

THE VALUE RELEVANCE OF ACCOUNTING INFORMATION MODERATED BY EARNINGS MANAGEMENT: EVIDENCE FROM LISTED COMPANIES IN THE DEVELOPING MARKET

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Abstract

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This research aims to investigate the value relevance of accounting information (VRAI) and the effect that earnings management (EM) has on the VRAI. Research on the VRAI is generally carried out using the model introduced by Ohlson (1995). Problems will occur when the VRAI as a company performance measurement tool is faced with the practice of manipulation by managers. This study's population is all manufacturing companies listed on the LQ45 Index. Sampling-based on purposive sampling; the research sample obtained as many as 16 samples over three years, so the number of observations is 48 companies per year. The data analysis technique used multiple linear regressions with moderating variables or moderated regression analysis (MRA). The results show that earnings per share (EPS) have value relevance (VR), and book value (BV) has VR. Operating cash flow (OCF) has no VR. Management weakens the VR of earnings, EM is not moderating BV relevance, and EM strengthens the VR of OCF.

Keywords: Book Value Per Share, Cash Flow Per Share, Earnings Per Share, Earnings Management, Stock Price

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1. INTRODUCTION

Accounting information has value relevance (VR) if it can be used as a foundation for predicting the market value of the business using accounting

information (Barth et al., 2001; Scott, 2012). Research on the value significance of bookkeeping information is typically conducted using Ohlson's model, presented at the beginning of the study (Ohlson, 1995). The model developed by Ohlson

describes the relationship between a company's earnings and book value (BV), as well as other information that is believed to influence stock prices and the market value of the business, which is the share price. Therefore, Ohlson's model offers an equation that can be tested to determine the relative importance of non-financial and financial information in establishing the worth of a company (Bugshan, 2005).

There is a correlation between bookkeeping revenues and stock values, as shown by several studies (Ball & Brown, 1968; Collins et al., 1997). Many empirical accounting studies have attempted to find the value-relevant attributes of accounting in order to enhance financial statement analysis. The accounting attribute is assumed to be value-relevant because this accounting attribute is statistically related to stock prices. Studies conducted by Freeman and Tse (1992) and Bartov et al. (2001) examine the relationship between earnings and stock prices or returns. The studies conducted by Anggono and Baridwan (2003), Mayangsari (2004), and Linda and Syam (2005) analyze the VR of earnings, cash flow, and the BV of equity by analyzing the financial crisis period 1995-1998. The study found that the relationship between stock returns and earnings is not linear. The research findings indicated certain circumstances, such as financial health (Barth et al., 1999) and business profitability, which cause the BV of equity to be a more relevant component than earnings or vice versa.

Research on the value relevance of accounting information (VRAI) in the IFRS convergence period in Indonesia was also conducted by Prihatni et al. (2018). Their findings indicated that accounting information such as earnings, BV, and cash flow have a fluctuating relevance value in the IFRS adoption and implementation phase. When the significance of earnings and BV as a means of evaluating business performance is put up against managers' manipulation of earnings management (EM) practices, problems will arise. Earnings and BV are two important metrics. There are two motivations for managers to do EM: 1) opportunistic motivation and signalling motivation. Agency theory explains that managers perform EM that increases earnings to hide bad performance, and 2) EM reduces earnings to delay good performance. Signalling theory explains that managers perform EM which increases earnings to provide a better signal of present/future earnings than the performance implied by current non-discretionary earnings. Managers perform EM which reduces earnings to signal that current/future earnings are worse than the performance implied by non-discretionary earnings (Suyudi, 2009).

Compared with a company that does not engage in EM, the earnings significance of a company that is suggested to be conducting EM ought to be lesser than that of another company. Consequently, market participants will shift their focus from a company's profit to its BV when attempting to evaluate the business. Previous research has demonstrated that EM substantially reduces the value pertinent to earnings and BV (Habib, 2004). The relevance of earnings and BVs in determining firm value when the company manages earnings is still unanswered. Several studies have shown that the two variables can replace each other. When the relevant value of earnings decreases,

the relevance of BV will increase (Anggono & Baridwan, 2003; Collins et al., 1997). When companies carry out EM practices, the earnings picture can no longer represent the company's performance fairly, thus reducing the earnings' reliability. Therefore, earnings information becomes less important, and the market will shift from focusing on profit to focusing on BV as the primary consideration in its evaluation (Whelan & McNamara, 2004). Research carried out by Habib (2004) lends support to the idea that the emphasis on investor evaluation should be shifted when considering the worth of a company.

Some literature and research related to EM and VR (Rangan, 1995; DeFond, 2002) states that the VRAI is influenced by EM behaviour. In general, the relevance of value is derived from two different measurement models, namely those found on the balance sheet and the revenue statement. This research aims to investigate the VR of real accounting numbers and analyze how profitability management affects the VR of real accounting numbers. This study makes several contributions. First, it provides empirical evidence regarding the ability of EM to influence the relevance of the values of fundamental accounting numbers. There are still rare studies that include EM as a moderator of the VRAI. Second, it provides empirical evidence for policy and preparation standards. The results of this study can help expand information from the aspect of manager behaviour.

This study makes several contributions. First, it provides empirical evidence regarding the ability of EM to influence the relevance of the values of fundamental accounting numbers, where to our knowledge there are still rare studies that include EM as a moderator of the VRAI. Second, practically, it provides empirical evidence for policy and preparation standards. It is hoped that the results of this study can help expand information from the aspect of manager behaviour.

The rest of the paper is structured as follows. Section 2 is a literature review and hypotheses development. Section 3 presents a methodology that has been adopted along with the reason for following the methodology. Section 4 presents the results. Section 5 contains the discussions. Finally, the conclusions are presented in Section 6.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Agency theory states that management practices are influenced by a conflict of interest between management (agent) and the owner (principal) that arises when each party strives to achieve and maintain the desired level of prosperity (Sheehy & Madrid, 2022; Gwala & Mashau, 2022; Zejnullahu, 2021; Noviana & Yuyyeta, 2011). Thus the agent is more aware of the condition of the company than the principal so the agent has more opportunities to make the information in the financial statements better by utilizing the information he knows, which is often driven to take actions that maximize the benefits of himself and his company.

Signal theory states that company executives who have better information about their company will be encouraged to convey this information to potential investors where the company can increase company value through its reporting by sending signals through its annual reports (Scott, 2012).

Francis and Schipper (1999) define the VRAI as the ability of accounting numbers to do so. Holthausen and Watts (2001) state that the VR of a financial report is high if the numbers presented in the financial statements can show a strong relationship with firm value. According to Watts and Zimmerman (1990), EM occurs when managers have discretionary behaviour related to accounting numbers, with or without limitations. This behaviour can be adapted to maximize firm value. In other words, EM occurs when managers can maximize firm value. Francis and Schipper (1999) define EM as a deliberate behaviour to change external financial statements to obtain personal benefits for managers.

Easton (1999) and Beaver (2002) state that VR research aims to examine the effect of several fundamental accounting variables on the dependent variable based on securities prices. An accounting number is called "value relevant" if it affects the dependent variable (price/return of the security). Several studies have shown that the earnings and BV variables can replace each other. When the relevant value of earnings decreases, the BV relevance will increase (Anggono & Baridwan, 2003; Collins et al., 1997). According to the findings of Kwon's (2009) research, cash flow is more relevant to value than earnings and BV. This demonstrates that the Korean capital market tends to view cash flow information first rather than other information. Similarly, Cheng et al. (1997) demonstrate that the value significance of operating cash flow (OCF) has increased over profitability in recent years. In the meantime, research conducted in Colombo by Karunaratne and Rajapakse (2010) revealed that earnings per share (EPS) have higher value significance than BV and cash flow.

Problems will occur when the relevance of accounting information as a tool to measure company performance is faced with manipulation practices by managers. When companies carry out EM practices, the earnings picture can no longer represent the company's performance fairly — bringing into question the dependability of the revenues in and of themselves. As a result, information regarding earnings becomes less important, and the market will eventually shift the emphasis of its evaluation away from earnings and toward BV (Whelan & McNamara, 2004). Research by Barth et al. (2008) stated that quality accounting information will have a higher VR. Companies with low information quality due to EM will impact the low VR of the company compared to companies that do not perform EM. Research on the effect of EM on firm VR has been conducted by Marquardt and Weidman (2004), Habib (2004), and Shan (2015). Their research results found that EM has a negative effect on VR.

Research conducted by Habib (2004) provides evidence that EM reduces the VRAI, both earnings and the BV of equity. Investors consider EM to be opportunistic, so investors react negatively to EM. Research conducted by Agusti and Rahman (2011) states that EM reduces the relevance of earnings and the BV of equity. This is caused when the company performs EM; investors distrust the reported earnings figures and the company as a whole. Research by Kwon (2009) states that OCF has a relevant value in companies that manage earnings.

EM can moderate the VR of cash flows. Some literature and research related to EM and VR (Rangan, 1995; DeFond, 2002; Barth et al., 1999; Marquardt & Weidman, 2004) state that the VRAI is influenced by EM behaviour.

Based on the explanation above, the formulation of the research hypotheses is as follows:

H1: Earnings have value relevance.

H2: Book value has value relevance.

H3: Operating cash flows have value relevance.

H4: Earnings management is a moderator of the value relevance of earnings.

H5: Earnings management is a moderator of the book value relevance of equity.

H6: Earnings management is a moderator of the value relevance of operating cash flows.

3. RESEARCH METHODOLOGY

The quantitative method is used to examine certain populations and samples. Sampling is done randomly and then analyzed quantitatively or statistically, intending to test the established hypothesis (Sugiyono, 2013). In this study, the population is all manufacturing companies listed on the LQ45 Index on the Indonesia Stock Exchange during the 2016–2018 periods. Sampling is based on purposive or conditional sampling, namely the selection of samples determined based on certain criteria.

To develop a regression model and determine the VR of corporate accounting information, this study uses four distinct types of variables. The following variables were measured for this research:

Dependent variable: The stock market price (P_t) on April 1 is a proxy for the company's value, which is the dependent variable in this analysis. The price of a share of stock is the price value of a share that occurs in the capital market at a particular moment and depends on the demand and supply of shares among market participants.

Independent variable: The independent variable consists of three different variables, which are as follows: EPS is the company's net income for a year divided by the number of shares outstanding; the BV of each share shows the value of each share of the total net assets owned by the company divided by the number of shares outstanding; OCF is cash flow originating from operating activities that are primarily derived from the primary revenue-producing activities of the company; and total cash flow is cash flow originating from all activities of the company.

A variable that acts as a moderator: Based on a modified version of the Jones model, the *EM strategy* is the moderating variable. The following are the stages of the calculation:

1) Calculating total accruals (TA), namely net income (NI) in year t less OCF in year t , with the following formula:

$$TA_{it} = NI_{it} - OCF_{it} \quad (1)$$

Accrual (TA_{it}) itself is also the sum of nondiscretionary accruals (NDA) with discretionary accruals (DA) with the following equation:

$$TA_{it} = NDA_{it} + DA_{it} \quad (2)$$

Furthermore TA is estimated with ordinary least square (OLS) as following:

$$\frac{TA_{it}}{A_{it} - 1} = \beta_1 \left(\frac{1}{A_{it} - 1} \right) + \beta_2 \left(\frac{\Delta REV_{it}}{A_{it} - 1} \right) + \beta_3 \left(\frac{PPE_{it}}{A_{it} - 1} \right) + \varepsilon_{it} \quad (3)$$

2) With the regression coefficient as in the above formula, the NDA are determined by the following formula:

$$NDA_{it} = \beta_1 \left(\frac{1}{A_{it-1}} \right) + \beta_2 \left(\frac{\Delta REV_{it}}{A_{it-1}} - \frac{\Delta REC_{it}}{A_{it-1}} \right) + \beta_3 \left(\frac{PPE_{it}}{A_{it-1}} \right) \quad (4)$$

3) Finally, DA as a measure of EM is determined with the following formula:

$$DA_{it} = \left(\frac{TA_{it}}{A_{it}} \right) - NDA_{it} \quad (5)$$

where:

- TA_{it} = TA of company i in year t ;
- NI_{it} = Net income of company i in year t ;
- OCF_{it} = Company i 's OCF in year t ;
- NDA_{it} = Non-discretionary accruals for company i in year t ;
- ΔREV_{it} = Revenue of company i in year t minus revenue in year $t-1$;
- ΔREC_{it} = Receivables from company i in year t minus accounts receivable in year $t-1$;
- PPE_{it} = Fixed assets of company i in year t ;
- A_{it-1} = Total assets of company i year $t-1$;
- β = Regression coefficient;
- ε_{it} = Error term of company i year t .

To test the hypotheses that have been designed, it is necessary to form a multiple linear regression model. This model is used to see the magnitude of the influence of the independent variable on the dependent variable by including a moderating variable in it. The regression equations used in this research are:

Model 1

$$P = \alpha + \beta_1 EPS + \beta_2 EM + \beta_3 EPS * EM + \varepsilon \quad (6)$$

Model 2

$$P = \alpha + \beta_1 BVPS + \beta_2 EM + \beta_3 BVPS * EM + \varepsilon \quad (7)$$

Model 3

$$P = \alpha + \beta_1 OCFPS + \beta_2 EM + \beta_3 OCFPS * EM + \varepsilon \quad (8)$$

where:

- P = closing price of the company on the report publication date finance;
- EPS = EPS of the company;
- $BVPS$ = book value of equity per share of the company;
- $OCFPS$ = OCF per share of the company;
- EM = Management of corporate earnings;

- A = Constant;
- $\beta_1 - \beta_7$ = coefficient of the independent variable;
- ε = Firm confounding variable.

4. RESULTS

The five assumptions were tested on a population consisting of every LQ45 Index manufacturing company that was traded on the Indonesia Stock Exchange between 2016 and 2018. Purposive sampling is a method that is used to select samples, and it is a method that is based on certain criteria. The sample selection was made using this method. After three years of observation and using the sample criteria as a guide, a sample size of sixteen was obtained, bringing the total number of observations to 48.

According to the results of the classical assumption test that was performed before testing the hypothesis, the results of the test have satisfied the requirements of the classical assumption test, which means that multiple linear regression analysis can now be performed with the moderating variable. The results of the regression analysis are presented in Table 1.

Table 1. Partial regression test

Model	B	T	Sig.
Model 1			
Constant	1165.908	1.808	0.078
EPS	21.963	22.646	0.000
EM	1632.771	0.350	0.728
EPS*EM	-94.169	-4.448	0.000
Model 2			
Constant	794.763	1.789	0.081
BVPS	3.935	31.629	0.000
EM	-2680.443	-0.813	0.421
BVPS*EM	-4.355	-1.350	0.184
Model 3			
Constant	0.417	0.707	0.483
OCFPS	-14.931	-0.735	0.466
EM	19333.278	10.291	0.000
OCFPS*EM	108.658	2.227	0.031

Based on the results of Table 1, a regression equation can be made from each of these research models as follows:

Model 1

$$P = 1165.908 + 21.963 EPS + 1632.771 EM - 94.169 EPS * EM + \varepsilon \quad (9)$$

Model 2

$$P = 794.763 + 3.935 BVPS - 2680.443 EM - 4.355 BVPS * EM + \varepsilon \quad (10)$$

Model 3

$$P = 0.417 - 14.931 OCFPS + 19333.278 EM - 108.658 OCFPS * EM + \varepsilon \quad (11)$$

Table 2. Simultaneous regression results

Model	F	Sig.
Model 1	172.767	0.000
Model 2	340.547	0.000
Model 3	702.952	0.000

It is obtained for Model 1, Model 2, and Model 3 obtained with a significance level of 0.000, with a significance value (0.000–0.05), so it can be concluded that the independent variables are either collectively or simultaneously capable of affecting the dependent variable. The results of the F-test for each model are presented in Table 2.

Table 3. Hypotheses testing results

<i>Hypothesis</i>	<i>B</i>	<i>Sig.</i>	<i>Result</i>
<i>H1: Earnings have value relevance.</i>	21.963	0.000	Accepted
<i>H2: Book value has value relevance.</i>	3.935	0.000	Accepted
<i>H3: Operating cash flows have value relevance.</i>	-14.931	0.466	Rejected
<i>H4: Earnings management is a moderator of the value relevance of earnings.</i>	-94.169	0.000	Accepted
<i>H5: Earnings management is a moderator of the book value relevance of equity.</i>	-4.355	0.184	Rejected
<i>H6: Earnings management is a moderator of the value relevance of operating cash flows.</i>	108.658	0.031	Accepted

Based on the regression results in Table 3, there is a significant influence between the *EPS* variable on stock prices. In other words, earnings have VR. There is a significant influence between the *BV per share* variable on stock prices; in other words, BV has VR. There is no significant influence between the variable *OCF per share* and stock prices, and in other words, *OCF* has no VR. There is a significant influence between the *EPS*EM* variable and stock prices. In other words, EM is a moderator of VR of earnings. There is no significant influence between the *BVPS*EM* variable and the stock price, and EM is not a moderator of VR of BV. There is a significant influence between the *OCFPS*EM* variable and stock prices, and in other words, EM is a moderator of VR of OCF.

Table 4. Coefficient of determination

<i>Model</i>	<i>R</i>	<i>R-square</i>	<i>Adjusted R-square</i>
<i>Model 1</i>	0.961	0.923	0.918
<i>Model 2</i>	0.980	0.960	0.957
<i>Model 3</i>	0.990	0.980	0.979

Based on the results of Table 4, Model 1 shows the adjusted R-square value obtained at 91.8%. Model 2 shows the adjusted R-square value obtained at 95.7%. Model 3 shows the adjusted R-square value obtained by 97.9%.

5. DISCUSSION

5.1. Earnings have value relevance

The results indicate that EPS positively affect stock prices in manufacturing companies listed on the LQ45 Index. This means that the increasing EPS also increases the stock price. This result can show that EPS have VR. These results can confirm the signal theory that the accounting information submitted by the company to potential investors is good news. It is hoped to increase market response by deciding to purchase/demand shares. Value in financial statements, such as company net income,

is a signal showing the company's value (Hughes, 1986). The results of this study are consistent with research conducted by previous researchers in different periods, such as in the IFRS convergence period, the earnings information generated by the company is more value-relevant (Aubert & Grudnitski, 2008; Prihatni et al., 2018).

5.2. Book value has value relevance

According to the findings, the BV of manufacturing companies that are part of the LQ45 Index has a positive impact on the stock prices of those companies. This indicates that the rising BV also contributes to an increase in the stock price. These findings suggest that value significance can be derived from book worth. These results demonstrate that investors utilize the BV accounting information in the financial statements as a decision-making tool when selecting investments to put their money into.

The findings of this study can also confirm the signal theory, which states that the announcement of accounting information sends a signal to investors indicating that the company has positive prospects for the future (i.e., good news), thereby increasing the likelihood that investors will trade stocks. Consequently, the market will respond, representing this in various shifts in the volume of stock transactions (Sharpe, 1997). Research carried out by Mulenga and Bhatia (2020), Linda and Syam (2005), Agusti and Rahman (2010), Ian and Hartati (2015), Triandi et al. (2015) and Bogstrand et al. (2012) are all consistent with the findings of this study demonstrates additionally that the BV of equity does have VR.

5.3. Operating cash flows have value relevance

The results indicate that OCF per share does not affect stock prices in manufacturing companies listed on the LQ45 Index. This means that OCF has no VR. This is due to the market's assumption that profit and BV is still considered a measure of company performance that is more relevant in decision-making. This research aligns with the research conducted by Ben Ayed and Abaoub (2006), which states that cash flow has no VR to the Tunisia Stock Exchange. This study does not align with Valencia and Mulyani's (2011) research, which states that OCF has VR for investors to predict future cash flows. Cash flow is more relevant to stock prices than earnings information (Bo, 2009).

5.4. Earnings management is a moderator of the value relevance of earnings

The result shows that EM is a moderator of the VR of earnings and EM decreases the VR of earnings seen from its negative regression coefficient. EM can influence investors' decisions. If investors perceive it as opportunistic behaviour, investors will react negatively, as seen from the decline in the VRAI. Agusti and Rahman (2011) state that EM reduces the VRAI, both for earnings and BV. Similarly, Habib's (2004) research states that if investors perceive EM as a form of opportunistic behaviour, investors will react negatively. This can be seen from the decline in the VR of earnings.

5.5. Earnings management is a moderator of the book value relevance of equity

The results show that EM does not moderate BV relevance. The results of this study cannot prove that high EM indicates a tendency for management to opportunistically manipulate financial reports so that EM can reduce the relevance of equity BV, so investors react negatively. The BV of equity, which is indicated by EM, is irrelevant for investors because the BV of equity describes the investor's wealth for each share he owns. The assumption is that if the BV of equity is indicated by EM, the investor's wealth is not the same as the real situation. This research is in line with Kusuma's (2006) study, which states that EM does not significantly impact the BV relevance of equity.

5.6. Earnings management is a moderator of the value relevance of operating cash flows

The results show that EM as a moderator of the VR of OCFs and EM strengthens the VR of OCFs seen from its positive regression coefficient. The existence of EM can strengthen the VR of OCFs. The results of OCFs are viewed differently from profits by investors. This is because OCF is a signal to flow dividends according to investors' expectations, so investors can use cash flow information from operating activities to make decisions (Brigham & Daves, 1997). Thus, EM impacts the relevance of cash flows, increasing the company's stock price.

Yoon (1998) conducted a study on the Korean financial market, stating that companies that carry out EM usually have different signs of earnings coefficients and OCFs (opposite signs, such as positive and negative cash flows). This also occurs in this study that the existence of EM weakens the VR of earnings. In contrast, EM strengthens the VR of cash flows. Research by Kwon (2009) states that OCF has a relevant value in companies that manage earnings.

6. CONCLUSION

This study aims to collect empirical evidence pertaining to the value relevance of fundamental accounting numbers and the impact of earnings management on the value relevance of fundamental accounting numbers. The manufacturing companies listed on the LQ45 Index on Bursa Efek Indonesia during the period of 2016–2018 make up

the population. Sampling methods based on purposive sampling. According to the sample criteria, we obtained a sample size of 16. Since we observed them for three years, the total number of observations is 48. Operating cash flows do not have value relevance, earnings management weakens the relevance of earnings value, earnings management is not a moderator of book value relevance, and earnings management strengthens value relevance of operating cash flows. These findings are based on the outcomes of tests that have been carried out. Operating cash flows do not have value relevance. Model 1 has an explanatory power of 0.918, Model 2 has an explanatory power of 0.957, and Model 3 has an explanatory power of 0.979. According to the findings of these three models, the analyzed variables can influence stock prices by greater than 90%. The findings of this study have implications for analysts, investors, and other market participants in the sense that they should use earnings per share, book value, and operating cash flows per share in the equity valuation of manufacturing companies that are included in the LQ45 Index in order to achieve a more efficient distribution of resources in the market capital.

The conclusions of this research have important repercussions for investors, creditors, and analysts working with manufacturing businesses with an LQ45 Index; however, the study has some limitations. This investigation, first and foremost, investigates the VRAI chosen from the balance sheet, income statement, and cash flow statement; additional variables may be included in subsequent research. Second, the findings are based on an analysis of 48 manufacturing companies listed on the LQ45 Index of the Indonesia Stock Exchange for three years, beginning in 2016 and ending in 2018. The results can be generalized to LQ45 Index companies comparable to those used in this study. The duration of the study may be extended in subsequent studies, and the scope of the investigation may be expanded to include other industries, such as the oil and gas industry, the service industry, and the energy industry. In conclusion, looking at a comparative analysis of the relevance of values between different types of businesses and countries will be important and interesting. Thus, specifically, the limitations of this study, such as in analyzing the relevance of accounting information using only the price model, the sample only consists of manufacturing companies registered at LQ45 Index, allowing the results to not be generalized.

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