THE EFFECT OF EARNINGS MANAGEMENT ON THE VALUE RELEVANCE OF EARNINGS AND BOOK VALUE

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ABSTRACT

Earnings and book value are commonly used as the basis for firm valuation. However, the reliability of earnings which affected by earnings management may affect accounting informations’ relevance in determining firm value. This thesis investigates the link between earnings management and firm valuation by assessing the impact of earnings management on the value-relevance of earnings and book value. This study estimates discretionary accruals using the Modified Jones model with ROA (Kothari, 2005) as earning management proxy. The population in this research is manufacturing companies listed on Indonesia Stock Exchange 2009-2011 period. Samples are selected using Purposive Sampling Method. From samples selection, 108 indicated earnings management firms (highest discretionary accruals) and 108 non-indicated earnings management firms (lowest discretionary accruals) are obtained. Hypothesis 1 test result shows that earnings and book value affect stock price. It proves that earnings and book value are value relevant. Hypothesis 2 test result shows that earnings management reduces the value-relevance of earnings and book value. It is due to the decrease of accounting information reliability. This link between the integrity of accounting information and its usefulness to market participants supports the need for ongoing regulatory activity and management policy as well as educational program to improve the integrity of financial reporting process.

Keyword: earnings management, discretionary accrual, value-relevance, earnings, book value, stock price
INTRODUCTION

Capital market is a market for securities where business enterprises and governments can raise long-term funds. The capital market includes stock market and bond market. The efficient market theory of financial economics states that the price of an asset reflects all available relevant information about the intrinsic value of the asset (Hartono 2009:29 in Wigraha 2011).

Accounting information refers to information about operations, performance and condition of business and other organization expressed primarily in monetary terms. One of the most important accounting information source is financial statement. Company’s financial statement is mainly presented in balance sheet, income statement and cash flow statement. Both balance sheet and income statement are accrual basis, while cash flow statement is cash basis. Financial information should have two main criteria such as reliability and relevance. According to FASB’s Statement of Financial Accounting Concept No. 2, reliability means the quality of information which assures that information is reasonably free from error and bias and faithfully represents what it purports to represent, while relevance means the capacity of information to make a difference in a decision by helping users to form predictions about the outcomes of past, present, and future events or to confirm or correct prior expectations.

Accounting information has value-relevance when it comes to stock prices. Value-relevance of accounting information is one of the basic attributes of accounting quality (Francis et al., 2004). In order to be value-relevant, information must be both relevant and reliable in terms of the definition provided in conceptual framework (Barth et al., 2001).

The tendency of investors and other external parties to focus on earnings triggers management to do dysfunctional behavior in the form of earnings management that is earnings manipulation to generate a normal return for a company (Bartov, 1993 in Wahyuningsih, 2007). Earnings management action has caused some cases of accounting report scandals such as Enron, Merck, WorldCom, and many other companies in United States (Marcus et al., 2006). Spesifically in Indonesia, Boediono (2005) stated that according to mass media, there are many cases related to financial accounting statement manipulation in Indonesia. Furthermore, Subekti (2011) argued that the concern of Indonesian public company about earnings management is reasonable. It is due to the level of perceived standard on disclosure and transparency in Indonesia is still low or poor.

Previous studies examining relationship between earnings management and value-relevance of accounting information show that earnings management decreases value-relevance of accounting information (Habib, 2004 in Kusuma, 2006). However, previous studies show that earnings and book value are not lost its value-relevance. They both have the positive and significant impact on stock prices when the practice of earnings management is existed in a company (Whelan and McNamara, 2004).

This research will examine whether earnings and book value equity are value-relevant which is indicated by stock price changes and whether earnings management will affect those two accounting information value-relevance.
THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

Earnings Management

Scott (2003:369) viewed earnings management from both contracting and financial reporting perspective and defined earnings management as the choice by a manager of accounting policies to achieve some specific objective while Assih et al. (2000) in Wahyuningsih (2007) stated that earnings management is a process that is carried out within the limits of general accepted accounting principles that inadvertently leads to a desired level on reported earnings.

The accounting academics use some approaches to evaluate the existence of earnings management. According to Sulistyanto (2008) in Wangi (2010), generally, there are three empiric approaches to identify earnings management. The first is accrual based approach that uses discretionary accruals as earnings management proxy. The second is specific accruals based approach. This approach determines accruals as earning management proxy using specific item of financial statement from specific industry. Then the last model is distribution of earnings approach. Moreover, Whelan (2004) stated that studies focusing on the detection of earnings management have traditionally used measures based on aggregate accruals.

According to Stubben (2010), there are two concepts of accruals, such as discretionary accruals and non-discretionary accrual. Discretionary accruals is the recognition of accruals income or expense that is set free and constitutes the choice of management’s policy. Thus high level of discretionary accrual is associated with high opportunistic behaviour by the management. On the other hand, non-discretionary accruals is the recognition of a reasonable profit which is subject of standard or generally accepted accounting principles. Non-discretionary accruals is reasonable accruals and if it is breached, it will affect the quality of financial statements (qualified financial statement). Thus abnormal discretionary accruals is used to investigate the existence of earning management.

Accounting Earnings

One of information in financial statement is earnings. The understanding of earnings that is adopted by the current accounting structure is the difference measurement between accrual cost and revenue (Suwardjono, 2005:456 in Wigraha, 2011). PSAK No. 1 (IAI, 2004) stated that earnings information is needed to value the potential economic resources that may be controlled in the future and to estimate production of cash flows as well as to consider the company effectiveness in utilize additional resources. Beaver (1968) characterizes earnings as having information content about a security’s value if its release alters investors’ beliefs regarding the attributes they value, such as claims to future dividends.

Book Value

Book value is the value of shares according to the issuer company's bookkeeping. Book value per share shows net assets (total asset subtracted by total liability) owned by shareholders by having one share. Since net assets is equal to total shareholders' equity, the book value per share is the total equity divided by the number of shares outstanding (Hartono, 2009:124 in Wigraha, 2011). Book value is derived from a company's balance sheet which shows the
assets, liabilities and equity of a company at a single point in time.

**Value-relevance**

Value-relevance of financial statements has been the subject matter of research over many years. Value-relevance can be termed as the ability of a financial statement to explain the market numbers (Narasimhan and Srinivasan, 2010). According to Barth et al. (2001), accounting information has value-relevance if it is predicted to have significant relationship with stock price. It is only when accounting information reflects the reliable information for investor to evaluate the company’s value. Therefore, to be value-relevant, accounting information has to contain both relevance and reliability.

The Ohlson’s Clean Surplus Theory shows how the market value of the firm can be expressed in terms of balance sheet and income statement components. The market value of a firm can be expressed by the formula:

\[ MV_t = BV_t + G_t \]

Where \( BV_t \) is the net book value of the firm’s net assets and \( G_t \) is the expected present value of future abnormal earnings which is called goodwill (the difference between actual and expected earnings) (Yuliarini, 2010; Suartana, 2005; Ohlson, 1995; Feltham and Ohlson 1995; Wikipedia, 2012). According to this theory, changes in book value over time adhere to clean surplus accounting. Therefore, the changes in book value from period to period are equal to earnings substracted by net dividends (dividends adjusted for capital contributions). This condition is revealed later that the accounting data has value-relevance (Mayangsari, 2004).

Earnings plays an important role to show the firm tendency whether it grows or terminates its operation. Valuation model measures the creation of equity capital investment on continuation or termination of the firm operation framework (Burgstahler and Dichev, 1997 in Sumiyana, 2011). On the other hand, book value can be viewed as a proxy for expected future earnings for loss firms (Hayn, 1995 in Whelan, 2004) and as a proxy for the abandonment option for firms likely to cease operations (Berger et al., 1996; Subramanyam and Wild, 1996; Barth et al., 1998 in Whelan, 2004).

Naimah and Utama (2006) states that various studies have shown that accounting earnings is associated with stock prices (Ball and Bown, 1968; Beaver, 1968, Beaver et al., 1979; Kormendi and Lipe, 1987; Lipe 1986; Collins and Kothari, 1989). Several other studies also indicate that the assets and liabilities are associated with share prices (Landsman, 1986; Amir 1993; Francis and Schipper, 1999).

Wigraha (2011) in his research states that there are studies proving that earnings and book value have value-relevance, such as Whelan and McNamara (2004), Kusuma (2006), Indra and Syam (2004), Suwardi (2005) and several more, either abroad or in Indonesia. Moreover, Collins et al. (1997) in Narasimhan and Srinivasan (2010) found that value-relevance of combined earnings and book value has not declined over the past forty years.

According to those research, earnings and book value are seem play an important role in determining the value of the firms. **Hypothesis 1**: Earning and book value are value-relevant
Whelan and McNamara (2004) examine the impact of earnings management on the value-relevance of earnings and book value equity by separating the earnings management to short-term and long-term discretionary accruals. They find that both earnings management with short-term or long-term discretionary accruals reduce the value-relevance of earnings but they have no impact on the value-relevance of book value.

Research which is carried out by Kusuma (2006) using 495 sample companies listed on Jakarta Stock Exchange for the period 2003-2005 shows that the value-relevance of earning decrease, while the value-relevance of book values do not significantly change when earnings management is measured using total discretionary accruals.

According to Habib (2004) in Subekti (2011), both earnings management measures and aggregate earnings management measures (combination of both earnings smoothing and earnings management measures) are significantly negatively associated with the combined value relevance of book values of equity and earnings (combined model) and value relevance of earnings (earnings model).

Those above findings become basis to develop hypotheses as follows:

Hypothesis 2: Earnings management decreases the value-relevance of earnings and book value.

**RESEARCH METHOD**

The population of this research is manufacturing public companies listed on Indonesia Stock Exchange from 2009 up to 2011 period. The reason underlies the selection of manufacturing sector is that the manufacturing sector has the largest number of go public companies compared to another sector, so as to it can avoid the lack of data after adjustment has been accomplished. Furthermore, samples of this research are selected using purposive sampling method, that is sample selection under certain criteria which are expected to provide the best data in accordance with research objective (Indriantoro and Supomo, 2002: 131 in Taman and Nugroho, 2010).

The sample criteria are as follows:

1. The published financial statements are ended on December 31, 2009 up to 2011
2. The currency of financial statements is Rupiah
3. The company has complete data related to variables used in this research
4. The company has positive earnings and book value of equity in the event year

This criteria aim to avoid bias, since negative earnings and book value may affect much to stock price regardless of the indicator of earnings management engagement, because the negative earnings and book values are believed as a proxy of or closely related to firms bankruptcy.

Dependent variable in this research is stock price. Furthermore, the stock price used is the stock on last March or three-months after balance sheet date on December 31. This method is used in order to ensure that the stock price fully reflects the information presented in annual financial statement (Cheng et al., 1996 in Kusuma, 2006). This study employs two accounting numbers as the independent variable, namely earnings per share (EPS) and book value per share (BVEq). Earnings per share used in this study is net income divided by the number of outstanding stock, while book value per share is total assets subtracted by total liabilities, then
divided by the number of outstanding stock. Moderating variable is variable that affects (strengthen or weaken) the relationship between dependent and independent variables. In this study, the moderating variable is earning management.

Dechow et al. (1995) in (Rachmawati and Triatmoko, 2011) state that Modified Jones Model is the best among other models to measure earnings management. Dechow et al. show that the Modified Jones Model provides the most powerful test of earnings management (Bartov et al. 2000). Additionally, Kothari et al. (2005) incorporate prior year Return on Assets to Modified Jones Model.

This research uses Modified Jones Model with ROA developed by Kothari et al. (2005). The steps are as follow (Rahman, 2011; Halim et al., 2005):

1. Calculate total accruals using cash flow approach:

\[ TA_{it} = NI_{it} - CFO_{it} \]

Explanation:

\[ TA_{it} = \text{Total accruals for firm } i \text{ year } t \]
\[ NI_{it} = \text{Earnings before extraordinary item for firm } i \text{ year } t \]
\[ CFO_{it} = \text{Cash flow from operation for firm } i \text{ year } t \]

2. Calculate non-discretionary accrual

\[ TA_{it}/A_{it-1} = \alpha_1 (1/A_{it-1}) + \alpha_2 [(\Delta\text{REV}_{it} - \Delta\text{REC}_{it})/A_{it-1}] + \alpha_3 (PPE_{it}/A_{it-1}) + \alpha_4 \text{ROA}_{it-1} + \varepsilon_{it} \]

Explananition:

\[ TA_{it} = \text{Total accruals for firm } i \text{ year } t \]
(calculated using equation 1)

\[ A_{it-1} = \text{Total assets for firm } i \text{ year } t-1 \]
\[ \Delta\text{REV}_{it} = \text{Revenue year } t \text{ substracted by revenue year } t-1 \text{ for firm } i \]
\[ \Delta\text{REC}_{it} = \text{Receivable year } t \text{ substracted by revenue year } t-1 \text{ for firm } i \]
\[ PPE_{it} = \text{Property, plant and equipment for firm } i \text{ year } t \]
\[ \text{ROA}_{it-1} = \text{Return on Assets of firm } i \text{ year } t-1 \]
\[ \alpha_1, \alpha_2, \alpha_3, \alpha_4 = \text{Industry specific estimated coefficients} \]
\[ \varepsilon_{it} = \text{Error for firm } i \text{ year } t \]

The estimated coefficients (\( \alpha_1, \alpha_2, \alpha_3, \alpha_4 \)) from equation 2 are used to estimate non-discretionary accruals for each firm.

\[ NDA_{it} = \alpha_1 (1/A_{it-1}) + \alpha_2 [(\Delta\text{REV}_{it} - \Delta\text{REC}_{it})/A_{it-1}] + \alpha_3 (PPE_{it}/A_{it-1}) + \alpha_4 \text{ROA}_{it-1} + \varepsilon_{it} \]

Explanation:

\[ NDA_{it} = \text{Non-discretionary accruals for firm } i \text{ year } t \]

3. Calculate discretionary accruals:

Total accruals are a sum of non-discretionary accruals and discretionary accruals. Therefore, the difference between that above estimation and actual accruals is deemed to be the total of discretionary accruals:

\[ DA_{it} = (TA_{it} / A_{it-1}) - NDA_{it} \]

Explanation:

\[ DA_{it} = \text{Discretionary accruals for firm } i \text{ year } t \]
\[ TA_{it} = \text{Total accruals for firm } i \text{ year } t \]
\[ A_{it-1} = \text{Total assets for firm } i \text{ year } t-1 \]
\[ NDA_{it} = \text{Non-discretionary accruals for firm } i \text{ year } t \]

Discretionary accruals may be either positive or negative as the direction to reach the target. Yet, it becomes the magnitude rather than the direction of the accruals that is of interests. Therefore, the absolute value of the discretionary accruals is used to rank firms according to the level of accrual usage from the smallest to the biggest number. High discretionary accruals are more likely to reflect opportunistic rather than conservative behavior and it signals of low reliability on earnings. Therefore, high discretionary accruals are used as the indicator of earnings management in this study. The firms will then be allocated to one of two groups representing the existent of earnings management and the non – existent of earnings management.

To understand the impact of earnings manipulation on value-relevance of earnings and book value equity, it requires a valuation model that links accounting information to market value. Ohlson model (1995) is one of proposed valuation framework that links firm value to earnings and book value, in which it measures the contribution of each variables toward the value of the firms. According to Barth et al. (2001), Ohlson model is the most used valuation model recently. Moreover, Whelan (2004) showed that an empirical adaptation of Ohlson’s theoretical model has been used extensively in the value-relevance literature (Burgstahler and Dichev 1997; Collins et al 1997; Barth et al 1998; Collins et al 1999; Ou and Sepe 2002). In Ohlson model (1995), market price is a linear function of earnings and book value of equity. Generally, the Ohlson’s regression model (1995) is as follow (Whelan and McNamara, 2004):

\[ P_{it} = a_0 + a_1 E_{it} + a_2 BV_{it} + t_{it} \]

Explanation:

\[ P_{it} = \text{Stock price for firm } i \text{ at the end of the third month of year } t+1 \]

\[ E_{it} = \text{Net earnings per share for firm } i \text{ in year } t \]

\[ BV_{it} = \text{Book value of equity per share for firm } i \text{ at end year } t \]

\[ t_{it} = \text{Error term for firm } i \text{ in year } t \]

The coefficients \( a_1 \) and \( a_2 \) represent the value-relevance of earnings and book value respectively. From Hypothesis 1, it is expected that both earnings and book value display a positive association with firm value. Thus, both \( a_1 \) and \( a_2 \) are expected to be significantly positive.

Ohlson’s model is extended to capture the impact of earnings management through the inclusion of slope dummies for earnings and book value. Each dummy variable has a value of one when the level of discretionary accruals indicates earnings management. As it has been described in advance, the earnings management indicator in this study is established using Jones model of discretionary accruals with ROA which is developed by Kothari (2005). An intercept dummy is included in the model to assess the value-relevance of earnings management in its own right (Whelan, 2004).

\[ P_{it} = a_0 + a_1 E_{it} + a_2 BV_{it} + t_{it} \]

With:

\[ a_0 = a_0 + a_1 D_{it} \text{ and } a_1 = a_2 + a_3 D_{it} \text{ and } a_2 = a_4 + a_5 D_{it} \]

Explanation:

\[ D_{it} = 1 \text{ for “Earnings Management” group; 0 otherwise} \]
Thus:

\[ P_{it} = (a_0 + a_1 D_{it} + a_2 E_{it} + a_3 D_{it} + a_4 E_{it} + a_5 D_{it}) \] 

\[ + t_{it} \]

\[ P_{it} = (a_0 + a_1 D_{it} + a_3 E_{it} + a_4 BV_{it} + a_5 BV_{it} D_{it} + t_{it} \]

\[ P_{it} = \alpha_0 + \alpha_1 D_{it} + \alpha_2 E_{it} + \alpha_3 E_{it} + \alpha_4 BV_{it} + \alpha_5 BV_{it} D_{it} + t_{it} \]

The \( \alpha_1 \) slope coefficient is an intercept variable that is used to examine the value-relevance from each earning management source. The \( \alpha_2 \) slope coefficient represents the value-relevance of earnings in the absence of earnings management while \( \alpha_3 \) slope coefficient represents the value-relevance of earnings in the presence of earning management. The market’s total response to earnings is represented by the sum of the coefficients \( \alpha_2 \) and \( \alpha_3 \). Likewise, the \( \alpha_4 \) slope coefficient represents the value-relevance of book value in the absence of earnings management while \( \alpha_5 \) slope coefficient represents the value-relevance of book value in the presence of earning management. The market’s total response to book value is represented by the sum of the coefficients \( \alpha_4 \) and \( \alpha_5 \). The slope coefficients \( \alpha_3 \) and \( \alpha_5 \) represent the impact of earnings management on the value-relevance of earnings and book value respectively.

In accordance with hypothesis 2, it is expected that earning management decrease the value-relevance of earnings book value equity. Thus, it is expected that \( \alpha_2 > \alpha_3 \) and \( \alpha_4 > \alpha_5 \).

### RESEARCH FINDINGS AND DISCUSSION

#### Population and Sample

The population in this research is manufacturing companies listed on Indonesia Stock Exchange, 2009 up to 2011 period. Sample is chosen using purposive sampling method.

#### Sample Determination Procedure

<table>
<thead>
<tr>
<th>Sample</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing companies listed on IDX in 2011</td>
<td>131</td>
</tr>
<tr>
<td>Currency other than Rupiah</td>
<td>(8)</td>
</tr>
<tr>
<td>Balance sheet date other than 31 December</td>
<td>(1)</td>
</tr>
<tr>
<td>Uncompleted data</td>
<td>(34)</td>
</tr>
<tr>
<td>Total sample in 2011</td>
<td>88</td>
</tr>
<tr>
<td>Total sample for three years 2009-2011</td>
<td>264</td>
</tr>
<tr>
<td>Negative earnings and/or book value</td>
<td>(48)</td>
</tr>
<tr>
<td>Grand total sample</td>
<td>216</td>
</tr>
</tbody>
</table>

The number of samples above would be sorted from the smallest to the biggest amount based on discretionary accrual values which have been absolutized, then the samples were divided into 2 quartiles. Companies which fall into the top quartile (the smallest discretionary accrual) were classified as companies indicated for having least engagement to earnings management, while companies which fall into the bottom quartile (the biggest discretionary accrual) were classified as companies indicated for having most engagement to earnings management. Therefore, there would be 108 sample in “No Earnings Management” group and 108 sample in “Earnings Management” group.
Descriptive Analysis

<table>
<thead>
<tr>
<th>V</th>
<th>EM</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>Std. D</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>N</td>
<td>54</td>
<td>270500</td>
<td>8825,56</td>
<td>30601,8</td>
</tr>
<tr>
<td></td>
<td>Y</td>
<td>51</td>
<td>450000</td>
<td>16913,5</td>
<td>54420,9</td>
</tr>
<tr>
<td></td>
<td>T</td>
<td>51</td>
<td>450000</td>
<td>12869,5</td>
<td>44231,4</td>
</tr>
<tr>
<td>E</td>
<td>N</td>
<td>0,74</td>
<td>21021,7</td>
<td>751,56</td>
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<tr>
<td></td>
<td>Y</td>
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<td>135040,4</td>
<td>4726,01</td>
<td>19760,2</td>
</tr>
<tr>
<td></td>
<td>T</td>
<td>0,37</td>
<td>135040,4</td>
<td>2513,79</td>
<td>14152,8</td>
</tr>
<tr>
<td>B</td>
<td>N</td>
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<td>36858,77</td>
<td>6023,22</td>
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<tr>
<td></td>
<td>Y</td>
<td>15,5</td>
<td>311214,5</td>
<td>47241,7</td>
<td>19760,2</td>
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<tr>
<td></td>
<td>T</td>
<td>15,5</td>
<td>311214,5</td>
<td>6639,69</td>
<td>33815</td>
</tr>
</tbody>
</table>

From the above tables, it can be seen that all three variables data such as stock prices, earnings and book value of “Earnings Management” group have the greater variation and the wider range than stock prices, earnings and book value data variables of “No Earnings Management” group.

Classical Assumptions Testing

In order to obtain more accurate result, prior to hypothesis testing using multiple linear regression analysis, the data that will be processed have to be tested using classical assumptions first. The classical assumptions used in this research are autocorrelation using Durbin-Watson testing to investigate time correlation among independent variables, multicollinearity using VIF value to investigate the correlation among independent variables, normality testing using Kalmogorov-smirnov to determine whether or not residual value are normally distributed and heteroscedasticity using Glejser testing to identify variance differences from residual in an observation with other observation.

In this research the original data obtained are not directly meet all of the classical assumptions. To address this problem, the data is transformed. Transformation used in this research natural logarithm and first difference delta. The result of classical assumptions testing for both data used in Hypothesis 1 and 2 are as follow:

**Original**

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>E</th>
<th>BV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autocorrelation</td>
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</tr>
<tr>
<td>Multicollinearity</td>
<td>VIF</td>
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<tr>
<td>Normality</td>
<td>ZKS</td>
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</tr>
<tr>
<td>Heteroscedasticity</td>
<td>Glejser</td>
<td>0,000</td>
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<tr>
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<th>BV</th>
<th>DE</th>
<th>DBV</th>
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</thead>
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<tr>
<td>Autocorrelation</td>
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<td>N</td>
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<td></td>
</tr>
<tr>
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<td>VIF</td>
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<td>185,636</td>
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<td>198,697</td>
</tr>
<tr>
<td>Normality</td>
<td>ZKS</td>
<td>0,000</td>
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<td></td>
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<tr>
<td>Heteroscedasticity</td>
<td>Glejser</td>
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<td>0,000</td>
<td>N</td>
<td></td>
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</table>

**Transformation Ln**

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<th>Hypothesis</th>
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<th>BV</th>
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<td>VIF</td>
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<td>Y</td>
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<td>Normality</td>
<td>ZKS</td>
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<td>Glejser</td>
<td>0,768</td>
<td>0,235</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Hypothesis</th>
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<th>E</th>
<th>BV</th>
<th>DE</th>
<th>DBV</th>
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<tbody>
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<td>Normality</td>
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<tr>
<td>Heteroscedasticity</td>
<td>Glejser</td>
<td>0,277</td>
<td>0,056</td>
<td>0,050</td>
<td>0,118</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>D</th>
<th>E</th>
<th>BV</th>
<th>DE</th>
<th>DBV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autocorrelation</td>
<td>DW</td>
<td>1,986</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multicollinearity</td>
<td>VIF</td>
<td>1,009</td>
<td>4,325</td>
<td>4,284</td>
<td>3,875</td>
</tr>
<tr>
<td>Normality</td>
<td>ZKS</td>
<td>0,098</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heteroscedasticity</td>
<td>Glejser</td>
<td>0,622</td>
<td>0,443</td>
<td>0,920</td>
<td>0,285</td>
</tr>
</tbody>
</table>

Explanation:

D = Earnings Management
E = Earnings
BV = Book value
DE = Earnings interacts with earning management
DBV = Book value interacts with earning management

N = Data do not meet the requirement
Y = Data meet the requirement

From those above classical assumptions table, it can be seen that data which is that meet all of classical assumptions used are Transformation Ln for Hypothesis 1 and Tranformation Ln FDD for Hypothesis 2. Therefore, those data are used to test each Hypothesis.

**Hypothesis 1**

<table>
<thead>
<tr>
<th>Hypothesis 1</th>
<th>E</th>
<th>BV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>0.513</td>
<td>0.422</td>
</tr>
<tr>
<td>Regression</td>
<td></td>
<td></td>
</tr>
<tr>
<td>t Statistic</td>
<td>10,099</td>
<td>5,924</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>R square</td>
<td>0.843</td>
<td></td>
</tr>
<tr>
<td>F statistic</td>
<td>571.224</td>
<td></td>
</tr>
<tr>
<td>Sig.</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

That above table shows that earnings regression coefficient is positive 0,513, t arithmetic 10,099 and probability (Sig.)= 0,000. On the other hand. Book value regression coefficient is also positive as 0,422, t arithmetic as 5,924 and probability (Sig.) = 0,000. Both earnings and book value regression coefficient are positive and significant, which means that earnings and book value significantly affect independent variables; stock prices. Thus, H1 is accepted. Earnings and book value are value relevant both partially as well as simultaneously as it is proven by F arithmetic 571,224, $R^2$ 0,843 and Sig. 0,000.

Hypothesis 1 which is stated that earnings and book value are value-relevant is accepted. This result supports the prior study such as the research about the effect of earnings management on accounting information value relevance in Indonesia by Kusuma (2006) which stated that both earnings and book value are value-relevant. Subekti, Kee and Ahmad (2009) also conclude that earnings and book value of equity have value-relevance in measuring market value of firm. The same result is also obtained from other studies of Subekti (2007; 2011). This result implies that Indonesia capital market relies on accrual accounting information such as earnings and book values as the consideration in making financial investment decision. This might be due to the assumption that earnings play important role showing the firm tendency whether to grow or to terminate its operation as well as the expectation that earnings is closely related to dividen. On the other hand, book value is value-relevance since it is believed to be a proxy for expected future earnings for loss firms.

**Hypothesis 2**

<table>
<thead>
<tr>
<th>Hypothesis 2</th>
<th>D</th>
<th>E</th>
<th>BV</th>
<th>DE</th>
<th>DBV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>-0,131</td>
<td>0,334</td>
<td>0,283</td>
<td>-0,140</td>
<td>-0,068</td>
</tr>
<tr>
<td>Regression</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>t Statistic</td>
<td>-1,283</td>
<td>5,294</td>
<td>3,544</td>
<td>-1,769</td>
<td>-0,632</td>
</tr>
<tr>
<td>Sig.</td>
<td>0,238</td>
<td>0,000</td>
<td>0,000</td>
<td>0,078</td>
<td>0,528</td>
</tr>
<tr>
<td>R square</td>
<td></td>
<td></td>
<td></td>
<td>0.505</td>
<td></td>
</tr>
<tr>
<td>F statistic</td>
<td></td>
<td></td>
<td>43,722</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig.</td>
<td></td>
<td></td>
<td>0,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

That above table shows that earnings regression coefficient is positive 0,334, t arithmetic 5,294 and probability (Sig.)= 0,000, meaning that in the absence of earnings management, earnings significantly affect stock price; earnings is value-relevant. Book value regression coefficient is positive 0,283, t arithmetic 3,544 and probability (Sig.)= 0,000, meaning that in the absence of earnings management, book value significantly affect stock price; book value is value-relevant. Those two conclusions support the result of regression model 1 that is in line with
Hypothesis 1. In the other hand, in the existence of earnings management, earnings regression coefficient is negative and is not significant (regression coefficient -0.140, t arithmetic -1.769 and Sig.= 0.078). Similar to earnings, in the existence of earnings management, book value regression coefficient is negative (regression coefficient -0.068, t arithmetic -0.068) and is not significant (Sig. 528). From this data, it can be concluded that in the existence of earnings management, both earnings and book lose its value-relevance, meaning that earnings management significantly decrease both earnings and book value value-relevance. The decreasing value-relevance of earnings is much bigger than book value, meaning that earnings management has bigger effect on earnings value-relevance rather than book value value-relevance.

Hypothesis 2 which stated that earnings management decreases the value-relevance of earnings and book value value-relevance is accepted. Earnings and book-values even lose its value relevance when they interact with earnings management. Accounting information informativeness is very sensitive to the issue of earnings manipulation. Earnings management is considered as opportunistic behaviour by manager that leads the opaque of accounting information (Sunarto, 2009), it is associated further with less reliability and or low quality of accounting information that may affect investor behaviour toward accounting information, thus indirectly will affect stock price. Earnings management may lead to the missallocation resource and prediction of next income. Thus, this is usually very risky for investors to solely rely on the accounting information existed in published financial statement without considering the conditions underlying that released information.

The result of Hypothesis 2 testing is supported by the previous research of earnings management and accounting information value-relevance in Indonesia by Rahman (2011), Oktaviana and Rahman (2010), Subekti (2007), Subekti (2011) and Subekti, Kee, Ahmad (2009) which stated that earnings management significantly decrease book value equity per share.

**SUMMARY**

The results in this study provide evidence of the value-relevance of earnings and book value for Indonesian firms; especially manufacturing industry firms. The response coefficients for both earnings and book value are positive and significant, meaning that earnings and book value are value-relevant. It indicates that Indonesia capital market considers even relies on both earnings and book value either partially and/or simultaneously in making investment decision. Moreover, the research result shows that value-relevance of earning is higher than book value, which means that investors are expected to use more earnings information rather than book value information.

The results of this study show that earnings management decreases the value relevance of both earnings and book value equity. Earnings and book value are even no longer value-relevant when interacting with earnings management via discretionary accruals.

There are several motivations underlie the action of earnings management, one that closely related to this study is increasing market value. Since capital market mostly relies on earnings information, the firms management may opportunistically manage earnings in accordance with its interest. Thus, the decreases earnings information value-
relevance may be due to the lack of investors reliance on earnings, since it is presumably manipulated and does not reflect the real financial condition of firms. On the other hands, the market may react to low reliability of earnings by discounting the earnings figure, but making no change to reliance on book value as alternate information, it may because book value is also accrual basis that is possible to be abnormally managed. Therefore, earnings management decreases both earnings and book value value-relevance.

**Recommendation for future research**

Alternatively, the decreases of both earnings and book value value-relevance in the existence of earnings management may simply indicate that the market looks for information other than book value and earnings, such as cash flow, in making investment decision. These conditions are supported by Almilia and Sulistyowati (2007) who stated that under the observation period, operating cash flow positively affects stock prices.

The possible weaknesses in this study lie in the determination of earnings per share. This research overlooks the number of extraordinary item and discounted operation. In the contrary, the extraordinary item and discounted operations are not common. Thus it may affect the equality among samples because it might lead to improved earnings growth in a period that does not arise in other periods. Therefore, it is expected for further research to use a more homogeneous earnings variables.

The number of samples during the three-year study may still be insufficient to produce a conclusion that can be generalized for a long year period. Therefore, either the period or the number of sample observations should be given special attention in further similar research. Finally, this study only focused on companies with established criteria, that is manufacturing industry. In the subsequent study, it might be better to develop the research with the addition of another industry sector or specific industry focusing on industry impact analysis.

Another suggestion for future research is related to earnings management estimation using discretionary accrual. As stated by Sulistyanto (2008) in Wangi (2010), generally, there are three empiric approaches to identify earnings management such as accrual based approach, spesific accruals based approach, distribution of earnings approach. Moreover, Stubben (2010) find that revenue model is less biased and better specified than accrual models, such that estimates from revenue models could be useful as a measure of revenue management or as a proxy for earnings management. It implies that it is better for future research to consider the another especially newer model of earning management that may produce more accurate result.

**REFERENCE**


