CHAPTER II

LITERATURE REVIEW

2.1. Previous study

It is a summary of the results of similar studies, the purpose to examine the results of research on the themes that has been done before. Hence, it can serve as a basic reference in this study. The research as follows:

Amero (2011), the variables of the research are inflation, exchange rate, interest rate (SBI) and Money demand (M2) and third party fund. The methodology used path analysis method with decomposition model and using the software Amos 16. The result of substructure I indicate that inflation, exchange rate, SBI interest rate, and money demand (M2) have a significant effect on the third party fund. The result of substructure II indicate that inflation, interest rate, money demand (M2) and third-party fund (DPK) variable have significant effect on the volume of interbank money market.

Thohari (2010), variables used are exchange rates, inflation, the money demand, third-party funds and mudharabah. It is using the path analysis method. From the results, the first substructure shows that the variable exchange rate (rupiah), inflation and the money demand (M2) have a significant effect on the third party fund (DPK) and the second test shows that the variable money demand and deposits have a significant effect on mudharabah financing.

Shafiq (2016), the variables are money demand, inflation, mudharabah third-party funds. The analytical method is multiple linear regression. The result shows

that partially inflation did not significantly influence the mudharabah third-party funds, money demand has an influence on mudharabah third-party funds at Bank Syariah Mandiri, meaning that changes in money demand have a significant effect on Mudharabah third-party funds. In addition, Inflation and money demand have a significant effect on mudharabah third-party funds simultaneously.

Asnawi (2018), the data analysis method used is multiple linear regression. The data used are timeseries data from 1999-2017 which were interpolated. The results partially show that the money demand and inflation have a positive and significant influence on economic growth in Indonesia, while interest rates does not affect economic growth in Indonesia. The money demand, interest rates and inflation have a significant influence on economic growth in Indonesia, simultaneously.

Maya (2016), this research show that independent variable (economic growth, Inflation, money demand, and BI rate) simultaneously has significant effect to dependent variable mudharabah savings. This can be proved by significant value 0.000. Based on the test partially economic growth variable has a negative effect and not significant to mudharabah savings that showed by t- test is 11.262. Inflation variable partially showed that has a negative effect and not significant to mudharabah savings that showed by t-testing is -.391. Money demand variable partially has positive effect and significant to mudharabah savings that showed by t-test is 81.202. BI rate variable partially has positive effect and not significant to mudharabah savings that proved by t-test is 1.306.

Maries (2008), examines the impact of fluctuations in macroeconomic variables on third-party funds (DPK) that are compiled in Islamic banking. The testing uses multiple linear regression models and the variables are money demand, BI rate, inflation, third-party funds (DPK). The results of the study show that these three variables simultaneously affect third-party funds (DPK).

Setiadi (2012), this research used the quarterly time series from 1999: Q1 to 2010: Q4. The results showed (1) in the short term and long term inflation has a positive and significant impact on money demand. (2) in the short run interest rate negative and not significant affect money demand, and long term has a negative and significant effect on money demand in Indonesia. (3) the GDP variable in the short run is not significant, while the long run has a positive and significant impact on the demand for money in Indonesia. (4) Error Correction Term marked positive and significant indicate valid models and can be used to estimate the demand for money in Indonesia. Based on the results concluded that, significant inflation variable affecting the money demand in Indonesia both in the short and long run. The interest rate and GDP variable in the short run are not significant, while in the long run, both are a significant affect on money demand.

Arfidan (2017), this research type is explanatory research with the quantitative approach. Population in this research is time series (monthly data) of money demand (M2), CPI (inflation), SBI (interest rate), rupiah exchange rate to US dollar period 2011-2015. The type of data is the secondar data from 2011-2015 which is available and published by Bank Indonesia. Data analysis techniques in this study using multiple linear regression analysis. The results of this study indicate

that (1) the variables of money demand, CPI inflation, SBI interest rate significantly influence the exchange rate of rupiah/US dollar simultaneously, (2) partially the money supply has significant influence on the exchange rate/US dollar; (3) SBI rate has a significant influence on the exchange rate/US dollar; (4) CPI inflation has no significant effect on the exchange rate/US dollar.

Abdim (2016), the method that used in this research is quantitative method and also using secondary data obtained from financial reports and other reports started from 2005 until the end of 2015. The analysis technique used is Johansen Cointegration and Vector Autoregressive (VAR). The result is monetary policy shocks have to affect significantly on deposits Islamic banks in the long run and short run. Furthermore, variables macroeconomic like GDP and CPI have effect significant on deposits in Islamic banks. interestingly, the money demand, in the long run, has a significant effect on Islamic banks deposits, but in the short run does not have a significant effect on the deposits of Islamic banks.

Arif (2015), The analysis methode used in this research is Error Correction Model (ECM). The results showed that the variable Gross Domestic Product (GDP) is not significantly influences money demand. Exchange Rate (Exchange), and the Price Level positively and significantly affect the demand for money (M1) in the short term. While the rate of 3-month deposit rate negatively and significantly influences the money demand (M1). The results of this study also showed that in the long term demand for money (M1) in Indonesia positively and significantly influenced by variables Gross Domestic Product (GDP) and the price level. While the exchange rate and variable interest rates have negative effect to money demand.

Helmi (2017), the purpose of this study was to determine the effect of the rupiah exchange rate, inflation, money demand and the growth of exports to total Islamic banking financing by using third-party funds as a moderating variable. The population in this study is all Islamic banking in Indonesia both Islamic Banks or Business Unit of Sharia in 2007-2015. The sample is the entire population with time series data as much as 108 of data. The method used is multiple regression analysis. The results of this study showed that simultaneous variable rupiah exchange rate, inflation, the money demand and export growth significantly influence the total financing of Islamic banking in Indonesia. Meanwhile, third-party funds moderating influences the rupiah exchange rate, inflation and export growth to the total financing of Islamic banking in Indonesia.

Haryadi (2014), the Error Correction Model (ECM) has been used as a tool of analysis. The result of this research is in the long term variable inflation and money demand has a significant impact on the exchange rate, in other hands variable interest rate and national income has no a significant impact.

Hendayanti (2017), the research applies the ECM method to determine the effect of the rupiah exchange rate on money demand which is expected to be used to make policies in the economic field. The results showed that the coefficient of short-term to long-term adjustment in the money supply each month was 0.0197%. In addition, there is a significant and positive relationship between changes in the rupiah exchange rate against the US dollar in the previous month and changes in money supply this month and a significant and negative relationship between

changes in the money supply in the previous month and changes in the money supply this month.

Marina and Amirudin (2014), in this study applies multiple linear regression, inflation, money demand and exchange rates. The type of data used is secondary data (time series) from 1999 to 2013. The results showed that inflation and money demand variables simultaneously did not significantly influence the rupiah exchange rate in Indonesia. Meanwhile, the inflation variable has a significant effect on the rupiah exchange rate partially, while the variable money demand does not show a significant effect.

Mahendra (2016), The method used is linear regression where the test results show variable effects on the money demand, the interest rate (SBI), and the exchange rate (Rp/USD) in 2005 to 2014. Using the SPSS 22 software obtained the results of research that the money supply and value the exchange rate (Rp / USD) has no significant effect on inflation while the interest rate (SBI) also has no significant effect on inflation.

Kia and Darrat (2004), error correction model and cointegration M1, interest rate, inflation, profit sharing deposit, money demand and growth domestic product. They found that both money demand models, M1 and profit sharing monetary aggregates, and especially the demand for profit sharing deposits are stable and policy invariant despite the numerous shocks that have characterized Iran in recent years. Moreover, the results of the research also provide another piece of evidence supportive of the merit of the interest-free profit sharing banking system and

suggest that profit sharing monetary aggregates represent a credible instrument for monetary policymaking in Iran.

Krisnaldy (2017), this research uses the model of error correction or Error Correction Model (ECM). A number of tests conducted against the five variable data using the root test unit, test the Granger, and test model of error correction. The test results showed that money demand growth variables, growth of gross domestic product and interest rates do not affect significantly to change inflation rate in the short term, only the variable growth Rate against the USD influential significantly to changes in the level of inflation in the short term.

Hario (2010), the models will be calculated with OLS (Ordinary Least Square) and Classical Assumption which is excelent in technical, easy to calculate and interpretation. In this case a correlation between dependent variables and independent variables. To determine the inflation rate effect before and after Global Crisis, the other test methods also needed, in example: Normality Test, Autocorrelation Test, Multicolinearity Test, Heteroscedastisity Test and Chow Test. The result from this research determine that Inflation rate as a dependent variable will significantly influence to money demand and exchange Rate in Indonesia.

Tiara (2017), the variable in this reserch are Indonesia Exchange Rate (as dependent variable), money demand and BI rate (as independent variables). The results show that money demand (M2) are significantly and positive impact on exchange rate. Meanwhile, the BI rate is significantly and positively affect on exchange rate. The finding in this research suggests money demand and BI rate give

dominant impact on exchange rate in indonesia. Goverment and related agencies, especially Bank Indonesia as policy maker must be carefully understood with those variables in order that they can control exchange rate variable and maintaining economic stability in order to avoid exchange rate fluctuation.

Ascarya and Heni (2008), this study aims to analyze conventional and Islamic money demand in Indonesia and specify the relationship between the money demand in the two systems and price level as the goal of monetary policy. Methods used are Vector Auto Regression (VAR) and Vector Error Correction Model (VECM). The results show that PLS return negatively correlated with Islamic money demand. In Islamic money demand, the value of correction error is significant, thus there is an adjustment towards its long-term equilibrium. The Islamic money demand stabilizes quickly to response the shock from other variables compares to that of conventional money demand. Moreover, there is no cointegration between money demand, conventionally and Islamically, with price level, so that inflation targeting framework of monetary policy implemented by Bank Indonesia need to be reviewed.

Ascarya (2012), the methodology using Granger and VAR on monthly data from January 2003 to December 2009. The research result shows that the transmission mechanisms from conventional policy rate are all linked to output and inflation, while the Islamic policy rate is not linked to it. In addition, the interest rate, credit and conventional interbank rate shocks give negative and permanent impacts to inflation and output, while profit lost sharing (PLS), financing, Islamic interbank profit lost sharing (PLS) as well as central bank shariah certificate (SBIS)

19

give positive and permanent impacts to inflation and output. Central Bank Certificate as conventional policy gives positive impact to inflation and negative impact on output.

Theodores et al., (2014), the variable are interest rates (bi), money demand and exchange rate, inflation. The methodology is using the error correction model Engle-Granger (ECM-EG). The results of this study indicate that the BI Rate positive and significant effect on the inflation rate in Indonesia Meanwhile, money supply and exchange rate Rp/Usdollar positive and not significant effect on the rate of inflation in Indonesia.

Syukri et al., (2017), The population in this study is all Islamic banking in Indonesia both Islamic Banks or Business Unit of Sharia in 2007-2015. The sample is the entire population with time series data as much as 108 of data. The method used is multiple regression analysis. The results of this study showed that simultaneous variable rupiah exchange rate, inflation, the money supply and export growth significantly influence the total financing of Islamic banking in Indonesia. Meanwhile, third-party funds moderating influencesthe rupiah exchange rate, inflation and export growth to the total financing of Islamic banking in Indonesia.

Arif (2015), the analysis method used in this research is Error Correction Model (ECM). The results showed that the variable Gross Domestic Product (GDP) is not significantly influences money demand. Exchange Rate (Exchange), and the price level positively and significantly affect the demand for money (M1) in the short term. While the rate of three month deposit rate negatively and significantly influences the money demand (M1). The results of this study also showed that in

the long term demand for money (M1) in Indonesia positively and significantly influenced by variables Gross Domestic Product (GDP) and the price level. While the exchange rate and variable interest rates have negative effect to money demand.

Zulkifli (2011), the general objective of this study was to know how far the effect to changing of Rupiah's Exchange Rate to American Dollar by three factor of economic: inflation rate, interest rate and money demand, and also to know its causality link. The evaluations are carried out by several data of inflation rate, interest rate and money demand from that two country. A multiple regression was done to determine how far the effect of the variables above. Some statistical test, that is related to regression, was done too. Also Granger's causality test was done to know the causality link. Based upon data analyzed in this study, there are some conclusions as follow: (1) if inflation rate, interest rate and money demand is used partially, there is no significan't effect on changing of exchange rate. (2) in other way, if those factor is integrated in using of analysis, there is quite significan't. (3) and the last, for interest rate and money demand have causality relation to changing of exchange rate, but not inflation rate.

Wahyu (2011), this research is focused on an analysis of the effect of deposit interest rates on money demand in Indonesia. So this research is quantitative. The type of data used in this study is secondary data, it was obtained from various books of Bank Indonesia (BI) and BPS reports. In this study, the data were taken monthly for five years from 2005 to 2009. From the results obtained there is a significant influence between the deposit interest rate (X), on money demand (Y).

Khikmatul (2012), the purpose of this study is to explain the factors that influence the volume of mudharabah deposits. The variables used in this study are the interest rate (BI rate), the amount of profit sharing, inflation, the Jakarta Islamic Index (JII) stock price index, and the total money demand. This study uses secondary data in the form of monthly data from January 2007 to December 2011. Explanation of these variables uses multiple linear regression models. The test results show Adjusted R Square value of 0.971 which means that simultaneously shows that total mudharabah deposits in BSM are influenced by interest rates, profit sharing, inflation, JII stock index, and JUB by 9.71%, while the remaining 2.9% is influenced by factors or other variables outside the model. This research also proves that all independent variables influence mudharabah deposits in bank syariah mandiri (BSM).

Kurniawan (2017), the type of data used in this research is secondary data in the form of time series of monthly. The method of analysis in this study using quantitative analysis and analysis tool used is multiple linear analysis with OLS (Ordinary Least Square). The results of this study indicate that the variable Inflation does not affect the profitability. While the variable Interest Rates, Money Supply, and Rupiah Exchange Rate affect the profitability. And the relationship between independent variables to the dependent variable of 43.58%, which means that the rest is influenced by other variables that are not included in the model.

Lilik (2016), the type of the research method was quantitative, the research sample were six general Islamic banking in Indonesia since 2011-2015 and was taken with purposive sampling. The methodology is using path analysis. According

to the first significance test, the result showed that the interest income inflation and exchange rate did not significantly affected toward third party funds. Whereas, circulate money aggregation significantly influenced toward third party fund. In the second test, the result showed that inflation, interest income and circulate money aggregation significantly influenced toward toward fund distribution. Third significance test, the result showed that third party fund significantly influenced toward amount of fund distribution. Finally, it can be conclude that third party fund was only became intervening variable for the circulate money aggregation, because the circulate money aggregation influenced third party fund and fund distribution.

Based on the empirical reviews many studies are used exchange rates, inflation, gross domestic product and interest rates as their variables. Therefore, this study will try to add some other variables, namely industrial production index variables, third party funds (DPK) and equivalent rate. Some of the research uses third party fund (DPK) and nisbah (profit sharing), but not many have implemented it in their research. Also in this research add an industrial production index and equivalent rate variables that distinguish the research from others.

2.2. Theoretical framework

2.2.1. Money demand

Money has a central role in the economy if too much money circulated in the community causes a lot of demand. If production or supply in the market is limited, then the inflation rate will increase, it negatively affecting economic growth. The level of price increase will provide incentives for industries to increase productions.

But if prices are too high, demand will decline. Therefore, it can be understood the importance of monetary policy to maintain the stability circulation of money.

Tambunan (2011: 257) stated that too much money circulating in the community has the effect of generating many demands and vice versa. These causes low production activities which can lead to the economic recession. Hence, the stability of money demand means economic stability for high and sustainable economic growth. Economic developments cause money demand to increase. If the economy continues to grow, the portion of the use of currency (banknotes and metals) are getting smaller, replaced by demand deposits. (Rahardja and Manurung, 2008: 324).

Money in trading used as a transaction tool, it was created to facilitate trade activities and exchange. The more modern a country, the more important the role of money in trade. Money as an asset inventory used for transactions, in a simple economy the amount of money easily measured, but in the more complex economy, it is not easy to measure the amount of money. It is because there is no single asset used for all transactions.

According to Bank Indonesia, money demand is the obligation of the monetary system (Central Bank, Commercial Bank, and BPR Bank) towards the domestic private sector (not including the central government and non-residents). The money demand component consists of currency held by the public (outside commercial banks and rural banks), demand deposits, quasi-money held by the domestic private sector, and securities except shares issued by the monetary system owned by the domestic private sector up to one year.

Furthermore, money demand also plays an important role in the implementation of monetary policy. Friedman argued that monetary policy contributes to achieving economic stability by controlling monetary aggregates in the economy (Chess Sugiyanto, 1995). In general, an empirical analysis states that money demand function is stable. However, the debate between Keynesians and monetarists about the role of money in determining economic activities and factors affecting the money demand led to differences in views. According to Insukindro (1993), the effect of monetary policy, fiscal policy and economy are difficult to predict when the money demand unstable. Instability occurs due to a shift in the money demand function, for example, new methods of managing cash, thus people reduce the amount of money held. The shift means money demand is unstable and the implication on the monetary sector more volatile than real sector. Thus, policies in the real sector are more effective than monetary policy (Nopirin, 1998).

2.2.2. The relationship between money demand and money supply

There are some different views of economists in the role of money to the economy. Classical stated if the economy has reached full employment, it is means the money does not play a role in economic development due to the increase only lead the price increases proportionally. On the other hand, Keynes argued that the increase of money in the economy facing relatively large unemployment. Monetarist point of views tends to the role of money in economic development as well as the possibility of coming into effect of the increase in prices.

The classical view of the factors that determine the demand for money can be explained using the quantity theory. The quantity theory aims to explain the relationship between the money supply and the price level. In addition, this theory is used to explain the classical view of the purpose of society in demand for money. Demand theory based on the hypothesis that the demand for cash (real) is stable and the factors that influence the demand does not depend on the factors that affect the money supply. The stability of the money demand function is written by Friedman that "the quantity theory is not only a stable money demand function but also has an important role in determining the key variables in the economy (e.g., income and prices)". In the quantity theory of money, the demand for money is used both as a theory of price changes (fixed output) or the theory of the price level (output and fixed velocity). Meanwhile, the theory of Neo-Classical use money demand as changes in income (output and velocity change) as a result of changes in the money supply.

The quantity theory of money assumed that the demand for money is stable, causing a change in the velocity of money circulation slowed unless driven by changes in the money supply, in which changes in the monetary sector do not affect the interest rate set in the real sector. The money market will be in equilibrium when the money supply equal to the money demand. The equilibrium between money demand and money supply will form in the LM curve, which reflects the equilibrium point of interest with the national income in the money market. Moreover, to predict or calculate the movement in money demand is using a proxy of money supply, because it is difficult to calculate money demand in society. In

money demand theory Irving Fisher formulated the quantity theory of money as follows (Sukirno, 1955, pp. 77):

$$MV = PT$$

Where :

M   = total quantity of money

V   = velocity of circulation

P   = price level, and

T   = total amount of goods and services exchanged for money.

The right-hand side of equation (PT) represents the money demand relies on the value of the transactions to be undertaken in the economy, and it is equal to a constant fraction of those transactions." (MV) represents the supply of money which is given and in equilibrium equals the demand for money. Thus the equation becomes :

$$Md = PT$$

The transaction money demand, in turn, relies on the level of full employment income. it is because the classicists believed in say's Law whereby supply created its own demand, assuming the full employment level of income. Thus the demand for money in the Fisher approach is a constant proportion of the level of transactions, which in turn, bears a constant relationship to the level of national income. Further, the money demand linked to the volume of trade in an economy at any time. Furthermore, the second view of the classical theory is cash balance theory which expands by A.Marshall and A.C Pigou from Cambridge University. Basically, the theory is equal to the quantity theory of money. In this theory does

not emphasize the relationship between money supply and price level, but the purpose of society in the demand for money and the amount of money needed. Marshall argued that the purpose of holding the money is for the transaction. Whilst, Pigou said that the reason people holding money as a precaution motive. By the same notation Marshall formulation as follows:

$$M = k \, PT$$

$$= kY$$

Where:

K = 1/V

Mathematically, Marshall formulation the same as Irving Fisher, but the implication is different. Marshall view that society wants a portion of their income (Y) in cash (K). Therefore, KY is the desire of the society for cash.

The demand for money appears from two important functions: First as a medium of exchange and the second as a store of value. Thus, individuals and businesses wish to hold money partly in cash and partly in the form of assets. There are two views in changes in money demand:

1. Firstly is the "scale" view which is related to the impact of the income or wealth level upon the demand for money. The money demands directly connected to the income level. The greater the level of income, the higher the demand for money.

2. Secondly is the "substitution" view which is related to the relative attractiveness of assets that can be substituted for money. when alternative assets such as bonds become unattractive because fall in interest rates,

society prefers to keep their assets in cash and money demand increases, and vice versa.

The scale and substitution view merged together have been used to clarify the nature of the money demand which has been split into the transactions, the precautionary and the speculative motives. There are some approaches to the demand for money.

1. The Keynes approach

Keynes theory of money demand is part of the macro theory which outlined in his book " The General Theory of employment, interest and money " (Budiono, 1985, pp. 27). In his book using a new term "liquidity preference" for the money demand. According to Keynes, the total money demand as follows :

$$(M/P)d = F(Y) + k(r)$$

It means that real money demand relies on income level (Y), which is for a transaction and precautionary motive. Keynes recommended three motives of money demand in an economy:

    a. The transactions demand for money

Transactions in money demand come from the media function of money exchange in creating regular payments for goods and services. According to Keynes, it was related to "cash needs for private and business exchange transactions", then divided into income and business motives. The income motive for bridging the revenue between revenue and disbursement "as well as business motives are intended" to bridge the interval between issuing business costs and

receiving revenue from sales. "If the time between expenditure and revenue is small, less cash will be held by people for the current transaction, and vice versa, however, there will be a change in the demand for money depending on the expectations of the income recipient and the employer, they depend on the level of income, interest rate, business turnover, normal period between revenue and expenditure etc.

b. The precautionary demand for money

The Precautionary motive related to " the ambition to supply for needs sudden expenditures and advantageous purchases." people and businessmen keep cash to meet unexpected needs. people hold money in cash to provide for illness, accidents, unemployment and other unforeseen things. Similarly, businessmen hold their cash to overcome the unforeseen conditions or to obtain unexpected deals. Therefore, "people held money under the precautionary motive instead of keeping in a water tank." The precautionary money demand relies on the level of revenue, business activity and unexpected profitable deals, the availability of cash and cost of holding liquid assets in bank reserves, etc. Keynes held that the precautionary demand for money, like transactions demand, was a function of the level of income. But the Keynesian economists believe that transactions demand, it is inversely connected to high-interest rates. The transactions and precautionary money demand will be unstable if the economy does not at full employment level and transactions are. hence, less than the maximum, and tend to fluctuate. Since the precautionary demand, such transactions demand is a function of revenue and interest rates, the money demand for these two purposes is stated in the single equation LT = f (Y, r).

c. The speculative demand.

The speculative money demand is for gaining profit from knowing better than the market in the future. people and businessmen having funds, after saving enough for transactions and precautionary purposes, to make a speculative gain by investing in bonds. Money held for speculative motive is a liquid store of value which can be invested at an opportune moment in interest-bearing bonds. Bond prices and interest rate are inversely related to each other. Low bond prices are indicative of high-interest rates, and high bond prices reflect low-interest rates. A bond carries a fixed rate of interest. For instance, if a bond of the value of 100 carries 4 per cent interest and the market rate of interest rises to 8 per cent, the value of this bond falls to 50 in the market. If the market rate of interest falls to 2%, the value of the bond will rise to 200 in the market. This can be worked out with the equation below:

$$V = R/r$$

Where :

V is the current market value of a bond, R is the annual return on the bond, and r is the rate of return currently earned or the market rate of interest.

According to Keynes, expectations about changes in bond prices determine the speculative money demand. Keynes had a normal or critical rate of interest (RC) to explaining the speculative money demand. If the interest (r) is over the "critical" interest rate, businessmen expect to fall and bond price to rise. therefore, they will buy bonds to sell it again in future when their prices increase in so that gain profit. At such times, the speculative money demand would decrease. on the contrary, if the present interest rate happens to be below the critical rate, businessmen expect it

31

to increase and bond prices to decrease. therefore, sell bonds now and the speculative money demand would rise. when r > r0, an investor holds all liquid assets in bonds, and when r < r0 his entire holdings go into money. When r = r0 becomes indifferent to hold bonds or money.

2. The Friedman approach

According to Friedman money demand is determined by several factors, such as level of price, the interest rate on bond, interest rate "equity", capital and wealth (Sukirno, 2000. Pp.418). Regarding the role of price in determining the demand for money, Friedman argued that holding money is a way of storing wealth. Thus, people store it in the form of financial assets such as bonds, deposits and shares. Based on the above factors, the demand theory is based on the quantity theory of modern developed by Friedman can be expressed in the following equation:

$$M^D = f\,(P, r, rFC, Y)$$

Where:

M^D is the nominal money demand, P is the level of price, r is the interest rate, rFC is the return on capital from physical capital, Y is the income and wealth.

Another Friedman's point of view about money demand real :

$$M^D / P = f\,(\Delta P, r, Y^*)$$

Where:

M^D / P is the money demand real, ΔP is the level of price increase, r is the interest rate, Y^* is the income and real wealth.

The real money demand model above is in a general form, specifically, the form of the above functions still strongly influenced by other factors such as the development of financial institutions that involved in the government policy.

2.2.3. Transmission mechanism of monetary policy

The transmission mechanism of monetary policy basically illustrates how monetary policy pursued by the central bank affect various economic and financial activities, thus it can achieve its final goal. Specifically, Taylor (1995) stated that the transmission mechanism of monetary policy is "the process through monetary decisions that are transmitted into changes in real GDP and inflation".

The monetary transmission mechanism begins with the actions of a central bank using monetary instruments. It is affected economic and financial activities through various channels of monetary policy transmission; channel of money, credit, interest rates, exchange rates, asset prices, and expectations. In the financial sector, monetary policy influences the development of interest rates, exchange rates, and stock prices beside the volume of public funds held in banks, loans channelled by banks to the business world, investment in bonds, stocks and other securities. Meanwhile, in the real economic sector monetary policy further influences the development of consumption, investment, exports, imports up to economic growth and inflation are the ultimate targets of monetary policy.

Mechanism of transmission of monetary policy is a complex process, therefore in monetary economic theory it is often referred to as "black box" (Mishkin, 1995)]. This is because transmission is influenced by three factors; (i)

changes in the behaviour of central banks, banks, and economic actors in a variety of economic and financial activities, (ii) length of lag since monetary policy reached until the inflation target achieved, and (iii) changes in monetary transmission channels themselves according to with economic and financial developments in the country concerned.

The transmission of monetary policy to economic growth and inflation has been long and varied (Friedman and Schwartz, 1963), due to the relationship between various economic and financial variables that are constantly changing with economic development. In a closed economic condition with banking, the relationship between money demand and real economic activity relatively close. Along the development of the financial sector, the relationship between money demand and real sectors can be strained. Some of the funds mobilized by financial institutions can continue to revolve only in the financial sector and does not have an effect on the real sector. The changes in scheme economic and financial variables will influence the length of the lag of the monetary policy transmission mechanism.

The complexity of the transmission mechanism related to the changes in role and mode of operation monetary transmission in the economy. In traditional economies, the role of banking is still dominant and their products are relatively undeveloped, usually the role of money channels still dominant with a relationship scheme of various economic activities. However, the more developed banking and financial markets, the more financial products will be transacted in various types of financial transactions. Likewise, the open economy also affected by economic and financial developments in other countries, it is assured through exchange rates,

export and import volumes, or the flow of funds. In these conditions, the role of other channels, such as interest rates, credit, and exchange rates also becoming increasingly important in the transmission of monetary policy. The role of other asset price channels, such as bonds and stocks, and the expectation channel also need to be considered.

Meanwhile, Keynesian views the process of monetary policy transmission as a structural model, which explains how the economy operates using a collection of equations that describe the behaviour of firms and consumers in many sectors of the economy. Mishkin (2004:604), stated that these equations then show the channels through which monetary (as well as fiscal) policy affects aggregate output and spending. Loayza and Schmidt-Hebbel (2002), stated that monetary policy transmission mechanisms perform through various channels, affecting different variables and markets at various speeds and intensities. Identifying transmission lines is very necessary because it creates effective policy instruments, the timing of policy changes, and the main constraints facing the central bank in making decisions.

The process of monetary policy to influence final objectives (i.e., prices and output) starts with the transmission of open market operations to market interest rates, either through the reserves market or through the supply and demand for money more broadly. From there, the transmission may proceed through any of several channels (Kuttner and Mosser, 2002). Monetary policy transmission mechanisms have been evolved and categorized in many different ways by different economists, such as Mishkin (1995), Kuttner and Mosser (2002), and Boivin,

35

Giannoni, Mojon (2010) and Mishkin (1995) divides monetary policy transmission mechanisms into:

a. traditional interest rate channels (traditional Keynesian IS-LM (Investment Saving– Liquidity Preference Money Supply) [investment spending and consumer spending] and interest rate channel [cost of capital or investment spending and consumer spending].

b. other asset price channels (exchange rate channel, equity price channels [Tobin's q, wealth effect, and housing and land price channels]); and credit channels (bank lending channel, firms' balance-sheet channels such as equity price, cash-flow, and general price. lastly, household balance-sheet effects).

Kuttner and Mosser (2002), map monetary policy transmission mechanisms started from open market operation through several channels, namely:

a. narrow credit channel or bank lending channel.

b. broad credit channel.

c. wealth channel.

d. interest rate channel.

e. exchange rate channel; and

f. monetarist channel or money channel.

Mishkin (2004), reclassifies his 1995 monetary policy transmission mechanisms into traditional interest rate effects, other asset price effects (exchange rate effects on net exports, Tobin's q theory and wealth effects), and credit view

36

(bank lending channel, balance sheet channel, cash flow channel, unanticipated price level channel, household liquidity effects).

2.2.4. Money demand in Islamic and conventional system

Money has been a controversial subject since a long time ago. Economists have not built a conclusive definition of money.according to Broaddus (1975; Walter, 1989), a study on the subject showed two approaches that support in the definition of money, namely the functional and empirical approach. The functional approach characterizes money based on its purpose and demand. Therefore, the classic definition, "money as something of general value is accepted as a medium of exchange, a unit of measurement, and store of value." Hence, money is defined as something of value and fulfils three functions.

Friedman and Schwartz (1970), identify with an empirical approach to determine the money chosen, assign numbers to certain operations; it is not something to be found, it is a temporary financial construction that will be created, such as 'long' or 'temperature' or 'strength' in physics. This is a technical definition of money covering all stable financial assets and predictable relationship to basic macroeconomics.

The concept of money in Islam is utterly different from conventional economics basically because Islamic principles are based on Shari'ah. in Islam money or wealth is a property held by humans as vicegerent givers. It should be used and invested wisely and in accordance with the Shari'ah (the Laws of the Creator). Contrary to the capitalistic ideologies, Islam discourages egotism. Money

in Islam carries out a "social role" and is invested in promoting socio-economic justice for the benefit of the broad community. Furthermore, the development of Shariah Banking in Indonesia is represented in Islamic Banking or is abbreviated as ib socialized by the Bank of Indonesia. According to Chapra (1996), the one categorized as social value is all things that are not prohibited by Islam and have a social value influencing money demand. Thus, Chapra proposed other monetary instruments which Islamic M1 expansion target consist of currency and clearing account money, and Islamic M2 consists of M1 added by mudharabah saving and mudharabah deposit investment; Public Share of Demand Deposit; Statutory Reserve Requirement and Credit Ceiling. Social values instrument affected the target of Islamic M2 and M1 development, that is M1 which is a non-interest loan used to provide residence, health facilities, and education for poor people.

Islamic banks as financial institutions that rely on the Profit and Loss Sharing (PLS) system in their relevant banking activities (Nienhaus, 1983, p. 31). these institutions may be precisely identified as an alternative to modern conventional banks (Van Schaik, 2001, p. 46). Islamic banks basically operate in reliance on profit and loss sharing (PLS) paradigm. The term Islamic profit and loss sharing (PLS) refers to a relationship between the borrower, lender and intermediary built upon financial trust and partnership (Yudistira, 2003, p. 2). The implication of Islamic banks refers to a possibility for positive contribution to financial stability because of the free interest rate. The main reasons for a positive contribution are their protection against rising and fall in interest rates, the possibility of bankruptcy,

dissimilarity to merge with international markets and obligation to avoid speculations.

The main reason Islamic banking become more stable compared to conventional banks because they are not influenced by the movement of interest rates (Kassim et al., 2009). This means that Islamic banks should be more stable than conventional banks. Where Islamic banking is not influenced by interest rates, it is highly likely that the demand for money will become more stable in the economy. Stability in money demand holds positive effects on the efficiency of monetary policies and financial stability.

Kia and Darrat (2007), refer to two major reasons for the positive impact of interest-free banking system upon stability in the demand for money. These are speculation from a demand perspective and revaluation of balance sheet items from a banking perspective. Of factors determining the demand for money, interest rates appear to be the most visible component that is subject to speculation. Because they avoid interest rates, in Islamic banking transactions introduce a stable money demand function in the existence of Islamic funds as a substitution. In this case, the absence of interest rates system "reduces structural breaks in the demand relationships producing from exogenous shocks" (Kia and Darrat, 2007, p. 105).

On the contrary, the conventional monetary system begins with the conventional economic theories developed a long time ago. The development of economic thought starting from the pre-classical school of economics, classical economics, Marxism, Neo-Classical; historical; Institutional; Keynes; Monetarists, supply-siders and the rationale expectation progressing onward to the present. The

development of conventional monetary system primarily in terms of demand for money is very clear at the time of monetarist school birth, which is based on the opinion Keynesian criticism about the need for government intervention in directing and guiding the economy as desired. One of the most underlies the development of this genre is Milton Friedman who sees that the role of government is necessary for a more effective economy. Moreover, the main aspect of monetarist principles is where the monetary developments are one important element in production development, employment and prices. Monetary flow is also suggested that the growth in money supply represents a reliable element in monetary developments.

In his article Friedman (1970), stated that changes in the money supply is very influential on the level of inflation in the long term and also the behaviour of real growth national product. Besides that, monetarist stated that there were some market power and resource influence stating that the decline interest rates would encourage investment and lower prices will encourage consumption level (the Pigou effect). Another thing is the opinion of the monetarist economic regarding economic fluctuations due to the expansion money supply caused by expansionary policies taken by the government. We can see that monetarist run the economy from the monetary side which is the opposite of the Keynesian school.

Studies supporting the merits of an interest-free monetary and banking system have been extensive. In general, these studies propose that the relative monetary stability accorded by an interest-free monetary system is due to its asset linked nature as compared to the interest-based system which is subjected to the

fluctuations in the interest rate levels. A monetary system which is relying on interest-free assets eliminates the element of speculation. Due to this, it is proposed to be more predictable and has a reliable link to the policy objectives, this can be effectively controlled by the monetary authority. Consequently, there is a general belief that the Islamic banking system is somewhat shielded from the risks associated with interest rate fluctuations and is more stable compared to the conventional banking system. Khan (1985), further suggests that the Islamic financial market is able to weather the economic and financial crisis better. In line with this, current research efforts in this area are mainly focused on developing and evaluating the demand for Islamic monetary instruments and demonstrating the validity and effectiveness of these instruments for monetary policy purposes.

2.2.5. Islamic banking in Indonesia

Development in Islamic banking is implemented under a dual banking system in accordance with the Indonesian Banking Architecture (API), this is given that Islamic banks have provided extensive services to the Indonesian economy. The Islamic and conventional banking systems synergistically support broader mobilization of public funds in order to encourage the financing capacity of the national economic sector. The characteristics of the Islamic banking system are based on the principle of partnership and profit sharing system. it will give a priority to justice in investments by avoiding speculative activities in financial transactions. By providing various products and banking services supported by variation

financial scheme. Islamic banking will be a credible alternative that can be benefited by all of the Indonesian people without exception.

In the context of macroeconomic management, the use of various Islamic financial products and instruments will help the financial sector and the real sector and create harmonization between the two sectors. It the use of Islamic products and instruments can support finance and business broadly, also reduce speculative transactions that support the financial system economy as a whole. In the end, Islamic banking will significantly contribute to the achievement of mid-long term price stability. Furthermore, the Islamic financial system is growing rapidly. Joharris (2007), estimated that currently there is 276 financial institution scattered in 70 countries and the capitalization more than $13 billion. Broadly speaking there are three pillars of the monetary system to distinguish from one another: the money system, the banking system, and the operating system finances. The main difference is conceptually Islamic monetary system, the monetary system of contemporary Islamic and conventional monetary system:

Table 2.1 The differences monetary system between Islamic and conventional

No.	Conventional conceptual	Islamic conceptual	Contemporary islam
1	Fiat money system	Islamic money system- full bodied or fully backed money.	Fiat money system
2	Fractional reserve banking system	100% reserve banking	Fractional reserve banking
3	Interest rate system	Profit sharing system	Profit sharing system

Source: ascarya (2007)

Currently, in the dual financial system only the concept of profit sharing that distinguishing between the conventional monetary system and Islamic monetary system. Islamic system monetary in the dual financial system still uses conventional fiat money and still applying the fractional reserve banking system. Characteristics of interest system are different from the profit sharing system. Interest rate as the rate of return on conventional systems can be set at any time by banking authorities and the nominal movement can be seen by the general public, giving rise to speculation. Whereas, in the profit sharing system is set by nisbah which fixed throughout the contract valid. The rate of return followed the results actually happening in the field. That is, the return itself is not defined exogenously by the authority of Islamic banking.

According to Ahmed (2001), Islamic banking as an institution offering saving, landing and another financial transaction. Islamic banking provides service to its customers free from interest and the giving and taking of interest are prohibited in all transactions. An Islamic bank, like another bank, attract financial resource from individual and institution and direct towards business firms which need external finance to support their productive activities. Therefore, the Islamic bank performed by traditional banks. The primary difference between these two banking methods is that the Islamic banking system is based on the Islamic Sharia law while the orthodox banking system is based on man-made ideology and principles. Sharia literally translates to 'the way to the source of life' it encompasses all the laws governing Muslims in all aspects of life. Another difference that Islamic banks operate under profit and loss sharing. it means that if an entrepreneur suffered

losses, the Islamic bank will share the losses based on the method of finance Mudarabah or Musharakah. different from conventional banks that still implement interest although the businessman losses with bank loans. Meanwhile, conventional banks using money as a commodity, mode of exchange as well as a store of value while Islamic banks only use it as a medium of exchange and a store of value, not as a commodity. This showed that conventional banks trade money at higher prices and also rent it out, whilst Islamic banks not implement such things.

On the other hand, the conventional economy implementing usury system, fiat money, fractional reserve system and speculation that led to the creation of money (currency and demand deposits), hence the money in the monetary sector is used to gain profit without the risk. Consequently, money or investments that should be channelled to the real sector but it flew to the monetary sector and it obstructs the growth of the monetary and real sector. Thus, money creation without any value added will lead to inflation. Profit sharing system accompanied by the zakat system and prohibition speculation in the economy will encourage investment to the real sector. Those things will ensure the allocation of wealth and income to the real sector and public welfare is reached.

Related to Islamic economy, money demand is not a variable that can be determined by the government as an exogenous variable, but it is defined as endogenous variables (the amount of money supply is equal to the value of goods and services in the economy). The differences between Islamic and conventional are financial sector followed the growth of the real sector, compared to conventional which separating those two sectors. Moreover, the separation of these

two sectors makes the economy world vulnerable, because economic agents are not using the money for real sector but rather speculative activities. Speculation made the economy condition become unstable especially for political issues. As a result, the money supply is not balanced with the number of goods in the real sector.

The empirical assessment on the merits of the interest-free banking system has been initiated by Darrat (1988) who showed that the banking system becomes more stable without interest-bearing assets than if these assets were to exist. recent studies were done by Darrat (2000) and Kia (2001) serve further empirical proof of the benefit of the interest-free monetary. since 1984 the Islamic banking system has a long story in perform interest-free monetary and banking system. These research found in short and long-run money demand functions are stable under the interest-free system and their coefficients are not changing with respect to policy and other exogenous shocks. Kia and Darrat (2003), in their study comparing the money demand equation and profit-sharing savings, they found that the demand for profit-sharing deposits has the most stable invariant function and policy, this indicates that the profit-sharing banking scheme separates the monetary system from fluctuating interest rates and reduce financial instability.

Furthermore, the Islamic economic system needs to be strengthened in Indonesia because it can have survived during the economic crisis as well as free from speculation activity. In the macroeconomic policy framework, Islamic economic system is touched on fiscal policy, monetary policy, and policy of the real sector. However, the main system is closely linked to monetary policy. This is because monetary policy is used to influence financial variables such as interest

45

rates and money supply. By arranging those two variables, the expected value of money and economic stability is achieved. In reality, the interest rate is a source of instability in the economic problems. Therefore, the presence of Islamic monetary policy that free interest-bearing could maintain the stability of the economy in Indonesia.

2.3. Research hypothesis

2.3.1. Inflation

Inflation is the tendency of prices to rise continuously. In theory, inflation has a positive effect on the money demand, which means that an increase in inflation affects the money demand to rise. According to Widodo (2015) and Setiadi (2013), stated that the inflation variable has a positive and significant effect on the variable money demand, it means that in the short term when there is an increase in inflation people do not directly request money. In addition, long-term inflation variable has a positive and significant effect on the money demand. It can happen when inflation rises, people prefer to delay consumption and choose to consume when inflation falls.

Empirically, Friedman and Schwartz managed to verify the relationship between inflation and the growth of money demand. The results of Friedman and Schwartz's research show that high money growth tends to have high inflation, and low money growth tends to have low inflation. The same results obtained a comparison of the average inflation rate and the average rate of money growth in more than 100 countries during the 1990s. In the study, there is a clear relationship

46

between money growth and inflation. According to Mankiw (2003), the closeness of the relationship between inflation and money demand cannot be seen in the short term. This inflation theory works best in the long run, not in the short term.

The relationship can be seen from the money demand equation. People hold money for the purposes of the transaction. If the price of goods and services rise they tend to hold money. When inflation occurs means that the amount of money circulating in society is overflow. Hence, the value of the currency will fall. According to Paunescu (2000), stated that money demand is affected by inflation. The relationship between inflation and money demand is positive if inflation rise then money demand will rise and vice viersa.

H_1 : Inflation positive and significant affect the money demand (M2).

2.3.2. Interest rate

According to Nopirin (1996), the interest rate is the cost that must be paid by the borrower, it is a reward for the lender for his investment. When the interest rate is high, people tend to save because they will get a large amount of interest. Milton Friedman's theory stated that rising interest rates encourage people to buy more bonds and equity and reduce the holding of money. Interest rates are not influenced by changes in economic actors' preferences in terms of loans and lending but influenced by changes in the purchasing power of money, market interest rates or prevailing interest rates change over time.

According to Sunariyah (2004), some functions of interest rates as an attraction for savers who have more funds to invest. The higher the interest rate, the

47

higher it is to save and invest money in the bank. The greater the interest to saving, the more adding third party funds.Interest rates are factor that can affect money demand in society. An increase in interest rates causes money demand to decrease because people prefer to save rather than revolve money in productive sectors. Conversely, if the interest rate is too low, the amount of money circulating in the community will increase because people prefer to revolve their money in productive sectors.

H_2 : Interest rate positive and significant affect the money demand (M2).

2.3.3. Industrial production index (IPI)

The Industrial Production Index (IPI) is an economic indicator released by the board of the US Federal Reserve Bank, measuring changes in the value of total inflation adjusted for production output from producers, mining companies, electricity, water supply and the gas industry. It is usually does not include the construction industry. Industrial production index (IPI) is usually arranged to measure the increase and decrease in production output. The reference year for the index is 2000 and the base level is set at 100. The data used in preparing this report was obtained from the Bureau of Labor Statistics and trade associations. The data includes all physical inputs and outputs used in the production process. Industrial production index (IPI) is usually released to the market on a monthly basis, around 16 days after the month of review is over. Release time is 9:15 US Eastern Time. The data was released on the federal reserve bank's webpage and also in an independent news feed from bloomberg and reuters thomas.

48

H3 : Industrial production index positive and significant affect the money demand (M2).

2.3.4. Exchange rate

The exchange rate is one of the important prices for a country that adheres to an open economic system, their movements determined by the balance between demand and supply in the market. The exchange rate has a large effect on the current account and other macroeconomic variables, it can be used as a tool to measure economic conditions. Foreign exchange rates indicate the value of a country's currency expressed in the value of another country's currency, a country with a stable exchange rate shows that the country's economy is relatively stable.

According to (Miskhin, 2008: 130), the increase in money demand will cause the level of prices higher in the long run and reduce the exchange rate in the future. The changes in money demand encourage an overshooting exchange rate, it caused to change more in the short term than in the long run. The higher the domestic money demand, caused the domestic currency to depreciate (Mishkin, 2008: 130). According to Joseph, et al. (1999), the effect of money demand has a positive relationship with the exchange rate, if the money demand increases the exchange rate will also increase and vice versa. The research was supported by Marina (2016) stated that money demand statistically affected on the rupiah exchange rate in Indonesia. In addition, sabiq (2017) stated that the money demand (M2) against the rupiah exchange rate has a significant effect. This is due to the exchange rate that follows the movement of money demand.

H4 : Exchange rate positive and significant affect on money demand (M2).

49

2.3.5. Equivalent rate

Equivalent rate is the rate of return from an investment or fund raising by a bank. Equivalent rate also means the rate of return on investment that has been invested. The role of the equivalent rate is the same as the interest in conventional banks, which gives an idea of how much the return on investment is invested. The equivalent rate is calculated at the end of every month after the investment carried out yields. Customers can find out the amount of equivalent rates of a bank last month, to estimate equivalent rate in the following month. One important role of a bank is the ability to collect third party funds, in the form of savings, deposits, or current accounts. In this case, Islamic banks use the profit sharing ratio instrument which is stated as equivalent rate.

Equivalent instruments in Islamic banks differ from interest. Conventional banks compete very competitive in setting deposit rates, to attract prospective customers. The distribution of profits is determined at the beginning by calculating the amount of interest expense from funds deposited or borrowed and is greatly influenced by interest rates. The higher interest rates will be followed by rising deposit and loan interest rates. In its application, it is not allowed to equate the profit sharing with the equivalent rate, unless it is a past result. For example, a Sharia Bank stated that the profit sharing for the previous month was equal to 12%, but it still could not determine the profit sharing amount in the coming month. If the profit sharing ratio is for example 60:40, the results of future revenue sharing may be less or more than 12%, it all depends on the income of Islamic banks. This is a common practice in Indonesian Islamic banks. Naming equivalent rates to

facilitate customers in estimating the profit sharing, and not the results. If the equivalent rate is equal to the profit sharing of future results, means that it has been confirmed at the beginning and that means usury. Accordingly, the equivalent value is a calculation for results by converting profit sharing for each of the third party fund products in the form of a percentage.

H_5 : Equivalent rate positive and significant affect the money demand (M2).

2.3.6. Third party fund (DPK)

Fund collection and distribution is the main focus of Islamic bank activities, to be able to channel funds optimally banks must have the ability to raise third-party funds because these deposits are the main source of financing for Islamic banks. According to Sukirno (2000), the function of a central bank is to create currency for transactions, trade, payment of income in the economy. In order to maintain the smooth operation of an economy, the central bank needs to increase money demand. The more money in circulation, the more it encourages people to save. It can be concluded that the growth of money demand increases third-party funds in banks.

According to Tohari (2010), an increase in money demand responded to Islamic banking financing because the increase in money demand affected the increasing amount of third-party funds. If the increase in third-party funds is not immediately channelled into financing, they will be suffering losses due to the obligation to provide a ratio to deposits that have been collected. Another research by Euganta (2017) found that money demand variable has a significant effect on the third-party variable, based on the theory, if money demand increases, the

51

government will try to attract money in circulation in several ways, through Open Market Operations. open market operations are transactions on the money market in the context of Monetary Operations conducted by Bank Indonesia to achieve the Interbank Money Market interest rate target as the operational target of monetary policy. In open market operations by selling securities at high-interest rates will attract people to invest in securities rather than saving. The government will implement a discount rate policy; they will increase the benchmark interest rate which causes deposit rates in commercial banks to increase. These will attract people to save money at commercial banks or conventional banks

H_6: Third party fund (DPK) positive and significant affect the money demand (M2).