

CHAPTER III

DATA AND RESEARCH METHODOLOGY

A. Research Object

This research is about That Affecting Mudharaba Payment on Islamic Banks and Sharia Business Unit (Third Party Fund (TPK), Non Performing Financing (NPF), Profit Sharing Ratio).

B. Type Data

This study uses a quantitative analysis with secondary data in the form of monthly data for six years, namely finance data based classes in Islamic Banks and Sharia Business Unit (BUS and UUS), TPF, NPF, and Profit Sharing Percentage happened in Indonesia during the period (2006-2009) (2011-2015).

C. Secondary Data

The data in this study were obtained from the Indonesian Banking Statistics (SPI) Bank Indonesia (www.bi.go.id), Islamic Banking Statistics Bank premises and the Financial Services Authority (FSA).

D. Data Collection Techniques

The data required are collected by non participant observation, that is to download (Download) from various sites relevant to suitability needs of data, record or copy data from a variety of data publication of financial reports and studies related scientific literature.

E. Operational Definition of Variables

Variable Definitions Research

Variables are defined as everything that will be the object of observation research. Understanding that can be taken from the definition in the study is that there is something that is being targeted, namely variables. So that the variable is a phenomenon that became the center of attention and to be observed or measured.

The variables in the research are limited to:

a. Financing Mudharaba

Mudharaba financing a number of Islamic banking funds distributed to the public with the principle of sharing. Data on the number of mudharaba financing obtained from financial statements (balance sheet) that the amount of financing mudharaba.

b. Third Party Fund (TPF)

TPF is defined as the total third party funds managed by the Islamic banking which is the sum of wadiah deposits, savings mudharaba, and seposit mudharaba. Data on the total amount of third party funds obtained from the data of financial statements (balance sheet) that is the sum of wadiah deposits, savings and deposit mudharaba mudharaba. In this research, third-party funds measured by third-party funds (t-1)

c. Non Performing Financing (NPF)

The amount of credit / financing is classified as noncurrent / jam is classified as substandard, doubtful, and loss based on Bank Indonesia regulations concerning the quality of earning assets.

d. Profit Sharing Percentage (PSP)

Determination of the profit sharing ratio of financing is determined by considering the reference level of the profit margin and the estimated level of business profit / project financed. Data on the profit sharing ratio derived from the Financial Statements in the form of income and profit margin (t-1)

F. Research Model

Econometric model is a statistical model used in econometrics. Econometric model defines a statistical relationship between the variables in the phenomenon. This study uses an econometric model (Achsani, 2005) econometric model naturally. VECM general model can be expressed as the equation

$$\Delta x_t = \mu_t + \prod x_{t-1} + \sum_{i=1}^{k-1} \Gamma_i \Delta x_{t-1} + \varepsilon_t$$

Where:

X_k is k with the selected endogenous variables, specifically for each model ε_k is disturbance or error term with zero mean constant variance-covariance. From

the natural model, the model turned into filling models investigated in this study is P.MUDHAR, TPF, NPF and PSP.

Model 1

$$P.MUDHAR_t = \sum_{j=1}^n P.MUDHAR_{t-j} + \sum_{j=1}^n TPF_{t-j} + \sum_{j=1}^n NPF_{t-j} + \sum_{j=1}^n PSP_{t-j} + \epsilon_{1t}$$

Model 2

$$TPF_t = \sum_{j=1}^n TPF_{t-j} + \sum_{j=1}^n P.MUDHAR_{t-j} + \sum_{j=1}^n NPF_{t-j} + \sum_{j=1}^n PSP_{t-j} + \epsilon_{1t}$$

Model 3

$$NPF_t = \sum_{j=1}^n NPF_{t-j} + \sum_{j=1}^n P.MUDHAR_{t-j} + \sum_{j=1}^n TPF_{t-j} + \sum_{j=1}^n PSP_{t-j} + \epsilon_{1t}$$

Model 4

$$PSP_t = \sum_{j=1}^n BHS_{t-j} + \sum_{j=1}^n P.MUDHAR_{t-j} + \sum_{j=1}^n TPF_{t-j} + \sum_{j=1}^n NPF_{t-j} + \epsilon_{1t}$$

Where P.MUDHAR Mudharaba financing, TPF is a Third-Party funds, non-financial NPF is performing, PSP is the profit sharing ratio. Where e1 is the error term (t 1,2,3,4 ...), l is length of lag WITH 1,2,3, x and x is a maximum lag.

G. Methodology

This study adopts Vector Error Correction Model (VECM) to examine the relationship between finance and variable Mudharaba TPF, NPF and PSP. The model was developed and applied in this study as follows:

$$P.MUDHAR_t = \sum_{j=1}^n P.MUDAR_{t-j} + \sum_{j=1}^n TPF_{t-j} + \sum_{j=1}^n NPF_{t-j} + \sum_{j=1}^n PSP_{t-j} + \epsilon_{1t}$$

Where :

P.MUDHAR: Mudharaba

TPF: Third Party Funds

NPF: Non Performing Finance

PSP: Profit Sharing percentage

This study follows the standard procedure time series analysis. By following this procedure:

1. Descriptive Statistics
2. Test Data stationer - Augmented Dickey Fuller Test
3. Optimal Lag Length Test
4. Stability Test VAR Model
5. Test cointegration
6. Analysis Kuualitas Granger - Julius Johansen Co-integration Test
7. Empirical Model VAR / VECM
8. Analysis of Impulse Response funcion
9. Analysis of Varian Decompotion.

VECM method has several advantages compared with other econometric methods, among others:

1. It is freed from the restrictions of economic theory that often arise, such as symptoms of endogenous and exogenous variables false, because the research is based on the data;

2. VECM build models simultaneously in a complex system (multivariate), so as to capture the overall relationship variables in the equation;
3. Test multivariate VECM can avoid bias due to omission of relevant variables;
4. VECM test can detect relationships between variables in the equation system, by making all variables as endogenous;
5. The method is simple VECM, when one does not have to worry to determine which variables are endogenous and exogenous variables;
6. The method is simple VECM, because usually OLS method can be applied to each equation separately; and
7. Results of the estimation of prediction (prediction) obtained through methods VECM in many cases better than the estimation of simultaneous equations more complex models

Meanwhile, some of the weaknesses of the VECM, among others:

1. Model VECM is considered a theoretical, because it uses less information than earlier theories, unlike the simultaneous equation model, where the revenue and expenditure of certain variables play an important role in the identification of the model;
2. VECM Model less appropriate for policy analysis, because too much emphasis on the predictions (forecasts);

3. Election of the long lag be the biggest challenge, especially when too many variables with a long lag, so there is a parameter that is too long will reduce the degree of freedom and requires a large sample size;
4. All variables must be stationary. If not, the data must be converted correctly (eg, captured first difference). long-term relationships that are required in the analysis will be lost in the transformation; and
5. Impulse Response Functions, which is the core of the analysis using method VECM, is still debated by researchers.

H. Hypothesis Test and Data Analysis

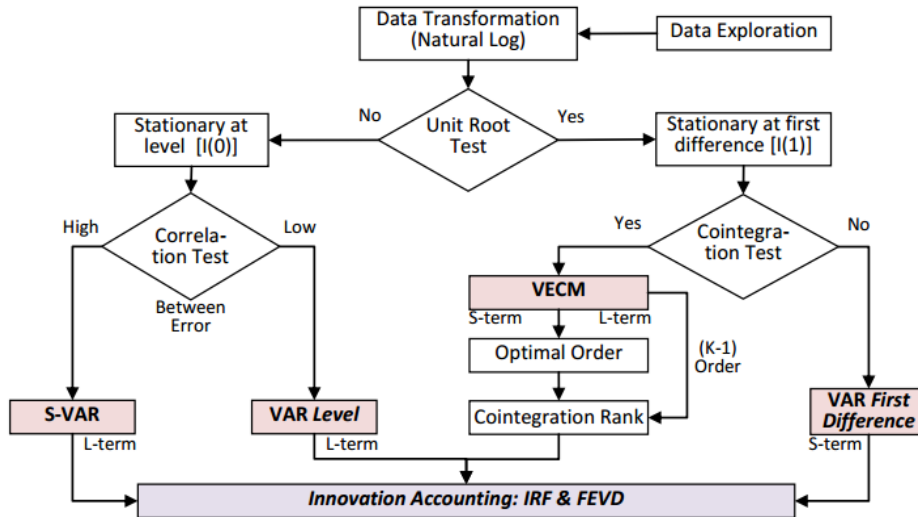
In the details mentioned techniques will be explained in the following description.

1. Descriptive statistics.

The research employs descriptive statistics to get then data:

- a. Examining the value Mean (average)
- b. Researching the maximum value
- c. Researching Minimum value

Picture 3.1 Hypothesis Test and Data Analysis



Source: (Basuki, 2015)

2. Test the unit root.

The economic data of time series is generally stochastic (trending is not stationary / data that have roots units). If you have a unit root, then the value will tend to fluctuate around the average value, making it difficult to estimate a model. The unit root test is one of the concepts that lately more and more popular used for testing stationarity time series data. This test developed by *Dickey* and *Fuller*, using *Augmented Dickey Fuller Test (ADS)*. stationarity test that will be used is to test the ADF (Augmented Dickey Fuller Test) using a 5% significance level (Basuki, 2015).

3. Determining the length of lag.

VAR estimation is very sensitive to lag length used. Determination of the amount of lag (order) to be used in the VAR model can be determined based on

the criteria of Akaike Information Criterion (AIC), *Schwarz Information Criterion (SC)* or *Quinnon Hannan (HQ)*. Besides testing the optimal lag length is quite useful to eliminate the problem of autocorrelation in the VAR system, so with the use of optimal lag is expected to no longer appear autocorrelation problem. (Basuki, 2015)

4. stability test VAR.

VAR stability needs to be tested first before doing further analysis. VAR estimation which will be combined with the error correction model is unstable, then the *Impulse Response Function* and *Variance Decomposition* become invalid (Basuki, 2015).

5. Test cointegration.

As stated by *Engle-Granger*, the presence of non-stationary variables most likely cause is most likely a long-term relationship among the variables in the system. Cointegration test is performed to determine the existence of the relationship between variables, especially in the long term. If there is cointegration in variables used in the model, then certainly the long-term relationship among variables. The method can be used to test the existence of cointegration is the method of *Johansen Cointegration*.

6. Pair Wise Granger causality test.

Causality test is performed to determine whether Seatu endogenous variables can be treated as an exogenous variable. It happened because of the affects of both variables. If two variables y and z , then if y affects z or y or z

affecting apply both or no relationship between the two variables. Variable y affects variable z means how much the value of z in the current period can be described by the z value in the previous period and the value of y in the previous period (Basuki, 2015).

7. Empirical Model VAR / VECM

Having known the existence of cointegration, the test process is then performed using methods of *error correction*. If there are different opinions about variables degree of integration testing, the is done together (jointly) between the long-term equation by equation tricorrection error. Once it is known that in the variables occurred cointegration. The degree of integration of cointegrated variables called Lee and Granger as *multicointegration*. But if encountered by the phenomenon cointegration, then the test is continued using variables *first difference*. VECM is a form of VAR restricted due to the existence of the form data that is not stationary but cointegrated. VECM often referred to as the design for the series nonstationary VAR that has cointegration relationship. VECM specification is restricted long-term relationship endogenous variables that converge into cointegration relationship, but it still allows the existence of short-term dynamics.

8. Analysis of Impulse Response Function

IRF (Impluse Response Function) analysis is a method used to determine the response of an endogenous variable to shock specific variables. IRF also be used to see the shaking of one variable affects another and how long they occur.

Through IRF, an independent response about one standard deviation can be reviewed. IRF explores the impact of interference by one standard error (*standard error*) as an innovation in an endogenous variable against another endogenous variable. An innovation in one variable, it will directly impact the variable in question, then proceed to all other endogenous variables through the dynamic structure of the VAR (Basuki, 2015).

9. Analysis of Variance Decomposition.

Forecast Error Variance Decomposition (FEVD) or decomposition of forecast error variance reduces innovation at a variable to components of other variables in the VAR. The information presented in FEVD is the proportion of movement sequentially caused by its own shocks and other variables (Basuki, 2015). The Independent variable contributes the most dependent variable.

