CHAPTER 3

RESEARCH METHODOLOGY

This chapter explained the research method which consists of the type of research, the object of research, population and sample, research variables and measurement and data analysis techniques used in this study.

3.1   Research Approach

This study aims to examine the relationship corporate governance characteristics for the corporate tax avoidance. This research approach is quantitative approach. This study intends to explain the variables studied and the influence of the independent variables with the dependent variable through hypothesis testing. The data comes from research that used secondary data which is the publication data without making changes to the data.

3.2   Identification of Variables

3.2.1   Dependent Variable

The dependent variable is the variable of primary interest to the researcher (Sekaran, 2009:70). The dependent variable of this research is tax avoidance which measured by the cash ETR.

3.2.2 Independent Variables

Independent variable is one that influences the dependent variable in either a positive or negative way (Sekaran, 2009:70). The independent variable used in this research is corporate governance characteristics (X1) which consist of independent commissioners, audit committee, institutional ownership, managerial ownership, and audit quality.

3.3 Operational Definition and Measurement of Variables

This study aimed to examine the relationship of corporate governance characteristics that consist of independent commissioners, audit committee, institutional ownership, managerial ownership, and audit quality for the corporate tax avoidance. Here is the definition and measurement of each variable in this study.

3.3.1 Tax Avoidance

Tax avoidance is a legal utilization of tax policy to reduce explicit taxes of pre-tax accounting income as a transfer value from the state to shareholder activity. Value of tax avoidance here is measure by proxy. The proxy will use Cash Effective Tax Rate (Cash ETR). Cash ETR will be measured by current tax expense divided by income before tax. The use of the current tax will be seen clearly by the amount of tax that occurred in the current year and the related tax policy in that year. The formula for Cash ETR will be:

$$\text{Cash ETR} = \frac{\text{Current Tax Expense}}{\text{Income Before Tax}}$$

3.3.2 Corporate Governance Characteristics

Corporate governance is a term that regulated the relation between directors, managers, employees, shareholders, customers, creditors, and suppliers of the company based on the ownership and control of company to minimizing agency conflict to make a good business climate in a country. Corporate governance had five principles, there are transparency, independency, accountability, responsibility, and fairness. These five principles are very important as a part of the application of the principles of good corporate governance consistently proven to improve the quality of financial reporting. The following are the corporate governance characteristics that used in this study.

3.3.2.1 Independent Commissioners

Independent commissioner is defined as a person who is not affiliated in any way with the controlling shareholder, has no affiliation with the board of directors or board of commissioners and not served as a director of a company associated with the company owner. Variable independent commissioner measured by looking at the proportion of independent commissioner on the board of commissioners (Hanum and Zulaikha, 2013:4). The following is the formula for independent commissioners.

$$\text{Independent Commissioners} = \frac{\text{Total of Independent Commissioners}}{\text{Board of Commissioners}} \times 100\ \%$$

3.3.2.2 Audit Committee

The audit committee is an additional committee that assists the board of directors in overseeing the company's management to help commissioners to avoid asymmetry of information by monitoring and making recommendations to management and the board of commissioners of the controls that had been run. The audit committee variables measured by the total number of committee members in a company. The following is the formula for audit committee.

> Audit Committee = Total Number of Committee Members

3.3.2.3 Institutional Ownership

Institutional ownership share holding company is majority owned by the institution (insurance companies, banks, investment companies, asset management and other institutional ownership) that had a big part to handle the work of the operational company such as forcing managers to focus on economic performance and avoid opportunities for self-interested behaviour. Institutional ownership variable measured by the proportion of institutional ownership based on the number of existing investors in a company. The following is the formula for institutional ownership.

$$Institutional\ Ownership = \frac{Total\ of\ Institutional\ Ownership}{Number\ of\ Existing\ Ownership}\ x\ 100\ \%$$

3.3.2.4 Managerial Ownership

Managerial ownership is a condition where the management had an ownership or stock in the company. Managerial ownership managed to become mechanisms to reduce agency problems aligning the interests of managers with shareholders. This can be said that managerial ownership can reduce the agency problems between external and internal part of the company because the tendency doing manipulated is reduced since they have the part of company stock.

In doing the good corporate governance, the managerial ownership is an essential part to build a public trust to make a good and healthy corporation. The side effect by the managerial ownership besides the reducing profit manipulating is to make a trustable company as a result of doing good corporate governance. In Murwaningsari (2009:32) studied about managerial ownership as a part of corporate governance. The research calculated the proportion of managerial ownership is based on the percentage of ownership. Here is the formula.

$$Managerial\ Ownership = \frac{Total\ of\ Management\ Share}{Number\ of\ Existing\ Share}\ x\ 100\ \%$$

3.3.2.5 Audit Quality

Audit quality comprises actual and perceived quality which the actual quality is the degree of the risk in reporting a material error in the financial accounts reduced, while perceived quality is how effective users of financial statements believe the auditor at reducing material misstatements. Audit quality increases with the size of the public accounting firm used by the company because

the bigger the public accounting firms the more ability to specialize and innovate through technology. Thus, the possibility to find violations in the company‟s accounting system is larger than the small public accounting firm.

As Annisa and Kurniasih (2012:126) stated that the financial statements were audited by auditors from The Big Four Public Accountant Firm, according to some reference more credible quality to show the actual value of the company. Therefore, suspected companies were audited by the Firm of The Big Four (PricewaterhouseCoopers - PWC, Deloitte Touche Tohmatsu, KPMG, Ernst & Young-E&Y). This research will use this measurement to measure the audit quality variables. Audit quality are measured by a dummy, if company financial statements were audited by auditors from The Big Four Public Accountant Firm of (1) and not audited by auditors from The Big Four Public Accountant Firm (0) of audit quality.

3.4   Types and Sources of Data Research

This research was conducted in the Indonesia Stock Exchange. The type of data that is used in the form of quantitative data derived from the study of data sources. As for the sources of data used are secondary data from the financial statements from sampled companies from year 2011 to 2013. Data obtained from the official website of Indonesia Stock Exchange.

3.5   Data Collection Method

There are two ways that used to collect data for this research which are:

1. Reference

Data are collected by reading and summarizing books, studying previous researches containing theories and others related information.

2. Documentation

Data are collected by making quotation and reduplicating data from the sources as listed on the previous section.

3.6   Population, Sample, and Observation Period of Research

Population is the generalization region consisting of the subjects that have certain qualities and characteristics defined by the researchers to learn and then drawn conclusions. The population of this study are all companies classified as manufacturing companies listed in Indonesia Stock Exchange with the observation period of research conducted for the years 20011-2013.

Samples taken from the population to be truly becomes representative of this research. The criteria used in this study are:

1. Companies belonging to the companies listed in Indonesia Stock Exchange during 2011-2013

2. Companies belonging to the manufacturing company that publishes financial statements in a row and complete during the period 2011-2013.

3. Companies that belong to the manufacturing company that has the financial information that is relevant to the study variables during 2011-2013.

4. Companies that belong to the manufacturing company that publishes financial statements using the unit value of the rupiah.

5. Companies belong to the manufacturing company has published financial statements for the period ended December 31, during the years 2011-2013.

6. Companies that belong to the manufacturing company that meet losses.

3.7 Data Analysis Techniques

This study aimed to test whether corporate governance characteristics which consisting of independent commissioners, audit committees, institutional ownership, and audit quality effect on tax avoidance as measured by Cash ETR. This study uses PLS (Partial Least Square) method.

3.7.1 Descriptive Analysis

This analysis is a method that used for quantitative data in order to get the needed information. Descriptive analysis explains the various characteristics of the data such as the average (mean), sum , standard deviation, variance, range, the minimum and maximum values.

3.7.2 Analysis Data Method

The statistical method that used in this research was Smart PLS. PLS (Partial Least Square) is a powerful analysis method (Ghozali, 2008) because this analysis does not need many assumptions such as normal distribution and non

high sample amount. Besides used for theory confirmatory, PLS can be used for explained whether there is relation among latent variables. PLS also analyzed the construct that formed with reflective or formative indicator. After collecting the data, followed with descriptive analysis and PLS analysis test.

Here the steps that must be fulfill in doing PLS based on Ghozali (2008:22-26):

1. Made structural model or inner model. Inner model, also called inner relation or structural model or substantive theory, is a picture of the relation among latent variables.

2. Made measuring model or outer model. Outer model, also known as outer relation or measurement model, defined as every indicator block that related to latent variable.

3. Path diagram constructed.

   In path diagram, the relation among constructs explained through the arrow. The straight row indicated the correlation between constructs. The construct structured in path diagram can be classified in two categories, there are:

   a. Exogenous Constructs, also known as source variables or independent variables, was not predicted by other variables in the model. Exogenous constructs is a construct that pointed by the row with one tip of the row.

   b. Endogenous Construct, was a construct that came from factors predicted by one or some constructs. Endogenous construct can

predicted one or some other endogenous constructs, but exogenous construct only can had causal relation with endogenous construct.

4. Converting the path diagram into equation system.

The equation that developed in this research showed measured three models of measuring and structured equation:

a. Measured equation model or outer model with reflective indicator.

X and Y	: The indicator or manifest for exogenous and endogenous latent variables.
ξ and η	: Exogenous and endogenous
Λx and Λy	: Loading matrix that described the simple regression coefficient that connected between latent variable and the indicator
εx and εy	: Error measurement or noise

b. Structural equation method or Inner model.

$$\eta_1 = \gamma_1 \xi_1 + \zeta_1$$

Where:

η_1	: Latent dependent variable of first equation
γ_1	: Path coefficient latent endogenous with exogenous of first equation
ξ_1	: Exogenous latent variable vector
ζ_1	: Residual variable vector (unexplained variance) of first equation

5. Made estimation of parameter

Estimation of parameter purposed to calculate latent variable data. Parameter estimation method in PLS is the least square methods. The calculation process done with iteration way, where the iteration stopped when the process meet the convergent situation. The parameter estimation done by PLS can be classified to three parts in the following (Ghozali, 2008:19).

a. Weight estimate used for creating latent variable score.

b. Path estimate that lined latent variable and the relation between latent variable and its indicator block (loading).

c. Means and parameter location (value of regression constant) for indicator and latent variable

6. Goodness of fit, in this case divided into two part, the outer model and inner model.

7. Model evaluating, this evaluating model divided into two parts, there are outer model and inner model.

a. The Outer model divided into two parts, reflective and formative. Reflective outer model evaluated with convergent and descriminant validity from its indicator and reliability composite for indicator block. While the formative outer model evaluated based on substantive content with using the level of significance from weight.

b. The inner model measure with some criterias, there are:

1. R^2 for endogenous latent variable.

2. Path coefficient estimation. This is the value of estimation for path relation in structural model that found with bootstrapping with significance value.

3. f^2 for effect size.

4. Prediction Relevance (Q^2). If the findings of Q^2 more than zero, it proofed that the model had predictive relevance, but if the Q^2 value below zero means that the model proofed not had predictive relevance.

Here the assumption that used in PLS:

a. The relation among the latent variables in inner model and addictive.

b. Structural model had recursive quality.

3.7.3 Validity and Reliability Test

After getting the data needed, the goodness of data evaluated by validity test and reliability test. Validity showed the level of goodness of a technique, instrument, measuring process of a certain concept. The reliability shows how the stability and consistency of an instrument in showing variable (Sekaran, 2006:93). The convergent of parameter validity test can be showed from the value of loading factor that must be had value above 0,5. This means indicator of a construct enter other variables less than 0,5, so the probability of this become convergent indicator and enter the mean construct is increasing, that is more than 0,50.

The convergent validity from the measuring model with reflective indicator valued based on the model correlation between item score/component score and construct score that calculated with PLS. The high individual reflective size obtained if the correlation value more than 0,70 of the measuring construct. However, the measuring scale of loading 0,5 until 0,6 for the early research is valued enough.

The other method for discriminate validity is compared between the value of square root of average variance extracted (AVE) of every construct and the correlation between construct and another construct in the model. This can be said as a good value of discriminate validity. The formula for AVE:

$$AVE = \frac{\sum \lambda_i^2}{\sum \lambda_i^2 + \sum_i \mathrm{var}(\varepsilon_i)}$$

Where :

λi   : Loading Component to indicator

var (εi) : $1 - \lambda_i^2$

The value of AVE recommended is more than 0,50.

3.7.4 Hypothesis Testing

The hypothesis testing in this research used resampling bootstrapping. The hypothesis testing in this research did with seeing the existing path coefficient compared to probability value of 0,05 with the following decision base of the level significance probability (Sig.):

a. If the probability level is same or lower than 0,05 with the level of significance probability (Sig. = ≤0,05) then Ho is rejected and Ha is accepted, that means significance occurred.

b. If the probability level is more than 0,05 with the level of significance probability (Sig. = >0,05) then Ho is accepted and Ha is rejected, that means not significance occurred.

Table 3.1

PLS Measuring Criteria

Criteria	Explanation
Structural Evaluated Model	
R^2 for endogenous latent variable	The result of R^2 was 0.67, 0.33 and 0.19 for endogenous latent variable in the structural model indicated the "good", "moderated", and "weak" model.
Estimated of Path Coefficient	The estimated value for path relation in structural model must be significance. This significance value can be obtained with bootstrapping procedure.
f^2 for effect size	The value of f^2 was 0.02, 0.15 and 0.35 can be interpreted whether the latent variable predictor had a weak, medium, or strong effect in the structural level.
Prediction Relevance (Q^2 and q^2)	Blindfolding procedure used in calculating: $$Q^2 = 1 - \frac{\sum_D E_D}{\sum_D O_D}$$ D was omission distance, E was sum of squares of prediction erros and O was sum of squares of observation. If the value of Q2 was more than zero indicated that the model had given the predictive relevance (Q2) and if the value of Q2 was less than zero indicated the low predictive relevance model. In the relation with f2, the effect of structural relative model for measuring latent variable was following: $$Q^2 = \frac{Q2_{included} - Q2_{excluded}}{1 - Q2_{included}}$$

Criteria	Explanation
Evaluation of Reflective Measuring Model	
Loading factor	The value of Loading factor must be more than 0,70
Composite Reability	Composite reability measured the internal consistency and the value must be more than 0,60
AVE	The value of AVE must be more than 0,50
Discriminate Validity	The value of AVE must be more than correlation value among latent variables.
Cross Loading	Cross Loading was the other size of discriminate validity. Every indicator block might had higher loading for every measured latent variable than the other indicator of latent variables.
The Evaluation of Formative Measured Model	
The significance of weight value	The estimated value of formative measured model must be significance. This significance level measured with bootsrapping procedure.
Multicolonierity	The manifest variable in block must be testing whether had multicolonierity or not. The variance inflation factor (VIF) value can be used for this testing. The VIF value more than 10 indicated the multicolonierity.

Source: Ghozali (2008: 27)