real EM. Other variables that provide significant results are size, absolute value from operating cash flow, sales growth, accrual EM, and the economic ASEAN community implementation. Other variables are not significant. This study will discuss the effect of EPU and real EM using multivariate regression in the following section.

Tabel 2. Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) ABS_real EM1	1.0000												
(2) ln_EPUAV	-0.076*	1.0000											
	(0.001)												
(3) ln_EPUMED	-0.061*	0.879*	1.0000										
	(0.010)	(0.000)											
(4) LEVERAGE	0.0010	0.0010	-0.0070	1.0000									
	(0.973)	(0.969)	(0.774)										
(5) FCF	0.127*	0.0220	0.0010	0.0040	1.0000								
	(0.000)	(0.356)	(0.968)	(0.861)									
(6) lit	0.0400	0.0000	0.0000	-0.0130	0.0200	1.0000							
	(0.088)	(1.000)	(1.000)	(0.582)	(0.392)								
(7) SIZE	0.145*	-0.0070	-0.0060	-0.0490	0.0610	-0.0280	1.0000						
	(0.000)	(0.770)	(0.802)	(0.036)	(0.010)	(0.228)							
(8) SG2	0.063*	-0.106*	-0.0250	0.0130	-0.085*	0.0210	0.0240	1.0000					
	(0.007)	(0.000)	(0.286)	(0.569)	(0.000)	(0.383)	(0.319)						
(9) AbsCFOTA	0.085*	0.0040	-0.0060	-0.063*	0.115*	0.170*	-0.0150	-0.0010	1.0000				
	(0.000)	(0.870)	(0.790)	(0.008)	(0.000)	(0.000)	(0.522)	(0.956)					
(10) AEC	0.066*	-0.072*	-0.086*	-0.0110	0.0470	0.0000	0.0550	0.0260	-0.0340	1.0000			
	(0.005)	(0.002)	(0.000)	(0.651)	(0.046)	(1.000)	(0.020)	(0.279)	(0.149)				
(11) IFRS	0.0260	-0.193*	-0.278*	0.0000	0.071*	0.0000	0.0530	-0.067*	-0.0450	0.632*	1.0000		
	(0.269)	(0.000)	(0.000)	(0.985)	(0.003)	(1.000)	(0.024)	(0.004)	(0.057)	(0.000)			
(12) GDP	-0.0090	-0.220*	0.140*	-0.0130	-0.070*	0.0000	-0.0310	0.187*	0.0120	-0.370*	-0.520*	1.0000	
	(0.718)	(0.000)	(0.000)	(0.585)	(0.003)	(1.000)	(0.190)	(0.000)	(0.617)	(0.000)	(0.000)		
(13) AEM	-0.148*	0.0150	0.0010	0.0070	-0.0120	-0.0090	-0.297*	-0.0040	-0.0280	-0.0100	0.0220	-0.0110	1.0000
	(0.000)	(0.519)	(0.952)	(0.755)	(0.607)	(0.692)	(0.000)	(0.858)	(0.243)	(0.669)	(0.348)	(0.646)	

Thetablepresentsthecorrelationsbetweenthevariablesincludedinthetestsofthemainanalysis.***$p<0.01$,**$p<0.05$,*$p<0.1$

2. Baseline Model

This study presents the baseline result using equation (3) in Table 3. Column (1), shows evidence that the effect of EPU_AV on real EM is positive with a coefficient of 0.231 and a significance level of 1%. Column (2) introduces the EPU measurement using a median value from EPU (EPU_MED) and shows that the coefficient of EPU_MED is still positive with a coefficient of 0.1803 and significance level of 1%. These findings mean that managers engaging in real EM tend to be more prevalent when there is more macroeconomic policy uncertainty. The regressions in Column (1) and Column (2) also suggest that EPU affected the real EM of Indonesian companies during the period 2012 to 2020. These findings lend empirical support to hypothesis H1a which suggests that EPU has a positive effect on real EM. This study also supports the lean against the wind theory which suggests that managers tend to provide increased earnings figures to the users of financial statements during undervaluation periods.

Tabel 3. The effect of economic policy uncertainty on real earnings management – baseline estimation

	(1) ABS_real EM1	(2) ABS_real EM1	(3) ABS_real EM1	(4) ABS_real EM1
lnEPU_AV	**.2371*** **		**.2485*** **	
	(.0219)		(.0229)	
lnEPU_MED		**.1803*** **		**.1889*** **
		(.0167)		(.0174)
LEVERAGE	-.4699	-.4699	-.4534	-.4534
	(.3797)	(.3797)	(.3312)	(.3312)
FCF	.4751	.4751	.4715	.4715
	(.4653)	(.4653)	(.4496)	(.4496)
LITIGATION	.0536	.0536	-.3461	-.3461
	(.6669)	(.6669)	(.5888)	(.5888)
SIZE	.0707	.0707	.1021	.1021
	(.1769)	(.1769)	(.1662)	(.1662)
SG	.1756	.1756	.1283	.1283
	(.2225)	(.2225)	(.1845)	(.1845)
AbsCFO	-.4007	-.4007	-.5035	-.5035
	(.7373)	(.7373)	(.7175)	(.7175)
AEC	.0942***	.0266	-.0514	-.1222
	(.0219)	(.0208)	(.0765)	(.0803)
IFRS	-.9262***	-.9067***	-.7818***	-.7614***
	(.0194)	(.0207)	(.0957)	(.0969)
GDP	-.0058	-.0221**	-.0041	-.0212**
	(.0081)	(.0096)	(.0063)	(.0077)
AEM			-.6216	-.6216
			(.3456)	(.3456)
Cons	1.5269	1.5361	1.3911	1.4007
	(2.3281)	(2.3289)	(2.231)	(2.2318)
Observations	1800	1800	1800	1800
R-squared	.4544	.4544	.4736	.4736

This table reports results the effect of EPU on real earnings management (real EM) using equation (3) with standard errors clustered by firm, including firms and years fixed effect. Column (1) and Column (2) present the association between EPU and EPU without considering the accrual earnings management (AEM), while column (3) and column (4) shows the regression result by incorporating the AEM. The variables are defined in the appendix. *** p<0.01, ** p<0.05, * p<0.1.

Nevertheless, the results presented in Column (1) and Column (2) may be biased due to omitted variable issue or unobserved firm heterogeneity issues. Even though this study uses firm-fixed effects and year-fixed effects in the regression model in equation (3) and also uses clustered robust standard errors to overcome any biased results, the researchers suggest that it is necessary to control for other company characteristics that have the possibility of influencing decisions about real EM behavior. As suggested by prior studies in the literature on EM (Chen et al., 2012; Januarsi & Yeh 2022; Sohn 2016; Zang 2012), there is a trade-off phenomenon between accrual EM and real EM, causing managers' choices to engage in real EM to be effected by the level of accrual EM. Therefore, this study controls for this possible estimation in Column (3) and Column (4) by introducing the accrual EM variable as a control for real EM strategy. When the accrual EM is included in equation (3), similar results as in column (1) and (2) are obtained. This study finds that the coefficients of EPU_AV and EPU_MED are 0.2485 and 0.1889 respectively with the significance level at 1% for both columns. Therefore, the estimation which include the accrual EM model lend further support to H1a which suggests that EPU induces managers to engage more real EM.

3. Additional Test

This study examines whether the association between EPU and real EM is driven by a specific company characteristic: the ability to produce profits. A further examination is carried out on the effect of a company's ability to produce profit on the relationship between EPU and real EM. This study predicts that, compared to less profitable companies, more profitable ones would have more incentive to modify their earnings during a period of uncertainty**.** This is because following the bonus plan hypothesis from the positive accounting theory, the managers of more profitable companies tend to manage their earnings to gain more profit and receive bigger bonuses. Macroeconomic fluctuation creates more incentive for profitable companies to achieve the targeted earnings numbers, maintain the bonus plan, and provide good performance to gain more trust and loyalty from their investors during periods of economic uncertainty. To examine this prediction, the sample is divided into 10 deciles based on operating profit, and a similar technique as the one in the first additional test is repeated. This study then uses the baseline equation to examine the effect of profitability on the association between EPU and real EM. Reported results support this study's prediction. (Table 4).

4. Robustness Test

This study performs different robustness tests utilizing various measurements of independent and dependent variables as indicated in Table 5. First, this study uses an alternate measurement for real EM by employing sign real EM as used by Sohn (2016) and Januarsi and Yeh (2022). Second, this study uses a combination of three proxies for real EM which are total value from abnormal cash flow, abnormal discretionary expense, and abnormal production cost. Third, this study uses three alternative measurements for real EM utilizing individual proxies: abnormal cash flow, abnormal discretionary expense, and abnormal production cost. These three robustness tests are presented in Table 5. Overall, the results remain unchanged when different measurements of real EM are used. As the fourth robustness test, this study uses a presidential election as an alternative of the EPU. Unreported results, in general, demonstrate that this study's model is robust for a variety of other measurements and situations.

Table 4: Additional test incorporating (more profitable companies versus less profitable companies)

	(1) AB_real EM1	(2) AB_real EM1	(3) AB_real EM1	(4) AB_real EM1
	More profitable group	Less profitable group	More profitable group	Less profitable group
ln_WUIAV	**.6188****		**.0447**	
	(.2679)		(.055)	
ln_WUIMED		**.4705****		**.034**
		(.2036)		(.0418)
LEVERAGE	-.8823	-.8823	.3477**	.3477**
	(2.5377)	(2.5377)	(.1488)	(.1488)
FCF	2.5542*	2.5542*	-.2473	-.2473
	(1.123)	(1.123)	(.3869)	(.3869)
LITIGATION	1.7028	1.7028	-.3067	-.3067
	(2.5844)	(2.5844)	(.3609)	(.3609)
SIZE	-.3547	-.3547	.1279	.1279
	(.5706)	(.5706)	(.141)	(.141)
SG	-.4715	-.4715	.1832	.1832
	(.4351)	(.4351)	(.2811)	(.2811)
AbsCFO	-2.6707	-2.6707	.3532	.3532
	(2.6722)	(2.6722)	(.6853)	(.6853)
AEC	.7986*	.6224	.3204**	.3077**
	(.389)	(.399)	(.0973)	(.1077)
IFRS	-.0494	.0015	-.769***	-.7653***
	(.2073)	(.2219)	(.0735)	(.0746)
GDP	.0969**	.0542	.0098	.0067
	(.0346)	(.0413)	(.0113)	(.0132)
_cons	5.3997	5.4237	-.3398	-.338
	(7.3631)	(7.3722)	(1.7318)	(1.7305)
Observations	450	450	900	900
R-squared	.6655	.6655	.5338	.5338

This table reports additional test, examining the effect of EPU on real earnings management (real EM) using equation (3) with standard errors clustered by firm, including firms and years fixed effect. Column (1) to Column (4) present the regression result examining the association between EPU and EPU from more profitable firms Vs low profitable firm. *** p<0.01, ** p<0.05, * p<0.01

Table 5: Robustness test using alternative real EM measurements

	(1)	(2)	(3)	(4)	(5)
	Sign real EM1	ABS_real EM2	absabncfo	absabndiscexp	abs_abprod
ln_WUIAV	.0528**	.2891***	.0245***	.2606***	-.0322***
	(.0183)	(.0224)	(.0008)	(.0257)	(.002)
LEVERAGE	.7574	.4785	-.0304	.4588	.0459
	(.5483)	(.5008)	(.0226)	(.5103)	(.0358)
FCF	-2.1547*	.0768	.0216	-.2171	-.0081
	(.9473)	(.7254)	(.0918)	(.7778)	(.1166)
LITIGATION	-.2462	.0512	.0133	-.0341	.0209
	(.185)	(.1604)	(.0127)	(.1847)	(.0207)
SIZE	.0351	.1658	.0135**	.2696	-.0238
	(.2015)	(.2574)	(.0047)	(.2788)	(.0164)
SG	-1.8929**	-.6437	.3973***	-.7706	.0845
	(.6682)	(.8661)	(.0423)	(.7797)	(.0605)
AbsCFO	.2847***	-.0293	.0084***	.5847***	-.0265***
	(.0252)	(.0243)	(.0012)	(.019)	(.0032)
AEC	-.8593***	-.9795***	-.0666***	-1.427***	.0143***
	(.0224)	(.0215)	(.0015)	(.029)	(.0022)
IFRS	-.0038	.001	.0051***	-.0015	-.0029***
	(.0083)	(.009)	(.0003)	(.0107)	(.0007)
_cons	4.9713*	2.04	-.068	2.9566	-.2193
	(2.3784)	(2.1075)	(.1836)	(2.404)	(.3063)
Observations	1800	1800	1800	1800	1800
R-squared	.457	.4365	.4891	.4074	.36

This table reports the effect of EPU on real earnings management (real EM) using various alternative measurement from real EM. The variables are defined in the appendix. *** p<0.01, ** p<0.05, * p<0.1.

CONCLUSION

The empirical findings show that EPU is positively associated with real EM for Indonesian listed companies from 2012 to 2020, suggesting that higher EPU induces managers to engage in real EM. The additional test finds that more profitable companies during macroeconomic policy uncertainty are more likely to engage in real EM. These results suggest that companies whose characteristics include profitability can find it enhances the association between EPU and real EM. In addition, to capture the effect of a presidential election as a reflection of EPU, this study also finds that the uncertainty caused by the presidential election also induces managers to engage in more real EM. These findings are robust in the face of several tests using different measurements for both real EM and EPU.

This study adds to the existing literature that investigates the determinants of real EM and adds to the growing literature on the association between EPU and manager behavior and their strategy for achieving their earnings targets. The researchers support the lean against the wind theory for emerging markets, especially for Indonesian listed firms, and this study provides regulators, investors, and creditors with fresh empirical findings showing that EPU may become managers' incentive to engage in more real EM. This study reveals that managers may feel forced to present a rosy financial picture of their companies in order to placate outsiders. Satisfying shareholders and meeting their

expectations during times of high uncertainty may become plausible justifications for carrying out earnings manipulation because companies do not want to be labeled poor performers by investors. The findings of this study are in line with Yung and Root (2019), Jin et al. (2019), and Kahloul et al. (2023), Al-Thaqeb and Algharabali (2019), Bova et al. (2015), and Jiang et al. (2017). Previous empirical research, such as that by Kim and Yusada (2021) and El Ghoul et al. (2023), has primarily focused on developed markets, with little emphasis given to emerging ones. Their investigations were carried out during periods when the countries were not subjected to considerable uncertainty as a result of crises like the COVID-19 pandemic which can generate significant variations in economic conditions. This issue has emerged as one of the most significant discrepancies between this study and other EPU studies. This means that users of financial statements should be aware that the reported earnings numbers in financial statements may have been overstated as a result of changing macroeconomic policy conditions.

Our findings also have several implications. The first implication of this study is that policymakers should prioritize minimizing EM to protect both firms and investors—as well as the economy as a whole—by drafting and enacting policies that can reduce the manipulation of real activity. This means creating more detailed policy models that enable authorities to identify and track the negative effects of EM in the economy. Second, more disclosure on real activity during periods of uncertainty is required to mitigate manager's incentive in engage in real EM. Third, for practical implementation in public accountancy firms, higher audit quality is essential to reduce the opportunistic behavior of managers in terms of engaging in EM during periods of uncertainty. In addition, improving the capacity and quality of supervision over CG mechanisms is also essential to reduce real EM when there is high EPU. Sound accounting standards are meaningless without a legal and institutional framework to oversee and enforce them.

This study has several limitations and these can be considered as opportunities for future research. First, the findings of this study can only be generalized to the Indonesian capital market. Although this study adds to the growing literature on the possible effect of macroeconomic factors on manager behavior, future research could take into account data from another emerging market or make a comparison between two countries to examine similar issues. Second, future research could include stronger endogeneity testing to provide a more robust analysis. Third, because of the limitations of the data, this study cannot incorporate corporate governance (CG) characteristics into its investigation. Future empirical studies could include these characteristics in their regression models.

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