ANALYSIS THE IMPACT OF SELECTED MACROECONOMIC VARIABLES TOWARDS THE RESILIENCE OF ISLAMIC BANKIN IN INDONESIA PERIOD 2010 - 2017

By
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ABSTRACT

Background of study - The interconnectedness and interdependences of global economy have resulted the heightened of global financial market turbulence. Consequently, shocks which are originated from one economy, are easily transmitted into entire economy.

Significance of study - The economic disturbances become unpredictable and worsen the resilience of Islamic banking in Indonesia. Therefore, maintaining the resilience is important by analyzing sources of shocks leading to Islamic banking's vulnerability.

Purpose of study – The study aims at analysing sources of shocks by selecting some macroeconomic indicators as leading factors and constructing proxy for resilence measure.

Data and Methodology – The study utilizes time series data in quartaly basis spanning from 2010Q1 to 2017Q4. The dependent variable in this research is the resilience index of Islamic banking. The resilience of Islamic banking is formed through 3 individual indexes of banking variables including, Capital Adequacy Ratio (CAR), Return on Assets (ROA), and Third Party Funds (DPK). Meanwhile, the independent variable are selected macroeconomic variables, including GDP, Inflation rate, and Exchange Rate.

Findings - The findings show that GDP and inflation rate have positive and significant impact towards the resilience of Islamic banking. Meanwhile, exchange rate has negative and significant impact towards the resilience of Islamic banking.

Conclusion and Suggeston – Generally, the resilience of Islamic banking in Indonesia is fluctuated, given that dynamic and unabsorbed shocks transmitted into Islamic banking system from macroeconomic indicators. Finally, the study suggests that monetary and government authorities should regularly monitor the GDP growth, inflation and nominal exchange rate as important indicators affecting Islamic banking operations.

Key Word*:* Resilience of Islamic banking, Gross Domestic Product, Inflation rate, Nominal Exchange Rate, and Indonesia

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INTRODUCTION

It has been more than twenty years after Asian financial crisis (AFC) and nine years after Global financial crisis (GFC). The global and national economy has been trying to recover from the crisis damage. A new chapter of new normal global economy has been a witness of the growth of national economy. New Normal is a term in business and economics that refers to financial condition following the financial crisis of 2007-2008 and the aftermath of the 2008-2012 global recessions. This new normal occurs after one cycle of business cycle (expansion, peak, recession, through, and recovery phase).

The new phase of a new normal with the interconnectedness and interdependences of global economy has resulted the heightening global financial market dynamic where the high potential risks are exist is now become well-known problem. The volatility, uncertainty, complexity, and ambiguity (VUCA) in the global economy has become the growing acronym in the economy world (Bank Indonesia, 2017). Under VUCA, the economic disturbances become unpredictable and worsen the vulnerability of Islamic banking in Indonesia. Thus, the worsened vulnerability of Islamic banking that is resulted from the economic disturbance or economic shocks can jeopardize the stability of entire banking system and even the stability of financial system, the economic fluctuation which can disturb the resilience of Islamic banking should be the focus of policy maker and government. Therefore, maintaining the resilience of the banking system would reduce the possibility of a crisis occurring and also preserving the financial system stability.

The combination of exogenous shocks and the vulnerability of Islamic banking will trigger the imbalances on various indicators in Islamic banking and causes the problem for the resilience of Islamic banking. Thus, this Study selects several macroeconomic variables that are correlated to the resilience of Islamic banking and also the variables from the internal of Islamic banking to determine how the selected macroeconomic variables influence the resilience of Islamic banking.

METHODOLOGY

To complete this study and obtain the result, this study used Microsoft excel as the auxiliary tool to construct the vulnerability index as the dependent variable and the single index of each selected macroeconomic variable as the independent variable. Multiple Linear Regression Ordinary Least Square (OLS) as statistical approach to identify the influence of the independent variable (the selected macroeconomic variables) towards the dependent variable (resilience index of Islamic banking).

1. Indexation

Indexation by standardization method is used to develop or construct the single index and composite index. The resilience index (Composite Index) is constructed from 3 index internal variable of Islamic banking, Return on Assets (ROA), Capital Adequacy Ratio (CAR), and Third Party Fund (DPK). This resilience index is set as the dependent variable, while the independent variables are the single index of each macroeconomic variable (GDP, Inflation rate, and nominal exchange rate).

The composite index is an index that contains more than one single index of selected Item. To obtain the composite index, the single index is needed to obtain

(Organization for Economic Co-Operation and Development, 2008). Here is the formula for the single index:

$$SI_t = \frac{X_t^j - \bar{X}}{\sigma}$$

Where:

SI_t : Single Index at period t

X_t^j : Variable (Quarterly)

$\bar{X}$: Average of Variable during the research period

σ : Standard Deviation per variable during research period

Then, the composite index can be constructed by added the entire Single index (SI_t) into composite index.

(0,3 x SI ROA) + (0,3 x SI CAR) + (0,3 x SI DPK) = Resilience Index

In constructing the composite index, every single index is given the same weight because all the selected variables has the same influence and each variable is important. According to the "Handbook on Constructing Composite Index" by Organization for Economic Co-operation and Development (2008) about constructing the composite index, most composite indicators rely on equal weighting (EW), all variables are given the same weight. This essentially implies that all variable are worth the same in the composite. Then combining the each index with the threshold in one graph aims to see easily the index whether the index is in normal level or beyond the set 3 thresholds (1,3, 1,7, and 2). The Threshold 1,3 represents the alert threshold, threshold 1,7 represents the wary threshold, and the threshold 2 represents the crisis threshold. The smallest the

value of index is the index below the set threshold then it is can be said as normal level. These 3 selected thresholds refer to the threshold used by Bank Indonesia.

2. Multiple Linear Regression Method

The purpose of multiple linear regression method that used in this research is to identify the influence of the independent variable (the selected macroeconomic variables) towards the dependent variable (resilience index). Every value of independent variable is associated with the value of the dependent variable. The multiple linear regression is one the regression analysis in data analysis which attempt to model the relationship between two or more explanatory variables and a response variable by fitting a linear equation to observe data. This study uses this following econometric model:

$$RI_t = a + \beta_1 SIGDP_t + \beta_2 SIER_t + \beta_3 SIINF_t + e$$

Where:

Y	= Resilience Index of Islamic Banking
a	= Constanta
$\beta_1 - \beta_3$	= Regression Coefficient of Each Variable
SIGDP	= Single index of Gross Domestic Product
SIER	= Single Index of Exchange Rate
SIINF	= Single Index of Inflation Rate

The linear regression model can be called a good model of it meets the classical assumption (Normality, Heteroskedasticity, Multicollinearity, Autocorrelation test) and statistic test (T-Test, F-Test, and R-Squared) requisite.

RESEARCH FRAMEWORK

The unpredicted world macroeconomic environment and also the high level of vulnerability are the real challenges for the Islamic banks performance, stability, and resilience. The internal variables of Islamic bank that can indicate the level of resilience are Return on Assets (ROA), Capital Adequacy Ratio (CAR) and Third Party Funds (DPK). ROA indicates the profitability of Islamic banks, CAR relates to a bank's capital. It is expressed as a percentage of a bank's risk weighted credit exposure, while DPK correlates to liquidity and main source of operation. The normal resilience level of Islamic banking can be seen from those previous variables mentioned. While, the external shocks that can trigger and worsen the vulnerability and decrease the resilience level of Islamic banking can be indicated from the external variables are gross domestic product, Inflation rate, and Nominal Exchange rate. Therefore, the macroeconomic condition along with the resilience of Islamic banking is urgent to be monitored.

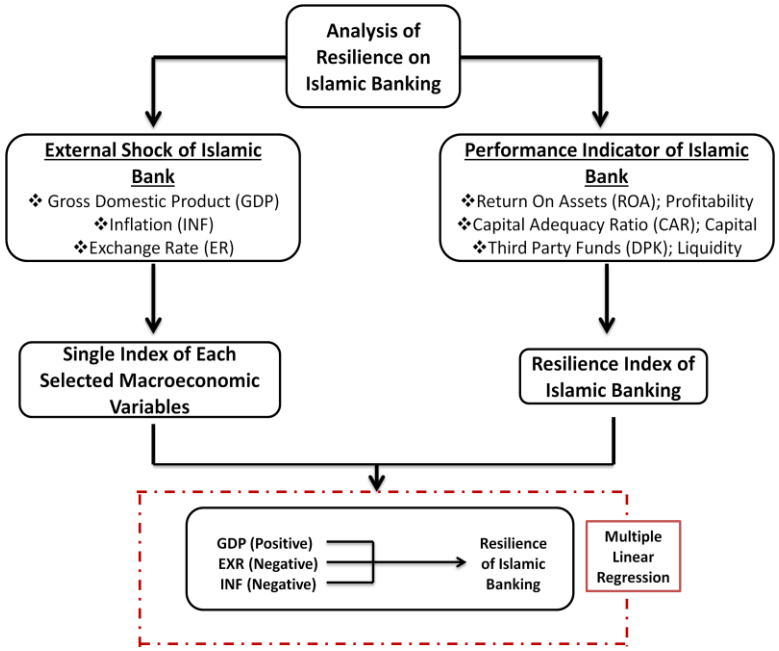


FIGURE 1

Research Framework

HYPOTHESIS

H1 : gross domestic product (GDP) is positive and significant effect towards the resilience of Islamic banking.

H2 : Exchange Rate (ER) is negative and significant effect towards the resilience of Islamic banking.

H3 : Inflation Rate (INF) is negative and significant effect towards the resilience of Islamic banking.

Objectives of the Study

Based on the description of the background and the formulation of the problems, the objectives of this study are:

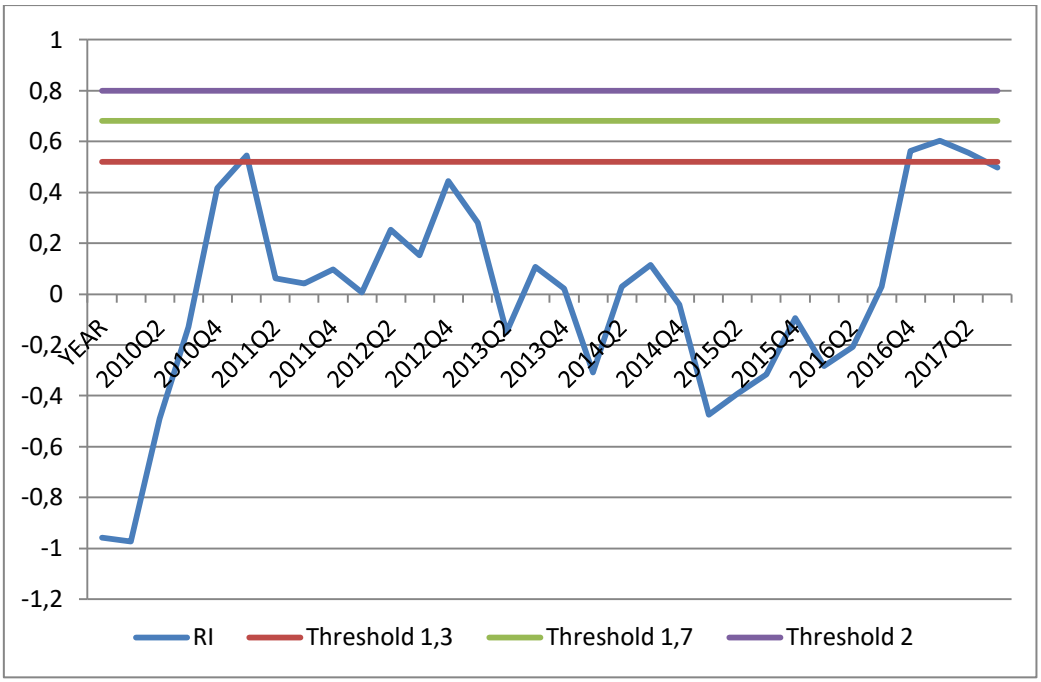
1. To determine the effect of gross domestic product affect on the resilience of Islamic banking.
2. To determine the effect of nominal exchange rate affect on the resilience of Islamic banking.
3. To determine the effect of inflation rate affect on the resilience of Islamic banking.

RESULT AND DISCUSSION

1. Resilience of Islamic banking Index

The condition of Islamic banking resilience can be seen from figure 4.4 below, the resilience of Islamic banking that is figured by the index shows that the development of Islamic banking year over year (yoy) has the good level of resilience. During the

researched period, the index of resilience is moving below the 3 set stipulate thresholds, while in the end of 2016 4th quarter and the beginning of 2017 in the 1st quarter shows its movement in the area of 1,5 threshold and back to normal area.



Source: *Laporan Perbankan Syariah* (data processed Ms. Excel)

FIGURE 2

Resilience index of Islamic Banking Period 1st Quarter 2010 – 4th Quarter 2017

In term of profitability, during the researched period 2010 to 2015, the percentage of return on aseets (ROA) of Islamic banking respectively by 1,67%, 1,79%, 2,14%, 2%, 0,41%, 0,49%, 0,66%, 0,96%. The growth of ROA of Islamic banking is still considered competitive by Bank Indonesia with the market share year over year (yoy) by 3,24%, 3,98%, 4,58%, 4,89%, 4,95%, 4,87%, 5,3%, 5,4%. Meanwhile, the third party funds (DPK) keeps increasing from 2010 to 2014 respectively by 60.284, 90.176, 124.023, 165.421, 193.901 IDR millions. It decreases in 2015 to 170,234 IDR millions, but increasing in the next year 2016 to 184,355 IDR millions and 223.179 IDR million in 2017.

In term of liquidity, the percentage of CAR from Islamic banking form 2010 to 2017 respectively in 16,25%, 16,63%, 14,13%, 15,35%, 14,42%, 15.74%, 15,02%, 15,19% (Otoritas Jasa Keuangan, 2016). The fluctuation of CAR is based on the percentage of financing that is conducted by Islamic banking to earn the profit. In the end of 2017, CAR of Islamic banking increases to 16,78% (Bank Indonesia , 2017). The Islamic banking still has enough percentage of CAR to maintain and stabilize the intermediary function under the tolerant level of Bank Indonesia at 8% (Bank Indonesia, 2010).

With the condition where third party fund (DPK) keeps increasing year over year, and the percentage of capital adequacy ratio (CAR) is adequate to stimulate the channeling funds activity from surplus to deficit party, and also the competitive percentage of return on assets (ROA) in Islamic banking indicates the resilience of Islamic banking during the researched period is able to be maintained.

2. Multiple Linear Regression

A. Classical Assumption

Classical assumption test is used to determine whether there is interfere in normality, multicallinearity, heteroskedasticity, and autocorrelation. Then, the regression model can be said to be a good model of it meets the classical assumption.

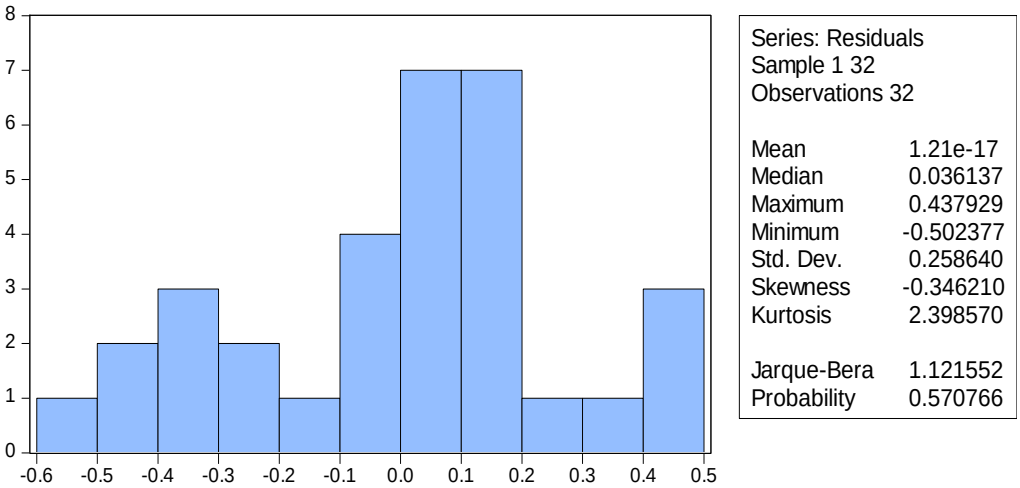
a. Normality

In this study, the normality test is conducted by looking at the histogram of the residual. The residual will be said as normal or not normal can be seen from Jarque-Bera test. The null hypothesis (Ho) states that the residual has a normal distribution.

While, the alternative Hypothesis (Ha) states that the residual has not normal distribution.

Ho is accepted if probability of Jerque-Bera > 0.05

Ha is accepted if probability of Jerque-Bera < 0.05



Source: Data Processed (Eviews 9)

FIGURE 3
Normality Test

According to the figure 4.10, the value of Jarque-Bera is 1.1215522 with the probability level 0.570766. It is higher than 0.05 or 5%. It means the null hypothesis is accepted. Null hypothesis (Ho) states that the residual has a normal distribution.

b. Heteroskedasticity

Heteroskedasticity test is used to test whether the regression model occurred similarity variance of residuals of the observations to other observations. If the variance of the residuals of the observations to other observations is constant, then it is called homokedasticity. If the variance is not constant, it is called heteroscedasticity. A good regression model is homokedasticity or there is no heteroskedasticity (Gujarati, 2007). The results of heteroskedasticity test are:

TABLE 1

Heteroskedasticity Test Result

Heteroskedasticity Test: White			
F Statistic	1.149082	Prob F (9.22)	0.3725
Obs*R Squared	10.23246	Prob Chi Square(9)	0.3320
Scaled Explained SS	5.478359	Prob Chi Square(9)	0.7908

Source: Data Processed (Eviews 9)

Based on the heteroskedasticity test by using White specification, The white test regresses the squared residual on the cross product of the original regressors and a constant, it shows the value of Obs*R Squared is 10.23246 with the Prob. Chi-Square is 0.3320 greater than alpha 5% (>0.05). So, the result is no heteroskedasticity.

c. Autocorrelation Test

Detecting the presence of Autocorrelation is very important in multiple regression when a researcher has applied ordinary least square over an estimator to get the competent estimator. This Study used Breusch-Ggodfrey Serial Correlation LM Test by comparing the probability value Obs * R Squared with α = 5% (0, 05). The result of the Breusch-Ggodfrey Serial Correlation LM Test for autocorrelation as follows:

TABLE 2

Autocorrelation Test Result

Breusch-Godfrey Serial Correlation LM Test			
F Statistic	1.461305	Prob. F (2,26)	0.2504
Obs*R Squared	3.233578	Prob. Chi Square (2)	0.1985

Source: Data Processed (Eviews 9)

Based on the chart, the value of Obs*R-squared is 3.233578 and its profitability is 0.1985 more than α=5% (0.05). So, it can be ascertained that there is no autocorrelation in the regression model.

d. Multicollinearity Test

This study uses variance inflation factors to test the multicollinearity by looking at the centered VIF. The centered of each variable should not more than 10 or it should less than 10 to be said there is no multicollinearity in the data regression. The result from multicolinearity test using variance inflation factors as follow:

TABLE 3
Variance Inflation Factors

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.002701	1.000000	NA
GDP	0.017090	6.130605	6.130605
ER	0.016416	5.889026	5.889026
INF	1.003286	1.178692	1.178692

Source: Data Processed (Eviews 9)

From the result of the variance inflation factors, the result of centered VIF of each variable is not more than 10 then it can be said that there is no multicollinearity in the regression model.

B. Statistic Test

TABLE 4
Statistic Test Result

Test		Requisite	Result
Statistic Test	A. T-Test	Prob. T-Statistic < 0,05 or 5%	a. GDP = 0,0000 (probability levels of variable)
			b. ER = 0,0000 (probability levels of variable)
			c. INF= 0,03389 (probability levels of variable)
	B. F-Test	Prob. F-Test < 0,05 or 5%	0,000017
	C. R^2		R-Squared = 0,582200

a. T-Test

The null hypothesis (Ho) states that gross domestic product, exchange rate, inflation rate has significant effect towards the resilience of Islamic banking. The alternative hypothesis (Ha) states that gross domestic product, exchange rate, inflation rate does not have significant effect towards the resilience of Islamic banking.

Ho is accepted if probability levels of variable < 0.05

Ha is accepted if probability levels of variable > 0.05

According to the result of regression estimation table, the probability level of variable GDP, Inflation rate, and exchange rate are less than 0,05 > 0.0000. So, it can be concluded that the null hypothesis (Ho) is accepted and the alternative hypothesis (Ha) is rejected.

b. F-Test

The statistic of F-test is basically to determine the influence of independent variables on the dependent variable simultaneously.

The null hypothesis (Ho) states all the independent variables simultaneously affect the resilience of Islamic banking.

The alternative hypothesis (Ha) states all the independent variables simultaneously affect the resilience of Islamic banking.

According to the regression result shows the level of probability F-statistic is 0.000017, which is smaller than 0,05. It means, all the independent variables; gross domestic product (GDP), exchange rate (ER), and inflation rate (INF) simultaneously affect the resilience of Islamic banking in Indonesia.

c. Coefficient Determination (R^2)

Based on the result of regression, the R squared value is 0.582200. It means that the value of all independent variables used can explain about 58% toward the dependent variables, while the 42% is explained by the other factors that are not included in the regression model such as from the political issues, global financial system and global macroeconomic condition.

C. Multiple Liner Regression Result

In this Study multiple linear regression analysis is used. The model of regression estimation for this study is :

$$RI_t = a + \beta_1 GDP_t + \beta_2 ER_t + \beta_3 INF_t + e$$

Based on the regression calculation using Eviews 9 shows the correlation between dependent variable and independent variables with the coefficient.

$$RI_t = -5{,}66E\text{-}16 + 0{,}773634\, SIGDP_t - 0{,}676592\, SIER_t + 0{,}118573\, SIINF_t + e$$

TABLE 5

The Result of Regression Estimation

Variable	Regression		
	Coefficient	T-Test	Prob.
Constanta	-5.66E-16	-1.18E-14	1.0000
SIGDP	0.773634	6.204313	0.0000
SIER	-0.676592	-5.587133	0.0000
SIINF	0.118573	2.166860	0.0389
R-Squared		0.582200	
F-Statistic		13.00591	
Prob. F-Stat		0.000017	

Dependent Variable: Resilience Index of Islamic Banking

Source: Secondary Data Processed (eviews 9)

Based on the regression result, gross domestic product (GDP) and Inflation rate (INF) have positive and significant correlation towards the resilience of Islamic banking. Meanwhile, Exchange rate (ER) has negative and significant correlation towards the resilience of Islamic banking.

DISCUSSION

The finding from the regression using multiple linear regression aims to determinant the correlation and influence between dependent resilience of Islamic banking index with all independent variables; gross domestic product (GDP), exchange rate (ER), and inflation rate (INF). All the selected macroeconomic variables as the independent variables that influence on the resilience index of Islamic banking will be discussed one by one.

TABLE 6

The Accumulation of Independent Variable Influence on Dependent Variables

Variables	Coefficient	Probability
Constanta	-5.66E-16	1.0000
GDP	0.773634	0.0000
ER	-0.676592	0.0000
INF	0.118573	0.0389

Source: Data Processed (Eviews 9)

1. The Influence of Gross Domestic Product on Resilience of Islamic Banking.

The coefficient value of gross domestic product is 0.773634 which means that if there is an increase on global gross domestic product about 1 unit, the resilience index of Islamic banking will increase about 0.773634 unit, with the assumption that other variables are constant or ceteris paribus. The result is significant because the probability value is less than 5%.

The regression result show there is positive and significant correlation between GDP and resilience index of Islamic banking. It is because GDP is the macroeconomic factor that indicates the economic growth. The increase of GDP can affect the intermediary function of Islamic banking, whether the right hand side function or left hand side function. The right hand side is the function of Islamic banking to collect the funds and saving from people deposit and other sources. Meanwhile, the left hand side is the function of Islamic banking to channel the funds to earn the profit through financing, funding, trading and credit channeling.

TABLE 7

The Mico-Banking Variable Transmission Due to GDP changes

Macroeconomic Variable Changes	Micro-banking variable transmission	The resilience of Islamic banking
The increasing of GDP	Increases saving → Increases DPK → increases capital (CAR) → increases ROA	Increase the resilience of Islamic banking in Indonesia

2. The Influence of Exchange Rate on Resilience of Islamic Banking.

The coefficient value of exchange rate is -0.676592 which means that if there is an increase on exchange rate (depreciation against U.S dollar) about 1 unit, the resilience of Islamic banking will decrease by 0.568104 unit, with the assumption that other variables are constant or ceteris paribus. The result is significant because the probability value is less than 5%.

The negative correlation between exchange rate variable and the resilience index of Islamic banking in Indonesia gives the explanation that exchange rate variable has negative effects towards the resilience of Islamic banking. An increasing of exchange rate or depreciation of Rupiah towards US Dollar will decrease the level of resilience of Islamic banking in Indonesia, vice versa.

TABLE 8

The Mico-Banking Variable Transmission Due to Nominal Exchange Rate Changes

Macroeconomic Variable Changes	Micro-banking variable transmission	The resilience of Islamic banking
The increasing of nominal exchange rate (Depreciated)	Decrease purchasing power → Decreases DPK → decreases capital (CAR) moreover . (Short term credit funds channeled to long term credit)→ decreasing ROA	Decrease the resilience of Islamic banking in Indonesia

3. The Influence of Inflation Rate on Resilience of Islamic Banking.

The coefficient value of inflation rate is 0.118573 which means that if there is an increase on inflation about 1 unit, will increase resilience of Islamic banking about 0.118573 unit, with the assumption that other variables are constant. The coefficient value of inflation rate has positive and significant less than 0,05 or 5% > 0.0389 influence on resilience of Islamic banking. The result is not appropriate with the null hypothesis (Ho) that states inflation rate is negative and significant effect towards the resilience of Islamic banking. Then, the alternative hypothesis (Ha) is accepted. It is because the result shows inflation is positive and significant effect towards the resilience of Islamic banking.

Based on the regression result, the inflation rate has positive and significant influence on the resilience of Islamic banking. As long as the type of inflation is demand pull inflation which is promote the rise in good and service productivity. The

demand pull inflation is also good for the saving, where people have high demand, high consumption and saving caused by the increasing of income. Demand-pull inflation occurs when job opportunities are high, it creates high levels of income and expenditure raises that exceed the economic capacity of issuing goods and services. Excessive spending will cause inflation.

TABLE 9

The Mico-Banking Variable Transmission Due to Inflation Rate changes

Macroeconomic Variable Changes	Micro-banking variable transmission	The resilience of Islamic banking
The increasing of inflation rate	Demand pull inflation → high level of income and expenditure → increases saving → Increases saving→Increases DPK → increases capital (CAR) → increases ROA	Increase the resilience of Islamic banking in Indonesia

CONCLUSION AND SUGGESTION

The resilience of Islamic banking in Indonesia is fluctuated, given that dynamic and unabsorbed shocks transmitted into Islamic banking system from macroeconomic indicators. Finally, the study suggests that monetary and government authorities should regularly monitor the GDP growth, inflation and nominal exchange rate as important indicators affecting Islamic banking operations.

REFFERENCES

Al-Qur'an Al Karim (Published in 2009, Juni) Religious Affairs coordinates with PT. Sygma Eamedia Arkanleema.

Agustiano, (2008). "Membangun Equilibrium Sektor Finansial dan Sektor Riil Syari'ah Dalam Pengembangan Ekonomi Islam". *Journal of Islamic Economics*, pp. 8-13.

Ascarya. (2009). "Pelajaran yang Dipetik Dari Krisis Keuangan Berulang: Perspektif Ekonomi Islam. Bank Indonesia, *Buletin Ekonomi Moneter Dan Perbankan* (Vol. 12). Jakarta, Indonesia: Bank Indonesia, pp. 2-9.

Bank Indonesia . (2014, April 29). Laporan Perkembangan Perbankan Syariah . *LPPS 2014* , pp. 35-37.

Bank Indonesia . (2017, April 29). Laporan Perkembangan Perbankan Syariah . *LPPS 2017* , pp. 2-4.

Bank Indonesia . (2017, April 29). Laporan Perkembangan Perbankan Syariah. *LPPS 2017* , pp. 30-38.

Bank Indonesia. (2011). Bank Indonesia Bank Sentral Republik Indonesia . *Sosialisasi Kebanksentralan Kepada Mahasiswa UNIKU* . Cirebon: Bank Indonesia.

Bank Indonesia. (2003, Juni). Kajian Stabilitas Keuangan (KSK). *KSK , 1*, pp. 5-9.

Bank Indonesia. (2011, March 28). Laporan Perekonomian Indonesia. *Laporan Perekonomian Indonesia 2010* , pp. 68-69.

Bank Indonesia. (2014, March 29). Laporan Perekonomian Indonesia. *LPI 2013* , pp. 37-39.

Bank Indonesia. (2015, March 28). Laporan Perekonomian Indonesia. *LPI 2014* , pp. 83-91.

Bank Indonesia. (2016, March 29). Laporan Perekonomian Indonesia. *LPI 2015* , pp. 30-39.

Bank Indonesia. (2018, March 28). Laporan Perekonomian Indonesia. *LPI 2017* , pp. 206-220.

Bank Indonesia. (2011, April). Laporan Perkembangan Perbankan Syariah . *LPPS 2011* , pp. 20-23.

Bank Indonesia. (2012, April 29). Laporan Perkembangan Perbankan Syariah . *LPPS 2012* , pp. 2-3.

Bank Indonesia. (2013, April 29). Laporan Perkembangan Perbankan Syariah . *LPPS 2013* , pp. 2-4.

Bank Indonesia. (2014, Aprl 29). Laporan Perkembangan Perbankan Syariah . *LPPS 2014* , pp. 2-3.

Bank Indonesia. (2015, April 29). Laporan Perkembangan Perbankan Syariah . *LPPS 2015* , pp. 2-4.

Bank Indonesia. (2016, April 29). Laporan Perkembangan Perbankan Syariah . *LPPS 2016* , pp. 45-50.

Bank Indonesia. (2010, April). Laporan Perkembangan Perbankan Syariah. *LPPS 2010* , pp. 10-12.

Bank Indonesia. (2016). *Mengupas Kebijakan Makroprudensial.* Jakarta: Bank Indonesia, Department Kebijakan Makroprudensial, pp. 13-19

Bank Indonesia. (2017). Synergy on The VUCA World: Maintaining The Resilience and The Momentum of The Economic Growth. *International Conference, Bulletin of Monetary, Economics and Banking.* Jakarta: Bank Indonesia, pp. 2-4.

Basuki, A. T., & Yuliadi, I. (2014). *Electronik Data Processing (SPSS 15 dan Eviews).* Yogyakarta: Danisa Media.

Berry, C., Jose, R.-C., & Tony, G. (2015). "Financial System Resilience Index Building a Strong Financial System". *New Economics Foundation*, pp. 10-13.

Blancher, M., Morsy, Otani, Severo, & Valderma, L. (2013). Systemic Risk Monitoring "SysMo" Toolkit. IMF, pp. 7-9.

Briguglio, L. (2009). *Resilience Building in Vulnerable Small States.* University of Malta. pp. 87-89.

Crossen, C., Xuan, L., Andriy, P., & Jing, Z. (2014). *Measuring the Banking System's Resilience*. Moody's Analytics, pp. 5-9.

Desi, M., Swandayani, K., & Rohmawati. (2012). "Pengaruh Inflasi, Suku bunga, Nilai Tukar Valas dan Jumlah Uang Beredar terhadap Profitabilitas Perbankan Syariah di indonesia Tahun 2005-2009". *Jurnal Akrual PPA FE Unesa bekerjasama dengan IAI Jawa Timur III*, pp. 1-5.

Dimitrious, A., & Stephen, G. H. (2007). *Applied Econometrics: A modern Approach Using Eviews and Microfit Revised Edition.* Palgrave Macmillan, pp. 124-128.

Febriana, D., & Prima, N. (2009). *Analisis Pengaruh Inflasi, BI Rate, dan Nilai Tukar Mata Uang Terhadap Profitabilitas Bank Periode 2003-2007.* Yogyakarta: Repasitory UMY, pp. 1-3.

Febrina, D., & Naomi, P. (2009). "Analisis Pengaruh Inflasi, BI Rate, dan Nilai Tukar Mata Uang Terhadap Profitabilitas Bank Periode 2003-2007". *Journal Karisma* , *3* (2).

Fischer, S. (1997, March). "Central Banking: The Challenges Ahead Financial System Soundness". *Financial & Development Journal* .

George, G. K. (2013). Too Big to Fail in Banking: What does it mean? Chicago: *LSE Financial Markets Group Special Paper Series*, pp. 23-26.

Hamidi, M. L. (2012). *The Crisis, Krisis Manalagi Yang Engkau Dustakan?: Krisis Ekonomi Global 2008.* Jakarta: Republika.

Henni, V. G., & Zamir, I. (2007). Framework for Risk Analysis. In I. Zamir, *Risk Analysis for Islamic Banks* (pp. 64-69). Washington, D.C: The World Bank.

Iftaha, N. R. (2017). *Analysis of The Impact of Bank Specific Determinants and Macroeconomic Indicators on Profitability in Islamic Bank Period 2012-2015.* Yogyakarta: UMY.

Indriani, L. (2016). *Analisis Ketahanan Bank Terhadap Krisis Ekonomi Studi Pada Bank Syariah dan Konvensional.* Yogyakarta: Perpustakaan Pusat UGM.

Jarita, D., Dimas, B., & Sumandi. (2016). Building an Early Warning Towards The Resilience of Islamic Banking in Indonesia. *Bulletin of Monetary Economicsn and Banking* , 2.

Kunt, D. A., & Detragiache, E. (1998). The Determinants of Banking Crises in Developing and Developed Countries. *IMF Staff Paper , 45* (1).

Lim, S. S., Loke, J. C., Ong, E. P., & Yeoh, S. C. (2015). *Factors Affecting Performance of Islamic Banks and Conventional Banks: Evidence from Malaysia.* University of Tunku Abdul Rahman.

Makram, N., Ezzeddine, A., & Anis, O. (2015). "The Determinant of Banking Performance in Front of Financial Changes: Case of Trade Banks in Tunisia". *International Journal of Economics and Financial Issues*, pp. 1-3.

Mankiw, N. G. (2006). *Macroeconomics* (6th ed., Vol. 6). (O. Kerry, & J. L. Ye, Eds.) New York: Catherine Woods and Craig Bleyer, Worth Publisher.

Organization for Economic Co-Operation and Development. (2008). *Handbook on Constructing Composite Indicators: Methodology and User Guide.* New Zealand: OECD.

Otoritas Jasa Keuangan. (2016). *Roadmap Pengembangan Keuangan Syariah Indonesia 2017 - 2019.* Jakarta: OJK.

Otoritas Jasa Keuangan. (2017). *Statik Perbankan Syariaih.* Jakarta: OJK.

Pebrianto, E. W. (2013). *Negara Negara yang Alami Hiperinflasi Terburuk Sepanjang Sejarah.* Liputan 6 bisnis, https://www.liputan6.com/bisnishttps://www.liputan6.com/bisnis/read/714905/9-

negara-yang-alami-hiperinflasi-terburuk-sepanjang-sejarah-2, accessed 28th July 2018 11.38 P.M.

Research Federal Researve St. Louis. (2017). *Gross Domestic Product by Expenditure in Constant Prices: Total Gross Domestic Product for Indonesia, Index 2010=100, Quarterly, Seasonally Adjusted.* St. Louis: Bank of St. Louis, https:://fred.stlouisfed.org/tags/series?t=gdp%3Bindonesia%3Bquarterly, 21st July 2018, 04.25 P.M.

Rosanna, R. D. (2007). Pengaruh Inflasi, Nilai Tukar dan Suku Bunga SBI Terhadap Profitabilitas Perbankan Syariah di Indonesia Tahun 2002 - 2006. *Thesis Universitas Islam Indonesia* , pp. 1-2.

Sahara, Y. A. (2013). Analisis Pengaruh Inflasi, Suku Bunga BI, dan Produk Domestic Product Terhadap Return on Asset (ROA) Bank Syariah di Indonesia. *Jurnal Ilmu Manejemen , 1*.

Setiwan, A. (2009). Analisis Pengaruh Faktor Makroekonomi, Pangsa Pasar dan arakteristik Bank terhadap Profitabilitas Bank Syariah. *Journal of Islamic banking , 1*.

Shanty, O. (2008). Deteksi Dini Perbankan Indonesia: Identifikasi Variabel Makro Dengan Metode Logit. *Skripsi , 1*, 1.

Sukirno, S. (2003). *Pengantar Teori Mikro Ekonomi* (Vol. 3). Jakarta: PT. Raja Grafindo Perkasa.

Sumandi. (2017). *Analysis an Early Warning System on The Robustness of Islamic Banking in Indonesia.* Yogyakarta: UMY.

Widarjono, A. (2017). *Ekonometrika: Pengantar dan Aplikasinya Disertai Panduan Eviews* (4th ed.). Yogyakarta: UPP STIM YKPN.

World Bank, (2017), World Bank Data, https://data.worldbank.org/indicator/NY.GDP.MKTP.KD, accessed time 21st June 2018, 03,00 P.M.