Article

Risk Management Committee and Textual Risk Disclosure

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Abstract: This research examines the relationship between the risk management committee and textual risk disclosure. Textual risk disclosure is measured using the use of a risk-contained tone in the annual report. We employed empirical analysis for the Indonesian listed firms for the period 2010 to 2018. The findings of this research suggest that the existence of the risk management committee gives more risk disclosure. This finding implicates that firms with a risk management committee will give more risk disclosure, because they have a specific committee which have abilities concerning firm risk. The first additional analysis suggests that the results are more pronounced for firms within the period after the regulation to have a risk management committee was applied in Indonesia. We also make second additional analysis for different level of technology within industry. The existence of risk management committee for managing risk disclosure is more pronounced for company within high level of technology industry. We provide several contributions to the users of the financial statements such as shareholders and other stakeholders, especially regulatory bodies in Indonesia.

Keywords: risk management committee; risk disclosure; tone; MD&A

1. Introduction

Awareness of risk management is increasing, due to many recent corporate business failures and scandals (Walker et al. 2002). Several previous studies have shown that the risk management committee has a function to control, detect, and prevent firm risk (Abdullah and Said 2019; Larasati et al. 2019; Harymawan et al. 2021). Firm risk is divided into two categories. They are the financial risk and non-financial risk. Both of these risks are essential for the stakeholder to be considered in their decision-making. Therefore, companies should pay balanced attention to both of them. Previous studies by (Abdullah and Shukor 2017) proved empirical evidence that existence of a stand-alone risk management committee is positively related to risk management disclosure (Abdullah and Shukor 2017). Besides, the risk management committee also has an impact on non-existence of any financial crime incidence (Abdullah and Said 2019). Harymawan et al. (2021) added that RMC plays a role in monitoring the activities of the company and provides a broader scope for identifying risks within the company. However, to our knowledge, there is lack of empirical evidence on how the existence of a standalone risk management committee affects the firm's risk of textual disclosure.

As is well known, corporate disclosure is one of the crucial things and therefore, mounting studies have focused on examining the quality of corporate disclosure (Harymawan et al. 2020; Putra et al. 2020). Research on qualitative disclosure has existed since the early eighties (Frazier et al. 1984) and has continued to develop until now. The qualitative disclosures have important rules to give a wider perspective to and information for stakeholders, such as investors about the company, especially information that cannot be written in the form of a number. Advances in technology have made this topic more researched. The content analysis method is easier to use with certain applications or software. Several recent studies have examined the tone in company disclosure, especially the MD&A report, among others (Li 2008; Feldman et al. 2010; Davis and Tama-Sweet 2012; Huang et al. 2014).

These studies examined whether the tone of various corporate disclosures is related to, for example, the cost of capital, the volatility of returns, and analysts' forecasts (Kothari et al. 2009), shareholder litigation (Rogers et al. 2011), financial reporting errors (Larcker and Zakolyukina 2012), earnings quality (Li 2008), and market prices (e.g., Henry 2008; Li 2008; Feldman et al. 2010; Davis and Tama-Sweet 2012). Kahveci (2016) found that there is a positive relationship between company tone and performance. However, there is still little research concerning how internal factors of a company, such as their corporate governance, affect the qualitative disclosure. Further research needs to be done to find out how the relationship between the two variables is clear, especially in the case of companies in Indonesia.

The preparation of annual reports in Indonesia is regulated by the Financial Services Authority Regulation Number 29/POJK.04/2016 concerning Annual Reports of Go-Public Companies. In the annual report, there are several sections that contain different information. One of the important sections is Management Discussion and Analysis (MD&A). MD&A is one part that is mandatory or must be included in the annual report. This section specifically discusses the analysis and management's views on the company's past performance and future plans. Through this report, investors can find out the condition of the company from the manager's point of view. In terms of conveying information, there are several things that need to be considered, one of which is how to write a narrative text. The choice of words and the arrangement of sentences in a report will affect the mindset and point of view of the reader in understanding the information contained therein (Chung and Pennebaker 2011). This is an interesting topic to research. The tone that affects the investor's paradigm in understanding information will later carry over to the decision-making process and can affect the company's future performance.

Based on the Linguistic Theory, a group of words can generally affect the way readers think. In other words, the structure and the use of certain words in a sentence in the text can affect the reader's paradigm in interpreting the meaning of the text. In connection with this theory, there is another theory, namely, the Signaling Theory, which says that the way companies convey information is influenced by the objectives to be achieved, one of which is to give signals to the market. Thus, that tone and readability are important to measure the quality of information in a report.

The tone in a report text is divided into two types, namely, positive and negative. Positive leads more to company optimism, while negative tends to reflect company pessimism. In this study, it will focus on the negative tone that leads to qualitative risk disclosure following previous studies (Kravet and Muslu 2013; Bonsall and Miller 2016). Disclosure of corporate risk in previous studies has shown its effect on investor decisions and company performance (Oyerogba 2019). Risk is usually analyzed using financial analysis, but still, less research analyzes risk disclosure through tone analysis in reporting texts. Most previous studies examined the relationship between corporate governance and bankruptcy risk (Fraile and Fradejas 2012; Darrat et al. 2016; Manzaneque et al. 2016; Seetharaman et al. 2017). However, most previous studies discussed limited samples and examined the effects of several firms' attributes of governance (such as board size and director independence), but not those specific to managing risk. To fill this gap in the literature, we examine the relationship between the risk management committees and bankruptcy risk. In this study, the researcher wanted to examine whether the existence of risk management committee affects the use of negative tone as a form of verbal risk disclosure.

This study uses an observation of 4359 firms listed in the Indonesian Stock Exchange years 2010–2018 and got 2136 samples through purposive sampling. This study employs ordinary least square regression analysis to prove our hypothesis. Our main finding suggests that firms with a standalone risk management committee are significantly related to the firm's textual disclosure. It occurs since the risk management committee, as part of a board which is highly concerned about the firm's risk, can disclose more risk to investors to get positive feedback. We also have several additional analyses using sub-samples of the finance industry and high-tech industry. Our findings can be an input for policy-

makers regarding the implementation of stand-alone risk management committees on public companies for better firm risk disclosure for any related stakeholders.

The next section of this paper has the following structure: Section 2 will explain the development of the hypothesis; Section 3 will explain the sample and variables used in the study; Section 4 will explain the results; and Section 5 will provide conclusions of the study.

2. Hypothesis Development

As technology develops, content analysis methods are also growing. By using the the text mining method, the characteristics of a text can be easily assessed. Several previous studies have shown positive results that tone (Lang and Lundholm 2000; Henry 2008; Davis et al. 2015; Rogers et al. 2011) can influence stakeholder economic decisions. The decisions taken by these stakeholders can certainly have an impact on the company's future performance, positively or negatively. Several studies have argued that negative tones illustrate company pessimism (Loughran and McDonald 2011; Rogers et al. 2011). Furthermore, the negative tone is considered to contain risks for investors over the uncertainty of the company's performance in the future (Kravet and Muslu 2013; Bonsall and Miller 2016) which, in this study, is called the risk-contained tone. On the other hand, there is research that states that there is no relationship between the tone and performance of the company (Tailab and Burak 2018) because according to the study, the financial statements made by the company are only a formality, without paying too much attention to the current state of the company.

Ideally, if the company exposes too much risk in its reports, it will increase investors' knowledge about the risks of the company that were not previously exposed. Investors will consider these risks when making decisions. Risks that cannot be handled properly can have an impact on the company's performance in the future. Company performance itself is a measure to see the extent to which the company's achievements are in good condition at a certain time. (Memon et al. 2012) added that the company's performance is a description of the achievements that the company has achieved with the aim of gaining trust from outside parties. In addition, investors' economic decisions that are less supportive can also have an impact on company performance.

The existence of a risk management committee has become more important since the post-financial crisis, as well as the bankruptcy phenomenon in the past. A worldwide survey showed that 85 percent of financial institutions reported periodic reviews of the entity's asset management reports by their board of directors in 2010, a 12 percent increase compared to 2008 (Deloitte 2011). This suggests that more board members are currently active within the company in risk management actions. To overcome this problem, company board members began to create new structures in the organization to support the company's risk-monitoring process (Beasley et al. 2009). Risk management is one of the specialized skills that businesses need to create better management officers who have the greatest responsibility for overseeing the company's strategic policies and activities, and that means the greatest responsibility for controlling the proper implementation of corporate risk management. The system relies heavily on the commissioners (KNKG 2012). The risk management committee (RMC) can be formed by the Board of Commissioners to ensure that the implementation of risk management functions properly and minimizes the risk of bankruptcy.

In Indonesia, the formation of RMC is mandated for companies engaged in the banking sector because this sector has more complex risks compared to other sectors. Most of the academic literature on RMC was also conducted in the banking sector (Aebi et al. 2012; Hines and Peters 2015). For other sectors, the establishment of the RMC is still voluntary. However, many companies outside the banking sector appear to have RMCs to improve the quality of their risk management. Brown et al. (2009) showed that due to the increasingly complex business risk conditions that also occur in the non-financial industry, there is a need for corporate governance that focuses specifically on risk management practices, such as through the establishment of an RMC. It is hoped that the formation of a special committee such as the RMC which focuses specifically on risk management is expected to be filled with more skilled members who have in-depth knowledge of risk management

(Choi 2013; Fraser and Henry 2007). The establishment of an RMC can improve board risk monitoring because the RMC can dedicate its resources to evaluating risk appetite, risk profiling, and validating the company's internal controls (Moore and Brauneis 2008). This research will show that the existence of a management committee will be related to firm textual risk disclosure. It will be higher since the RMC will give more risk disclosure and assessment, or lower since the existence of RMC can manage the risk disclosure to mitigate the stakeholder's risk perception.

Hypothesis 1 (H1). *There is a relationship between the risk management committee and risk-contained tone in the company's MD&A report.*

3. Research Design
3.1. Sample and Source of Data

The sample in this study covers the period 2010–2018 and consists of companies listed on the Indonesian Stock Exchange (IDX). The information was collected through the company's annual report by hand-collection and the ORBIS database. Detail regarding the data resources is available in Table 1. We applied sample selection criteria to reach our final sample. We excluded all of the missing variables. After applying these criteria, our final sample included 2136 firm-year observations.

Table 1. Sample selection criteria.

Description	Total
Initial observations	4359 observations
Excluded: Firms with missing data	2223 observations
Final Observations	2136 observations

We provide the sample distribution of this research in Table 2. Overall, there are still big gaps for each company within industries which have a risk management committee and those which do not. There are still 70.11% of companies in Indonesia which do not have risk management committees, although the regulation is already applied. Firms in an industry with high complexity are more likely to have RMC to show their serosity to conduct good corporate governance.

Table 2. Sample distribution.

Industry	RMC		Non-RMC		Total	
	N	%	N	%	N	%
(SIC 0) Agriculture, Forestry and Fisheries	19	38.00	31	62.00	50	100
(SIC 1) Mining	69	32.70	142	67.30	211	100
(SIC 2) Construction Industries	71	24.40	220	75.60	291	100
(SIC 3) Manufacturing	43	22.99	144	77.01	187	100
(SIC 4) Transportation, Communications and Utilities	56	35.22	103	64.78	159	100
(SIC 6) Finance and Real Estate	102	35.22	233	64.78	159	100
(SIC 5) Wholesale & Retail Trade	28	36.36	49	63.64	77	100
(SIC 7) Service Industries	23	43.40	30	56.60	53	100
(SIC 8) Health, Legal, and Educational Services and Consulting	1	11.11	8	88.89	9	100
Total	510	29.89	1626	70.11	2136	100

3.2. Operational Definition and Variable Measurement

The independent variable of this research is the risk management committee (RMC). In Indonesia, the formation of a risk management committee is still voluntary for companies outside the banking industry. Therefore, some companies have RMC and some do not. We measure RMC using a dummy variable, coded 1 if companies disclose the existence of stand-alone RMC, and 0 if otherwise (Abdullah and Shukor 2017; Yatim 2009).

The dependent variable of this study is risk-contained tone data. We use a list of words that tend to be negative and categorized as risk (Kravet and Muslu 2013; Bonsall and Miller 2016) which is contained in the MD&A report using the text-mining method. Those risk-contained tones might indicate some possible risk of firm performance. In this research, we follow the approach of Kravet and Muslu (2013), which was also used by Bonsall and Miller (2016) to recognize and control the proportion of terms used in statements containing risk by looking at how much negative tone was used in the text (RISKDISC).

According to Kravet and Muslu (2013), RISKDISC is defined as the existence of risk sentences with a negative tone. First, the sentences are categorized into risk sentences, then those risk sentences are selected again and categorized as risk disclosure if they contain a negative tone. The number of negative tones from selected risk sentences will be used as variables. We predict that more intensive use of negative tone will be associated with a higher cost of debt. The complete steps to measure the negative tone or content analysis is explained in the Appendix B.

Based on previous literature, we use several control variables (Abbott et al. 2003; Duellman et al. 2015; Hay et al. 2008; Karim et al. 2016). The control variables are the board of commissionaire size (COM); board of director size (DIR), the proportion of independent commissionaire (INDCOMM), BIG 4 auditors using dummy variables (BIG4), firm sizes from the natural logarithm of the total asset (FIRMSIZE), firm age from the number of years since the incorporation date until the observed year, firm performance from return on assets (ROA), firm leverage (LEVERAGE), and loss using the dummy variable (LOSS). Before analyzing the data, we winsorized our financial variables at 1% and 99% levels. The detail operational definition of variable is included in Appendix A.

3.3. Methodology

This study uses two regression models, namely, the ordinary least square (OLS) and OLS, with a cluster model approach by Petersen (2009). The researchers also use year and industry fixed-effects to control for differences in economic conditions and industry characteristics. The software used in this research is Stata 14.0. To test our hypotheses, we use the following research models:

$$
\begin{aligned}
\text{RISKDISC} = {} & \beta_0 + \beta_1 \text{RMC} + \beta_2 \text{COM} + \beta_3 \text{DIR} + \beta_4 \text{INDCOM} + \beta_5 \text{BIG4} + \beta_6 \text{FIRMSIZE} + \beta_7 \text{AGE} + \beta_8 \text{ROA} \\
& + \beta_9 \text{LEVERAGE} + \beta_{10} \text{LOSS} + \beta_{11} \text{IFE} + \beta_{12} \text{YFE} + e
\end{aligned}
\tag{1}
$$

Description:

$\beta_0 - \beta_0$	= Coefficient
RMC	= Risk Management Committee (Dummy)
RISKDISC	= Risk Disclosure (Negative Tone)
COM	= Board of Commissionaire Size
DIR	= Board of Director Size
INDCOM	= Proportion of Independent Commissionaire
BIG4	= BIG 4 Auditor (Dummy)
FIRMSIZE	= Natural Logarithm of Total Asset
AGE	= Firm Age
ROA	= Return on Asset
LEVERAGE	= Total Debt/ Total Asset
LOSS	= Firm Loss (Dummy)
IFE	= Industry Fixed Effect
YFE	= Year Fixed Effect
Cons	= Constanta.

4. Result

4.1. Descriptive Statistics and Univariate Comparison

Table 3 shows the descriptive statistics for all variables used in our models. Table 3 shows the descriptive statistics for all variables used in our models. The mean value of RISKDISC is 3.016. The median value of RMC is 0, which means more than half of the observations have zero value or no risk management committee. Furthermore, the mean value of several control variables, such as COM is 4.387, DIR is 4.965, INDCOM 0.367, LEVERAGE 0.527, FIRMSIZE 28.661, AGE 31.361, LOSS 0.198, ROA 6.406, and BIG4 0.426.

Table 3. Descriptive statistics.

	N	Mean	Std. Dev	Median	Minimum	Maximum
RISKDISC	1037	20.565	1.226	20.516	17.910	24.334
RMC	1037	0.299	0.458	0.000	0.000	1.000
COM	1037	2.829	6.754	4.000	2.000	8.000
DIR	1037	2.225	4.323	2.197	2.000	9.000
INDCOM	1037	0.367	0.125	0.360	0.000	0.667
LEVERAGE	1037	0.490	0.219	0.482	0.073	1.266
FIRMSIZE	1037	29.023	1.491	28.948	25.401	32.339
AGE	1037	3.371	0.595	3.466	1.386	4.727
LOSS	3505	0.230	0.421	0.000	0.000	LOSS
ROA	1037	4.192	8.745	3.189	−20.313	37.049
BIG4	1037	0.502	0.500	1.000	0.000	1.000
CEOAGE	1037	0.246	0.431	0.000	0.000	1.000

Table 4 shows the Pearson correlation matrix among the variables used in this study. The existence of a risk management committee (RMC) shows a significant negative relationship to risk disclosure (RISKDISC). This occurred according to the expectations we built, that the risk management committee will impact the firm's risk disclosure.

Table 4. Pearson correlations.

Panel A: From Variable RMC to FIRMSIZE							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
[1] RMC							
[2] RISKDIC	0.170 ***						
[3] COM	0.518 ***	0.155 ***					
[4] DIR	−0.013	0.026	-0.019				
[5] INDCOM	0.337 ***	0.068 **	0.320 ***	-0.079 **			
[6] BIG4	−0.159 ***	0.216 ***	−0.085 ***	0.094 ***	−0.201 ***		
[7] FIRMSIZE	0.069 **	0.021	−0.012	−0.048	0.105 ***	0.026	
[8] AGE	0.695 ***	0.198 ***	0.604 ***	−0.003	0.434 ***	−0.121 ***	0.170 ***
[9] ROA	0.094 ***	−0.069 **	0.228 ***	−0.026	0.079 **	0.055 *	−0.006
[10] LEVERAGE	0.269 ***	0.032	0.191 ***	0.027	0.157 ***	−0.017	−0.178 ***
[11] LOSS	0.061 **	−0.015	−0.054 *	−0.096 ***	0.042	−0.067 **	0.023

Panel B: From Variable FIRMSIZE to MTB			
	[8]	[9]	[10]	[11]
[8] FIRMSIZE				
[9] FIRMAGE	0.071 **			
[10] OCF	0.175 ***	0.070 **		
[11] MTB	−0.047	−0.091 ***	0.224 ***	

p-values in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

4.2. Risk Management Committee and Risk Disclosure

Table 5 presents the results of OLS regression to test the association between the risk management committee (RMC) and the risk disclosure (RISKDISC) of firms using the tone

of the text with all control variables. The existence of a risk management committee in a firm is positively related to the risk disclosure, with a coefficient of 0.153 and 0.01 significance level. It means that the risk management committee is beneficial to assess and disclose more risk through the company's report. This result is in line with previous research by Abdullah and Shukor (2017) that the existence of a standalone risk management committee is positively related to risk management disclosure. This result supports the hypothesis.

Table 5. Risk management committee and negative tone.

	RISKDISC
RMC	0.153 ***
	(2.63)
COM	0.014
	(1.10)
DIR	−0.020 *
	(−0.177)
INDCOMM	−0.003 *
	(−2.15)
BIG4	0.090 *
	(2.20)
FIRMSIZE	0.133 ***
	(8.68)
AGE	0.002
	(1.30)
ROA	−0.005 **
	(−2.47)
LEVERAGE	−0.006
	(−0.12)
LOSS	−0.041
	(−0.74)
Industry Fixed Effect	Included
Year Fixed Effect	Included
_cons	−1.022 **
	(−2.48)
r2	0.470
r2_a	0.464
N	2136

t-statistics in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Several control variables in this research also showed a significant result. Corporate governance, including the director size (DIR) and the proportion of independent commissioners (INDCOMM) showed a negative and significant relationship to risk disclosure (RISKDISC). The company auditor (BIG4) and firm size (FIRMSIZE) shows a positive significant relationship to firm risk disclosure (RISKDISC). It indicates that bigger audit firms and bigger companies are associated to higher risk disclosure. However, firm performance (ROA) has a negative and significant relationship to risk disclosure (RISK). It may indicate that firms with good performance expose less risk to their corporate disclosure.

4.3. Risk Management Committee, Risk Disclosure and Corporate Governance

Furthermore, Table 6 shows the results of the risk management committee and negative tone moderated with some governance variables, such as director size, independent commissioner, and firm size. These results indicate that firms with better corporate governance, such as the director size and independent commissioner size, strengthen the relationship between the risk management committee and risk disclosure, as well as firm's size, which indicates that in a bigger firm, the existence of a risk management committee is more effective than the firm's risk disclosure.

Table 6. Risk management committee, director size, independent director, and firm size.

	(1) RISKDISC	(2) RISKDISC	(3) RISKDISC
RMC	0.653 ***	0.492 ***	3.561 **
	(3.16)	(3.99)	(2.33)
RMC_DIR	−0.095 **		
	(−2.30)		
RMC_INDCOM		−0.190 ***	
		(−2.93)	
RMC_FIRMSIZE			−0.115 **
			(−2.22)
COM	0.015	0.027 **	0.020
	(1.16)	(2.10)	(1.56)
DIR	−0.018	−0.036 ***	−0.034 **
	(−1.30)	(−2.63)	(−2.54)
INDCOMM	−0.003 **	−0.002	−0.003 **
	(−2.11)	(−1.20)	(−2.08)
BIG4	0.098 **	0.095 **	0.090 **
	(2.55)	(2.48)	(2.33)
FIRMSIZE	0.134 ***	0.138 ***	0.150 ***
	(7.71)	(7.85)	(8.34)
AGE	0.001	0.001	0.001
	(0.89)	(1.02)	(0.97)
ROA	−0.003	−0.004 *	−0.004 *
	(−1.62)	(−1.95)	(−1.77)
LEVERAGE	−0.034	−0.045	−0.032
	(−0.52)	(−0.70)	(−0.50)
LOSS	−0.004	−0.012	−0.009
	(−0.07)	(−0.21)	(−0.17)
Industry	Included	Included	Included
Year	Included	Included	Included
_cons	−1.086 **	−1.179 **	−1.472 ***
	(−2.25)	(−2.44)	(−2.96)
r2	0.478	0.478	0.477
r2_a	0.471	0.471	0.471
N	2136	2136	2136

t-statistics in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

4.4. Risk Management Committee, Risk Disclosure and Industry Technology

For further analysis, we provide an analysis for firms in a different level of the industry. Table 7 presents the results of OLS regression in examining the association between the risk management committee and risk-contained tone between four levels of technology. Tech 1 is the industry with a low level of technology, and Tech 4 is the industry with a high level of technology. All observations in this study were divided into the lowest level of technology, which was included in TECH 4 with 243 observations, TECH 3 with 371 observation, TECH 2 with 525 observations, and TECH 1 with 1006 observations. For sub-sample TECH 4, the RMC is negatively significant to risk disclosure with a coefficient of 0.677 and significant level of 0.05. It indicates that for firms in a lower level of technology, risk management committees disclose less risk. However, firms with a high level of technology in TECH 1 are positively significant, which means that a high-level industry has a higher risk of being disclosed.

Table 7. Industry technology levels.

	(TECH 1) RISKDISC	(TECH 2) RISKDISC	(TECH 3) RISKDISC	(TECH 4) RISKDISC
RMC	0.296 ***	0.059	0.069	−0.677 **
	(5.19)	(0.37)	(0.42)	(−2.47)
COM	0.004	0.038	−0.006	0.139 ***
	(0.26)	(1.39)	(−0.20)	(3.23)
DIR	0.019	−0.073 **	−0.044	−0.086 *
	(1.17)	(−2.58)	(−1.64)	(−1.75)
INDCOMM	−0.000	−0.004	−0.002	−0.003
	(−0.13)	(−1.39)	(−0.61)	(−0.58)
BIG4	0.057	−0.035	0.256 ***	0.339 **
	(1.12)	(−0.38)	(3.25)	(2.01)
FIRMSIZE	0.128 ***	0.233 ***	0.128 ***	−0.024
	(5.27)	(6.61)	(3.57)	(−0.42)
AGE	0.000	−0.000	−0.002	0.012 ***
	(0.36)	(−0.12)	(−0.45)	(2.61)
ROA	−0.007 **	0.003	−0.009	−0.005
	(−2.39)	(0.72)	(−1.59)	(−0.63)
LEVERAGE	0.007	−0.129	−0.440 *	0.594 ***
	(0.08)	(−1.25)	(−1.96)	(3.28)
LOSS	−0.107	0.074	−0.151	−0.024
	(−1.31)	(0.72)	(−1.10)	(−0.11)
INDUSTRY	Included	Included	Included	Included
YEAR	Included	Included	Included	Included
_cons	−1.053	−3.557 ***	−0.895	2.229
	(−1.55)	(−3.71)	(−0.91)	(1.39)
r2	0.520	0.412	0.555	0.492
r2_a	0.508	0.388	0.527	0.439
N	1006	525	371	234

t-statistics in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

4.5. Risk Management Committee, Risk Disclosure and Quartal Analysis

Further, we conducted a quartal analysis as the robustness analysis in the Table 8. We divide the sample into four groups based on the sample distribution of risk disclosure (NTONE). Quarter 1 is for the negative tone, which is less than 11, with a total sample of 519. Quarter 2 is for the negative tone between 11 and 28, with a total sample of 482. Quarter 3 is for the negative tone between 29 and 45, with a total sample of 481. Quarter 4 is for the negative tone of more than 45, with a total sample of 518. The results show that the coefficient on RISKDISC is positive and statistically significant at the 1 percent level only for the subsample in quartal 4. It means that the standalone risk management committee is associated to firms with higher levels of risk disclosure. It supports the main regression analysis.

Table 8. Quartal analysis.

	(1) RISKDISC	(2) RISKDISC	(3) RISKDISC	(4) RISKDISC
RMC	−0.076	0.015	0.020	0.082 ***
	(−0.58)	(0.39)	(0.97)	(2.82)
COM	0.023	0.008	−0.002	0.002
	(0.96)	(0.87)	(−0.48)	(0.34)
DIR	−0.026	0.008	−0.001	0.007
	(−1.21)	(1.12)	(−0.17)	(1.06)
INDCOMM	−0.003	0.001	−0.000	−0.001
	(−1.10)	(0.99)	(−0.05)	(−1.15)
BIG4	0.057	0.025	−0.017	−0.091 ***
	(0.76)	(0.99)	(−1.31)	(−3.84)
FIRMSIZE	0.065 **	−0.005	0.011 **	0.052 ***
	(2.47)	(−0.43)	(2.10)	(5.28)
AGE	0.000	0.000	0.000	−0.001
	(0.03)	(0.16)	(0.90)	(−1.51)
ROA	−0.008 *	−0.003 **	−0.000	−0.001
	(−1.72)	(−2.43)	(−0.35)	(−0.47)
LEVERAGE	−0.078	−0.029	−0.044 ***	0.034
	(−0.96)	(−0.93)	(−2.81)	(0.65)
LOSS	0.084	−0.067 *	0.000	−0.031
	(0.89)	(−1.73)	(0.01)	(−0.99)
INDUSTRY	Included	Included	Included	Included
YEAR	Included	Included	Included	Included
_cons	−0.265	2.966 ***	3.272 ***	2.498 ***
	(−0.37)	(10.21)	(22.57)	(8.62)
r2	0.060	0.158	0.089	0.157
r2_a	0.012	0.112	0.039	0.116
N	519	482	481	518

t-statistics in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

4.6. Risk Management Committee, Risk Disclosure and Financial Industry

The next additional analysis is for the financial and banking industry as presented in Table 9. Since the regulation of the risk management committee is mandatory for banking since 2016, we made a sub-sample for pre- and post-regulation. Table 5 shows the result that the relation between RMC and Risk Disclosure is more significant after the regulation is applied for companies in the banking industry.

Table 9. Pre–post regulation for the financial and banking industry.

	(1) RISKDISC	(2) RISKDISC
RMC	0.248	0.418 **
	(1.37)	(2.01)
POST	−1.418 ***	−1.349 ***
	(−7.30)	(−6.83)
RMCPOST		−0.609
		(−1.47)
COM	−0.030	−0.032
	(−0.85)	(−0.90)
DIR	0.084 **	0.091 **
	(1.98)	(2.10)
INDCOMM	−0.003	−0.002
	(−0.55)	(−0.51)
BIG4	−0.068	−0.062
	(−0.54)	(−0.49)

Table 9. *Cont.*

	(1) RISKDISC	(2) RISKDISC
FIRMSIZE	0.059	0.043
	(1.10)	(0.76)
AGE	0.010 **	0.009 *
	(2.07)	(1.89)
ROA	−0.019 *	−0.019 *
	(−1.65)	(−1.68)
LEVERAGE	0.506 *	0.481 *
	(1.76)	(1.66)
LOSS	−0.427 *	−0.448 *
	(−1.72)	(−1.82)
SIC 6	0.000	0.000
	(.)	(.)
YEAR	0.000	0.000
_cons	0.584	1.018
	(0.39)	(0.65)
r2	0.501	0.505
r2_a	0.456	0.457
N	206	206

t-statistics in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

5. Conclusions

This research investigated the relationship between risk management committees and risk-contained tone. Risk-contained tone in this research became the proxy of the firm's risk disclosure quality. This becomes an important issue, since the formation of risk management committees in Indonesia are still voluntary for most of the industry. We expect that our study can provide an input for policy-makers regarding the formation of RMC, especially in Indonesia. This research used observations of 4359 firms listed in Indonesian Stock Exchange years of 2010–2018, and got 2136 samples through purposive sampling. The quantity of negative tone of the annual report as the indicator of the textual disclosure strategy was recognized as an important reporting aspect for companies. The existence of the Risk Management Committee within a company is essential for managing those risk disclosures.

The results of this study support our hypothesis. This research gives empirical evidence that the risk management committee has a significant relationship to the firm's risk disclosure. This result supports previous research by Abdullah and Shukor (2017) As stated by several previous studies, we expect that companies establish a standalone risk management committee with a motive to disclose risk information as it benefits investors, enabling companies to better allocate resources (Abraham and Shrives 2014; Leopizzi et al. 2020; Fijalkowska and Hadro 2022). Some other interested variables also showed a significant result as predicted; for example, corporate governance showed a positive association to risk disclosure because better governance means better control. Our additional analysis also provides several insights. The relationship between the existence of the risk management committee within a company is more pronounced for companies in a high-technology industry. Besides in the specific case of Indonesia, the risk management committee is more significantly related to risk disclosure for companies in the finance and banking industry, since the regulation is only mandatory for those industries, and voluntary for other industries.

The results of this research contribute new insight to the literature through the examination of firm-specific committees related to risk, and the risk disclosure as the output. This research also provides evidence for the management of the importance of risk management committees to make firm risk management and disclosure its optimum concern. For the regulator, this finding might prompt a consideration to apply mandatory regulation for

each public company to have a risk management committee. There are some limitations that researchers found when conducting this research. First, some companies publish their annual report in the form of pictures, and therefore, the text cannot be run in the application. Lastly, this research focuses on the setting of Indonesia as a developing country. Other countries with a similar setting might use this research as an input to regulatory bodies. Hence, future researchers from different countries with different characteristics from Indonesia might do similar research to provide richer insight. The following ressearchers can also include external environmental factors to enrich the perspective of research. It can be added onto by political, economic, social, technological, and environmental factors. Future researchers may also consider another textual risk disclosure measurement.

Appendix A

Table A1. Variable definition.

	Variables	Definition	Source
Dependent: Risk Disclosure	RISKDISC	Number of risk tones disclosed in the company's annual report	Annual Report
Independent: Risk Management Committee	RMC	Dummy variable, 1 if company has a Risk Management Committee, and 0 if not	Annual Report
Control: Commissioner Size	COM	Number of members of the board of commissioners in the company	Financial Report
Independent Commissioner	INDCOM	Percentage of independent commissioners in the company	Financial Report
Director Size	DIR	Number of members of the board of directors in the company	Bloomberg
Firm Size	FIRMSIZE	Natural logarithm of total assets at the end of the year	ORBIS
Leverage	LEVERAGE	Total debt divided by total assets	ORBIS
Firm Age	AGE	The number of years since the company was listed in IDX	ORBIS
Growth of Assets	GROWTH	Difference between total assets and lag total assets divided by lag total assets	ORBIS
Return on Assets	ROA	Net income divided by total assets	ORBIS
Loss	LOSS	Dummy variable, 1 if net income is negative, and 0 if otherwise	ORBIS
BIG4 Auditor	BIG4	Dummy variable, 1 if the firm was audited by a Big 4, and 0 if otherwise	Financial Report

Appendix B

Data Collection Method of Risk-Contained Tone

Step 1: Obtaining Annual Report file

We downloaded annual reports of all listed firms for fiscal years from 2010 until 2017 from the Indonesian Stock Exchange website (idx.co.id). Then we did content analysis from steps 2 to 3.

Step 2: Extracting risk disclosures from 10-K filings

We searched for full sentences that involve the following risk-related keywords (where a '*' implies that suffixes are allowed): "can", "cannot", "could", "may", "might", "risk*", "uncertain*", "likely to" "subject to" "potential*", "vary*", "varies", "depend*", "expos*", "fluctuat*", "possibl*", susceptible", "affect", " influenc*", and " hedg*". We tagged a sentence as risk disclosure if it contained at least one of the above keywords.

Step 3: Analyzing the negative tone in risk disclosures

We further categorized risk-disclosure sentences according to whether they contained a negative tone. A risk disclosure sentence is identified as having a negative tone if it includes one or more of the following keywords and their variations: "Negative*", "material*", "adverse*", "damage*", destroy*", "loss", "harm", "catastroph*", "tragic", "destruct*", "significant", "serious", and "hamper".

Step 4: Calculating numbers of negative tone

The last step is calculating the numbers of negative tone which are contained in risk disclosure sentences. Those numbers will then be used as the proxy of variable negative tone (RISKDISC).

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