The Determinants of Islamic Banking Capital Structure in Indonesia

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ABSTRACT

The decision about capital structure is an important part of the banking industry because it is related to the interests of many parties such as investors, creditors, and company management. Therefore, this study aims to analyze and explain the factors that influence the capital structure of Islamic banking in Indonesia. Capital structure is measured by the Debt to Equity Ratio (DER). This research examines the determinants and causal relationships among the major determinants of Capital structure, namely the bank's profitability, risk, and Firm size. The population of this study is all Islamic banks registered in Otoritas Jasa Keuangan (OJK), with observation periods starting in 2010 until 2018. The selection of samples in this study is a purposive sampling method. Data analysis and hypothesis testing were carried out by using the Eviews 11. The results of the study showed that all the independent variables had a significant effect on the capital structure simultaneously. But, partially only ROA and Firm size had a significant effect on Capital Structure of Islamic Bank in Indonesia. The results indicate that Islamic bank managers in Indonesia choose the capital structure sourced from internal funds and the larger the company, it is necessary to rearrange capital structure, to obtain the sustainability of the company in the future.

Keywords: Capital Structure, Profitability, Risk, Firm Size, and Islamic Banking.

INTRODUCTION

Capital is the core of the financial industry that supports banks by providing a buffer to absorb unexpected losses from their activities. A common problem in financial accounting is the combination of debt and equity, which is called capital structure. The decision about capital structure is an important part of the banking industry because it is related to the interests of many parties such as investors, creditors, and company management. The capital structure as a strong pillar that provides a competitive advantage for the company (Kumar, Colombage, and Rao 2017). Therefore, it must be budgeted and structured for future operations, let the company

has an optimal debt and capital structure. If the company has a higher debt now, it will be a burden to pay higher interest rates in the future. Various theories regarding capital structure can explain the behavior of capital structure decision making by company management. Major research on capital structure comes from the Modigliani and Miller article which has led to the emergence of various theories of capital structure (Modigilani and Miller 1958). Researchers tend to have different perspectives of capital structure such as agency theory (Jensen and Meckling 1976), trade-off theory (Myers 1984) pecking order theory (Myers and Majluf 1984). Some research that tests the theory such as (Ahmeti and Prenaj 2015), (Al-Kahtani and Al-Eraij 2018), (Chechet and Olayiwola 2014).

Indonesia's population is predominantly Muslim, so the opportunity for Islamic banks to develop is huge. Islamic banking company is one of the companies engaged in the financial sector. Banks as intermediary institutions in the financial sector have an important role in the economy of a country. In micro terms, banks' function is to distribute funds from customers who have excess funds to business actors and individuals who need funds to facilitate business from interested parties. In macro terms, banking companies play a role as a source of funding for economic development and as a means of implementing monetary policy. Understanding the knowledge about capital management by taking into account turnover company conditions is very important to be implemented so that the case of Century bank no longer occurs in other banks.

Obligations relating to capital regulations are the most important factors determining the capital structure. Banks generally hold more capital than the minimum capital ratio required by Bank Indonesia (BI) regulations as a regulator. Minimum capital requirements for commercial banks based on Islamic principles are listed in Bank Indonesia regulations no 7/13 / PBI / 2005 (Bank Sentral Republik Indonesia, 2005). The minimum capital determination of the operating bank is according to the risk profile rating of the bank.

The capital structure is projected by a Debt to Equity Ratio (DER). Capital structure is a comparison between external capital (long-term debt and short-term debt) and internal capital (Retained earnings and ownership). The risk is projected by Financial to Deposit Ratio (FDR). This ratio states how far the bank is able to repay the withdrawal of funds made by depositors by relying on loans provided as a source of liquidity. The profitability ratio used is the ratio of Net Profit Margin (NPM) and Return on Assets (ROA). The net profit margin measures the extent to which a company generates net income at a certain income level. A low-profit margin ratio can show management inefficiency. Return on Assets (ROA) shows how much the company's ability to generate profits by utilizing it. Firm size is measured by the logistic of total assets.

Empirically, previous studies provide some evidence about factors affecting the capital structure of companies in developed and developing countries. But research on Islamic banking is still limited. Various recent studies show that the factors determining the capital adequacy ratio are not only limited to Bank Indonesia regulations, however special variables for banks are important in determining the capital structure. The Islamic banking sector currently plays an important role in the Indonesian economy, therefore banks must choose and adjust the mix of capital strategies to maximize company value and ensure that bank operations are directed to achieve an optimal capital structure. Lack of capital will always be identified as the main cause of business risks. To increase capital, banks must blend the strategic debt and equity for optimal capital structure. Capital structure is measured by leverage, which is obtained from long-term debt/equity or short-term debt/ equity.

Facilities and contracts often make Islamic banks experiencing moral hazard problems, most of which focus on market imperfections and asymmetric information (Abedifar,

Molyneux, and Tarazi 2013). Islamic banks have risk management that is less experienced and more vulnerable to Islamic risk, which can damage investor confidence. The effect of bank risk on bank capital is an empirical question, which we leave to empirical estimates. We take Islamic banking literature and use the ratio of net loans to third party funds. This study aims at determining whether the factors influencing the capital structure of Islamic banking companies. The samples are Islamic-based companies that report their financial report at Bank Indonesia for the period 2010-2018. Previous empirical studies have examined several matters relating to factors that influencing capital structure, namely, by (Aremu et al. 2013), (Fauziah and Iskandar 2015), (Chaklader and Chawla 2016),(Kumar et al. 2017), (Handoo and Sharma 2014), the independent variables used in this study have a relationship with capital structure. Research by (Singh and Bagga 2019), (Chang et al. 2019), (Chang et al. 2019), (Vătavu 2015), (Oino and Ukaegbu 2015) examining influence the capital structure and profitability. (M'ng, Rahman, and Sannacy 2017), uses samples of companies listed on Malaysian, Singapore, and Thai exchanges. This study examines the factors influencing the capital structure that comes from within the company such as profitability, company size, tangible assets, and depreciation ratio to total assets. While the macroeconomic factor used is inflation. Research by (Abimanyu and Wirasedana 2015; Lawi 2016; Listyawati, Oemar, and Supriyanto 2017; Wahdati and Santoso 2019) results of this study are company size, operating leverage and earnings variability effect on the capital structure of the banking industry in Indonesia.

Another study was conducted by Adiputo (2018) which examined the effect of capital structure on all companies listed on the Indonesia Stock Exchange which was 231 from 2010-2013. The result was that the capital structure in a sample company can explain pecking order theory and trade-off theory and larger company sizes have large debt levels. Research on the capital structure of Islamic banking companies is still relatively rare, so it is necessary to do research related to the factors affecting the capital structure of Islamic banking companies.

STUDY OF LITERATURE AND HYPOTHESES
Capital Structure

The signaling theory, Ross developed a model where the capital structure (debt usage) is a signal conveyed by the manager to the market. If the manager is certain that the prospect of the company is good therefore he wants to increase the stock, this must be communicated to the investor (Ross 1977).

Miller and Rock, the choice of the capital structure occur because of the existence of asymmetric information that occurs between managers and investors (Miller and Rock 1985). The greater asymmetry information will lead to the greater risks faced by outside investors. But in reality, managers often have better and more accurate information rather than investors.

Pecking order theory does not provide an optimal capital structure, information asymmetry between managers, shareholders, and investors (Myers and Majluf 1984). This theory suggests a financial hierarchy, banks prioritize retained earnings as the best source of funds. If it is not available, then management is permitted to use debt or issue bonds. Equity is done as a last resort because managers believe that the issuance of equity will be underestimated by the market (Belkhir, Maghyereh, and Awartani 2016) (Belkhir et al., 2016). Islamic banks to have a clearer view of the allocation of financial resources. Islamic law requires that financial resources be invested in socially responsible activities that benefit society in general.

Production sharing and loss contracts (eg. Musyarakah and mudharabah) based on participatory finance. musyarakah makes Islamic banks allowed to control the activities of entrepreneurs, while in mudharabah, Islamic banks encourage entrepreneurs to manage projects because the payment depends on the experience and knowledge of the entrepreneurs.

Therefore, Islamic banks will be less exposed to information asymmetries and losses associated with evaluating and access to investor's personal information. As a result, transparency, the tangibility of assets, and profit/loss sharing, Islamic banks must reduce risk exposure, information asymmetry, and use of debt, which in turn will direct banks to support internal funds as the first choice in funding, followed by improving capital quality (Bitar, Hassan, and Hippler 2018).

According to Brigham and Houston optimal capital structure is a capital structure that will maximize the company's stock price, and this structure generally requires a debt ratio lower than the ratio that maximizes the expected EPS (Brigham and Houston 2011). Determination of capital structure will involve an exchange between risk and return, by using a larger amount of debt will increase the risk borne by the shareholders. However, using more debt, in general, will increase the estimated return on equity.

The higher risk associated with debt, which is greater in number, tends to reduce stock prices, but the estimated higher rate of return due to larger debt will increase the share price. The company will try to find a capital structure that produces a balance between risk and return and it will maximize stock prices. According to Brigham and Houston, four factors influence capital structure decisions (Brigham and Houston 2011), are (1) The business risk or the level of risk inherent in the company's operations is high if the companies do not use debt. It means that the greater the company business risk, the lower the optimal debt ratio; (2) Company tax position. One of the main reasons for using debt because interest is a tax deduction then decreases the cost of effective debt. However, if most of the profits of a company have been protected from taxes by tax protection coming from depreciation, then the interest on debt that has not been repaid, or tax losses brought to the next period will result in a low tax rate. As a result, additional debt will not provide the same advantage compared to companies that have a higher effective tax rate; (3) Financial flexibility or the ability to raise capital with reasonable conditions in poor conditions. A smooth supply of capital will affect the company's operations, which in turn has a very important meaning for long-term success; (4) Conservatism or managerial aggressiveness. Some managers are more aggressive than other managers, so they are more willing to use debt as an effort to increase profits. This factor does not affect the actual optimal capital structure or the capital structure that maximizes value, but this will affect the target capital structure of the company.

The formula for finding debt to equity ratio (DER) can be used as a comparison between total debt and total equity as follows:

$$\text{DER} = \frac{Total\ Liability}{Total\ Equity}$$

Based on the above understandings, it can be concluded that the debt to equity ratio (DER) is the ratio for assessing debt with equity, how much the company borrows funds, and knows the number of funds provided by the creditors with companies owner.

Profitability

According to Brigham and Houston profitability is the net result of a series of policies and decisions. Profitability describes the level of profits obtained by the company in a certain

period (Brigham and Houston 2011). Profitability can be assessed in various ways, one of which is using the ratio of Net Profit Margin (NPM) and Return on Assets (ROA).

Return on Assets (ROA)

According to Bank Indonesia Circular No. 13/24 / DPNP, Return on Assets (ROA) is a comparison between pre-tax earnings and the average total assets in a period. Earnings before tax are profit as recorded in the annualized bank profit and loss for the year. The average of total assets is the total number of assets divided by the number of months/years you want to calculate. ROA is formulated as follows:

$$\text{ROA} = \frac{\text{Earnings before tax}}{\text{Average total assets}}$$

Net Profit Margin (NPM)

According to Ehrhardt and Brigham, Net Profit Margin (NPM) is the ratio between net income and sales (Brigham and Ehrhardt 2009). For Islamic companies, sales can be equated with income, so the formula is as follows:

$$\text{NPM} = \frac{Net\ Income}{Sales}$$

Risk

According to Bank Indonesia Circular No. 13/24/ DPNP risk assessment is carried out on inherent risks and the quality of the application of risk management in bank operational activities. Assessment of inherent risk is an assessment of the risks inherent in the bank's business activities, which has the potential to affect the bank's financial position.

Islamic banks are very transparent in transactions. Islamic law prohibits gharar so asymmetries of information between Islamic banks and stakeholders are not permitted. Maysir or risk-taking is not allowed. The principle for Islamic banks is tangibility and traceability of assets. Financial transactions by Islamic banks (eg. Murabaha, ijarah, salam, and istishna') must be supported by tangible assets. These transactions often involve risks and, consequently, increase the problem of moral hazard. Islamic banks will buy or build these assets and sell or lease them to borrowers to reduce risk.

Risk is measured by the Financial to Deposit Ratio (FDR). At this ratio, it can be seen how far the ability of banks to repay withdrawals of funds made by depositors by relying on loans provided as a source of liquidity. The total credit is a credit to third parties, not banks. Total third party funds are all funds entrusted by the community to banks in the form of demand deposits, savings, time deposits, deposits, and other similar forms. The FDR is formulated as follows:

$$\text{FDR} = \frac{Total\ Credits}{\text{Total third party funds}}$$

Firm Size

Firm size is a scale or value where the company can be classified as small based on total assets, log size, stock value, and so forth. Firm size can be expressed in total assets, sales, and market capitalization, the greater the total assets, sales, and market capitalization, the greater the size of the company. These three variables can be used to determine the size of the company because it can represent the size of the company, for example, the greater the assets, the more capital invested, the more sales, the more money, and the greater market capitalization, the greater the company known in the community. Firm size is formulated as follows:

$$\text{FS} = \text{Ln Total Assets}$$

Hypothesis

The hypothesis that can be concluded from this study is as follows:

H1: There is an influence of Return on Assets (ROA) on capital structure

H2: There is an influence of Net Profit Margin (NPM) on capital structure

H3: There is an influence of Financial to Deposit Ratio (FDR) on capital structure

H4: There is an influence of firm size on capital structure

H5: There is a joint influence of Return on Assets (ROA), Net Profit Margin (NPM), Financial to Deposit Ratio (FDR) and firm size on capital structure

METHODS

This type of research is quantitative descriptive and explanatory descriptive. The data used in this study were a combination of data between companies (cross-section) and time (time series), or also called panel data obtained from financial reports and annual reports published on the official website of Bank Indonesia (www.bi.go.id), Financial Services Authority website (www.ojk.go.id) also obtained from the company's website, as well as from mass media coverage. The object of this research is all Islamic banking companies registered in Otoritas Jasa Keuangan (OJK), using a purposive sampling method with 3 (three) criteria set out in this study, namely, (1) Islamic banking companies that have been registered in Bank Indonesia since 2010 until 2018; (2) Islamic banking companies that have published annual financial reports for three consecutive years, from 2010 to 2018; and (3) The Islamic banking company has information related to various measurement variables, such as Debt To Equity Ratio (DER), Net Profit Margin (NPM), Return on Assets (ROA), Financial to Deposit Ratio (FDR) and Firm Size (FS), and the samples are Bank BCA Syariah, BNI Syariah, BRI Syariah, Mandiri Syariah, and Mega Syariah. Those data analyzed using Data panel Regression through E-views version 11.

RESULT AND ANALYSIS

Before the model was analyzed with data panel regression, the model was tested with the classical assumption test. First, Normality test which is detected through histogram graphs (Appendix 2). Histogram graphs are like bells, not leaning left or right, so the data is normally distributed. Residual normality test results above are jarque value of 0,755633 with a p-value of 0,685346 where > 0.05 so that means the residues a normally distributed. Second, Multicollinearity test, According to Ghozali if the matrix between the independent variables does not have a value > 0.9 (appendix 3), then there is no multicollinearity in the model (Ghozali 2013). Third, the autocorrelation test, the LM test have values > 0.05 (appendix 3), so it can be concluded that there were no symptoms of autocorrelation in the research model. Last, the Heteroscedasticity test can also be seen from appendix 4, The probability values are> 0.05 which means there is no heteroscedasticity in the research model.

The next step is the hypothesis test aims to test 4 (four) independent variables whether influences the dependent variable both partially and simultaneously. The results of the partial effect test (t-Test) are shown in the following table 1. The t-test is used to find out whether the independent variable partially influences the dependent variable. From the table above the linear regression equation of this study is as follows:

$$Y_{it} = -8.988631 + 123.49\ X1_{it} - 8.66139\ X2_{it} - 0.433991X3_{it} + 0.368613\ X4_{it} + \varepsilon_{it}$$

Table 1
Partial Influence Test Results (t-Test)

```
Dependent Variable: Y
Method: Panel Least Squares
Date: 03/20/20   Time: 22:04
Sample: 2010 2018
Periods included: 9
Cross-sections included: 5
Total panel (balanced) observations: 45
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Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-8.988631	6.018300	-1.493550	0.1440
X1	123.4900	45.23453	2.729994	0.0097
X2	-8.661390	5.335270	-1.623421	0.1132
X3	-0.433991	1.756248	-0.247113	0.8062
X4	0.368613	0.194386	1.896292	0.0660

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.512989	Mean dependent var	2.416644
Adjusted R-squared	0.404765	S.D. dependent var	1.078814
S.E. of regression	0.832321	Akaike info criterion	2.647660
Sum squared resid	24.93930	Schwarz criterion	3.008992
Log likelihood	-50.57234	Hannan-Quinn criter.	2.782361
F-statistic	4.740040	Durbin-Watson stat	1.310797
Prob(F-statistic)	0.000497		

a. Dependent Variable: DER
Source: Research Results, 2020 (data processed)

This study uses a significance level of 10%. From the output in the table, 1 can conclude that variables that influence the capital structure are Return on Assets (ROA) with probability value 0.0097 and firm size (FS) with probability value 0.0660, while the percentage Net Profit Margin (NPM) and Financial to Deposit Ratio (FDR) does not have any influence on the capital structure because of probability value above 10%. Judging from the linear regression equation, the independent variable that has the largest coefficient value is Return on Assets (ROA), and the most dominant influence on capital structure is Return on Assets (ROA).

The simultaneous influence test results (Test-F) are as follows in table 1. Probability (F-statistic) is 0.000497 below 10%, means that confidence interval obtained results in more than 90%, namely 99.9503% (100% -0.0497%). These results indicate that all variables used in the research, namely Return on Assets (ROA), Net Profit Margin (NPM), Financial to Deposit Ratio (LDR), and firm size (FS) have a significant effect on Debt to Equity Ratio (DER) simultaneously. While the coefficient of determination (R^2) value is 0.512989 or 51%, it means that the Return on Assets (ROA), Net Profit Margin (NPM), Financial to Deposit Ratio (FDR) and firm size (FS) affecting the Debt to Equity Ratio (DER) about 51%, while the remaining 49% is influenced by other factors outside this study.

Profitability and Capital Structure

In this study, the profitability projected by Return on Assets (ROA) and Net Profit Margin (NPM). ROA has a significant effect on the capital structure of the Islamic Bank in

Indonesia, while NPM has no significant impact on the capital structure of the Islamic Bank in Indonesia. According to the results, a positive association between profitability and capital structure.

ROA ratio is obtained from the balance sheet and the NPM ratio is obtained from the income statement. The balance sheet describes the company's financial condition at any given moment so it is more appropriate to take into account the capital structure. Income statement describes the results of operations obtained in a given period, making it difficult to predict the capital structure. Islamic bank managers in Indonesia choose the capital structure sourced from internal funds.

The results of this study are in accordance with the research conducted by (Aremu et al. 2013). Our results are in line with (Adiputro 2015), (Handoo and Sharma 2014), (M'ng et al. 2017) and (Singh and Bagga 2019). The negative coefficient on Net Profit Margin (NPM) means that profitability can reduce the capital structure. This is due to the profits obtained by the Islamic banking company being reused to increase the company's capital, so it is not needed to increase capital through debt.

Risk and Capital Structure

The research previously conducted explains that the risk in Islamic banking companies is projected by the Financial to Deposit Ratio (FDR) and so is the case in this study. The results show that The risk of Islamic banks does not affect the capital structure.

Financial to Deposit Ratio (FDR) is the ability of banks to repay withdrawals of funds made by depositors by relying on loans provided as a source of liquidity. The higher the FDR, the more liquid the bank is, to a certain extent as required by Bank Indonesia that the ideal FDR is 75-80%, so if it exceeds this limit, it must deposit a larger minimum required deposit (GWM) to Bank Indonesia and then slowly lowering the FDR within one year.

Islamic banks are very transparent in transactions. Islamic law forbids gharar and maysir. The principle of Islamic banks is tangibility and traceability of assets. Financial transactions by Islamic banks often involve risks and, consequently, increase the problem of moral hazard. Islamic banks will buy or build these assets and sell or lease them to borrowers to reduce risk. The results of other studies that state that the risk does not significantly affect capital structure are carried out by (Aremu et al. 2013).

Company Size (Size) and Capital Structure

One of the results of this study is that firm size has a significant effect on capital structure, even among other variables. In the previous research on conventional banks, it also showed the same results, but the direction was different. In Islamic banks, the results show that the larger the firm size, the greater the level of debt and capital preparation is needed more carefully, while in conventional banks the results are the greater the size of the company (Aremu et al. 2013; Fauziah and Iskandar 2015), the smaller the debt level. The results are in accordance with the research conducted by (Adiputro 2015; Handoo and Sharma 2014; M'ng et al. 2017).

CONCLUSION

The Factors that affect the Capital structure of Islamic Banks in Indonesia significantly are Profitability which is proxied by ROA and Firm Size, while Net Profit Margin (NPM) and Financial to Deposit Ratio (FDR) did not affect the capital structure of Islamic Banks in Indonesia. The results indicate that Islamic bank managers in Indonesia choose internal funds as their main capital structure rather than debt and equity financing. Islamic bank preferences

to internal funds and equity may be related to constraints imposed by Islamic law, which encourage Islamic banks to increase capital buffers. The larger firm size, the greater of debt management and capital preparation is needed.

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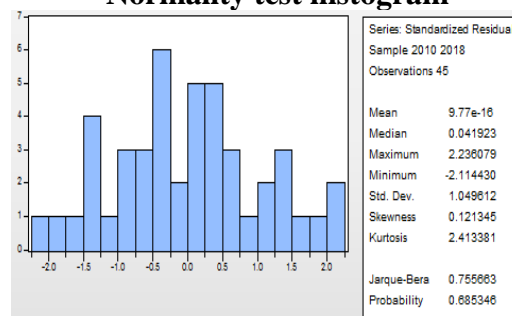
APPENDIX

Appendix 1
Statistic Descriptive

	Y	X1	X2	X3	X4
Mean	2.416644	0.011133	0.081844	0.864533	30.15222
Median	2.291	0.011	0.077	0.86	30.047
Maximum	4.6	0.03	0.261	1.027	32.22
Minimum	0.616	0	-0.008	0.693	27.497
Std. Dev.	1.078814	0.005957	0.050404	0.078135	1.243137
Skewness	0.304023	0.738548	0.987252	0.001434	-0.230271
Kurtosis	2.189848	4.083977	5.178464	2.302757	2.31009
Jarque-Bera	1.923874	6.294031	16.2082	0.911544	1.290141
Probability	0.382152	0.04298	0.000302	0.633958	0.524625
Sum	108.749	0.501	3.683	38.904	1356.85
Sum Sq. Dev.	51.20892	0.001561	0.111784	0.268623	67.99719
Observations	45	45	45	45	45

Source: Research Results, 2020 (data processed)

Appendix 2
Normality test histogram

Appendix 3
Multicollinearity test

	X1	X2	X3	X4
X1	1.000000			
X2	0.808065	1.000000		
X3	0.214848	0.114682	1.000000	
X4	-0.097614	-0.068970	-0.106039	1.000000

Source: Research Results, 2020 (data processed)

Table 4
Autocorrelation Test

Residual Cross-Section Dependence Test
Null hypothesis: No cross-section dependence (correlation) in residuals
Equation: Untitled
Periods included: 9
Cross-sections included: 5
Total panel observations: 45
Cross-section effects were removed during estimation

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	11.88191	10	0.2930
Pesaran scaled LM	0.420808		0.6739
Bias-corrected scaled LM	0.108308		0.9138
Pesaran CD	0.716308		0.4738

Source: Research Results, 2020 (data processed)

Table 5
Heteroscedasticity Test

Panel Period Heteroskedasticity LR Test
Equation: UNTITLED
Specification: Y C X1 X2 X3 X4
Null hypothesis: Residuals are homoskedastic

	Value	df	Probability
Likelihood ratio	2.087175	5	0.8370

LR test summary:

	Value	df
Restricted LogL	-65.52550	40
Unrestricted LogL	-64.48192	40

Unrestricted Test Equation:
Dependent Variable: Y
Method: Panel EGLS (Period weights)
Date: 06/03/20   Time: 22:02
Sample: 2010 2018
Periods included: 9
Cross-sections included: 5
Total panel (balanced) observations: 45
Iterate weights to convergence
Convergence achieved after 15 weight iterations

Source: Research Results, 2020 (data processed)
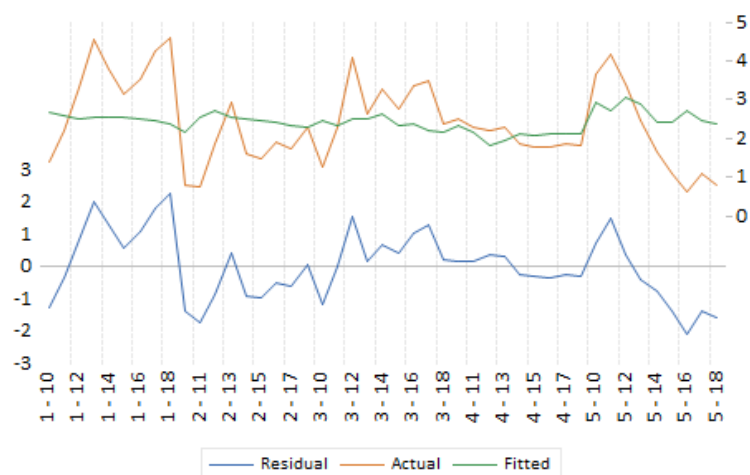
Source: Research Results, 2020 (data processed)
Picture 2
Heteroscedasticity Test