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AL-AMWAL

Analysis on Factors Influencing the Participant's Contribution of the Islamic Life Insurance in Indonesia

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Abstract

The development of the gross contribution and gross claims of Islamic life insurance has increased every year. In contrast to the growth in gross contribution and gross claims of Islamic life insurance, it has experienced fluctuating growth. The growth in gross claims should be balanced followed by the gross contribution, which shows an alignment between the growth in gross contributions and gross claims. This study aims to determine an overview of the growth and development of participant's contributions to the sharia life insurance industry in Indonesia and to analyze the effect of operational costs, claims, investment returns, risk-based minimum tabarru funds (DTMBR), company size, and tabarru funds. sharia law in Indonesia for the 2015-2019 period. This study uses panel data regression analysis with the help of Stata 14 software. The objects of this study are four full fledge companies and 16 sharia life insurance business units for the period 2015 to 2019. The results show that operational costs, claims, DTMBR, company size have a significant positive effect. to the contribution of sharia life insurance participants.

Keywords: *Sharia Life Insurance, Gross Contribution, Gross Claims, Panel Data*

Abstrak

Perkembangan kontribusi bruto dan klaim bruto asuransi jiwa terjadi peningkatan setiap tahunnya. Namun, berbeda dengan pertumbuhan kontribusi bruto dan klaim bruto asuransi jiwa syariah di Indonesia justru mengalami pertumbuhan yang fluktuatif. Seharusnya pertumbuhan klaim bruto seimbang diikuti dengan kontribusi bruto yang menunjukkan adanya keselarasan antara pertumbuhan kontribusi bruto dengan klaim bruto. Penelitian ini bertujuan untuk mengetahui gambaran umum pertumbuhan dan perkembangan kontribusi peserta pada industri asuransi jiwa syariah di Indonesia dan menganalisis pengaruh biaya operasional, klaim, hasil investasi, dana *tabarru'* minimum

berbasis risiko (DTMBR), ukuran perusahaan, dan dana *tabarru'* berpengaruh terhadap kontribusi peserta asuransi jiwa syariah di Indonesia periode 2015-2019. Penelitian ini menggunakan analisis regresi data panel dengan bantuan *software Stata 14*. Obyek penelitian ini adalah empat perusahaan *full fledge* dan 16 unit usaha asuransi jiwa syariah periode 2015 hingga 2019. Hasil penelitian menunjukkan bahwa biaya operasional, klaim, dana *tabarru'* minimum berbasis risiko, ukuran perusahaan berpengaruh signifikan positif terhadap kontribusi peserta asuransi jiwa syariah.

Kata kunci: Asuransi jiwa syariah, kontribusi bruto, klaim bruto, regresi data panel

INTRODUCTION

Protection for insurance participants means that insurance participants provide funds to receive compensation from the insurance company (Rianto 2012). There are multiple functions of insurance including protection, future savings and other sources of income, risk instruments, distribution of costs, and benefits more evenly (Arthesa 2006). The insurance industry has the second largest market share in other Islamic financial services institutions (Bank Indonesia 2010). According to Haiss & Sumegi (2014) insurance sector is developing as a key barometer to measure a healthy economy, not only as evidence of an efficient financial services sector. Based on data from OJK (2019), the ratio of gross premium contribution of insurance to the gross domestic product in Indonesia had relatively increased from 2015 to 2019. In 2019 the ratio between the contribution of gross insurance premiums and the gross domestic product reached 3,04 percent, an increase of 0.12 percent from 2018 and was the largest ratio between 2015 and 2019. This means that insurance in Indonesia had a contribution of 3.04 to the national economy in 2019.



Figure 1. Contribution of Insurance Gross Premiums in Indonesia to Gross Domestic Product

Based on figure 1 increasing the contribution of gross insurance premiums to the gross domestic product, indicates an increase in the development of the insurance industry in Indonesia. Indonesia is the country with the largest muslim population. The population in Indonesia is 275 million people with a percentage of 87.2 percent are muslim (World Population Review, 2021). That population indicates Indonesia has the largest muslim population. Thus, the development of the insurance industry is also followed by the existence of the islamic insurance industry in Indonesia. Hasan (2014) stated that sharia insurance or *takaful* aims to be an assistant and guarantor for Muslims, consider that it is closely related to goodness by sharing responsibility between people.

This statement is contained in the Qur'an about the command to help others "*Cooperate in righteousness and piety, but do not cooperate in sins and aggression. And fear Allah, surely Allah is severe in punishment*" (Surah al-Maidah [5]: 20).

The development of Sharia insurance can be seen from total assets, investment, and gross contribution of sharia insurance with condition that there is always an increase every year. According to OJK (2019) total assets, investments, gross contributions in 2019 amounted to 45.8 trillion rupiah, 39.89 trillion rupiah, and 16.75 trillion rupiah, an increase of 19.11 trillion rupiah, 16.78 trillion rupiah, and 6.52 trillion rupiah from 2015 to 2019. This increase shows that sharia insurance is can compete for every year, one of which is the development of gross contribution. In 2019, the gross contribution of sharia insurance reached 16.75 trillion rupiah, consisting of 83.34 percent of sharia life insurance contributions, 16.66 percent of sharia general insurance contributions, and sharia reinsurance. The gross contribution of sharia life insurance has the largest gross contribution in 2019 among other insurance companies of 13.96 trillion rupiah with a growth of 68.8 percent from 2015.



Figure 2. Development of Gross Contribution and Gross Claims of Sharia Life Insurance from 2015 to 2019

Depending on the risk and nominal that must be paid as a measurement to determine the nominal contribution of participants so that the burden of losses suffered by the company can be calculated. Insurance companies are obliged to give rights to insurance participants by Islamic regulations, these rights are also called claims (Solihin dan Ifham 2010). Islamic insurance requires each participant to contribute funds that are used to help each other in an amount sufficient to cover the expected claims (Bouaziz Cheikh 2013). According to OJK (2019) gross sharia life insurance contributions and claims amounted to 13.96 trillion rupiah and 9.24 trillion rupiah in 2019, which shows an increment from 2018 of 1.3 trillion rupiah and 2.05 trillion rupiah. The total of gross contributions and claims for sharia life insurance in 2015-2019 is presented in Figure 2. This figure shows that the total of gross contributions and gross claims continues to increase every year. In contrast to the growth of gross contribution and gross claims of sharia life insurance, which has a fluctuating growth as shown in Figure 3.

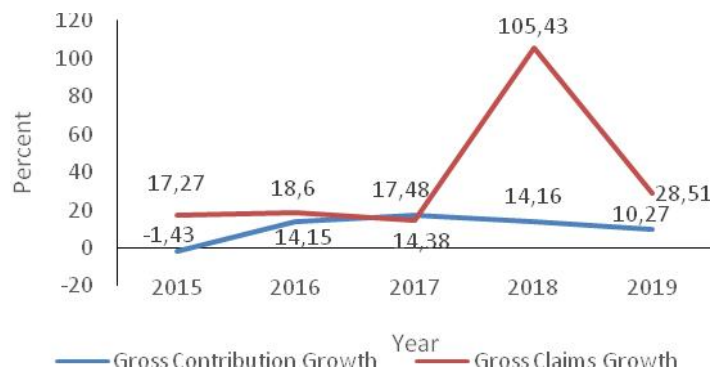


Figure 3. Gross Contribution Growth and Gross Claims for Sharia Life Insurance from 2015 to 2019

Based on Figure 3. the growth of gross contribution and gross claim of sharia life insurance has a very significant difference in 2018, the growth of gross claims increased significantly to reach 105.43 percent while the gross contribution only reached 14.16 percent and decreased from 2018. In 2019 the growth of gross contribution was only 10.27 percent and decreased from 2018 to 3.89 percent, while the growth of gross claims in 2019 was 28.51 percent, a decrease from 2018 of 76.92 percent. The average growth of gross claims and gross contributions from 2015 to 2019 was 36.83 percent and 10.29 percent, respectively. There is a difference of 26.54 percent, which means that gross claims growth is greater compared to gross contribution growth. The growth of gross claims should be balanced followed by gross contributions which show an alignment between the growth of gross contributions and gross claims. The decline from multiple sectors is the cause of weak and stalled economic growth, including in the sharia life insurance industry (OJK 2019).

These problems are related to the sustainability of a company whose role is determined by the nominal contribution of participants when the losses coverage are high with the stable condition of the nominal offer of participants' contributions or when the conditions of losses that can be covered are low but nominal contributions of participants remain low (Saksono 2006). Therefore, the determination of participants' nominal contribution is influenced by several factors. Risk components, savings, and investment are contribution components of sharia life insurance participants (Archer *et al.* 2011). According to Coolen & Maturi (2013) the contribution of sharia insurance also depends on the type of coverage, the nature of the risk, and the period of cover. Add according to Galal & Kabbashi (2017) actuarial calculations, statistical data, market power, and the price of the risk approach as a guide in determining the number of contributions that must be paid by participants. The contribution of participants to reach an optimal turning point is determined by product variations, operating expenses, investment returns, and risk of potential participants (Soedibjo dan Fitriati 2009). As research conducted by Wardhani, which says that operational costs, claims, and investment returns have a significant effect on the participant's contribution to sharia life insurance. Meanwhile, Istiqomah said operational costs, claims, DTMBR have a significant effect on the contribution of general insurance participants but the investment return variable has no significant effect on the participant's contribution of sharia general insurance. Based on the above problems and the contradictions of

previous research, the purpose of this study is to determine the factors that influence the participant's contribution to sharia life insurance (2015-2019 period).

LITERATURE REVIEW

Insurance

Risk includes the possibility of losing something that cannot be avoided, especially associated with financial activities. This risk can be minimized with insurance. Insurance companies carry out activities to ensure losses that occur to insurance participants. The term insurance comes from the Dutch word called *Assuranite*. The word is divided into two words, namely the word "*assurateur*" which means guarantor, and "*geassureerde*" which means the insured. In Latin, it is called "*Assecurare*" which means insured things that may happen (Kasmir 2012). Rianto (2012) stated that insurance is the payment of premiums by insurance participants to anticipate future losses to obtain compensation from insurance companies and as a process of protecting insurance participants. The rules become the reference for every loss that appears in the insurance agreement.

Sharia Insurance

Sharia insurance is defined as an effort to protect and help among several parties through investment in the form of assets and *tabarru'* funds with a certain return pattern mechanism to deal with certain risk problems by contracts determined by Islamic sharia principles. (DSN-MUI Fatwa No. 21/DSN-MUI/X/2001). The contract has been determined in Islamic sharia principles, namely a contract that does not contain elements of usury, *gharar* (deceit), *maysir* (gambling), *zhulm* (torture), *risywah* (bribes), forbidden objects and sinful goods. It can be concluded that sharia insurance is mutual help and protection or in Islam it can be called "*ta'awun*". *Ta'awun* is a way of life to help and protect each other based on the provisions of Islamic *ukhuwah* in dealing with risks among members of sharia insurance participants. Sharia life insurance, sharia general insurance, and sharia reinsurance are types of sharia insurance companies operating in Indonesia. There is also a sharia insurance business unit and is fully compliant with sharia law (full sharia).

Sharia Life Insurance

According to the Regulation of the Financial Services Authority of the Republic of Indonesia No. 69/POJK.05/2016, the sharia life insurance business is risk management based on sharia principles to help and protect each other by making payments based on the death or life of the participant, or other payments to participants or other entitled parties. at a certain time stipulated in the contract. In 2021 the total sharia life insurance companies that have spin off (full fledge) are 7 companies including PT Takaful Keluarga, PT Jiwa Syariah Al-Amin, PT Jiwa Syariah Amanah Jiwa Giri Artha, PT Jiwa Syariah Jasa Mitra Abadi, PT Asuransi Syariah Keluarga Indonesia, PT Asuransi Jiwa Syariah Bumiputera, PT Capital Life Syariah.

Participant Contribution

Al-musahamah in fiqh means the contribution of participants, which means the contract between the management and participant as a consideration (*al-iwad'*) which is an obligation (Sula 2004). In conventional insurance the participant's contribution is known as the premium. According to Saksono (2006), the sustainability of a company is

determined by the nominal contribution of participants, which means that when the covered losses are the high but nominal offer of participants' contributions are stable or when the covered losses are low but the nominal contributions of participants remain low. The amount of the contribution to be paid has been determined by the company, but can also be seen from the mortality table consisting of age and medical history. Risk, savings, and investment are components of the contribution of sharia life insurance participants (Archer *et al.* 2011). According to Soedibjo & Fitriati (2009), the contribution of participants to reach an optimal turning point is determined by product variations, operating expenses, investment returns, and the total risk of potential participants.

Operating Costs

Operating expenses are costs associated with operational activities carried out by the company daily to support the company's performance (Purnomo 2017). Costs that cover all operational activities charged by the company are called operational costs including marketing costs, administrative costs, commission fees, and development costs (Dewi dan Witjaksono 2013). According to Wardhani & Septiarini, (2017), participants' contributions are a source of insurance company operational costs. If the operational costs in the company are not effective, the company's contribution will also be increased. But if the company attempt to reduce the company's operating costs, the participant's contribution can also be reduced (Istiqomah dan Gati 2020).

Claim

Claim means that the participant is entitled to receive dependents based on the agreement because of the loss experienced by the participant, heir, or who is involved in a contract with an insurance company (Anwar 2007). Claims administration is mandatory since it is used to verify claims administration, to determine the eligibility of claims. Sula (2004) stated that the *tabarru'* account which consists of mutual aid fund account that has been agreed upon by all participants is used to pay claims. This is ideal if the company's operational costs, profits, and claims can be covered by the participant's contribution rate (Puspitasari 2012). The emphasis on participant contributions increases because claims are costs that the company must fulfill so that contributions are affected if there is an increment in claims (Sianturi 2014).

Investment Return

Halim (2015) stated that investment is a facility for a certain amount of money to earn more money in the future. Investment returns are the results of participants investing their capital in the chosen investment tool, to gain or lose by the nominal investment at a certain time. The amount of contribution charged to participants is determined by the insurance company to achieve the objectives of investment returns (Huda dan Nasution 2007). The right to collect participants comes from the investment results from the *tabarru'* fund, while the profit sharing based on the *mudharabah* comes from the *tabarru'* fund, as well as choosing the company entirely from the investment results of the *ujroh* funds (Solihin dan Ifham 2010).

Risk-Based Minimum *Tabarru'* Fund (DTMBR)

The company participant contribution rate is determined from the size of risk obtained and participants' coverage which will be projected and calculated when the

risk obtained increases, therefore it will increase loss and contribution (Triandaru dan Budisantoso 2006). According to a copy of Financial Services Authority Circular Letter Number 25/ SEOJK.05/2017 concerning Guidelines for Calculation of Risk-Based Minimum *Tabarru'* Funds and Risk-Based Minimum Capital for Insurance Companies and Reinsurance Companies with Sharia Principles, the definition of risk-based minimum *tabarru'* funds is the total amount of money required as a means of anticipating losses as a cause of irregularities in managing assets and debts from the *tabarru'* fund. DTMBR risk consists of several components, including credit risk, liquidity risk, market risk, operational risk.

Company Size

Company size is a scale to categorize large or small companies. It can be determined by calculating the number of assets and sales in a certain period (Nugroho dan Setyorini 2018). According to Rifai et al. (2015) the larger the assets will maximize the use of existing resources to generate profits, while the smaller assets generate profits by the relatively small assets of the company. High profits can also be measured by the size of company that gets more market power to obtain a higher price (Pervan 2012). It leads to the competitive performance of the company to be better due to lower operational costs because these costs can be allocated to the investment sector (Patriana 2014). Company size is also closely associated with solvency because it can observe the strength of insurance company as a risk (Ambarwati dan Hasib 2018).

***Tabarru'* Fund**

The word *tabarru'* means *tabarra'a-yatabarra'u-tabarru'an*, which means donation or alms. *Mutabarru'* or philanthropist is a term for people who donate (Rahman 2011). *Tabarru'* fund is a sum of money paid by sharia insurance participants to other participants in the form of pooling funds by the agreement (Fadilah dan Makhrus 2019). There is no general regulation that regulates the proportion of *tabarru'* funds, causing there are several other factors in this difference in the proportion of *tabarru'* funds. Another factor is claims. According to Puspitasari (2012) if claims have increased, there will be an increase in the proportion of *tabarru'* funds and if there is a decrease in claims, a decrease will also occur in the proportion of *tabarru'* funds. When there is no increase in *tabarru'*, it causes *qardul hasan* to be issued. Sumanto et al. (2009) stated that the increase in the submission of claims made by participants and more than the *tabarru'* fund component will affect the determination of the contribution in which there is a *tabarru'* component in the future.

Theoretical Model Frameworks

In this section the authors propose a research framework that is taken based on the background of the problem and the results of theoretical studies as well as from previous research. Then the research framework is as follows:

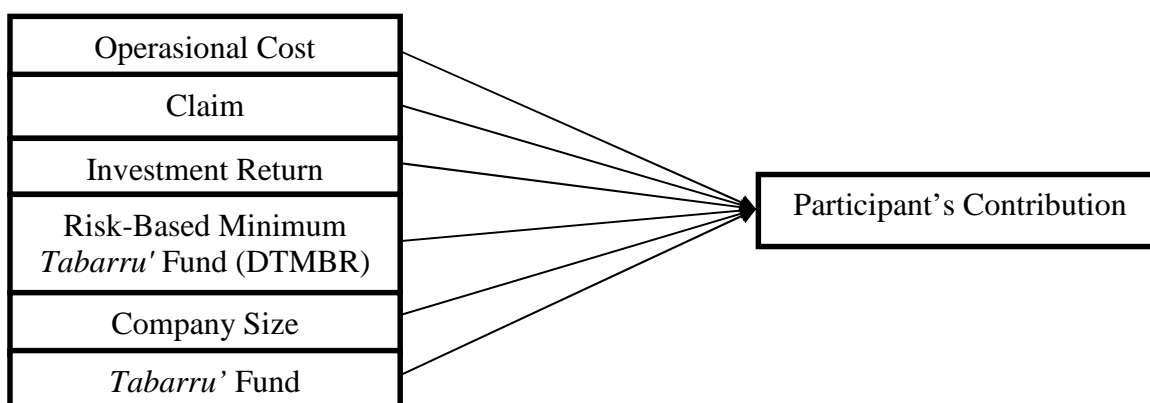


Figure 4. Research Model

Hypothesis

1. Operational costs positively and significantly affect the contribution of sharia life insurance company participants.
2. Claims positively and significantly affect the contribution of sharia life insurance company participants.
3. Investment returns affect the contribution of participants in sharia life insurance companies positively and significantly.
4. The risk-based minimum *tabarru'* fund affects the contribution of sharia life insurance companies in a positive and significant way.
5. The size of the company positively and significantly affects the contribution of participants in sharia life insurance companies.
6. The *tabarru'* fund positively and significantly affects the contribution of sharia life insurance company participants.

METHOD

Sample Procedure

This study used the purposive sampling technique to collect samples. Purposive sampling is a method to obtain samples from data with certain conditions. The criteria are sharia life insurance companies that are listed in the OJK sharia insurance statistics and issue the company's annual financial statements for 2015-2019. Based on these criteria, this study used four sharia life insurance companies and 12 sharia life insurance business units in Indonesia.

Table 1. List of Sharia Life Insurance Companies

No.	List of Sharia Life Insurance Companies
1	PT Asuransi Takaful Keluarga
2	PT Asuransi Jiwa Syariah Al-Amin
3	PT Asuransi Jiwa Syariah Amanahjiwa Giri Artha
4	PT Asuransi Jiwa Syariah Jasa Mitra Abadi

Source: Processed data (2021)

Table 2. List of Sharia Life Insurance Business Units

No.	List of Sharia Life Insurance Business Units
1	PT AIA Financial
2	PT Asuransi Allianz Life Indonesia
3	PT Asuransi BRI Life
4	PT Asuransi Jiwa Central Asia Raya

5	PT Asuransi Jiwa Manulife Indonesia
6	PT BNI Life Insurance
7	PT Panin Daichi Life
8	PT Prudential Life Assurance
9	PT Tokio Marine Life Insurance Indonesia
10	PT Chubb Life Assurance
11	PT Sun Life Financial Indonesia
12	PT Asuransi Jiwa Sinar Mas MSIG

Source: Processed data (2021)

Variable operationalization

Table 3. Operational Variable

Variable	Definisi
Participants Contribution	Contract between management and participant as a consideration (al-iwad) which is an obligation (Sula 2004)
Operational Cost	Costs associated with operational activities which carried out by the company on a daily basis to support the company's performance (Purnomo 2017)
Claim	Participants are entitled to receive dependents based on agreement because of the loss experienced by participant, heir, or who is involved in a contract with an insurance company (Anwar 2007)
Investment returns	Investment returns are the results of participants investing their capital in the chosen investment tool, which will later gain or lose in accordance with the nominal investment at a certain time (Huda dan Nasution 2007)
<i>Tabarru'</i> Fund Minimum Risk-Based	Total funds needed to anticipate the risk of losses that arise due to irregularities in the management of assets and liabilities from <i>tabarru'</i> fund (Financial Services Authority Regulation of the Republic of Indonesia No 69/POJK.05/, 2016)
Company size	Company size is a scale to categorize large or small company. It can be determined by calculating number of assets and sales in a certain period (Nugroho dan Setyorini 2018).
Dana <i>Tabarru'</i>	An amount of money as a membership fund that sharia insurance participants give to other participants in the form of pooling funds in accordance with the agreement (Fadilah dan Makhrus 2019).

Analysis Techniques

The analysis technique used is panel data regression analysis with Microsoft Excel and Stata 14. Panel data is the result of monitoring in a sequential time or time series consisting of several individuals or cross-sectional units. It is carried out through three model approaches, namely Pooled Least Square (PLS), Fix Effect Model (FEM), and Random Effect Model (REM). To select the best model, The researcher conducted three tests, namely the chow test, hausman test, and the lagrange multiplier test.

RESULTS AND DISCUSSION

Overview of the Development of Gross Contribution of Sharia Life Insurance

Based on data from OJK Insurance Statistics 2019 data, the ratio of gross premium contribution of insurance to the gross domestic product in Indonesia was the lowest in 2015 at 2.56 percent, which means that in 2015 insurance in Indonesia only had a gross premium contribution of 2.56 to the national economy. However in the following year, there was a significant increase reaching 2.92 percent with an increase of 0.35 percent from 2015. This increase also occurred in 2017 by 3 percent but decreased again by 2.92 percent in 2018. And in 2019 rose again to 3.04 percent which is the highest value of the ratio of gross insurance premium contribution to the gross

domestic product in Indonesia. Comparison of the ratio of the gross premium contribution of insurance to the gross domestic product in Indonesia from 2015-2019 there was a significant increase by 0.48 percent. It shows that insurance in Indonesia has a gross premium contribution that has increased by 0.48 to the national economy from 2015-2019.

The contribution of gross insurance premiums to the gross domestic product in Indonesia, which on average has increased, indicates a rapid growth in the insurance industry in Indonesia. Indonesia is the country with the largest population of Muslims. The population in Indonesia is 275 million people with a percentage of 87.2 percent are muslim (World Population Review, 2021). That population indicates Indonesia has the largest muslim population. Thus, the development of the insurance industry is also followed by the existence of the Islamic insurance industry in Indonesia. In 2019, the gross contribution of sharia insurance reached 16.75 trillion rupiah, consisting of 83.34 percent of sharia life insurance contributions, 16.66 percent of sharia general insurance contributions, and sharia reinsurance. The gross contribution of sharia life insurance has the largest gross contribution in 2019 among other insurance companies of 13.96 trillion rupiah with a growth of 68.8 percent from 2015. The development of the gross contribution of sharia life insurance increases every year. According to OJK 2019 data, the highest gross contribution in 2019 was 13.96 trillion rupiah. Comparison of the gross contribution of sharia life insurance in 2015-2019 increased by 5.69 trillion rupiah. The development of the gross contribution of sharia life insurance in Indonesia is presented in Figure 5.

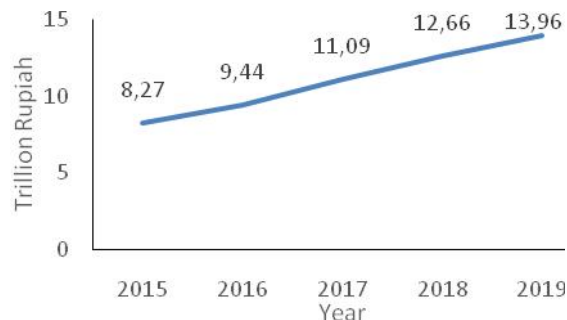


Figure 5. Development of Sharia Life Insurance Gross Contribution from 2015 to 2019

The development of the contribution of sharia life insurance has increased every year. However, it is in contrast to the growth of gross contribution of sharia life insurance, which has fluctuating growth. The increase in gross contribution growth has occurred in 2016 reached 14.15 percent from 2015 which was -1.43 percent. Furthermore, in 2017 the condition was getting better, the gross contribution increased by 17.48 percent. However, in 2018 gross contribution growth decreased to 14.16 percent and continued to decline from 2019 only reached 10.27 percent. The average gross contribution growth from 2015 to 2019 was 10.92 percent. The decline in the contribution of sharia life insurance was significant in 2018 with declining sector conditions, especially in investment (OJK, 2019). The growth of the gross contribution of sharia life insurance in Indonesia is presented in Figure 6.

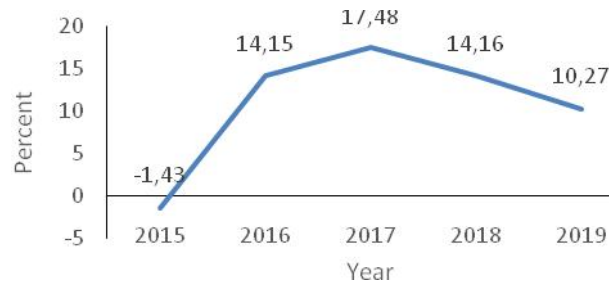


Figure 6. Growth in Gross Contribution of Sharia Life Insurance from 2015 to 2019

Analysis of Factors Affecting the Contribution of Sharia Life Insurance Participants

a. Best Model Estimation Stage

Model estimation is useful to recognize the factors that influence the contribution of sharia life insurance participants in Indonesia which is the best model with panel data analysis, through three model approaches namely Pooled Least Square (PLS), Fix Effect Model (FEM), and Random Effect Model (REM). To select the best model, there are 3 tests, namely the Chow test, Hausman test, and the Lagrange Multiplier test.

Table 3. Model Selection Test Results

Pengujian	Prob.	Keputusan
Uji <i>Chow</i>	0,0000	FEM
Uji <i>Hausman</i>	0,0083	FEM

Determination of the first estimation model is conducted by performing the Chow test. The Chow test is useful in determining the best model between Pooled Least Square (PLS) and Fix Effect Model (FEM). In table 3, the value of Prob>F is 0.0000. It shows that the results are smaller than 0.05 or 5 percent level of significance. Thus, sufficient evidence can reject hypothesis H₀, which means that the results of FEM model are better than PLS model.

Derived from the estimation results of the previous model, then continued with the Hausman test. Hausman test is useful in determining the best model between the Fix Effect Model (FEM) and the Random Effect Model (REM). In table 3, the value of Prob>Chi² is 0.0083. This shows that the results are smaller than 0.05 or 5 percent level of significance. Thus, there is sufficient evidence to reject H₀, which means that the estimation of FEM model is better than REM model. Based on these 2 tests, it can be concluded that FEM model is the best model.

b. Classic assumption test

The next stage is to test the classical assumptions of FEM. It is used as an obligation to obtain a BLUE (Best Linear Unbiased Estimator) model. Consists of multicollinearity test, heteroscedasticity test, and autocorrelation test.

a) Multicollinearity Test

The multicollinearity test is shown from the variance inflation factor (VIF) value of $VIF < 10$, which means that it does not have multicollinearity problems. The results of the multicollinearity of each variable show that the VIF value of the *tabarru'* fund variable is 5.00, the VIF value of the BOPO variable is 5.15, the VIF

value of the claims variable is 3.98, the VIF value of the investment return variable is 3.88, the VIF value of the firm size variable is 2.74, the VIF value of *tabarru'* funds is 1.62. The VIF results of the six independent variables are less than 10. Based on these results, the model does not violate the multicollinearity assumption.

b) Heteroscedasticity Test

The heteroscedasticity test shows the results of Prob>chi2 of 0. This result was smaller than 5 percent significance level. Thus, the model violates the assumption of heteroscedasticity.

c) Autocorrelation Test

One of the methods to check the assumption of autocorrelation is the Wooldridge Test. The results obtained show the results of Prob>F of 0.0003 which is smaller than 5 percent level of significance. Therefore, the model violates the autocorrelation assumption.

c. The correction of Classic Assumption

In the classical assumption test that has been tested previously, the model has heteroscedasticity and autocorrelation problems in FEM. The problem of heteroscedasticity must be overcome by the Generalized Least Square or Robust Standard Error method. Meanwhile, to overcome the autocorrelation problem, the Two Stage Least Square, Generalized Least Square, and Feasible Generalized Least Square methods were used. In this research model, there were problems of heteroscedasticity and autocorrelation. Therefore, the researcher chooses the Generalized Least Square method to overcome the problem of heteroscedasticity and autocorrelation in the FEM model.

d. Results of Model Evaluation Based on Economic Criteria

Table 4. Estimated Results of the FEM Model Evaluation

Y	Coefficient	Std.Error	Z	P> z
BOPO	0,3872273	0,531412	7,15	0,000*
Claims	0,757675	0,1120003	6,76	0,000*
Investment Returns	-0,1570697	0,1468878	-1,07	0,285
DTMBR	0,4209063	0,1504909	2,96	0,005*
Company Size	40314,61	8463,996	4,76	0,000*
<i>Tabarru'</i> Fund	0,0432836	0,0588532	0,74	0,462

Description: * significant at the 1 percent level of significance

Source: The results of the author's analysis (2021, processed)

Based on the estimation results, the estimating model for the contribution factor of sharia life insurance participants in Indonesia is as follows:

$$\text{Contribution of participants} = 0.3872273 \text{ BOPO} + 0.757675 \text{ Claims} + 0.4209063 \text{ DTMBR} + 40314.61 \text{ Company Size}$$

a) The Effect of Variable Operational Costs on Participant Contribution

Based on hypothesis testing, operational costs (BOPO) have a significance of 0.000 (<0.01) with a coefficient of 0.3872273 affecting the contribution of participants positively and significantly. These results indicate that an increase in operational costs by one percent will increase the contribution of participants to sharia life insurance in Indonesia by 0.3872273 percent.

According to (Soedibjo dan Fitriati 2009) the contribution of participants to obtain the optimal turning point is determined by product variations, operating expenses, investment returns, and the amount of risk of prospective participants. The ideal rate is when the participant's contribution must cover claims, insurance costs, and company profits (Puspitasari 2015). And then according to Swartz & Coetzer (2010) from the risk column, direct and indirect costs and claims are paid. The increment in operational costs is determined by participant's contributions which affect the increment of participant contributions. Increased operational cost efficiency causes participant contributions to be inexpensive and more competitive between companies (Purnomo 2017). Supported by research by Istiqomah & Gati (2020) that operational costs significantly and positively affect the contribution of sharia general insurance participants. Companies with increased operational activities will also need to increase operational costs, so the increment in contribution costs is needed for sharia life insurance companies. The enhancement in the contribution of sharia life insurance participants that occurs must be audited regularly so that operational costs become more efficient and able to allocate the contribution costs of sharia life insurance participants for the growth of sharia life insurance company assets and can suppress the determination of participant contributions by sharia life insurance companies in Indonesia.

b) The Effect of Claim Variables on Participant Contribution

Based on hypothesis testing, the claim has a significance of 0.000 (<0.01) with a coefficient of 0.757675 affecting the participants' contribution significantly and positively. These results indicate that an increase in claims by one percent means that the participant's contribution to sharia life insurance will increase by 0.757675 percent.

.According to Puspitasari (2015), it can be said is ideal if the company's operational costs, profits, and claims can be covered by the participant's contribution rate. Components such as risk, savings, and investment are also components of the contribution of sharia life insurance participants (Archer *et al.* 2011). Sharia life insurance has the principle of sharing risk between the company and participants by protecting the participants. One of the risks contained in sharia life insurance is claims. According to Bouaziz Cheikh (2013) Islamic insurance requires each participant to contribute funds that are used to help each other in an amount sufficient to cover the expected claims. According to Sianturi (2014), the increase in claims will affect the contribution of company participants, when the company has to endure claims, the company will increase the contribution rate to be slightly expensive. The results of testing the hypothesis are also supported by previous research by Wardhani & Septiarini (2017) that claims affect the contribution of sharia life insurance participants significantly positively. Therefore, the rights for sharia life insurance participants must be obtained in the form of claims. Meanwhile, sharia life insurance companies must fulfill the rights of sharia life insurance participants. When the claim is increased by the participant, the company will also increase the participant's contribution fee to fulfill all its obligations.

c) The Effect of Company's Risk-Based Minimum *Tabarru'* Fund Variable on Participant Contribution

Based on hypothesis testing, the Risk-Based Minimum *Tabarru'* Fund has a significance of 0.005 (<0.01) with a coefficient of 0.4209063 affecting the participant's

contribution significantly and positively. These results indicate that an increase in risk-based minimum *tabarru'* funds by one percent so that the participant's contribution to sharia life insurance will increase by 0.4209063 percent.

According to Salman (2014) participants contribute to the company to minimize the risks they may face in the future. The amount of the contribution fee depends on the type of coverage, the nature of the risk, and the period of cover (Coolen dan Maturi 2013). The increase or decrease in the participant's contribution is the main consideration for the company when the risk that occurs to the insurance company can be covered by the participant's contribution (Djojosoedarso 2003). The opportunity for high risk is the determination of the participant's contribution rate (Triandaru dan Budisantoso 2006). Credit risk, liquidity risk, market risk, insurance risk and operational risk are components of risk-based minimum *tabarru'* fund risk. This risk is the risk prepared by the minimum risk-based *tabarru'* fund (Soedibjo dan Fitriati 2009). Following research by (Istiqomah dan Gati 2020) which mentioned that the company's risk-based minimum *tabarru'* fund affects the contribution of general sharia participants significantly and positively. Therefore, the increased risk of sharia life insurance companies affects the company to require high risk-based minimum *tabarru'* funds, which caused the participant's contribution to be high.

d) The Effect of Company Size Variables on Participant Contribution Costs

Based on the results of hypothesis testing, firm size has a significance of 0.000 (<0.01) with a coefficient of 40314.61 affecting the contribution significantly and positively. These results indicate that an increase in the size of the company by one percent means that the participant's contribution to sharia life insurance will increase by 40314.61 percent.

According to (Rifai *et al.* 2015) increasing assets will maximize the utilization of existing resources to generate profits, while the smaller the profit assets obtained are by the relatively small number of assets owned by the company. High profits can also be measured by the size of the company that gets more market power to get a higher price (Pervan 2012). According to Galal & Kabbashi, (2017) actuarial calculations, statistical data, market forces, and the price of the risk approach as a guide in determining the number of contributions that must be paid by participants. It is also supported by (Sari dan Budiasih 2014) that larger operational costs are needed when having a large company size to carry out its operational activities. Larger operational costs are needed when having a large company size to carry out its operational activities and company size is also closely related to solvency because it can see the strength of an insurance company as a risk bearer (Ambarwati dan Hasib 2018). Therefore, in sharia life insurance, the price set is in the form of participant contributions. The larger size of the company, the more market force it will have among other sharia life insurance companies and can determine the price of a higher participant contribution therefore it can compete with other sharia life insurance. And then, when the company has a large company size, the company will pay more operational costs, so it must be balanced with an increase in the contribution of sharia life insurance participants to fulfill all company operational activities. The fulfillment of operational activities shows that the performance of sharia life insurance company is in good condition.

e) The Effect of Investment Returns Variables on Participant Contribution Costs

Based on the results of hypothesis testing in this study, Investment returns have a significance of 0.285 (> 0.01) with a coefficient of -0.1570697 has an insignificant and negative effect on the contribution of participants. These results indicate that the increase in investment returns does not affect the contribution of sharia life insurance participants in Indonesia.

This can be seen in the growth of sharia life insurance investment returns from 2015 to 2019. Investment returns experienced a decline in growth from 2016 to 2018. The peak occurred in 2018 with the development of sharia life insurance investment returns which reached minus 198 billion and the growth of sharia life insurance by minus 107.9 percent. This is due to volatile and unfavorable investment conditions as well as macroeconomic conditions that are still under pressure due to the turmoil of the trade war between China and the United States. However, the state of Islamic insurance assets has been successfully improved. In 2018 total assets reached 41.9 trillion rupiah, an increase of 1.4 trillion rupiah from 2017. This indicates that the investment returns obtained by the company were diverted to increase total assets, not to increase the contribution of sharia life insurance participants so that investment returns do not affect the contribution of sharia life insurance participants in Indonesia (Istiqomah dan Gati 2020).

f) Effect of *Tabarru'* Fund Variable on Participant Contribution Costs Biaya

Based on hypothesis testing, *tabarru'* funds have a significance of 0.462 (> 0.01) with a coefficient of 0.0432836 affecting the contribution of participants significantly and positively. These results indicate that the increase in *tabarru'* funds does not affect the contribution of sharia life insurance participants.

Companies with large *tabarru'* funds do not affect large contributions because according to (Puspitasari 2012) the proportion of *tabarru'* funds is different for each participant's contribution to sharia life insurance companies which is allocated to the *tabarru'* and *ujrah* fund account columns. This difference in the proportion of *tabarru'* funds is caused by several factors such as claims, operational costs and the contribution of the *tabarru'* (Amin 2020). This factor is a component of the participant's contribution. Therefore, the *tabarru'* fund does'nt effect on the participant's contribution, but on the contrary, the participant's contribution affect on determining the proportion of the *tabarru'* fund because the determination of the *tabarru'* fund must adjust the contribution of the company It observed from the condition of *tabarru'* fund's proportion in several sharia life insurance companies in 2015-2016 which had a lower proportion of *tabarru'* funds than the proportion of *ujrah*. The large amount of average *ujrah* indicates that *tabarru'* funds allocate more funds to *ujrah* funds, therefore it does not affect the determination of the contribution of sharia life insurance participants in Indonesia.

CONCLUSION

The development of sharia life insurance industry has increased every year as shown by the development of gross contribution of sharia life insurance from 2015 to 2019. The conditions for the development of increasing gross contribution are different from the growth of gross contribution which experiences fluctuating conditions. As well as the significant difference in gross contribution growth with gross claims in 2018 due to declining economic conditions.

Based on these study, the six estimated variables testing were carried out by panel data regression using Generalized Least Square FEM model. The estimation results show that four variables affect the contribution of sharia life insurance participants significantly and positively at one percent level of significance. The factors that significantly influence the contribution of sharia life insurance participants are operational costs, claims, risk-based minimum *tabarru'* funds, and company size, while the investment returns and *tabarru'* funds do not significantly affect the contribution of sharia life insurance participants. Variables that have a positive effect are operational costs, claims, risk-based minimum *tabarru'* funds, company size.

Based on these results, policymakers need to decide actions to evaluate the company's performance related to determining participant contributions by considering the six independent variables in this study. In addition, it is also necessary to have training for sharia life insurance companies' employees to manage operational costs and existing risks efficiently, so that these costs can be allocated for asset growth of sharia life insurance companies. Thus, the company will not face incompetence in managing the operational costs and risks of the sharia life insurance company. The contribution and the assets growth of sharia life insurance company can be increased therefore the company can operate properly and protect to public.

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