

ENVIRONMENTAL, SOCIAL AND GOVERNANCE DISCLOSURES AND FIRM RISK

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Full paper

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Abstrak

Penelitian ini bertujuan untuk menganalisis pengaruh pengungkapan Lingkungan, Sosial dan Tata Kelola (ESG) terhadap risiko perusahaan. Pengungkapan ESG mencakup isu - isu lingkungan, sosial dan tata kelola yang dipertimbangkan oleh pemangku kepentingan untuk mencerminkan akuntabilitas perusahaan. Penelitian ini menggunakan indikator indeks GRI-G4 untuk mengukur skor pengungkapan ESG. Risiko perusahaan direpresentasikan oleh risiko total yang diukur dengan menghitung standar deviasi pengembalian saham harian untuk mencerminkan volatilitas saham. Risiko total dikategorikan ke dalam risiko sistematis yang diukur dengan menghitung beta pasar dan risiko idiosinkratik yang diukur dengan menghitung standar deviasi residual. Pengukuran risiko dalam penelitian ini berdasarkan pada model CAPM Sharpe.

Objek penelitian dalam studi ini adalah perusahaan non-keuangan yang terdaftar di Bursa Efek Indonesia (BEI) yang menerbitkan laporan keberlanjutan selama periode 2014-2016. Penelitian ini menggunakan metode purposive sampling dalam menentukan sampel dan penelitian ini memperoleh 36 sampel perusahaan serta 90 perusahaan yang menjadi data observasi. Data yang digunakan dalam penelitian ini adalah data sekunder yang dikumpulkan dengan melakukan studi dokumentasi dan studi pustaka. Data tersebut selanjutnya diuji dengan menggunakan regresi linier berganda sebagai metode analisis dalam penelitian ini.

Temuan – temuan penelitian ini menunjukkan bahwa pengungkapan lingkungan dan sosial berpengaruh negatif dan signifikan terhadap risiko total, risiko sistematis, dan risiko idiosinkratik. Akan tetapi, pengungkapan tata kelola hanya secara signifikan mempengaruhi risiko total dan secara tidak signifikan mempengaruhi risiko sistematis dan risiko idiosinkratik. Namun demikian, pengungkapan tata kelola memiliki pengaruh positif pada semua ukuran risiko.

Kata Kunci: Pengungkapan ESG, risiko total, risiko sistematis, risiko idiosinkratik

1. Introduction

The emergence of the Fourth Industrial Revolution caused competition among business people increasingly tight. The Fourth Industrial Revolution is the era of digitalization leading to technological convergence that disguises boundaries among physical, digital, and biological environments and creates a new genetic engineering and neurotechnology capability (WEF, 2016). Therefore, the competitiveness becomes one of the important factors to be considered in maintaining economic growth. As a result, company's vision is no longer merely short-term but also long-term

oriented so that companies need to increase their global competitiveness in the achievement of long-term vision. A way to encourage global competitiveness enhancement is through investments. However, any action taken by a company might create risks.

Firm risk potentially leads to a loss of corporate value due to the uncertainty of future results or events (Chang et al., 2014). Therefore, firm risk may cause losses for investor and other stakeholders so that investor and other stakeholders have always considered firm risk before having an investment relationship with a company. As a result, the relationship between a company and investor or other stakeholders will be disrupted if a company has a high firm risk. While investor and other stakeholders have a very important role in the achievement of sustainable operational success of a company, so firm risk may also hamper the sustainable operational success of a company. Thus, a company needs to have a strategy to mitigate firm risk.

Among strategies extensively and objectively chosen to mitigate the risk, environmental and social disclosures have been considered essential. Environmental and social disclosures are important to be increased because environmental and social issues are increasingly considered by investor and other stakeholders. Moreover, companies in Indonesia are required to perform environmental and social responsibilities as set out in the law number 40, 2007. Environmental and social disclosures related to the actual and the real activity of Corporate Social Responsibility (CSR) so that environmental and social disclosures can reflect an accountability of a company. In other words, a company's business practice may judge environmentally and socially through environmental and social disclosures. Thereby, a company can increase its image and create a good relationship with investor and other stakeholders due to CSR related activities demonstrate the company as a good citizen. A good relationship can facilitate the company in carrying out the company's operations as well as increase the confidence of investor to invest in the company. As a result, the operational costs or the input costs may be decreased and the market value of the company may be increased. Thus, firm risk will be lower.

Yet, environmental and social disclosures are not enough to serve as the only firm risk mitigation strategies. Governance disclosure is also required as a part of risk mitigation strategies, especially because the identification of corporate governance mechanisms becomes one of the crucial issues for investor and other stakeholders (Kolk and Pinkse, 2010). Governance disclosure reflects the transparency of information disclosure by a company so that governance disclosure can reduce an asymmetric information between companies and investor or other stakeholders. Therefore, governance disclosure can serve as an analytical tool for investors to detect the potential governance issues as early as possible, so investors can effectively measure the value of the investments and business risks.

A number of earlier empirical studies have examined the influence of environmental, social and governance disclosures on firm risk. However, the results of previous studies are inconclusive. Benlemlih et al. (2016) and Sassen et al. (2016) found that environmental, social and governance

disclosures have a negative influence on firm risk. Meanwhile, Nguyen et al. (2015), as well as Kim et al. (2017), showed the positive influence of environmental, social and governance disclosures on firm risk. In addition, Gramlich and Finster (2013) did not even find a clear evidence that sustainability through ESG disclosure can lower the risk.

The different findings among earlier empirical studies were due to the differences in environmental, social and governance disclosures measure. Some researchers used an aggregate ESG disclosure measures, such as Gramlich and Finster (2013) and Kim et al. (2017). Meanwhile, the other researchers used an individual ESG disclosure measures as independent variables, such as Nguyen et al. (2015), Benlemlih et al. (2016), and Sassen et al. (2016).

Another cause of the discrepancy of findings among earlier empirical studies was the difference in risk measures used in the different time ranges and sub-samples. Some researchers used the accounting-based risk measures, such as Gramlich and Finster (2013) and Nguyen et al. (2015). Meanwhile, several other researchers used the market-based risk measures, such as Benlemlih et al. (2016), Sassen et al. (2016), and Kim et al. (2017). As a result, the difference in the outcomes among former empirical studies was taken as the major problem in this study.

Meanwhile, the previous empirical studies that investigated the influence of ESG disclosure on firm risk in Indonesia were still hard to find. Some previous empirical studies had largely focused on the companies in America and Europe. Moreover, most previous empirical studies in Indonesia still used CSR concepts and the companies that disclose the ESG or CSR disclosure in their reports were still limited. The limitations of the previous empirical studies led to further research needed to examine the influence of ESG disclosure on firm risk in Indonesia. Thus, this study focused on analyzing the influence of environmental, social and governance (ESG) disclosure on firm risk to non-financial companies that published a sustainability report and listed in Indonesia Stock Exchange (IDX) over the period of 2014-2016. Based on the previous elaboration, the following research questions are proposed:

1. Does the Environmental disclosure negatively influence the firm risk?
2. Does the Social disclosure negatively influence the firm risk?
3. Does the Governance disclosure negatively influence the firm risk?

The research questions which are proposed represented the problem formulation that required to be resolved in this study. Therefore, the first objective of this study was to be able to analyze the influence of environmental disclosure to the firm risk. Then, the second objective of this study was to be able to analyze the influence of social disclosure to the firm risk. Furthermore, the third objective of this study was to be able to analyze the influence of governance disclosure to the firm risk. Firm risk in this study included total risk, systematic risk and idiosyncratic risk.

2. Theoretical Framework and Hypothesis Development

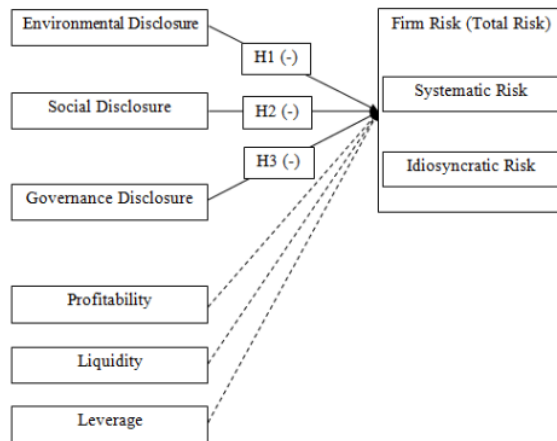
Firm risk might affect both internal and external stakeholders; so that, stakeholders encouraged the companies to be more accountable and transparent for their actions. Freeman (2010) described stakeholders as a group of people or individuals who may influence or be influenced by the achievement of the company's objectives. Stakeholders consist of shareholders, employees, creditors, suppliers, customers, government agencies, and other public interest groups. Stakeholder theory deals with corporate responsibility in considering some different claims of the stakeholders (Nguyen et al., 2015). The fulfillment of the diverse needs of the stakeholders directly creates a shareholder value and reduces firm risk (Freeman, 2010). Corporate responsibility of a company could be represented by disclosing informations about some issues which in this study related to environmental issues, social issues, and governance issues. Therefore, stakeholder theory were relevant to be used in explaining the influence of environmental, social and governance disclosure on firm risk (total risk), systematic risk, and idiosyncratic risk.

Furthermore, the information conveyed by management or executives of a corporation to external party reflected a signal. The signal would be interpreted by the external party as the recipient as positive or negative information. In this state, signaling theory explains how companies should choose information and communicate it; so that, the companies can provide a positive signal to external parties (Connelly et al., 2011). The consideration of external parties in disclosure is very important and the companies required to increase the information transparency, either in financial information nor non-financial information. Therefore, signaling theory also explains about the asymmetric reduction of information between two parties. Accordingly, the companies require disclosing non-financial information as a signal other than disclosing financial information. Thus, the information provided to external parties could be more relevant and reliable; thereby, the asymmetric information could be reduced. The disclosure of the non-financial information in this study was ESG disclosure.

Theoretical framework visually represents the influence of independent variable on dependent variable in the research hypothesis. Firm risk which represented by total risk consisting of systematic risk and idiosyncratic risk was the dependent variable used in this study. While, environmental, social and governance disclosures were the independent variables used in this study. Each of environmental, social and governance disclosures assumed to have a negative influence on firm risk (total risk), systematic risk, and idiosyncratic risk. Moreover, this study also used several control variables as variables that be made constant so that the influence of environmental, social and governance (ESG) disclosure on firm risk was not affected by the other factors that were not examined. The control variables used were financial ratios that included profitability ratio, liquidity ratio, and leverage ratio. The theoretical framework used was described in detail in the following figure.

Figure 1

The Research Theoretical Framework



2.1. The Influence of Environmental Disclosure on Firm Risk

The stakeholders are increasingly concerned about environmental issues, such as the use of materials, energy, and water, as well as the issues of biodiversity, emission, effluents and waste. The attention of a company to stakeholder's claims which considered the environmental issues in running their operational activities can be reflected by environmental disclosure. Benlemlih et al. (2016) stated that environmental disclosure related to corporate environmental responsibility. Therefore, stakeholder theory suggests that companies that engage in responsible activities can improve the company's image and reputation and gain support from stakeholders (Kim et al., 2017). In other words, environmental disclosure may affect the perceptions of the other stakeholders about the company (Benlemlih et al., 2016). Companies with environmental disclosure considered as a responsible company and thereby, signaling theory explains that companies that disclose environmental disclosure provide a positive signal to external parties (Connelly et al., 2011). Furthermore, Benlemlih et al. (2016) in their journal entitled "Environmental and Social Disclosures and Firm Risk," found that environmental disclosure has a negative and significant influence on total risk. The increasing of the stakeholders' trust to the company may increase the corporate value and decrease firm risk. Based on the explanation, this study formulates the hypothesis:

H1. *Environmental disclosure has a negative influence on firm risk (total risk)*

Firm risk is represented by total risk. One of components of total risk is systematic risk. Therefore, environmental disclosure also assumed to have an influence on systematic risk. Environmental disclosure can enhance the company's image among investors and particularly increase the market value of the company and decrease firm risk (Benlemlih et al., 2016). Moreover, Cheng et al. (2014) found a negative and significant influence of environmental disclosure on capital constraint.

An increased corporate transparency through environmental disclosure encourages the companies to have a better financial access so that reducing the capital constraints. The reduction of capital constraints of such company may decrease the systematic risk. Based on the explanation, this study extends the first hypothesis into:

H1a. *Environmental disclosure has a negative influence on systematic risk*

The other component of total risk is idiosyncratic risk so that environmental disclosure also assumed to have an influence on idiosyncratic risk. The companies with the high environmental disclosure can gain more funding sources and increase their expected cash flow growth (Qiu et al., 2016). The increasing of company's image and reputation among stakeholders might encourage the increase in sales of products or services so that the expected growth rates of company's cash flow might increase. Furthermore, Benlemlih et al. (2016) found a negative and significant influence of environmental disclosure on idiosyncratic risk. The high environmental disclosure can increase the trust of the stakeholders to the company. Thus, environmental disclosure may reduce the likelihood that the company is subject to expensive fines or severe legal sanctions (Nguyen et al., 2015). As a result, the companies can reduce their operational risks or transactional risks arising from the conflict between the companies and their stakeholders (Benlemlih et al., 2016). Based on the explanation, this study extends the first hypothesis into:

H1b. *Environmental disclosure has a negative influence on idiosyncratic risk*

2.2. The Influence of Social Disclosure on Firm Risk

Stakeholder theory explains that various different claims of stakeholders required to be met by the company (Sassen et al., 2016). Companies can meet the claims of stakeholders by considering some social issues, such as controversies of child labor or forced labor, discrimination acts, human rights violations, harmful product compositions, prohibited products, the company's involvement in the industry which is rejected by the public, fraudulent controversies, unhealthy competition, tax fraud, as well as acts of corruption or acts of bribery. The fulfillment of the different claims of stakeholders reflects the corporate social performance that can be measured by social disclosure. Social disclosure indicates the company is responsible to all of its stakeholders. Therefore, companies that disclose social disclosure are considered as a good citizen and a part of society with high awareness (Sassen et al., 2016); so that, signaling theory explains that companies by social disclosure provide positive signals to external parties (Connelly et al., 2011). Therefore, Benlemlih et al. (2016) stated that social disclosure has a negative and significant impact on total risk. The extensive and objective social disclosure can increase the satisfaction of its stakeholders. Moreover, companies with the high social disclosure may also gain trust from the stakeholders. Therefore, company may increase the corporate value and decrease firm risk. Based on the explanation, this study formulates the hypothesis:

H2. *Social disclosure has a negative influence on firm risk (total risk)*

Firm risk is represented by total risk. One of components of total risk is systematic risk. Therefore, social disclosure also assumed to have an influence on systematic risk. The trust of stakeholders can reduce the conflict between the company and its stakeholders (Benlemlih et al., 2016) so that the company considered was not related to the case or conflict. Then, Sassen et al. (2016) revealed that social score has a negative and significant effect on systematic risk. The company could have a good reputation by disclosing an environmental disclosure which could increase the confidence from investors to the company which then encourage the increase of market value of a company's shares due to an increase in stock prices and the number of outstanding shares of the company. Thus, the systematic risk of a company assumed could be reduced. Based on the explanation, this study extends the second hypothesis into:

H2a. *Social disclosure has a negative influence on systematic risk*

The other component of total risk is idiosyncratic risk so that social disclosure also assumed to have an influence on idiosyncratic risk. The satisfaction from stakeholders can increase loyalty, such as customer loyalty. Thus, social disclosure can increase the expected cash flow growth (Qiu et al., 2016). Moreover, Benlemlih et al. (2016) and Sassen et al. (2016) stated that social disclosure has a negative influence on idiosyncratic risk. The companies that disclose a social disclosure can get a trust of stakeholder so that the company's reputation and good relationships between the company and its stakeholders can be enhanced. The good relationships between the company and its stakeholders can facilitate the company in carrying out its operational activities (Husted, 2005). Thus, social disclosure is assumed to reduce operating costs or input costs.

Based on the explanation, this study extends the second hypothesis into:

H2b. *Social disclosure has a negative influence on idiosyncratic risk*

2.3. The Influence of Governance Disclosure on Firm Risk

Governance disclosure related to governance issues, such as governance structure, the role of the highest governance body in setting the purposes, values and strategies, the highest governance body's competencies and performance evaluation, the highest governance body's roles, remuneration and incentive policies. While Sassen et al. (2016) revealed that corporate governance score has no significant effect and positively affects total risk, Chang et al. (2015) stated that corporate governance has a negative moderating effect on the relationship between firm performance and risk. Stakeholder theory deals with corporate governance which involves a checks and balances process between management and shareholders, as well as considering trade-offs between management and other stakeholders, including local communities. Furthermore, corporate governance reflects the transparency of corporate structure and operations so that governance becoming a form of effective internal control system implementation and risk management (Bassen and Senkl, 2011). Therefore, signaling theory describes that governance disclosure reflects the existence of information transparency on corporate governance issues and thereby, an information asymmetric can be reduced

(Chang et al., 2015). Moreover, companies can provide an effective protection for stakeholders, such as shareholders and creditors. As a result, companies that disclose governance disclosure can provide a good signal and get positive feedback, such as the company can maintain their sustainable operational activities and reduce firm risk.

Based on the explanation, this study formulates the hypothesis:

H3. Governance disclosure has a negative influence on firm risk (total risk)

Firm risk is represented by total risk. One of components of total risk is systematic risk, so governance disclosure also assumed to have an influence on systematic risk. The increasing of investors' confidence in the company may encourage the majority of the investor group will buy additional stocks from the company due to the governance disclosure (van Duuren et al., 2016). As a result, market value of a company might increase and systematic risk might decrease due to an increase in stock prices and the number of outstanding shares.

Based on the explanation, this study extends the third hypothesis into:

H3a. Governance disclosure has a negative influence on systematic risk

The other component of total risk is idiosyncratic risk so that governance disclosure also assumed to have an influence on idiosyncratic risk. The governance information disclosed in detail can improve the company performance and reduce the capital cost that is a part of the firm risk. Corporate governance activities conducted by a company and disclosed in a company report can help improve the company's reputation and potentially increasing the profitability and stock value (Chang et al., 2015). Based on the explanation, this study extends the third hypothesis into:

H3b. Governance disclosure has a negative influence on idiosyncratic risk

3. Research Method

3.1. Measurement and Operational Defenition of Research Variables

The dependent variable used in this study was firm risk which represented by total risk. Total risk reflected the total stock volatility of a company or the variation of the stock return level of the firm over time. Therefore, total risk is measured by calculating the standard deviation of daily stock returns in the current year (Benlemlih et al., 2016). Then, total risk consisted of systematic risk and idiosyncratic risk. Systematic risk depended on the sensibility of stock returns on market movements. Thus, systematic risk is measured by calculating market beta based on the Sharpe's CAPM model of each stock during the year using daily stock returns (Benlemlih et al., 2016). Whereas idiosyncratic risk was not influenced by the market movements in general, but idiosyncratic risk posed by the company-specific characteristics. Idiosyncratic risk is the difference between total risk and systematic risk; thereby, the idiosyncratic risk is measured by calculating the standard deviation of residuals based on the Sharpe's CAPM model using daily stock returns (Benlemlih et al., 2016).

The independent variables used in this study were environmental, social and governance disclosures with the measurement which based on the Sustainability Reporting Guidelines Index (GRI-G4). Each of environmental, social and governance disclosure category divided into 34 indicators, 48 indicators, and 22 indicators, respectively (GRI, 2013). The total indicator used to measure ESG disclosure was 104 indicators. The measurement of environmental, social and governance disclosures in this study uses content analysis based on a dichotomous approach (Nurhidayah, 2017). Companies that disclose indicators of each environmental, social and governance category will be given a score of "1" for each indicator. Conversely, companies that do not disclose these indicators will be given a score of "0". After the score is given for each indicator disclosed from each environmental, social and governance category, then all scores are summed to obtain the total score of each category for each company. Furthermore, ESG disclosure can be calculated by dividing the total score by the total number of indicators for each category.

This study also used several control variables. The control variables used in this study were financial ratios that consisted of profitability ratio, liquidity ratio, and leverage or solvency ratio. These ratios were used to assess the company's current performance and future prospects. In addition, these financial ratios could also be used to assess future risks and opportunities. Profitability ratio is the ratio used to measure a company's ability to generate profit. Profitability ratio is measured by calculating return on assets or ROA (Sassen et al., 2016). Furthermore, liquidity ratio is a ratio that measures a company's ability to meet its short-term financial obligations. Liquidity ratio is measured by calculating the current ratio or the ratio of total current assets to the total current liabilities (Sassen et al., 2016). Then, leverage or solvency ratio is a ratio that measures a company's ability to meet its long-term liabilities. The leverage ratio can be measured by calculating the debt ratio or the ratio of total liabilities to total assets (Benlemlih et al., 2016).

3.2. Population and Sample

The population used in this study was all non-financial companies that listed in Indonesia Stock Exchange (IDX) during the year 2014-2016. The reasons for using the time range of 2014-2016 were this study could get more samples and this study could more completely obtain the data for each variable. Furthermore, sample determination in this study used purposive sampling method based on the sample selection criteria, consisting of:

1. Company that included non-financial sector that listed in Indonesia Stock Exchange (IDX) for the year 2014-2016.
2. Company that conducted an IPO before 2014-2016.
3. Company that issued the complete financial report and annual report for the year 2014-2016.
4. Company that issued sustainability report for the year 2014-2016.

Furthermore, there were 36 non-financial companies used as sample that meet the specified criteria. Total number of companies were then multiplied by sample period of three years and reduced by missing observation in order to get the number of firm-year observations. Missing observation caused by incomplete data reporting due to not all of non-financial companies as sample in this study that consistently published their sustainability reports over the reporting period of 2014-2016. Moreover, missing observation also caused by data outlier. As a result, this study attained 90 firm-year observations over the period 2014-2016.

3.3. Data Selection and Collection Approach

The data used in this study was secondary data, which could be obtained from sustainability reports, financial sites, financial reports, and/or annual reports. ESG disclosure score data could be obtained from reporting of environmental, social and governance indicators based on the GRI-G4 index published in the sustainability report of the company. The Sustainability Reporting Guidelines Index (GRI-G4) is accessible through the website www.globalreporting.org. Then, the data to measure firm risk (total risk), systematic risk, and idiosyncratic risk could be obtained through the financial site, such as Yahoo! Finance website (<http://www.finance.yahoo.com/>). Meanwhile, the data to measure financial ratios could be obtained from financial reports and/or annual reports.

The data collection method in this study consisted of several stages. The first stage was a documentation study by collecting data for each variable (ESG disclosure data, stock price, market price, and financial information). The second stage was a literature study by collecting and understanding several journals and literature to be able to formulate research background, the theoretical basis used, and previous studies relevant to the topic in this study.

3.4. Data Analysis Method

The analysis method in this study used linear regression model that consisted of descriptive statistical test and classical assumption test. Furthermore, this study used multiple linear regression analysis to describe each influence of independent variable (X) to the dependent variable (Y). Multiple linear regression analysis was performed by analyzing the coefficient of determination test, F-test, and t-test. Regression model in this study is as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \epsilon$$

Where:

Y = Dependent variable (RSTD, BETA, IR)

α = Constant

$\beta_1, \beta_2, \beta_3$ = Regression coefficients of independent variables

$\beta_4, \beta_5, \beta_6$ = Regression coefficients of control variables

X_1	= Environmental disclosure score (ENV)
X_2	= Social disclosure score (SOC)
X_3	= Governance disclosure score (GOV)
X_4	= Profitability ratio (ROA)
X_5	= Liquidity ratio (CURA)
X_6	= Leverage ratio (DEBT)
ε	= Error coefficient

4. Results and Discussions

4.1. The Description of Research Object

The research object used in this study was non-financial companies listed in Indonesia Stock Exchange (IDX) for the year 2014-2016. Non-financial companies used as sample because of such companies including controversial industries which potentially related to operational activities that produce products harmful to human being, society, or environment. Meanwhile, financial companies were excluded as the research object in this study because their capital and risk requirements are heavily regulated and atypical. The sample determination in this study used purposive sampling method. The specified criteria were company should conduct an IPO before 2014-2016 and published the sustainability report for the year 2014-2016, as well as company should publish the complete financial report and annual report for the year 2014-2016. The detailed sample selection was described in the following table.

Table 1
Details of the Sample

	Criteria	2014	2015	2016	Total
a.	Companies that listed in Indonesia Stock Exchange (IDX) for the year 2014-2016	495	513	529	1537
b.	Financial companies that listed in Indonesia Stock Exchange (IDX) for the year 2014-2016	(85)	(88)	(92)	(265)
c.	Non-financial companies which conducted an IPO for the year 2014-2016	(16)	(15)	(12)	(43)
d.	Non-financial companies that did not publish a sustainability report for the year 2014-2016	(365)	(377)	(391)	(1133)
e.	Non-financial companies that did not publish a complete financial report and annual report for the year 2014-2016	(0)	(0)	(0)	(0)
f.	Data outlier	(3)	(0)	(3)	(6)
g.	Final sample (a+b+c+d+e+f)	26	33	31	90

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Table 1 shows that the number of companies listed in Indonesia Stock Exchange for the year 2014 is 495 firms, then those number gradually increased up to 513 firms in 2015 and 529 firms in 2016. Therefore, the population of this study comprised 1537 firm-year observations. Financial companies then excluded from the research object with the numbers of companies for the year 2014, 2015, and 2016 in sequence are 85 firms, 88 firms, and 92 firms. Thus, there were 410 non-financial companies in 2014, which then increased up to 425 non-financial companies in 2015 and 437 non-financial companies in 2016, listed in Indonesia Stock Exchange. However, the unavailable data about stock prices and unpublished sustainability reports of non-financial companies over the period 2014-2016 have reduced the final sample to an unbalanced panel of 96 firm-year observations. Furthermore, table 1 also shows that there are six firm-year observations which then be excluded when processing data, hereinafter called as data outlier. Ghazali (2013) stated that data outlier is the unique data which are very different from the other data or observations because of the extreme values of an independent variable or combination. Therefore, there are 90 firm-year observations over the period 2014-2016, which used for multiple linear regression in this study. The final sample was described further in the following table.

Table 2

Final Sample Breakdown by Year and Sector

No	Sector	2014	2015	2016	Total	%
1.	Agriculture	2	4	4	10	11.11
2.	Mining	7	7	6	20	22.22
3.	Basic Industry and Chemicals	2	5	5	12	13.33
4.	Miscellaneous Industry	1	1	1	3	33.33
5.	Consumer Goods Industry	2	2	2	6	66.67
6.	Property, Real Estate, and Construction	3	4	2	9	10.00
7.	Infrastructure, Utilities, and Transportation	6	7	8	21	23.33
8.	Trade, Services, and Investment	3	3	3	9	10.00
TOTAL					90	100.00

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Table 2 shows that there are eight non-financial sectors used as the research object. The proportions of final sample breakdown for each of non-financial sectors over the period 2014-2016, which then be sorted from the highest to the lowest proportion are 23.33% for infrastructure, utilities, and transportation, 22.22% for mining, 13.33% for basic industry and chemicals, 11.11% for agriculture, 10.00% for property, real estate, and construction, 10.00% for trade, services, and investment, 6.67% for consumer goods industry, and 3.33% for miscellaneous industry. Thus, the table shows that infrastructure, utilities, and transportation sector companies are the most widely used sample in this study and then followed by mining sector companies.

4.2. Descriptive Statistic Analysis

Descriptive statistics represent a description of statistical characteristics of the data for each variable. The statistical characteristics used to consist of mean, standard deviation, minimum, and maximum. The mean value represents the center of all data values that shows a general description of the data group observed. The standard deviation represents the measure of variation or a spread of data. The minimum value represents the lowest value of all data group values that observed, while the maximum value represents the highest value of all data group values that observed. The further descriptive analysis was described in the following table.

Table 3

Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation
RSTD	90	0.00000	0.06000	0.02370	0.00945
BETA	90	0.00000	0.02000	0.00930	0.00475
IR	90	0.00000	0.05000	0.01440	0.00810
ENV	90	0.09000	0.65000	0.37520	0.13186
SOC	90	0.06000	0.56000	0.35670	0.12259
GOV	90	0.00000	0.73000	0.16870	0.19680
ROA	90	-0.56000	0.43000	0.05810	0.12268
CURA	90	0.18000	4.93000	1.48180	0.97567
DEBT	90	0.13000	1.92000	0.54800	0.25775

Source: Analyzed secondary data, 2018

Table 3 shows the descriptive statistics of each variable used in this study. The first variable statistics which shown in the table was dependent variable which proxied by firm risk (total risk). Total risk (RSTD) in this study has minimum value of 0.00000 and the maximum value of 0.06000; thereby, the mean value of total risk of 0.02370 is closer to minimum value than maximum value. Therefore, average of non-financial companies that published a sustainability report concluded have a lower total risk. Moreover, standard deviation of total risk is 0.00945 that represented the variation of data. Furthermore, systematic risk (BETA) is a part of total risk, which the data has the minimum

value of 0.00000 and the maximum value of 0.02000. The mean value of systematic risk of 0.00930 is closer to minimum value than maximum value. Therefore, average of non-financial companies that published a sustainability report concluded have a lower systematic risk. Moreover, the standard deviation of systematic risk is 0.00475 that represented the variation of systematic risk data. Then, idiosyncratic risk (IR) is also a part of total risk, which the data has the minimum value of 0.00000 and the maximum value of 0.05000. Idiosyncratic risk has mean value of 0.01440 that is closer to minimum value than maximum value. Therefore, average of non-financial companies that published a sustainability report concluded have a lower idiosyncratic risk. Moreover, the standard deviation of idiosyncratic risk is 0.00810 that represented the variation of idiosyncratic risk data. Referring to the table, mean value and standard deviation of idiosyncratic risk data are higher than mean value and standard deviation of systematic risk data. Thus, total risk in this study was more dominated by idiosyncratic risk.

Table 3 also shows about descriptive statistics of independent variables used in this study. Environmental, social and governance disclosures data have the different range, mean value, and standard deviation. The range between the lowest value and the highest value of each such disclosure data are 0.09000-0.65000 for environmental disclosure, 0.06000-0.56000 for social disclosure, and 0.00000-0.73000 for governance disclosure. Whereas, mean value and standard deviation of each such disclosure data are 0.37520 and 0.13186 for environmental disclosure, 0.35670 and 0.12259 for social disclosure, 0.16870 and 0.19680 for governance disclosure. Mean values of environmental and social disclosures are closer to maximum value than minimum value. Therefore, this study concluded that average of non-financial companies disclosed many environmental and social issues in their sustainability reports. However, mean value of governance disclosure is closer to minimum value than maximum value, which indicated that non-financial companies were mostly just disclosed a little about governance issues in their sustainability reports. Moreover, minimum value of governance disclosure is 0.00000 which indicated that there was a non-financial company who did not disclose about governance issues in its sustainability report.

Furthermore, table 3 also shows the range value between the minimum value and the maximum value of control variables used, which are (0.56000)-0.43000 for ROA, 0.18000-4.93000 for CURA, and 0.13000-1.92000 for DEBT. Subsequently, the mean value and standard deviation of this variables are 0.05810 and 0.12268 for ROA, 1.48180 and 0.97567 for CURA, 0.54800 and 0.25775 for DEBT. Based on the results, this study concluded that current ratio had the highest range value, mean value, and standard deviation than others financial ratios.

4.3. The Results and Discussions of Hypotheses Testing

This study used multiple linear regression analysis method with a level of significance of 5% in testing three hypotheses that have been formulated. The significance level which is lower than 0.05

indicates that there is an influence of independent variable on dependent variable. Conversely, the significance value which is higher than 0.05 indicates that independent variable does not have an influence on dependent variable. Furthermore, the beta coefficient of each testing also set must show a negative value in order to conclude that hypothesis could be accepted in this study. The data processing in this study used SPSS program version 23. The regression test results were then presented in the following table.

Table 4
Regression Test Result

	Hypothesis	Coefficient	Sig.	Decision
H1	Environmental disclosure has a negative influence on firm risk (total risk)	-0.022	0.002***	Accepted
H2	Social disclosure has a negative influence on firm risk (total risk)	-0.030	0.001***	Accepted
H3	Governance disclosure has a negative influence on firm risk (total risk)	0.010	0.018**	Rejected
H1a	Environmental disclosure has a negative influence on systematic risk	-0.008	0.043**	Accepted
H2a	Social disclosure has a negative influence on systematic risk	-0.010	0.042**	Accepted
H3a	Governance disclosure has a negative influence on systematic risk	0.003	0.166	Rejected
H1b	Environmental disclosure has a negative influence on idiosyncratic risk	-0.014	0.047**	Accepted
H2b	Social disclosure has a negative influence on idiosyncratic risk	-0.020	0.029**	Accepted
H3b	Governance disclosure has a negative influence on idiosyncratic risk	0.007	0.118	Rejected

Source: Analyzed secondary data, 2018

4.3.1. The Influence of Environmental Disclosure on Firm Risk (Total Risk), Systematic Risk, and Idiosyncratic Risk

The first hypotheses in this study revealed that environmental disclosure has a negative influence on firm risk (total risk), systematic risk, and idiosyncratic risk. The results of hypotheses testing showed that environmental disclosure was significantly negatively influenced the firm risk (total risk), systematic risk, and idiosyncratic risk. Thus, the first hypotheses in this study were accepted.

The results of first hypotheses testing in accordance with both theories used, namely stakeholder theory and signaling theory. Stakeholder theory stated that environmental disclosure may affect the perceptions of stakeholders about the company. The high environmental disclosure can increase the

trust of stakeholders to the company (Benlemlih et al., 2016). Then, signaling theory also explained that the companies which disclose environmental disclosure provide positive signals to external parties (Cormier et al., 2009). Environmental disclosure reflected the company's actions in relation to its actual and real environmental responsibility. Therefore, environmental disclosure could enhance the company's image among investors so that investors were increasingly interested to have an investment relationship with those company and thereby increased the company's stock value which could reduce the stock volatility. Furthermore, environmental disclosure encourages the companies to have a better financial access so that reducing the capital constraints (Cheng et al., 2014). The reduction of capital constraints could help to reduce the systematic risk. Moreover, environmental disclosure may reduce the likelihood that the company is subject to expensive fines or severe legal sanctions (Nguyen et al., 2015). As a result, the cost of capital of the company may decrease and thereby, operational costs or input costs that caused the idiosyncratic risk may also decrease.

4.3.2. *The Influence of Social Disclosure on Firm Risk (Total Risk), Systematic Risk, and Idiosyncratic Risk*

The second hypotheses in this study revealed that social disclosure has a negative influence on firm risk (total risk), systematic risk, and idiosyncratic risk. The results of hypotheses testing showed that social disclosure was significantly negatively influenced the firm risk (total risk), systematic risk, and idiosyncratic risk. Thus, the second hypotheses in this study were accepted.

The results of second hypotheses testing in accordance with both theories used and the results supported the previous findings from (Benlemlih et al., 2016 and Sassen et al., 2016) which stated that social disclosure has a negative and significant influence on firm risk (total risk), systematic risk and idiosyncratic risk. Signaling theory assumed that a disclosure intended to decrease the asymmetry information between firms and their investors. Furthermore, stakeholder theory stated that the fulfillment of a company's stakeholders claims could reflect a corporate social responsibility implementation, such as through the company's respect for human rights as well as the company's fair remuneration policy implementation. The companies which increase their social responsibility could increase the trust of investors toward the companies and thereby the companies could increase the number of investors who wanted to have an investment relationship with them. Thus, the companies could increase their stock value and reduce the stock volatility. Furthermore, the increasing of investors' trust to the company could increase the market value of a company's shares due to an increase in stock prices and the number of outstanding shares of the company. Thus, the systematic risk of a company could be reduced. Moreover, social disclosure can increase the expected cash flow growth (Qiu et al., 2016) and the good relationships between the company and its stakeholders can facilitate the company in carrying out its operational activities (Husted, 2005). Thus, social disclosure could reduce the operating costs and lowered the idiosyncratic risk.

4.3.3. The Influence of Governance Disclosure on Firm Risk (Total Risk), Systematic Risk, and Idiosyncratic Risk

The third hypotheses in this study revealed that governance disclosure has a negative influence on firm risk (total risk), systematic risk, and idiosyncratic risk. However, the results of hypotheses testing showed that governance disclosure only significantly influenced the firm risk (total risk), while governance disclosure was insignificantly influenced the systematic risk and idiosyncratic risk. Moreover, the positive beta coefficient values of third hypotheses testing results shows the different direction with the hypotheses. Thus, the third hypotheses in this study were rejected.

Corporate governance of companies in Indonesia still did not show a good corporate governance practice (Dwiridotjahjono, 2009). There were still people who did fraud actions or embezzling actions, such as corruption. As a result, governance disclosure cannot be made as a reliable reference for investors or other stakeholders to make an investment decision. Moreover, governance issues which disclosed by non-financial companies in their sustainability report were still limited, which shown by descriptive statistics result or mean value of governance disclosure (0.16870) is closer to minimum value (0.00000) than maximum value (0.73000). Furthermore, shareholder-focused governance mechanisms may encourage managers to adopt more risky business strategies and operations and then lead to increased firm risk. This statement is referring to the journal by (Iqbal et al., 2015). Moreover, the increased governance disclosure by a company may be influenced by the increased risk that suffered by the company. Then, the company probably improves their corporate governance disclosure because the company might be under the stakeholder pressures or the strict regulations (Sassen et al., 2016). In other words, the result which in accordance with the prior study of (Sassen et al., 2016) found out that there is a bidirectional influence between governance disclosure and total risk, systematic risk, as well as idiosyncratic risk which makes this study also difficult to assess the influence of governance disclosure on total risk, systematic risk, and idiosyncratic risk.

5. Conclusion, Implication and Limitation

5.1. Conclusion

This study aimed to analyze the influence of environmental, social and governance (ESG) disclosure on firm risk. The samples of this study were non-financial companies that published a sustainability report and listed in Indonesia Stock Exchange (IDX) over the period of 2014-2016. This study used purposive sampling method in determining samples. Furthermore, this study conducted a documentation study for collecting data, a literature study for creating theoretical basis and prior research, as well as implementing some analysis methods for processing data, analyzing and interpreting the testing results. Then, referring to the results and discussion which have been described previously, this study concluded that:

1. Environmental disclosure had a negative and significant influence on firm risk (total risk), systematic risk, and idiosyncratic risk. Thus, the first hypotheses (H1, H1a, and H1b) were accepted.
2. Social disclosure had a negative and significant influence on firm risk (total risk), systematic risk, and idiosyncratic risk. Thus, the second hypotheses (H2, H2a, and H2b) were accepted.
3. Governance disclosure only had a positive influence on firm risk (total risk), while governance disclosure had no influence on systematic risk and idiosyncratic risk. Thus, the third hypothesis (H3, H3a, and H3b) were rejected.

5.2. Limitations

The limitations or the weaknesses of this study were:

1. The range of observation time covers three years (2014-2016) and the number of companies as sample were limited because this study was conducted since 2017 and ESG scores calculation in this study created own calculation based on the index of Global Reporting Initiative (GRI-G4) that was released in 2013 and companies effectively only used the index since 2014. In addition, the other data, such as stock data and complete financial ratios can only be collected only until 2016.
2. The assessments of ESG disclosure in this study conducted by using content analysis, so the results tended to be subjective.
3. This study just used non-financial sector companies that listed in Indonesia Stock Exchange (IDX) and published the sustainability report as samples. Thus, the limited number of such companies caused the findings in this study might not be generalized to all other companies that listed in Indonesia Stock Exchange (IDX).

5.3. Suggestions

Some limitations of this study required some suggestions to make a better research on this research topic in the future. Therefore, this study provided some suggestions as follow:

1. ESG disclosure measurement in the future research will be better if done by looking at ESG scores data from Bloomberg or other rating providers. Therefore, the assessments could be free of subjectivity and the results could be more accurate.
2. If the future research still used the content analysis, so it should be done at least by three people in a group. Thereby, the result could be more objective.
3. Further research could extend the scope of samples being observed. Thus, the research findings might be generalized.

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Appendix

List of GRI-G4

CATEGORY: ENVIRONMENTAL	
Materials	
G4-EN1	Total volume of materials used
G4-EN2	Percentage of recycled input materials
Energy	
G4-EN3	Energy consumption within the organization
G4-EN4	Energy consumption outside of the organization
G4-EN5	Ratio of energy intensity
G4-EN6	The reduction number of energy consumption
G4-EN7	Reductions in energy requirements of products and services
Water	
G4-EN8	Total water withdrawal by source
G4-EN9	Water sources significantly affected by withdrawal of water
G4-EN10	Percentage and total volume of water recycled and reused
Biodiversity	
G4-EN11	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value
G4-EN12	Significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value
G4-EN13	Habitats protected or restored
G4-EN14	Total number of IUCN Red List Species and national conservation list species with habitats in areas affected by operations
Emissions	
G4-EN15	Direct Greenhouse Gas (GHG) emissions (scope 1)
G4-EN16	Energy indirect greenhouse gas (GHG) emissions (scope 2)
G4-EN17	Other indirect greenhouse gas (GHG) emissions (scope 3)
G4-EN18	Greenhouse gas (GHG) emissions intensity
G4-EN19	Reduction of greenhouse gas (GHG) emissions
G4-EN20	Emissions of ozone-depleting substances (ODS)
G4-EN21	NOX, SOX, and other significant air emissions
Effluents and Waste	
G4-EN22	Total water discharge
G4-EN23	Total weight of waste
G4-EN24	Total number and volume of significant spills
G4-EN25	Waste deemed hazardous under the terms of the Basel convention ²
G4-EN26	Impact of water discharge on biodiversity and other habitats in the water bodies and water flows
Products and Services	
G4-EN27	Mitigation of environmental impacts of products and services
G4-EN28	Products sold and their packaging materials that are reclaimed by category

Compliance	
G4-EN29	Monetary value of significant fines for non-compliance with environmental laws and regulations
Transport	
G4-EN30	Significant environmental impacts of transporting products and other goods and transporting members of the workforce
Overall	
G4-EN31	Total environmental protection expenditures
Supplier Environmental Assessment	
G4-EN32	New suppliers that were screened using environmental criteria
Equal Remuneration for Women and Men	
G4-LA13	Ratio of basic salary and remuneration of women to men
Supplier Assessment for Labor Practices	
G4-LA14	New suppliers that were screened using labor practices criteria
G4-LA15	Significant actual and potential negative impacts for labor practices in the supply chain
Labor Practices Grievance Mechanisms	
G4-LA16	Grievances and settlement of labor practice cases
HUMAN RIGHTS	
Investment	
G4-HR1	Clauses of human rights in the agreement or investment contracts
G4-HR2	Total hours of employee training on human rights policies or procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained
Non-discrimination	
G4-HR3	Total number of incidents of discrimination and corrective actions taken
Freedom of Association and Collective Bargaining	
G4-HR4	Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and measures taken to support these rights
Child Labor	
G4-HR5	Operations and suppliers identified as having significant risk for incidents of child labor
Forced or Compulsory Labor	
G4-HR6	Identified forced or compulsory labor
Security Practices	
G4-HR7	Human Rights training for security personnel
Indigenous Rights	
G4-HR8	Violation to local customs
Assessment	
G4-HR9	Total number and percentage of operations that have been subject to human rights reviews
Supplier Human Rights Assessment	
G4-HR10	New suppliers that were screened using human rights criteria
G4-HR11	Significant actual and potential negative human rights impacts in the supply chain
Human Rights Grievance Mechanisms	
G4-HR12	Grievances on the violation to human rights

SOCIETY	
Local Communities	
G4-SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs
G4-SO2	Operations with significant actual and potential negative impacts on local communities
Anti-corruption	
G4-SO3	Risks assessment of corruption
G4-SO4	Communication and training on anti-corruption policies and procedures
G4-SO5	Confirmed incidents of corruption and actions taken
Public Policy	
G4-SO6	Donation/contribution for political party
Anti-competitive Behavior	
G4-SO7	Anti-competitive behavior, anti-trust, and monopoly practices
Compliance	
G4-SO8	Fines and sanctions for non-compliance with laws and regulations
Supplier Assessment for Impacts on Society	
G4-SO9	New suppliers that were screened using criteria for impacts on society
G4-SO10	Significant actual and potential negative impacts on society in the supply chain and actions taken
Grievance Mechanisms for Impacts on Society	
G4-SO11	Grievances of the society on the operational impact
PRODUCT RESPONSIBILITY	
Customer Health and Safety	
G4-PR1	Impact of products and services on health and safety
G4-PR2	Violation to rules related to the impact of products and services on health and safety
Product and Service Labeling	
G4-PR3	Presentation of information on products and services according to the procedures
G4-PR4	Violation to rules or norms related to information of products and services and its label
G4-PR5	Customer satisfaction survey
Marketing Communications	
G4-PR6	Sale of banned or disputed products
G4-PR7	Violation to rules and norms related to marketing communications
Customer Privacy	
G4-PR8	Customer Complaints
G4-PR9	Fines and other sanctions for non-compliance with laws and regulations concerning the provision and use of products and services
CATEGORY: GOVERNANCE	
Governance Structure and Composition	
G4-34	The governance structure of the organization, including committees of the highest governance body
G4-35	The process for delegating authority for economic, environmental and social topics from the highest governance body to senior executives and other employees

G4-36	The organization has appointed an executive-level position or positions with responsibility for economic, environmental and social topics, and whether post holders report directly to the highest governance body
G4-37	The processes for consultation between stakeholders and the highest governance body on economic, environmental and social topics
G4-38	The composition of the highest governance body and its committees
G4-39	Highest Governance Post Cum Executive Officer
G4-40	The nomination and selection processes for the highest governance body and its committees, and the criteria used for nominating and selecting highest governance body members
G4-41	The processes for the highest governance body to ensure conflicts of interest are avoided and managed
G4-42	The highest governance body's and senior executives' roles in the development, approval, and updating of the organization's purpose, value or mission statements, strategies, policies, and goals related to economic, environmental and social impacts
G4-43	The measures taken to develop and enhance the highest governance body's collective knowledge of economic, environmental and social topics
G4-44	The processes for evaluation of the highest governance body's performance with respect to governance of economic, environmental and social topics
Highest Governance Body's Role In Risk Management	
G4-45	The highest governance body's role in the identification and management of economic, environmental and social impacts, risks, and opportunities
G4-46	The highest governance body's role in reviewing the effectiveness of the organization's risk management processes for economic, environmental and social topics
G4-47	The frequency of the highest governance body's review of economic, environmental and social impacts, risks, and opportunities
Highest Governance Body's Role In Sustainability Reporting	
G4-48	The highest committee or position that formally reviews and approves the organization's sustainability report and ensures that all material Aspects are covered
Highest Governance Body's Role In Evaluating Economic, Environmental And Social Performance	
G4-49	The process for communicating critical concerns to the highest governance body
G4-50	The nature and total number of critical concerns that were communicated to the highest governance body and the mechanism(s) used to address and resolve them
Remuneration and Incentives	
G4-51	The remuneration policies for the highest governance body and senior executives
G4-52	The process for determining remuneration
G4-53	Stakeholders' views are sought and taken into account regarding remuneration
G4-54	The ratio of the annual total compensation for the organization's highest-paid individual in each country of significant operations to the median annual total compensation for all employees (excluding the highest-paid individual) in the same country
G4-55	The ratio of percentage increase in annual total compensation for the organization's highest-paid individual in each country of significant operations to the median percentage increase in annual total compensation for all employees (excluding the highest-paid individual) in the same country

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