

# The Value Relevance of Earnings in the Presence of Earnings Management: Indonesia as Evidence

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## Abstract

This study examines the influence of earnings management on the value relevance of earnings, that is, the value relevance of level and changes of earnings. The sample consists of manufacturing companies listed on the Indonesia Stock Exchange (IDX), comprising 606 observations. By using panel data regression, this study provides evidence that the level of earnings has no value relevance; conversely, changes in earnings have value relevance, indicating that earnings have less value relevance. Furthermore, the results of the relevance test of earnings value with the presence of earnings management show that the relevance of the value of the earnings level increases with the presence of earnings management; on the contrary, the relevance of earnings changes decreases with the presence of earnings management. Based on the value of earnings response coefficient, the impact of earnings management on the value relevance of level and changes of earnings appears to indicate that earnings management reduces the value relevance of earnings.

## Keywords

Value relevance, earnings, earnings management, return model

## Introduction

Information about a company's financial performance should be presented in a financial report so that the accountability of a company management to its owner can be assessed and investors can have a basis in determining investment decisions. Information that is deemed useful in determining investment decisions should be relevant and reliable as specified by the conceptual framework for financial reporting (IASB, 2018). To provide relevant accounting number value, the numbers provided should be based on the current company value (Beisland, 2009). Determining value relevance can be conducted by finding the degree of statistical correlation between accounting information and market values or returns (Beisland, 2009).

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Unlike in developed countries, Indonesia has been initially considered and examined as an emerging economy and an investigation is conducted on the correlation between earnings management and value relevance of accounting information. There is a considerable difference in terms of the reporting context within an emerging economy as compared to that of developed countries (Nijam & Jahfer, 2018). Rationally assumed, the lack of efficiency in emerging markets will lead to lower value relevance of accounting data.

Indonesia is one of the code-law countries with a massive amount of accounting system politicization (Ball et al., 2000). The conservative method to asset valuation and liability acknowledgement under the code-law model appears to decrease the value relevance of accounting measures relative to the Anglo-American method for financial reporting (Elbakry et al., 2017). In addition, the research findings from La Porta et al. (1999) and Leuz et al. (2003) implied that the supervision and protection mechanisms of investors in Indonesia, which is classified in code-law country group, are weak; thus, the practice of earnings management is more widely adopted than those of common-law countries like England and America.

Indonesia is a developing country where such a country tends to perform pervasive opportunistic earnings management leading to decreasing trust in the earnings. In this case, the financial report is irrelevant to the investors in making decision. In other words, opportunistic earnings management can lead to the low relevance of accounting information. For this reason, this study is intended to confirm whether earnings management reduces the relevance of earnings in Indonesia.

This research was conducted due to the lack of empirical studies that focus on determining the earnings management effect on value relevance in the Indonesian context. Considering this shortcoming, a study to confirm the possibility whether managers actually tend to influence the Indonesian financial market through earnings management needs to be conducted. This study then focuses on investor's behaviour to determine the influence of earnings management on value relevance.

This study employs return model as an alternative to price model, which has fundamental limitations in terms of the scale effect issue (Easton & Harris, 1991; Holthausen & Watts, 2001; Kothari & Zimmerman, 1995). The use of the return model is believed to be more relevant with its capability to rationalize investors' behaviour in revising beliefs in the decision they create (Kahle et al., 2015).

Previous studies primarily focused on a certain date, following the publication of financial statements, that is, 31 March, in determining stock returns (Alali & Foote, 2012; Easton & Harris, 1991; Filip & Raffournier, 2010, 2013; Francis & Schipper, 1999; He et al., 2018). As a number of issuers have submitted financial reports from the beginning of January to before the specified date, this points to its disadvantages as there is a possibility that the financial reports have been observed by investors through quarterly financial reports. In such a case, the publication of financial reports is not something that is eagerly awaited. This study seeks to overcome this weakness by using the actual publication date of the financial statements by each company. This is rarely applied in studies using the return model.

Following the introduction, the second section documents relevant literature related to the variables and their correlation with one to another. Then, the specific objectives are elaborated in the third section. The fourth section introduces and describes the idea behind the research questions. Subsequently, the fifth section unravels the sampling method and the contraptions. The sixth section illustrates various statistical techniques applied for data examination, followed by narration on the results in the seventh section. The eighth section discusses the summary of the primary factors from the arguments or findings. Finally, the ninth section throws light on the actual implications of the consequences for regulators and standard setter in improving the value relevance in Indonesia along with the obstacles encountered by the study.

## Literature Review

### *The Value Relevance of Earnings Level and Earnings Changes*

Accounting information is defined as data or information collected from a firm's accounting system, that is, through financial statements, special reports or oral statements (Bruns, 1968). It is a significant source of publicly accessible information that provides vital information to various users of the financial statement (e.g., investors, government, regulatory agencies) for their corresponding needs (Bhatia & Mulenga, 2019; Shamki & Abdul Rahman, 2012). Investors need accounting information to make efficient investment decisions, while the government, needs it for tax purposes. Regulatory agencies use this information to ensure the conformity with the prevailing legal regulations. This information has to be relevant in order to be useful and acceptable to the users (Bhatia & Mulenga, 2019; Olugbenga & Atanda, 2014). Accounting information is said to be a value-relevant information when having an expected connection with the market values of the equity, that is, share prices and stock returns. Studies on value relevance establish whether specific accounting figures represent information used by the investors to measure the firm's equity (Barth et al., 2001). However, in the absence of significant relation, the accounting information is, thus, not relevant (Pervan & Bartulović, 2014).

The study of Ball and Brown (1968) is frequently regarded as the origin of modern market-based accounting research (MBAR). Their event study observes abnormal returns in the months prior to and following the earnings announcement dates. Their study concludes that income of a company captures at least half of all the information about a company available during a year. In general, this conclusion is supported by another seminal article on MBAR. Beaver (1968) emphasized the significance of the information content of income. His evidence indicates that during the week of earnings announcement, there is a visible increase in the stock trade volume. Easton and Harris (1991) made a comparison between the use of earnings and the use of change in earnings as explanatory variables for stock returns. The result suggests that both take part in stock valuation.

Other studies that focus on the relationship between stock returns and earnings come with diverse results, which are as follows: earnings are positively associated with returns, but a change in earnings does not explain returns (Kim, 2013); the negative coefficient of earnings changes, which suggests that investors react negatively to increases in earnings and positively to declines in earnings (Filip & Raffournier, 2010); the relative relevance of earnings is high in bad years, that is, years with low market returns or uncertain market elevation (Schaberl, 2016); the level of earnings is generally higher than those associated with changes in earnings, suggesting that investors scrutinize the level of earnings more closely than changes in earnings (Filip & Raffournier, 2013).

This study is intended to test the value relevance of earnings, whereas the literature on value relevance, often, estimated a regression model that linked returns with earnings levels and earnings changes as independent variables. Capital market studies that evaluate the return-earnings relations exhibit the wide presence of both earnings changes and earnings levels as explanatory variables in a return-earnings model. Some studies (Ali & Zarowin, 1992) suggest that earnings permanence influences the corresponding significance of earnings levels and earnings changes in explaining stock returns. In particular, the weight on earnings changes and/or earnings levels relies on the permanence or transitory degree of the earnings innovations (Baber et al., 1999). Moreover, stock returns respond stronger to changes in earnings that are likely to repeat in comparison to those likely to be transitory (Nichols & Wahlen, 2004).

In comparison to more mature markets, the Indonesian financial market is perhaps less efficient, and it probably has less demand for timely and relevant information. Hence, in comparison with Western

countries, it will exhibit a lower level of value relevance (a similar discourse has been presented by Filip and Raffournier (2010)), concerning the value relevance of earnings in Romania as an emerging market.

### *Earnings Management and Value Relevance of Earnings Level and Earnings Changes*

The impact of earnings management on value relevance of earnings raises two arguments (Jiraporn et al., 2008). One is that managers take advantage of earnings management to reflect a firm's financial condition more accurately. In this case, earnings management becomes a measurement tool of a firm's performance that enhances the quality of earnings. Whereas, in relation to the second argument, i.e. Subramanyam (1996) affirms that managers plan to send a signal to the capital market that accruals are used to achieve efficient contracting. The other is that managers take advantage of earnings opportunistically to reap benefits for their own interests. Here, through earnings management, the quality of earnings in representing a firm's performance is then reduced (Lev & Zarowin, 1999). Firms adopt numerous accounting policies in an attempt to manipulate their financial information under so many reasons, with 'market reaction' as one of the most dominant rationales. If a firm's reported earnings drop significantly below the original estimates, its share price in the market may be impaired (Agrawal & Chatterjee, 2015).

Previous studies show that opportunistic earnings management affects the value relevance of earnings adversely (Callao et al., 2016; Feltham & Pae, 2000; Marquardt & Wiedman, 2004; Mostafa, 2017; Murwaningsari et al., 2015; Rahmat et al., 2020). Moreover, as indicated earlier, opportunistic earnings management reduces the quality of earnings to represent a firm's performance (Lev & Zarowin, 1999). It is, therefore, predicted that earnings play a less important role in explaining stock returns (i.e., earnings have less value relevance) when opportunistic earnings management is present.

Indonesia is one of the code-law countries with an inadequate monitoring mechanism and investor protection, which lead to a more intensive earnings management practice in comparison to common-law countries, like England and the USA (La Porta et al., 1999; Leuz et al., 2003). Thus, firms in Indonesia tend to apply opportunistic earnings management. Earnings management decreases the information reliability, resulting in the distrust of investor. An investor might decide not to use such information in decision-making. Thus, the information therein, which contain manipulation, becomes less relevant, reducing its explanatory power about the return.

### **Objectives of the Study**

Studies on value relevance have focused on the developed economies, that is, American and European markets, rather than emerging ones. On the basis of the literature review, developed markets generally consider the accounting information useful, whereas the value relevance of accounting information in developing countries is questionable, and anomalies are common. Thus, this study seeks to examine earnings, that is, one of the underlying accounting information for investors to make decisions, and whether it has value relevance in emerging markets—specifically Indonesia. Using event study method, this research study also aims to explore the efficiency of the Indonesian capital market.

## Theoretical Framework

Agency theory predicts and explains the behaviour of relevant parties with reference to principal–agent relationship (Jensen & Meckling, 1976). Compared to the principal, the agent will normally hold more or better information about the agency, the decision-demanding situation or the consequences of the action. This circumstance is called information asymmetry (Ross, 1973). Watts and Zimmerman (1986) state that as an accounting product, financial statements can decrease principal–agent conflict. Decision usefulness approach suggests that financial information is useful when it is relevant and faithful. It is relevant if it can be used as a basis for decision-making and reliable or faithful when it truly represents an economic phenomenon (Scott, 2015).

Ohlson (1995) describes that a firm's value can be expressed as a linear function of book value, earnings and other value relevance information. For managers, earnings is the most important measure and therefore a focal point (Burgstahler & Dichev, 1997). Referring to agency theory, earnings management is often conducted opportunistically, resulting in the manipulation of economic and financial data to achieve the predetermined profit. Earnings management is beneficial in both ways, either to improve earnings quality as a measure of the firm's performance or even to manipulate earnings (Jiraporn et al., 2008; Watts & Zimmerman, 1986). With the intention of earnings manipulation, the reliability of earnings becomes questionable (Dechow & Skinner, 2000; Healy & Wahlen, 1999). From past studies, opportunistic earnings management is proved to negatively affect the value relevance of earnings (Adisetiawan & Suroño, 2016; Feltham & Pae, 2000; Marquardt & Wiedman, 2004).

## Methodology

### *Population and Sample*

The surveyed sample of this research study is manufacturing companies listed on the Indonesia Stock Exchange (IDX) during the period 2012–2017. Manufacturing companies were selected because they tended to have the same accrual characteristics and happened to be the most listed companies on the IDX and presenting financial statements in rupiah. The period began in 2012 since the full adoption of International Financial Reporting Standards was effective from 1 January 2012.

The data were collected from the IDX database from 2012 to 2017. In addition, the data from the Indonesian capital market directory (ICMD) was employed, while data on publication date of financial statements regarding share prices were acquired from PT Indonesian Capital Market Electronic Library (ICaMEL). The sample obtained were 606 observations.

### *Earnings Management*

This study employed discretionary accruals as indicators of accrual earnings management. To estimate discretionary accruals, a cross-sectional version of the Jones model, modified by Kothari et al. (2005), was applied with the following formula:

$$Accruals_{it} = \alpha_0 + \alpha_1 (1 / Assets_{it-1}) + \alpha_2 \Delta Sales_{it} + \alpha_3 PPE_{it} + \alpha_4 ROA_{it} + \varepsilon_{it}$$

In regression (1), the total accruals ( $Accruals_{it}$ ), change in sales ( $\Delta Sales_{it}$ ) and gross property, plant and equipment ( $PPE_{it}$ ) are, respectively, deflated by the total assets at the beginning of the year ( $Assets_{it-1}$ ). Return on asset ( $ROA_{it}$ ) is added as an additional control variable, since previous studies found that the Jones model is misspecified for the well-performing or poor-performing firms (Dechow et al., 1995; Kothari et al., 2005).  $Accruals_{it}$  is the total accruals of the firm  $i$  in year  $t$ , defined as earnings before extraordinary items subtracted by the operating cash flows.

### Value Relevance of Earnings

This research is an event study. As most emerging markets, the IDX is probably less efficient than more mature stock markets. Prior value-relevance studies have been generally silent on whether the market is efficient or not. Event studies are joint tests of market efficiency, and the model involving the expected rate of return is used in estimating abnormal returns (Kothari, 2001). Event studies specify an event window surrounding the event of interest in order to capture the pre-event and post-event reaction (MacKinlay, 1997). The return reaction was examined using a 11-day (-5, +5) window. For a more comprehensive measure, prior to the examination of earnings management effect upon the value relevance of earnings, the value relevance of earnings was first addressed for the entire sample. To estimate the correlation of stock returns and earnings level and change, the value relevance of earnings was examined using the following regression model:

$$CAR_{it} = \alpha_0 + \alpha_1 EPS_{jt} / P_{jt-1} + \alpha_2 \Delta EPS_{jt} / P_{jt-1} + \varepsilon_{it} \quad (1)$$

Within this framework, an accounting figure is said to be value-relevant if its regression coefficient ( $\alpha_1$ ,  $\alpha_2$  in the aforementioned equations) is statistically significant. Globally, the  $R$ -square coefficient of the regression measures the value relevance of the accounting item set included in the equation. Positive and significant values for  $\alpha_1$  and  $\alpha_2$  are expected. A positive and significant value for  $\alpha_1$  implies that the level of earnings has value relevance, and a positive and significant value for  $\alpha_2$  implies that the change of earnings have value relevance.

The sum ( $\alpha_1 + \alpha_2$ ) that combines the estimated coefficients of the change and level of earnings represents earnings response coefficient (ERC). Earnings have value relevance if the number is positive. For assessing the effect of earnings management on value relevance of the level and change of earnings, the following non-linear regression model, which is an extension of model (1), is estimated. The non-linear model (2) has the following structure:

$$CAR_{it} = \alpha_0 + \alpha_1 EPS_{jt} / P_{jt-1} + \alpha_2 \Delta EPS_{jt} / P_{jt-1} + \alpha_3 AEM_{it} X EPS_{jt} / P_{jt-1} + \alpha_4 AEM_{it} X \Delta EPS_{jt} / P_{jt-1} + \alpha_5 AEM_{it} + \alpha_6 SIZE_{it} + \alpha_7 ROE_{it} + \varepsilon_{it} \quad (2)$$

where

- CAR : cumulative abnormal return
- $P_{jt-1}$  : the year-end price of share  $j$  for  $t-1$
- $EPS_{jt}$  : the earnings per share of firm  $j$  in year  $t$
- $\Delta EPS_{jt}$  : the change in earnings per share of firm  $j$  in year  $t$
- $\varepsilon_{it}$  : other value-relevant information of firm  $i$  for year  $t$
- $AEM_{it}$  : earnings management of firm  $i$  during year  $t$
- $SIZE_{it}$  : The size of firm  $i$  in the year  $t$
- $ROE_{it}$  : The return of shareholders equity of firm  $i$  in the  $t$

The next analysis was conducted by testing the expanded model by including the  $AEM_{it}$  and its interaction with the level and change of earnings as elaborated in model (2). Coefficient  $\alpha_3$  was expected to be negative, which would indicate that  $AEM_{it}$  decreases value relevance of the level of earnings. Coefficient  $\alpha_4$  was expected to be negative, which would indicate that  $AEM_{it}$  decreases value relevance of the change of earnings.  $(\alpha_1 + \alpha_2)$  is the total estimated coefficients of the change and level of earnings of firms that do not perform earnings management.  $(\alpha_1 + \alpha_2 + \alpha_3 + \alpha_4)$  is the total estimated coefficients of the change and level of earnings of firms that perform earnings management.  $(\alpha_3 + \alpha_4)$  is the difference in the estimated slope coefficients of the level and change in earnings between firms that perform earnings management and those that do not. It was expected to be negative  $(\alpha_3 + \alpha_4)$  to imply that the ERC (value relevance of earnings) will be smaller in firms that perform earnings management.

## Analysis

### Descriptive Statistics

Table 1 presents the sample distribution based on the manufacturing industry subsector according to the classification contained in the Indonesia Capital Market Directory (ICMD), with the total sample of 230 companies.

From Table 1, it appears that the sample consisted of 120 companies totalling 606 firm-years. The manufacturing sector consists of 18 sub-sectors. The highest number of samples is in the Food and

**Table 1.** Sampling Frame.

No.	Sub-sector	Number of Firms	Number of Firm-Year	%
1	Cement	6	26	4
2	Ceramics, glass and porcelain	6	35	6
3	Metal and allied product	12	69	11
4	Chemicals	8	33	5
5	Plastics	8	45	7
6	Animal feed	5	28	5
7	Wood industries	3	8	1
8	Pulp and paper	6	30	5
9	Machinery and heavy equipment	3	4	1
10	Automotive and component	10	52	9
11	Textile and garment	8	39	7
12	Footwear	2	11	2
13	Cable	5	29	5
14	Food and beverages	16	86	14
15	Tobacco manufacturers	4	21	3
16	Pharmaceuticals	10	51	8
17	Cosmetics and households	5	24	4
18	Houseware	3	15	2
	Total	120	606	100

**Source:** The authors.



**Table 2.** Descriptive Statistics.

Variable	Minimum	Maximum	Mean	Standard Deviation
CAR	0.314	0.333	0.0042	0.07
EPS/P-1	-4.191	1.694	0.022	0.327
$\Delta$ EPS/P-1	-1.458	3.139	0.013	0.285
AEM	-0.314	0.333	$8.3 \times 10^{-8}$	0.09
SIZE	10.796	19.505	14.427	1.584
ROE	-6.011	10.932	0.104	0/721
N		606		

**Source:** The authors.

Beverage sub-sector (14%), followed by the Metal & Allied Product sub-sector (11%), while the other subsectors are under 10%.

In Table 2, the descriptive statistics on the variables examined in the current study is presented. The average CAR is 0.0042, indicating that the average return is greater than the expected return. The positive EPS/P-1 average of 1,694 shows that the average company in the sample is in a state of profit. The positive  $\Delta$ EPS/P-1 average of 3,139 shows that the average company that sampled current year's earnings was greater than the previous year's earnings. The average AEM is  $8.3 \times 10^{-8}$ , indicating that the average earnings management is carried out through income increasing. The average ROE is 0.104, indicating that the average company earns 10.4% of equity.

### Model Selection

Before conducting the hypothesis test, the panel data test approach was chosen to get the best model among the three approaches, namely common effect, fixed effect or random effect.

Table 3 presents the results of selecting the best model for panel data analysis. Using both the first and second equations, the decision to choose the model together produces the best decision with the common effect model approach. That is because in both equations, the likelihood ratio test results produce  $p > 5\%$  (the outcome of the common effect is better than the fixed effect), followed by Hausman test showing  $p > 5\%$  (the outcome of the random effect is better than the common effect), while the Lagrange multiplier test shows  $p > 5\%$  (the outcome of the common effect is better than the random effect). So it can be concluded that the best model chosen for the two equations in this study is the common effect model.

**Table 3.** Model Selection Test Results of the Research Equation.

Equation	Likelihood Ratio Test	Lagrange Multiplier Test	Hausman Test	Decision
1	0.5587	0.8755	0.8487	Common effect
2	0.6692	0.6543	0.5015	Common effect

**Source:** The authors.



**Table 4.** The Result of Value Relevance Test.

Variables	Predict Sign	Coefficient
C		-0.040342 (-3.114842)***
EPS/P-1	+	0.007225 (1.126470)
$\Delta$ EPS/P-1	+	0.012519 (1.786132)*
SIZE	*	0.002625 (2.892657)***
ROE	+	0.000376 (0.171602)
F_stat	3.646103 (0.00631)	
Adj. R <sup>2</sup>	0.017194	
N	606	

**Source:** The authors.

**Note:** \*  $p < 0.10$  and \*\*\*  $p < 0.01$ .

Value relevance test uses the return model, that is, by regressing the level and change of earnings to stock prices. Model (1) is employed to measure the value relevance of earnings (without taking into account the influence of earnings management) through the stock returns regression on earnings changes and levels. From Table 4, it appears that the effect of the earnings level variable (EPS/P-1) on stock prices is not significant with a coefficient of 0.007225. This shows that the level of earnings has no value relevance. This confirms the study carried out by Negakis (2013) but not the one by Collins and Kothari (1989), Easton and Harris (1991), Cahan et al. (2000), Heflin et al. (2015), Lim and Park (2011), Kim (2013), Alali and Foote (2012), Erin et al. (2017), Mostafa (2017) and Altintas et al. (2017). Furthermore, the effect of earnings change variable ( $\Delta$ EPS/P-1) is significant with a coefficient of 0.012519 at  $\alpha = 10\%$  with a value of 1.786132. This shows that changes in earnings have value relevance. Based on the research results, it can be concluded that the level of earnings does not have value relevance, whereas changes in earnings do.

Ball and Brown (1968) suggest that unexpected earnings explain the stock returns in evaluating the significance of earnings in the firm's valuation. Earnings changes, as a natural proxy for unexpected earnings, have a substantial role of valuation. Therefore, early accounting studies analysing the return-earnings relations have primarily concentrated on earnings changes. However, a considerable assumption emerges under which earnings changes can be used as a proxy for unexpected earnings: annual earnings are purely permanent. From model (1), the level of earnings appears to have no value relevance, whereas earnings changes have value relevance. Thus, the purely permanent annual earnings of companies (whether or not doing earnings management) serve as the possible cause.

The total significant coefficients of the level and change in earnings ( $\alpha_1 + \alpha_2$ ) is  $0 + 0.012519 = 0.012519$ . Despite the positive value, only earnings change has value relevance. Thus, it can be concluded that (without addressing the effect of earnings management) earnings have less value relevance.

Furthermore, this study investigates whether the earnings management decreases the value relevance of earnings. It observes the impact of earnings management practices on the value relevance of earnings. Model (2) examines the value relevance of earnings of firms that perform and do not perform earnings management via regressing stock returns on earnings changes and levels. Hence, from this model, the number of significant coefficients of the level and changes in earnings (ERCs) can be visualized for firms that do and do not do earnings management. Moreover, this model identifies differences in the coefficients of the level and change in earnings between firms that perform and do not perform earnings management.

**Table 5.** The Impact of Earnings Management to the Value Relevance of Earnings.

Variables	Predict Sign	Coefficient
C		-0.0400 (-3.1665)***
EPS/P-1	+	0.016184 (2.1199)**
$\Delta$ EPS/P-1	+	0.008098 (1.131203)
AEM $\times$ EPS/P-1	-	0.194628(1.987951)**
AEM $\times$ $\Delta$ EPS/P-1	-	-0.220295(-2.061758)**
AEM	-	0.021036 (1.283807)
SIZE	+	0.001128 (0.498049)
ROE	+	0.002609 (2.95976)***
F_stat	3.3166 (0.0018)	
Adj. R <sup>2</sup>	0.0261 0.01189	
N	606	

**Source:** The authors.

**Note:** \*\*  $p < 0.05$  and \*\*\*  $p < 0.01$ .

From Table 5, it appears that the EPS/P-1 variable is significant with a coefficient of 0.01618 at  $\alpha = 5\%$  with a  $t$ -value of 2.1199. This shows that in firms that do not apply earnings management, the earnings level has a positive effect on stock prices, or, in other words, the level of earnings has value relevance, whereas the results of the test of the relevance of the value of earnings changes in firms that do not apply earnings management indicate that  $\Delta$ EPS/P-1 has no effect on stock prices with a coefficient of 0.008098. Thus, the change in earnings has no value relevance. Based on this study, the earnings level has value relevance whereas change in earnings has no value relevance, likely due to low permanent special annual earnings in companies not performing earnings management.

The next hypothesis states that the relevance of earnings level decreases with the earnings management. This analysis concludes that there is a significant influence of the interaction variable of AEM and EPS/P-1 towards stock prices with the coefficient of 0.194628 at  $\alpha = 5\%$  and a  $t$ -value of 1.987951. This finding implies that the relevance of earnings level increases with the earnings management. Further, the test result of the influence of earnings management on the value relevance of earnings changes indicates significant influence of the interaction variable of AEM and  $\Delta$ EPS/P-1 towards stock prices with the coefficient of -0.22029 at  $\alpha = 5\%$  with the  $t$ -value of -2.061758. In other words, the relevance of earnings changes decreases with earnings management.

From Table 5, the total significant coefficients of the level and change of earnings of firms that do not perform earning management ( $\alpha_1 + \alpha_2$ ) is  $0.016184 + 0 = 0.016184$ . Despite the positive value, only earnings level has value relevance. It suggests that earnings from firms that do not perform earnings management have less value relevance, whereas the total coefficients of the change and level of earnings of firms performing earnings management ( $\alpha_1 + \alpha_2 + \alpha_3 + \alpha_4$ ) is  $0.016184 + 0 + 0.194628 - 0.220295 = -0.009483$ . This negative value represents the fact that earnings of the firms performing earnings management have no value relevance.

Furthermore,  $(\alpha_3 + \alpha_4)$  combines the difference in the estimated slope coefficients of the level and change in earnings between firms that perform earnings management and those that do not, amounting to  $-0.025667$ . It signifies that the ERC is smaller for earnings of firms performing earnings management, implying smaller impact from earnings management on the returns of such firms. In other words, the value relevance of earnings of those firms is lower than that of the firms not performing earnings management.

## Discussion

Model (1) is employed to measure the value relevance of earnings (without taking into account the influence of earnings management), while in model (2) the influence of earnings management is considered. The results show that in model (1), the level of earnings has no value relevance, whereas changes in earnings do. This indicates that, as a whole (in the sample of companies that do or do not carry out earnings management), the previous period's earnings are predominantly permanent. Furthermore, in model (2), specifically, in firms that do not apply earnings management, the earnings level has value relevance. In other words, there is an indication that in firms without earnings management, the past period's earnings are predominantly transitory. This corresponds with the investigation by Ali and Zarowin (1992) who states that with predominantly permanent earnings in the previous period, it is not expected that the inclusion of the earnings level variable increases the ERC and the explanatory power of the model. The opposing effect is anticipated in the event of predominantly transitory earnings in the earlier period.

Furthermore, despite the indication of value relevance in model (1) due to earnings changes, the result of model (2) shows otherwise. This shows that, overall, changes in earnings will potentially recur, whereas, in firms not engaging in earnings management, changes in earnings are likely to be transitory. This conforms to the investigation conducted by Nichols who clarifies that stock returns react stronger to changes in earnings presumably to reappear than those inclined to be transitory.

The examination, which includes the influence of earnings management, then shows that earnings management increases the value relevance of the earnings level. Otherwise, earnings management reduces the value relevance of changes in earnings. Therefore, especially regarding the earnings level, investors respond positively to adverse media. The positive coefficient of earnings level suggests that investors react positively to earnings management by increasing income. The evidence from this study is consistent with the intuition that the positive market reaction to earnings management is one sign of relatively inefficient market. The return model test can also be used to test market efficiency. In terms of the effect of earnings management on the value relevance of earnings level, investors react positively to adverse media, although commonly positive (adverse) news produces positive (negative) reactions (Sulistiawan & Rudiawarni, 2019). This indicates an anomaly in investor reaction to earnings management in Indonesia. As affirmed by Zarembo and Szyszka (2016), market anomaly commonly occurs in developing markets. From this finding, a market anomaly is detected in Indonesia, endorsing indications that the Indonesian market is inefficient.

Value relevance of earnings can be calculated from the sum of significant coefficients of the level and change in earnings. Due to the positive value, it can be concluded that in a whole sample, and specifically in firms that do not apply earnings management, earnings have less value relevance, whereas, in firms performing earnings management, earnings have no value relevance. This indicates that in making decisions, investors in Indonesia rely less on earnings. The lack of value relevance is common in emerging markets as argued by Filip and Raffournier (2010).

Based on the value of ERC, the impact of earnings management on the value relevance of level and changes of earnings appears to indicate that earnings management reduces the value relevance of earnings. From these results, earnings subject to managerial manipulation appear to be particularly less informative for investors. Therefore, earnings management negatively impacts the value relevance of earnings presented to users of financial statements. Thus, there is an assumption by the market that the earnings level cannot present facts about firms' operations. This finding corroborates with the investigation by Feltham and Pae (2000), Marquardt and Wiedman (2004), Mostafa (2017), Murwaningsari et al. (2015), Callao et al. (2016) and Rahmat et al. (2020).

## Conclusion

This study confirms that the level of earnings does not have value relevance and the changes in earnings otherwise has value relevance. Despite the positive value of the ERC, only earnings changes that have value relevance indicate that earnings have less value relevance. Furthermore, in the presence of earnings management, the value relevance of the earnings level increases and that of earnings changes decreases. In the end, earnings management reduces the value relevance of earnings. In other words, the value relevance of earnings for firms performing earnings management is lower than that of those not performing earnings management. In terms of the effect of earnings management on the value relevance of earnings level, investors react positively to adverse media, indicating a market anomaly in Indonesia, implying inefficient Indonesian capital market.

## Managerial Implication and Limitation

Earnings is the bottom line of income statement. It should be a medium of decision-making for investors. The results of this study show that investors in Indonesia rely less on earnings. It is possible that there are still many inexperienced investors who are unaware of how important financial reports are. Moreover, Indonesia is one of the code-law countries where the demand for high-quality financial reports is less than that of common-law countries. Indonesian regulators have to increase the knowledge of capital market actors in order to advance their understanding about the significance of financial statement information in assessing the firm's value.

Furthermore, the influence of earnings management shows that the value relevance of earnings decreases. It can be concluded that with earnings management, earnings do not reflect the actual conditions, and, therefore, investors doubt the value of earnings and consider them less useful, which is reflected in negative reactions to earnings. These results corroborate the decision usefulness approach in agency theory, which states that financial information is useful if it is relevant and faithful. Therefore, Indonesian accounting standard setters need to evaluate these standards to curtail earnings management as well as increase the quality and credibility of financial statement information. Those means then eventually may grow value relevance. As a general recommendation, the industry needs to increase investor confidence, and companies should avoid opportunistic earnings management. Thus, it is expected that the value relevance of the earnings of firms in Indonesia can be increased.

The limitation of this study lies in the fact that it only examines the impact of earnings management on value relevance without taking into account the influence of earnings management under the provision of certain incentives or conditions. For future research, it is recommended to choose a specific incentive and examine the consistency of discretionary accruals and incentives.

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