Company Size Moderates the Effect of Real Earning Management and Accrual Earning Management on Value Relevance

Sistya Rachmawati

Abstract. The purpose of this study is to determine the effect of real and accrual earnings management on the value relevance, proxied by predictive value, feedback value and timeliness. Furthermore, this study investigates whether the company size variable can strengthen the effect of real and accrual earning management on value relevance. Multiple regression models are used with secondary data between 2014-2016 from 61 companies, resulting in 183 observations. The results show that there are positive effects of accrual earnings management on predictive value and feedback value and adverse effect on timeliness. Meanwhile, real earnings management only has a positive effect on predictive value. On the other hand, company size only strengthens the effect of accrual earnings management on timeliness.

Keywords: earnings management, value relevance, company size

JEL Classification: G39, M41

How to Cite:
Introduction

Since the seminal work of Ball and Brown (1968), study on value relevance usually done through empirical market-based accounting research, by analyzing the relationship between accounting data with stock market prices, and in general, found evidence that if information is useful, investors will adjust their behavior so that the market will respond through changes in stock prices (Kothari, 2001). However, Holthausen & Watts (2001) argued that past value relevance works of literature studying the association between accounting numbers and stock prices had limited implications or inferences to standard setting, due to the underlying theories are not descriptive. They worry that researchers have begun to assume that financial reporting is predominantly concerned with equity valuation. Concerns on market-based approaches on past studies in value relevance create a gap in the literature of value relevance. A strand of research filled the gap by studying the impact of earnings management to value relevance (e.g., Christensen, et al., 1999; Whelan & McNamara, 2004; Marquardt & Wiedman, 2004; Tucker & Zarowin, 2006; Shan, 2015; Mostafa, 2017). Along this strand of research, this study contributes to the literature through the development of value relevance study that differs from previous research. So, this study tries to review value relevance in terms of its characteristics, namely predictive value, feedback value, and timeliness and linking them to both real and accrual earnings management, as well as using company size to moderate the effect.

Motivations for managers to use either real or accrual earnings management as an earnings management tool are relatively similar. One of the motivations for managers to conduct earnings management is to reduce asymmetric information (efficient motive) by providing private information to investors. Such information is usually related to the company’s future profit and expressed in the form of accruals. Accruals often misused by managers to maximize their utility at the expense of other stakeholders, especially the interests of shareholders (Scott, 2009).

On the other hand, Statement of Financial Accounting Concept (SFAC) (Ikatan Akuntan Indonesia, 2017) as the basic framework for preparing and presenting financial statements identifies value relevance as the characteristics of accounting information used in making corporate valuation decisions. Information is said to be relevant when it has a significant relationship with stock prices and when it can help users predict and correct past judgments. Information can have predictive value, feedback value, and timeliness.

This study tries to review value relevance in terms of its characteristics, namely predictive value, feedback value, and timeliness. Real and accrual earnings management are used in the study to see their impact on value relevance. Then, this study investigates whether company size as a moderating variable strengthens the effect of real and accrual earnings management to value relevance. It motivates from Ahmadpour & Hadiyan (2015), which argued that after using the accounting standards, the value relevance of balance sheet relation is increasing, and there is a meaningful and negative relationship between changes in the value relevance of accounting information and company size.

Value relevance can be associated with the publication of earnings information, where earnings management is possible. Earnings management is the selection of accounting policies by managers from existing accounting standards and can naturally maximize their
utility or the company’s market value (Godfrey et al., 2010). Murwaningsari et al. (2015) state that the effect of accrual earnings management on the relevance of earnings value using the returned model shows a negative direction and the price model shows a contrary direction to the relevance of equity value. Suwardjono (2010) argued that management of real earnings and accruals is considered to influence predictive value and feedback value if it has the information ability to fulfill decisions that will become input for decision making.

The size of the company is expected to strengthen the effect of accrual and real earnings management on value relevance. This result is because the size or proxy used for this variable is a total asset. Owusu-Ansah (2000) stated that companies that have significant resources (assets) and sources of information (e.g., more accounting staff, more sophisticated information systems, a robust internal control system, supervision from investors, regulators and the public) tend to present financial statements more quickly to the public. Moreover, Toding & Wirakusuma (2013) argued that company size has a significant influence on timeliness.

In turn, these timely and quick publications of financial statements will allow investors to evaluate the performance (feedback value) of the company and predict stock prices so that investors can make future investment decisions appropriately. Obradovich & Gill (2012) and Prasetyorini (2013) stated that company size has a positive influence on the value of the firm.

Hence, the purpose of this study is to determine the effect of real and accrual earnings management on the value relevance (predictive value, feedback value, timeliness). Besides that, this research also determines whether company size as a moderating variable will strengthen the influence of real and accrual earnings management toward value relevance.

**Methods**

This study uses secondary data taken from the annual financial report of manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the 2014-2016 financial years. Data analysis method in this study uses multiple regressions. Dependent variables in this study comprise of predictive value, feedback value, and timeliness. Independent variables in this study comprise of accrual earning management and real earning management.

Moderation variables are company size. The amounts of information disclosed by a company related to the size of the company. Large companies are often considered to have more information to be disclosed than small companies. This study follows Hermuningsih (2012) to measure company size as a log of total assets. Control variables in this study consist of solvency ratio (leverage), liquidity, and profitability.

In order to test the hypotheses that have been formulated, this study employs several regression models as follows:

\[
PDV = \alpha_0 + \alpha_1 REM + \alpha_2 AEM + \alpha_3 UP + \alpha_4 REM*UP + \alpha_5 AEM*UP + \alpha_6 LEV + \alpha_7 LIK + \alpha_8 PROF + e \tag{1}
\]

\[
FB = \alpha_0 + \alpha_1 REM + \alpha_2 AEM + \alpha_3 UP + \alpha_4 REM*UP + \alpha_5 AEM*UP + \alpha_6 LEV + \alpha_7 LIK + \alpha_8 PROF + e \tag{2}
\]

\[
TL = \alpha_0 + \alpha_1 REM + \alpha_2 AEM + \alpha_3 UP + \alpha_4 REM*UP + \alpha_5 AEM*UP + \alpha_6 LEV + \alpha_7 LIK + \alpha_8 PROF + e \tag{3}
\]
(Note: PDV: predictive value; FB: feedback value; TL: timeliness; AEM: accrual earnings management; REM: real earnings management; UP: company size; LIK=liquidity; PROF: profitability).

**Results and Discussion**

Samples from this study amounted to 61 companies. This study uses the study period of 2014 - 2016 and the number of research samples that fit the criteria of the study were 183 samples, from 61 companies. The descriptive statistics of the variables used in this study presented in Table 1.

<table>
<thead>
<tr>
<th>Table 1. Descriptive Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent</strong></td>
</tr>
<tr>
<td>PDV</td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>Max.</td>
</tr>
<tr>
<td>Min.</td>
</tr>
<tr>
<td>Stdev</td>
</tr>
</tbody>
</table>

Note: PDV = Predictive value, FB = Feedback value, TL = Timeliness, REM = Real Earning Management, AEM = Accrual Earning Management, UP = Company Size, PROF = profitability, LEV = leverage, LIK = liquidity

The standard deviation shows the spread of the mean. Its interpretation, for example, liquidity (LIK) variable, it is generally concentrated around the number 1.952 + 1.592, with a minimum value of 0.01, and with only a few companies whose value is far above average. This result means that the mean is closer to the minimum value, and most of the data is around that number. Whereas different variables, feedback value (FB), are generally concentrated around the -86.457 + 488.94 with max 87. This result means that they are closer to the maximum value, and most of the data is around that value. There are several companies whose values are far below average.

<table>
<thead>
<tr>
<th>Table 2. Chow Test – Common Effect vs. Individual Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
</tr>
<tr>
<td>1. PDV</td>
</tr>
<tr>
<td>2. FB</td>
</tr>
<tr>
<td>3. TL</td>
</tr>
</tbody>
</table>

Note: PDV = Predictive Value, FB = Feedback Value, TL = Timeliness

In order to select the best specification for the model, between common, fixed, or random effect, this study employs the Chow test, Hausman test, and Lagrange Multiplier (LM) test. Table 2 shows the result of the Chow test for predictive value, feedback value, and timeliness models. For predictive value and timeliness models, the chi-square probabilities are less than 0.05; thus the null hypothesis (common effect) is rejected, and the next step is to test between fixed and random effect using Hausman test. Whereas for feedback value model, the chi-square
probability is more significant than 0.05; thus the null hypothesis (common effect) fails to be rejected, and the next step is to test between common and random effect using LM test.

Hausman Test results for predictive value and timeliness models present in Table 3. For both models, the chi-square probabilities are less than 0.05. Thus, the null hypothesis (random effect) rejected, and both models will estimate with fixed effect.

Table 3. Hausman Test – Fixed Effect vs. Random Effect

<table>
<thead>
<tr>
<th>Model</th>
<th>Prob. Chi-square</th>
<th>Decision</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PDV</td>
<td>0.00</td>
<td>Ho fail to reject</td>
<td>Fixed Effect</td>
</tr>
<tr>
<td>3. TL</td>
<td>0.04</td>
<td>Ho fail to reject</td>
<td>Fixed Effect</td>
</tr>
</tbody>
</table>

Note: PDV = Predictive Value, TL = Timeliness

LM test result for feedback value presents in Table 4. The Breusch-Pagan probability is more significant than 0.05. Thus, the null hypothesis (common effect) fails to reject, and the model will estimate the common effect.

Table 4. Lagrange Multiplier (LM) Test – Common vs. Random Effect

<table>
<thead>
<tr>
<th>Model</th>
<th>Prob. Breusch-Pagan</th>
<th>Decision</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. FB</td>
<td>0.05</td>
<td>Ho fail to reject</td>
<td>Common Effect</td>
</tr>
</tbody>
</table>

Note: FB = Feedback Value

Results from the regressions present in Table 5. The normality test with Kolomogrov-Smirnov test result shows a significance value of 0.20 > 0.05, hence data normally distributed. Multicollinearity test with VIF shows that all interaction variables with UP have VIF values > 10. This result means that there is multicollinearity in the variables, although they can ignore because these variables are interaction variables. The rest of the variables have VIF values < 10, meaning that the models are free from multicollinearity problems. Autocorrelation test using D-W stats shows value around 2, which means that there are no autocorrelation problems. Heteroscedasticity test with Gletsjer test shows all variables have significance values bigger than 0.05, meaning that there are no heteroscedasticity problems. The goodness of fit of the models is quite reasonable, as shown by Adj R-squared for model 1 (0.55), model 2 (0.11) and model 3 (0.97) as well as the F-stat results, showing that statistically, all independent variables have an influence on the dependent variable.

For predictive value model, the coefficient of both real and accrual earnings management are respectively 0.30 and 0.72, not following the negative predictions, hence there is no real and accrual earnings management effect on predictive value. The moderating coefficient of the company size for both real and accruals earnings management are respectively -0.02 and -0.05 and significant, hence company size strengthened the effect of both real and accrual earnings management on predictive value.

For feedback value model, the coefficient of real earnings management is -0.26, following the hypothesis, but not significant, while the coefficient of accrual earnings management is 4.10,
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not in accordance with the hypothesis, which is negative. Hence, there is no real and accrual earnings management effect on feedback value. The moderating coefficient of the company size for real earnings management is 0.02 and not significant; hence there is no moderating effect, while for accrual earnings management the coefficient is -0.32 and significant, hence company size strengthened the effect of accrual earnings management on feedback value.

For timeliness model, the coefficient of real earnings management is 4.72, following the hypothesis, which is negative, and it is also not significant; hence there is no real earnings management effect on timeliness. The coefficient of accrual earnings management is -29.37, following the hypothesis, and it is also significant; hence there is an effect of accrual earnings management on timeliness. The moderating coefficient of the company size for real earnings management is -0.27 and not significant, hence there is no moderating effect, while for accrual earnings management the coefficient is 2.39 and significant; hence company size strengthened the effect of accrual earnings management on timeliness.

The positive coefficients of accrual earnings management show that management provides efficient information. So, it helps investors make predictions and feedback precisely on the financial statements issued by the company. This finding supports Bayat et al. (2015), which showed a positive relation between earning sustainability and value relevance of accounting information, and increasing earning sustainability may increase the predictive power of shareholders. Similarly, Altintas et al. (2017) found a positive relationship between earnings and market adjusted stock returns, and its effect on the value relevance of earnings in the listed Turkish manufacturing firms.

Table 5. Empirical Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1 PDV</th>
<th>Model 2 FB</th>
<th>Model 3 TL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H Beta Sig</td>
<td>H Beta Sig</td>
<td>H Beta Sig</td>
</tr>
<tr>
<td>Constant</td>
<td>0.31 0.00</td>
<td>-0.36 0.54</td>
<td>95.15 0.00</td>
</tr>
<tr>
<td>REM</td>
<td>+/-0.30 0.01</td>
<td>+/-0.26 0.57</td>
<td>+/-4.72 0.36</td>
</tr>
<tr>
<td>AEM</td>
<td>+/-0.72 0.00</td>
<td>+/-4.10 0.00</td>
<td>+/--29.37 0.00</td>
</tr>
<tr>
<td>UP</td>
<td>+/--0.02 0.01</td>
<td>+/-0.03 0.42</td>
<td>+/--1.11 0.07</td>
</tr>
<tr>
<td>REM*UP</td>
<td>+/--0.02 0.01</td>
<td>+0.02 0.47</td>
<td>+0.02 0.50</td>
</tr>
<tr>
<td>AEM*UP</td>
<td>+/--0.05 0.00</td>
<td>+0.02 0.00</td>
<td>+2.39 0.00</td>
</tr>
<tr>
<td>PROF</td>
<td>+/--0.00 0.42</td>
<td>+/--0.19 0.42</td>
<td>+/--3.31 0.12</td>
</tr>
<tr>
<td>LEV</td>
<td>+/--0.00 0.42</td>
<td>+/-0.00 0.55</td>
<td>+/-0.34 0.05</td>
</tr>
<tr>
<td>LIK</td>
<td>+/--0.00 0.02</td>
<td>+/-0.00 0.95</td>
<td>+/--0.76 0.00</td>
</tr>
</tbody>
</table>

Asym Sig 0.20 0.20 0.20
DW-Stat 2.05 2.05 2.05
Gletsjer >0.05 0.05 0.05
Adj R² 0.55 0.11 0.97
F-stat 0.00 0.00 0.00

***Significant at a level of 1 percent; **Significant at a level of 5 percent; *Significant at a level of 10 percent. Note: PDV: Predictive Value, FB: Feedback Value, TL: Timeliness, REM: Real Earning Management, AEM: Accrual Earning Management, UP: Company size, PROF: Profitability, LEV: Leverage, LIK: Liquidity, H: hypothesis.
This result shows that the division of total accruals into accrual earning management and non-accrual earnings management components may result in not all method choices or accounting estimates reflect earnings management with opportunistic motives. Accruals can also be used to make financial statements more informative with efficient reporting motives. The difficulty is to distinguish both types of earnings management that are efficient or opportunistic.

This result is may be due to market efficiency where accrual earnings management improves earnings ability in reflecting the economic value of the company (that is, managers’ signal investors). Alternatively, the opportunistic earnings management that is not detect by the market. In this study, there is no difference between the two explanations. Subramanyam (1996) argues that since earnings management improves the relevance of value from earnings, namely the existence of a positive relationship with stock prices, management of accruals is intended as a credible signal and should not be perceived as opportunistic behavior. Zarowin (2002) found that companies with more substantial earnings management will have more informative relevance. This fact shows that managers use earnings management to disclose their private information about future company profits.

Meanwhile, the negative coefficient results from accrual earning management on timeliness shows opportunistic motives. This result shows that earnings management reflects the motivations of managers who opportunistically adjust earnings to move wealth from shareholders for their interests. Earnings management through accrual earning management motivated by the opportunism of managers can cause noise on value relevance (Godfrey et al., 2010). Accrual earning management abnormal accrual models are free accruals that are not regulated and are management policy choices, such as pension benefit costs. This abnormal accrual is used to make earnings management (Rachmawati, 2010). This finding is consistent with Habib (2004), which found a negative and significant effect of earnings management in a regression of accounting information quality.

On the other hand, real earnings management has a positive and significant effect on predictive value. It is consistent with the findings of Oraby (2017), which showed real activity-based earnings management strategy possesses a significant effect on value relevance and is used to manipulate net income upwards.

However, real earnings management does not affect feedback value and timeliness. Roychowdhury (2006) described that real earnings management could do in three ways, namely: First, manipulation of sales, to increase sales temporarily in a certain period by offering excessive discounts on product prices or providing softer credit requirements. This strategy can increase the sales volume and profit of the current period but will reduce the cash flow of the current period. Second, decreasing accrual earning management expenditures, such as research and development expenses, advertising, and sales, administration, and general, especially in the period in which these expenditures do not directly lead to income and profit. This strategy can increase the profit of the current period and reduce future cash flows. Third, excessive production (overproduction), to increase profits can produce more than is needed assuming that a higher level of production will cause a lower fixed cost per unit of product. This strategy can reduce the cost of goods sold (cost of goods sold) and increase operating profit. Hence, real earnings management may have no effect on value relevance due
to discount sales manipulation strategies, decreases in research expenses; excessive production is difficult to apply by investors to make predictions and feedback.

Company size only strengthens the effect of accruals earnings management on the relevance of the value of the timeliness model. These results indicate that companies that have substantial total assets are companies that have reached the stage of maturity. In this stage, the company's cash flow is positive and is considered to have good prospects in the long run. Besides, the company perceived as relatively more stable and able to generate profits compared to companies with small assets. It is consistent with Yokoyama et al. (2015) that the accounting information is more relevant and presents greater informativeness for small caps companies.

The result also shows that the size of the company cannot strengthen the effect of accruals and real earnings management on the relevance of predictive value model and feedback value, due to the different signs compared to their predictions or they are not statistically significant. For the control variables, only liquidity variable that has a negative effect on the predictive value. It also has a negative effect on timeliness, while leverage has a positive effect on timeliness.

Conclusion

The effect of accrual earnings management on predictive value and feedback value had a positive signs. The effect of accrual earnings management on timeliness is a negative sign, while for real earnings management only has a positive effect on predictive value. On the other hand, company size cannot strengthen the effect of real earning management and accrual earning management on predictive value and feedback value, while only the effect of accrual earnings management that can be strengthened by company size on the timeliness value.

Implications of research results are expected to be used by companies, investors and scientific development as follows: First, for the company, it is expected not to take earnings management actions in improving value relevance (predictive value, feedback value, timeliness) because it can make the company’s earnings quality worse. Second, for investors, can help analyze the factors that can affect value relevance (predictive value, feedback value, timeliness) so that investors can better choose companies to invest. Third, for the next research, it is expected to develop the theory and add variables and samples used to be expanded outside the manufacturing industry. Fourth, for the regulator, it is better to impose strict regulation for the company size, since it has been proven that company size will strengthen the effect of both real and accrual earnings management on predictive value and feedback value, which in turn will lead investors to make a false prediction on the company.

References


