CHAPTER III

RESEARCH METHOD

3.1.Types of Study

According to Aliaga and Anderson (2002) in Essays (2013), "Quantitative research is an inquiry into a social problem, explain phenomena by gathering numerical data that are analyzed using mathematically based methods e.g. in particular statistics". According to the Creswell in Williams (2007) researcher primarily uses post-positivist approach to develop knowledge when quantitative research is selected (i.e cause and effect thinking, use of measurement and observations, and test of theories), employs strategies of inquiry such as experiments and surveys, and collects data on predetermined instruments that yield statistical data. This research used an attribute of managerial and institutional ownership, audit committee, independent commissioner board, firm size and sales growth and from mining companies listed in Indonesian Stock Exchange (IDX) during the period 2015-2017.

3.2.Population and Sample

3.2.1. Population

The population of this study were mining companies listed in the Indonesia Stock Exchange (BEI) for the period 2015-2017

3.2.2. Sample

The sample is a subset of a population selected to participate in the study, it is fraction of the whole. The sample was taken by purposive or judgmental sampling method with the certain criteria. Saunders et al (2009) cited by Niarachma (2012) stated that purposive or judgmental sampling is allowing the use of the researcher assessment in a sample selection to answer the research question and also to adjust to the research objectives. These criteria as follows:

1. Mining company
2. Listed in BEI during 2015-2017
3. Audited annual financial reports that can be accessed directly during 2015-2017

3.3.Data Sources and Data Collection Techniques

According to Kabir (2016), Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research question, test hypotheses, and evaluate outcomes. The methods that used in data collection was direct observation, opinion, archival, and analytical strategies. In this research, the technique that researcher used an archival method to get secondary data taken from any sources. The data that used in this research was secondary data that already available or existed. The data source that used is the Audited Annual Financial Report of the Mining

Companies listed in Indonesia Stock Exchange (BEI) for the period 2015-2017 that published on IDX website.

3.4.Definition of Operational Variables

In this research, there were two types of variables which is independent variable and dependent variable.

3.4.1. Independent Variable

Independent variable is a variable that affects or influences the change in dependent variable. In other word, the changes of dependent variable because independent variable. In this research, the independent variables that used were Good Corporate Governance (GCC): Managerial Ownership, Institutional Ownership, Audit Committee, and Independent Commissioner Board, Firm Size, and Sales Growth.

Managerial ownership

Managerial ownership is the proportion of company ownership by management (directors or commissioners). The greater the proportion of ownership by management, the greater the responsibility of management in managing the company. Good management in the company will give better quality in the financial report because of management also as a supervisor in control of the company's operational until making financial reports. Thus, managerial ownership can increase the effectiveness of management working as well as decreasing the financial distress that can make damage the company. Managerial

ownership is measured by dividing share ownership by management who actively participate in corporate decision making by the total number of outstanding shares (Puspitasari & Ernawati, 2010)

Managerial ownership = Total shares owned by management / $Total$ outstanding shares

Institutional ownership

Institutional ownership the proportion of company ownership by the institution. Several shareholders which are foreign companies, BUMN, insurance, bank or others that have big control over management and giving motivation for management to the optimization of company value so it will increase company performance and decrease financial distress. The higher institutional ownership shows the ability to control the management and the more efficient the utilization of assets so the potential of financial distress can be minimized. Institutional ownership is measured by dividing share ownership by institution by the total number of outstanding shares.

Institutional ownership = Total shares owned by institution / $Total$ outstanding shares

Audit Committee

Audit Committee is corporate governance mechanism which assumed declining financial distress. Audit committee competency is one factor which influence company performance. Audit committee help

management about financial report and explanation, internal control system, and independent auditor.

Based on the Decision of the Directors of the Jakarta Stock Exchange No. Kep-315 / BEJ / 06/2000 stated that the membership of the audited committee at least 3 (three) members, the independent commissioner of the company and also as chairman of the committee audited, and another member are independent parties where at least one of them have ability in the field of accounting and finance.

Audit Committee = Total audit of company in certain period (t)

Independent Commissioner Board

Independent commissioner as *controveiling power,* which means the existence of independent commissioner as supervisor of long term strategies decided by commissioner board, supervision was also carried out by an external independent party so it will raise appropriate decision and keep the company safe from the possibility of financial distress. The existence and the minimum number of Independent Commissioners have also been regulated in the Indonesian Stock Exchange (IDX) regulations. Listing of Regulation No. 1-A Kep-305 / BEJ / 07-2004: regarding General Provisions for Listing of Equity Securities on the exchange. The regulation states that the existence of an Independent Commissioner is mandatory for companies whose listings are proportional to the number of shares owned by non-controlling shareholders provided that the number of independent Commissioners is at least 30% of the total

members of the commissioners. Independent commissioner board was measured by dividing the number of Independent Commissioners by the total members in the Board of Commissioners

Independent Commissioner Board = Total number of independent commissioner board / Total board of commissioners

Firm Size

The amount of assets is considered able to describe the actual size of the company because of the assets owned by the company can be known rights and obligations and capital owned by the company (Bukhori & Raharja, 2012). Therefore, the firm size in this study was measured using a natural log (Ln) of total assets (Puspitasari and Ernawati, 2010).

FS = log (Total Assets)

Sales Growth

Sales growth is a ratio to measure the growth of company sales by measuring the difference in value of sales in certain period. And the formula for sales growth ratio was:

Sales Growth = (Net Sales (t) – Net Sales (t-1)) / Net Sales (t-1)

3.4.2. Dependent Variable

Dependent variable is the variable that affected by the independent variable. The dependent variable in this study was financial distress. According to Elloumi and Gueyie (2001) in Bodroastuti (2009), Financial distress defined company that had negative earnings per share (EPS).

The earnings per share showed the ability of the company to gain of shares that will give to shareholders, where the gain from the company operation. The negative earnings per share as an indicator of the profitability of the company showed a negative condition, because by the income received by the company in the period was smaller than the costs incurred. Thus, it can be concluded that the company was in financial distress. In this study, dependent variable was a dummy variable. A dummy variable or qualitative showed presence or absence of quality or attribute (Ghozali, 2006) in (Niarachma, 2012). To quantify the qualitative variable above by forming the artificial variable with value 0 or 1, which is 0 indicating the presence of an attribute and 1 indicating the absence of an attribute. Thus, the given score is 0 (zero) for negative EPS (financial distress) and 1 (one) for positive EPS (healthy company).

Overall, the operational variables used in this research shown in the Table 3.1 below

Table 3.1 Operational variables

Variables	**Measurements**	**Acronyms**
Financial Distress	0 for financial distress and 1 for healthy company	FD
Managerial Ownership	Share ownership by management divided	MANOWN

	by the total number of outstanding shares	
Institutional Ownership	Share ownership by institution divided by the total number of outstanding shares	INSOWN
Audit Committee	Total audit of company in certain period (t)	AUCOM
Independent Commissioner Board	dividing the number of Independent Commissioners by the total members in the Board of Commissioners	INDEPCOM
Firm Size	The natural log (Ln) of total assets (Puspitasari and Ernawati, 2010).	FIRMSIZE

Sales Growth	The difference of current sales period with the previous period, divided by the sales of the previous period	SALESGROWTH

3.5.Data Analysis Method

3.5.1. Descriptive Statistics

Descriptive statistics were used to describe the main financial variables disclosed by companies in the financial statements for the period 2015-2017. The analytical tool used was the minimum value (MIN), maximum value (MAX), average value (AVERAGE), and standard deviation to describe the research variables (Ghozali,2013) cited by (Hanafi & Breliastiti,2016)

3.5.2. Multiple Regression Analysis

This study used multiple regression analyses in testing the hypothesis. Multiple regression analysis is a method used to analyze the relationship between a dependent variable (Y) with one or more independent variables (X) whether the independent variable has positive or negative and to predicting dependent variable value whether the value

of dependent variable increasing or decreasing. Variable equations obtained from the calculation process must be statistically tested. The regression coefficient values are followed by a model fit test if all regression coefficients are significant and the model obtained is in conformity then the resulting regression equation can be used to predict the value of the dependent variable. If the resulting test less than significant (Sig ≤ 0,05), then Ha (alternative hypotheses) is accepted, it shows there was significant influence between the independent variable and the dependent variable. If the resulting test more than significant (Sig ≥ 0,05), then Ha (alternative hypothesis) is rejected. It shows there was no influence on the independent variable and dependent variable.

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

Where:

Y = Financial Distress

α = Constant

β = Regression Coefficient

X_1 = Managerial Ownership

X_2 = Institutional Ownership

X_3 = Audit Committee

X_4 = Independent Commissioner Board

X_5 = Firm Size

X_6 = Sales Growth

e = Error

3.5.3. Classical Assumption Test

The classical assumption test in the regression analysis was necessary to ensure that the regression coefficient obtained based on unbiased data analysis. Regression models that have a regression coefficient of bias can cause errors in their use. Before, using the regression model to make a decision, the classical assumption test will be ensured that the regression model has an unbiased regression coefficient. The classical assumption test included: normality test, autocorrelation test, heteroscedasticity test, and multicollinearity test.

3.5.3.1. Normality Test

Normality test used to test in regression between dependent variable and independent variable have normal distribution (unbiased regression) or unnormal distribution (bias regression) (Ghozali,2011:19) cited by (Ayuwardani,2018). This test performed by using non-parametric test or Kolmogorov-Smirnov (K-S). K-S test used by make hypotheses as follow:

Ho = Normal distribution

Ha = Abnormal distribution

The standard in making decision of K-S test

a) If the K-S statistics was significant (sig<0,05) then Ho was rejected, which means the data distribution being tested was unnormal distribution

b) If the K-S statistics was not significant (sig>0,05) then Ho was accepted, which means the data distribution being tested was normal distribution.

3.5.3.2. Multicollinearity Test

According to Ghozali (2011:105) cited by Ayuwardani (2018), A Multicollinearity test is used to know whether any relation between the independent variable in the regression model. A good regression model should there is no relation between independent variable. This test is done using the Tolerance (TOL) and Variance Inflation Factor (VIF) method.

TOL is the magnitude of variation from one independent variable that is not explained by other independent variables. Meanwhile, VIF explains an independent variable that explained by other independent variables. Multicollinearity test can be shown using cut off value which is value TOL>0,10 or equal and VIF<10 (Ghozali,2011) cited by (Rachmania,2017).

3.5.3.3. Heteroscedasticity Test

This test aims to test whether the regression model occurs variance from one observation residual to another observation (Ghozali,2011:139) cited by (Ayuwardani,2018). If there is no existence of variance, it was called homoscedasticity. While heteroscedasticity when

if there was the existence of variance. This test was done by using the Spearman rank collection method. If an independent variable had a spearman rank correlation that was not significant, so the independent variable does not experience heteroscedasticity.

3.5.3.4. Autocorrelation Test

According to Ghozali (2011: 110) cited by Ayuwardani (2018), the autocorrelation test aims to test whether in the linear regression model there was a correlation between the error of the intruder in the period t with the error of the intruder in the period t-1 (previous). If there was an autocorrelation then there was a problem autocorrelation.

In this test, the regression model of this research using Durbin-Watson test. There are some criteria in Durbin-Watson (DW) test as follow:

a) 0<d<dl, means there was no positive autocorrelation and rejected
b) dl ≤ d ≤ du, means there was no positive autocorrelation and no decision
c) 4 – dl < d < 4, means there was no negative autocorrelation and rejected
d) 4 – du ≤ d ≤ 4 – dl, means there was no negative autocorrelation and no decision
e) du < d < 4 – du, means there was no positive or negative autocorrelation and accepted.

3.5.3.5. Hypothesis Test

This test is used to test and analyze the relation between independent variable (X) and dependent variable (Y)

The hypotheses tested are:

1) Ho: if significant value > 0.05, Ho is accepted. It means that all independent variables are not significant explanatory variables for the dependent variable.
2) Ha: if the value is significant <0.05 then Ha is accepted. It means that all independent variables are a significant explanation for the dependent variable.