Determinant of Islamic Insurance Performance in Indonesia: A GMM Approach

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Profitability is an indicator in measuring the performance of a financial institution, one of which is sharia life insurance. Sharia life insurance profitability can be measured by *Return on Assets* (ROA). This study aims to analyze the influence of internal and external factors on the profitability of Islamic life insurance in Indonesia. The objects of this study were three *full fledge* and 15 sharia life insurance business units for the period 2014 to 2018. The research method used was panel data regression analysis dynamic *generalized method of moments* (GMM). The results showed that *leverage* and contribution (premium) had a positive and significant effect on the profitability of sharia life insurance.

Keywords: Islamic insurance; GMM; Profitability; Indonesia

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INTRODUCTION

Islamic insurance, or commonly referred to as *takaful,* can be defined as a business that aims to provide mutual protection and assistance between participants through investments in the form of assets and *tabarru'* (donations), where these investments provide returns (claims) to face various risks to the shareholders. policy through a contract (agreement) that is in line with sharia principles. Sharia insurance uses the ta'awun principle, which is defined as the principle of mutual help and mutual protection based on Islamic ukhuwah in dealing with risks among members of Islamic insurance participants (Sula, 2004).

The Islamic insurance industry has grown rapidly since its establishment in 1979, particularly in the Middle East, North Africa and Southeast Asia.rate *growth* The 2017 Islamic Financial Service Board (IFSB) report contains the total gross contribution of sharia insurance in 24 OIC countries which reached 26.7 billion dollars, growing by 4.3 percent from 2016. The total gross contribution of sharia insurance in OIC member countries is increasing every year with aan average of 6.9 percent since 2012 (IFSB 2019), indicating the positive development of the Islamic insurance industry to date. The positive growth of the sharia insurance industry globally is also shown by Indonesia as a member of the OIC. In 2018, the gross contribution of sharia life insurance reached IDR 12.66 trillion, growing 14 percent from the previous year.

In the midst of the rapid growth of the sharia insurance industry, competition in the sharia insurance business is also increasingly competitive, thus requiring companies to constantly improve their company's performance in order to give a sense of trust to the public. Currently, even though the sharia insurance industry is experiencing growth in terms of the number of companies, total assets, or contribution, this has not been able to compete with conventional insurance companies in terms of market share. Until December 2018, *market share* to the national insurance industry only reached 5.71 percent, so sharia insurance must continue to improve financial performance in order to survive and develop existence in the national insurance arena.

Financial performance is a description of the company's financial condition in a certain position concerning aspects of raising and distributing funds which are usually measured by indicators of capital adequacy, liquidity and company profitability (Jumingan, 2011). One of the company's performance indicators that is important to assess is profitability, which can be seen from the value of ROA (*Return on Assets*), where the ratio is a ratio that measures the company's ability to utilize the company's assets to generate income by comparing income with the assets used by the company to generate income (Gibson, 2001). Mardian (2016) states that ROA is the most important ratio in comparing the efficiency and financial performance of insurance companies, apart from DEA (Rusydiana & Nugroho, 2017; Ikhwan & Rusydiana, 2022).

The condition of the ROA profitability performance for sharia general insurance and reinsurance in Indonesia in 2018 was at 6.31 percent, with a consecutive decline since 2012 which had an ROA of 14.5 percent. Meanwhile, a sharp decline occurred in sharia life insurance which only produced an ROA of 5.36 percent, down drastically since 2014 which had an ROA of 12.7 percent. The decreased ROA value indicates a decrease in profitability in the sharia insurance industry, especially sharia life insurance.

This study aims to identify the factors that influence the profitability of life insurance in Indonesia. Kripa and Ajasllari (2016) state that the ROA ratio can be influenced by various factors, including internal and external factors. Internal factors are factors that come from within the company that can be controlled by the company. Internal company factors that are often used according to Kripa and Ajasllari (2016) are company size, liability ratio, total paid-in capital, fixed assets and liquidity ratios. Meanwhile, external factors are factors that come from outside the control of company management. In general, the external factors of a company can be influenced by macroeconomic factors, which include Gross Domestic Product (GDP), interest rates, stock indices and inflation (Putri, 2019). In relation to the profitability of insurance companies, Alhassan *et al.* (2015) stated that there is a negative relationship to the ROA of insurance companies.

LITERATURE REVIEW

There are several studies that have been conducted to look at the determinants of the performance of insurance profitability, one of which is Hailegebreal (2016) which examines internal and external factors that influence the profitability of insurance companies in Ethiopia using data from nine insurance companies in Ethiopia from 2004 to 2014. The research method uses panel data regression analysis. The findings show that *underwriting risk*, technical fees, inflation and *leverage* have a significant negative correlation, while premium growth, firm age, solvency

ratio and GDP have a significant positive correlation with profitability of insurance companies in Ethiopia.companies *takaful* in Malaysia using data from 2011-2015 using *the Generalized Moment Method* (GMM) as a research method. The findings show that firm size and age have a significant effect on *takaful* in Malaysia.

Then another study from Guendouz and Ouassaf (2018) examined the effect of company age, company size (*size*), loss ratio, *rate of retention*, risk level, and premium growth on the level of profitability of Islamic insurance companies in Saudi Arabia using panel data regression. The research data uses quarterly data from the six *takaful* in Saudi Arabia from 2010-2016. The results show that company age, company size, loss ratio, and premium growth have a significant effect on the level of profitability of Islamic insurance companies in Saudi Arabia. Banerjee and Majumdar (2018) analyzed internal factors that affect the profitability of insurance companies in the United Arab Emirates using the *Robust Least Square*. The research sample consisted of 20 insurance companies from 2009 to 2013. The results showed that the investment ratio, company size,and *leverage* had a negative relationship with profitability, while premium growth, *market share*, and per-capita GDP had a positive relationship with profitability. insurance company. Next, Ishtiaq and Siddiqui (2019) also conducted research that aimed to identify the factors that influence the financial performance of the life insurance sector in Pakistan using the *generalized method of moment* (GMM) panel data regression method. The sample used 9 insurance company samples in the research period 2008 to 2017. The results showed that liquidity, loss ratio, *debt to equity* (DER), paid-up capital, *capital surplus* and inflation statistically significantly had a positive effect on the financial performance of the life insurance sector in Pakistan.

METHODOLOGY

This research is quantitative using panel data regression analysis. The use of panel data forms the basis for the process of estimating research data, namely its use in obtaining characteristics over time and between individuals. Panel data regression is able to minimize collinearity between variables and maximize degrees of freedom in increasing efficiency (Firdaus, 2011). The method to be used in this study is dynamic panel data regression using the *Generalized Method of Moment* (GMM) approach. Panel data analysis can be used in dynamic models, where the dependent variable does not only depend on exogenous variables, but also on the lag of the dependent variable (Dasril, 2015). The advantage of this method is that it can determine the short-term effects and long-term effects. Inclusion of the dependent variable's lag into the independent variable gives a difference in the model estimators.estimation method can be used *Instrumental Variable* , namely by instrumenting variables that are correlated with *errors*. There are two estimation procedures within the GMM framework, namely *the first-different* GMM (FD-GMM or AB-GMM) and *system* (SYS-GMM) (Lubis and Setiawan, 2013). Then proposed a serial correlation test based on GMM residues and compared with the Sargan test. The GMM Arellano Bond estimation method produces unbiased, consistent and efficient estimates.

Data

The data used in this study used secondary data in the form of panel data, namely a combination of *cross sections* and *time series*. Next, the research sample was determined through a *purposive sampling* technique, namely the selection of selected samples on the basis of certain criteria, where the selected research criteria were sharia life insurance recorded in the Insurance Statistics of the Financial Services Authority (OJK) and operating between 2014 to 2018 and sharia life insurance. which publish audited annual financial statements in that period life insurance companies *full fledge* and 15 sharia life insurance business units. The data is in the form of annual financial reports which are officially obtained from the website of each company and macroeconomic data which is sourced from the website of the Central Statistics Agency (BPS).

Next, the model specifications that can be formulated in this study are as follows:

$$ROA_{it} = \alpha + \delta ROA_{it-1} + \beta_1 LN\_SIZE_{it} + \beta_2 INV_{it} + \beta_3 LIQ_{it} + \beta_4 LEV_{it} + \beta_5 GC_{it} + \beta_6 CLA_{it} + \beta_7 LN\_RET_{it} + \beta_8 LN\_IHK_{it} + \varepsilon_{it}$$

Note:

ROA_{it} = *Return on asset* (percent)
LN_SIZE_{it} = Log natural company size (billion IDR)
INV_{it} = Investment income (percent)
LIQ_{it} = Liquidity (percent)
LEV_{it} = *Leverage* (percent)
GC_{it} = Contribution (percent)
CLA_{it} = Claim (percent)
LN_RET_{it} = Log natural reinsurance (billion IDR)
LN_IHK_{it} = Log natural Consumer price index (percent)
α = Intercept
β = Regression coefficient
ε = Error

RESULT AND ANALYSIS

Model of Islamic insurance profitability (ROA)

Modeling of the ROA ratio in Islamic insurance is carried out using GMM Arellano-Bond dynamic panel data on the variables SIZE, INV, LIQ, LEV, GC, CLA, RET and CPI. Estimation using the GMM Arrelano Bond method is used to determine the short-term and long-term effects of the model formed. In obtaining the coefficient estimator of Islamic insurance profitability (ROA) model using the GMM *two-step difference model*. Parameter estimation results can be obtained in Table 1 below.

Table 1: Model estimation of GMM *two-step difference*

Variable	Coefficient	Std. Error	Z	P. *Value*	*Short-run*	*Long-run*
L1. ROA	1.279827	0.3620994	3.53	0.00		
LN_SIZE	-6.357429	10.80228	-0.59	0.556		
INV	0.001266	0.0103615	0.12	0.903		
LIQ	-0.001536	0.0037263	-0.41	0.68		
LEV	0.0225241	0.0119624	1.88	0.06	**0.0225241***	-0.0804929
GC	0.3243384	0.1449762	2.24	0.025	**0.3243384***	-1.159066
CLA	-0.0030038	0.0031216	-0.96	0.336		
LN_RET	-3.410505	3.311539	-1.03	0.303		
LN_IHK	80.37802	84.96301	0.95	0.344		
Arellano-Bond Test AR(2)			Z = 0.87	P.Value = 0.383		
Sargan Test			Z = 1.74	P. Value = 0.187		

The estimation results from *two-step difference*t can be seen that there are only two variables that are significant at the 10 percent level of significance, namely the Islamic insurance profitability model (ROA) in Indonesia has three variables that are significant at the ten percent level (α=10%) namely ratio of lag Islamic insurance profitability (ROA), *leverage* (LEV), and gross contribution (premium) (GC). These two significant variables are then required to estimate the long-term model, whose coefficient results can be seen through the *long-run* above. The result is that in the long-term model there is no significance at the 10 percent level of significance, so that only the short-term model can be known. The interpretation of the above model can use the *ceteris paribus assumption,* that is, when the *leverage* (LEV) increases by one percent, it will increase ROA by 0.022 percent in the short term. Then when the gross contribution (premium) ratio rises by one percent, it will increase ROA by 0.32 percent in the short term.

Classical Assumption Test

The criteria for a valid instrument can be seen in the Sargan Test with a test result of 1.74 which is not significant at any real level, so it fails to reject H0 which means that the instrument variable in the Islamic insurance profitability model is valid or the number of instrument variables is more than the total estimated parameters. The Sargan Test hypothesis is:

H0: The condition *of overidentifying restrictions* in the estimation model is valid (instrument variable is not correlated with error); and

H1: The condition of *overidentifying restrictions* in model estimation is invalid.

The criteria for estimator consistency are that there is no second-order serial correlation of *errors* and endogenous variables in *the first difference* as shown by the results of the Arellano-Bond Test or AB Test in Table 1. The second-order test statistic (AR(2)) is 0.87 and P-*The value* of 0.383 is greater than α = 5%. So the decision

is to fail to reject H0, which means that the resulting parameter estimates are consistent or there is no second-order serial correlation of *errors* and endogenous variables in the *first difference*. The Arellano-Bond Test hypothesis is:

H0: There is no serial correlation between Δv_{it} and Δv_{it-2} (*random walk*); and

H1: There is a serial correlation between Δv_{it} and Δv_{it-2}

An overview of the relationship between variables is explained through the correlation matrix and *p-value* between variables as well as plots between Islamic insurance profitability (ROA) and the variables that influence it are used to determine the relationship between variables. The results of the multicollinearity test can be seen in Table 2 below.

Table 2: Multicollinearity test

Variable	ROA	LN_SIZE	INV	LIQ	LEV	GC	CLA	LN_RET	LN_IHK
ROA	1								
LN_SIZE	0.5637	1							
INV	0.0703	-0.0856	1						
LIQ	0.0636	-0.1651	0.1783	1					
LEV	-0.2189	-0.058	0.0696	-0.1436	1				
GC	0.0724	0.1298	-0.0671	-0.2325	0.3608	1			
CLA	0.0476	0.1165	0.2482	-0.1343	-0.1321	0.1541	1		
LN_RET	0.3093	0.6064	-0.0399	-0.1939	0.38	0.6788	0.0317	1	
LN_IHK	-0.0443	0.1401	0.0245	0.223	0.1651	-0.1367	-0.1643	0.0506	1

Based on the correlation value *of the Pearson correlation matrix* in Table 1, it shows that the coefficient on each independent variable is not higher than the absolute value of 0.8 so that there is no multicollinearity in the dynamic panel data model.

DISCUSSION

GMM model *two-step difference* above, there is a significant and positive relationship between *leverage* and ROA of sharia life insurance in the period 2014 to 2018. This means that companies with *leverage* have better performance than companies with *leverage* low. Harahap (2015) describes *leverage* as a measurement ratio of how a company is funded by liabilities (obligations), or from outsiders to the ability of a company which is described by equity measurement *Leverage* can also assess a company's ability to meet its financial obligations. This is important because in fulfilling its operations, companies rely on a combination of equity and debt to evaluate whether the company can pay off its debts when the maturity date arrives. These results are consistent with Jensen's research (1986) where high leverage conditions tend to make management committed to generating cash flows to fulfill their obligations under debt contracts (insurance).

In addition, a significant and positive relationship also occurs in the contribution (premium) to the ROA of sharia life insurance. The results of this study are consistent with research from Kantakji *et al.* (2020) which states that the contribution of participants has a positive effect on profitability in general sharia insurance in four OIC countries. Contributions to Islamic insurance have the meaning of funds that are routinely submitted by Islamic insurance participants. Of course, increasing the level of contribution will increase *underwriting* and expand market share (Sula, 2004). In addition, contributions (premiums) are one of the insurance company's sources of income, which come from insurance participants through the ujrah of participant fund management. When the contribution (premium) collected increases, the management fee will also increase, which of course also affects the insurance company's profit which will increase.

CONCLUSION

Islamic insurance globally shows great potential to become one of the drivers of Islamic financial instruments in the world. This is indicated by the gross contribution (premium) which always experiences positive growth every year. The same thing is also shown in Indonesia, with a positive growth in gross contribution every year. But on the other hand, the profitability of sharia insurance companies, both life, general and reinsurance has decreased significantly in the last five years. This becomes the context in this study, to

analyze what influences the profitability of sharia life insurance in Indonesia.

From the estimation results of the GMM dynamic panel data model, the *leverage* and contribution (premium) variables show a significant effect on the profitability of Islamic life insurance, with the ROA indicator. Both of these variables have a positive influence on the profitability of sharia life insurance in Indonesia. That is, with *leverage* highIn addition, the positive relationship between the contribution (premium) and the ROA of sharia life insurance concludes that the increase in contribution received by the company will certainly be in line with the increase in profitability for sharia life insurance companies.

Then, related to increasing the inclusiveness of the Islamic finance industry, especially Islamic life insurance, policy makers and regulators must be more dedicated in supporting its development by being more active in increasing public awareness and knowledge about Islamic life insurance products in order to get customers who are loyal to Islamic finance. The use of technology is the main key in the process of public education.

Future research can include certain variables that may have an effect such as government social security spending, as well as external variables which include other macroeconomic factors such as interest rates or Gross Domestic Product (GDP) on profitability in Islamic life insurance. In addition, research should be conducted on the impact of the legal system and government policies on the demand for Islamic life insurance in Indonesia. Finally, the supply side of the equation should not be neglected and should be included in future studies to provide researchers with a complete picture of what determines the development of family Takaful products and services.

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