

Monetary Stability under Dual Banking System before Covid-19 Pandemic in Indonesia

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The Indonesian monetary authority or the Central Bank of Indonesia has established a policy in accordance with the constitution No. 3 in 2004, the monetary policy taken by Central Bank of Indonesia is the inflation targeting framework (ITF). To achieve this, Central Bank of Indonesia established intermediary policies which are regulating the volume of the money supply, stipulating the minimum reserves banking and regulating credit or financing. From some of these intermediary policies, the authors are interested in researching monetary policy in the dual monetary system in Indonesia, where the instruments used by each monetary system are different, so which system is the most stable and sustains Indonesia's growth and which system is the best to achieve ITF goals. The method used is Autoregressive Distributed Lag (ARDL) with data from 2010-sep 2018. The results show that the instruments used in conventional monetary systems based on interest rates have no influence on economic growth, whereas instruments in the Islamic monetary system have an influence on economic growth.

Keywords: Monetary Stability; Dual Banking; Indonesia; ARDL

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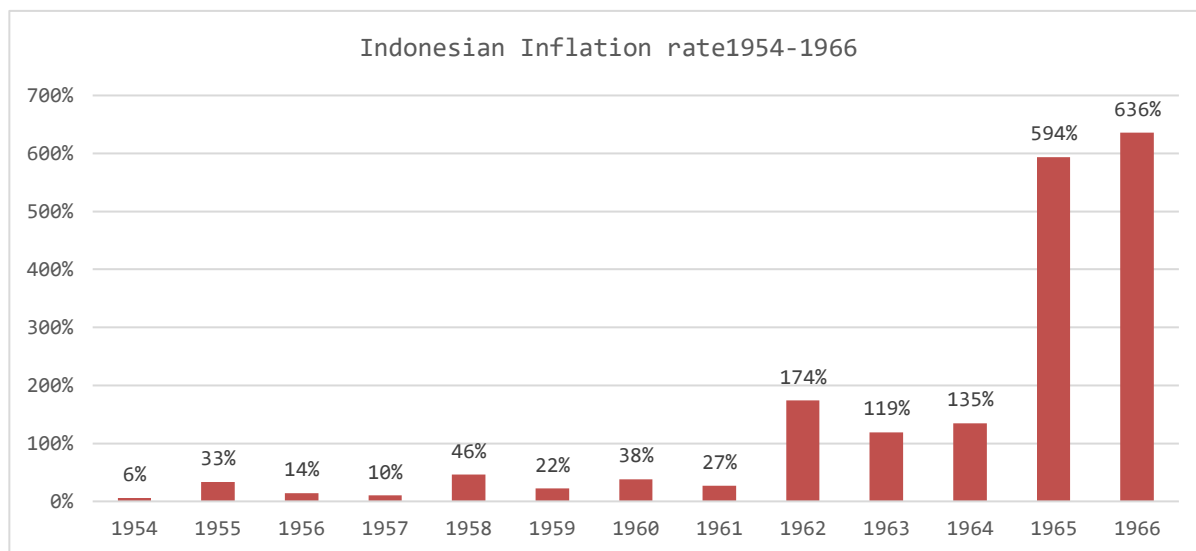
INTRODUCTION

Monetary economics is a policy of managing monetary quantities by controlling the money supply, the amount of primary money and bank loans that aimed for achieving a certain level of economic growth which will have a direct impact on the level of welfare and economic equality. The level of well-being measured by the level of economic growth can be achieved by monetary policy applied in accordance with the Business Cycle. In the economic cycle there will be a cycle of fluctuations, is the cycle that occurs when the economic condition is in good condition is called expansion and the cycle that occurs when the economic condition is in a state of sluggishness is called a recession. This business cycle will influence monetary policy which is effectively very dependent on the money supply, output and inflation (Rivai and Arifin, 2010).

The Indonesian Monetary Authority, (Central Bank of Indonesia) was initially formed to function as a circulation bank and commercial bank that could directly conduct credit to the private sector,

government and other credit agencies. In addition, Central Bank of Indonesia has a functions as a development agent. This is stated in the constitution on Bank of Indonesia monetary policy No. 13 in 1968, Chapter IV clause 7 about the central bank that the main task of Bank of Indonesia is to help the government achieve multiple objectives, i.e. regulating, maintaining and maintaining the stability of the rupiah exchange rate, and encouraging continuity of production and development and expanding employment opportunities to improve people's standard of living.

As a development agent, Bank of Indonesia has a role in financing the government's fiscal budget deficit that is used for the construction of infrastructure projects by printing money. This policy made the money supply exceed the economic needs in real terms, thus pushing up fantastic prices and resulting in a very high inflation rate in Indonesia reaching 635.5% in 1966 called hyperinflation. Following are the details of the data:



Source: Bank of Indonesia, processed.

Figure 1: Indonesian Inflation Rate

However, this monetary policy that has sunk Indonesia into the brink of hyperinflation is still being applied by the next government. In the early 1980s, the government implemented deregulation, de-bureaucratization and liberalization policies in various economic sectors including the financial, trade, investment and others. This policy has encouraged very rapid growth in the financial sector where financial

products are created, i.e. securities and derivatives, including reducing reserve requirements from 15% to 2% so that the flow of funds in the financial sector is very abundant and affects the amount of money, inflation and output. With this significant development in the financial sector, the monetary policy adopted by Bank of Indonesia is controlling the money supply, i.e. M_1 , M_2 as the intermediate target and M_0 as the

operational target. The volume of transactions and the abundant money supply in the financial sector will be a gap for the real sector between money supply and inflation and real output.

The transfer's easiness of foreign funds through the money market has implications for the uncontrolled money supply and has a negative impact on where Bank of Indonesia must absorb this excess liquidity, so that to encourage a rise in domestic interest rates. This worsened Indonesia's economic condition,

Sources: Bank of Indonesia and World Bank, Processed

foreign loans in the form of bonds could not be returned due to high interest rates and weakening of the rupiah exchange rate. This policy was the main trigger for more severe economic failure than in 1966, there was a monetary crisis, economic crisis, socio-cultural crisis and political crisis since 1997, conditions of high inflation returned to reach 77.60% and negative economic growth below the figures minus 10% is proof that there is an inappropriate monetary and economic system.

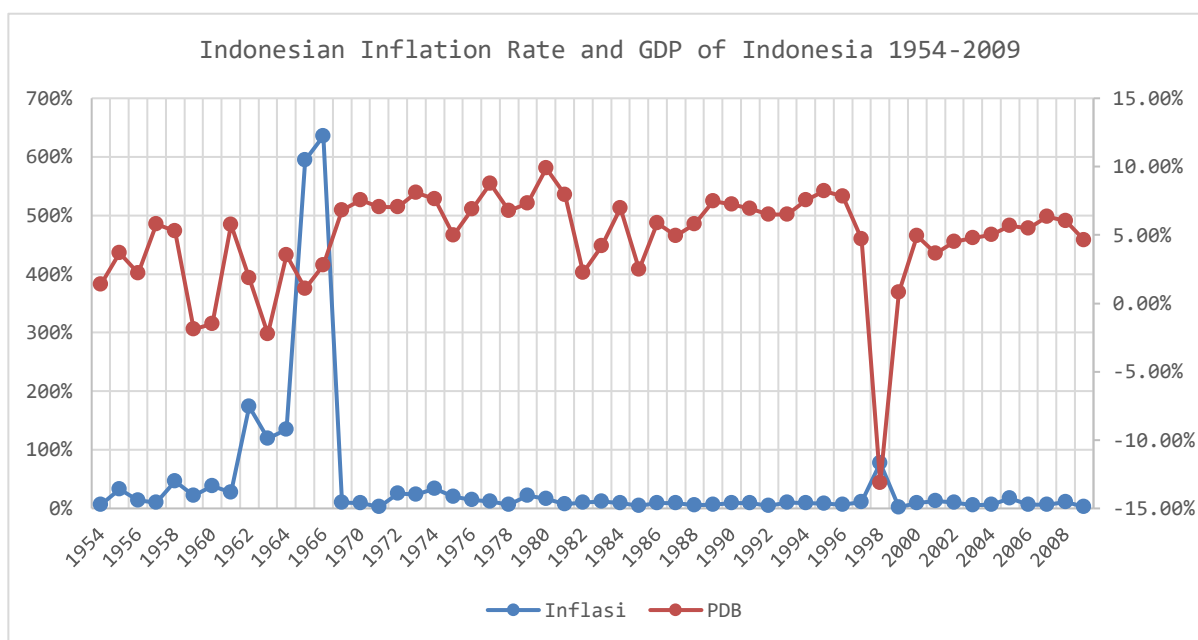


Figure 2: Indonesian Inflation Rate & GDP

The mistake in governance policies and functions of Bank of Indonesia as a monetary authority have led to failure to achieve real economic growth. This has been proven by the history in which Indonesia has experienced a dark period of very high inflation and has caused the Indonesian economy to be in uncertainty. The lesson from this failure is the change in monetary policy and function contained in constitution No. 23 in 1999 which automatically replaced the previous constitution. In this new policy, Bank of Indonesia has a more focused goal of achieving and maintaining rupiah stability. Theoretically, the stability of the value of the rupiah has two meanings, first the stability of prices of goods and services (inflation) in the country and secondly the stability of the price of the domestic currency (exchange rate). Reorientation of Bank of Indonesia's monetary policy objectives in the long term to maintain the stability of commodity prices which will encourage

stability in the rupiah exchange rate and stability of the rupiah exchange rate can encourage the achievement of sustainable economic growth and correlate with rising welfare.

To achieve the new objectives as mandated by constitution, Bank of Indonesia has three main tasks contained in chapter III clause 8, i.e.: 1) establishing and implementing monetary policy, 2) regulating and maintaining the continuity of payment system, 3) regulating and overseeing the banking system. In order to establish and implement monetary policy, Bank of Indonesia has the authority to set monetary targets and control monetary means by: 1) open market operations, 2) determination of discount rates, 3) minimum mandatory reserve determination, 4). Credit or financing arrangements. With this authority, Bank of Indonesia can determine monetary instruments that can maintain the stability of the rupiah.

In 2004, the government made a changes of constitution No. 23 in 1999, where this changes are to enhance the objectives of the previous Bank of Indonesia monetary policy, i.e. 1) determine monetary targets by taking into account the inflation rate target, 2) carry out monetary controls using methods which include but are not limited to: a. open market operations in the money market, both rupiah and foreign exchange, b. determination of discount rate, c. minimum mandatory reserve determination, d. credit or financing arrangements. In constitution No. 3 of 2004, adding a clause that the target of monetary control can also be carried out with Islamic principles through the mechanism of transmission of monetary policy. In 2005, Bank Indonesia established a monetary policy framework for the Inflation Targeting Framework (ITF) which was the main target of Indonesia's monetary policy objectives.

In Islamic terms, the main objective of monetary policy is economic growth that has correlated with welfare distribution. Thus, the instruments used in Islamic principles are different from the general instruments that apply the concept of interest rates. In Islam, open market operations whether contraction or expansion must pay attention to the relationship between monetary instruments and real assets or projects in the real sector. Meanwhile, in the current monetary sector, only securities is traded without an underlying asset (Rabin, 2004).

Ismael (2011) has researched about Islamic monetary instruments that allow it to be applied as the basis of Islamic rules that do not allow interest rates. First, the instruments with a payment of returns routine, which consist of: *Wakalah wa Ijarah* certificate (agency and leasing) and *Wakalah wa Ijarah Muntahia Bitamlik* (agency and leasing-sale). Second, instruments to possess a project (asset), which consists of: *Musharakah muntanaqisab wa Ijarah* certificate and Islamic securitization *wa Ijarah* certificate.

Today, Islamic finance industry is an object that is always be interesting to be studied. The results of research conducted by Nurfalih et al (2018) which stated that Islamic banking is relatively more stable compared to conventional banking when facing both internal and external shocks. This is an interesting finding that needs to be proven through various research in the future. Indonesia adheres to a dual monetary system so that in the application of monetary policy must be adjusted to the respective policies, especially Islamic monetary policy which may not use interest rates. Therefore, the authors are interested in

researching the respective monetary policy instruments towards the Indonesian economy and which of the two monetary policy instruments can achieve the ultimate goal of the Indonesian monetary framework, the Inflation Targeting Framework (ITF).

LITERATURE REVIEW

Conventional monetary system vs Islamic monetary system

In general, there are three main differences in the Islamic monetary system with the conventional monetary system (Ascarya, 2007). that are:

1. Interest rate vs profit and loss sharing (PLS)

Meraa's research (2004) has analyzed there are several negative impacts caused by this usury-based economic system, i.e.: 1). Interest requires endless economic growth even though the standard of living is constant. 2). Interest encourages competition among economic actors. 3). Interest concentrates wealth only on a small minority (rich people) by taking taxes from the majority (middle-poor).

The main instrument in the conventional monetary system is the interest rate. The interest rate applied by the conventional monetary system will have an impact on speculations, which speculation will create money concentration in the monetary sector. Speculators want a low risk investment portfolio but have abundant benefits. Money creation that should be managed and allocated to the real sector cannot be achieved due to the concentration of money in the monetary sector. The result is a contraction in the real sector, the real sector cannot produce well. Then the creation of money that is continuously carried out without the value of underlying the money, then there is inflationary fluctuation. Inflation will be higher which will ultimately impede economic growth (Sakti, 2007).

In the Qur'an Al-Baqarah verse 275, Allah SWT said: "People who eat (take) usury cannot stand but like the establishment of people who are possessed by demons because of (pressure) madness. Their situation is because they say (arguing) that actually buying and selling is the same as usury, even though Allah has justified buying and selling and prohibiting usury. Those who have come to him from the Lord's ban then continue to stop (from taking usury), so for him what he has taken before (before the prohibition comes) and his affairs (up) to Allah. The one who repeats (takes usury), then that person is the inhabitants of hell, they will abide therein (Al-Baqarah: 275).

Unlike the Islamic monetary system, where the Islamic monetary system emphasizes profit and loss

sharing. This system will accelerate between the monetary sector and the real sector, because loans borrowed from the monetary sector are not invested with the interest system, but they are allocated to efforts in the real sector. The implication is the

distribution of wealth and income, the real sector will also grow rapidly, then productivity will also increase. So, when the wealth and income increase, the real sector grows rapidly and productivity increases, this will accelerate economic growth (Sakti, 2007).

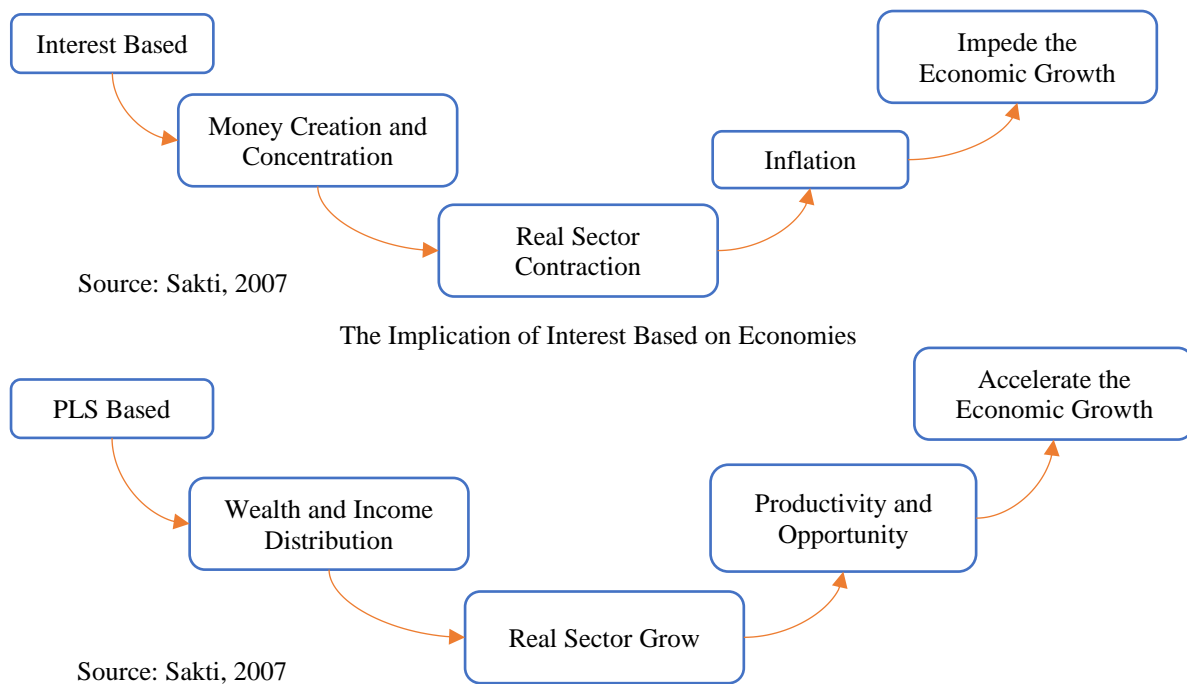


Figure 3: The Implication of PLS Based on Economies

2. Fiat money vs fully backed money

fiat money that are not backed up by gold will cause the speculation and where the exchange rate between countries has a difference that creates a dangerous advantage, called seigniorage. For example, Indonesia, large speculators will prefer to save their money in US dollars compared to the rupiah when the rupiah exchange rate depreciates against the US Dollar. As a result, the rupiah supply is increasingly in the market and causes the increase price of goods, when the increase price of goods will trigger high inflation as well. And finally if it is not handled properly it will cause a crisis, this happened in Indonesia in 1998 where the rupiah exchange rate at that time fell sharply to the lowest level of Rp.16,500/USD. In addition, even in printing this fiat money against the benefits between the costs of production and the real value of the money, this advantage is usually called seigniorage. Examples of production costs for printing money with a value of Rp.100,000 are only Rp.2,000, meaning there is a profit of Rp.98,000. Such a system will cause the weakening purchasing power along with the addition of new money and this will cause high inflation and weaken the economy (Ascarya, 2007).

Whereas in Islamic monetary economics, money is a valuable item or object that has a certain value so there is no difference between intrinsic value and the nominal value of the money. Islam knows gold as money used for exchange in the form of coins or in paper forms backed up by gold. So that in the printing process money there is no purchasing power created (no seigniorage) and free from usury. Furthermore, the costs incurred for the process of printing new money are the responsibility of the government, so that no one party feels financially disadvantaged. In addition, the addition of the amount of money issued will go hand in hand with the growth of value added in the economy, so in general in the Islamic economy there is no inflation nature and tends to be stable.

3. Fractional Reserve Banking System vs 100 percent Reserve Banking System

Fractional reserve banking system (FRBS) means that banks are only required to save reserves in a certain percentage of savings funds raised. Banking minimum required reserves vary generally around 5% - 20%. With this system, banks has the ability to create other types of fiat money, i.e. bank money (demand

deposits, including electronic money), through multiple deposit creation. In this case money is created when banks give loans (Ascarya, 2007).

This fractional reserve banking system will provide large profits to commercial banks by providing loans. The advantage obtained in the form of seigniorage is the cost of money issued is smaller than the real nominal value of the money lent. For example,

Asset A	Liabilities A	Asset B	Liabilities B
Reserve 80.000	CA 1.000.000	Reserve 73.600	CA 920.000
Credit 920.000	(current account)	Credit 846.400	(current account)
Amount 1.000.000	Amount 1.000.000	Amount 920.000	Amount 920.000

Thus, the money creation process carried out by commercial banks through fractional reserve instruments will continue until the amount of incoming reserves reaches 1,000,000 according to the first deposit amount. This process of creating demand deposits by the commercial bank, which initially only amounted to 1,000,000 with an 8% FRR would become 12,500,000 (Ascarya, 2007).

International monetary system

The international monetary system with liberalized products spawned a policy in which countries could use paper money without backing up gold or real assets. This can be beneficial for the state from the difference between the nominal value and the printing price, namely seigniorage profit, but behind this profit it turns out that the loss is more marked as the commodity prices increase causing inflation and weakening people's purchasing power. And even more fortunate are countries whose currencies are used as global currencies such as the US Dollar, Americans get enormous seigniorage from international trade but small, poor countries and non-convertible currencies only benefit from national banknote printing. This situation causes persistent inflation and injustice especially for small and poor countries. The more currencies a country uses in international trade, the more profits that are taken from the seigniorage. (Ascarya, 2009).

This international monetary system makes the exchange rate of a country's currency experience uncertainty and this greatly affects the country's economic growth. Fluctuating currency exchange rates are an example of uncertainty in today's modern cases.

customers save money at Bank A in the amount of 1,000,000 with an FRBS, for example 8%, then the money that can be disbursed is 920,000.

Furthermore, the second customer borrows money at Bank A then assumes all the loans are deposited at Bank B. Reserves of 8% or 73,600 (8% x 920,000), the amount of money that can be conducted by bank B is reduced to 846,400.

Prophet Muhammad SAW said in a hadith narrated by Muslims: "From Abu Hurairah r.a. he said: Rasulullah saw. has prohibited the sale and purchase by throwing stones and buying and selling with fraud (narrated by Muslim)".

Several efforts to present the studies on monetary and banking stability under dual financial system have been done. For the international example the researches conducted by Ghassan (2012), Rahim & Zakaria (2013), Trad et al (2017), Hassan et al (2018), Kabir & Worthington (2017), also Salma & Younes (2014). For the Indonesia example the researches have done by Ismail et al (2017), Kusairi et al (2018) and Sukmana & Setianto (2018).

METHODOLOGY

ARDL is a regression method that includes the lag of both the dependent and independent variables simultaneously. Using this model, we can analyse long-term relationships when the explanatory variable variables are a mixture of I (1) and I (0). The ARDL estimator will produce a consistent long-term coefficient. One of the advantages of this ARDL approach is to produce estimates that are consistent with good long-term coefficients regardless of whether the explanatory variables or regression are I (0) or I (1). In the case of a long-term relationship that is trend stationarity, ARDL can be detrending against the series and model the detrended series as stationary distributed lag. (Falianty, 2003).

If the variables observed form a set of variables that are mutually integrated, then the dynamic model that is suitable for finding short-term equilibrium is the Error Correction Model (ECM). Furthermore, the

Unit root test

To find out whether the data used is stationary or not, we need to do a Unit root test. The test commonly used is the Augmented Dickey-Fuller (ADF) test. Another similar test is the Phillips-Perron Test. Both indicate the existence of unit roots as the null hypothesis. Data sets are declared stationary if the average values and variants of the time series data do not change systematically over time, or some experts state the average and variants are constant (Nachrowi, 2006).

If a time series data is not stationary or has a unit root, there is an event that can be done to station the data. One way is by the stochastic difference process, namely by subtracting the time series data set with the unit root. Suppose that a time series data has a unit root equation:

$$y_t = y_{t-1} + \mu_t$$

So the difference statistical process is,

$$\Delta y_t = y_t - y_{t-1} = \mu_t$$

Time series data that is not differentiated is often also referred to as data level and has a symbol of difference I (0). Whereas for data that has been differentiated in the nth order has a symbol of difference I (n). The stochastic difference process will change the time series data that was not stationary into a time series data that is stationary and has a constant average and variance between periods. This study uses the ADF method to view data stationarity. The results of Unit Root testing using Eviews 9 are shown in the following table.

Based on the table, we can see that all variables are not stationary at the level. This is indicated by the probability value of the series greater than 5% (0.05). Furthermore, variables are tested at the level of first difference. The results show that all variables observed are stationary at the level of first difference.

Table 1: Unit root test

Model	Moneter	Augmented Dickey Fuller (ADF)		Phillips Peron (PP)	
		Level	First Diff	Level	First Diff
lnM _{1(con)}	Konvensional	0,99	0,00	0,12	0,00
lnM _{2(con)}		0,52	0,00	0,00	0,00
lnIPI		0,92	0,00	0,75	0,00
Inf		0,12	0,00	0,26	0,00
lnLiq _(con)		0,00	0,00	0,00	0,00
lnCre		0,02	0,00	0,00	0,00

Model	Moneter	Augmented Dickey Fuller (ADF)		Phillips Peron (PP)	
		Level	First Diff	Level	First Diff
lnM _{1(isl)}	Islam	0,99	0,00	0,12	0,00
lnM _{2(isl)}		0,53	0,00	0,16	0,00
lnIPI		0,92	0,00	0,75	0,00
Inf		0,12	0,00	0,26	0,00
lnLiq _(isl)		0,02	0,00	0,01	0,00
lnPby		0,00	0,00	0,00	0,00

Notes: the bold printed is significant at real level 5%.

Determination of Optimum Lag

In ARDL regression, we will be faced with the selection of the number of Lags used to process the data, the optimum lag is a way to choose how much lag we use in the study. so the selection of the optimum amount of lag is needed so we can get better results. This study will look at the optimum number of Lags

based on the results of the lag length VAR criteria. The most optimum lag results are indicated by the highest number of stars. The result of the lag length criteria in the following graph shows that the optimum lag used is different for each model. The result of optimum lag determination is attached.

the optimum lag results indicate the selection of the 20 best models for optimum lag by the AIC criteria where the smallest value of the AIC will be used as the optimum lag in the research model. In model 1 conventional monetary and Islamic monetary the smallest value of AIC is -1.21 with optimum lag (2,3,0), then in conventional monetary model 2 the smallest value of AIC is -4,61 with optimum lag (3,6,1) and Islamic monetary model 2 the smallest AIC value is 9.57 with optimum lag (6,6,1). Meanwhile the smallest value of AIC in conventional monetary model 3 is -4.23 with optimum lag (4,0,0) and the smallest AIC value for Islamic monetary model 3 is 8.48 with optimum lag (7,6,1).

The smallest AIC criterion value from the credit model equation is -4.29 with the optimum lag (3,0) and the smallest AIC criteria value from the financing model equation is 7.97 with the optimum lag (1,1). The models (1 and 2) of the ITF equation for conventional monetary and Islamic monetary equations

have the optimum lag (3,0) with the smallest AIC criterion value is -7.42.

Diagnosis of the ARDL model

Before carrying out further ARDL analysis, we need to do a diagnostic test of the ARDL model to find out more clearly whether the ARDL model produced is a suitable and perfect model. To do a diagnostic test, we first need to check the Bounds Test results. The Bounds test is used to see how much percentage of significance we can use on the variables that we examine, besides that this test is conducted to see the cointegration of research models in the long run. If the F-stat value is smaller than critical value, then accept the null hypothesis (no long run relationship) and if F-stat is greater than critical value, then reject the null hypothesis. The following table results from the Bounds test for each model:

Table 2: Bound test of each model

Name of Model	F-Stat	Critical Value	Significance/no
Model Conventional Monetary	10,49	3,87	significance
Model Islamic Monetary	14,65	3,87	significance
Model Credit	19,32	4,16	significance
Model Lending	22,85	4,16	significance

The results of the bounds test shows that on the contrary for conventional monetary and Islamic monetary model, the F-stat value is greater than the critical value, meaning that there is a long-term cointegration between the money supply (M_2) ($M_{2(isl)}$) to the inflation rate and economic growth. Whereas the financing conducted by Islamic banking does not have Long term cointegration against inflation and GDP. These results also prove that the conventional banking sector has a significant influence on money turnover, inflation and GDP in Indonesia. Meanwhile, the financing conducted by Islamic banks is more targeted at the real sector and does not apply interest rates so that the growth in the amount of money will run in line with the growth of economic value added.

On the other hand, the equality model of credit and financing instruments where credit and financing have co-integration with liquid banking assets, means

that the total liquid assets of conventional banking or Islamic banking will affect the total credit distribution or financing in the long run.

In Islam the money is a valuable object that contains intricate values so that the basic value with its nominal value will be the same. Therefore, if the Islamic monetary concept is applied there will not be a gap between the real sector and the monetary sector because the increase in the money supply will go together with the growth in purchasing power and economic growth. (Ascarya, 2007).

In addition to the ARDL Bounds Test, another result that we need to examine next is the value of error coefficient ($CointEq_{(-1)}$) in the short-term ECM model. This value will show how much error will be corrected in each time period. In order to meet the requirements, this value must be negative and significant.

Table 3: Cointegration test

Name of Model	Coefficient	CointEq ₍₋₁₎	Significance/no
Model Conventional Monetary	-0,26	0,0035	significance
Model Islamic Monetary	-0,26	0,0035	significance
Model Credit	-0,35	0,0000	significance
Model Lending	-0,02	0,0000	significance

The cointegration test results show that the 4 estimation models used in this study are significant, meaning that the negative coefficient value indicates that the model will go to a balance at a certain level according to the coefficients of each model. In model 1 conventional monetary and Islamic monetary will go to the equilibrium level with a speed of 26% per month. While the credit model will go to the balance level at a speed of 35% per month and the financing model will go to the balance level at a speed of 2% per month.

Short Term Analysis (ECM)

The short-term results of the ARDL model can be seen from its ECM model. This ECM model is

obtained by using the general to specific method which starts from the maximum lag then the standard test procedure eliminates the ARDL variables that are specifically insignificant, until the simplest results (*parsimonius* regression) are obtained. This step is not done manually by the author, because Eviews 9 that is used already has an ARDL option, so the desired results are already automatically obtained. This ECM result has several significant lags, but the author will only take one example of the variable as a general description of short-term estimates. The following table shows a sample of ECM short-term estimation results.

Table 4: Short term estimation

Name of Model	Coeff	Std. Error	T-Stat	Prob.
Model: Conventional Monetary				
lnm ₁₍₋₁₎	-0,6771	0,1185	-5,7119	0,0000
Lnipi	0,1813	0,4020	0,4511	0,6529
lnipi ₍₋₁₎	0,6536	0,4906	1,3321	0,2860
lnipi ₍₋₂₎	-0,7148	0,4468	-1,5997	0,1130
Inf	0,6807	1,9788	0,3439	0,7316
Model: Islamic Monetary				
lnm ₁₍₋₁₎	-0,6771	0,1185	-5,7119	0,0000
Lnipi	0,1813	0,4020	0,4511	0,6529
lnipi ₍₋₁₎	0,6536	0,4906	1,3321	0,2860
lnipi ₍₋₂₎	-0,7148	0,4468	-1,5997	0,1130
Inf	0,6807	1,9788	0,3439	0,7316
Credit Model				
lncre ₍₋₁₎	-0,4026	0,0815	-4,9355	0,0000
lncre ₍₋₂₎	-0,1910	0,0839	-2,2768	0,0250
lnliq _{con}	0,3510	0,1283	2,7345	0,0074
Financing Model				
lnliq _{isl}	0,4021	0,0430	9,3400	0.0000

Notes: data processed

The data result table shows the effect of variables on other variables in the short term. Conventional monetary model with the model equation variable, i.e. the money supply (M1_(con)), inflation and GDP, the results show that in the short term only the

variable money supply (M1_(con)) has a significant effect, meaning that the growth of the money supply at this time will be influenced by the amount of money circulating in the previous one period.

The Islamic monetary equation model, table shows that the money supply ($M1_{(isl)}$) is influenced by the money supply in the previous period. Then the monetary model 2 of Islam, connecting the correlation between the money supply ($M2_{(isl)}$) and inflation and GDP, in the short term that the money supply ($M2_{(isl)}$) in Islamic monetary is strongly influenced by the money supply ($M2_{(isl)}$) in the previous 5 periods and also GDP in the third and fourth periods. This also proves that Islamic monetary has a very good correlation with economic growth. On the other research conducted by Rusydiana (2009a) and Sanrego & Rusydiana (2013), the increase of shariah financing will give positive impact for reducing inflation rate in Indonesia, because with this system possibility to make equal growth among monetary and real sectors appears.

These all models of equations, both conventional monetary models and Islamic monetary models, the inflation rate variable has a probability of more than the 5% real level, meaning that this variable is not significant in the short term. Muslim economist Al Maqrizi said that one of the causes of inflation was the growth of the money supply (fiat money) which was not in accordance with the capacity of real goods, so that money (fiat money) became worthless and prices increased. (Karim, 2002). The solution offered

by the Islamic monetary system is gold (dinar and dirham) or paper money that is full backed up gold because the value of this gold tends to be stable from time to time, for example the price of a goat must be around 1-2 dinars and the price of a chicken 1 dirham. (Ascarya, 2007).

Furthermore, the relationship between credit and financing with the assets of each banking system. Credit in conventional banking is influenced by lending in the previous 2 periods and liquid assets in the current period, while financing for Islamic banking is only influenced by liquid assets of Islamic banking in the current period.

ARDL Long Term Analysis

Long-term estimation is an advantage in the use of the ARDL model. Using this model, we can analyse long-term relationships when the explanatory variable variables are a mixture of I (1) and I (0). The ARDL estimator will produce long-term coefficients that are consistent with the resulting estimation consistent with good long-term coefficients regardless of whether the explanatory variables or regression are I (0) or I (1). The following table shows the ARDL Long-term estimation table.

Table 5: Long term estimation

Name of Model	Coeff	Std. Error	T-Stat	Prob.
Model: Conventional Monetary				
Lnipi	-2,7879	3,5356	-0,2046	0,1040
Inf	-2,8116	3,8755	-0,7254	0,4700
lnm ₁₍₋₁₎	-0,6771	0,1185	-5,7119	0,0000
Model: Islamic Monetary				
Lnipi	2,7879	0,5356	5,2046	0,0000
Inf	-2,8116	3,8755	-0,7254	0,4700
lnm ₁₍₋₁₎	-0,6771	0,1185	-5,7119	0,0000
Credit Model				
lnliq _{con}	0,9808	0,0310	31,5449	0,0000
lncre ₍₋₁₎	-0,4026	0,0815	-4,9355	0,0000
Financing Model				
lnliq _{isl}	0,4727	0,3184	1,4849	0,1407
lnpby ₍₋₁₎	0,9707	0,0203	47,653	0,0000

The table shows the long-term results of the equation model in the study, the results for the conventional monetary model show that the variable PBD has a positive significant effect on the money supply ($M1_{(con)}$), an increase in economic growth of 1% will increase the money supply ($M1_{(con)}$) of 2.78%, as well as model in Islamic monetary, where economic growth will significantly increase the money supply ($M1_{(isl)}$), while the inflation variable does not have any influence. In addition, the credit variable in the conventional monetary credit model, the results of data processing shows that liquid assets significantly affect credit with a positive coefficient, meaning that the increase in liquid assets of conventional banks by 1% will also increase the amount of bank lending.

The Muslim economist, Taqiyudin Ibn Ahmad Al Maqrizi classifies the causes of inflation into two factors, first inflation due to lack of inventory (nature inflation) and human error inflation. Nature inflation has meaning when natural disasters occur which result in a decrease in inventory stock depletion, so the prices of these goods will increase. Human inflation error is divided into 3 categories: 1). corruption and bad administration, 2) excessive tax, 3) excessive seigniorage (Rusydia, 2009b). Of the three things, the third cause is one area of monetary policy, where the government must oversee the amount of money in circulation so as not to exceed the real value of the economy. In essence of Islam, if the money system today uses gold, then there will be no excess in the money supply because excessive printing and the balance curve between the value of money and the value of goods in real economic transactions will be balanced (Karim, 2002).

The results of the study also prove that inflation does not affect the amount of money in circulation, this result is in accordance with research on Fadhilah and Sukmana (2017) where the influence of the variable inflation on the money supply differs from theory in general. Thus, Indonesia's monetary policy regarding the ITF with interest rate instruments did not have a significant impact on Indonesia's economic growth. This is evident from the level of Indonesia's economic growth in the last three years which only grew stagnant at only 5%, namely in 2016 amounting to 4.94%, in 2017 amounting to 5.19% and the third quarter of 2018 of 5.17%. (Statistics Indonesia, 2018).

CONCLUSION & RECOMMENDATION

This research uses two ARDL models, namely the model for conventional monetary and Islamic monetary models. The models of stability equations for each monetary system are in accordance with Kaleem's research (2000). The results show that in the short term and long term on the conventional monetary system, the variable inflation and GDP do not affect the money supply ($M1_{(con)}$) ($M2_{(con)}$), as well as the reverse money supply ($M1_{(con)}$) ($M2_{(con)}$) does not affect the inflation rate, while lending is strongly influenced by the liquid assets of conventional banks. In the short term, model in the Islamic monetary system that GDP has a positive effect on Islamic banking financing. In the long run GDP affects the money supply ($M1_{(isl)}$). This proves that Islamic monetary has a significant influence on Indonesia's economic growth.

The bound test and ECM test results show that the ITF equation model does not have long-term or short-term cointegration so the authors conclude that the achievement of the ITF by regulating the money supply through instruments that use interest rates cannot be used as the main reference in taking monetary policy.

Monetary authority or Central Bank of Indonesia, must begin to gradually switch to using gold (dinar, dirham) or paper money that is fully backed by gold because it has a more stable value and keeps the inflation rate in line with the equilibrium of commodity prices. Fractional reserves to 100 percent reserves and interest rates to PLS, as evidenced by the results of research that credit has no effect on economic growth while financing has a positive influence on economic growth.

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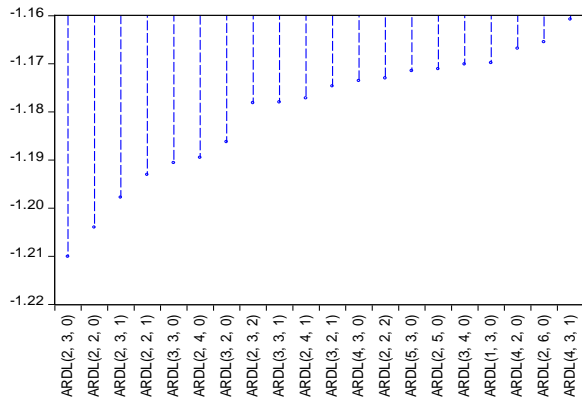
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APPENDICES

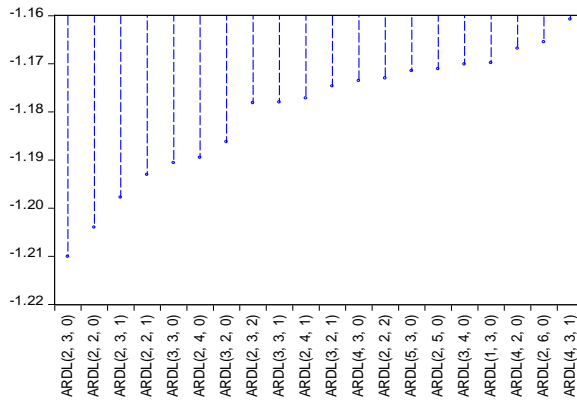
Lag Optimum: Model Conventional Monetary

Akaike Information Criteria (top 20 models)



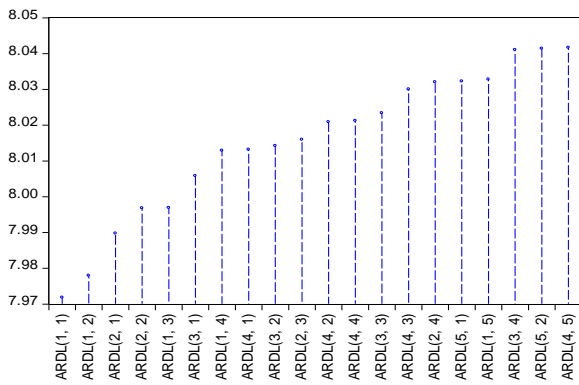
Lag Optimum: Model Islamic Monetary

Akaike Information Criteria (top 20 models)



Lag Optimum: Credit Model

Akaike Information Criteria (top 20 models)



Lag Optimum: Financing Model

Akaike Information Criteria (top 20 models)

