

DETERMINANTS OF NON-PERFORMING FINANCING OF MORTGAGE IN ISLAMIC COMMERCIAL BANKS

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Article Info

Article History:

Received : 19 Juli 2020
Accepted : 22 Dec 2020
Published : Dec 2020

Abstract

This study aims to determine the effect of Capital Adequacy Ratio, Return on Assets, BI 7-Day Rate, and Inflation towards Non-Performing Financing Mortgages in Islamic commercial banks in Indonesia. The population of this study is the Islamic commercial banks in the period 2015-2019. The sample used is a saturated sample, which uses all Islamic banks as research samples. This research uses a quantitative approach using time series data. All variables use the percentage of growth and show the results of the level stationary so that the technique used is Ordinary Least Square (OLS) regression analysis which is processed using E-Views 10 software. The results of this study indicate partially the Capital Adequacy Ratio and Return on Assets variables have a negative influence significant to Non-Performing Financing Mortgages. While BI 7-Day Rate and Inflation variables do not influence Non- Performing Financing Mortgages. Nonetheless, Capital Adequacy Ratio, Return on Assets, BI 7-Day Rate, and Inflation simultaneously have a significant effect on the Non-Performing Financing of Mortgages in Islamic commercial banks in Indonesia in the period 2015-2019.

Keywords:

Microeconomics; Macroeconomics;
Non Performing Financing; Home
Ownership Loan

DOI:

<https://doi.org/10.28918/ijibec.v4i2.2725>

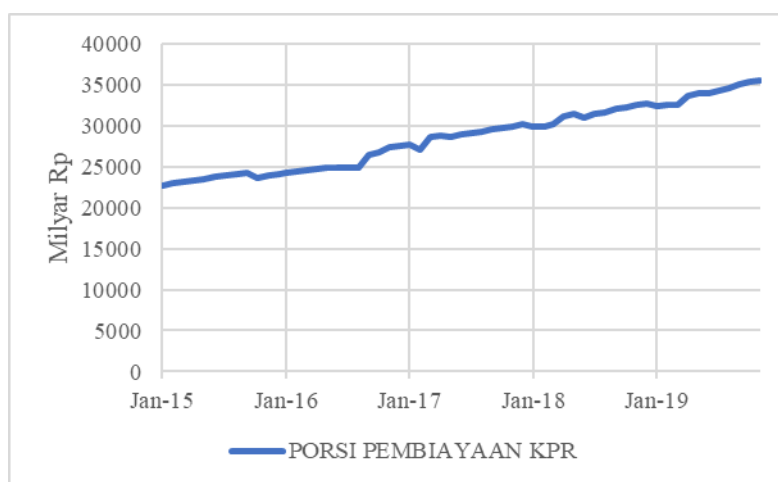
JEL: G 21, G 32



1. Introduction

The level of housing demand is 800,000 units per year while housing needs that can be met until the end of 2017 are around 400,000 units to 500,000 units per year. This makes the price of land and house prices very expensive, in addition to the less available land makes the housing supply gap (backlog) reached 13.5 million units in 2017 (Indonesian Cabinet Secretary, 2017). The government through the Ministry of Public Works and Public Housing (PUPR), continues to provide alternative policies for granting Housing Loans/Mortgages (KPR) through various programs that have been running to help low-income people who cannot buy houses in cash. The Ministry of Public Works and Housing has appointed both the conventional and Islamic banking industry and the non-bank financial industry (IKNB) as KPR distributors (Public Communications Bureau, 2019).

Muamalah in cash or mortgages, which is the banking party needs a clear agreement regarding the scheme that will be used according to Haris (2007), one of which is *iB Murabaha*, *istishna'* and *ijarah* especially *ijarah muntahiyah bittamlik* (IMBT). Besides, there is a new scheme, namely *Musharaka Mutanaqisah* (Financial Service Authority, 2016). Increased Islamic Banking mortgages financing (*iB KPR*) because this product is one of the primary needs that are currently in high demand by the public. According to the 2019 Sharia Banking Statistics (SPS) data, the portion of *KPR* financing distribution in 2015-2019 tends to increase every month following figure 1.



Mortgage Financing Portions

Figure 1. Chart of Distribution of Mortgage Financing Portions (Billion Rp), 2015 – 2019
Source: Sharia Banking Statistics Data 2016-2018, processed.

Risks to mortgages are reflected in the ratio of Non-Performing Financing (NPF) or problem loans. The lower the NPF, the lower the level of problem loans that occur, and the better the condition of the bank. A high NPF value indicates that the Islamic bank has low bank health and must bear a large risk as well. Therefore, Islamic banking must be selective in channeling credit to customers. Non- Performing Financing Mortgage Ratio from 2015-2019 in Figure 1.2 tends to decrease.

Non-Performing Financing Mortgage Ratio in the Islamic commercial bank industry

listed in Figure 1.2 experienced a significant increase of 4.53% in 2016, then in May 2016 decreased by a significant enough so that the value of the NPF KPR ratio of 2.76%. The Non- Performing Financing Mortgage Ratio in Figure 1.2 is fluctuating but tends to decrease. The decline in KPR NPF is a wise step by the central bank (Bank Indonesia) or Islamic banking in addressing and dealing with the occurrence of problematic financing that is maintained well from sharing factors that can influence it.

Some studies show factors that have a significant effect on NPF in Islamic banks, such as Asnaini's research (2017), namely SBIS and CAR variables; Auliani and Syaichu (2016), namely BOPO, CAR, Inflation, and SBIS variables; Firdaus (2015) namely CAR and GDP; Akbar (2016) namely GDP, CAR, and FDR; Yusof, et al (2018) variable interest rates affect sharia housing loans; Haifa and Dedi (2015) namely FDR, profit-loss sharing, inflation, and exchange rates; Lidyah (2016), namely CAR, BI rate, and BOPO. Of several above research, the variables used in this study are the Capital Adequacy Ratio (CAR), Return on Assets (ROA) BI 7-Day Rate or Interest Rate, Inflation. Based on a series of problem descriptions above, this study is interested in researching on "Analysis of Factors Affecting Non-Performing Financing of Housing Loans at Islamic Commercial Banks from 2015 to 2019".

According to Muhammad (2009: 91), types of financing by Islamic banks according to the nature of its use is divided into productive financing and consumer financing. Various types of productive and consumptive financing are facilitated by Islamic banking, one of which is financing for residential homes on credit or called *KPR* iB financing. Bank Indonesia defines a Housing Loan/Mortgages (*KPR*) as a credit facility provided by banks to individual customers who will buy or repair a house. In providing credit financing, Islamic banks are required to conduct a feasibility analysis of the customer. This is intended to find out that the customer is truly trustworthy and can pay his debts. Credit financing assessment criteria that must be considered according to Kasmir (2009: 115) namely 5 C + 1 S which consists of an assessment of the character of the prospective recipient (Character), subjective assessment of the recipient's ability to make payments (Capacity), capital capabilities of the recipient (Capital), collateral owned by the recipient (recipient), economic conditions of the recipient (Condition), and the business or goods provided do not violate sharia following the DSN (Sharia) fatwa.

Dendawijaya (2005) defines NPF as the failure of the debtor to fulfill its obligations to pay the installments (principal) of the agreed principal. Non-Performing Financing (NPF) is the most crucial thing in the Islamic banking system, because of this relating to bank liquidity and profitability. By Muhammad's research (2005: 359), namely problem financing increases, the risk of decreasing profitability is greater. If profitability decreases, the bank's ability to expand financing decreases, and the pace of financing decreases. Asnaini's research (2017) in Mardiani (2013) explains that the increasing CAR ratio of Islamic banks, Islamic Commercial Bank will feel safe to channel financing. The results of previous studies by research Akbar (2016); Auliani and Syaichu (2016); Lidyah (2016).

Asnaini(2017) have significant and negative effects on NPF. Capital Adequacy Ratio is often called the capital ratio authorized capital that must be met by the bank. Under Bank Indonesia regulation No 3/21/PBI/2001 that banks are required to provide a minimum capital of 8% of the weighted assets according to the risk stated in the Capital Adequacy Ratio. Capital Adequacy Ratio (CAR) defined by Dendawijaya (2009) is a ratio

that shows how far all bank assets that contain risks (loans, investments, securities, bills at other banks) are also funded from the bank's capital funds besides obtaining funds from sources outside the bank, such as public funds, loans (debt) and others

The level of profitability of the company can be proxied into the ratio of Return On Assets (ROA). Return on Assets according to Wardoyo and Endang (2009) is a ratio to measure a company's ability to make a profit compared to the company's total assets. Bank Indonesia has set a safe standard of ROA ratios ranging from 0.5% to 1.25%. According to Yuwono (2012), the basis for achieving high profitability is to fulfill obligations to shareholders, to assess the performance leadership, and to increase the attractiveness of investors to invest their capital. Research that shows ROA has significant and negative influences, namely Wardoyo and Endang Research (2009) on NPLs in rural credit banks and Raysa (2014) on NPF in Islamic commercial banks.

Interest rates according to Karl and Fair (2001: 52) are annual interest payments in the form of a percentage of loans obtained and the amount of interest received each year divided by the number of loans. Interest rates in Keynesian theory are positively related to the number of credit offers and vice versa is negatively related to the number of loan requests means that the higher the loan interest rate is reflected the more expensive the cost will reduce credit demand, and vice versa. This phenomenon reflects that the high lending rate is currently one of the considerations of the public in making loans to banks. The benchmark interest rate becomes the reference for Islamic banks in determining the house price margin, the BI 7-Day Rate. Yusof research results (2018), interest rates have a significant and positive effect on Islamic housing loans. Lidyah Research (2016); Hernawati, et al (2018) showed that the BI rate influences NPF.

Inflation is an increase in process general prices of goods continuously (Sunariyah, 2004: 17). This does not mean that the prices of various types of goods go up with the same percentage. Some theories that discuss why inflation occurs, according to Nature (2006), namely: First, the Quantity Theory expressed by the opinion of classics that the price level is determined by the amount of money in circulation. The price will rise if there is the additional money supply. Second, Keynes's Theory sees inflation as the level of demand for needs increases while supply remains, what will happen is that prices will rise. Auliani and Syaichu's (2016); Rahmadani (2016) shows that inflation has a significant effect on KPR NPF on Islamic banks.

2. Research Method

This study uses a quantitative approach because this study presents data in the form of numbers. According to Kurniawan and Zahra (2016: 18), Quantitative research is structured research and quantifies data to be generalized. This approach and method began by gathering data, analyze data, and interpret it. Secondary data used in this study is time-series data, in the form of monthly financial statement data from the Financial Service Authority and BI. The population in this study is the entire Industry of the Indonesian Sharia Commercial Bank in 2015-2019 which distributed mortgages in Indonesia. The sample in this study uses saturated samples. According to Sugyono (2014: 68), the saturation sampling technique is a sampling technique when all members of the population are used as samples. This was due to limited sources of information from several Islamic commercial banks

related to CAR, ROA, BI 7-Day Rate, Inflation, Non-Performing Financing Mortgages so that the chosen is the entire Islamic commercial bank industry. Parametric test in this study uses the Ordinary Least Square (OLS) regression method or the least-squares method using statistical tools E-Views 10 and Microsoft Excel 2016. The main step in conducting data analysis techniques is to first tabulate the research data needed following the sample research, as well as this regression model must meet several classic assumption test requirements.

3. Results and Discussion

Data Stationarity Test (Unit root test)

Based on the results of the stationarity test using the Augmented Dickey-Fuller (ADF) test at the level, the results of the probability of all independent variables are less than $\alpha = 5\%$. It can be concluded that stationary data or data is feasible to be tested using the Ordinary Least Square (OLS) method.

Classical Assumption Testing following:

Normality Test, based on the results of the panel data Multicollinearity test with the help of E-Views 10 application, the results of the Normality test can be seen in the value of the Jarque-Bera Test (J-B Test) which shows a Jarque-Bera value of 0.503738 with a probability value of 0.568500 is greater than $\alpha = 5\%$. It can be concluded if the Prob (Jarque-Bera) value is greater $\alpha = 5\%$. that the data is normally distributed so that it meets the requirements in the regression model.

Multicollinearity Test, based on the results of the panel data Multicollinearity test with the help of the application E-Views 10, the results of testing the VIF value shows all independent variables produce a VIF value < 10 . Based on these results, all independent variables have been free from the classic problem of multicollinearity so that this regression model is worth testing.

Heteroskedasticity Test, based on the results of the panel data Multicollinearity test with E-Views 10 application assistance, Breusch-Pagan-Godfrey Test Result shows the Chi-Square probability of 0.9018, more than $\alpha = 5\%$. It can be concluded that there is no heteroscedasticity problem.

Autocorrelation Test, based on the test results The method used to test the autocorrelation is the Breusch-Godfrey Serial Correlation LM Test in table 4.6 with lag 5 obtained a DW value of 1,931 which is greater than the du limit (1.7266) and smaller than (2.2734). The du value is obtained from the Durbin Watson table with a significance value of 5% with the independent variable (k) being 4 and observation (n) being 59. It can be concluded that there are no autocorrelation symptoms.

CAR growth variable has a significant and negative effect on the growth of KPR NPF. This research is in line with research by Raysa (2014); Akbar (2016); Diansyah (2016); Auliani and Syaichu (2016); Lidyah (2016) Asnaini (2017) which shows the CAR variable has a negative and significant effect on Non- Performing Financing in Islamic banks. This means that the higher the CAR, the bank will be more careful to provide financing, which in turn will reduce the NPF level of Islamic commercial mortgage loans in Indonesia.

According to Auliani and Syaichu (2016), the significant result of this ROA is because every bank has criteria and different requirements in providing funding. There is a clear initial agreement between the customer and the bank (contract) for good faith that

emphasizes the mandate and forms of a business carried out by Islamic banks in overcoming the problem of default. One of the actions is to save non-performing loans by banks such as Rescheduling, Reconditioning, Restructuring, and Execution (Adlan, 2016). The method of execution is the last method such as handing over obligations to the BUPN (State Receivables Agency) and submitting the case to the district court (civil case). One other way banks do to reduce problem loans is by auctioning houses that have failed to pay by a mortgage (KPR) or transferring credit (take-over credit) of the first home buyer to someone else.

ROA growth variable has a significant and negative effect on the growth of KPR NPF. This means that the higher the ROA, the level of mortgage financing problems in a bank decreases. This research is in line with the study of Wardoyo and Endang (2009) which shows ROA has a significant and negative effect on NPL. High profitability obtained from good management, according to Berger DeYoung's (1997) research in Kusuma and A Mulyo's (2016) research which states that bad management practices will have an impact on corporate profits. When managers do not have credit scoring skills-assessing building up to the supervision of the debtor, this mismanagement will increase bad credit to banks. The high profitability indicates that the bank has a good performance that attracts the public to place their funds in the bank. For trust it is this community that banks can raise a lot of funds which will then be distributed, then the ratio of bad loans can then be suppressed. Conversely, if the profits are bad, the bank may raise the interest rate policy for the sake of achieving profit targets that will only increase the possibility of debtors defaulting. There is a tendency to decrease the NPF KPR ratio because this financing is a consumptive activity in the presence of pawning goods or collateral in the form of the house itself, the collateral can be used if the borrower is unable to pay it off.

BI 7-Day Rate growth variable had no significant and negative effect on the growth of KPR NPF. This result is in line with the research of Astuty and Nisa (2018) which shows insignificant results on Islamic mortgage financing. These results indicate that the economic turmoil that makes the interest rate fluctuations or BI 7-Day Rate does not affect the NPF KPR. Covenants on mortgages such as *Murabaha*, *istishna'*, *IMBT*, and *musyarakah mutanaqisah* in their application do not use interest rates in determining the amount of the installment because the beginning of the agreement has been determined the amount of margin and ratio between the bank and the customer. The Islamic banking system in Indonesia in channeling mortgage financing applying Islamic principles that are free of interest and penalties. Also, Sharia mortgages apply a fixed rate, which means that the mortgage installments will not change from the initial installment to the end of repayment and there is no penalty or administrative fees (provision) if the customer makes early repayments.

Inflation growth variable did not have a significant and positive effect on the growth of the NPF KPR, which meant an increase in the inflation rate, so the level of problematic financing in a bank would remain. This research is in line with Asnaini (2017); Syahputra and Achmad (2019); Hernawati, et al (2019). Not significant inflation to the NPF KPR because inflation conditions in the study period tend to be stable a year) and according to the target determined by Bank Indonesia (classified as mild inflation is <10%). Inflation can occur because of people's desire to consume excessively. The customer's decision to make a KPR transaction indicates that the customer feels that he has a responsibility or commitment to

fulfill his obligations in terms of repaying loans to the bank so that even though inflation has increased, problematic financing at Islamic banks has not increased as well.

Asnaini's research (2017) shows no the effect of deep inflation installment payments due to installment payments by customers do not increase if inflation rises but remains as large as the initial contract and also because the initial contract and also changes in the rate of inflation do not dampen the desire of the public to follow the development or reduce consumption, the impact of financing risks can still be controlled. According to Fisher in Akbar (2016) states that rising inflation in the short term will not dampen people's desire to follow the fulfillment of needs, then the impact of credit risk in the short term can still be controlled. According to Bank Indonesia (2013), Islamic banking more resistant to macroeconomic variable shocks. This is evident at the time of the recession and the crisis of Islamic banks are more able to survive than conventional banks. This is evidenced by the high growth of financing in 2008/2009. Besides, rising inflation causes the value of the collateral (the house) will also increase. The higher the value of the collateral can cover if the debtor fails to pay.

The results of the probability value on the Simultaneous Test (Test F) that have been done that is equal to 0.000054 which is smaller than the value of α (0.05). Then it can be concluded that the growth of each variable CAR, ROA, BI 7-Day Rate, and Inflation together influences the growth of Non-Performing Financing Mortgages so that H_0 is rejected. Based on the R-Square value shown by the same table, the value is 0.363812 or 36.38%. This shows that the CAR, ROA, BI 7-Day Rate, and Inflation variables in the regression model can explain the NPF KPR variable in Islamic banks in the 2015-2019 period by 36.38% and the rest is equal to, which means 63.62% is influenced by other variables. Which is not used in this study.

4. Conclusion

Capital Adequacy Ratio or capital adequacy ratio has a significant and negative effect on Non-Performing Financing Mortgages. The CAR variable is the most important factor for banks. The greater the value of CAR, the more careful the banking sector is in giving the financing will make the opportunity for NPF KPR smaller. Return On Assets has no significant and negative influence on Non-Performing Financing Mortgages. ROA variable influences increasing or decreasing mortgage NPF. The high level of profit is obtained because in this financing there are goods pledged or collateral, thus encouraging customers to pay on time which will indirectly affect the profitability of banks. Inflation has a significant effect and positive for Non-Performing Financing KPR. In the short term, if inflation increases will not affect the problematic financing of Islamic banks. Rising inflation will not discourage people from continuing to carry out their obligations. Inflation also makes the value of the guarantee has increased, so it can cover problem financing if the debtor defaults.

The suggestions of this study are as follows, banks must implement a prudent system when channelling capital to customers and further develop professional banking performance from the Islamic banking system so that it can improve bank profitability to minimize the occurrence of Non-Performing Financing Mortgages. For further research, It is expected to be able to take several models and samples of Islamic banks both in Indonesia and in other countries so that they can be used as a comparison and can be known with certainty the occurrence of problem financing. Besides it also

adds factors to both internal and external variables accordingly to the conditions and the economic situation of Indonesia and the World. It is also necessary to consider and examine the dimensions of time and space research scope. We need to consider and examine the dimensions of time and scope of research.

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Appendix

Stationary Test

Null Hypothesis: G_NPF has a unit root
 Exogenous: Constant
 Lag Length: 1 (Automatic - based on SIC, maxlag=10)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-9.671679	0.0000
Test critical values:		
1% level	-3.550396	
5% level	-2.913549	
10% level	-2.594521	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: G_CAR has a unit root
 Exogenous: Constant
 Lag Length: 0 (Automatic - based on SIC, maxlag=10)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-10.13383	0.0000
Test critical values:		
1% level	-3.548208	
5% level	-2.912631	
10% level	-2.594027	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: ROA has a unit root
 Exogenous: Constant
 Lag Length: 0 (Automatic - based on SIC, maxlag=10)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-9.885397	0.0000
Test critical values:		
1% level	-3.548208	
5% level	-2.912631	
10% level	-2.594027	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: G_BI7_DAY has a unit root
 Exogenous: Constant
 Lag Length: 0 (Automatic - based on SIC, maxlag=10)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.982016	0.0001
Test critical values:		
1% level	-3.548208	
5% level	-2.912631	
10% level	-2.594027	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: G_INFLASI has a unit root
 Exogenous: Constant
 Lag Length: 0 (Automatic - based on SIC, maxlag=10)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-6.965870	0.0000
Test critical values:		
1% level	-3.548208	
5% level	-2.912631	
10% level	-2.594027	

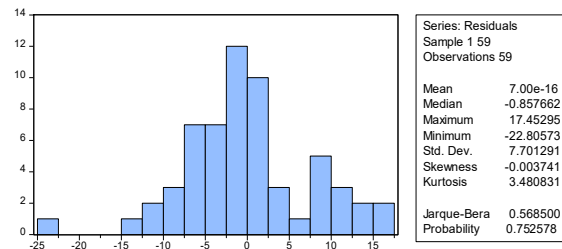
*MacKinnon (1996) one-sided p-values.

Heterokedastisity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey
 Null hypothesis: Homoskedasticity

F-statistic	0.245036	Prob. F(4,54)	0.9114
Obs*R-squared	1.051806	Prob. Chi-Square(4)	0.9018
Scaled explained SS	1.092915	Prob. Chi-Square(4)	0.8954

Normality Test



Multikolinearity Test

Variance Inflation Factors
 Date: 02/16/20 Time: 19:16
 Sample: 1 59
 Included observations: 59

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
G_CAR	0.094205	1.088256	1.065758
G_ROA	0.000380	1.075098	1.039752
G_BI7_DAY	0.074049	1.054575	1.024440
G_INFLASI	0.011810	1.087926	1.071907
C	1.227165	1.136564	NA

Autokorelation Test

Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 3 lags

F-statistic	4.170882	Prob. F(3,53)	0.0100
Obs*R-squared	11.26876	Prob. Chi-Square(3)	0.0104

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Date: 02/14/20 Time: 11:13

Sample: 1 59

Included observations: 59

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CAR	-0.027212	0.280666	-0.096955	0.9231
ROA	0.012798	0.018468	0.692971	0.4914
C	-0.098757	0.987729	-0.099984	0.9207
RESID(-1)	-0.491521	0.139446	-3.524814	0.0009
RESID(-2)	-0.188950	0.151656	-1.245911	0.2183
RESID(-3)	-0.053591	0.138324	-0.387431	0.7000

R-squared	0.190996	Mean dependent var	-3.31E-16
Adjusted R-squared	0.114675	S.D. dependent var	7.816682
S.E. of regression	7.354850	Akaike info criterion	6.924741
Sum squared resid	2866.973	Schwarz criterion	7.136016
Log likelihood	-198.2799	Hannan-Quinn criter.	7.007215
F-statistic	2.502529	Durbin-Watson stat	1.994396
Prob(F-statistic)	0.041627		

Regesion OLS Result

Dependent Variable: G_NPF

Method: Least Squares

Date: 02/16/20 Time: 19:15

Sample: 1 59

Included observations: 59

Variable	Coefficient	Std. Error	t-Statistic	Prob.
G CAR	-0.881640	0.306928	-2.872470	0.0058
G ROA	-0.095536	0.019495	-4.900507	0.0000
G BI7 DAY	-0.131332	0.272120	-0.482624	0.6313
G_INFLASI	0.125897	0.108673	1.158492	0.2518
C	1.779146	1.107775	1.606054	0.1141

R-squared	0.363812	Mean dependent var	0.308814
Adjusted R-squared	0.316687	S.D. dependent var	9.655408
S.E. of regression	7.981429	Akaike info criterion	7.073050
Sum squared resid	3439.973	Schwarz criterion	7.249113
Log likelihood	-203.6550	Hannan-Quinn criter.	7.141778
F-statistic	7.720129	Durbin-Watson stat	2.687802
Prob(F-statistic)	0.000054		