

## **CHAPTER III**

### **RESEARCH METHODOLOGY**

#### **A. Research Object**

The populations in this study are the commercial banks which join the ranking process held by Indonesian Institute for Corporate Governance during 2012 to 2016. The data to be used is obtained by accessing [www.idx.co.id](http://www.idx.co.id) and [www.iicg.org](http://www.iicg.org).

#### **B. Type of Data**

The data used in this research is secondary data which is obtained from the bank's annual report and awarding report issued by Indonesian Institute for Corporate Governance.

#### **C. Sampling Method**

Sampling method conducted by purposive sampling method, that is the method of sampling based on certain criterion and consideration. Sample determination criteria:

1. Commercial bank which join the ranking process held by Indonesian Institute for Corporate Governance in 2012 to 2016
2. Commercial banks listed in Indonesian Stock Exchange

3. Banks that provide complete data and publish financial reports in 2012 to 2016

#### **D. Data Collection Method**

The data used in this research is collected through the official website of the bank and also from Indonesia Stock Exchange. Moreover, the other data is collected through the report issued by Indonesian Institute for Corporate Governance. Furthermore, other data are obtained through journals and book to support this research.

#### **E. Measure of Construct**

In this research there are two kinds of variables. They are independent variable and dependent variable. Here is the explanation of each of them:

1. Independent Variable

This research use firm-risk and remuneration as independent variable. Firm risk is a description of the level of a risk faced related to certain policies in banking companies. In this study, firm risk is divided into three; credit risk, market risk and liquidity risk.

- a. Credit Risk

Credit risk is selected in the study because credit risk is a major risk that must be managed by a banking company. Credit risk is risk due to failure of debtor or other party in fulfilling obligation to bank. Credit risk is measured by using financial ratios that result in comparison of Non Performing Loans (NPL) amounts to total

loans provided by banks. The higher the NPL ratio owned by a bank, the greater the risk it has. To measure the NPL, we use formula:

$$\text{NPL} = \frac{\text{Total Non Performing Loan}}{\text{Total Loan}}$$

b. Market Risk

Market risk is the risk on the balance sheet position and the administrative account including derivative transactions, due to changes in market conditions, including the risk of changes in the option price. Market risk is measured by using financial ratios that result in comparison of Net Interest Income (NIM) amounts to total productive asset. The higher the NIM ratio owned by a bank, the lower the risk it has. To measure the NIM, we use formula:

$$\text{NIM} = \frac{\text{Total Net Interest Income}}{\text{Total Productive Asset}}$$

c. Liquidity Risk

Liquidity risk is the ability of the bank to meet the obligations due from sources of cash flow financing or high quality liquid assets that can be mortgaged, without disrupting the activities and financial condition of the bank. Liquidity risk is measured by using financial ratios that result in comparison of Loan to Deposit Ratio (LDR) amounts to total third party funds. The higher the LDR ratio owned by a bank, the greater the risk it has. To measure the LDR, we use formula:

$$\text{LDR} = \frac{\text{Total Loan}}{\text{Total Third Party Funds}}$$

d. Remuneration

The independent variable of remuneration is measured by the log of the amount of total compensation paid to directors of bank in period that includes cash and non-cash compensation.

e. Corporate Governance

This research also uses corporate governance as independent variable. According to IICG, 2008 the concept of corporate governance can be defined as a series of mechanisms that direct and control companies to run the company's operations in accordance with the expectations of the stakeholders. Good corporate governance can be defined as the structures, systems, and processes used by company as an effort to provide added value of the company on a long-term basis, with due regard interests of other stakeholders, based on legislation and prevailing norms.

In this research, the writer uses the CGPI ranking to measure the good corporate governance. We use dummy variable to represent each of the ranking. The CGPI ranking results using assessment norms based on the range of scores achieved by CGPI participants with categorization of GCG implementation quality levels using the term "trusted". Companies that scored between 55.00 and 69.99 were awarded as a "fairly reliable" company. Companies that scored between 70.00 to 84.99% were awarded as

"trusted" companies. Companies that get a score of between 85.00 and 100% were awarded as a "very reliable" company.

## 2. Dependent Variable

This research use firm performance as dependent variable. The dependent variable in this study is the performance of the company which is a picture of the achievement of the implementation of an activity or program or policy in realizing the objectives, mission and vision of the organization. Company performance can be assessed through various indicators to measure the success of the company. In this study, the performance is proxied with Return on Assets (ROA). To measure ROA, we use this formula:

$$\text{Return on Asset} = \frac{\text{Net Income}}{\text{Total Asset}}$$

## F. Instrument and Data Testing

The instrument testing consists of normality test, auto-correlation test, multicollinearity, and heteroscedasticity test. The technique of data analysis used to test the hypothesis is multiple linear regressions and ordinary least square (OLS).

### 1. Descriptive Statistic Test

Descriptive statistic test is used to depict both of independent variable and dependent variable in the form of table. The descriptive statistic includes the means, deviations standards, maximum values and minimum values of each variable. In this research, the independent

variables are firm risk, remuneration and corporate governance while the dependent variable is firm performance.

## 2. Normality Test

Normality test is used to test whether the distribution of the residuals are distribute normally. This research use One Sample Kolmogrov-Smirnov (K-S) to test the normality of the data. The residuals of data can be assumed as normal if the significance value is more than  $\alpha = 0.05$ .

## 3. Auto-correlation Test

Auto-correlation test is used to test in a regression model whether there is relation between t period and t-1 period. As it is a regression model, it can be used to know the relation between independent and dependent variable. Thus, there must be no correlation between them. This research uses Durbin Watson to test the correlation of the data. According to Sunyoto (2012 : 139) , if the value of Durbin Watson (DW) is between -2 to +2, it means that the regression model doesn't contain auto-correlation.

## 4. Multicollinearity Test

Multicollinearity test is used to test whether there is a relationship between the independent variables in a regression model. The value of the multicollnearity test can be seen in tolerance value and variance information factor (VIF). This research uses the tolerance value  $> 0,10$  and the VIF value  $< 10$ .

## 5. Heteroscedasticity Test

Heteroscedasticity test is used to test whether there is different variance from the one residual observation to others in a regression model. It is assumed as homocedasticity if the variance of the residual observation is the same. On the other hand, if the variance is different, it assumed as heteroscedasticity. This research uses Glejser test to test the variance from the residual observation. If the significance value is more than  $\alpha = 0.05$ , it means that the regression model doesn't contain heteroscedasticity.

## G. Hypothesis Testing and Data Analysis

### 1. Multiple Linear Regression Analysis

The statistic test of multiple linear regressions uses SPSS program. Multiple linear regressions is a linear regression model which dependent variable is a linear function of several independent variables. Multiple linear regressions is very useful to examine the effect of some variables that correlate with the variables tested. This analysis technique is needed in various decision making both in the formulation of management policy and in scientific study. The relationship of functions between one dependent variable with more than one independent variable can be done by multiple linear regression analysis.

The formula of the regression to test the hypothesis is:

$$FP = \alpha_0 + b_1 CR + b_2 MR + b_3 LR + b_4 RM + b_5 CG + e$$

Index:

FP = Firm Performance

$\alpha_0$  = Constant

$b_1 b_2 b_3 b_4 b_5$  = Regression Coefficient

CR = Credit Risk

MR = Market Risk

LR = Liquidity Risk

RM = Remuneration

CG = Corporate Governance

e = Error

## 2. F-Test

This test is done to know whether independent variables simultaneously affect the dependent variable. This test is done by using two-way test with the following hypothesis:

- a.  $H_0: b_1 = b_2 = b_3 = b_4 = b_5 = 0$ , meaning there is no significant influence of the independent variables simultaneously.
- b.  $H_0: b_1 \neq b_2 \neq b_3 \neq b_4 \neq b_5 \neq 0$ , meaning there is a significant influence from independent variables together.
- c. Determine the level of significance that is equal to 0.05 ( $\alpha = 5\%$ )

The test criteria used are as follows:



- a.  $H_0$  accepted and  $H_a$  rejected if  $F_{\text{arithmetic}} < F_{\text{table}}$ . This means the independent variable together does not significantly affect the dependent variable.
- b.  $H_0$  rejected and  $H_a$  accepted if  $F_{\text{arithmetic}} > F_{\text{table}}$ . This means the independent variable simultaneously have significant effect toward the dependent variable.

### 3. t-Test

This test is done to know whether independent variables partially affect the dependent variable. This test is done by determining the level of significance and looking at the direction of regression coefficient. If the level of significance is equal or less than 0.05 ( $\alpha = 5\%$ ) and has the same direction as hypotheses, it means that the independent variable influences the dependent variable significantly.

### 4. Coefficient Determination Test

Coefficient determination test is used to know to what extent the independent variables influence the dependent variable. This can be tested using coefficient determination value. If the value is near to 1, it means that the independent variable can represent almost all of the information needed to depict what variables influence the dependent variable.