

Board of Directors Effectiveness, Integrated Reporting Quality, and Firm Risk

Rita Sugiarti, Ancella Anitawati Hermawan

Faculty of Economics, Universitas Indonesia, Kampus FEB UI Depok, 16424, Indonesia

Keywords: Board of Directors Effectiveness, Integrated Reporting Quality, Firm Risk

Abstract: IR is propose to "reform" corporate's financial statements, address the shortcomings in existing reporting practices and provides a better understanding of financial and non-financial information in an integrated manner. This study aims to provide empirical evidence on the role of IR quality in mediating the effect of board of director effectiveness on firm risk directly and indirectly. This study is a quantitative research and used panel data. The samples were used are 143 listed companies on the Johannesburg Stock Exchange (South Africa) with 4 years observation that is from 2014 to 2017. Structural Equation Model was used to analyze data and test hypotheses. The results found that BOD effectiveness has a significant negative effect on firm risk but has not affect IR quality, and IR quality has not affects firm risk directly. This study also found that IR quality cannot mediate the effect of BOD effectiveness on firm risk. It is because the implementation of IR was only use to comply with regulatory requirements.

1 INTRODUCTION

Current corporate reporting model deemed to be less relevant to shareholders (Financial Reporting Council, 2011), failed to provide tools that can be used to communicate future opportunities, strategy and value creation (Simnett & Huggins, 2015) and cannot meet stakeholders' information needs to assess past and future corporate performance (Flower, 2015). To respond this issue, Integrated Reporting (IR) has proposed to "reform" the company's reporting model. IR provides a better understanding to stakeholders about financial and non-financial information in an integrated manner (IIRC, 2013).

In practice, in most countries of the world, IR is voluntary and the first country to require IR is South Africa. Although in South Africa IR is mandatory, but compliance level of each firms may differ because basically IR guidance regulates minimum level of firms to disclose IR components so that the firms may publish IR more than minimum level. On contrary, the regulation also provides management flexibility in publishing IRs for being "applied" or "explain". The companies may present IRs below minimum level and only provide explanations for reasons of non-compliance. Therefore, this may cause IR quality level to be different for each

company. For this reason, this study used listed companies on the Johannesburg Stock Exchange as samples.

Corporate governance is one factor that can affect IR quality (Velte & Stawinoga, 2016; DeVilliers et al., 2017). To improve IR quality, boards play a role in monitoring performance of management and ensuring accountability of management in manage the company (including financial reporting process).

DeVilliers et al. (2017) suggested to test IR consequences such as firm risk. IRs issued by the company should contain information that integrates Environment, Social, and Governance (ESG) factors into strategy, output measurement and risk and opportunities assessment faced by company to maximize long-term value creation (Steyn, 2014). Corporate social performance is often defined as the ESG factor (Sassen, Hinze, & Hardeck, 2016). Higher social performance can increase company value through improved financial performance i.e. cash flow and / or capital cost reduction (Plumlee, Brown, Hayes, & Marshall, 2015). The low social performance allows high lawsuits to be faced by company. Conversely, high corporate social performance can reduce firm risk because it can meet information needs of various stakeholders, and also can create a moral capital that can make

stakeholders become more loyal to company, so that stakeholders tend to react less to negative news about company and can reduce firm risk and resulting in increasing volatility and market risk (Sassen et al., 2016). Some researchers have examined the association of ESG factors to firm risk (Oikonomou, Brooks, & Pavelin, 2012; Sassen et al., 2016). However, until now researchers have not found a study that examines the effect of IR quality on firm risk.

The existence of corporate governance structures (such as Board of Directors effectiveness) is expected to reduce firm risk as it may impede managerial opportunistic behavior and excessive risk taking (Balachandran & Faff, 2015). Mathew et al. (2018) documented that corporate governance index (compiled based on board attributes such as composition, leadership structure, member characteristics, and board processes) are negatively related to firm risk because they can influence control role, so board attributes may affect firm risk through its impact on strategic direction for management and control functions.

Research that examines relationship of governance and firm risk is still limited (such as Alam & Shah, 2013; Sila et al., 2016; Mathew et al., 2018). The researchers measured corporate governance based on each board's characteristics. Alam & Shah (2013) examines ownership, independence, size, and CEO-Duality against firm risk, while Sila et al. (2016) examines the effect of proportion of women on board against firm risk. This study examines the effects of corporate governance (as measured by overall BOD characteristics or BOD effectiveness) on firm risk. This study aims to provide empirical evidence on the effect of BOD effectiveness on firm risk, and the role of IR quality in mediating those influences.

Based on signaling and legitimacy theory, this study developed hypotheses. This study used panel data from 143 listed companies in JSE from 2014 to 2017. Using Structural Equation Modeling (SEM) analysis, this study found that BOD effectiveness has a negative effect on firm risk. However, BOD effectiveness does not affect IR quality in which IR quality does not affect firm risk. This study also found that IR quality cannot mediate the effect of BOD effectiveness against firm risk.

2 LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Integrated Reporting Quality

IR is a brief communication of how corporate strategy, governance, performance and prospects can lead to create short, medium and long term value (IIRC, 2013). IRs including eight interrelated content elements: organizational overview and external environment, governance, business models, risks and opportunities, strategy and resource allocation, performance, outlook, and base of presentation.

2.2 Firm Risk

Ross et al. (2015) classifies firm risk into two components: systematic and specific or unsystematic risk. Systematic risk is all risks that can affect a large number of assets become larger or smaller. This risk is often referred to as market risk as there is uncertainty about economic conditions such as GNP, interest rates, or inflation. While specific or unsystematic risk is defined as a risk that specifically affects an asset or a small asset such as announcement of an oil strike by a company will only affect the company itself or some other company, it will not affect the world oil market. Such information is unsystematic and affects only certain companies. This risk is also often referred to as an idiosyncratic risk (Ross et al., 2015).

2.3 Board of Directors Effectiveness

BOD effectiveness is influenced by the characteristics it possesses. Hermawan (2011) uses several board characteristics (i.e. independence, activity, size, and board competencies) to measure board of commissioner effectiveness, but his research uses a sample of Indonesian companies which follow a two-tier system. This study uses a sample of listed companies on Johannesburg Stock Exchange (South Africa) which adopt a one-tier system where there is no board of commissioners, so board characteristics are used to measure BOD effectiveness. First characteristic is independence. King III (2009) requires that majority of non-executive directors be independent to reduce conflicts of interest and encourage objectivity. Second characteristic is board activity.

Frequent meetings will have a more effective role as they can better control the company (Lipton

&Lorsch, 1992). Third characteristic is board size. King III (2009) requires that board must have at least two executive directors who must become CEOs and other directors responsible for finance. Last characteristic is competence. The effectiveness of boards monitoring role depends on their experience, knowledge, and educational background so they can have ability to understand business operations of the company and also they must have competence in understanding company's financial statements, since reported financial performance is one of the information used in evaluating action management (Hermawan, 2011).

2.4 Board of Directors Effectiveness and Firm Risk

Board plays a role in lead company with a prudent and effective controlling framework for assessing and managing risks (Mallin, 2016). Board attributes (measured by composition, leadership structure, characteristics, and board processes) determine how board performs control roles, services, and strategies that can affect results and performance of the company and it is expected that these board attributes relate to firm risk through its impact on strategic direction over function and management control (Mathew et al., 2018). Bennett (2013) confirmed that enhanced monitoring roles, through increased board attendance and other factors related to less risk taking. Platt & Platt (2012) tested several board attributes linked to bankruptcy and found that bankrupt companies have fewer independent directors, smaller board sizes, higher shareholdings by directors, less compensation and nominations. This indicates that the board factors are related to firm risk.

Baulkaran (2014) found that board size can reduce firm risk, this is because more board members the company's monitoring role is increasing which will reduce firm risk. Mathew et al. (2018) is also documented that governance as measured by board attributes is negatively related to firm risk. Based on the description above, the first hypothesis in this study is as follows:

Ha1: Board of Directors effectiveness has a negative effect on firm risk

2.5 Board of Directors Effectiveness and IR Quality

King III (2009) requires boards to ensure and verify IR integrity. This can be done in a way such as delegating authority to audit committee to evaluate

disclosure of sustainability, ensuring that published IR has included issues of going concern, and illustrated positive and negative impacts of the company's operations and plans to improve positive things and reduce impact of negative things. Alfiero et al. (2017) documented a positive relationship between board characteristics to IR adoption. Thus, it is expected that an effective BOD will be able to better monitor financial and non financial reporting and improve IR quality. Frias-Aceituno et al. (2012) found that larger board sizes, boards with more experience, and more board diversity can result in an increasingly IR quality. It is expect that board characteristics can create an increasingly effective monitoring role which can lead to better IR quality. Based on the description above, the next hypothesis is:

Ha2: Board of Directors effectiveness has positive effect on Integrated Reporting Quality

2.6 Integrated Reporting Quality and Firm Risk

IR essentially integrates ESG factors into strategies, output measurements and assessments of risks and opportunities faced by firms (Steyn, 2014). ESG factor disclosed may reduce firm risk (Sassen et al., 2016). Lower level of corporate social performance tends to increase the likelihood of lawsuits faced by companies, whereas companies with high levels of social performance can reduce financial risk and market participants are more willing to allocate capital so as to lower capital limit for firms (Cheng, Green, Conradie, & Romi, 2014). Better corporate social performance can also meet stakeholder information needs, enhance corporate reputation, enhance brand value, improve corporate image, and create moral capital (Sassen et al., 2016). Sassen et al. (2016) documented a negative relationship between social performance and firm risk, meaning that there was a decrease in risk (ie systematic and total risk) in companies with high social performance. Furthermore, idiosyncratic risk also declines when firms have high environmental performance, but negative effects of environmental performance with systematic risk and total risk apply only to industries that are environmentally sensitive. Based on the description, high IR quality is expected to decrease firm risk. This is because better IR quality indicates ESG factor has been well integrated in IR. Thus, the next hypothesis in this study is:

Ha3: IR quality has a negative effect on firm risk

2.7 Board of Directors Effectiveness, IR Quality, and Firm Risk

The effect of BOD effectiveness on firm risk has been proven by previous research. Mathew et al. (2018) documented that board attributes of composition, leadership structure, characteristics, and board processes are negatively related to firm risk. This is because board attribute can determine how the board performs role of controls, services, and strategies that can affect results and performance of company and it is expected that these board attributes can reduce firm risk through its impact on strategic direction of management functions and controls (Mathew et al., 2018). Although the relationship of BOD effectiveness and firm risk has been demonstrated, board actually has many roles which role does not only focus on managing firm risk. For example monitoring role of corporate reporting, this role has been set in King III (2009) i.e. board must ensure and verify IR integrity. On the other hand, company reports (in this case IRs) are among the sources of information considered by investors in assessing company, moreover this study measures firm risk by using market risk. So through IR, it is expected to reduce firm risk because board plays a role in monitoring IR process and then can affect IR quality generated and qualified IR is expected to reduce firm risk because in assessing company, information in IR become one of considerations by investors to take decision.

Ha4: Board of Directors effectiveness has a negative effect on firm risk through enhanced integrated reporting quality

3 METHOD

Population of this study are all public companies listed on Johannesburg Stock Exchange (JSE), South Africa. The sample was chosen by using purposive sampling technique. The reason of selecting this sample is because South Africa was first country to require listed companies on JSE to issue an IR or explain reasons for not complying. BOD effectiveness and IR quality data are obtained from

the company's annual report accessed from the official JSE website or official website of each company. Listed companies on JSE numbered 488 companies. Then, this study excluded companies that include in financial industry as much as 119; companies that do not issued IR 2014 to 2017 of 56 companies; companies with unavailable and incomplete data of 157 companies; and companies with data outliers of 11 companies. The final sample numbered 143 companies with 4 years of observations. So the number of observations is 572 Firms-Years. While financial data to measures other variables obtained from datastream accessed through *Pusat Data EkonomidanBisnis* (PDEB), Universitas Indonesia. Structural Equation Modeling (SEM) is used to data analysis with Stata Version 13 software. The use of SEM aims to prove hypotheses of this study that examines the direct and indirect effects. To test hypotheses, this study uses two research models, as follows:

Hypotheses 1 and 3 were tested using Model 1 as follows:

$$\text{RISK}_{it} = \alpha_0 + \alpha_1 \text{BOD}_{it} + \alpha_2 \text{IRQ}_{it} + \alpha_3 \text{SIZE}_{it} + \alpha_4 \text{ROA}_{it} + \alpha_5 \text{LEV}_{it} + \alpha_6 \text{MTB}_{it} + \alpha_7 \text{DPR}_{it-1} + \alpha_8 \text{IND} + \alpha_9 \text{YEAR} + \varepsilon_{it} \dots \dots \dots (1)$$

With an expectation: H₁: $\alpha_1 < 0$, H₃: $\alpha_2 < 0$

Hypothesis 2 was tested using Model 2 as follows:

$$\text{IRQ}_{it} = \beta_0 + \beta_1 \text{BOD}_{it} + \beta_2 \text{SIZE}_{it} + \beta_3 \text{ROA}_{it} + \beta_4 \text{LEV}_{it} + \beta_5 \text{MTB}_{it} + \beta_6 \text{IND} + \beta_7 \text{YEAR} + \varepsilon_{it} \dots \dots \dots (2)$$

With an expectation: H₂: $\beta_1 < 0$

Hypothesis 4 was tested using the following model:

$$\text{RISK}_{it} = \lambda_0 + \lambda_1 \text{IRQ}_{it} + \lambda_2 \text{BOD}_{it} + \lambda_3 \text{SIZE}_{it} + \lambda_4 \text{ROA}_{it} + \lambda_5 \text{LEV}_{it} + \lambda_6 \text{MTB}_{it} + \lambda_7 \text{DPR}_{it-1} + \lambda_8 \text{IND} + \lambda_9 \text{YEAR} + \varepsilon_{it} \dots \dots \dots (3)$$

With an expectation: H₄: $\lambda_2 < 0$

The above four models of research refer to Violita et al. (2014). Description of each variable is presented in Table 1.

Table 1: Description of Research Variables

Variables	Description
IRQ	IR quality is measured using keyword searches referring to IIRC (2013) and Zhou et al. (2017) with NVIVO software. Keywords are presented in Appendix 1
BOD	Board of directors effectiveness is measured by content analysis based on Hermawan (2011) (Appendix 2)
RISK	Firm risk is measured by standard deviation of daily stock returns over 12 months from April to March (Sassen et al., 2016; Mathew et al., 2018)
SIZE	Firm size is measured using the natural logarithm of total assets (Baboukardos&Rimmel, 2016; García-Sánchez &Noguera-Gámez, 2017; Lee & Yeo, 2016)
ROA	Profitability is measured by using ROA is net profit divided by total assets (Haji &Anifowose, 2016).
LEV	Leverage is measured by using total liabilities divided by total assets (Hajj &Anifowose, 2016; Lee & Yeo, 2016).
MTB	Growth is measured using market-to-book ratio is market value of equity divided by book value of equity (García-Sánchez &Noguera-Gámez, 2017).
DPR	Dividends are measured using Dividend Payout Ratio (DPR) of previous year (Sassen et al., 2016)
IND	Industry types is measured by dummy variables (Baboukardos&Rimmel, 2016)
YEAR	Year of this study as a control with dummy

3.1 Measurement of Integrated Reporting Quality

This study uses keywords to measure IR quality with NVIVO10 software. Keywords that have been inputted in NVIVO will show percentage coverage value. Fernando (2018) states that percentage of keywords coverage are percentage of keywords number against all words disclosed in corporate report. Keywords used in this study are presented in Appendix 1.

3.2 Measurement of Firm Risk

This study measures firm risk using standard deviations from daily stock returns over the previous 12 months (Sassen et al., 2016; Mathew et al., 2018). The period used is from April to March.

3.3 Measurement of Board of Directors Effectiveness

BOD effectiveness is assessed by using question checklist based on their characteristics ie independence, activity, size, and competence. The checklist was developed from Hermawan (2011) which consisted of 20 questions for BOD effectiveness. There are 3 possible assessments for each question: Good, Fair, and Poor, but there are a few questions that have only 2 possible assessments: Good and Poor. Each assessment is rated 3 for Good, 2 for Fair, and 1 for Poor or for inadequate information. Maximum score is 60 and minimum 20.

Scores obtained from each company then divided by total maximum score, so value of BOD effectiveness ranged from 0 to 1. The questionnaire used in checklist is presented in Appendix 2. This study then conducts Cronbach Alpha testing to test the reliability of these questions.

4 RESULT AND DISCUSSION

4.1 Description Statistics

Table 2 shows descriptive statistics. Based on Table 2, it shows that companies listed on JSE have an average risk of 2.68%, firm risk variable shows a standard deviation value of 0.0215 which means that the data variation is quite low and data is normally distributed. IR quality variable shows an average value of 0.1855 which means that on average firms listed on JSE reveal 18.55% IR elements of total information disclosed in company report. The IRs issued by Sasol Limited 2015 has highest quality of 21.5% in which earned an award from EY in 2015 as one of the best IRs. However, Table 3 shows that the average value of IR quality variables each year is not very different i.e. only between 18.3% to 18.8%, indicating that IR quality in South Africa is not growing significantly. BOD effectiveness variable is good because it shows average value of 84,17%. Sasol Limited is also one of the companies that has an BOD effectiveness value of 83.

Table 2: Descriptive Statistics

Variabel	Mean	St. Dev	Min	Max
RISK	0,0268	0,0215	0,0000	0,2067
IRQ	0,1855	0,0092	0,1445	0,2150
BOD	0,7872	0,0479	0,6167	0,9000
SIZE (Thousands of Rand)	19.685.240	44.740.709	42.515	398.939.000
SIZE (Ln)	22,1908	1,9188	17,5654	26,7121
ROA	0,0733	0,1107	-0,3498	0,6300
MTB	2,4304	2,7003	-2,6053	23,5078
LEV	0,4978	0,1924	0,0020	2,1997
DPR	0,1715	0,2818	0,2038	1,8851
IND			0	1
YEAR			2014	2017

Description: Mean is average value of variable. Std. Dev is standard deviation of variable. Min is minimum value. Max is maximum value. RISK is a dependent variable, ie firm risk as measured by standard deviation of daily stock return for 12 months from April to March. IRQ is a mediation variable that is IR quality measured by keyword search in IR using NVIVO software. BOD is an independent variable, ie BOD effectiveness as measured by a manual check on the company's annual report. SIZE is a control variable that is firm size measured by using Ln value of total assets. MTB is a control variable that is growth measured by using market-to-book ratio. ROA is a control variable that is profitability measured by return on assets is net profit divided by total assets. LEV is a control variable that is the level of debt measured by total debt divided by total assets. DPR is a control variable that is dividend measured by using dividend payout ratio. YEAR is a control variable that is the year of study measured by dummy variabel 1 and 0. IND is control variable that is industrial type measured with dummy variable 1 and 0.

Table 3: Average of IR Quality Scores Each Year

Year	Average
2014	0,1846
2015	0,1839
2016	0,1857
2017	0,1879

Table 4: Cronbach Alpha Testing

Variabel	Cronbach Alpha
BOD	0,6407

Descriptions:
BOD = board of directors effectiveness

4.2 Reliability of Board of Directors Checklist

Table 4 shows BOD cronbach alpha value of 0.6407. According to Hermawan (2011) there is no statistical test of standard significance for alpha values. However, alpha coefficient of BOD score in this study is not much different from alpha coefficient value for checklist board of commissioner in Hermawan (2011) that is 0,607 and not much different from coefficient alpha value of disclosure index in Botosan (1997) that is equal to 0,64. Thus, BOD scores used in this study are considered valid enough.

4.3 Hypotheses Testing

4.3.1 Direct Effect Testing of Model 1

Table 5 shows a significant negative effect between BOD effectiveness against firm risk seen from 0.000 with negative coefficient (H1 accepted). More effective BOD, the BOD can provide strategic direction for better management and control functions (including risk management). Mathew et al. (2018) found that board attributes consisting of composition, leadership structure, characteristics and board processes negatively affect firm risk. Bernile et al. (2016) documented that BOD diversity can reduce the volatility of stock returns because board diversity tends to adopt a more stable and less daring policy in financial risk taking.

However, this study can not prove the effect of IR quality on firm risk (H3 is unacceptable). This can be seen from significance value of 0.313 which is greater than alpha. IR implementation in South Africa has been mandatory, so all companies listed on JSE have published IR. Many companies have not complied with the rules and only provided explanations for the reasons behind their disobedience to the regulation. Therefore, IR can not be used as a signal to reduce firm risk because IR

quality is not much different between companies in a state that is already mandatory. Descriptive statistics also indicate that the IR quality level is very low and has not experienced significant progress from year to year. It is also supported by the analysis done by the researcher that many companies provide an explanation ("explain") in their IR, which indicates that many companies do not fully comply with the IIRC framework or do not reveal IR content elements.

Table 5: Direct Effect (Model 1)

Research Model:
 $RISK_{it} = \alpha_0 + \alpha_1 BOD_{it} + \alpha_2 IRQ_{it} + \alpha_3 SIZE_{it} + \alpha_4 ROA_{it} + \alpha_5 LEV_{it} + \alpha_6 MTB_{it} + \alpha_7 DPR_{it-1} + \alpha_8 IND + \alpha_9 YEAR + \epsilon_{it} \dots \dots \dots (1)$

	Prediction	Coef.	Sig.
Constant		0,2303	0,000***
BOD	-	-0,1011	0,000***
IRQ	-	0,0425	0,313
SIZE	-	-0,0032	0,000***
ROA	-	-0,0202	0,007***
LEV	+	0,0082	0,0295**
MTB	-	-0,0004	0,1505
DPR	-	0,0055	0,0535*
IND			Yes
YEAR			Yes
Adjusted R-squared		0,3489	
Prob(F-Statistics)		0,003	

*** significant at $\alpha=1\%$, ** significant at $\alpha=5\%$, *significant at $\alpha=10\%$
 Description:
BOD = board of directors effectiveness, IRQ = integrated reporting quality, SIZE = firm size, MTB = firm growth, ROA = profitability, LEV = debt ratio, DPR = dividend payout ratio, IND = dummy industry, YEAR = dummy year

4.3.2 Direct Effect Testing of Model 2

Table 6 shows that BOD effectiveness has no effect on IR quality. This is seen from the significant value of BOD of 0.436 (greater than alpha) which means that BOD effectiveness does not affect IR quality (H2 is unacceptable). The results of this study support Hurghis (2017). Hurghis (2017) documented that BOD characteristics (which are the determinants of BOD effectiveness) such as percentage of independent non-executive directors, gender CEOs, duality CEOs, CEO and women board changes do not affect the company's issued IR expansion because the IR framework principles and guidelines are still flexible and IR is still a new so training is still needed for companies to publish IRs. This indicates that the board's ability to publish IRs

is lacking, so companies generally only issue IRs at a minimal level or just to meet the applicable of regulatory requirements of King III (2009).

Additional testing result shows that each board characteristic has no effect on board quality except independence. This indicates that only the independence of the board has a significant positive effect on IR quality which means that board independence can improve IR quality. An independent board is considered as an important mechanism for controlling manager activities and ensuring that the objectives of shareholders are achieved. An independent board is expected to be able to apply greater objectivity and independence in managing the company, so as to encourage improvement of the quality and quantity of information disclosed (Frias-Aceituno et al., 2012).

Table 6: Direct Effect (Model 2)

Research Model:			
IRQit = $\beta_0 + \beta_1$ BODit + β_2 SIZEit + β_3 ROAit + β_4 LEVit + β_5 MTBit + β_6 IND + β_7 YEAR + ϵ_{it}(2)			
	Prediction	Coef.	Sig.
Constant		0,1562	0,000***
BOD	+	0,0022	0,436
SIZE	+	0,0015	0,000***
ROA	+	0,0096	0,006***
LEV	+	0,0038	0,034**
MTB	+	0,0001	0,267
IND			Yes
YEAR			Yes
Adjusted R-squared	0,1817		
Prob(F-Statistics)	0,003		
*** significant at $\alpha=1\%$, ** significant at $\alpha=5\%$, *significant at $\alpha=10\%$			
Description:			
<i>BOD = board of directors effectiveness, SIZE = firm size, ROA = profitability, LEV = debt ratio, MTB = firm growth, IND = dummy industry, YEAR = dummy year</i>			

4.3.3 Indirect Effect Testing of Model 3

Table 7 shows that IR quality can not mediate the effect of BOD effectiveness on firm risk (H4). Flower (2015) states that IIRC does not require companies to include information on losses caused by company activity (e.g. Environment) to IR. In addition, IR is considered to have little impact on corporate reporting practices. This is due to lack of strength from IR regulatory body IIRC where IIRC council is dominated by accounting profession and multinational corporations determined to control the rules that threaten their positions. As a result, IIRC is considered a "regulatory capture".

Flower (2015) further explains that the IIRC framework (which was used as the basis for IR quality measurement in this study) failed for two reasons, (1) this Framework does not require company to report fully impact of its activities on stakeholders, society, and environment; and (2) In IR process, this framework involves too much corporate management discretion. Therefore, even if company applies this framework correctly, this report will still have many shortcomings. In addition, IIRC can not guarantee that the company has implemented IR elements well. Thus, IR users can confidently predict that the company does not disclose complete, correct and comparable information about its sustainability performance and its impact on stakeholders, society and environment. In addition, IRs can not provide the information society needs to assess company performance (Flower, 2015).

4.3.4 Additional Testing Analysis

Additional analysis aims to obtain additional results and analysis by making changes in the research model. Hermawan (2011) and Haji & Anifowose (2016) performed additional analyzes by examining the effect of each characteristic used to measure BOD effectiveness. This research tries to see the influence of these characteristics on firm risk directly or indirectly through IR quality. Additional analysis test results are presented in Table 8. Based on table 8, for model 1 it is seen that each characteristic of BOD has negative effect to firm risk, while IR quality does not affect IR quality. These results are consistent with the main tests in this study that BOD effectiveness may reduce firm risk and there is no effect of IR quality on firm risk. For model 2, overall test results show same thing as the main test, but BOD independence can improve IR quality. While other have no effect on IR quality. The indirect effect test indicates that the results are consistent with main test that IR quality can not mediate influence of each BOD characteristics on firm risk.

Table 7: Indirect Effect

Variable	Risiko Perusahaan	
	Coef.	Sig.
BOD	0,0000	0,439
Prob F	0,003	
*significant at $\alpha=10\%$, **significant at $\alpha=5\%$,*** significant at $\alpha=1\%$		

Table 8: Additional Testing Results

Variabel	Model 1 Dependen Variable: RISK		Model 2 Dependent Variable: IRQ		Indirect Effect	
	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
Constan	0,2333	0,000***	0,1562	0,000***	0,2333	0,000***
IRQ	0,1524	0,4315				
BOD_INDEPENDENCE	-0,0012	0,0245**	0,0005	0,0365**	0,0000	0.4315
BOD_ACTIVITIES	-0,0014	0,009***	0,0002	0,2695	0,0000	0.4340
BOD_SIZE	-0,0019	0,057*	-0,0006	0,1225	-0,0000	0.4320
BOD_COMPETENCE	-0,0023	0,000***	-0.0004	0,1990	-0,0000	0.4320
SIZE	-0,0034	0,000***	0,0012	0,0000***		
ROA	-0,0190	0,011**	0,0099	0,0055***		
MTB	-0,0003	0,135	0,0001	0,2660		
LEV	0,0084	0,0275**	0,0034	0,0490**		
DPR	0,0055	0,054*				
IND	Yes		Yes		Yes	
YEAR	Yes		Yes		Yes	

5 CONCLUSION

This study aims to provide empirical evidence the effect of BOD effectiveness on firm risks directly and indirectly through IR quality. Research samples are 143 companies with 4 years observation that is 2014 until 2017, data analysis using Structural Equation Model. The results showed that BOD effectiveness has a significant negative effect on firm risk, BOD effectiveness has no effect on IR quality, and IR quality has not affect firm risk. The results of this study have implications for regulators, especially in Indonesia that need to do a good consideration if want to require IR practices in Indonesia. This study has some limitations: searching keywords for IR quality only captures how much information disclosure but cannot assess how information quality is disclosed, sample of this study uses only one country i.e. South Africa, using only one proxy for risk measurement i.e. total risk, and this study combine 8 elements of IR content, so the results of each content element cannot be analysed. Further research may consider the limitations in this study.

REFERENCES

- Alam, A & Shah, S.Z. (2013). Corporate Governance and Its Impact on Firm Risk. *International Journal of Management, Economics, and Social Sciences*, 2 (2), 76-98
- Alfiero, S., Cane, M., Doronzo, R., & Esposito, A. (2017). Integrated reporting: the links between its adoption and board characteristics. Proceeding. Available on <http://disa.uniroma3.it/ricerca/osservatori-e-laboratori/>
- Baboukardos, D., & Rimmel, G. (2016). Value relevance of accounting information under an integrated reporting approach: A research note. *Journal of Accounting and Public Policy*, 35(4)
- Balachandran, B. & Faff, R. (2015). Corporate governance, firm value and risk: past, present, and future. *Pacific-Basin Finance Journal*, 32, 1-12
- Baulkaran, V. (2014). A Quiet Revolution in Corporate Governance: An Examination of Voluntary Best Practice Governance Policies. *International Review of Finance*, 14(3), 459-483
- Bennett, B. (2013). Evidence on the value of director monitoring: a natural experiment. *Working Paper, Arizona State University*, available at SSRN: <http://ssrn.com/abstract=2218773>
- Bernile, G., Bhagwat, V., & Yonker, S. (2016). Board diversity, firm risk, and corporate policies. *Working Paper*
- Brick, I.E. & Chidambaran, N.K. (2008). Board monitoring, firm risk, and external regulation. *Journal of Regulation Economic*, 33, 87-116
- Cheng, M., Green, W., Conradie, P., & Romi, A. (2014). The international integrated reporting framework: Key

- issues and future research opportunities. *Journal of International Financial Management & Accounting*, 25(1), 90–119.
- DeVilliers, C., Hsiao, P.-C. K., & Maroun, W. (2017). Developing a conceptual model of influences around integrated reporting, new insights and directions for future research. *Meditari Accountancy Research*, 25(4), 450–460.
- Fernando, K. (2018). Relevansi nilai informasi sustainability reporting dan integrated reporting: Bukti dari Afrika Selatan. *Tesis*. Universitas Indonesia
- Financial Reporting Council (FRC). (2011). *Cutting clutter. Combating clutter in annual reports*.
- Flower, J. (2015). The international integrated reporting council: A story of failure. *Critical Perspectives on Accounting*, 27, 1–17.
- Frias-Aceituno, J. V., Rodriguez-Ariza, L., & Garcia-Sanchez, I. M. (2012). The role of the board in the dissemination of integrated corporate social reporting. *Corporate Social Responsibility and Environmental Management*, 20(4), 219–.
- Frias-Aceituno, J. V., Rodríguez-ariza, L., & García-sánchez, I. M. (2013). Is integrated reporting determined by a country ' s legal system? An exploratory study. *Journal of Cleaner Production*, 44(1), 45–55.
- García-Sánchez, I.-M., & Noguera-Gámez, L. (2017). Integrated Reporting and Stakeholder Engagement: The Effect on Information Asymmetry. *Corporate Social Responsibility and Environmental Management*.
- Haji, A.A. (2015). The role of audit committee attributes in intellectual capital disclosures. *Managerial Auditing Journal*, 30(8/9), 756–784. <https://doi.org/10.1108/MAJ-07-2015-1221>
- Haji, A.A., & Anifowose, M. (2016). Audit committee and integrated reporting practice: does internal assurance matter? *Managerial Auditing Journal*, 31(8/9), 915–948.
- Hermawan, A.A. (2011). The Influence of Effective Board of Commissioners and Audit Committee on the Informativeness of Earnings: Evidence from Indonesian Listed Firms. *Asia Pacific Journal of Accounting and Finance*, 2 (1).
- Hurghis, R. (2017). Integrated reporting and board features. *Audit Financiar*, XV (1), 83-92
- IIRC. (2013). The International IR Framework. <http://integratedreporting.org/resource/international-ir-framework/>
- Ika, S.R. & Ghazali, M.N.A. (2012). Audit committee effectiveness and timeliness of reporting: Indonesian evidence. *Managerial Auditing Journal*, Vol. 27 (4), pp. 403-424.
- King III.(2009). *King Code of Governance for South Africa*. Institute of Directors in Southern Africa.
- Lee, K. W., & Yeo, G. H. H. (2016). The association between integrated reporting and firm valuation. *Review of Quantitative Finance and Accounting*, 47(4), 1221–1250.
- Mallin, C.A. (2016). *Corporate Governance*. Oxford: University Press, Fifth Edition
- Mathew, S., Ibrahim, S., & Archbold, S. (2018) Corporate governance and firm risk. *Corporate Governance: The International Journal of Business in Society*, 18 (1), 52-67.
- Oikonomou, I., Brooks, C., & Pavelin, S. (2012). The Impact of Corporate Social Performance on Financial Risk and Utility: A Longitudinal Analysis. *Financial Management*, 41(2), 483–515.
- Platt, H., & Platt, M. (2012). Corporate board attributes and bankruptcy. *Journal of Business Research*, Vol. 65 No. 8, pp. 1139-1143
- Plumlee, M., Brown, D., Hayes, R. M., & Marshall, R. S. (2015). Voluntary environmental disclosure quality and firm value: Further evidence. *Journal of Accounting and Public Policy*, 34(4), 336–361.
- Sassen, R., Hinze, A. K., & Hardeck, I. (2016). Impact of ESG factors on firm risk in Europe. *Journal of Business Economics*, 86(8), 867–904.
- Sila, V., Gonzalez, A., & Hagedorff, J. (2016). Women on board: does boardroom gender diversity affect firm risk?. *Journal of Corporate Finance*, 36, 26-53
- Simnett, R., & Huggins, A. L. (2015). Integrated reporting and assurance: where can research add value? *Sustainability Accounting, Management and Policy Journal*, 6(1), 29–53.
- Steyn, M. (2014). Organisational benefits and implementation challenges of mandatory integrated reporting. *Sustainability Accounting, Management and Policy Journal*, 5(4), 476–503.
- Velte, P., & Stawinoga, M. (2016). Integrated reporting: The current state of empirical research, limitations and future research implications. *Journal of Management Control*, 1–46.
- Zhou, S., Simnett, R., & Green, W. (2017). Does integrated reporting matter to the capital market?. *ABACUS: A Journal of Accounting, Finance, and Business Studies*, 53 (1)