



The Mediating Effect of Sustainability Disclosure on the Relationship between Financial Performance and Firm Value

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Jel Classification

Q56.

Abstract

The purpose of the study is to examine the effect of financial performance on sustainability disclosure and then to examine the effect of sustainability disclosure on firm value. Sustainability disclosure is treated as a mediating variable, therefore an investigation of the indirect effect of financial performance on firm value is required to accomplish the mediating effect. It is predicted that lower leverage and higher firm size, higher liquidity, as well as higher profitability will motivate companies' management to convey more their sustainability disclosure. This action should increase firm value. The sample used in this study is companies listed on the Jakarta Islamic Index (JII) for the period 2013 - 2015. The study uses path analysis to examine the hypothesis.

The results present that higher liquidity emboldens management to convey more sustainability disclosure. Higher sustainability disclosure increase firm value significantly. However, the effect of leverage, profitability, and firm size is not significant. Regarding the indirect effect of financial performance on firm value, the results show that leverage and profitability have a positively indirect effect on firm value. However, size and liquidity have no indirect effect on firm value. This means that the increase of leverage and profitability will encourage management to publish more sustainability disclosure and it will increase firm value of companies listed on the Jakarta Islamic Index.

Introduction

The Jakarta Islamic Index (JII) is a stock market index on the Indonesia Stock Exchange, which aims to provide guidance for investors who wish to invest in shares in accordance with Islamic Sharia. Since JII was established on July 3, 2000, JII has progressed rapidly. At the end of the fourth quarter of 2015, sharia shares listed on the JII have controlled 35.65% of the total stock market capitalization listed on the stock exchange. Every year, the market capitalization of sharia stocks keeps increasing, although the value tends to fluctuate year to year. The development of JII over the past year is shown in Figure 1.1 and the development of market capitalization of sharia stocks in JII is shown in Figure 1.2 below.

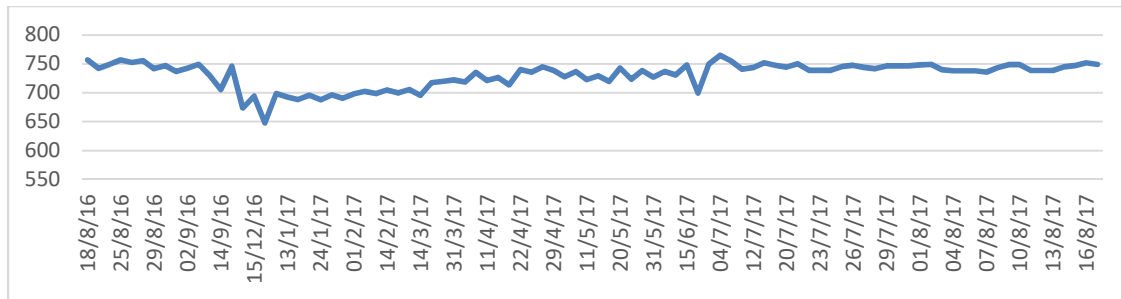


Figure 1.1. Jakarta Islamic Index from August 2016 until August 2017

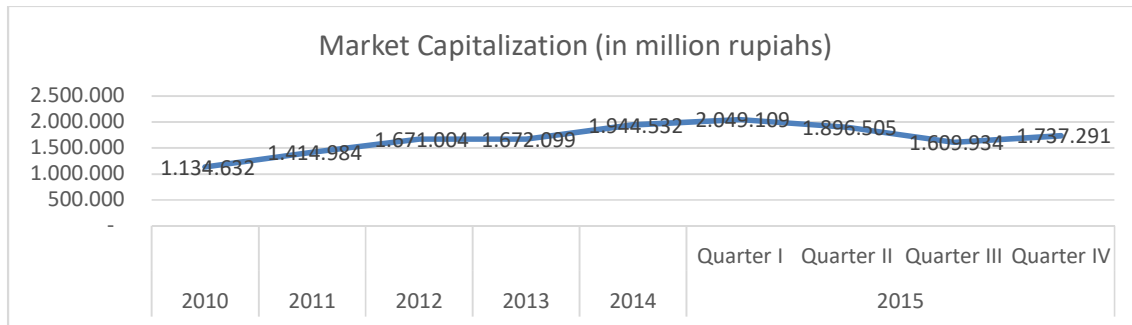


Figure 1.2. Market Capitalization of Shariah Stock of Jakarta Islamic Index

Resource: Report of Otoritas Jasa Keuangan Indonesia.

The increase in market index and market capitalization of sharia stocks shows an increase in corporate value. The condition indicates that investors' interest in sharia stocks is getting higher. To attract investor concern, the company discloses financial and non-financial information about company's prospects and future corporate performance.

Sustainability disclosure is one of the information that can influence investors' decision to buy the company's shares (Fazzini and Maso, 2016; Saka and Oshika, 2014). It is indicated by a variation of companies' stock prices when the companies publish their sustainability disclosure (Klerk et al., 2015; Klerk and Villiers, 2012).

The regulatory¹ and financial accounting standards² in Indonesia recommend public companies to disclose corporate sustainability. This disclosure is very crucial to describe the company's sustainability and to explain the company's concern for the social and environmental aspects. Companies that have run their business with the assumption of sustainability can be seen from the disclosure of the sustainability of the company. This sustainability disclosure consists of reports on social responsibility (Corporate Social Responsibility) and the environment. Sustainability disclosure is not the same as social responsibility reporting (CSR). The CSR report only focuses on social and environmental disclosure while the sustainability report which includes the concept of sustainable development covers a broader area of economic, social and environmental aspects (Hubbard, 2008).

Although there is a regulation requiring sustainability disclosure, not all companies listed on the stock exchange prepare the disclosure. This maybe because, there is no sanction for the companies which do not convey sustainability disclosure, or the company does not engage in activities related to corporate responsibility to the environment, or the company's commitment for the environment is low (Clarkson et al., 2007). Also, may be it is due to the fact that the company's financial performance is bad. Dienes et al. (2016) assert that firm size, profitability, capital structure, firm corporate governance structure, ownership structure, and firm age affect firms propensity to make sustainability disclosures or not. Better the indicators of financial performance lead the companies to convey sustainability disclosures (Weber, 2017).

¹ Law No. 40 of 2007 Article 66 Paragraph 2 regarding to Perseroan Terbatas.

² PSAK No. 1 Paragraph 31.

Theory and Hypothesis Development

Stakeholder Theory

I use Stakeholder Theory to explain the motivation of managers or organizations for sustainability disclosure. Stakeholder theory is motivated by organizational responsibility to stakeholders. This theory explains that the existence of an organization is strongly influenced by the support of groups and individuals who have relationships with the organization (Freeman, 1984). Stakeholders are groups and individuals who can influence or be influenced in the process of achieving the goals of an organization.

The sustainability reporting can be used as a tool by stakeholders to assess the extent of the company's role in addressing social and environmental issues. Firms that communicate their sustainability disclosure can also improve their corporate accountability and transparency. The sustainability reporting is the responsibility of the company not only to investors and owners but also to all stakeholders (Donaldson dan Preston, 1995; Laan, 2009).

Financial Performance and Sustainability Disclosure

Sustainability disclosure takes into account the balance between people, planet, and profit or the so-called Triple Bottom Line (TBL) concept (Hubbard, 2008), which shows a balance between economic (profit), environmental (planet), and social aspects (people). If these three aspects can be well executed, then the company can produce sustainability performance so that the company will continue to grow stably (Dainiene and Lina, 2015). If one of the three aspects is not met, it will be difficult for the company to keep growing. Preparing sustainability disclosure is one way to implement the Triple Bottom Line concept in a company. The sustainability disclosure reveals the information about the most important impact of an organization (whether positive or negative) on the environment, society, and economy.

There are seven determinants that drives management to convey their sustainability disclosure (Dienes et al., 2016). They are firm size, profitability, capital structure, media visibility, corporate governance structure, ownership structure, firm age. One indicator for firm size is total assets. The indicators for profitability are ROA, ROE, etc. The indicators for capital structure is book value of debt to book value of equity ratio (DER ratio) and book value of debt to total assets ratio (leverage). Firm size positively affects sustainability

disclosure (Wang, 2017; Kend, 2015; Shamil et al., 2014). Larger firms are more likely to publish their sustainability disclosure.

Research findings regarding the effect of leverage on sustainability disclosure are contrary. Drilling et al. (2010) as well as Ho and Taylor (2007) show that leverage negatively affects sustainability disclosure. However, Wang (2017) and Li et al. (2013) show that leverage positively impact the sustainability disclosure. From liquidity side, a company with higher liquidity ratio indicates a strong financial position. The company usually considers the certain level of liquidity as an indicator of their credibility. Consequently, as liquidity ratio matches with their expectation, the companies will publish the sustainability disclosure. From the profitability side, there is a positive relationship between profitability and sustainability disclosure. The more profitable the companies, the more they are able to finance their voluntary reporting (Dienes et al., 2017).

H_{1a}: Leverage negatively affects sustainability disclosure of companies listed in JII.

H_{1b}: Firm size positively affects sustainability disclosure of companies listed in JII.

H_{1c}: Liquidity positively affects sustainability disclosure of companies listed in JII.

H_{1d}: Profitability positively affects sustainability disclosure of companies listed in JII.

Sustainability Disclosure and Firm Value

The companies convey sustainability disclosure to the public in order to increase their firm value (Fazzini and Maso, 2016; Klerk et al., 2015; Saka and Oshika, 2014; Klerk and Villiers, 2012; Haggard et al., 2008). The research of Saka and Oshika (2014) show that environmental disclosure could increase the value of firms in Japan. Fazzini and Maso (2016) explain that the disclosure of the environment is an information that has value relevance and positively significant affects the value of companies in Italy. In Indonesia, the findings related to the effect of sustainability disclosure on firm value is mostly carried out in manufacturing and mining companies listed on the BEI.

Burhan and Rahmanti (2012) conduct a study on all companies, except financial companies listed on the BEI during the period 2006-2009. During the observation period, only 32 companies convey sustainability disclosure. The results show that sustainability reporting had an effect on the company performance. Conversely, Gunawan and Mayangsari (2015) also carry out a research on the effect of sustainability reporting on firm value with investment opportunity set as a moderating variable. The sample of this research is 18

companies listed on BEI with observation year 2011-2013. The result of the research shows that sustainability disclosure has no effect on company value.

H₂: Sustainability disclosure positively affects firm value of companies listed in JII

H₃: Financial performance of companies listed in JII affects firm value indirectly.

Research Method

Population and Sample

The population used in this study is non-financial companies listed on the Jakarta Islamic Index (JII) year 2013-2015. JII Companies consist of 30 companies that are evaluated every 6 months. Companies that do not qualify for Islamic sharia will be excluded from the index and other qualified companies will be added instead. Sample companies are companies that deliver continuous disclosures continuously for 3 consecutive years. Based on these criteria, there are 14 non-financial companies listed on the JII in the period 2013 to 2015 that deliver sustainability disclosure for 3 years. The number of observations from 2013 to 2015 is 42 companies – years.

Data Collection Techniques

The data about financial performance are taken from company's annual report. The data about market value is acquired from the website of Indonesian Stock Exchange. The data about sustainability index is constructed by checking the conformity of the information submitted in companies' sustainability reporting with the information items required by the GRI (Global Reporting Initiative). The way to construct the index is explained in operationalization of variables below.

Operationalization of Variables

Definition and operationalization of all variables are exhibited in Table 3.1.

The Sustainability Disclosure

One of the organizations that set up sustainability disclosure guidelines is the GRI. According to the GRI, sustainability reporting is the practice of measuring, disclosing and accountability efforts of organizational performance in achieving sustainable development goals to the stakeholders both internal and external. GRI is an independent organization that prepares sustainability reporting guidelines and is based in the Netherlands. The GRI guidelines are internationally recognized and widely used in many countries. According to the GRI, 92% of the world's 250 largest companies use the GRI guidelines in preparing

company sustainability reports. The latest GRI guide is GRI G4. GRI G4 was launched in May of 2013.

The sustainability reporting consists of 3 aspects, these are economics, environmental, and social. All these aspects contain individual items. These items are taken under the guidelines of the GRI. The GRI Index is an index commonly used by companies to measure the level of corporate sustainability disclosure. The sustainability disclosure index (SDI) is measured by looking at the items in the sustainability reporting. The GRI Index used in this study is the GRI G4 Index. Each item disclosed will be scored. If the value is 0 (no), there is no disclosure of the item and if the value 1 (yes) otherwise. If the company does not disclose the item of sustainability disclosure because the incident does not occur in the company, it will be given the code N / A. After the scoring is done then the score is summed to get the overall score for each company. The formula used to measure the sustainability disclosure index is as follows:

$$SDI = \frac{\text{The amount of items disclosed}}{\text{The amount of items must be disclosed}} \text{ OR } \frac{\text{Yes}}{\text{Yes} + \text{No}}$$

Table 3.1 Operationalization of All Variables

Research Variables	Operational Definition	Indicator	Symbol	The Expected Correlation
Dependent Variable				
Firm Value	Tobins' Q	Market value of equity + debt divided by total assets.	FV	
Intervening Variable				
Sustainability Disclosure	Sustainability Disclosure Index	$SDI = \frac{\text{The amount of items disclosed}}{\text{The amount of items must be disclosed}}$ OR $\frac{\text{Yes}}{\text{Yes} + \text{No}}$	SDI	
Independent variable				
Leverage	A measurement of the amount of assets that is financed with debt.	Total debt to total assets Ratio = Total Debt / Total Assets	LEV	(-)
Size	Size of the company can be stated in total assets,	The ratio of total assets Size = Ln (Total assets)	SIZE	

	sales and market capitalization. The greater the value of company's total assets, or sales or market capitalization then the larger will be the size of a company.			(+)
Liquidity	The availability of fund so that company can afford the payment of current liabilities	The ratio of current assets to current liabilities. Liquidity = Current Assets / Current Liabilities	LIQ	(+)
Profitability	The ability of the company with all their capital in their company to generate income	The ratio of net operating income to total equity. ROE= Net Operating Income / Total book value of equity	ROE	(+)

Hypothesis Testing Design

In order to examine and analyze the indirect impact of financial performance includes leverage (LEV), size (SIZE), liquidity (LIQ), and profitability (ROE) on firm value with sustainability disclosure (Y) as intervening variable. The hypothesis testing in this research uses path analysis method. Path analysis can be used to test the indirect effect of financial performance on firm value and direct effect of sustainability disclosure on firm value. To analyze the relationship between the variables it needed to construct two substructures as follows. The model is described in Figure 3.1.

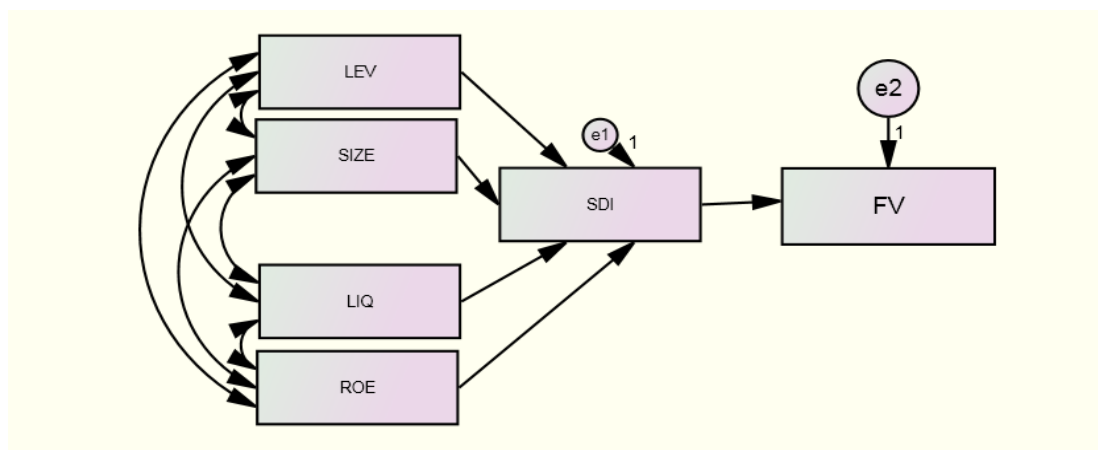


Figure 3.1 The Development of Path Diagram

Substructure I

The first substructure is related to hypothesis 1a, 1b, 1c, 1d. The effect of these variables is determined through path coefficient with the structural equation.

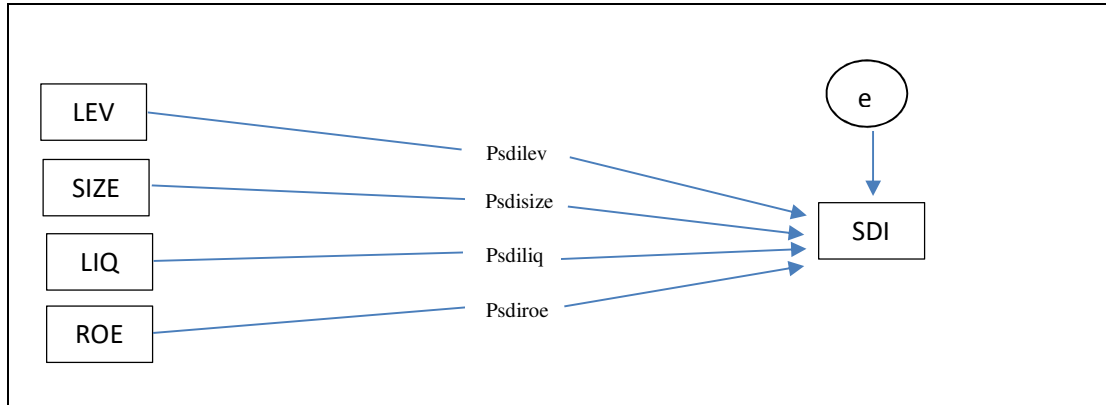


Figure 3.2. Substructure I: $SDI = P_{sdilev}LEV + P_{sdisize}SIZE + P_{sdiliq}LIQ + P_{sdiroe}ROE + e_1$

Notes: LEV is leverage, SIZE is firm size, LIQ is liquidity, ROE is profitability, and SDI is sustainability disclosure. e_1 is the influence of other variable that is not involved in this research model.

Substructure II

Second substructure is the impact of sustainability disclosure (SDI) on firm value (FV).

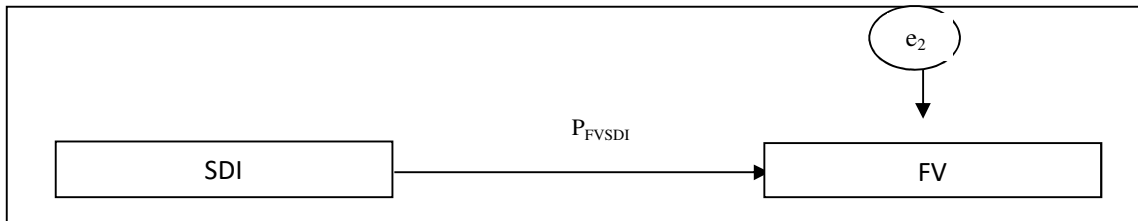


Figure 3.3. Substructure II: $FV = P_{fvSDI}SDI + e_2$

Notes: SDI is sustainability disclosure, and FV is firm value. e_2 is the influence of other variable that is not involved in this research model.

Mediation Hypothesis testing

Preacher et.al (2007) state that mediation or an indirect effect occur when the causal effect of an independent variable (X) on a dependent variable (Y) is transmitted by a mediator (M). In other words, X affects Y because X affects M, and M, in turn, affects Y. Mediation effect and indirect effect are often used interchangeably Analysis on direct effect, indirect

effect and total effect are used to see the power of influence between constructs, either directly, indirectly, or the total effect. Direct effect is the coefficient of all lines with one end dart. While the indirect effect is the effect that arises through intervening variable. Intervening variable in this research is sustainability disclosure. The total effect is the influence of the various relationships.

Based on Preacher and Hayes (2007), it can be concluded that the design of the hypothesis testing is as follows:

1. If the results of the indirect effect of LEV is greater than its direct effect, this means there is an indirect effect by sustainability disclosure on the influence of LEV on firm value. In other words, sustainability disclosure mediates the influence of LEV on firm value.
2. If the results of the indirect effect of SIZE is greater than its direct effect, this means there is an indirect effect by sustainability disclosure on the influence of SIZE on firm value. In other words, sustainability disclosure mediates the influence of SIZE on firm value.
3. If the results of the indirect effect of LIQ is greater than its direct effect, this means there is an indirect effect by sustainability disclosure on the influence of LIQ on firm value. In other words, sustainability disclosure mediates the influence of LIQ on firm value.
4. If the results of an indirect effect of ROE is greater than its direct effect, it means there is an indirect effect by sustainability disclosure on the influence of ROE on firm value. In other words, sustainability disclosure mediates the influence of ROE on firm value.

Results and Discussion

Statistic Descriptive

Figure 4.1 below reveals fluctuations in corporate value and sustainability disclosure. The abscissa line describes the company code, whereas the ordinate line explains the value. At most points, this indicates an increase in sustainability disclosure followed by an increase in corporate value and a decrease in sustainability disclosure followed by a decline in firm value. This indicates that if the company delivered the sustainability disclosure to the public, the value of the company will be changed.

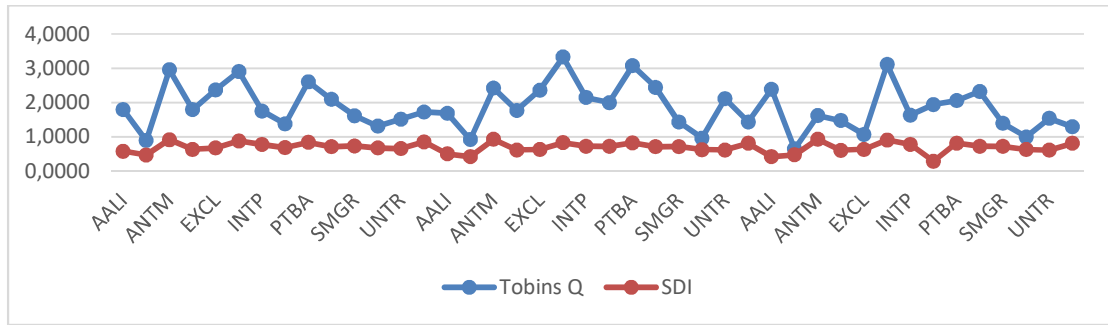


Figure 4.1 Firm Value and Sustainability Disclosure

The average (mean), maximum, and minimum values of firm value, sustainability disclosure index, and other variables can be seen in Table 4.1. The company's average value of 1.8617 explains that the market value of equity and debt is 187% of the company's total assets. This value is relatively high. The company's lowest value is 64.52% and the highest is 332.81%. The average of sustainability disclosure index (SDI) 0.6905 indicates the information items disclosed by the company regarding sustainability of 69.05% of all information items they should disclose under GRI G4 guideline. Minimum value of sustainability disclosure index 28.74% and maximum 92.77%. The difference between this minimum and maximum value is relatively high which causes the average value of the disclosure index to be low.

The average value of variable financial performance, i.e. leverage (LEV) 0.4999 explains that companies' total debt is 49.99% of 100 total assets. The highest leverage is 84.01% and the lowest is 13.64%. Firms with leverage 13.64% better than firms with leverage 84.01% due to lower leverage indicate a lower level of financial risk. The average value of liquidity 1.7791 explains that companies' current assets is 177.91% of their 100 current liability. The highest value of liquidity is 614.81% and the lowest 45%. Higher liquidity values are better than smaller liquidity. The average profitability of 0.6931 explains that companies' earnings before taxes 69.31% of their 100 book value of equity. The lowest value of -0.0787 shows the company's profit (loss) of 7.87% of the book value of equity. Negative values indicate there are companies that suffered losses during the year of observation but still deliver sustainability reporting to the public. The maximum value of profitability is 4.9337.

Table 4.1 Statistic descriptive of all variables

	FV	SDI	LEV	SIZE	LIQ	ROE
Panel balance data in the period 2013 – 2015						
Mean	1,8617	0,6905	0,4999	17,3083	1,7791	0,6931
Maximum	3,3281	0,9277	0,8401	19,3185	6,1481	4,9337
Minimum	0,6452	0,2874	0,1364	16,2731	0,4500	-0,0787
Std. Dev.	0,6531	0,1474	0,1906	0,8485	1,3291	1,0935
Observation	42	42	42	42	42	42
Cross - sectional analysis of the year 2013						
Mean	1,9055	0,7174	0,4961	17,1800	1,9315	0,1663
Maximum	2,9553	0,9122	0,8401	19,1815	6,1481	0,2621
Minimum	0,8918	0,4670	0,1364	16,2731	0,4500	0,0320
Std. Dev.	0,6090	0,1229	0,2011	0,8805	1,5944	0,0729
Cross - sectional analysis of the year 2014						
Mean	2,0046	0,6883	0,4943	17,3179	1,8035	1,8035
Maximum	3,3281	0,9254	0,8364	19,2795	4,9337	4,9337
Minimum	0,9197	0,4167	0,1419	16,4973	0,5847	0,5847
Std. Dev.	0,7064	0,1358	0,1955	0,8720	1,3282	1,3282
Cross - sectional analysis of the year 2015						
Mean	1,6751	0,6657	0,5093	17,4268	1,6022	0,1095
Maximum	3,1100	0,9277	0,7605	19,3185	4,8866	0,2496
Minimum	0,6452	0,2874	0,1365	16,5370	0,4816	-0,0787
Std. Dev.	0,6435	0,1830	0,1892	0,8377	1,0981	0,0918
This table presents descriptive statistics of all variables tested. FV is firm value which is measured by Tobin's Q. SDI is Sustainability Disclosure Index. LEV is financial leverage, measured by total debt to total assets ratio. SIZE is firm size which is measured by natural logarithm of total assets. LIQ is liquidity, measured by current assets to current liabilities ratio. ROE is return on equity. It is used as an indicator for profitability.						

Based on cross – sectional analysis, the characteristics of financial performance, sustainability disclosure index, and fair value of the companies listed on the JII are varied. Mean of all variables is fluctuated year by year. Mean of firm value in 2014 (200.45%) is higher than mean of fair value in 2013 (190.55%) and in 2015 (167.51%). Mean of sustainability disclosure index in 2013 (71.74%) is higher than mean of sustainability disclosure index in 2014 (68.83%) and in 2015 (66.57%). Mean of leverage in 2015 (50.93%) is higher than mean of leverage in 2013 (49.61%) and in 2014 (49.43%). Mean of liquidity in 2013 (193.15%) is higher than mean of liquidity in 2014 (180.35%) and in 2015 (160.22%). Mean of profitability in 2014 (180.35%) is higher than mean of profitability in

2013 (16.63%) and in 2015 (10.95%). Sustainability disclosure of the companies listed on the JII is relatively high. It is more than 50%. In 2013, the companies communicate 71.74% information about their sustainability performance in their sustainability reporting. In 2014, the companies express 68.83% information regarding their sustainability performance. In 2015, the companies communicate 66.57% information of their sustainability performance in their sustainability reporting.

Hypothesis Testing Result of Substructure I

The effect of financial performance: leverage, size, liquidity and profitability on sustainability disclosure index reveals in Table 4.2. The effect of financial performance on sustainability disclosure index simultaneously is not significant. However, partially, liquidity positively significant affects the sustainability disclosure. The result support the H1c. The effect of leverage, size, and profitability is not significant on the sustainability disclosure index. The result does not support the H1a, H1b, and H1d.

Table 4.2 Coefficient, T – Stat., and F – Stat. of all Variables in Substructure I

	LEV	SIZE	LIQ	ROE	SDI	C
Coefficient	0,1171	-0,0417	0.0440*	-0,0105	2.1492***	1.2830**
T-Statistic	(0.7465)	(-1.5426)	(1.8657)	(-0.4622)	(3.507931)	(2.6321)
F-statistic	1.4625					

This table presents the results of multiple regression of all variables tested. FV is firm value which is measured by Tobin's Q. SDI is Sustainability Disclosure Index. LEV is financial leverage, measured by total debt to total assets ratio. SIZE is firm size which is measured by natural logarithm of total assets. LIQ is liquidity, measured by current assets to current liabilities ratio. ROE is return on equity. It is used as an indicator for profitability. * denote to significance level of 10%, ** denote to significance level of 5%, and *** denote to significance level of 1%.

Hypothesis Testing Result of Substructure II

The effect of sustainability disclosure index on firm value is positively significant on firm value at level 1%. It indicate that the fluctuation of firm value is caused by the level of sustainability disclosure index. The result is succeeded to support the H2.

Mediation Hypothesis Testing Results

Analysis on direct effect, indirect effect and total effect are used to see the power of influence between constructs, either directly, indirectly, or the total effect. Direct effect is the coefficient of all lines with one end dart. While the indirect effect is the effect that arises through mediating variable. Mediating variable in this research is sustainability disclosure index (SDI). The total effect is the influence of the various relationships. The direct, indirect and total effects are presented in Table 4.3 below.

Table 4.3 Parameter Estimation Value

	Direct Effect	Indirect Effect	Total Effect	P – Value	Explanation
LEV → SDI	0.151	0	0.151	0.432	Not Significant
SIZE → SDI	-0.078	0	-0.078	0.104	Not Significant
LIQ → SDI	-0.240	0	-0.240	0.050	Significant
ROE → SDI	0.397	0	0.397	0.627	Not Significant
SDI → FV	0.485	0	0.485	0.001	Significant
LEV → FV	0	0.073	0.073	-	Indirect
SIZE → FV	0	-0.038	-0.038	-	-
LIQ → FV	0	-0.116	-0.116	-	-
ROE → FV	0	0.192	0.192	-	Indirect

This table presents parameter estimation value to determine the indirect effect of financial performance on firm value. FV is firm value which is measured by Tobin's Q. SDI is Sustainability Disclosure Index. LEV is financial leverage, measured by total debt to total assets ratio. SIZE is firm size which is measured by natural logarithm of total assets. LIQ is liquidity, measured by current assets to current liabilities ratio. ROE is return on equity. It is used as an indicator for profitability.

The effect of leverage, size, and profitability on sustainability disclosure is not significant. While, liquidity negatively significantly affects the sustainability disclosure at level 5%. The value of liquidity direct effect is -0.240, meaning that the direct impact of liquidity on sustainability disclosure is as much as 24%. Sustainability disclosure positively significantly affects firm value at level 1% as much as 48.5%. The indirect effect value of leverage and profitability is more than the direct effect value. It means that leverage and

profitability have indirect effects on firm value. The path diagram result is exhibited in Figure 4.2 below. The results indicate the support to H3.

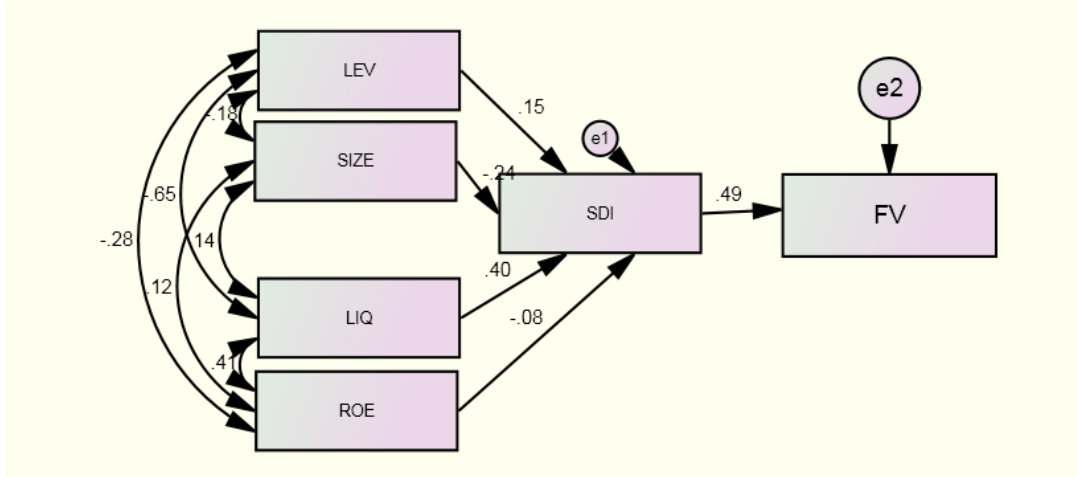


Figure 4.2 Path Diagram Result

Conclusion

The results show that the financial performance effect is not significant on sustainability disclosure simultaneously. However, partially, liquidity has a positively significant effect on sustainability disclosure at level 10%. The company with higher liquidity ratio has higher motivation to reveal their sustainability disclosure. The result supports H1c but does not support H1a, H1b, and H1d. This result indicates that the companies with a strong financial position tend to disclose sustainability disclosure. The effect of sustainability disclosure on firm value is positively significant at level 1%. It supports the H3.

Regarding the indirect effect of financial performance on firm value, the results show that leverage and profitability have positively indirect effect on firm value, but size and liquidity have no indirect effect on firm value. This means that the increase of leverage and profitability will encourage management to publish more sustainability disclosure and it will increase firm value of companies listed on the Jakarta Islamic Index. This result is in line with Wang (2017) and Li et al. (2013) who state that higher leverage encourage management to disclose more information and it will make a fluctuation of firm value. This result is consistent with the argument of Dienes et al. (2017).

The result is also consistent with Fazzini and Maso (2016), Saka and Oshika (2014), as well as Klerk and Villiers (2012). For the Indonesian case, higher sustainability disclosure of

companies listed on the JII will increase their firm value. This result also support the result of Burhan and Rahmanti (2012) who conclude that sustainability reporting had an effect on the company performance of all companies except financial companies listed on the Indonesia Stock Exchange (BEI) during the period 2006-2009.

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