

# Determining Factors of Surplus (Deficit) Underwriting in Sharia Life Insurance in Indonesia

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## ABSTRACT

This study aims to investigate the determining factors of surplus (deficit) underwriting in sharia life insurance in Indonesia. The factors considered are net contribution, claims, and investment return. The study employed panel data regression, using a sample of 15 sharia life insurance companies, including 12 sharia business units and 3 full sharia companies, over the period of 2015-2018. Analysis of the data suggests that Random Effect Model (REM) is the most appropriate estimation model for this study. Results indicate that net contribution and claim variables have a significant partial effect on surplus (deficit) underwriting, while the investment return does not. The study also found that all of independent variables (net contribution, claim, and investment result) have a significant simultaneous effect on the surplus (deficit) underwriting.

**Keywords:** *Net Contribution, Claim, Investment Return, Surplus (Deficit) Underwriting*

## INTRODUCTION

Indonesia is known to have a large number of sharia insurance operators worldwide. The competition in the Islamic insurance business in Indonesia is becoming increasingly intense with the entry of new players, including both from life insurance and general insurance with sharia-compliant principles. Sharia reinsurance has also undergone changes in its composition, transitioning from a whole company that was only in the form of a sharia business unit, to a sharia form (full-pledged) by conducting a spin off (Karim Consulting Indonesia, 2016).



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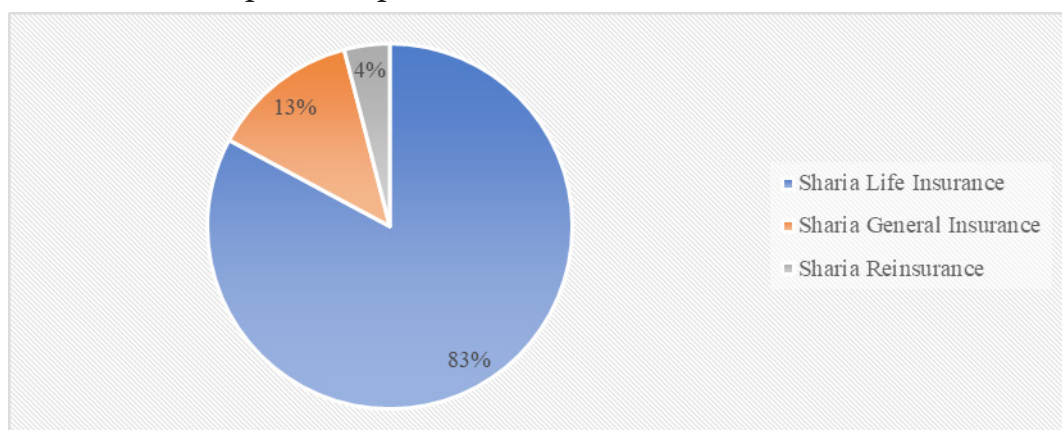
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According to the Indonesian Islamic financial development reports by OJK (2017), the number of sharia insurance companies in 2015 was 55, in 2016 it increased to 58, and by the end of 2017 it reached 63. However, according to Sharia IKNB Statistics (2018), the number of sharia insurance general companies decreased by one in 2018, resulting in a total of 62 sharia insurance companies. Nevertheless, the greatest increase in the number of insurance industries occurred in sharia life insurance companies between 2015-2017.

In addition to the increasing number of sharia life insurance companies, several aspects of sharia life insurance activities also experienced growth during the four years period from 2015-2018. According to data from OJK, it was noted that sharia life insurance companies experienced positive growth in terms of assets, investments, contributions and claims. This positive increase has a good impact on the country's economy. As highlighted by Hamizun (2013) that *takaful* (sharia insurance) has the potential to play an important role in contributing to the economic growth (Nuraini & Kamal, 2018).

In order to understand the growth of sharia insurance in Indonesia, it is important to compare the development of the 3 types of sharia insurance in Indonesia, namely sharia life insurance, sharia general insurance, and sharia reinsurance. To visualize this comparison, a graph below can be used to show the growth of assets in each of these types of insurance over a specific period of time:

Graph 1 Comparison of Sharia Insurance Assets in 2018



Source: Data processed from Sharia IKNB Statistics (2018) OJK

The data shown in graph 1 illustrates that the growth of sharia life insurance assets is significantly higher compared to sharia general insurance

and sharia reinsurance. This highlights the higher level of public demand for sharia life insurance products offered by different companies in the industry.

Along with the rapid growth of sharia insurance, the primary principle that is used as the basis for its operations is to help between a number of parties through investments in the form of *tabarru'* funds / participant contribution funds. The principle of helping each other aligns with the word of Allah SWT in QS Al Maidah (5) verse 2, which means:

“And please help you in (doing) virtue and piety, and do not help in committing sin and enmity. Fear Allah, truly, Allah is very severe in torment.”

The fundamental difference between conventional insurance and sharia insurance lies in their procedures and operations. Sharia insurance is rooted in the teachings of the Quran and Sunnah. Based on the fatwa of the National Sharia Board Number 21/DSN-MUI/X/2001, sharia insurance activities must avoid the elements of *gharar*, *maysir* and *usury*. Instead, Islam instills the principle of mutual agreement and shared risk-bearing.

Similar to conventional insurance, sharia insurance also recognizes the term premium (contribution), which means the contribution of funds agreed upon by the insurance participant to the managing entity. Based on the Statement of Financial Accounting Standards (PSAK) 108, premiums or contributions can be interpreted as the total amount of funds incurred by insurance participants to the managing entity after collecting administrative and operational costs. The contributions obtained are allocated into *tabarru'* funds for further management by the company. In addition to premium income, *tabarru'* funds are also formed by investment returns.

The *Tabarru'* funds received by sharia insurance companies are not considered as income because sharia insurance companies only act as a representative for the participants in managing these funds. However, the *tabarru'* funds received by the company can be invested to generate returns which are added to the fund, with a proportion also going to the managing entity as per the agreement. The implementation of investment activities by sharia insurance companies must abide by Islamic law, and the companies may only invest funds in Islamic financial institutions such as Islamic banks, Sharia Rural Banks, Islamic Bonds, and other activities that comply with Islamic principles (Damayanti & Mawardi, 2016).

In the operational process, sharia insurance companies are inseparable from underwriting management. Underwriting is the process of selecting risks and classifying them according to the level that the company can bear. In this case, the risk that arises is a claim that may be faced by insurance companies in the future. According to the fatwa of the National Sharia Board Number 21/DSN-MUI/X/2001 on general guidelines for sharia insurance, claims are the rights of participants and the obligations of insurance companies to fulfill them. They are paid based on the initial contract agreement. Claims can be submitted in cases of disasters that occur against insurance participants, such as death, fire, earthquake, and other accidents that come unexpectedly. The claim submission process is carried out in accordance with the initial agreement on the contract.

The fundamental difference between conventional insurance and sharia insurance in terms of claims lies in the payment process. In conventional insurance, claim are paid out from the company's fund account, while in sharia insurance, the source of claim payments is taken from *tabarru'* fund accounts in which insurance participants have intended for the purpose of helping other participants.

As the sharia insurance industry develops, it is hoped that the company will not leave their underwriting management. This is crucial so that events that have occurred in 2012 are not repeated, where in a study conducted by Naimah (2018) revealed that PT Asuransi Jiwa Bersama Bumi Putra 1912 experienced a *tabarru'* fund underwriting deficit of 4,091.14 million rupiah. Although the contribution obtained was greater at 64,731.19 million Rupiah, the company still experienced an deficit underwriting.

Similarly, research conducted by Pratama (2018) revealed that PT Asuransi Takaful Keluarga experienced a deficit of 2,565 million rupiah in 2010. Even though the premium received by the company during the period was quite large at 174,924 million Rupiah, the company still experienced a deficit due to the company's inadequate implementation of underwriting management, resulting in a higher number of claims than the premium received.

The problem is caused by the lack of proper implementation of underwriting management by the company. The occurrence of the deficit prevented companies to provide additional funds to *tabarru'* reserves. And conversely, the deficit resulted in *tabarru'* fund balance being reduced to cover the deficit that occurred.

Several empirical studies of the distribution of surplus underwriting were carried out by Al Nemer (2015) who examined the perceptions of *takaful* participants on the distribution of surplus underwriting in Saudi Arabia. This study reflects the comparison between SAMA regulations and AAOIFI standards. The results of this study indicate that there are very large differences in terms of surplus and profit accumulation, where the increased company profits are contrary to the rights of participants. In other words, if SAMA follow AAOIFI standards, insurance participants will be able to participate even with a small contribution to get a proportional return on the expected surplus.

In addition to the management and distribution of surplus underwriting, prior research has also been conducted on the factors that affect surplus (deficit) underwriting sharia insurance companies in Indonesia. One such study was conducted by Alifianingrum & Suprayogi (2018) which revealed that premium income had a significant effect on surplus (deficit) underwriting. However, this finding is not in line with Naimah (2018), who found that premium income did not have a significant effect on surplus (deficit) underwriting.

Another study conducted by Damayanti & Mawardi (2016) revealed that claims had a significant effect on surplus (deficit) underwriting, but this finding is not in line with Anggraini (2016) which revealed that the claim variable did not have a significant effect on surplus (deficit) underwriting.

Subsequent research was conducted by Ramdhani P & Sukmaningrum (2019) who found that investment returns had a significant effect on surplus (deficit) underwriting. However, this result of the study is not in line with Damayanti & Mawardi (2016) who revealed that investment returns did not have a significant effect on surplus (deficit) underwriting.

Surplus (deficit) underwriting of sharia insurance companies is an interesting subject to study. Because when a sharia insurance company experiences a surplus of underwriting, the funds can be used as a reserve for payment of insurance participant claims in the future. It can also increase public confidence in the services of Islamic insurance companies. This is the topic that the author will study on sharia life insurance companies in Indonesia. In addition, this research is expected to be an additional reference in the study of sharia insurance financial management.

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## **LITERATURE REVIEW**

### **Net Contribution**

According to the regulation of the Minister of Finance Number 11/PMK.010/2011 about Health Financial Insurance Business and Reinsurance Business with Sharia Principle, net contribution is defined as the difference over contributions from insurance participants allocated to *tabarru'* funds plus reinsurance contributions received without reinsurance contributions. In the financial statements of sharia insurance companies, gross contributions which have been reduced by management and reinsurance *ujrah* are called net contributions.

### **Claim**

Claims are the submission of rights made by the insured to the guarantor to obtain their rights in the form of coverage for losses based on the agreement or contract that has been made. In other words, insurance claim is the process of filing by the insurance participant to get the insurance money after the participant has made all his obligations to the insurance company in the form of settlement of premium payments in accordance with the previous agreement (Huda & Nasution, 2009).

### **Investment Returns**

Investment returns are the output from the investment of a number of capital/assets in the form of assets and funds (Alifianingrum & Suprayogi, 2018). According to the fatwa of the National Sharia Board Number 53/DSN-MUI/III/2006 concerning the *tabarru'* agreement on sharia insurance that the investment returns from *tabarru'* funds become a participant's collective rights and are recorded in the *tabarru'* account. From investment returns, insurance companies can obtain profit sharing based on *mudharabah* or *mudharabah musytarakah* agreements, or obtain *ujrah* (fees) based on *wakalah bil ujah* contracts.

### **Surplus (Deficit) Underwriting**

According to Ali (2002, p. 309), surplus (deficit) underwriting is the result of the reduction of the participants *tabarru'* funds reduced by the total number of claims incurred (*tabarru'* expenses). If the result of the reduction is positive, then the company will experience a surplus, and vice versa if the result of the reduction is negative, then the company will experience a deficit

## Previous Study

Several studies have been conducted with the determinants of surplus (deficit) underwriting in sharia life insurance:

Table 1. Previous Study

No	Previous Study	Research Model		research result
		Similarity	Difference	
1	“Factors that Influence Surplus Underwriting of Tabarru Funds in General Islamic Insurance Companies”. Mohammad Firdaus Ramdhani P and Puji Sucia Sukmaningrum (2019)	The independent variables used are claims and investment returns. while the dependent variable used is surplus underwriting. In addition, the statistical analysis used is multiple regression with panel data.	The independent variable used is gross contribution, and the object of research is sharia general insurance.	Partially, gross contribution, claims, and investment returns have a significant influence on Tabarru’ fund surplus underwriting. And simultaneously it has a significant effect on tabarru’ fund surplus underwriting. The coefficient of determination is 77,16%.
2	“Pengaruh Pendapatan Premi, Klaim, dan Hasil Investasi Terhadap Surplus Underwriting Dana <i>Tabarru’</i> Pada Perusahaan Asuransi Syariah di Indonesia”. Salman Zakki Syahri Mubarak (2018)	The independent variables used are premium income, claims, and investment returns. While the dependent variable used is surplus underwriting. In addition, the statistical analysis used is multiple regression with panel data.	The object of research in this study is the sharia insurance company.	Partially, premium income, claims and investment returns have a significant effect on the tabarru’ fund surplus underwriting. And simultaneously it has a significant effect on tabarru’ fund surplus underwriting. The coefficient of determination is 86%.

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3	“Faktor-Faktor yang Mempengaruhi Surplus <i>Underwriting</i> Dana <i>Tabarru’</i> Pada Perusahaan Asuransi Jiwa Syariah” Rosyda Alifianingrum dan Noven Suprayogi (2018)	The independent variables used are net contribution, claim expense, and investment return. While the dependent variable used is surplus underwriting. In addition, the object of his research is the sharia life insurance company. And data analysis used is multiple regression with panel data.	The difference in this study lies in the number of periods studied.	Partially, the variable net contribution, claim expense and investment returns have a significant effect on the surplus underwriting. And simultaneous significant effect on Underwriting Surplus. The coefficient of determination is 99%.
4	“Pengaruh Kontribusi dan Hasil Investasi Terhadap Surplus <i>Underwriting</i> Pada Perusahaan Asuransi Jiwa Syariah di Indonesia Periode (2012-2015)” Faizatun Naimah (2018)	The independent variable used is investment returns. And the independent variable used is surplus underwriting. In addition, the object of her research on sharia life insurance. And the statistical analysis used is multiple regression.	The independent variable used is gross contribution.	Partially, the contribution variable does not have a significant effect on the underwriting surplus. While investment returns have a significant effect on underwriting surpluses. Simultaneously does not have a significant effect on surplus underwriting.

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- 5 “Pengaruh Kontribusi Bruto, Pembayaran Klaim, dan Pendapatan Investasi Terhadap Underwriting Dana *Tabarru’* Pada Perusahaan Asuransi Syariah di Indonesia”. Nilam Anggraini (2016)
- The independent variables used are claims and investment income. While the dependent variable used is surplus underwriting. In addition, the statistical analysis used is multiple regression.
- The independent variable used is gross contribution. And the object of research is sharia general insurance company.
- Partially, the variable gross contribution and investment income have a significant effect on dana tabarru’ underwriting, and claims have no significant effect on Tabarru funds’ underwriting. And simultaneous significant effect on tabarru’ fund underwriting. The coefficient of determination is 81%.
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- 6 “Faktor-Faktor yang Mempengaruhi Surplus Underwriting Asuransi Umum Syariah di Indonesia”. Febrinda Eka Damayanti & Imron Mawardi (2016)
- The independent variables used are claims and investment returns. While the dependent variable used is surplus underwriting. In addition, the statistical analysis used is multiple regression with panel data.
- The independent variable used is gross contribution. And the object of research is sharia general insurance company.
- Partially, participant contributions and claims have a significant effect on the surplus underwriting, while investment returns have no significant effect. And simultaneous significant effect on the surplus underwriting. The coefficient of determination is 21%.
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7	An Empirical Study of Takaful Participant's perception of the Distribution of the Underwriting Surplus and its Impact on Participant's Behavior. (Hashem Abdullah Al Nemer, 2015)	Surplus underwriting is the subject of this research.	This type of research is qualitative and the type of data is primary collected from insurance participants in Saudi Arabia through questionnaires.	The results of this study indicate that there are very large differences in terms of surplus and profit accumulation, where the increased company profits are contrary to the rights of participants.
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### **Hypothesis Development**

Based on the theory and previous study described, the research hypothesis can be arranged as follows:

1. Net contributions, claims, and investment returns partially have a significant effect on the surplus (deficit) underwriting of sharia life insurance companies in Indonesia.
2. Net contributions, claims and investment returns simultaneously have a significant effect on the surplus (deficit) underwriting of sharia life insurance companies in Indonesia.

### **RESEARCH METHOD**

In this study, a quantitative method was employed. The population in this study are all sharia life insurance companies in Indonesia. After determining the population, the next step is to determine the sample using the purposive sampling technique, where the sample is selected based on certain criteria that align with the research interests. The criteria used are as follows:

- a. Financial reports which are published and can be accessed through the official website of each sharia life insurance company that has been recorded and received a license from the Financial Services Authority until 2018. The financial statements are complete for four years (2015-2018).
- b. Life insurance companies that present data related to research variables in their financial statements.

After selecting the sample criteria, the number of samples in this study are as follows: Determining Factors  
of Surplus

Table 2. Research Objects and Samples

Category	Amounts
The financial reports are published and can be accessed through the official website of each sharia life insurance company that has been recorded and received a license from the Financial Services Authority until 2018. The financial statements have been complete for the past four years (2015-2018).	88
The financial statements do not present research variable data.	(28)
<b>The number of research objects to be sampled</b>	<b>60</b>
<b>Total selected sample data</b>	<b>60</b>

source: data processed (2019)

Based on the selection results above, the financial statements that were sampled amounted to 60 data obtained from 15 sharia life insurance companies that meet the criteria with the same time of four years (2015-2018).

The following table is an explanation of the independent variable and the type of measurement scale:

Table 3. Research and Measurement Variables

No	Variable	Definition and Measurement	Scale
1	Surplus (Deficit) Underwriting (Y)	Surplus (deficit) underwriting is the result of a reduction from the net contribution at the end of the year to the total number of claims that occurs. If the result of the reduction is positive, then the insurance company experiences a surplus of underwriting. Surplus (deficit) underwriting is presented in the <i>Tabarru'</i> Funds Surplus (Deficit) Report.	Ratio
2	Net Contribution (X1)	Net contributions is transactions of participant funds, where gross contributions are reduced by management, reinsurance, and changes in contributions that are not yet entitled. The net contribution is presented in the <i>Tabarru'</i> Funds Surplus (Deficit) Report.	Ratio

3	Claim (X <sub>2</sub> )	Claim is the amount of cover provided to participants for the loss they have suffered. Claim risk consists of payment of claims to participants along with other technical allowances. All risks of the claim are contained in the insurance burden presented in the <i>Tabarru'</i> Funds Surplus (Deficit) Report.	Ratio
4	Investment Returns (X <sub>3</sub> )	The intended investment returns are investment results that have been invested and then reduced by the burden of investment portfolio management. The net investment returns are presented in the <i>Tabarru'</i> Funds Surplus (Deficit) Report.	Ratio

## RESULT

### Descriptive statistics

Descriptive analysis or descriptive statistics used in this study aims to analyze data by looking at and describing the distribution of data that has been collected as it is. Descriptive statistical analysis of research data is summarized in table 3.

Table 4. Results of Descriptive Statistics Analysis

	SDU	NC	C	IR
Mean	17480.92	74430.15	74690.45	13970.23
Median	2253.500	25614.50	28299.00	2718.000
Maximum	211347.0	559280.0	361092.0	222195.0
Minimum	-14837.00	-3164.000	96.00000	-1414.000
Std. Dev.	45271.52	124343.1	97103.87	32075.84
Observations	60	60	60	60

Source: Eviews Output Results 9 (2019)

Explanation:

SDU = Surplus (Deficit) Underwriting

NC = Net Contribution

C = Claim

IR = Investment Return

The number of objects in this study were 15 sharia life insurance companies, with a total of 60 data sourced from financial statements for a four-year period from the 2015-2018 period. All variables used in this study were numerical values obtained from sharia life insurance company financial statements, presented in millions of rupiah.

Based on table 3, it can be seen that the mean (average) surplus (deficit) of the underwriting owned by a life insurance company is Rp 17.481.000.000 with a median value (middle value) of Rp 2.253.000.000. The largest surplus (deficit) underwriting was obtained by PT Prudential Life Assurance in 2018, amounting to Rp 211.347.000.000, while the lowest surplus (deficit) underwriting was owned by PT Asuransi Simas Jiwa (PT Asuransi Jiwa Mega Life) in 2015, amounting to Rp. -14.837.000.000. Meanwhile, the standard deviation of Rp 45.272.000.000 shows that the standard deviation or distance from the average value of each company is relatively far from the mean value (average).

It can also be seen that the mean (average) net contribution of an Islamic life insurance company is Rp 74.430.000.000 with a median (middle value) of Rp 25.615.000.000. The highest net contribution value was obtained by PT Prudential Life Assurance in 2018, amounting to Rp 559.280.000.000, while the lowest contribution value was owned by PT Asuransi Simas Jiwa (PT Asuransi Jiwa Mega Life) in 2018, amounting to Rp -3.164.000.000. While the standard deviation of Rp 124.343.000.000 shows that the standard deviation is relatively large because the mean (average) is smaller than the standard deviation.

In addition, the mean value (average) of claims owned by Islamic life insurance companies is Rp 74.690.000.000 with a median (middle value) of Rp 28.299.000.000. The highest claim value was obtained by PT Prudential Life Assurance in 2018, amounting to Rp 361.092.000.000, while the lowest claim value was owned by PT Tokio Marine Life Indonesia in 2018, amounting to Rp 96.000.000. Meanwhile, the standard deviation of Rp 97.104.000.000 shows that the data held by sharia life insurance companies are far apart.

The average value of investment returns owned by Islamic life insurance companies is Rp13.970.000.000 with a middle value of Rp 2.718.000.000. The highest investment value was obtained by PT AIA Financial in 2017, amounting to Rp 222.195.000.000, while the lowest investment return was owned by PT Panin Dai-ichi Life in 2018, which was Rp -1.414.000.000. Meanwhile, the standard deviation of Rp 32.076.000.000 shows that the

data owned by sharia life insurance companies are heterogeneous due to their relatively large value compared to the mean (average) value.

### **Panel Regression Test Results**

Before conducting a panel regression analysis, there are several tests that must be administered in determining the right model approach. Based on the results of the statistical F test (Chow test), it can be seen that the probability value of Cross-section F is 0.0037, where the number is smaller than 0.05. Thus, it can be concluded that the Fixed Effect Model (FEM) is a model that is more appropriate to use than the Common Effect Model (CEM).

Because in the first test (Chow test) obtained by the FEM model, it is necessary to do the second stage of testing, namely the Hausman test. Based on the Hausman test results, it can be seen that the random cross section probability value is 0.1533, where the number is greater than 0.05. Thus it can be concluded that the Random Effect Model (REM) is more appropriate than the Fixed Effect Model (FEM).

Because the best model obtained from the Chow test and the Hausman test is not consistent, where the best results from the Chow test are FEM, while the best results when the Hausman test is REM, it is necessary to use the Langrangge Multiplier (LM) test. Based on the results of the Langrangge Multiplier (LM) test it can be seen that the cross section probability value is 0.02, where the number is smaller than 0.05. Thus it can be concluded that the Random Effect Model (REM) is more appropriate than the Common Effect Model (CEM).

Based on the statistical tests that have been done above, it can be seen that the best model used in this study is REM, so there is no need to do a classic assumption test. This is consistent with the book written by Gujarati & Porter (2012) that if the REM model is more suitable to be used in research, then it is not necessary to test the classical assumptions, because this has been fulfilled, where Generalized Least Square (GLS) is the method used by the Random Effect model. The following are the results of the Random Effect Model (REM) regression.

Table 5. Random Effect Model (REM) Regression Results

Determining Factors

Dependent Variable: SDU

of Surplus

Method: Panel EGLS (Cross-section random effects)

Sample: 2015 2018

Periods included: 4

Cross-sections included: 15

Total panel (balanced) observations: 60

Swamy and Arora estimator of component variances

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Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3410.019	2944.423	-1.158128	0.2517
NC	0.465286	0.034767	13.38287	0.0000
C	-0.179530	0.042909	-4.184013	0.0001
IR	-0.023709	0.055372	-0.428186	0.6702
Effects Specification				
			S.D.	Rho
Cross-section random			7516.331	0.3532
Idiosyncratic random			10171.30	0.6468
Weighted Statistics				
R-squared	0.860093	Mean dependent var	9796.139	
Adjusted R-squared	0.852597	S.D. dependent var	27023.41	
S.E. of regression	10375.11	Sum squared resid	6.03E+09	
F-statistic	114.7548	Durbin-Watson stat	1.563477	
Prob(F-statistic)	0.000000			

Source: Random Effect Model (REM) Test output with Eviews 9 (2019)

Based on the results of testing of the Random Effect Model (REM), the regression equation is as follows:

$$SDU = -3410.019 + 0.465286\_NC - 0.179530\_C - 0.023709\_IR$$

Based on table 4 it can be interpreted that if the Net contribution (NC) has increased by 1%, then the surplus (deficit) underwriting will increase by 46% (0.465286). This means that if the net contribution increases, there will be an increase in the surplus (deficit) underwriting.

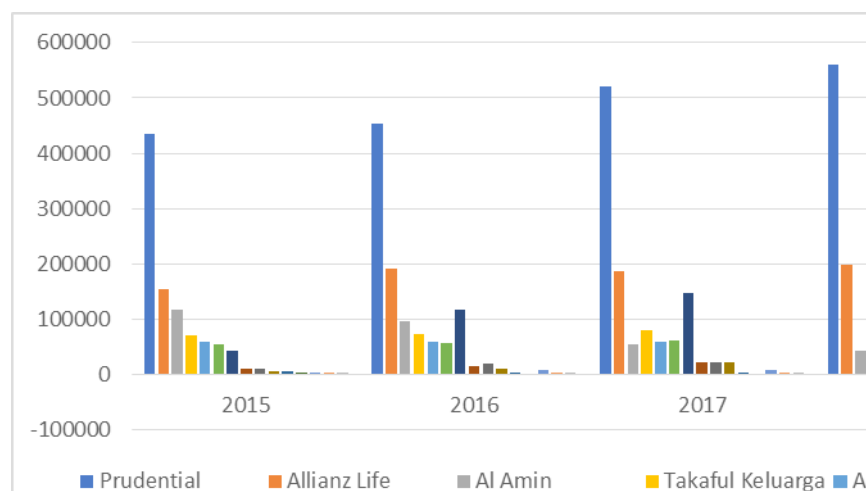
If Claim (C) has increased by 1%, the surplus (deficit) underwriting will decrease by 17.9% (0.179530). This means that if the burden of claims has increased, there will be a decrease in surplus (deficit) underwriting. If the investment returns has increased by 1%, then the surplus (deficit) underwriting will decrease by 2% (0.023709). This means that if the investment returns increase, there will be a decrease in the surplus (deficit) underwriting. The constant value (intercept) is -3410.019. It means that if the NC, C, and IR variables are fixed or unchanged, the SDU value is -3410.019.

## DISCUSSION

### Partial Testing of the Net Contribution to Surplus (Deficit) Underwriting

In this study, the results of the t test showed that the net contribution had a significance value of 0.0000 or smaller than 0.05, and a coefficient value of 0.465286. Thus, it can be interpreted that the net contribution has a significant and positive influence to the surplus (deficit) underwriting in sharia life insurance companies in Indonesia. The results of this test indicate that if the net contribution obtained by the company increases, then the surplus (deficit) underwriting obtained increases. So, it will have a significant impact on *tabarru'* fund reserves, companies, and insurance participants. But on the contrary, if the net contribution decreases, then the surplus (deficit) underwriting will decrease. The following is a graphic that illustrates in more detail the growth of net contribution and surplus (deficit) underwriting of sharia life insurance companies in Indonesia in 2015-2018.

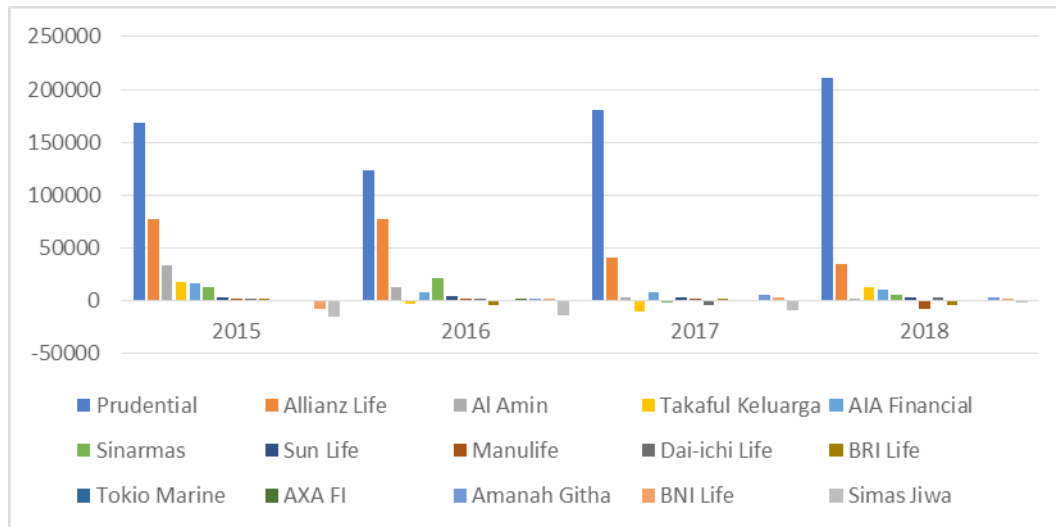
Graph 4.1 Growth of Net Contribution of Sharia Life Insurance Companies in Indonesia in 2015-2018 (in millions of rupiah)



Data Processed (2019)



Graph 4.2 Growth of Surplus (deficit) Underwriting of Sharia Life Insurance Companies in Indonesia in 2015-2018 (in millions of rupiah)



Data Processed (2019)

Based on the data obtained, the total net contribution and surplus (deficit) underwriting among sharia life insurance companies have a significant difference. In 2015, the highest total net contribution was obtained by PT Prudential Life Assurance of Rp 433,978,000,000 with a surplus underwriting value of Rp 167,968,000,000. Meanwhile, PT Tokio Marine Life Insurance had the lowest net contribution from 15 selected samples, amounting to Rp 644,000,000 with a surplus underwriting value of Rp 501,000,000. A significant difference in the net contribution obtained is based on the total gross contribution and policy on the proportion of *ujrah* and reinsurance of each sharia life insurance company.

In 2016, PT Allianz Life Indonesia had the second highest net contribution and underwriting surplus after prudential Life Assurance, where in 2016 the total net contribution increased from the previous year which amounted to Rp 153,956,000,000 to Rp 190,428,000,000 with an increase in underwriting surplus also from the previous year which amounted to Rp 77,322,000,000 to Rp 77,797,000,000. The increase in net contributions was due to the amount of the gross contribution raised from the previous year, besides the reinsurance portion was also deducted or smaller than the previous year. As a result, with an increase in the net contribution and efficiency of the *ujrah* and reinsurance, it can increase the value of the surplus (deficit) underwriting.

In another case, there are companies that experienced a decrease in the net contribution value in 2017. For example, PT Allianz Life Indonesia, where the net contribution decreased from Rp 190.428.000.000 in 2016 to Rp 187.010.000.000 in 2017. This is in line with underwriting deficit growth, which decreased from Rp. 77.797.000.000 in 2016 to Rp. 41.312.000.000 in 2017. This happened because the burden of claims increased significantly when the net contribution had decreased from the previous year.

Until the end of 2018, there are a number of companies that continue to experience an increase in net contributions despite fluctuating growth in underwriting surpluses, including PT Asuransi Jiwa Amanah jiwa Giri Artha, PT Asuransi Bri Life, PT Asuransi Jiwa Sinarmas MSIG, PT Prudential Life Assurance, and PT Asuransi Jiwa Manulife Indonesia.

Based on the data that has been described, the efficiency of *ujrah* and reinsurance is important to provide a sufficient net contribution value that results in decent surplus underwriting value. Lessons can be learned from PT Asuransi Simas Jiwa in 2016 which incurred an underwriting deficit of Rp -14.333.000.000 due to a higher insurance expense compared to net contributions while net contributions obtained amounted to Rp -1.745.000.000, a negative value. This is due to a disproportionately high reinsurance portion of contributions (Rp 2.326.000.000) compared to the reasonable proportion of *ujrah* (Rp 389.000.000) of the participant contributions obtained (Rp 970.00.000).

The results of this study are in line with Alifianingrum & Suprayogi (2018) and Mubarok (2018) which found that the net contribution has a significant and positive influence to surplus (deficit) underwriting. If there is an increase in the net contribution, it will increase the surplus (deficit) underwriting.

Overall, it can be concluded that the net contribution has a positive influence on the surplus (deficit) underwriting. The sharia life insurance company has maintained an adequate net contribution to produce a decent surplus (deficit) underwriting through efficiency in the *ujrah* and reinsurance, with the condition that the claim burden paid by the company is not greater than the net contribution obtained.

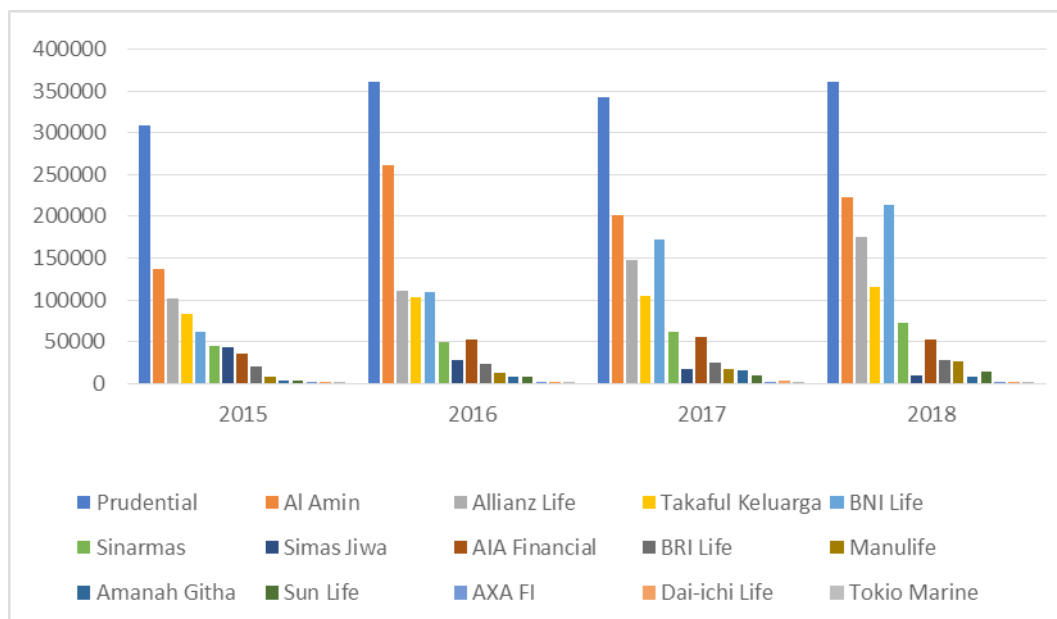
Puspitasari (2012) found that there are several factors to consider when determining the proportion of *tabarru'* distribution and *ujrah*. These include: (1) there is an ethics that *tabarru'* should not be smaller than *ujrah* because the priority should be on helping each other; (2) agreements with the third

parties related to claim records from the previous year; and (3) operational expenses (costs for the company).

### Partial Testing of Claims to Surplus (Deficit) Underwriting

In this study, the results of the t test show that the significance value of the claim is 0.0001 or smaller than 0.05, and the coefficient value is -0.179530. Thus, it can be interpreted that the claim has a significant and negative influence on the surplus (deficit) underwriting of Islamic life insurance companies in Indonesia. The results of this test indicate that if the claims paid by the company increase, then the surplus (deficit) underwriting will decrease. Conversely, if claims decline, then the underwriting surplus (deficit) will increase. The following is a graph that illustrates the growth of claims of sharia life insurance companies in Indonesia between 2015-2018.

Graph 4.3 Growth of Claims for Sharia Life Insurance Companies in Indonesia 2015-2018 (in millions of rupiah)



Data Processed (2019)

Based on the data that has been obtained, there is a significant difference in the value of claims and surplus (deficit) underwriting among sharia life insurance companies. For example, the risk of claims borne by PT Asuransi Jiwa Syariah Al Amin in 2015 amounted to Rp 137,422,550,000, and in the following year the number of claims borne by PT Asuransi Jiwa Syariah Al Amin increased to Rp 260,982,350,000. However, with an increase in claims,

the surplus (deficit) underwriting decreased from 2015 which amounted to Rp 32.894.170.000 to Rp 13.207.050.000 in 2016. Based on the data obtained, the increase in claims was contrary to the surplus (deficit) underwriting in the year 2016. This is because when the number of net contributions has decreased, the risk value of claims paid by companies has increased from the previous year. This trend was also observed in other companies such as PT Asuransi Jiwa Sinarmas MSIG, PT Tokio Marine Life Indonesia, PT Prudential Life Assurance, PT Asuransi Jiwa Manulife Indonesia, and PT AIA Financial.

Likewise, in PT Tokio marine Life Insurance, the risk of claims amounted to Rp 356.000.000 in 2016 and increased to Rp 285.000.000 in 2017. However, with the decrease in claims, the amount of surplus underwriting has increased from the previous year from Rp 12,000,000 to Rp 935.000.000. The significant increase in surplus underwriting was due to the number of net contributions that increased from 2016 which amounted to Rp 377.000.000 to Rp 1.118.000.000 in 2017, while the number of claims decreased as mentioned.

Until the end of 2018, the lowest claim acquisition in a period of four years (2015-2018) was occupied by PT Tokio Marine Life Insurance. Meanwhile, the highest claim risk was obtained by PT Prudential Life Assurance, and followed by PT Asuransi Jiwa Syariah Al Amin. Even though it has the highest claim risk value, the value of the company's surplus underwriting remains adequate because the net contribution value is not smaller than the number of claims paid.

Based on the data outlined above, the accuracy of the estimated risk of claims is highly recommended in order to obtain a proper surplus underwriting value. Lessons can be learned from PT Asuransi Takaful Keluarga that there has been an increase in net contributions, but this is not in line with the surplus of underwriting obtained. The total net contribution obtained was greater than the previous year which amounted to Rp 72.226.000.000 to Rp 78.796.000.000, whereas in 2017 PT Asuransi Takaful family experienced a deficit underwriting that was greater than before which amounted to Rp -2.896.000.000 to Rp -10.640.000.000. The data suggest that the increase in net contributions from the previous year is due to the proportion on the part of the manager of the contribution that has been efficient. However, the net contribution is not able to cover the amount of insurance burden which is an obligation that must be fulfilled by the company, where the risk of claims is greater than the net contribution obtained. Thus, PT Asuransi takaful family experienced a deficit underwriting.

The results of this study are in line with Ramdhani P & Sukmaningrum (2019), Alifianingrum & Suprayogi (2018) and Damayanti & Mawardi (2016) which found that claims have a significant and negative effect on surplus (deficit) underwriting. In their research, Damayanti & Mawardi (2016) explained that the most influential aspect in increasing the surplus underwriting is the burden of claims that must be paid by companies when a loss occurs to insurance participants. Therefore, it can be concluded that the claim has a significant effect on the underwriting surplus (deficit). In a sense, in the 2015-2018 period there was an increase in the risk of claims to sharia life insurance companies in Indonesia.

The increase in the risk of claim payments is caused by two things. Firstly, during unpredictable natural and environmental conditions. During these conditions, such as earthquakes, floods, fires, and accidents, the claim value will certainly increase. The second relies on an analysis in accepting objects (participants) that are less valid (Puspitasari, 2011).

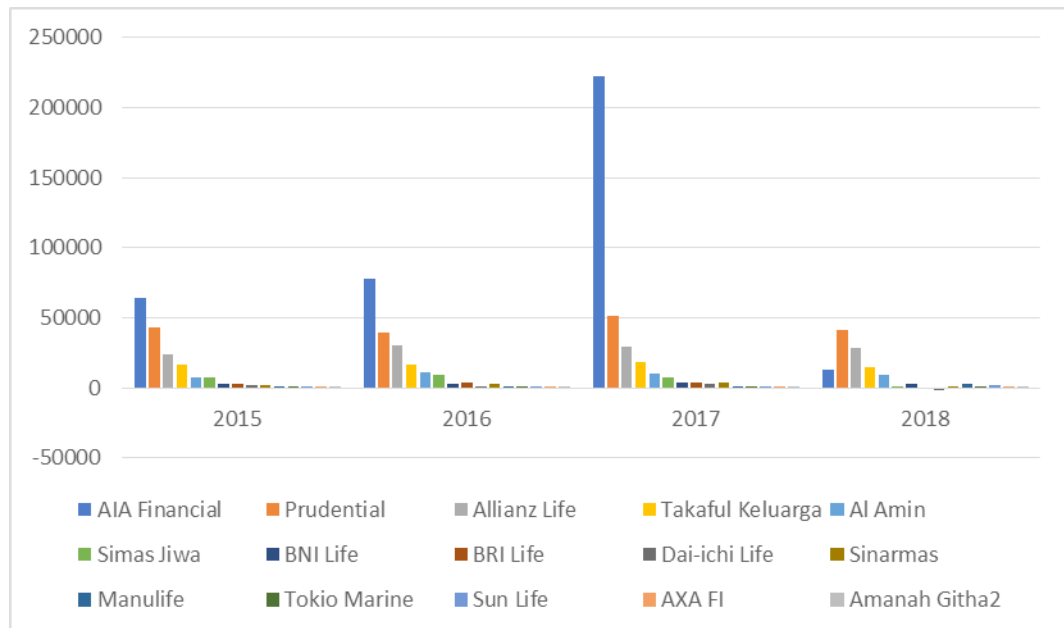
Based on the description above, the factor of environmental change is very influential, especially in the calamity faced by insurance participants who do not know when it will occur. Therefore, it is expected that the company can estimate the risk of claims appropriately, at least in accordance with the prediction of claims at the beginning of the period. This way, there is a hope to obtain a decent surplus (deficit) underwriting through the *tabarru'* funds to share the risks that might occur.

### **Partial Testing of Investment Results to Surplus (Deficit) Underwriting**

In this study, the results of the t test showed that the significance value owned by the investment was 0.6702 or bigger than 0.05, and the coefficient value was -0.023709. Thus, it can be interpreted that investment returns do not have a significant effect on the surplus (deficit) underwriting in sharia life insurance companies in Indonesia. The results of this test indicate that the increase or decrease in the surplus (deficit) underwriting that occurs in sharia life insurance companies is not influenced by investment returns.

The results of this study are in line with Damayanti & Mawardi (2016) which found that investment returns do not have a significant effect on a company's underwriting surplus. The following is a graph that will illustrate the growth in investment returns of sharia life insurance companies in Indonesia in 2015-2018.

Graph 4.4 Growth of Investment Results of Sharia Life Insurance Companies in Indonesia in 2015-2018 (in millions of rupiah)



*Data Processed (2019)*

Based on the data that has been obtained, the growth of investment returns within three years (2015-2017) has a very significant impact if PT AIA Financial is compared to other companies. At the end of 2018, many companies experienced a decline in investment returns, including PT Asuransi Takaful Keluarga, PT Asuransi Jiwa Syariah Al Amin, PT Allianz Life Indonesia, PT Asuransi Bri Life, PT Asuransi Simas Jiwa, PT Asuransi Jiwa Sinarmas MSIG, PT Bni Life Insurance, PT Prudential Life Assurance, PT Panin Dai-ichi Life, PT AIA Financial, and PT Axa Financial Indonesia.

Investment returns, which do not have an effect on surplus (deficit) underwriting, have to prudently consider the main task of insurance companies: managing risks. In other words, investment is not the main task of the insurance company because investment is only a way to obtain profits (investment returns). The investment returns can be used when the company experiences a shortage of claim payments. Therefore, it remains the main task of insurance companies to maintain the ability to pay claims in a bad or successful investment.

At present many companies offer investment products, in which insurance companies can manage themselves or hand it over to investment managers. In principle, insurance companies must be more prudent in investing so as not to lead to losses.

The sharia life insurance should learn from what happened to PT Asuransi Jiwasraya, which was unable to return the customer's money when it was due, in the sense of defaulting on the JS Savings Plan insurance policy due to errors/negligence in managing the investment portfolio. This can be used as a valuable lesson for the insurance companies and other financial industries, especially in investment management, risk management, and asset and liability management so that similar events such as Jiwasraya will not happen again.

Puspitasari (2012) in her research explained that macroeconomic conditions, which include inflation rates, the exchange rate of the Rupiah against the US Dollar, economic growth, and interest rates of Bank Indonesia (SBI), have an influence on aspects of the company's internal finances such as returns on investment.

Another thing that becomes the reason for investment results not having an effect on the surplus (deficit) underwriting is the problem of uncertainty about how much profit, or investment returns obtained. Insurance companies can only plan an investment activity, but cannot ensure the results that will be obtained from the investment activity. As organizers, the sharia insurance companies are required to invest *tabarru'* funds in financial institutions whose operations are in accordance with sharia principles.

One key to the success of investment management is the effort to improve the skills of human resources in the investment field. In addition, investment management must adjust to its obligations. The client's profile, demographics, and contribution levels must be the basis for determining investment portfolios so that they do not result in large potential losses (Susiyanto, 2020).

### **Simultaneous Testing of Net Contribution, Claims, and Investment Results to Surplus (Deficit) Underwriting**

It can be seen that between sharia insurance companies and participants have a relationship. At the end of every year, after calculating the financial statements, the insurance companies transparently report the funds that have been managed to the participants. If the collection of *tabarru'* funds is greater (surplus) than compensation given to participants who experience a disaster, profits will occur, and the company will return it transparently to insurance participants commonly known as surplus underwriting. According to Agusti (2017), if the deficit in *tabarru'* funds is managed by the company,

then the deficit will be overcome by the sharia insurance companies by providing bailout funds using the *qardul hasan* contract (benevolent loan).

The results of this study indicate that simultaneously, all independent variables consisting of net contributions, claims, and investment returns have a significant and positive effect on the dependent variable, namely the surplus (deficit) underwriting. This can be proven in table 4 that the probability value on the F test results is smaller than 0.05, i.e. 0.0000 with an R<sup>2</sup> value of 86%.

The R<sup>2</sup> indicates that 86% of the surplus (deficit) underwriting obtained by sharia life insurance companies is influenced by net contributions, claims and investment returns. In other words, the other value of 14% is influenced by other factors beyond this study.

The results of this study are in line with Ramdhani P & Sukmaningrum (2019) Alifianingrum & Suprayogi (2018) dan Mubarok (2018) which found that net contributions, claims, and investment returns have a significant effect on surplus (deficit) underwriting on sharia insurance in Indonesia.

From the description above, it can be concluded that the sharia life insurance company has a sufficient and reasonable underwriting surplus. By understanding the determining factors that can affect the surplus (deficit) underwriting (net contribution, claims, and investment returns), the company can optimize efficiency related to the proportion of *tabarru'* funds consisting of *ujrah* and reinsurance as a determinant of the adequacy of the net contribution value and estimate accurately various potential risks that are likely to occur.

## **CONCLUSION**

This study aims to examine whether there is an influence between the net contribution, claims, and investment returns to the surplus (deficit) underwriting sharia life insurance companies in Indonesia. The analytical method used in this research is multiple regression with panel data processed using Eviews 9. The data obtained are 60 with the same period, during 2015-2018. The data was obtained from 15 sharia life insurance companies selected based on a purposive sampling technique.



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