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Effect of Macroeconomic Variables on Third-Party Funds in Islamic Commercial Banks in Indonesia

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Abstract

The purpose of this article is to look at the long-term and short-term relationships between macroeconomic variables, namely the exchange rate, inflation and IPI to third party funds with Islamic commercial banks in Indonesia. This article uses quantitative research methods, the data used is secondary data with the time series type from January 2014-December 2018, the analytical tool used is VECM, which is a form of VAR detected. Before the final results are obtained, there are several analyzes that must be performed before testing the VECM, namely the stationarity test, the optimal lag test, the cointegration test, the VECM estimate, and finally the impulse response function test. Based on the results of the analysis performed, the results show that for both long and short term exchange rate variables affect deposits, the inflation variable in this investigation period does not affect deposits and the IPI variable has a long term relationship with deposits, while in the short term has no relationship with third party funds. This article contributes to the effect of both long and short term macroeconomic variables on the interest of customers in depositing money with Islamic banks to be used as third party funds with Islamic banks.

Keywords: Exchange Rate, Inflation, IPI, DPK, VECM

Introduction

Changes in times and eras cause many changes and developments that are common. Developments seen not only in the field of technology, but also in economic studies have also seen many developments, including the development of institutions that can regulate and control a country's economy, namely banking. Banks are also known as one of the institutions that accept current deposits, savings and deposits, not only that the bank is also used

as a place to borrow money used for consumption or business activities.

Both Islamic banks and conventional banks collect and distribute money in the course of their business activities. Islamic banks, as a business entity, will engage in business activities such as banks in general, which include conducting fundraising activities in the form of deposits and returning them to those who need it in the form of financing. In addition, it also conducts business activities in the field of services and activities in the social field as a manifestation of the social functions it performs (Anshori, 2009).

Banking is one of the institutions that play an important role in a country's economy because banks regulate money circulation so that it is always stable. As in other countries, banking activities in Indonesia will also have an impact on the Indonesian economy. Banking activities in Indonesia adhere to the dual banking system, where conventional banks and Islamic banks simultaneously conduct banking activities. Muamalat Bank's birth in 1991 and operational activities in 1992, added when the 1997 monetary crisis occurred where many conventional banks suffered and the Muamalat Sharia Bank remained a forerunner to the growth of Islamic banks in Indonesia, which continues to grow increase. The growth of Islamic banking wealth in Indonesia can be seen in the following graph:

## Chart 1.1 Total Assets of Sharia Comercial Bank
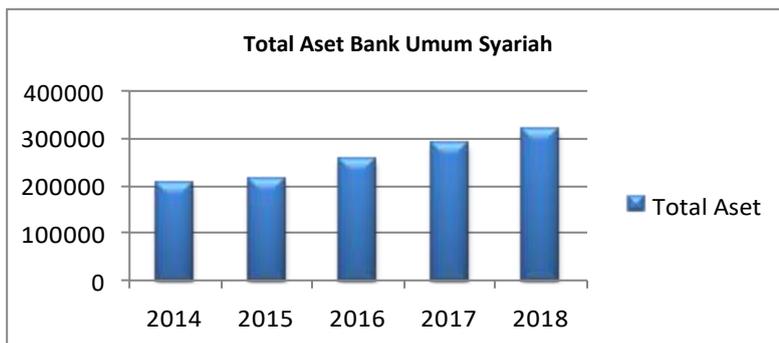
Source: www.ojk.go.id

Based on the chart above, it can be seen that from year to year the total wealth of Islamic commercial banks is always increasing, even the number of Indonesian Islamic banks from 2014 to 2018 experienced an increase that originally was 12 banks, has now reached 14 Islamic commercial banks. This increase clearly

illustrates the growth of Islamic banks in Indonesia.

The growth of Islamic banks in Indonesia is also reflected in the total number of deposits (third party funds) in the bank. In Islamic banking, the value of DPK itself dominates the funds in the bank, so that the funds can later be distributed over the financing that the customer needs. Third party funds (DPK) themselves are very important, even from the funds of the DPK itself not only Islamic banks but also the economy can be reached. When the value of deposits with Islamic banks increases, this can lead to an increase in economic activity because many customers are more prosperous, so that many customers also entrust their money to Islamic banks to become third-party funds. The development of deposits with Islamic banks can be seen in the following graph:

Chart 1.2 Third-Party Funs

Dana Pihak Ketiga
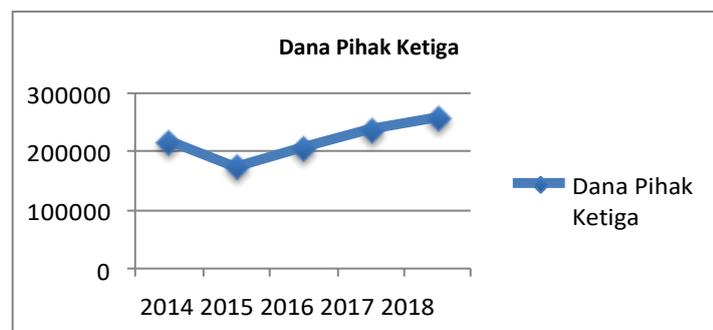
Source: www.ojk.go.id

Third-party funds from Islamic banks have undergone fluctuating changes. In the financial crisis that occurred in Indonesia, this had a negative impact on the growth of both conventional and Islamic banks. The development of conventional banks experienced a downturn at the time, but at the level of third-party Islamic banks was also under pressure at the time due to competition in the collection of funds. It can be concluded from this that Islamic banks are still vulnerable to macroeconomic variables. This is supported by research (Azmi & Haron, 2008), which states that the ups and downs of DPK funds are affected not only by yield returns, but also by macroeconomic conditions. This research is also supported by research (Supriani & Sudarsono, 2018) (Adim & Sukmana, 2017) (Abduh, Omar & Duasa, The Impact of Crisis and Macroeconomic Variables towards Islamic Banking Deposits, 2011) (Nazib, Masih, & Mansur, 2017) (Maulana1 & Fakhruddin, 2017) (Saragih & Esya,

2016) who also investigate the influence of macro variables on the performance of Islamic banking.

Based on the above explanation and previous studies have discussed the impact of macroeconomic variables on third party funds. This study will also discuss the impact of macroeconomic variables on third party funds in Islamic banks Indonesia,

Macro variables are used because events related to macro variables may affect the position of third party funds in Islamic banks, but three macroeconomic variables are used in this study, namely: exchange rate, inflation and IPI because these three variables in recent years often undergo changes which is quite drastic. So the aim of this study is to look at the long- and short-term effect of macroeconomic variables on third party funding (DPK).

Literature Review

Funding is one of the main activities and a major source of revenue for Islamic Cooperatives. Kabir et al (2013) state that foreign Islamic banks, on average, follow aggressive funding in host countries and enjoy higher net profit margin. Banking sector returns play an important role in the entry decision and presence of foreign banks. At this point, financial intermediaries provide great contributions to economic development by eliminating asymetrical information problem between lender and borrower (Sonmezler and Siriner, 2006). Lisa (2016) state that the capital structure, third party funds and non-performing financing significantly effect on the distribution of funding. Capital structure, third party funds, and the distribution of funding has a significant effect on profitability, Sharia Cooperative BMT in Indonesia.

Discussing about financing, it has high correlation to the banking regulation. Nastiti and Kasri (2019) state that the stimulus regulation indeed played a positive role in the acceleration of Islamic bank financing. However, the fintech-related regulation was not yet effective to achieve the goal, at least in the short term. Furthermore, the study found that return of assets, operational efficiency, financing deposit ratio and money supply also influenced Islamic financing. The role of financial regulation also supported by Killins et al. (2019). The literatures state that it is essential to ensure that clear communication channels are open especially to small and medium sized banks for proper strategic planning, given their greater sensitivity to regulatory uncertainty.

A goverment which cannot prepare the macroeconomic environment where banks can function at high productivity will increase banks' risks. In addition, banks require strict regulations and controlling as its structure is open to fraud. That these regulations are ignored or not prepared will lead to risk accumulation in the sector. It becomes a social responsibility of the state to take necessary cautions as these kinds of issues change a large cost on the society. In other hand different result show that one of aspect that give high impact on funding in bank is media reputation. The effects of media reputation are dependent on the stakeholders under review. However, this study's design does not yield evidence on direct causal effects. Further studies could, therefore, use surveys to analyze the decision-making processes of individuals regarding their relative dependency on news media consumption (Vogler, 2020).

A. Business Activities of Islamic Bank

According to the language, the word bank comes from the Italian word "banca", which means "table" or "place to exchange money". According to the term, a bank is "a financial institution whose main business is to provide credit and money payment and circulation services". According to Kasmir, a bank can easily be interpreted as "a financial institution that is primarily concerned with collecting money from the community and returning money to the community and providing other banking services". Whereas, according to the Law of the Republic of Indonesia No 10 of 1998 on Banking, the definition of a bank is "a business entity which collects funds from the public in the form of deposits and provides them to the public in the form of credit and or other forms to improve the lives of many people "(Muslich, 2015).

Rules governing the commercial activities of commercial and rural banks that apply to both conventional and Islamic banks are set out in Articles 6, 7 and 13 of Law No. 7 of 1992, as amended by Law No. 10 of 1998. Article The article contains a list of the legitimacy of business activities that can generally be carried out by banks. But specifically, for Islamic banks, business activities can be conducted that are in accordance with Islamic principles (Dewi, 2007). Below is discussed what business activities exist in an Islamic bank:

Islamic banks have different types of fundraising based on principles that consist of: (a) Wadiah principles, both in the form

of savings accounts, deposits and other forms, (b) mudharabah principles, and (c) additional contracts (Ali, 2010). Channel services in Islamic banks. The business activities of Sharia banks not only collect money, but Sharia banks also carry out activities such as conventional banks, which is to channel funds owned by Islamic banks. Fund distribution products carried out by Islamic banks can in principle be divided into 4 (four), namely (1) financing with the principle of buying and selling, (2) financing with the lease principle, (3) financing with the profit-sharing principle, and (4) financing with the complementary contract principle (Ali, 2010).

B.   Third-Party Funds

Third party funds represent funds from clients entrusted to Islamic banks. Customers entrust their money to Islamic banks for the purpose of security and convenience where they can withdraw money at any time (Arifin, 2009). The source of Islamic bank funds themselves comes not only from third parties, but also from, their own capital funds where the money comes from the bank's own capital or may also come from shareholders, these funds are called first party funds. There are also third party funds where the funds come from external loans.

Islamic banks can take deposits in a number of forms: First, deposits (wadiah) are deposits that provide guaranteed security and repayment, but there are no benefits in using the contract. Second, capital participation shares return with risk if the goal is to make a general investment where the bank will pay a proportional share of the profits using a portfolio funded with that capital. Third, a special investment in this case, the bank will act as an asset manager to generate a profit, so that the bank does not participate in investments while the investor fully takes the risk of investments (Ali, 2010).

C.   Macroeconomic Variabels
a.   Exchange Rate

The exchange rate, also known as the exchange rate, is a price of one country's currency against another country's currency. The exchange rate is a tool that can be used to measure macroeconomic conditions in one country because the exchange rate itself shows

the relative wealth of the economy that exists in one country relative to other countries. Currently, the strength of the world currency is measured using the US dollar. According to Mankiw in (Saekhu, 2017) when the real exchange rate is high, goods from abroad are relatively cheaper, while domestic goods will be more expensive and vice versa. Exchange rate changes, both up and down in economic activity, will grow, increasing the resources available to banks to invest and store, making it easier for banks to collect third-party funds. Research conducted by (Saekhu, 2017) shows that exchange rates can affect the collection of third party funds.

H1: Exchange rate has significant affect to third-party funds

b. Inflation

Inflation is a situation that arises when there is an excessive demand for goods in economic activity. Another definition says that inflation tends to raise prices generally and continuously. When there are one or two increases in goods, it is not necessarily said to be inflation unless the increase is widespread and occurs with some goods. Inflation is also a general increase in the amount to be paid for goods and services. When inflation takes place in a country, it is natural, inflation in a country should not be too low or too low, if inflation is too high, the level of public consumption will fall, while inflation will be too low the level of public consumption will be low, resulting in the level of production also falling, so that inflation must be appropriate every year so as not to harm economic activity. Research by (Abduh, Omar, & Duasa, 2011) and (Sahliyah, 2014) showed that inflation affects third-party funds.

H2: Inflation has significant affects to third-party funds

c. *Industrial Production Index* (IPI)

Industrial Production Index (IPI) is one of the variables in the macroeconomic category. IPI can also be categorized as an indicator of real income in a country. IPI discusses all problems that exist in the industrial sector where the industrial sector plays an important role in the development of a country. IPI's contribution is very important for development, so this variable plays a very important role. IPI is one of the macroeconomic variables that has

growth potential in financial institutions such as Islamic banks. Research conducted by (Sahliyah, 2014) also uses the IPI variable as one of the research variables, and the results of the study show that IPI affects third party funds.

H3: IPI has significant affect to third-party funds

Methodology

Based on the macroeconomic variables examined in this study, this study uses a quantitative approach to answer the questions that exist when formulating the problem. Quantitative approaches are used to test hypotheses made so that conclusions can be drawn that can be generalized. According to (Anshori & Iswati, 2009), quantitative research should use figures ranging from data collection to data results. This study uses secondary data obtained from the official website of Bank Indonesia and the Financial Services Authority. The data used is monthly time series data from January 2014 to December 2018. The use of monthly data to represent the object under investigation. The variables in this study are divided in two. The independent variable is the use of Third Party Funds (DPK) and for the dependent variable namely exchange rate, inflation and IPI. Data collection is done by opening each agency's site and searching for data of the required variables which are then cleaned up with Excel.

Analysis Method

Based on the wording of the previously discussed problems, in this study, the analysis technique used is the Vector Error Correction Model (VECM) processed with Eviews 10. According to (Tanjung & Devi, 2018), VECM is a form of VAR that has been detected. The addition of restrictions should be given due to the existence of data forms that are not stationary, but coordinated. The VECM specification is to see the long-term relationship of endogenous variables so that they converge in their co-integration relationship, yet allow for the existence of short-term dynamics. Before the final results are obtained, several analyzes must be performed before testing the VECM, namely the stationarity test, the optimal lag test, the cointegration test and finally the impulse response function

test.

Definition of Variabel Operations

Variabel	Definition	Unit	Source
Third-Party Funds	Third party funds represent funds from clients entrusted to Islamic banks.	Rp	Otoritas Jasa Keuangan (www.ojk.go.id)
Exchange Rate	The exchange rate, also known as the exchange rate, is a price of one country's currency against another country's currency.	Rp	Bank Indonesia (www.bi.go.id)
Inflation	Inflation is a tendency to raise prices in general and continuously.	%	Bank Indonesia (www.bi.go.id)
IPI	IPI can also be categorized as an indicator of real income in a country.	%	Bank Indonesia (www.bi.go.id)

Source: Processed by Researchers

Results and Discussion
Results

Based on the data obtained, the data is processed and gets the following results:

1. Stationarity Test

Stationary test is the first step in estimating the VAR / VECM model, which should ensure that the data used is stationary data. Data that has been stationary uses VAR with standard methods, but non-stationary data uses two choices, VAR in the form of difference or VECM. Stationary testing will use the Root Unit test (unit root test). In this study, the test method will use the Dickey-Fulleer (DF) test and the Augmented Dickey-Fuller (ADF) test. Testing is done at level and first difference level. In this test it will be seen when the ADF t statistic value is less than the Mc Kinnon Critical Value of 5% then H0 is accepted and H1 is rejected meaning there is no evidence that the equation contains unit roots that can be said that the data is not stationary (Cape & Devi, 2018). The test results for the levels are as follows:

Table 4.1 Result Stationarity Test in Level

Level – I (0)				
Variabel	ADF t-Statistic	Mc Kinnon Critical Value 5%	Prob	Information
DPK	-0.392953	-2.911730	0.9032	Not Stationary
Kurs	-1.259965	-2.911730	0.6424	Not Stationary
Inflasi	-2.130154	-2.911730	0.2339	Not Stationary
IPI	-1.067981	-2.913549	0.7225	Not Stationary

Source: Processed by Researchers, 2019

Based on the table above, the results of the stationary tests at the level of the levels were obtained for all variables that there is no stationary. This can be seen in the results of all variables where DPK variables (-0.392953 <-2.911730), exchange rates (-1.259965 <-2.911730), inflation (-2.130154 <-2.911730) and IPI (-1.067981 <-2.913549) of these results all are the variable t-statistic ADF value is less than the Mc Kinnon critical value of 5%, so H0 is accepted and H1 is rejected, meaning there is no evidence that the equation contains unit roots that can be said to be the data is not stationary. The level-level results indicate that not all variables are stationary, because data is required at the stationary level, so that stationary tests are performed at the first difference level. Following are the results of testing all variables at the first difference level:

Table 4.2 Result Stationarity Test in First Difference

First Difference - I (1)				
Variabel	ADF t-Statistic	Mc Kinnon Critical Value 5%	Prob	Information
DPK	-8.124713	-2.912631	0.0000	Stationary
Kurs	-9.220579	-2.912631	0.0000	Stationary
Inflasi	-6.002796	-2.913549	0.0000	Stationary
IPI	-10.17591	-2.913549	0.0000	Stationary

Source: Processed by Researchers, 2019

Based on the table above, the results of the stationary tests at the level level obtained the results for all variables already at the stationary level. This can be seen in the results of all variables where the TPF variable (-8.124713> -2.912631), the exchange rate

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(-9.220579> -2.912631), inflation (-6.002796> -2.913549) and IPI (-10.17591> -2.913549) of these results are all The variable t-statistic ADF value is greater than the McKinnon critical value of 5%, so H0 is rejected and H1 is accepted, meaning there is enough evidence to reject the null hypothesis that is in the comparison contains unit roots, it is concluded that the data has been stationary at the first difference level. Stationary data on the first difference will be analyzed by VECM estimation because all variables used are stationary at the first difference level.

2. *Lag Optimum Test*

Data that has been stationary at the first difference level is then processed in the Optimum Lag test. Optimum Lag Test to determine the lag, if the lag identified is too small, the regression residues will not reflect the white noise process, so the model cannot accurately estimate the actual error, while if the lag becomes too much inserted, the ability to refuse H0 will decrease, as many additional parameters will decrease the degrees of freedom (Tanjung & Devi, 2018). The lag test is also used to see how long a variable is affected by its past and other endogenous variables. The results of the determination of the lag test can be obtained from the criteria of the LR model (squential modified LR test statistic), FPE (Final Prediction Error), AIC (Akaike Information Criterian), SC (Schwarz Information Criterion), HQ (Hannan-Quinn Information Criterion). In this test to determine the optimal lag value, you will see most of the asterisks on the test results. The results of this test are as follows:

Table 4.3 Result Lag Optimum Test

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1054.321	NA	6.08e+11	38.48441	38.63039	38.54086
1	**-884.2579**	**309.2060**	**2.25e+09***	**32.88210***	**33.61204***	**33.16438***
2	-871.6528	21.08482	2.57e+09	33.00556	34.31945	33.51365
3	-859.9622	17.85485	3.08e+09	33.16226	35.06010	33.89617
4	-853.5871	8.809191	4.58e+09	33.51226	35.99405	34.47199
5	-832.2782	26.34557*	4.09e+09	33.31921	36.38495	34.50475

Source: Processed by Researchers, 2019

Based on the table of data processing results above, it can be seen that the optimal lay length lies in the first lay. The choice for the first delay in this result is because the first delay has more stars compared to other delays. The length of the lag is determined,

then the cointegration test is performed with the Johansen's Cointegration Test.

3. Cointegration Test

In this phase, the cointegration test is used to determine the existence of a long-term relationship between variables. Co-integration is defined as individual non-stationary, but a linear combination of two or more variables can be stationary. The combination of non-stationary variables will yield stationary residues, all these variables will work together towards a long-term balance. The use of co-integration test requires stationary test results for each variable to show the same degree of integration. The requirement for estimating VECM is a co-integration relationship. If there is no co-integration relationship, the estimate used is the VAR (Vector Auto Regression) model instead of the VECM. The criteria for this phase of the test are to compare the value of trace statistics with a critical value of 5%. If the statistical value of the trace is greater than the critical value of 5%, this indicates the co-integration between variables. In this study, the cointegration test used Johansen's cointegration test with a critical value of 0.05 was available in reviews 10. The results of the cointegration test are shown in the following table:

Table 4.4 Result Cointegration Test (Johansen's Cointegration Test)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.354517	49.63479	47.85613	0.0337
At most 1	0.254623	25.99597	29.79707	0.1288
At most 2	0.169673	10.12724	15.49471	0.2711
At most 3	0.001604	0.086688	3.841466	0.7684

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None	0.354517	23.63882	27.58434	0.1478
At most 1	0.254623	15.86873	21.13162	0.2326
At most 2	0.169673	10.04055	14.26460	0.2093
At most 3	0.001604	0.086688	3.841466	0.7684

Max-eigenvalue test indicates no cointegration at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Source: Processed by Researchers, 2019

Based on the table above, it can be seen that in the test level of 5% or 0.05 there is a rank related to co-integration. When in the results of the data there is at least one vector integration in the system marked by the value of maximum likes and the trace statistic is greater than the statistical value, this indicates co-integration. This is evidenced by the statistical trace value of 49.63479 which is greater than the Critival Value of 0.05, which is 47.85613, which means that H0 is rejected and H1 is accepted. This means that the variables used have a long-term relationship (co-integration) with each other.

4. *Granger* Kaulitas Test

Granger causality test is used to evaluate the ability to predict one time series change in the previous period to another time series change in the current period. In this test, H0 is tested to reveal the absence of causality between variables, while H1 indicates the causality relationship between variables. Rejection or acceptance of H0 can be seen by the probability value, in this study a critical value of 5% is used, when the probability value is greater than 5%, H0 is accepted, meaning there is no causal relationship to the tested variable. The results of this test are as follows:

Table 4.5 Result *Granger* Kaulitas Test

Null Hypothesis:	Obs	F-Statistic	Prob.
KURS does not Granger Cause DPK	55	0.65350	0.6604
DPK does not Granger Cause KURS		0.58097	0.7143
INF does not Granger Cause DPK	55	4.95000	0.0011
DPK does not Granger Cause INF		1.08626	0.3813
LN_IPI does not Granger Cause DPK	55	1.14539	0.3511
DPK does not Granger Cause LN_IPI		1.04576	0.4031

Source: Processed by Researchers, 2019

Based on the results of the table above, it can be seen that the variable exchange rate against DPK and DPK to Exchange has a probability value of more than 5%, so there is no causal relationship

between Exchange to DPK or DPK to Exchange. The Inflation Variable for Third Party Funds has a value of less than 5%, so that there is a causal relationship between Inflation and Third Party Funds, but between Third Party Inflation Funds, the probability value is greater than 5%, so Third Party Inflation Funds have no causal relationship. Finally, for the IPI variable against DPK and DPK to IPI, the probability value is more than 5%, so there is no causal relationship between IPI to DPK or DPK to IPI.

5. Estimated *Vector Error Correction Model* (VECM)

The VAR analysis process begins with the stationarity test performed on each variable, after the results are obtained that all variables have been stationary while in this study were stationary at the first difference level, then the lag test and then followed by the co-integration test. After obtaining the results that the data was integrated together, we will estimate the Vector Error Correction Model (VECM). VECM is a form of derived Vector Autoregression. This additional limitation should be given because data forms exist that are not stationary but joint. VECM then uses the information on limiting the joint integration in the model specifications. Therefore, VECM is often referred to as the VAR design for non-stationary series with a co-integration relationship.

VECM is used in accordance with the problem that will look at the short and long term relationships of the variable relationships. The results of long and short term VECM estimates are as follows:

Table 4.6 Result Estimated VECM

Variabel	Long-term Koefisien	T-Statistik
DPK	1.000000	
Kurs	**27.53285**	[3.08813]
Inflasi	7641.204	[1.24865]
IPI	**-739881.0**	**[-4.04276]**
	Short-term	
CointEq1	-0.239499	[-3.23897]
D(DPK(-1))	-0.172123	[-1.00234]
D(DPK(-2))	-0.001155	[-0.00658]
D(DPK(-3))	-0.161924	[-0.93507]
D(DPK(-4))	-0.063429	[-0.37737]
D(DPK(-5))	0.034277	[0.23258]
D(KURS(-1))	**12.07800**	**[2.04437]**
D(KURS(-2))	10.49620	[1.77503]
D(KURS(-3))	9.996444	[1.68691]
D(KURS(-4))	3.683021	[0.71209]

|		
D(KURS(-5))	-4.364215	[-0.94757]
D(INF(-1))	-3282.980	[-1.47390]
D(INF(-2))	-4529.235	[-1.78967]
D(INF(-3))	-632.8019	[-0.241556]
D(INF(-4))	-3675.736	[-1.47504]
D(INF(-5))	-3435.931	[-1.32707]
D(IPI(-1))	-111577.2	[-1.88191]
D(IPI(-2))	-41047.41	[-0.68460]
D(IPI(-3))	-28203.82	[-0.46438]
D(IPI(-4))	2046.466	[0.03830]
D(IPI(-5))	19326.75	[0.40679]
C	-1013.741	[-0.58795]

Source: Processed by Researchers, 2019

VECM estimation results obtained, in this study has a free grade of 54 with a 5% test level, so we get a t table for this test of 2.00488. In the long run, there are two variables that affect DPK, namely the exchange rate and IPI because both have t-statistics> t tables, with the exchange rate variable (3.08813> 2.00488) and IPI variable (4.04276> 2.00488). In contrast to the long term, for the short term of the three variables only the exchange rate variable in lag-1 only affects TPF seen from the t-statistical value> t table (2.04437> 2.00488), while for the other variables the t-statistical value <t-table so that nothing has any effect. After the analysis of the VECM estimation results continues, the final test, the IRF test, is continued.

6.   *Impluse Respons Function* (IRF) Test

Performing a VAR analysis has specific tools that can explain the interactions between variables in one model. IRF analysis will explain the impact of a shock on a variable on other variables. In this test, there are different results, namely lines or tables. The test results at this stage are shown in the following figure:

Chart 4.1 Hasil Uji IRF

Sumber: Diolah Peneliti, 2019
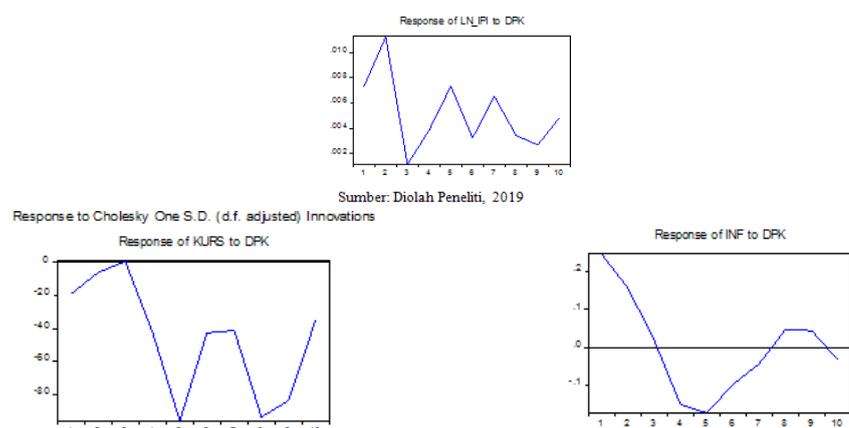
Based on the results of the IRF test above, it can be seen that the exchange rate response to the DPK, where the exchange rate starts to respond to the stock with a negative trend (-) and the response has risen before a very drastic decline occurred in the 5th period, but then increased again before the EEK-8 period saw another dramatic drop. Inflation response to the DPK starts with the reaction of stocks with a positive trend (+) and decreasing more and more until the 5th period has fallen very dramatically to be in a negative trend (-), but after that it is pretty well increased. IPI's response to DPK begins with the reaction of stocks with a positive trend (+) that always experience a rise and fall in certain periods, but are still in a positive trend, but the response is below number 1.

Discussion

1.   Effects of Exchange Rate on Third-Party Funds (DPK)

The exchange rate, also known as the exchange rate, is a price of one country's currency against another country's currency. The exchange rate is an instrument that can be used to measure macroeconomic conditions in one country because the exchange rate itself will show the relative wealth of the economy in one country relative to other countries. The results of the analysis performed show that the long-term and short-term exchange rates affect third-party funds. Can be interpreted when the exchange rate changes whereby an increase in the level of third party funds in Islamic banks will change, when the exchange rate changes will have an impact and also affect the customer's intention to deposit their money in Islamic banks and will also have an impact on the distribution of existing financing at Islamic banks, as financing will generally adjust to the prevailing exchange rate.

The relationship between exchange rates and third-party funds, both long and short term, has an impact, if analyzed more deeply when the exchange rate rises, the production level of goods and services becomes more expensive than usual, especially for production whose payment flow uses the exchange rate, the high selling price will result in a demand for goods and services will decrease, when a decrease in production occurs, actors will have to lower the level of production, which means that people who become actors will also experience a decrease in income and

ensure that funds invested or deposited in Islamic banks will be reduced so that banks will have a difficult time raising funds from third parties.

The results of this study support previous research conducted by (Saekhu, 2017) in which the exchange rate has a relationship with third party funds. In Islam itself, the exchange rate is allowed as long as it complies with existing provisions in accordance with Islamic principles, to avoid gharar. At this time, there are also many production actors whose commodities or production activities are related to the exchange rate, as Muslims also need to understand the exchange rate, especially for business actors, as that will help in production activities and production results will also influence the development of Islamic banking . in terms of third party funds and on the country's economic growth.

2. Effects of Inflation on Third-Party Funds (DPK)

Inflation is a situation that arises when there is an excessive demand for goods in economic activity. Another definition says that inflation tends to raise prices in general and continuously. The results of this study show that both long- and short-term inflation is not related to third-party funds in Islamic banks, so rising or falling inflation rates do not disrupt the value of third-party funds. The results of this study cannot be used to answer hypotheses that have been made. There is no connection between inflation and third-party funds at Islamic banks because Islamic banks use a profit-sharing system whereby Islamic banks are not based on the BI rate, so that rising or falling inflation has no effect.

Unlike previous research conducted by (Sahliyah, 2014), (Saekhu, 2017) stating that inflation is positively related to third party funds, research (Abduh, Omar & Duasa, 2011) found that inflation has a negative effect on third party funds . There is no prior research to support this research. The inflation rate in this investigation period does not seem to have an impact because it has a low inflation rate, Islamic banks will also not be affected by inflation because customers are more confident about placing their money so that they are safe from inflation.

3. Effects of IPI on Third-Party Funds (DPK)

Industrial Production Index (IPI) is one of the variables in the

macroeconomic category. IPI can also be categorized as an indicator of real income in a country. Based on the results of the analysis performed, the IPI variable has a long-term relationship with third-party funds, in the long run this IPI affects third-party funds, which means that when the IPI value increases, the income of party funds also rises. This result shows that as the IPI value increases, the state of the Indonesian economy also improves and is stable, so that the IPI value obtained from the factors of production in industrial activities, goods and services products will increase, leading to Indonesia's national income will also increase in the long run and the increase in national income will impact per capita income, which will also affect customers' savings intent, increasing the amount of third party funds in Islamic banks. This long-term relationship can continue when the government and the public are aware of the importance of conducting production activities and keeping the IPI value stable for the country's economy is also always stable. The results of this analysis also correspond to the hypothesis made where the IPI variable affects third party funds.

In contrast to long-term results, the short-term results of this variable have no relationship with third-party funds. This is because there are other variables in the short term that are more dominant in influencing customers' savings interests, so they cannot enter into a relationship with third party funds in the short term. IPI as a production index that exists in a country, its value can really be seen as the long-term benefits, so it's hard to see the short-term effect.

The relationship between IPI variables and third party funds also supports previous research conducted by (Sahliyah, 2014), where IPI influences third party funds from the results of its research. When economic growth increases, it will trigger and support the development of Islamic banking, as in good economic and income conditions it will prompt the public to safeguard many funds from Islamic banks. The results of this variable are also in line with Putong's view in (Subagio, 2005) that when the economy is stable in one country, government consumption will also become stable, so that the level of public savings will also be stable.

The public entrusts their money to Islamic banks and becomes savings because it is a means of investing in the future. Funds deposited with Islamic banks can also be used by banks to finance, especially in financing the real sector, which also improves

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economic turnaround. This investment activity, also in Islam, is highly recommended as no one knows how the future conditions for a Muslim to put his money into the real sector will be better than the funds alone, eventually the funds will eventually be consumed by zakat , and when the funds are not used or played can be a hoard of what activity is forbidden in Islam, so when a Muslim has money, it must be used productively to promote economic growth for himself and for the economy of his country.

Conclusions and Recommendations

Conclusions

Banking is one of the financial institutions in a country that functions to maintain money circulation and stability, banking itself affects the economic conditions in a country. The development of banks, especially Islamic banks in Indonesia, can be seen in the number of assets and the number of existing banks, from year to year the number of Islamic banking assets has increased and the number of banks has also increased, as well as conventional Islamic banks are susceptible to macroeconomic factors. The growth and development of Islamic banks is evidenced by the value of existing third-party funds, as a result of which customers increasingly trust Islamic banks. This study examines the relationship between long- and short-term macroeconomic variables on third-party funds in Islamic banks.

Based on the results of the analysis performed, the results obtained have different results for the three variables used, namely exchange rate, inflation and IPI. The exchange rate variable itself results in a relationship with third party funds, both long and short term, while the IPI variable has a long term relationship with third party funds only. Unlike the two previous variables, the inflation variable has no long or short term relationship. From these results it can be deduced which variables affect third party funds, in fact, there are other variables that affect the level of value of third party funds. The results of this study are expected to contribute to the effect of both long and short term macroeconomic variables on the interest of customers in depositing money with Islamic banks to be used as third party funds with Islamic banks, so that Islamic banks can continue to increase their third party funds.

Recommendations

As for some suggestions based on the results of this study:

1. The government, as a country's ruler, can adopt policies and protect the economy, particularly in the areas of exchange rates, inflation and IPI, so that it does not affect the performance of Islamic banks, as this will also affect on the distribution of financing.

2. Islamic banks as intermediaries between capital owners and customers must properly channel third party funds so that circulation, especially in the real sector, can continue.

3. The following researcher may focus more on conducting research in the financial sector by using other variables and other analytical tools to increase financial literacy.

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