

BOARDS' CHARACTERISTICS, VOLUNTARY DISCLOSURE, AND ACCOUNTING INFORMATION VALUE RELEVANCE - INDONESIAN EVIDENCE

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ABSTRACT

This paper describes empirical evidence that investigates the effect of boards' characteristics and voluntary disclosure on the accounting information value relevance. Voluntary disclosure (VD) is measured by voluntary disclosure index, a measure which in line with some regulations in Indonesia, especially the Company Act No. 40 of 2007 about the limited corporation; board's characteristics are proxy by board's independence (BIN) and board's size (BSIZE), whereas value relevance is measured by the Ohlson Price Model. Using the 119 manufacturing firms listed in the Indonesian Stock Exchange (IDX) for the year of 2011 to 2017 as a sample, taken by purposive sampling technique, this study finds that the voluntary disclosure strengthens the value relevance of earnings number but decreases the value relevance of book value number. Moreover, board size strengthens the value relevance of earnings and book value. Finally, board independence strengthens the value relevance of earnings numbers and book value number. This study provides additional evidence about the influence of boards' characteristics and the effect of voluntary disclosure on the value relevance of accounting information with the evidence from Indonesia.

Keywords: Voluntary disclosure, board's size, board's characteristics, value relevance.

Paper ini menguraikan hasil penelitian yang menginvestigasi pengaruh pengungkapan karakteristik dewan komisaris dan pengungkapan sukarela terhadap relevansi nilai informasi akuntansi. Pengungkapan sukarela (VD) diukur menggunakan indeks pengungkapan, sesuai dengan regulasi yang berlaku di Indonesia, khususnya Undang-undang Perseroan Terbatas No. 40 tahun 2007 tentang perseroan terbatas; karakteristik dewan komisaris diproksi dengan independensi (BIN) dan ukuran (BSIZE), sedangkan relevansi nilai diukur dengan Model Harga Ohlson. Dengan menggunakan data perusahaan manufaktur yang terdaftar di Bursa Efek Indonesia (IDX) pada tahun 2011 sampai 2017 yang dipilih menggunakan teknik purposive sampling, penelitian ini menemukan bahwa pengungkapan sukarela memperkuat relevansi nilai laba namun menurunkan relevansi nilai untuk nilai buku. Selain itu, ukuran dewan komisaris memperkuat relevansi nilai laba dan nilai buku. Terakhir, independensi dewan komisaris juga memperkuat relevansi nilai laba dan nilai buku. Hasil penelitian ini melengkapi hasil penelitian sebelumnya tentang pengaruh karakteristik dewan komisaris dan pengungkapan sukarela terhadap relevansi nilai informasi dengan menggunakan data perusahaan di Indonesia.

Kata kunci: Pengungkapan sukarela, relevansi nilai, ukuran dewan komisaris, independensi dewan komisaris.

INTRODUCTION

This paper describes the result of empirical research investigated the effect of boards' characteristics and voluntary disclosure on the accounting information value relevance for public companies listed in Indonesia Stock Exchanges in the year 2011 to 2015. This research is motivated by previous research who solely focus on the effect of voluntary disclosure on the stock liquidation (Leuz & Verrecchia, 2000), the effect of voluntary disclosure on the cost of capital

(Botosan & Plumlee, 2002), or the examination of voluntary disclosure determinant (Wang & Claiborne, 2008). Moreover, other previous research shows a mixed result. Some report that the higher voluntary disclosure does not strengthen the correlation between current return and future return (Banghøj & Plenborg, 2008; Lundholm & Myes, 2002). Alfaraih & Alanezi (2011) find that that voluntary disclosure does not affect the earnings and book values value relevance, whereas Mashayekhi (2014) and

Mashayekhi, Faraji, & Tahriri (2013) report that for high-quality disclosure firms the disclosure qualities have less value relevance, while Ahmadi, Valipour, & Talebnia (2014) report that the increase in voluntary disclosure level leads to the increase of information content of the earnings and book values. Finally, Belgacem (2014) find that voluntary disclosure does not affect a firm's value.

We suspect that such inconsistency might be because of other variables that affect the accounting information value relevance. This condition, therefore, opens an opportunity for us to do further research about the effect of voluntary disclosure on the accounting information value relevance by involving one of the corporate governance (CG) mechanisms, which is board characteristics since we believe that the board characteristics are more related to information production activities.

Empirical research about value relevance was started since 1968 following publication by (Ball & Brown, 1968) who published a manuscript about accounting income. The research triggers further study about the use of accounting numbers by investors and also changes the next research direction by showing the existence of a correlation between stock price movement and information content of accounting reports. The next research about accounting information value relevance was performed by Francis & Schipper (1999) which proves that association exists between book value reported earnings and stock return. Alfaraih & Alanezi (2011) argue that the main requirement for the accounting information value relevance is the disclosure practice quality and degree. The good quality of information disclosure is needed to guarantee that the capital market and economies well function (Levitt, 1998).

Disclosure is also able to overcome the information asymmetry between principal and agent since asymmetry happens when the principal hides a part of accounting information (Krisniaji, Aryani, & Suhardjanto, 2016). Disclosure is also useful to provide more information, especially information about firm value. Alfaraih &

Alanezi (2011) argue that firm value information may prevent investors to undervalue the firm's stock price. Incentive power of preparer affects high-quality information disclosure (Juhmani, 2017). Verriest, Gaeremynck, & Thornton (2011) argue that firms that have a strong CG mechanism are likely to produce higher quality financial accounting reports. This research aims to fill the research gap by conducting research that investigates the effect of voluntary disclosure and board's characteristic, one of CG mechanism elements, on the accounting information value relevance in Indonesia. Therefore, we state our research question as follow:

RQ1. Do voluntary disclosure and board's characteristics increase the accounting information value relevance disclosed by Indonesian publicly-held firms?

This research has at least two contributions. First, it will enrich literature which is related to the effect of CG characteristics and information voluntary disclosure on the value relevance of accounting information. Second, it could be used by the rule maker's institution to increase voluntary disclosure potential and increase the quality of boards to enhance the information value relevance reported by Indonesian companies listed in Indonesia Stock Exchange.

This manuscript is presented as follows: Section 2 discusses literature review and hypothesis development whereas section 3 presents the research method. Section 4 discusses hypotheses testing and results of data analysis and finally, section 5 presents conclusions, research implications, research limitations, and further research opportunities.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

This research focuses on the value relevance of accounting information. Value relevance is the ability of accounting information to affect the value of the share (M. E. Barth, Beaver, & Landsman, 2001). This research uses agency theory because the extent of information disclosed in the financial statement is affected by the managerial incentive. Disclosing

information is one of the agency problems since it can create information asymmetry. To solve this problem, Jensen & Meckling (1976) suggest companies to fully disclose financial information. Moreover, previous researches also use signaling theory to explain manager incentive for disclosure. This theory explains how to reduce information asymmetry by disclosing more information to the market. Hughes (1986) stated that disclosure is an indication of the value of the firm. This disclosure is reliably valid because it can be confirmed in the future. Therefore, the disclosure can be used by managers to inform investors about the firm's value and to distinguish their firm from others.

Firms have motivations to voluntarily disclose certain information. Usually, they disclose additional information when they want to issue securities or plan to purchase other companies to affect investor's and external parties' opinions (Healy & Palepu, 1995). When the firm's stock has a lower value, a firm's managers are encouraged to disclose voluntary disclosures to correct the stock price (Verrecchia, 1990). Grossman (1981) stated that the main manager's motivation to disclose more information is to prevent investors to use information from other sources to undervalue the firm's stock price. This motivation is triggered by the fact that the asymmetry of information between agent and principal will happen if firms do not provide information completely (Petersen & T. Plenborg, 2006). Karğın (2013) states that value relevance is the information ability to condense a firm value. Accounting figure is valued relevance if they contain information which affects share price. The value relevance is determined by regressing market returns on accounting figures to discover whether the association between variables exist (Suadiye, 2012).

Value relevance had been studied from several perspectives. Miller & Modigliani (1966) perform the first research investigated equity value in the cost of capital, whereas Ball & Brown (1968) relate earnings to share prices, and Ohlson (1995) associates earnings to the firm's market value. Alali & Foote (2012) find a positive

correlation between cumulative returns and EPS (earnings per share), and a positive correlation between book value and share price, while Karğın (2013) reports an improvement in the accounting value relevance in the post-IFRS adoption period for the firm's book value but there is no improvement for earnings' value relevance. Previous research shows that firms obtain benefit from presenting additional information, which is decreasing asymmetry of information (Petersen & Plenborg, 2006), cost of capital reduction (Botosan & Plumlee, 2002), and increasing the market's ability to hold a more news about future earnings to affect present returns (Lundholm & Myers, 2002). Yet, there is a basic question about the effect of voluntary information level on the accounting information value relevance.

Investors recognize the CG's vital role in increasing the firm's value (Alkdai & Hanefah, 2012); thus they agree to pay more for firms with CG. De Jong, DeJong, Mertens, & Wasley (2005) find positive correlation between firm's value and CG, whereas Black, Jang, & Kim (2006) find that CG is an imperative aspect of explaining publicly owned firms' value.

Hypotheses Development

There is limited research investigated the association between additional disclosure and share prices. Research performed by Lang, & Miller (2003) found a positive effect of disclosure on the firm's value, but research performed by Alfaraih & Alanezi (2011) report that voluntary disclosure level does not affect the value relevance of earnings and book values. Similarly, Belgacem (2014) report that voluntary disclosure does not affect the value of the firm, whereas Banghøj & Plenborg (2008) report that voluntary disclosure does not affect the correlation between current and future return. Another research performed by Miller & Piotroski (2000) reports that additional disclosure enhances the correlation between the announcement-period stock returns and earnings information. Additionally, Lundholm & Myers (2002) report that additional disclosures provide investors more able to estimate the future perfor-

mance of the firm, therefore their current share returns indicate more information about future returns. Kothari (2000) states that market participants need qualified information to alleviate the information asymmetry between agent and principal. Barth, Landsman, & Lang (2008) stated that the high quality of accounting information leads to a decrease in earnings management, and increases the relevance of earnings and book value. Finally, Scaltrito (2016) report that the voluntary disclosure level positively affect the value relevance of Italian listed companies.

Based on the above description, we conclude that how voluntary disclosure affects the value relevance of accounting information is still needs to be further investigated. Therefore, we state the hypothesis as follows.

H1a: Voluntary disclosure positively affects earnings value relevance

H1b: Voluntary disclosure positively affects value relevance of book value

Board characteristics used in this research consists of board independence and board size. The big size of the board helps directs and advice about firm strategic choices and plays an important role to create the identity of corporate (Rahman & Ali., 2006). However, the big size of boards is also assumed to become ineffective and make it difficult for coordination, communication, and decision making (Alkdai & Hanefah, 2012). Previous research about the effect of governance is performed by Malik & Shah (2013). They report that that book value per share (BVPS), EPS, and CG quality affect the stock price significantly. They also find that the issuance of the code of CG affects positively value relevance of book value and earnings' value relevance. In terms of board size, Alkdai & Hanefah (2012) find no association between the larger proportion of independent directors and the informativeness of earnings. Bahri, Behnamoon, & Hosenzadeh (2013) reported that the board's size is not effective in increasing accounting information relevance. Yet, Alfraih & Alanezi (2015) report that the board increases the accounting information value relevance. Specifically, board size has an

association with the firm's value. Almari (2017) finds that the board size has an association with accounting information value relevance. Malik & Shah (2013) find that BVS, EPS, and CG quality affect the stock price whereas Ikram (2016) finds that CG has a significant effect on the accounting information value relevance in which board size has a positive impact on EPS. Based on this description, we state the hypothesis as follows.

H2a: Board size positively affects the value relevance of earnings.

H2b: Board size positively affects the value relevance of book value.

Boards' independence is depicted by the external board's members. Assigning the external board member is important in monitoring corporate management. OECD (2004) claims that board members with sufficient independence can affect board decision making. They may deliver some objective opinion in evaluating the board performance and management performance. Previous research reports the positive association between board independence and the monitoring effectiveness of financial statement preparation. This, in turn, enhances accounting information value relevance. Mungly, Babajee, Maraye, Seetah, & Ramdhany (2016) found a positive association between the net asset and EPS with stock prices. Holtz & Neto (2014) find that board independence characteristics affect positively equity value relevance. Abdoli & Royae (2012) find that the number of independent directors positively affects the informativeness of earnings. Based on the above description, we state the hypothesis as follows.

H3a: Board's independence positively affects the value relevance of earnings.

H3b: Board's independence positively affects the value relevance of book value.

RESEARCH METHOD

Sample selection

This research uses a sample of firms which are listed on the Indonesian Stock Exchange (IDX) for the year of 2011 to 2017. This research period is selected be-

cause in this period all relevant regulators such as the International Financial Reporting Standard (IFRS) and the Indonesian Corporate Governance Manual of 2014 had been implemented. This research uses a purposive sampling method to select the sample. Several criteria should be fulfilled to be included in the research sample. The first is that a company is a public company that is listed in IDX from 2011 to 2017. The second is that the companies are manufacturing firms. Manufacturing firms are selected because of their complex business activities which could represent all other industries. The third requirement is that the firms have data that can be publicly accessed. Data is obtained from three sources: (1) Indonesian Capital Market Directory (ICMD); (2) Indonesian Stock Exchange website (www.idx.co.id); and (3) firm's website. The unit analysis used in this research is firm-years. Based on the criteria, this research uses 119 firms so that the total observation is 833 firm-years.

Variable Definition and Measurement

This research uses a measure of voluntary disclosure (VD) which in line with some regulations in Indonesia, especially the Company Act No. 40 of 2007 about the limited corporation. Voluntary disclosure index (VDI) is an instrument that is valid and reliable to measure voluntary disclosure (T. Cooke, Omura, & Willett, 2009)(Cooke & Wallace, 1989). Reliable means that a similar result will be obtained with a similar instrument for a certain time (Marston & Shrivs, 1991). We also use the index to measure voluntary disclosure. Our index is designed by the following steps. First, we refer to the index used by Alfaraih & Alanezi (2011). Second, we identify and remove from the list items which mandatorily should be disclosed based on the company's act of 2007. The result is a final index which consists of 51 items. Consistent with such previous research, our index consists of eight groups which view that all disclosure elements are important for financial reports users. Therefore, each item is stated to 1 if such information is disclosed and 0 otherwise. Finally, all scores are summarized and divided by the maximum scores

if all items are disclosed.

This research uses the Ohlson price model to assess value relevance. This model is used for testing an association between stock price (market value) and book value (Ohlson, 1995). This model connects market value with the reported earnings and book value. Abnormal earnings are proxy by the current year's earnings and the present value of expected future normal earnings is proxy by the book value. The price model denotes that the firm's share price is affected by earnings, book values, and other value-relevant information. The relationship between stock price and earnings and book value is used as the main figure for measuring value relevance of accounting numbers. If accounting numbers have value relevance, then there will be a relationship between stock price with earnings and book value. Additionally, the coefficient of earnings and the coefficient of book value will statistically significant. The relationship is measured by R^2 (the explanatory power) of the regression model. The model is as follows:

$$P_{it} = \alpha_{it} + \beta_1 \text{EPS}_{it} + \beta_2 \text{BVS}_{it} + \varepsilon_{it} \quad (1)$$

Where:

P_{it} = Stock (share) price firm i at year t , three months after the fiscal year-end of time t

EPS_{it} = Earnings per share of firm i at year t

BVS_{it} = Book value per share of firm i at year t

ε_{it} = error term

Other independent variables are board's independence (BIN) which is measured by the percentage of non-executive (external) director on the board and board size (BSIZE) which is measured by the number of boards member in a company. Previous research find that some factors affect earnings value relevance and value relevance of book value, including earnings sign (Collins, Pincus, & Xie, 1999) and size of the firm (Babalyan, 2005). Consequently, the price model includes profitability and the firm's size as the control variables in

testing the hypothesis. Profitability is a dummy variable, which equals 1 if the firm achieves negative earnings and 0 otherwise and it proxy by Loss. The firm's size is proxy by size which is measured by the natural logarithm of total assets.

To test hypotheses 1a and 1b, the VD is included in the model to detect its effect on the value relevance of earnings and book value. Similar ways are also performed for board characteristics to test hypotheses 2a and 2b (board size) and hypotheses 3a and 3b (board independence). The variable of interest for testing such a hypothesis is the interaction between accounting construct and voluntary disclosure construct (for H1a and H1b) and the interaction between accounting construct and board characteristic (H2a, H2b, H3a, and H3b).

Model Specification

To test hypotheses, model (1) is extended by involving variables of voluntary disclosure, board independence, the board size, and control variables. Model 2a is used to test hypothesis H1a and H1b, model 2b is used to test H2a and H2b, and Model 2c is used to test H3a and H3b, whereas model 2d is used to confirm the result of all hypotheses testing. All models are as follows.

$$P_{it} = \alpha + \beta_1EPS_{it} + \beta_2BVS_{it} + \beta_3VD_{it} + \beta_4EPS_{it} * VD_{it} + \beta_5BVS_{it} * VD_{it} + \beta_6LOSS_{it} * EPS_{it} + \beta_7SIZE_{it} + \epsilon_{it} \quad (2a)$$

$$P_{it} = \alpha + \beta_1EPS_{it} + \beta_2BVS_{it} + \beta_3BSIZE_{it} + \beta_4EPS_{it} * BSIZE_{it} + \beta_5BVS_{it} * BSIZE_{it} + \beta_6LOSS_{it} * EPS_{it} + \beta_7SIZE_{it} + \epsilon_{it} \quad (2b)$$

$$P_{it} = \alpha + \beta_1EPS_{it} + \beta_2BVS_{it} + \beta_3BIN_{it} + \beta_4EPS_{it} * BIN_{it} + \beta_5BVS_{it} * BIN_{it} + \beta_6LOSS_{it} * EPS_{it} + \beta_7SIZE_{it} + \epsilon_{it} \quad (2c)$$

$$P_{it} = \alpha + \beta_1EPS_{it} + \beta_2BVS_{it} + \beta_3VD_{it} + \beta_4BIN_{it} + \beta_5BSIZE_{it} + \beta_6EPS_{it} * VD_{it} + \beta_7BVS_{it} * VD_{it} + \beta_8EPS_{it} * BIN_{it} + \beta_9EPS_{it} * BSIZE_{it} + \beta_{10}BVS_{it} * BIN_{it} + \beta_{11}BVS_{it} * BSIZE_{it} + \beta_{12}LOSS_{it} * EPS_{it} + \beta_{13}SIZE_{it} + \epsilon_{it} \quad (2d)$$

Where:

P_{it} = stock price per share for firm i at time t , three months after the fiscal year-end of time t

EPS_{it} = earnings per share of firm i at time t

BVS_{it} = Book value per share of firm i at year t

VD_{it} = the voluntary-disclosure score of firm i at time t

BIN_{it} = board independence of firm i at time t

$BSIZE_{it}$ = board size of firm i at time t

$LOSS_{it}$ = dummy variable that equals 1 if the firm achieves negative earnings and 0 otherwise

$SIZE_{it}$ = the natural logarithm of total assets of firm i at time t

ϵ_{it} = error term.

RESULT AND DISCUSSION

Univariate Analysis

This section discusses the descriptive statistic for VDI exclusively and descriptive statistics for all variables. Table 1 present the descriptive statistic for VDI. Panel A, in Table 1 shows that the mean of voluntary disclosure for firms listed in the IDX at the period of 2011 to 2017 is 48.2% and has a range between 0% and 78%. The mean is larger than that of previous research performed by Hossain and Hammami in Qatar (2009) of 37%, and Alfaraih and Alanezi in Kuwait (2011) of 22%. Although each country adopts different measures of disclosure index based on its regulation, this becomes one of the indicators that Indonesian firms are better than the others in terms of giving additional information to interest parties. Panel B presents the frequency distribution of voluntary disclosure index scores for 119 selected firms sample for five years or 833 observations. The statistic shows that 51 observations (6,1%) have a score of 0.000 - 0.166 from total voluntary disclosure index, 103 observation (12,4%) have a score of 0.167 - 0.333, 156 observations (18,7%) have a score of 0.445 - 0.555, 253 (30,4%) observations have a score of 0.445 - 0.555, 178 (21,4%) observation have a score of 0.556 - 0.667, and only 92 observation (11,1%) have a score of 0.667 - 0.778.

Table 2 which presents descriptive statistics for all variables shows that all variables used in this research have logic variation. Table 2 reports that the mean (median) of stock price per share for the period of 2011 to 2017 is 4.566,92 (780,00). EPS has mean (median) value of 671,23 (42,39) and BVS has mean (median) value of 4.899,56 (322,72). Table 2 also shows that Size varied significantly in the range between 1,70 and 11,56 with a mean (median) value of 6,79 (6,46). Meanwhile, board independence (BIN) and board size (BSIZE) has mean (median) value of 0,99 (1,00) and 4,21 (4,00) in the range between 0,00 (4,57) and 2,00 (12,00) respectively.

Bivariate Analysis

Table 3 presents the correlation matrix between independent variables which is analyzed using Pearson correlation. Table 3 shows no correlation coefficient above 0.8.

This indicates that there is no multicollinearity. The correlation coefficient between EPS and stock price (P) is significantly positive at the level of 1%. A similar coefficient is also presented for the correlation between BVS and P, between VD and P, between BIN and P, between BSIZE and P, and between Size and P. These results show an early indication that voluntary disclosure and board characteristics increase value relevance of earnings and book value. The more comprehensive testing is performed by using regression analysis in the next section.

Multivariate Analysis

The result of regression analysis is presented in Table 4. We use four models. Model 2a is used to test hypotheses 1a and hypothesis 1b, model 2b is used to test hypotheses 2a and hypothesis 2b, model 2c is used to test hypothesis 3a and hypothesis

Table 1.
Descriptive Statistic for Voluntary Disclosure Index

Panel A: Descriptive Statistic						
Variable	N	Mean	Median	Std.Dev.	Minimum	Maximum
VD	833	0,482	0,50	0,157	0,000	0,78
Panel B: Frequency Distribution						
Range	Observations	Percentage		Cumulative Percentage		
0,000 - 0,166	51	6,10		6,10		
0,167 - 0,333	103	12,40		18,40		
0,334 - 0,444	156	18,70		37,10		
0,445 - 0,555	253	30,40		67,50		
0,556 - 0,667	178	21,40		88,90		
0,667 - 0,778	92	11,10		100,00		
Total	833	100,00				

Table 2.
Descriptive Statistics

	Mean	Median	Std.Dev.	Min.	Max.
P	4.566,93	780,00	11.210,02	50,00	118.300,00
EPS	671,23	42,39	3.792,81	(17.350.40)	55,576.08
BVS	4.899,56	322,70	87.116,04	(12,182.44)	2,511,315.28
BIN	0.99	1.00	1.11	0.00	4.57
BSIZE	4.21	4.00	1.79	2.00	12.00
SIZE	6,79	6,46	1,24	1,70	11,56

3b, and model 2d is used to conduct robustness test. The result shows that all model used in this research is significant ($p < 0.01$) and explains about 65%, 67%, 69%, and 70% of the relationship between dependent variables and independent variables for model 2a, 2b, 2c, and 2d respectively.

To test hypotheses 1a and 1b, the model used is model 2a with the variable of interest are the interaction between EPS and VD (EPS*VD) and BVS and VD (BVS*VD). The result shows that the coefficient of EPS*VD is positive (46.159) and significant at the level of 1%, whereas the coefficient of BVS*VD is significantly negative (-8.339) at the level of 1%. This result shows that voluntary disclosure strengthens the earnings value relevance but lessens the value relevance of book value. Therefore hypothesis 1a which stated that voluntary disclosure positively affects value relevance of reported earnings is supported and confirmed by empirical data, whereas hypothesis 1b which stated that voluntary disclosure positively affects value relevance of reported book value is rejected and is not supported by empirical data. The test result of hypothesis 1a confirms previous research performed by Barth et al. (2008) who find that high quality of accounting information leads to more relevance earnings; Lang et al. (2003) who find that there is a positive relationship between disclosure and firm value, and Miller & Piotroski (2000) who report that additional disclosure such as forward-looking statements enhances the correlation between the announcement-period stock returns and earnings information in the next quarter. Signaling theory explains that information asymmetry can be reduced by disclosing

more information to the market and Hughes (1986) stated that disclosure is an indication of the value of the firm. Therefore, the test result of hypothesis 1a also confirms such a theory. The test result of hypothesis 1b does not confirm any previous research. A rational explanation for the hypothesis 1b testing is that many investors are unable to use such extra information for their interest, especially to value the firms. This also happens in other emerging markets.

To test hypotheses 2a and 2b, the model used is model 2b with the variable of interest are the interaction between EPS and BSIZE (EPS*BSIZE) and the interaction between BVS and BSIZE (BVS*BSIZE). The result shows that the coefficient of EPS*BSIZE is positive (1.859) and significant at the level of 1%, whereas the coefficient of BVS*BSIZE is significantly positive (0.156) at the level of 1%. This result directs that board size strengthens the earnings value relevance and the value relevance of book value. Therefore hypothesis 2a and hypothesis 2b are supported and confirmed by empirical data. This result represents previous research performed by Malik & Shah (2013); Alfraih, Alanezi, & Alanzi (2015), and Ikram (2016) who report that CG system increases the value relevance of accounting numbers.

To test hypotheses 3a and 3b, the model used is model 2c with the variable of interest are the interaction between EPS and BIN (EPS*BIN) and BVS and BIN (BVS*BIN). The result shows that the coefficient of EPS*BIN is positive (3.155) and significant at the level of 1%, whereas the coefficient of BVS*BIN is significantly positive (0.187) at the level of 1%. This result specifies that board independence strengthens

Table 3.
Pearson Correlation

	P_{it}	EPS_{it}	BVS_{it}	VD_{it}	BIN_{it}	$BSIZE_{it}$
EPS_{it}	.267**					
BVS_{it}	.236**	.398**				
VD_{it}	.086**	.133**	.054			
BIN_{it}	.169**	.236**	.063	.085*		
$BSIZE_{it}$	.173**	.201**	.093*	.354**	.356*	
$SIZE_{it}$	.276**	.089**	.270**	.270**	.414**	.089*

** , * Correlation is significant at the 0.01 level and 0.05 level respectively (2-tailed).

Table 4.
Regression Analysis

Panel B. Regression result for Model 2a and Model 2b

$$P_{it} = \alpha + \beta_1 \text{EPS}_{it} + \beta_2 \text{BVS}_{it} + \beta_3 \text{VD}_{it} + \beta_4 \text{EPS}_{it} * \text{VD}_{it} + \beta_5 \text{BVS}_{it} * \text{VD}_{it} + \beta_6 \text{LOSS}_{it} * \text{EPS}_{it} + \beta_7 \text{SIZE}_{it} + \varepsilon_{it} \quad (2a)$$

$$P_{it} = \alpha + \beta_1 \text{EPS}_{it} + \beta_2 \text{BVS}_{it} + \beta_3 \text{BSIZE}_{it} + \beta_4 \text{EPS}_{it} * \text{BSIZE}_{it} + \beta_5 \text{BVS}_{it} * \text{BSIZE}_{it} + \beta_6 \text{LOSS}_{it} * \text{EPS}_{it} + \beta_7 \text{SIZE}_{it} + \varepsilon_{it} \quad (2b)$$

Variables	Model 2a			Model 2b		
	Coefficient		t-Statistic	Coefficient		t-Statistic
Intercept	-4512.998	***	-15.924	-4355.46	***	-15.750
EPS	1.736	***	3.520	1.106	***	2.793
BVS	-0.035		-0.466	-0.274	***	-4.544
VD	2640.71	***	6.094			
BIN						
BSIZE				-227.440	***	-5.543
EPS*VD	2.158	***	2.690			
EPS*BIN						
EPS*BSIZE				1.859	***	5.586
BVS*VD	-0.067	***	-0.446			
BVS*BIN						
BVS*BSIZE				0.156	***	4.681
LOSSSEPS	-2.263	***	-6.415	-7.499	***	-8.732
SIZE	764.721		11.069	270.326	***	4.161
Adj. R ²	0.291			0.674		
F-statistic	49.731	***		176.884	***	

Panel B. Regression result for Model 2c and Model 2d

$$P_{it} = \alpha + \beta_1 \text{EPS}_{it} + \beta_2 \text{BVS}_{it} + \beta_3 \text{BIN}_{it} + \beta_4 \text{EPS}_{it} * \text{BIN}_{it} + \beta_5 \text{BVS}_{it} * \text{BIN}_{it} + \beta_6 \text{LOSS}_{it} * \text{EPS}_{it} + \beta_7 \text{SIZE}_{it} + \varepsilon_{it} \quad (2c)$$

$$P_{it} = \alpha + \beta_1 \text{EPS}_{it} + \beta_2 \text{BVS}_{it} + \beta_3 \text{VD}_{it} + \beta_4 \text{BIN}_{it} + \beta_5 \text{BSIZE}_{it} + \beta_6 \text{EPS}_{it} * \text{VD}_{it} + \beta_7 \text{BVS}_{it} * \text{VD}_{it} + \beta_8 \text{EPS}_{it} * \text{BIN}_{it} + \beta_9 \text{EPS}_{it} * \text{BSIZE}_{it} + \beta_{10} \text{BVS}_{it} * \text{BIN}_{it} + \beta_{11} \text{BVS}_{it} * \text{BSIZE}_{it} + \beta_{12} \text{LOSS}_{it} * \text{EPS}_{it} + \beta_{13} \text{SIZE}_{it} + \varepsilon_{it} \quad (2d)$$

Variables	Model 2c			Model 2d		
	Coefficient		t-Statistic	Coefficient		t-Statistic
Intercept	-3181.082	***	-12.758	-3209.540	***	-14.079
EPS	3.485	***	10.069	4.597	***	5.981
BVS	-0.014	***	-9.171	0.672	***	3.368
VD				1489.421	***	7.814
BIN	497.376		88.232	498.838	***	6.603
BSIZE				89.425	***	3.852
EPS*VD				6.131	***	5.979
EPS*BIN	0.809	***	7.664	1.533	**	7.966
EPS*BSIZE				0.691	***	5.834
BVS*VD				-0.506	***	-5.239
BVS*BIN	0.037	***	0.678	0.153	**	2.178
BVS*BSIZE				-0.021	**	-0.833
LOSSSEPS	-4.274	***	-7.861	-4.132	***	-8.565
SIZE	609.598	***	10.928	416.596	***	4.746
Adj. R ²	0.456			0.498		
F-statistic	100.334	***		64.607	***	

***, **, * : coefficient is significant at 0.01 level, 0.05 level, and 0.10 level respectively

the book value and earnings value relevance. Therefore, hypothesis 3a and hypothesis 3b are supported and confirmed by empirical data. This result is in line with OECD (2004) which claims that board members with sufficient independence can affect board decision making. They may deliver some objective opinion in evaluating the board performance and management performance. Additionally, this research confirms previous research performed by Mungly et al. (2016) who finds a positive association between net asset and earnings per share with stock prices, Holtz & Neto (2014) who find that board independence characteristics affect positively equity value relevance, Abdoli & Royae (2012) who find that the number of independent directors positively affects informativeness of earnings.

To confirm the initial results, we also perform additional analysis by including all of the variables into one regression in model 3d. The result is presented in Model 2d, Panel B, in Table 4. Column Model 2d shows that the result is mixed. Four coefficients show consistency with that of the initial result, which are EPS*VD, EPS*BIN, EPS*BSIZE, and BVS*BIN, whereas two coefficients show inconsistency, which is BVS*VD which shows insignificant and BVS*BSIZE which shows a negative sign. We estimate that the inconsistency of two coefficients simply because BVS value relevance is less than earnings value relevance.

CONCLUSION

This research investigates the effect of board characteristic and voluntary disclosure on the accounting information value relevance. The result shows that five out of six hypotheses are received and supported by empirical data, whereas one hypothesis is rejected. The only rejected hypothesis is hypothesis 1b which stated that voluntary disclosure positively affects the value relevance of reported book value. The five hypotheses, H1a, H2a, H2b, H3a, and H3b are accepted. H1a is related to voluntary disclosure, whereas the others are related to board characteristics.

This research has two limitations so that it opens an opportunity for further

research in the future. First, this research uses five years of data. If this period is related to board characteristic, board characteristic tends to unchanged for five years. If this period is connected to voluntary disclosure index, then this period is assumed to be too short period since the effect of a policy on the accounting information value relevance is not expected to happen in a short period, especially in the emerging market. This result implies that investors do not respond to the new information rapidly for investment decision making. Therefore, further research can be conducted involving longer period data. Second, this research uses market-based relevance measures. This kind of measure indeed more realistically, but this measure is also affected by the investment decision made by the market participant. The varied level of competence and knowledge owned by market participants may produce the inconsistent and out of prediction result. Therefore, future research can be performed by using the accounting-based measure, which tends to be more neutral and is not affected by market participant investment decisions. The implication of such a situation tends to affect the practical aspect which helps the market participants to make their investment decision.

REFERENCES

- Abdoli, M. R., & Royae, R. (2012). Board monitoring and earnings quality: An empirical study in Iran. *African Journal of Business Management*, 6(11), 4179-4184. <https://doi.org/10.5897/ajbm11.2363>
- Ahmadi, R., Valipour, H., & Talebnia, G. (2014). A study on the impact of voluntary disclosure level on value relevance of accounting information of firms listed in Tehran Stock Exchange (TSE). *Academic Journal of Accounting and Economics Researches*, 3(1), 71-79.
- Alali, F. A., & Foote, P. S. (2012). The Value Relevance of International Financial Reporting Standards: Empirical Evidence in an Emerging Market. *International Journal of Accounting*, 47(1), 85-108. <https://doi.org/10.1016/j.intacc.2011.12.005>
- Alfaraih, M. M., & Alanezi, F. S. (2011). Does voluntary disclosure level affect the

- value relevance of accounting information? *Accounting & Taxation*, 3(2), 65-84.
- Alfraih, M., & Alanezi, F. (2015). The Value Relevance of Mandatory Corporate Disclosures: Evidence from Kuwait. *International Journal of Business and Financial Research*, 9(3), 1-18.
- Alfraih, M. M., Alanezi, F. S., & Alanzi, K. A. (2015). Do the characteristics of the board of directors affect the value relevance of accounting information? *International Journal of Accounting and Finance*, 5(2), 172. <https://doi.org/10.1504/ijaf.2015.071843>
- Almari, M. odeh salem. (2017). The Impact of Corporate Governance Mechanisms on Value Relevance of Accounting Information: Evidence from Jordanian. *Research Journal of Finance and Accounting*, 8(17), 60-66.
- Babalyan, L. (2005). Association Between Accounting Earnings and Stock Returns as a Measure of Value Relevance of Accounting Standards: Empirical Evidence from the Swiss Market. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.301923>
- Bahri, S. J., Y, B., & GH, H. (2013). Board of directors characteristics and value relevance of accounting information in Tehran stock exchange (TSE). *Journal Of Accounting Knowledge and Management Auditing*, 2(6), 51-63.
- Ball, R., & Brown., P. (1968). An empirical evaluation of accounting income numbers. *Journal of Accounting Research*, 6(Autum), 169-178.
- Banghøj, J., & Plenborg, T. (2008). Value relevance of voluntary disclosure in the annual report. *Accounting and Finance*, 48(2), 159-180. <https://doi.org/10.1111/j.1467-629X.2007.00240.x>
- Barth, M. E., Beaver, W. H., & Landsman, W. R. (2001). The relevance of value relevance literature for financial accounting standard setting: another view. *Journal of Accounting and Economics*, 31, 77-104.
- Barth, M., Landsman, W., & Lang., M. (2008). International Accounting Standards and accounting quality. *Journal of Accounting Research*, 46 (3), 467-498. *Journal of Accounting Research*, 46(3), 467-498.
- Belgacem. (2014). The Value Relevance of Voluntary Disclosure: Evidence from Tunisia Stock Market. *International Journal of Management, Accounting and Economics*, 1(5), 353-370. Retrieved from http://www.ijmae.com/files/accepted/97_final.pdf
- Black, B., Jang, H., & Kim, W. (2006). Does corporate governance affect Firms' market values? Evidence from Korea. *Journal of Law Economics and Organization*, 22(2), 366-413.
- Botosan, C. A., & Plumlee, M. A. (2002). A re-examination of disclosure level and the expected cost of equity capital. *Journal of Accounting Research*, Vol. 40, pp. 21-40. <https://doi.org/10.1111/1475-679X.00037>
- Collins, D. W., Pincus, M., & Xie, H. (1999). Equity valuation and negative earnings: The role of book value of equity. *Accounting Review*, 74(1), 29-61. <https://doi.org/10.2308/accr.1999.74.1.29>
- Cooke, T. E., & Wallace, R. S. O. (1989). Global Surveys of Corporate Disclosure Practices and Audit Firms: A Review Essay. *Accounting and Business Research*, 20(77), 47-57. <https://doi.org/10.1080/00014788.1989.9729394>
- Cooke, T., Omura, T., & Willett, R. (2009). Consistency, value relevance and sufficiency of book for market values in five Japanese conglomerates over the period 1950-2004. *Abacus*, 45(1), 88-123. <https://doi.org/10.1111/j.1467-6281.2009.00279.x>
- De Jong, A., DeJong, D. V., Mertens, G., & Wasley, C. E. (2005). The role of self-regulation in corporate governance: Evidence and implications from The Netherlands. *Journal of Corporate Finance*, 11(3), 473-503. <https://doi.org/10.1016/j.jcorpfin.2004.01.002>
- Francis, J., & Schipper., K. (1999). Have financial statements lost their relevance? *Journal of Accounting Research*, 37(2), 319-352.
- Grossman, S. J. (1981). The Informational Role of Warranties and Private Disclosure about Product Quality. *The Journal of Law and Economics*, 24(3), 461-483. <https://doi.org/10.1086/466995>
- Healy, P. M., & Palepu, K. G. (1995). The challenges of investor communication The case of CUC International, Inc. *Journal of Financial Economics*, 38(2), 111-140. [https://doi.org/10.1016/0304-405X\(94\)00814-H](https://doi.org/10.1016/0304-405X(94)00814-H)
- Holtz, L., & Sarlo Neto, A. (2014). Effects of Board of Directors' Characteristics on the Quality of Accounting Information in Brazil. *Revista Contabilidade & Fi-*

- nanças*, 25(66), 255-266. <https://doi.org/10.1590/1808-057x201412010>
- Hossain, M., & Hammami, H. (2009). Voluntary disclosure in the annual reports of an emerging country: The case of Qatar. *Advances in Accounting*, 25(2), 255-265. <https://doi.org/10.1016/j.adiac.2009.08.002>
- Hughes, P. J. (1986). Signalling by direct disclosure under asymmetric information. *Journal of Accounting and Economics*, 8(2), 119-142. [https://doi.org/10.1016/0165-4101\(86\)90014-5](https://doi.org/10.1016/0165-4101(86)90014-5)
- Hussain Alkdai, H. K., & Hanefah, M. M. (2012). Audit committee characteristics and earnings management in Malaysian Shariah-compliant companies. *Business & Management Review*, 2(2), 52-61. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=78392157&site=ehost-live&scope=site>
- Ikram, Z. (2016). *Corporate governance and value relevance of accounting information: Evidence from Pakistan*. Capital University of Science And Technology.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics*, 3(4), 305-360.
- Juhmani, O. (2017). Corporate governance and the level of Bahraini corporate compliance with IFRS disclosure. *Journal of Applied Accounting Research*, 18(1), 22-41.
- Karğın, S. (2013). The impact of IFRS on the value relevance of accounting information: Evidence from Turkish firms. *International Journal of Economics and Finance*, 5(4), 71-80.
- Kothari, S. P. (2000). The role of financial reporting in reducing financial risks in the market. *Discussion. Federal Reserve Bank of Boston.*, 89-112.
- Krismiaji, Aryani, Y. A., & Suhardjanto, D. (2016). International Financial Reporting Standards, board governance, and accounting quality. *Asian Review of Accounting*, 24(4), 474-497. <https://doi.org/10.1108/ara-06-2014-0064>
- Lang, M. H., V, L. K., & Miller, D. (2003). ADRs, analysts, and accuracy: Does cross listing in the U.S. improve a firm's information environment and increase market value? *Journal of Accounting Research*, 41(2), 317-345.
- Leuz, C., & Verrecchia, R. (2000). The economic consequences of increased disclosure. *Journal of Accounting Research*, 38, 91-124.
- Levitt, A. (1998). The importance of high-quality accounting standards. *Accounting Horizons*, 12(1), 79-82.
- Lundholm, R., & Myers, L. (2002). Bringing the future forward: The effect of disclosure on the returns-earnings relation. *Lundholm, R. and L. Myers. 2002. Bringing the Future Forward: The Effect of Disclosure on the Returns-Earnings Relation. Journal of Accounting Research*, 40(3), 809-839.
- Malik, M. F., & Shah, S. M. (2013). Value relevance of firm-specific corporate governance and macroeconomic variables: Evidence from Karachi Stock Exchange. Pakistan. *Pakistan Journal of Commerce and Social Sciences*, 7(2), 276-297.
- Marston, C. L., & Shrivess, P. J. (1991). The use of disclosure indices in accounting research: A review article. *British Accounting Review*, 23(23), 195-210.
- Mashayekhi, B. (2014). Accounting Disclosure, Value Relevance and Firm Life Cycle: Evidence from Iran. *International Journal of Economic Behavior and Organization*, 1(6), 69. <https://doi.org/10.11648/j.ijebo.20130106.13>
- Mashayekhi, B., Faraji, O., & Tahrii, A. (2013). Accounting Disclosure, Value Relevance, and Firm Life Cycle: Evidence from Iran. *International Journal of Economic Behavior and Organization*, 1(6), 69-77.
- Miller, G. S., & Piotroski, J. D. (2000). *The role of disclosure for high book-to-market firms*. Working paper (Harvard Business School, Boston, MA).
- Miller, M. H., & Modigliani, F. (1966). Some estimates of the cost of capital to the electric utility industry, 1954-57. *The American Economic Review*, 56(3), 333-391.
- Mungly, Y., Babajee, R. B., Maraye, N. P., Seetah, K., & Ramdhany, N. G. (2016). *A Study on Corporate Governance and Value Relevance of Accounting Information: Evidence from Listed Companies in*. Proceedings of the Fifth Asia-Pacific Conference on Global Business, Economics, Finance and Social Sciences (AP16Mauritius Conference) Port Louis, Mauritius. 1-12
- OECD. (2004). *OECD Principles of Corporate Governance*. OECD Publications Ser-

- vice, Paris, France.
- Ohlson, J. A. (1995). Earnings, book values, and dividends in equity valuation. *Contemporary Accounting Research*, 11(2), 661-687.
- Petersen, C., & T. Plenborg. (2006). Voluntary disclosure and information asymmetry in Denmark. *Journal of International Accounting Auditing & Taxation*, 15(2), 127-149.
- Rahman, R., & Ali., F. (2006). Board, audit committee, culture and earnings management, Malaysian evidence. *Managerial Auditing Journal*, 21(7), 783-804.
- Scaltrito, D. (2016). *Is voluntary disclosure value relevant? evidence from italian listed companies*. 10(2), 17-30.
- Suadiye, G. (2012). Value relevance of book value & earnings under the local GAAP and IFRS: Evidence from Turkey. *Ege Akademik Review*, 12(3), 301-310.
- Verrecchia, R. (1990). Endogenous proprietary costs through firm interdependence. *Journal of Accounting and Economics*, 12, 245-250.
- Verriest, A., Gaeremynck, A., & Thornton., D. (2011). The impact of corporate governance on IFRS adoption choices. *European Accounting Review*, 22(1), 39-77.
- Wang, K., S., O., & Claiborne, M. C. (2008). Determinants and consequences of voluntary disclosure in an emerging market: Evidence from China. *Journal of International Accounting, Auditing, and Taxation*, 17(1), 14-30.