

CHAPTER III

RESEARCH METHOD

3.1. Population and Sample

This study makes use of a quantitative method. Relating to data collection, the data was collected through the Indonesia Stock Exchange or *Bursa Efek Indonesia* website. A population is generalized area that consists of an object or subject that have certain characteristics determined by the researcher (Sugiono, 2016). The population of this research is state-owned enterprises listed on Indonesia Stock Exchange. Sample is defined as the representative of population based on particular criteria. Probability sampling is the sampling that uses random technique and allows the entire population to be chosen in a sample. Meanwhile, non-probability sampling is the sampling that does not apply random technique, but only allows selected members in population to be included in sampling due to certain consideration. This kind of sampling usually focuses on bias.

This study makes use of the former, using purposive sampling. Purposive sampling is a technique of determining samples with certain considerations (Sugiono, 2016). The following are the prerequisites of the sample in this research:

- a. State-owned enterprises listed on IDX website from the year of 2013 to 2017.
- b. State-owned enterprises that published their annual reports from the year of 2013 to 2017 on IDX website or company's website.

- c. State-owned enterprises that provides company information of the audit fee, public accounting firm, total equity, total asset, and total debt completely.

Based on the requirements, 22 companies along with two subsidiary companies were served as the population in this research.



Table 3.1 Lists of State-Owned Enterprises in IDX

No.	SOEs	
1	INAF	PT Indofarma (Persero) Tbk
2	KAEF	PT Kimia Farma (Persero) Tbk
3	PGAS	PT Perusahaan Gas Negara (Persero) Tbk
4	KRAS	PT Krakatau Steel (Persero) Tbk
5	ADHI	PT Adhi Karya (Persero) Tbk
6	PTPP	PT Pembangunan Perumahan (Persero) Tbk
7	WIKA	PT Wijaya Karya (Persero) Tbk
8	WSKT	PT Waskita Karya (Persero) Tbk
9	BBNI	PT Bank Negara Indonesia (Persero) Tbk
10	BBRI	PT Bank Rakyat Indonesia (Persero) Tbk
11	BBTN	PT Bank Tabungan Negara (Persero) Tbk
12	BMRI	PT Bank Mandiri (Persero) Tbk
13	ANTM	PT Aneka Tambang (Persero) Tbk
14	PTBA	PT Bukit Asam (Persero) Tbk
15	TINS	PT Timah (Persero) Tbk
16	SMBR	PT Semen Baturaja (Persero) Tbk
17	SMGR	PT Semen Indonesia (Persero) / Semen Gresik Tbk
18	JSMR	PT Jasa Marga (Persero) Tbk
19	GIAA	PT Garuda Indonesia (Persero) Tbk
20	TLKM	PT Telekomunikasi Indonesia (Persero) Tbk
	Subsidiary companies	
1	AGRO	PT Bank BRI Agro Tbk
2	WTON	PT Wijaya Beton Tbk

3.2. Data Collection Technique

There are two different methods used to gather information, which are primary data and secondary data. Primary data is collected for the first time by the researcher while secondary data is the data that already exist and is collected by previous work (Ajayi, 2017). Primary data is original while secondary data is the analysis and interpretation of primary data. Primary data source is surveys, observations, experiments, interview, or questionnaire. On the other hand, the secondary data source includes government publication, website, books, journals, and more. This study uses secondary data since the data was collected from the IDX website. The official Indonesia Stock Exchange or *Bursa Efek Indonesia* website is www.idx.co.id. Currently IDX website only provides three year annual report and financial report. Companies annual data includes the one who usually changes their auditor or public accounting firm, audit fee, and brief financial report periodically.

3.3 Research Variables and Operational Definition

3.3.1 Research Variables

This research tests and analyzes whether audits fee, public accounting firm reputation, company size, and company financial distress influence auditor switching or not. A variable is the concept idea in monetary term. This refers to measurable characteristics, qualities, of particular object or situation being researched (Fraenkel, Wallen & Hyun, 2006). There are two variables to be investigated independent and dependent variable. Independent variable is known

as a factor or prediction variable. This variable affects dependent variable. Meanwhile, dependent variable is the variable affected by independent variable and functions to explain other variables. The independent variables of this research are audit fees, public accounting firm reputation, company size, and company financial distress, while the dependent variable is auditor switching.

3.3.2. Definitions and Variable Measurement

3.3.2.1 Dependent Variable

Auditor switching is defined as the changes of auditor or public accounting firm done by a company. In this research, the research object refers the companies, which are registered as SOEs in IDX website and whether they change their auditor or not. Auditor rotation caused by several factors, it may comes from the client or auditor sides. In this study, the companies should have at least five-year annual reports starting from 2013 to 2017. Auditor switching measurement is using dummy variable. This dependent variable will be presented by 1 to conduct auditor switching. If the company does not change its auditor, the value is 0.

3.3.2.2 Independent Variables

The independent variables in this study are audit fee, public accounting firm reputation, company size, and company financial distress. These four variables will be tested whether or not they are affecting the changes of an auditor in state-owned companies listed on IDX website.

1. Audit fee

Audit fee is defined as the amount of money that an auditor will get after doing audit service in a company (Yendrawati, 2011). In other words, the auditor charges the company to pay fee monthly or yearly for the auditor service. Companies, which carry out auditor switching, might perceive the audit fee is too high. Thus, they tend to choose auditor or public accounting firm with lower charge. In this research, audit fee is calculated by the natural logarithm of professional auditor cost paid by the company. The measurement is stated as follows:

$$SIZE = \ln (\text{auditor fee})$$

2. Public accounting firm reputation

Public accounting firm reputation in this study is divided into two categories. They are audit firm that is affiliated with big 4 and audit firm that does not affiliate with big 4. Public accounting size is measured by a dummy variable. If a company is using big four public accounting firms, the value is 1. Otherwise, if it is using non-big four public accounting firms, it represents by 0 (Nasser et al., 2006). The following are big four public accounting firms in Indonesia,

- a. Deloitte Touche Tohmatsu (Deloitte), affiliated with Hans Tuankotta Mustofa & Halim; Osman Ramli Satrio and friends; Osman Bing Satrio and friends.

- b. Ernest and Young (EY), affiliated with Prasetyo, Sarwoko & Sandjaja; Purwanton, Surwoko & Sandjaja.
- c. Kliynveld Peat Marwick Goerdeler (KPMG), affiliated with Siddharta Widjaja
- d. Pricewaterhouse Coopers (PwC), affiliated with Haryanto Sahari & friends; Tanudiredja, Wibisana & friends; Drs. Hadi Susanto & friends.

3. Company size

Size of a company is determined by the company's total asset. Company size is directly reflecting the level of operational activity of the company. Companies with a big amount of financial tend to be more complex rather than smaller companies or entities (Kurniaty, 2014). Larger amount of a total asset shows the bigger size of a company and *vice versa*. The measurement of company total asset each year uses logarithm calculation. The formula is stated down below:

$$SIZE = \ln (total\ asset)$$

4. Company financial distress

Company financial distress is the condition in which a company has a low financial performance in certain period of time. A company that has financial distress is inclined to do auditor switching. This inclination happens due to the likelihood of bankruptcy (Sugiarti & Pramono, 2016). Therefore, the company

attempts to increase the subjectivity of evaluation by doing auditor changes. Another reason might be the company has a financial difficulty that is unable to pay the previous auditor; so another auditor has been selected with lower cost. According to Wijaya & Rasmini (2015) company financial distress is measured by solvability ratio. This ratio is represented with Debt to Equity Ratio. DER has calculation formula, which is:

$$\text{Debt to Equity Ratio} = \frac{\text{Total Debt}}{\text{Total Equity}} \times 100\%$$

If a company has Debt to Equity Ratio more than 100%, thus the value is 1. Meanwhile, when a company client has Debt to Equity Ratio less than or equal with 100%, the value is 1.

3.4 Data Analysis Method

3.4.1 Quantitative Method

Quantitative analysis is the main method in this research. Quantitative is usually directly measurable or related to statistic term. Researcher makes use of a quantitative method to identify one or several variables. This method often deals with computation and analysis system applied in a scientific approach. Quantitative method starts from data collection according to research theory and hypothesis. Raw data that has not been processed might be confusing. Consequently, it needs a systematic process in order to make the data yield information, whether it is confirmation or disconfirmation. The systematic process in this research can be done by several applications, one of which is SPSS or

Statistical Package for Social Sciences. Therefore, software IBM SPSS statistics 21 was used to carry out the qualitative method in this study.

3.4.2. Descriptive Analysis

Descriptive analysis is the analysis that studies the method on how to collect, arrange, and present the data in the research study in a more informative way. There are some activities in a descriptive statistics, which are collecting the data, grouping the data, determining the value and statistic formula, and creating the chart, diagram, and picture. Descriptive analysis is mainly aimed to make it easy to read the data and understand the meaning of the data. A descriptive statistics serves to provide descriptive data of the dependent variable-auditor switching and the independent variables-audit fee, public accounting reputation, company size, and company financial distress. The analysis explains the maximum value, minimum value, mean, and standard deviation. Minimum and maximum value measurement is a formula to determine the largest and lowest number of population. Mean is used to determine the average number of population of the sample. A standard deviation is a form of measurement used to measure the amount of variation or distribution of data value number. Those formulas are used to describe the overall sample collected and qualify the requirement to be the research sample.

3.4.3. Logistic Regression Analysis

3.4.3.1. Hosmer and Lemeshow's Goodness of Fit Test

Hosmer and Lemeshow's Goodness of Fit Test examines the hypothesis whether the empirical data fit the model. When the level of significance is more than 0.05, it indicates the model can predict the observed value (Ghozali, 2018). In other words, the model is acceptable as it is suitable with the observation data. If the value is equal or less than 0.05 it means that there is a significant difference between the model and the observation value, hence the model cannot predict the observation value or the model is rejected.

3.4.3.2. Overall Model Fit

The second analysis conducted in this study is the overall model fit toward the data. The hypotheses to test the model fit are:

H0: The model hypothesized fit the data

H1: The model hypothesized does not fit the data

From these hypotheses, it is obvious that the zero hypotheses cannot be rejected so the model will fit the data (Ghozali, 2018). A statistics used is in accordance with *likelihood* function. Likelihood L from the model is the probability whether the model that hypothesize describe the inputted data. To test the zero hypotheses and alternative, L is transformed to -2LogL . Degradation of likelihood (-2LogL) shows better regression model or in other words the hypothesized model fit the data.

3.4.3.3. Nagelkerke R Square

Nagelkerke's R square value shows the extent to which the variability of dependent variable can be explained by the variability of independent variable (Djamalilleil, 2015). It determines the ability of the model to explain variety of dependent variable. The test shows the influence of variables of audit fee, public accounting reputation, company size, and company financial distress toward auditor switching. Nagelkerke R square is the modified coefficient Cox and Snell to ensure the value varies between zero (0) to one (1) (Sari & Puspaningsih, 2018). The coefficient determination value between 0 to 1 indicates whether small amount reflects the limited ability of the independent variable explain the dependent variable. When the value is close to 1, it means the independent variable provides all information needed to predict the dependent variable.

3.4.3.4. Classification Table (Classification Matrix)

Classification table 2 x 2 is used to measure the correct and incorrect estimation value. Classification matrix shows the prediction of regression model to predict the possibility of auditor switching (Wijaya & Rasmini, 2015). In column side, there are two prediction values of dependent variable-success valued by 1 and if failure is valued by 0. Meanwhile, in row side, it shows the real observation value of success dependent variable (1) and unsuccessful (0). In the perfect model, all cases will be in the 100% diagonal accuracy. If the logistic model has homosexuality, the correct percentage will be the same for both lines.

3.4.4. Regression Analysis

The variables in this study will be tested using logistic regression analysis. This analysis will show the influence of audit fee, public accounting firm reputation, company size, and company financial distress toward auditor switching in SOEs listed on IDX website. This regression is a tool used to measure the influence of one variable toward another variable. The regression equation used in this research is stated below:

$$\text{Ln} \frac{\text{SWITCH}}{1 - \text{SWITCH}} = \beta_0 + \beta_1 \text{FEE} + \beta_2 \text{KAP} + \beta_3 \text{SIZE} + \beta_4 \text{FINDIS} + e$$

Explanation:

SWITCH	= Auditor switching (dependent variable)
β_0	= Constant
$\beta_1 \text{FEE}$	= Audit Fee
$\beta_2 \text{KAP}$	= Public Accounting Firm (KAP) Reputation
$\beta_3 \text{SIZE}$	= Company Size
$\beta_4 \text{FINDIS}$	= Company Financial Distress
e	= Residual Error

3.4.5. Hypothesis Testing

Hypothesis testing in this research aims to examine the influence of audit fee, public accounting firm reputation, company size, and company financial distress toward auditor switching. The testing is measured by Maximum Likelihood Estimation or MLE.

$$H_0 = b_1 = b_2 = b_3 = \dots = b_i = 0$$

$$H_0 \neq b_1 \neq b_2 \neq b_3 \neq \dots \neq b_i = 0$$

H_0 value of hypothesis states that independent variable (x) does not have an influence toward variable used (in population). Hypothesis testing with $\alpha = 5\%$.

1. If the probability value (sig.) $< \alpha = 5\%$, the hypothesis is supported.
2. If the probability value (sig.) $> \alpha = 5\%$, the hypothesis is not supported.

