



Value Relevance of Earnings and Book Value in Indonesian Exchange Listed Firms

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Abstract

This study investigates the value relevance of accounting information on manufacturing companies listed on the IDX for 2012-2017. This study uses the accounting-based Ohlson's (1995) model, which includes earnings (EPS) and book value (BVS) as variables. This study shows a direct relationship between financial statements and firm value. The value relevance does not increase, yet both the value relevance for EPS and BVS, although in specific years, does. The results show that individual BVS decreases with a better amount than EPS from 2012 to 2015. Meanwhile, in 2016-2017 BVS value decreased below EPS value.

Kata kunci:

BVS
EPS
Nilai relevan

Abstrak

Penelitian ini menginvestigasi relevansi nilai informasi akuntansi pada perusahaan manufaktur yang terdaftar di BEI tahun 2012-2017. Model Ohlson (1995) berbasis akuntansi yang mencakup laba (EPS) dan nilai buku (BVS) sebagai variabel digunakan dalam penelitian ini. Studi ini menunjukkan adanya hubungan langsung antara laporan keuangan dan nilai perusahaan. Relevansi nilai pada perusahaan yang diteliti tidak meningkat, baik relevansi nilai EPS maupun BVS, walaupun pada tahun tertentu naik. Hasil analisis menunjukkan bahwa nilai BVS menurun secara individual dengan besaran yang lebih baik dibanding EPS tahun 2012-2015, namun tahun 2016 dan 2017 besaran nilai BVS menurun di bawah besaran nilai EPS.



1. Introduction

This study intends to obtain empirical evidence on the value relevance of earnings and book value in companies listed on the Indonesia Stock Exchange from 2012 to 2017, the first six years of implementing international financial reporting standards (IFRS) by Indonesian companies. The importance of quality accounting information encourages this

research. Quality accounting information in this study is information that has value relevance to assist users in making the right investment decisions. Until now, research on the capital market that investigates the relationship between financial statements and stock prices has been done [1]. One of the main focuses of this study is to assess whether, when the capital market obtains financial information, stock

prices change in response to that information, and stock price movements are in line with information about book value and reported earnings [2]. The degree of information contained in financial information is called value relevance [3]. Research on value relevance is carried out by investigating the relationship between independent accounting variables and stock prices as the dependent variable. The accounting variable, which is significantly related to the dependent variable, is called value relevance [4]. The greater the value relevance of the information in the financial statements, the more information that can be used to make investment decisions, the closer the relationship between financial statements and stock prices or company returns will be [3].

The research conducted by Ball and Brown [5] and Beaver [6] has triggered intensive research on the content of accounting information. The majority of research conducted shows that stock market reactions are near related to the information contained in financial reports [7]. At this time, there is a belief that the information in financial statements has lost its value relevance due to a shift in business practices from a capital-intensive economy to an economy that is more service-oriented and a high-tech economy [8]. Researchers investigating changes in business practices include Harris et al. [9] in Germany and Collins et al. [10], Kim et al. [11], Francis and Schipper [12], Brown et al. [13], Ryan and Zarowin [14], and Dontoh et al. [15] in the US.

Pervan and Bartulović [16] investigated the value relevance of listed companies in Southeast European countries during 2005-2010. The results showed that there was no increase in the value relevance of accounting information. On the contrary, their findings indicate large decreases or fluctuations in value relevance. Kwon [17] explored changes in the value relevance before and after the mandatory adoption of IFRS in Korea. The results indicated a significant change in the value relevance of earnings and book values generated by companies listed in Korea. Other studies have found the opposite. Kim and Key [19] find

a continuous increase in the relevance of earnings and book values. Chalmers et al. [20] stated that, although the value relevance of information in the capital markets of developed countries has been well documented since Ball and Brown [5], practical problems still determine the role that accounting information plays in the pricing of securities in the developing capital market.

Moreover, little research (if any) has been done in the developing stock market. This condition provides an opportunity for research on the developing stock market because the reliability of accounting information and enforcement of accounting standards is believed to be lower than that of developed countries. With this condition, it is believed that the stock price does not reflect all the company's accounting information [1]. One implication is that information asymmetry can worsen in developing stock markets than asymmetry in developed stock markets [21].

Acar and Ozkan [22] stated that accounting information serves as a measure of firm performance. Therefore, accounting information is considered as a link between users and management. Research on accounting information in developing markets confirms this to understand the importance of accounting information. However, the value relevance of financial statements over time has not been adequately assessed. This provides opportunities for research in developing countries, especially Indonesia, which have adopted international financial reporting standards (IFRS) since 2012. By adopting IFRS, it is believed that the companies quality of accounting information will improve, especially in terms of value relevance. The research investigates the increase the value relevance of information generated by companies listed on the Indonesia Stock Exchange in 2012-2017.

This paper is systematically organized in three sections. The introduction is in section 1, Section 2 describes the research method, and Section 3 describes the results of hypothesis testing and the discussion. This paper ends by presenting the conclusions, implications,

limitations, and opportunities for further research in section 4.

2. Method

This study uses sample of companies listed on the Indonesia Stock Exchange (IDX) from 2012 to 2017. The sample selection was carried out by a purposive sampling method with the following criteria: (1) the company is a public company listed on the Stock Exchange from 2012 to 2017; (2) the companies included in the group are manufacturing companies. Manufacturing companies are chosen due to their complex business activities that can represent all other industries, (3) the company data that can be accessed publicly. Data were obtained from three sources: (1) Directory of Indonesian Capital Market (ICMD); (2) Indonesia Stock Exchange website (www.idx.co.id); and (3) company website. The unit of analysis used in this research is company-year. Based on these criteria, this study obtained and used a sample of 108 companies so that the total observations were 656 company-years.

This study intends to obtain empirical evidence about changes in the information power of earnings and book value by taking stock prices into account. These two figures are often used as proxies of information quality because they are rational indicators of two financial statements, which are the income statement and the statement of financial position. Profit is a proxy for future performance, while book value shows past performance and capital input.

Barth [23] reports the Ohlson [24] based accounting model, which uses earnings and book value as variables. This model presents a direct relationship between financial statements and firm value. Barth [23] stated that models are the most widely used models. Previous research using this model was conducted among others by Collins et al. [10]; Barth et al. [25]; Collins et al. [26]; Francis and Schipper [12]; Lev and Zarowin [27]; Chamisa et al. [28]; Kim and Key

[19]; Tsalavoutas and Dionysiou [29]. The Ohlson model used is as follows.

$$P_{it} = \alpha_{it} + \beta_1 EPS_{it} + \beta_2 BVS_{it} + \varepsilon_{it} \quad (1)$$

P_{it} is the share price of the company i in year t three months after the end of fiscal year t , EPS_{it} is the earnings per share of the company i in year t , BVS_{it} is the book value per share of the company i in year t , and ε_{it} is the error term. As done by Collins et al. [26], equation (1) is further decomposed into equation (2) and equation (3) to obtain individual R^2 values for both earnings and book value:

$$P_{it} = \alpha_{it} + \beta_1 EPS_{it} + \varepsilon_{it} \quad (2)$$

$$P_{it} = \alpha_{it} + \beta_1 BVS_{it} + \varepsilon_{it} \quad (3)$$

The statistical correlation of earnings and book value with share prices is the primary metric for measuring the value relevance of accounting information in financial statements. If the coefficient value of the earnings and book value are significant, then accounting information is considered to have a value relevance. The relationship between earnings and book value and share prices is measured using the R^2 value.

3. Result and Discussion

Table 1 presents descriptive statistics for the variables used in Ohlson's model [24]. The test results show that all the variables used in the model have a reasonable level of variation. Table 1 reports the mean of market price per share for the period 2012 to 2017 is 6,771.78, while earnings per share (EPS_{it}) and book value per share (BVS_{it}) have a mean value of 1,340.09 and 2,368.93 respectively.

Pearson and Spearman correlations between variables are calculated and presented in Table 2. The correlation matrix test for the independent variables of the Ohlson model in Table 2 shows that there is no correlation coefficient above 0.8. The results show that there is no multicollinearity problem [30].

Table 1. Descriptive Statistic

	Mean	Median	Maximum	Minimum	Std. Dev.
P _{it}	6.771	750	1.090.000	0	49.435
EPS _{it}	1.340	32	564.290	(10.063)	22.365
BVS _{it}	2.368	636	58.344	(5.434)	5.881

The variance inflation factor (VIF) was also tested, and the results were within acceptable limits. In Table 2, it can also be seen that the correlation between earnings per share (EPS_{it}) and price per share (P_{it}), and between book value per share (BVS_{it}) and price per share (P_{it}) is positively and significantly correlated at the 1% level. These results indicate that, with a positive and significant relationship at the 1% level, earnings per share, and book value per share increase the value relevance of accounting information. This will be more comprehensively tested through regression analysis. The results of the regression analysis to determine the value of explanatory power (R^2) for equation 1, equation 2, and equation 3 are presented in Table 3. Column Model 1 in Table 3 presents the EPS and BVS regression results for stock

prices, which indicate that Model 1 is statistically significant ($F = 144.84$ with $p < 0.01$). Adjusted R^2 shows that EPS and BVS explain 30.7 percent of the variation in stock prices for the observation period, 2012 - 2017. The annual adjusted R^2 value of the cross-sectional regression for EPS and BVS fluctuated between 76.1 percent in 2012 to 22.6 percent in 2017. The annual OLS regression presented in column Model 1 generally shows the variables under investigation performed well throughout the year, except for EPS in 2014 and BVS in 2015. F-statistic is very significant for Model 1. These results consistently support the results of previous studies on value relevance in stock markets in developed and developing countries [31] [32] [18] [33].

Table 2. Bivariate Correlation

	P _{it}	EPS _{it}
P _{it}		
EPS _{it}	,106**	
BVS _{it}	,534**	,457**

***. Correlation is significant at the 0.01 level (2-tailed).*

Table 3. Results of Pool Regression and Regression per Year EPS and BVS in 2012 - 2017

Year	n	Model 1				Model 2		Model 3	
		EPS	BVS	Adj.R ²	F-stat	EPS	Adj.R ²	BVS	Adj.R ²
2012	108	3.96***	2.39***	0.761	171.56***	6.16***	0.226	4.58***	0.506
2013	108	1.34***	14.12***	0.637	95.28***	6.83***	0.321	8.28***	0.406
2014	108	0.77	3.67***	0.552	66.95***	3.49***	0.204	3.36***	0.551
2015	108	2.16***	0.06	0.272	21.07***	1.40***	0.028	0.22***	0.042
2016	108	3.56***	0.04***	0.346	29.24***	3.89***	0.336	0.31***	0.028
2017	108	5.11***	0.62***	0.226	16.64***	6.71***	0.178	0.95***	0.142
Pooled	108	-0,38***	5.16***	0.307	144.84***	0.23***	0.099	4.49***	0.284

Notes: *, **, *** is significant at 0.10, 0.05, and 0.01 levels, respectively (two-tailed)

Table 4. Changes in the value of Adj. Annual R^2 and Increase in R^2 for EPS and BVS.

Year	n	Model 1	Model 2	Model 3	Model 1 – Model 3	Model 1 – Model 2
		Adj. R^2	Adj. R^2	Adj. R^2	Incremental EPS	Incremental BVS
2012	108	0.761	0.226	0.506	0.255	0.535
2013	108	0.637	0.321	0.406	0.231	0.316
2014	108	0.552	0.204	0.551	0.001	0.348
2015	108	0.272	0.028	0.042	0.230	0.244
2016	108	0.346	0.336	0.028	0.318	0.010
2017	108	0.226	0.178	0.142	0.084	0.048
Pooled	108	0.307	0.099	0.284	0.023	0.208

Consistent with the results obtained for Model 1, the second and third columns of Table 3 show that the OLS regression and annual pooled regression for Models 2 and 3 also individually produce positive and highly significant coefficient estimates for EPS and BVS, even better for EPS in 2014 and BVS for 2015. Table 4 summarizes the adjusted R^2 for changes in the value relevance of EPS and BVS, from 2012 to 2017 and a summary of the adjusted R^2 for annual cross-section regression models 1 to 3. Consistent with Collins et al. [10], we also decompose the total adjusted R^2 into two parts: the incremental adjusted R^2 for EPS and the incremental adjusted R^2 for BVS. The trend of changes in the incremental adjusted R^2 for EPS and BVS is presented in Figure 1, which ultimately presents the adjusted R^2 incremental for EPS and BVS each year, both combined and individually, from 2012 to 2017.

Overall, figure 1 shows a decrease during the observation period, both for combined earnings and individual earning. These results are consistent with the literature on value relevance in markets in developed and developing countries [31] [18]. If examined further, this figure shows that the BVS value decreased individually with a better amount than the EPS value from 2012 to 2015, but in 2016 and 2017, the BVS value fell below the EPS value. Alfraih [31] gave special attention to the decrease in the value relevance of EPS and BVS for shareholders. However, he noted that the decline in the value relevance of EPS was sharper and more pronounced than for BVS. Lacking capital market confidence causes a decline. The confidence of market players will last until 2015, and the opposite condition starting occurred in 2016.

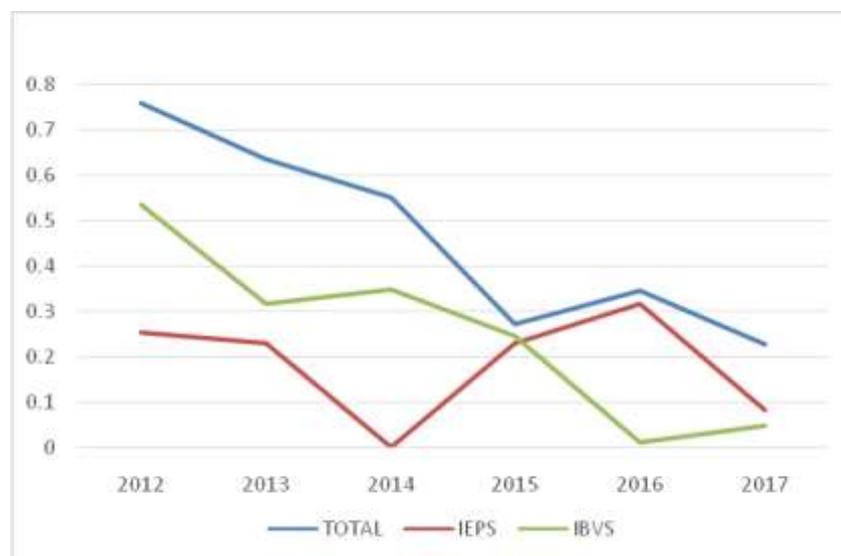


Figure 1. Adjusted R² Trend

The results of this study provide empirical evidence that BVS and EPS, both individually per year, are significant for the explanation of stock prices on the Indonesia Stock Exchange. However, if analyzed simultaneously, BVS is not significant in 2015, while EPS in 2014 is insignificant so that in both years, BVS and EPS cannot be used to explain stock prices. This shows that market players in the Indonesian stock exchange rely heavily on this information to make investment decisions. Although the EPS and BVS's value relevance decreased (except for increasing EPS in 2016), the decline in EPS was more profound and more prominent than BVS in the period before 2015, whereas in 2016 and 2017, the opposite thing occurred. The literature on financial markets shows investors in emerging markets functionally prioritize information about EPS higher than BVS information [34]. However, the findings of this study show slight differences, especially for the period before 2015. Variations in the observations of earnings and book value generated by companies listed on the Indonesia Stock Exchange tend to support the argument put forward by Barth [25], which states that BVS and EPS have different roles. Overall, the findings of this study do not differ from the literature on value relevance in developed and emerging markets [31] [32] [18].

Based on the above discussion, it can be seen that all the hypotheses in this study proved unresponsive. However, we are pretty sure that this is not a negative thing for several reasons. First, stock prices are also influenced by other factors that can exacerbate the association between EPS or BVS and share prices. Second, based on standard-setting regulations, Indonesian companies are allowed to choose to use fair value or historical cost value. This choice is believed to decrease the value relevance, especially when many companies adopt historical cost accounting.

4. Conclusion

This study examines the relevance of earnings value and book value in the company

using the Ohlson model. The results showed that all the formulated hypotheses were not supported because, based on the results of the adjusted R² trend test, the test results showed a decrease, both the combined results of EPS and BVS (model 1) and individual EPS and BVS (model 2 and model 3). There are limitations in this study so that it provides opportunities for further researchers if they want to continue research on the same topic. However, it is suggested that researchers consider the limitations contained in this study. First, this study only uses one industrial sector, namely the manufacturing industry, so the results of this study cannot be generalized to the non-manufacturing industrial sector. Therefore, further research can be carried out by adding other industrial sectors. Second, the relevant earnings and book values in a company can use proxies other than EPS and BVS in each company.

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