

CHAPTER III

DATA AND RESEARCH METHODOLOGY

A. Research Variable and Data Type

This study aims to examine the effect of financing growth, inflation, exchange rate (independent variable) to the performance of Islamic Bank in Indonesia using the Return on Assets (ROA) (dependent variable). Based on how to obtain the data, the type of data in this research are secondary monthly time series data starting from January 2012 to December 2015 from Otoritas Jasa Keuangan (OJK), Badan Pusat Statistik (BPS), and Bank Indonesia.

B. Data Collecting Method and Sources

The data are collected from Otoritas Jasa Keuangan (OJK) Indonesia. This following table shows the data and its sources:

TABLE 3.1

Variable and Data Source

No	Variables	Source
1	Return on Assets (ROA)	Shariah Banking Statistics OJK from January 2012 to December 2015
2	Financing contracts	Shariah Banking Statistics OJK from January 2012 to December 2015
3	Inflation rate	Badan Pusat Statistik from January 2012 to December 2015
4	Exchange rate	Bank Indonesia from January 2012 to December 2015

This study also obtains relevant information from many articles, books, journals, newspaper and others used as the reference.

C. Operational Definitions of Researched Variables

The operational definition is used in order to avoid mistakes in interpreting the data. This study uses four variables; the details are 3 variables as independent variables and one variable as the dependent variable. While dependent variable in this research is Return on Assets (ROA). The operational definition of the variables used in this study is:

1. Return on Assets (ROA) is a profitability ratio. ROA is able to measure the ability of company as impressive gains in the past and then projected in the future. Assets in question are the overall wealth of the company, which is obtained from its own capital and foreign capital that have changed the company into a company's assets that are used for the viability of the company. In this research, the Return on Assets (ROA) is the Return on Assets (ROA) of Islamic bank in Indonesia from monthly data, from January 2012 to December 2015.

The formula of return on assets (ROA) is:

$$\text{ROA} = \frac{\text{Net Income}}{\text{Total Assets}} \times 100$$

2. Financing growth is the provision of money or bills can be equated with it, based on agreements between the bank and other parties who require the financed party to return the money or the charges after a certain period of time in exchange or sharing system. In this research, the financing growth is the financing growth of Islamic bank in Indonesia from monthly data, from January 2012 to December 2015.

3. Inflation is rising prices of goods in general and continuously. Can not be called inflation when prices of one or two items only unless they lead to increasing the price on other goods. The opposite of inflation is called deflation. Consumer Price Index (CPI) is an indicator that is often used to measure the rate of inflation. In this case, the inflation is the inflation in Indonesia from monthly data, from January 2012 to December 2015.
4. Exchange rate is defined as the price of one currency in terms of another currency or the amount of one currency that can be exchanged per unit of another currency. Exchange rate as one of the indicators that affect the activity in the stock market and financial markets because investors tend to be cautious to invest. In this case, the exchange rate is the exchange rate in Indonesia from monthly data, from January 2012 to December 2015.

D. Research Model and Analysis Method

1. Multiple Linear Regression Method.

The analysis method in this research is multiple linear regression methods. The purpose of multiple linear regression method is to identify the influence of the independent variable (financing growth, inflation rate and exchange rate) to the dependent variable (Return on Assets (ROA)). Regression analysis is one of the techniques of data analysis, the statistical often used to examine the relationship between several variables and predict a variable (M.H. Kutner 2004).

An econometric model is a statistical model that defines the statistical relationship between variables in particular phenomena. This study uses this following econometric model:

$$Y_t = a + \beta_1 INF_t + \beta_2 FG_t + \beta_3 KURS_t + E \quad (3.1)$$

Where :

Y = Return on Assets

a = Constanta

$\beta_1 - \beta_4$ = Regression coefficients of each variables

INF = Inflation rate

FG = Financing growth

KURS = Exchange rate

E = Error term

Accordance to Gujarati (2003) assumptions on multiple linear regression model are as follows:

- 1) The regression model is linear in the parameter.
- 2) The average value of the error is zero.
- 3) The variance of error is constant (heteroscedasticity).
- 4) There is no autocorrelation in error.
- 5) There is no multicollinearity in independent variables.
- 6) Error normally distributed.

2. Regression Analysis.

1) Coefficients of Determination (R-Squared)

The coefficient of determination or R-squared (R^2) is again a measure of the closeness of fit in the multiple regression model as in the simple two-variable model. However, R^2 cannot be used as a means of comparing two different equations containing different numbers of explanatory variables. This is because when additional explanatory variables are included, the proportion of variation in Y explained by the X, R^2 , will always be increased. Therefore, it will always obtain a higher R^2 regardless of the importance or not of the additional regressor. For this reason it needs a different measure that will take into account the number of explanatory variables included in each model. This measure is called the adjusted R^2 because it is adjusted for the number of regressors (Dimitriod Asteriou 2007).

R^2 is to determine the proportion of total variation in the dependent variable Y that can be explained or explained by the independent variables X that is in multiple linear regression model simultaneously. Prices of R were obtained in accordance with the variation described each of the variables contained in the regression. This resulted, the variance explained by the estimators caused by the influential variable (which are real).

Regardless of representation, an R-squared equal to zero means that the dependent variable cannot be predicted using the independent variable. In reverse, if it equals one, it means that the dependent of variable is always predicted by the independent variable. A coefficient of determination that falls within this range measures the extent that the dependent variable is predicted by the independent variable. An R-squared of 0.38, for example, means that 38% of the dependent variable is predicted by the independent variable.

2) t-Test

t-Test basically shows how far the influence of the independent variables in explaining the dependent variable (Ghozali, 2009). t-Test was used to determine the influence of the independent variables partially to the dependent variables that are significant or not (Santoso, 2002). In this research using two-tailed test ie a test which has two areas rejection of H_0 is located at the tip, right and left (Suharyadi, 2009).

t-Test statistic is a partial test, where the test is used to test how good the independent variables can explain the dependent variable individually. At the 0.05 (5%) significance level, assuming the independent variable has a constant value.

Hypothesis:

If the probability $\beta_i > 0.05$ Not significant

If the probability $\beta_i < 0.05$ Significant

3. Classical Assumption.

1) Autocorrelation Test

This test is used to test the assumptions of classical regression related to the existence of autocorrelation. Autocorrelation shows the correlation between parts of observations. If a model has a correlation, then the parameters are estimated to be biased and its variations are not minimum and the model becomes inefficient (Basuki, 2014).

2) Multicollinearity Test

Multicollinearity test aims to test whether the regression model found a correlation between the independent variables. A good regression model should not happen correlation between independent variables. The results of these tests can be seen from the Variance Inflation Factor (VIF) by the equation $VIF = 1 / \text{tolerance}$. If VIF is less than 10 then there is no multicollinearity.

Multicollinearity is a linear relationship between the independent variables in the regression model. To examine the whether or not multicollinearity on the model, the researchers used partial methods between the independent variables. Rule of thumb of this method is if the correlation coefficient is high, above 0.85 then there is a multicollinearity in the model. Conversely, if the correlation coefficient is relatively low then there is no multicollinearity in the model (Basuki, 2014)..

3) Heteroskedasticity

Heteroskedasticity is the regression problem that does not have the same variance or variances not constant. This leads to various problems that the OLS estimator is biased, the variance of the OLS coefficient would be wrong (Basuki 2014).

E. Research Plan

In order to understand the undergraduate thesis clearly, so the researcher divided the materials into several sub-chapters with systematic writing as follows:

Chapter I, Introduction; This chapter describes the general information that the research background, limitation of the study, problem formulation of the study, purpose of the study, and benefit of the study.

Chapter II, Literature Review; This chapter contains the theory that some excerpts taken from the book, in the form of understanding and definition. This chapter also explains the basic concepts of Islamic bank, Islamic bank financing, Islamic banking products and services, economic stability, inflation, interest rate, exchange rate, performance bank and Return on Assets (ROA).

Chapter III, Data and Research Methodology; This chapter contains the research variables and data type, data collecting method and sources, operational definitions of researched variables, research model and analysis method, and research plan.

Chapter IV, Research Findings; This chapter describes the influence of financing growth, inflation rate, exchange rate to the Return on Assets (ROA) in Islamic bank in Indonesia. It also contains the result from the analysis of regression test, the result table and diagram, the analysis of empirical result with the theoretical framework and previous study.

Chapter V, Conclusions; This chapter contains of conclusion from the research, suggestion for the policy maker of Islamic bank in Indonesia and suggestion for the next research.