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Comparison of Two Sharia Insurance Unit-Linked Products Through Tabarru Fund Simulation

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Abstract

The number of sharia insurance products has been steadily increasing over the past few decades. According to some research, this rise is expected to reach 15–20%. Tabarru funds, which are gathered funds intended to support one another without payment, should be included in the sharia insurance policy. This fund is supposedly gathered to cover the insured person's claim. Additionally, sharia insurance providers provide unit-linked sharia insurance, which was first made available by traditional insurance providers. This paper explains the operation of unit-linked sharia insurance. We examine this product that is offered by many companies. We develop a mathematical model to compute the unit-linked product's tabarru fund and simulate a few scenarios. The outcome shows that some ujrah (fees), such as these for acquisition, administration, risk management, investment management, and fund transfers, are deducted from the contribution that was paid. The simulations involving a subject who lives to be 99 years old and dies at specific ages reveal differences in the quantity of tabarru funds gathered from the products under observation. The tabarru funds collected in products A and B are IDR 110.040.000 and 9.072.000, respectively. This amount is not enough to cover the promised claims.

Keywords: *Tabarru; Contribution; Sharia; Unit-Linked; Ujrah*

1. Introduction

The basic concept of Sharia Insurance, also referred to as Takaful, is the idea of mutuality and risk-sharing. The translation of takaful is "shared responsibility" or "joint guarantee." The ancient Arab tribes adopted sharia insurance as a pooled obligation that required individuals who committed crimes against members of a different tribe to compensate the victims or their successors, according to Cheikh's study [1]. Additionally, according to [2], Syarikat Islam insurance was the first to establish sharia insurance in Sudan in 1979. Two affiliate firms, PT Asuransi Takaful Keluarga and PT Asuransi Takaful Umum, are being developed by PT Syarikat Takaful Indonesia, which founded sharia insurance in Indonesia by 1994 [3]. The growth of takaful increased gradually over the last decades. According to a survey by Allied Market Research, the global takaful insurance market was estimated to be worth $24.85 billion in 2020 alone. It is anticipated to reach $97.17 billion in 2030, with a Compound Annual Growth Rate (CAGR) of 14.6% between 2021 and 2030 [4].

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Any financial company would be encouraged to start experimenting in this sector by the 15%–20% growth that is anticipated [5]. Takaful in Indonesia increased by 4.83% from June 2020 to IDR 42.813 billion in June 2021. Furthermore, compared to the second quarter of 2020, the gross contribution of takaful increased by 51.89% in the second quarter of 2021 [6]. Based on its economic operations, takaful is separated into two categories: full-fledged takaful and Sharia unit. On the other hand, takaful can be broadly classified into three categories: Sharia re-insurance, Sharia general insurance, and Sharia life insurance [7]. The 3% growth in total assets and gross contribution in takaful from the second quarter of 2020 to the second quarter of 2021 was impacted by the increase in investment.

In addition, the effects of COVID-19 have indirectly raised public awareness of the value of insurance, which has led to a 0.046% increase in the number of Indonesians using sharia insurance in the second quarter of 2021. According to Table I, the largest asset in Indonesian takaful is IDR 34,442 billion, or 80.45% of the entire value of sharia life insurance.

Table 1. Asset and Gross Contribution of Sharia Insurance in Indonesia in the 2nd Quarter 2021 (in Billion Rupiah).

	Asset	Gross Contribution
Life Insurance	34,442	10,079
General Insurance	6,285	1,001
Re-Insurance	2,086	470

Similarly, Sharia life insurance accounted for 87.26% of the total gross contribution, making it the largest contributor. According to the Indonesian Life Insurance Association (AAJI) and the Indonesian Financial Service Authority (OJK), Sharia unit-linked insurance (Investment link Sharia) accounts for 85% of contributions received for Sharia life insurance. Although sharia unit-linked insurance provides financial protection against a range of life risks, it also comes with investments for long-term financial need. The product's benefits and significant market potential have prompted a sharia insurance company to provide a sharia unit-linked insurance policy. There are 46 Sharia insurance businesses that provide investment-backed insurance products as of September 2021 [8].

Although sharia unit-linked insurance has grown significantly in recent years, it still has disadvantages. Otoritas Jasa Keuangan, the Financial Services Authority, reports that there have been numerous complaints against unit-linked. The majority of grievances are directed towards marketing representatives who fail to adhere to established operating practices. Many customers express dissatisfaction due to the disparity between the profit made and the product they were supplied. This occasionally occurs as a result of the client not thoroughly reading the contract. Additionally, the clients are unaware of the unit-linked costs, which results in a loss rather than a profit [9].

All of the funds involved in unit-linked insurance, including acquisition costs, policies, riders (extra benefits), coverage, administrative costs, etc., are significantly impacted by the fees assessed. Although it appears that the charges are rather high and may overlap, it does not appear to be a significant issue because the phrases are unfamiliar. According to a study by Gupta [10], unit-linked securities may not be worthy of being referred to as investment products. Many clients have suffered losses as a result.

This study creates mathematical models based on the idea and workings of the current sharia unit-link insurance. One useful tool for comprehending the products being presented is a mathematical model. Effectively calculating the value of the sharia ijarah contract based on the current product offered by a sharia company is one study that uses a mathematical model [11]. The theoretical idea of sharia insurance in general is used to analyze the mathematical models of sharia unit-link insurance [12]. Customers must be informed so they can choose whether or not to purchase unit-link insurance. In addition, a tabarru fund calculation simulation is performed to estimate the benefit for the insured individual, regardless of whether the tabarrru fund can fully file it. The following part will provide an explanation of the Tabarru fund, which is the theoretical source of the insurance benefit.

2. Methods

The research methods that are used are data collecting and literature analysis. Examining laws, fatwas, and earlier studies on Sharia insurance—specifically, Tabarru funds and unit-linked insurance—is part of the literature review process. Two distinct Islamic insurance companies that are registered with the Financial Services Authority of Indonesia (OJK) provided the product data used in this investigation. The fee structures and distribution processes of these products known as Product A and Product B differ. The main elements examined in the simulation are Tabarru funds, business funds, and participant funds. Information like investment returns, risk management costs, acquisition fees, and administrative expenses are all included in the computation simulation. Additionally, Tabarru funds are modeled using product-specific mathematical formulae, and the simulations calculate the fund's accumulation and claim-paying capacity. The flow of the diagram, which depicts the procedure from premium payments to fund allocation and ultimate benefits, is displayed in Figure 1.

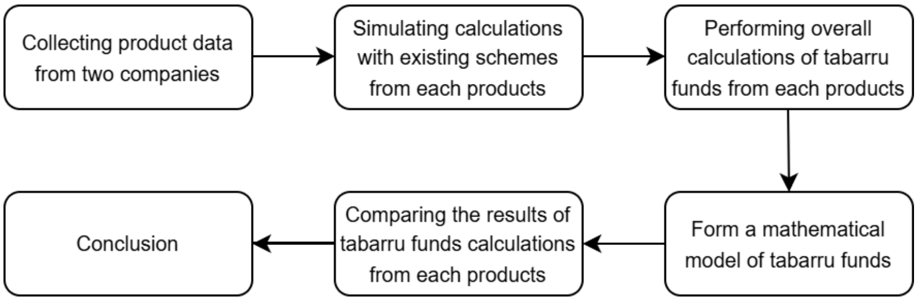

Figure 1. Flow Diagram

2.1 Regulation on Sharia Insurance in Indonesia

According to Indonesia Law Number 40 of 2014 concerning insurance [13], insurance is an agreement between an insurer and an insured party that is based on the insurer receiving contributions as payment for: (a) compensation for the insured resulting from loss, damage, expenses incurred, loss of profit, or legal liability to the insured; or (b) compensation based on the insured's life with benefits whose amounts have been known and/or based on fund management results [9]. According to the definition given above, a study by [7] found that an insurance contract has five essential requirements: (1) an insurer must be present; (2) the event (disaster) must not be intentional; (3) the amount of money must be agreed upon; (4) the sum insured has been established for the insurer as a return for contributions paid by the insured; and (5) the provisions regarding the type of risk must be on behalf of the insured. According to the Fatwa of the National Sharia Council Number 21/DSN/MUI/X/2001 concerning general guidelines for Sharia insurance, it is a product that protects and assists various individuals or parties through investments in assets and/or tabarru that offers a pattern of return to encounter risks through contracts (commitments) that are compliant with Islamic law [14]. Sharia insurance is based on ukhuwah between insured parties and is defined as mutual protection and support [15]. Furthermore, in Islamic insurance, any profits made by the business are distributed to the policyholders. Furthermore, in the event of a loss, it will be duly communicated. A sharia-compliant contract is characterized by the exclusion of elements such as gharar (uncertainty or fraud), maysir (gambling), usury, zhulm (injustice), risywah (bribery), unlawful goods, and immoral practices. There are two primary types of contracts: tabarru and tijarah. Tijarah contracts involve agreements made for commercial purposes, whereas tabarru contracts are designed for altruistic purposes and mutual cooperation, rather than profit. According to Sumarti (2019: 82) [12], the fundamental principles of sharia insurance include monotheism, justice, mutual cooperation, trust, willingness, and the prohibitions of usury, gambling (maisir), and uncertainty (gharar). Additionally, as noted by Kholis (2019: 47) [7], the contract should clearly outline the rights and obligations of both the insured and the insurer, the method and timing of contribution payments, the type of tijarah or tabarru contract involved, and the terms agreed upon for the specific type of insurance. In practice, sharia insurance companies only act as managers of funds from insured which will then be used when insured submit claims. Funds for submitting insured claims are taken from tabarru funds not from company funds. In general, the difference between conventional and sharia insurance is in their concept, in sharia insurance the concept is sharing of risk while in conventional insurance is transfer of risk.

2.2 Sharia Insurance Scheme

In general, the operational scheme of Islamic insurance can be seen in Figure 2.1 where the contributions paid by participants will be used to pay the company's ujrahujrah, tabarru contributions, and some will be kept in the participant's account or called the participant's fund account. The funds will later be invested by the company based on sharia instruments chosen by participants. Furthermore, the contributions collected from all insurance participants are referred to as tabarru funds. These funds are kept in a special tabarru account that cannot be mixed with other funds. This tabarru fund will be used by the company to pay participants' claims. While the ujrah-ujrah paid by participants to the company will go into the company's account.

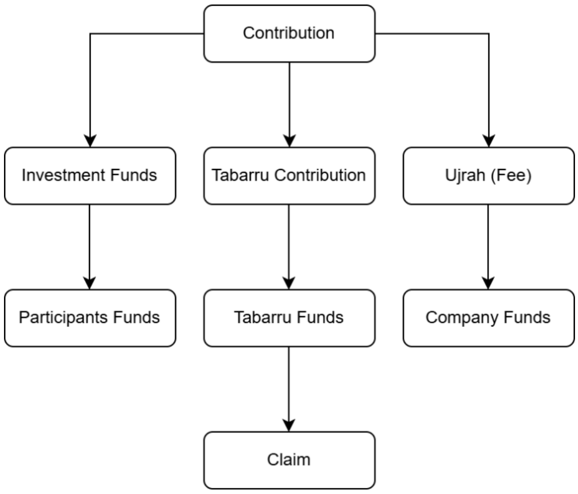

Figure 2. General Scheme of Islamic Insurance Operation

The company offers unit-linked sharia insurance products that give financial benefits in addition to life protection benefits, as shown in Figure 2.

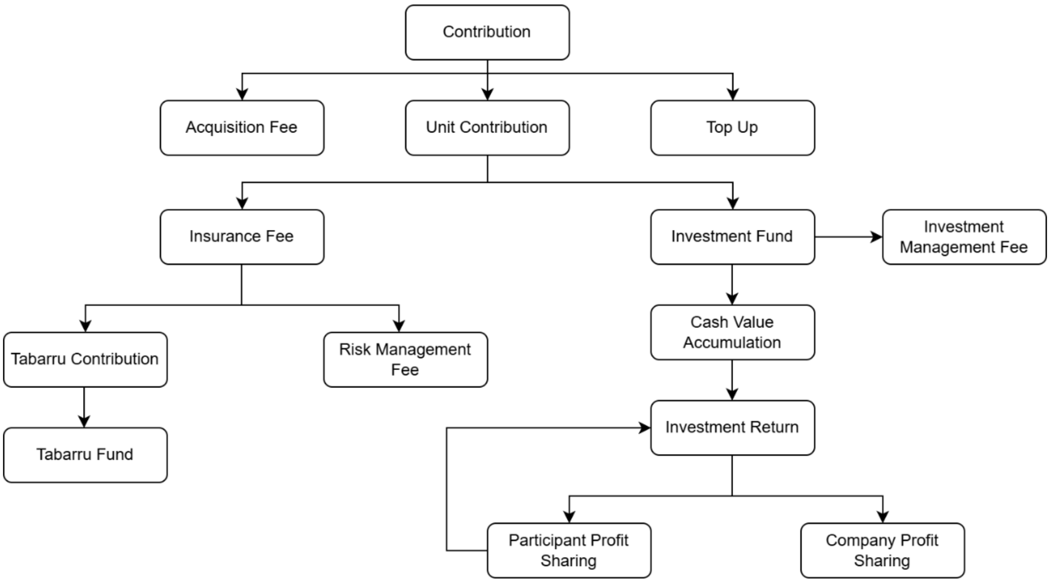

Figure 3. Unit Link Sharia Insurance Scheme

2.3 Tabarru Fund

According to Indonesian law number 40 of 2014 about insurance [13], tabarru fund is a collection of funds come from the contributions of the insured, and the mechanism of use is in accordance to the agreement or Sharia re-insurance agreement. This fund strives to provide participants with financial stability in times of need by operating on the mutual aid principle. The idea is firmly anchored in Islamic principles of duty and cooperation. Tabarru fund collected from the contribution, paid by insured with a certain percentage and will be put into tabarru account. Tabarru fund is a voluntary fund from insured to other insured, intend to help each other without any compensation. Tabarru fund that has been collected will be used to pay claims of insured. The amount of tabarru fund obtained by each insured is not the same, due to the agreement and the age of insured. Based on DSN-MUI Fatwa Number 53/DSN-MUI/III/2006 regarding the tabarru contract in sharia insurance [14], the following legal stipulations are outlined: (1) The tabarru contract must be integrated into all insurance products, (2) The tabarru contract in insurance represents an agreement among all insured participants, (3) The sharia insurance referred to in point 1 includes life insurance, loss insurance, and reinsurance. The terms of the contract are determined as follows: (1) The tabarru contract in insurance is an agreement in the form of a grant aimed at promoting goodwill and mutual assistance among the insured, not for profit-making purposes, (2) The tabarru contract must explicitly include at least: (a) The rights and obligations of each insured individual, (b) The rights and obligations among the insured within the tabarru account as part of a group, (c) The methods and timelines for contribution and claim payments, (d) Other mutually agreed terms according to the type of insurance product. The roles of the parties in the tabarru agreement are further clarified as follows: (1) In the tabarru (grant) contract, the insured contribute grant funds from their contributions, which are then allocated to assist other insured participants, (2) As individuals, the insured are entitled to receive tabarru funds (mu'amman/mutabarra'lahu), and collectively, they serve as insurers (mu'ammin/mutabarri'), (3) The insurer acts as the manager of the grant funds under a wakalah agreement with the insured, in addition to managing the investment of the funds [16].

Based on Indonesian Law Number 40 of 2014 concerning Insurance [13], the management of tabarru funds is regulated as follows: (1) Sharia insurance and reinsurance management can only be conducted by an institution acting as a trustee, (2) The tabarru fund must be accounted for separately from other funds, (3) The investment returns from the tabarru fund are considered collective assets of the insured and are recorded in the tabarru account, (4) Sharia insurance and reinsurance companies may earn a share of the investment returns through a mudharabah or mudharabah musytarakah contract, or receive fees under a wakalah contract [13]. The purpose of the tabarru fund in sharia insurance, according to Dewan Syariah Nasional in No. 53/DSN-MUI/III/2006, is to assist one another among insured; it should not be a tijarah fund [13]. In actuality, tijarah funds are those that are claimed as company funds or used for business operating expenses. Unscrupulous fund management can lead to contract destruction and, of course, harm the sharia insurance system. Consequently, the sharia insurance company ought to adhere to established regulations and sharia principles when managing the tabarru fund and other assets [16].

2.4 Sharia Unit-Linked Insurance

According to Kholis [7] sharia unit-linked insurance is a product that combines from protection and invest- ment. In other words, the insured of sharia unit-linked insurance get two benefits in one policy. The company offers life insurance or health insurance to the insured. Moreover, the insured have an option to determine their investment and what protection they want to obtain. In general, there are some ujrah (fee) in sharia insurance, especially unit-linked based, including: (1) Acquisition (wakalah bil ujrah) which is a fee charged for periodic contribution, (2) Administration which is fee charged to insured policy, (3) Risk management which is fee charged to manage the risk, (4) Investment management which is fee charged to investment fund according to the insured choice, (5) Transfer of fund which is fee charged to transfer an investment.

2.4.1 Product A

Product A offers protection in the form of insurance benefits and is a life insurance policy with investments based on sharia principles. For the first 10 years, this product offers a 5% top-up investment allocation, and for the following 10 years, it offers a 10% top-up. Additionally, 100% insurance compensation and cash value, the amount of which is determined by the performance of the chosen investment fund—are collected in the event that the insured participant passes away. 100% of the insurance payout and cash value will still be made if the insured participant lives to be 99 years old. The annual minimum donation is Rp4,800,000. Furthermore, this product is subject to the following ujrahs:

a. Acquisition fee
   Medical exams, insurance purchase, document printing, field expenses, postal and telecommunication charges, and employee and marketing compensation are all covered by the acquisition fee. Periodic donations having the following composition are subject to the acquisition fee: In the first year, 70%. In the second year, 70%. (c) 20% throughout years three through five. (d) 0% starting in the sixth year.
b. The cost of administration
   Table 2 shows the administrative cost that participants pay based on when they pay their insurance contributions. The acquisition charge includes payment of the administrative fee.

Table 2. Administrative Fees for Product A

Contribution Payment	Administrative Fees Monthly (IDR)
Annual	20.000
Half-yearly	30.000
Quarterly	37.500
Monthly	45.000

c. The type of unit to be invested in this thesis will determine the investment management fee, which is 1.75% of the investment fund if an equity unit-linked fund is selected.
d. The input of Tabarru. One policyholder may contribute a certain amount of money to a tabarru fund as grant. 50% of the insurance contribution is the tabarru contribution. If any insured participants encounter unforeseen hazards that are covered, Tabarru funds will be used to assist them.
e. Fee for Risk Management. the cost associated with the company's risk management for insurance. If the tabarru fund isn't enough to cover the participant's claim, the risk management fee is applied.

2.4.2 Product B

Product B is a sharia-based insurance plus investment product with lifetime protection. This program provides maximum protection against unexpected events that can affect a person's financial condition. The benefits obtained from this product are life protection for life until the participant is 99 years old. If the participant dies, the participant will get 100% of the life benefit plus the potential investment value as an inheritance for the family. Meanwhile, if the participant remains alive until the end of the insurance period, the company will pay investment benefits in the form of the entire balance of the investment value on the date of expiration of the insurance period. The minimum contribution set is IDR 2,400,000.00 million per year. The percentage of participant investment funds allocated to protection plus unit link products is as follows: 25% in the first year, 60% in the second, 85% in the third, 92.5% in the fourth and fifth, 100% in the sixth, and so on. Just 25% of the donation will be invested in the first year, with the remaining 75% going toward the acquisition cost. The acquisition fee accounts for 40% of the investment value, which increases to 60% in the second year. In the third year, 15% of the contribution will be subtracted for the purchase charge, while the remaining 85% of the contribution would be invested. Similarly, in the fourth and fifth years, the acquisition fee will be paid with 7.5% of the contribution. The full contribution will then be paid toward the acquisition charge until the sixth year. Participants are therefore exempt from the acquisition charge starting in the sixth year. The monthly administrative cost is Rp27,500. Age, gender, and participant compensation are taken into account for calculating insurance contributions; of these, 40% will go toward tabarru contributions and 60% toward risk management costs.

2.5 Mathematical Model

In this paper, we used a simulation approach, that is intended to provide an overview of the actual situation. We were given a case to be solved by mathematical calculations. The object of this research is a sharia insurance company that provide a unit-linked products and has been registered with the Financial Services Authority of Indonesia (OJK). The simulation will be carried out in two conditions in unit-linked sharia insurance, those are Company A and Company B. The simulation is carried out by building the model of receiving tabarru fund that are collected from the contributions of insured. Suppose that product of company A is Product A and product of company B is Product B. The tabarru fund contributions of each participant and the total tabarru funds of all participants for each period in each product are determined using the illustrative schemes outlined in 2.3.1 and 2.3.2. For product A, suppose Tb_{ij} is the tabarru contribution of the j-th participant in i-year and K_j is the contribution paid by the j-th participant and Dtb is the tabarru fund from all insured contribution, then

$$Tb_{ij} = \begin{cases} 0.07K_j, & i = 1,2 \\ 0.30K_j, & i \geq 3,4,5 \\ 0.35K_j, & i \ \geq 6 \end{cases} \tag{1}$$

From (1),

$$Tb_{i1} = 0.14K_1 + 0.9K_1 + 0.35K_1 + \cdots + 0.35K_1$$

$$Tb_{i1} = 0.14K_1 + 0.9K_1 + 0.35K_1 + \cdots + 0.35l_1K_1 \tag{2}$$

Note: l_1 =$m_1 - 5$, with m_1 = payment period of 1st participant.
In general (2), for the $j - th$ participant, with $j = 1,2,..,n$ applies:

$$Tb_{ij} = 0.14K_j + 0.9K_j + 0.35l_jK_j \tag{3}$$

with, l_j =$m_j - 5$.
So, we get

$$Dtb = \sum_{j=1}^{n} Tb_{ij} = Tb_{i1} + Tb_{i2} + Tb_{i3} + \cdots + Tb_{in} \tag{4}$$

Note: m_j = payment period of $j-th$ participant.

Meanwhile, for product B, suppose TF_i is the tabarru fund by the participants in the i-year, and DTF is the total tabarru fund of the participant's contributions, then:

$$TF_i = \begin{cases} 0, & i = 1 \\ 0.40ia\,, & i \geq 2 \end{cases} \tag{5}$$

Suppose the insurance contribution model:

$$ia = \begin{cases} 0, & i = 1 \\ ia_i + \left(\frac{1}{2} \times ia_i\right), & i = 2,3 \\ ia_i, & i \geq 3 \end{cases} \tag{6}$$

with:

ia_i : insurance fee is charged according to the value of the benefits taken by insured.

So, we get

$$DTF = \sum_{i=1}^{n} TF_i = TF_1 + TF_2 + \cdots + TF_n \tag{7}$$

3. Result and Discussion

3.1 Numerical Results

In the product A, the criteria for fee in unit-linked products at insurance company A are as follows: Fee acquisitions will be charged to periodic contributions with composition: (a) 70% in the first year, (2) 70% in the second year, (3) 20% in the third year, and (4) 0% in the sixth year and so on. Administrative fee is to IDR 20,000 per year. Withdrawal fee and redemption fee is charged: (1) 75% in the first year, (2) 30% in the second year, (3) 0% in the third year and so on. Moreover, insurance cost depends on insurance benefits, smoke status or not, age, and gender. Insurance costs are paid through unit deductions every month for the duration of the policy. Investment management fee, top up fee, risk management fee, and tabarru fee.

For example, given participant A who is 30 years old with an insurance agreement period of up to 99 years. The annual contribution is IDR 4,800,000, the death benefit to be received is IDR 200,000,000. The level of tabarru fund is given and the profit sharing is 50% each. The investment return prediction (per year) is 6.17%. In Product B, the fee charged to participants in company B consists of: fee for acquisition, fee for risk management, fee for administration, fee for investment management, and fee for transfer of fund. The contribution benefits that will be obtained by participant B are as follows: (1) If the participant dies in the middle of the agreement period, the heirs will receive a benefit equal to the contribution deposited by the participant and receive tabarru fund from other participants which are managed specifically in the tabarru account, (2) If the participant during the agreement period having the problem, for example, a critical illness is diagnosed, then the participant receives benefits from the tabarru fund and is free from paying regular contributions until the participant's age reaches 65 years, (3) If the participant is still alive and if the participant does not submit a claim until the insurance period ends, the participant receives all the installments that have been deposited, which are collected in the participant's account, plus the investment profit sharing, (4) If the participant resigns before the agreement period ends, the participant will receive the contribution money back after deducting administrative costs (fee) and tabarru fund.

The following is the percentage of participant's investment fund allocation during the 10-year agreement based on the policy year: (1) 1st year of 25%, (2) 2nd year of 60%, (3) 3rd year of 85%, (4), 4th and 5th years by 92.50%, (5) 6th year, and so on of 100%. The insurance period is up to 100 years old. For example, given participant B who is 30 years old with an insurance agreement period of up to 100 years. Contribution per year is IDR 6,000,000 with regular top up of IDR 100,000 per month, death benefit to be received is IDR 200,000,000. Profit sharing between companies and participants has a proportion of 40:60. The investment return prediction (per year) is 6.17%. The acquisition fee is determined as follows: (1) First year 75%, (2) Second year 40%, (3) Third year 15%, (4) Fourth and Fifth year 7.5%, (5) Sixth year and so on 0.

3.2 Tabarru Fund

Using the assumption given above, in the first year, product A has been collected the tabarru funds of IDR 420,000 and it fixed until 2 years, while for product B, the tabarru fund will be collected in the second year with amount of IDR 194,400.00 and remain the same for the third year. After the third year, the tabarru fund for product B until the contract finished is fixed with the amount of IDR 129,600 each year. Besides, for product A, the amount of tabarru fund is IDR 1,596,000 each year for sixth to ten years, IDR 1,512,000 each year for eleventh to twentieth years, and IDR 1,680,000 each year until the contract is finished. The total amount of tabarru in the end of contract for product A is IDR 110,040,000 and for product B is IDR 9,072,000. The calculate simulation of tabarru funds based on the scheme each products (A and B) is shown Figure 4.

Year	Age	Tabarru Contribution (IDR)
1	31	420.000,-
2	32	420.000,-
3	33	1.260.000,-
4	34	1.260.000,-
5	35	1.260.000,-
6	36	1.596.000,-
7	37	1.596.000,-
8	38	1.596.000,-
9	39	1.596.000,-
10	40	1.596.000,-
11	41	1.512.000,-
12	42	1.512.000,-
13	43	1.512.000,-
14	44	1.512.000,-
15	45	1.512.000,-
16	46	1.512.000,-
17	47	1.512.000,-
18	48	1.512.000,-
19	49	1.512.000,-
20	50	1.512.000,-
21	51	1.680.000,-
⋮	⋮	⋮
69	99	1.680.000,-
Total Tabarru Funds		110.040.000,-

Year	Age	Tabarru Contribution
1	31	Rp0,-
2	32	Rp194.400,-
3	33	Rp194.400,-
4	34	Rp129.600,-
5	35	Rp129.600,-
6	36	Rp129.600,-
7	37	Rp129.600,-
8	38	Rp129.600,-
9	39	Rp129.600,-
10	40	Rp129.600,-
11	41	Rp129.600,-
12	42	Rp129.600,-
13	43	Rp129.600,-
14	44	Rp129.600,-
15	45	Rp129.600,-
16	46	Rp129.600,-
17	47	Rp129.600,-
18	48	Rp129.600,-
19	49	Rp129.600,-
20	50	Rp129.600,-
21	51	Rp129.600,-
⋮	⋮	⋮
70	100	Rp129.600,-
Total Tabarru Funds		Rp9.072.000,-

Figure 4. Calculate Simulation Tabarru Funds of Product A (left) anda Product B (right)

The graph of the tabarru funds of the each products can be seen in the following Figure 5.

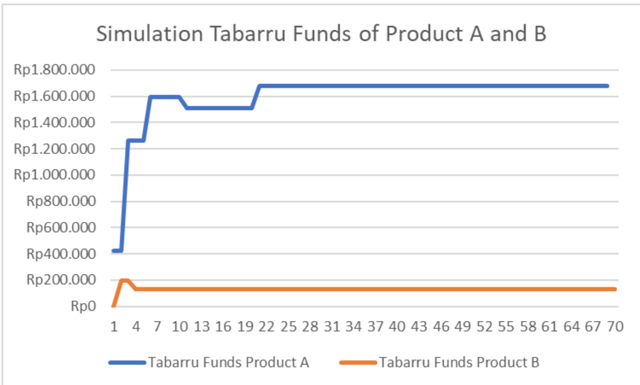

Figure 5. Simulation Tabarru Funds of Product A and B

The tabarru fund are simulated in the figure for periods 69 and 70 for two Islamic insurance products, Product A and Product B, is depicted in the figure. The horizontal axis displays the time period, and the vertical axis displays the quantity of tabarru funds in rupiah. After a brief period of rapid growth, the tabarru fund of Product A gradually increases until it eventually reaches a stable value of about Rp1,600,000. The tabarru fund of Product B, on the other hand, is at a much lower level, it started off slightly higher before leveling off below Rp200,000. The number of participants, starting contributions, money allocation, or claims made over the time frame could all be contributing factors to this discrepancy.

3.3 Company Fund

Company fund is fund from contributions paid by the insured party to the insurance company as an insurance management fee. The company fund consists of acquisition fee, administration fee, risk management fee, investment transfer fee, and withdrawal fund. The acquisition fee is given above, respectively for product A and product B. Meanwhile, the administration fees for product A are IDR 20,000; IDR 30,000; IDR 37,500; IDR 45,000 for annually, half year, quarterly and monthly, respectively. For product B, the administration fee is IDR 27,000 per month and will be charged in the second year. The risk management fee for product A is 50% of insurance fee and product B is 60% of insurance fee. Both of products, the investment management fee is charged 2% in each investment and 50% for risk management fee. The calculate simulation of tabarru funds based on the scheme each products is shown by Figure 6.

Year	Age	Company Funds
1	31	Rp 3.798.139,80
2	32	Rp 3.798.688,22
3	33	Rp 2.260.472,56
4	34	Rp 2.261.131,17
5	35	Rp 2.261.151,08
6	36	Rp 1.645.858,78
7	37	Rp 1.646.122,04
8	38	Rp 1.646.130,00
9	39	Rp 1.646.130,24
10	40	Rp 1.646.130,25
11	41	Rp 1.567.209,40
12	42	Rp 1.567.362,95
13	43	Rp 1.567.367,60
14	44	Rp 1.567.367,74
15	45	Rp 1.567.367,74
16	46	Rp 1.567.367,74
17	47	Rp 1.567.367,74
18	48	Rp 1.567.367,74
19	49	Rp 1.567.367,74
20	50	Rp 1.567.367,74
21	51	Rp 1.567.367,74
22	52	Rp 1.725.209,45
23	53	Rp 1.724.902,34
24	54	Rp 1.724.893,05
25	55	Rp 1.724.892,77
26	56	Rp 1.724.892,76
⋮	⋮	⋮
69	99	Rp 1.724.892,76
Total Company Funds		Rp 122.803.540,23

Year	Age	Company Funds
1	31	Rp4.638.672,0
2	32	Rp3.387.211,1
3	33	Rp2.150.154,1
4	34	Rp1.883.449,9
5	35	Rp2.172.111,8
6	36	Rp2.024.352,3
7	37	Rp2.340.810,3
8	38	Rp2.672.154,4
9	39	Rp3.019.084,9
10	40	Rp3.382.335,0
11	41	Rp3.762.672,4
12	42	Rp4.160.900,9
13	43	Rp4.577.862,1
14	44	Rp5.014.437,1
15	45	Rp5.471.548,6
16	46	Rp5.950.162,7
17	47	Rp6.451.290,7
18	48	Rp6.975.991,8
19	49	Rp7.525.374,8
20	50	Rp8.100.600,8
21	51	Rp8.702.885,5
22	52	Rp9.333.501,6
23	53	Rp9.993.781,9
24	54	Rp10.685.121,8
25	55	Rp11.408.982,3
26	56	Rp12.166.893,2
⋮	⋮	⋮
70	100	Rp122.793.396,3
Total Company Funds		Rp2.403.397.685,5

Figure 6. Calculate Simulation Company Funds Funds of Product A (left) anda Product B (right)

The graph of the company funds of the each products can be seen in the following Figure 7.

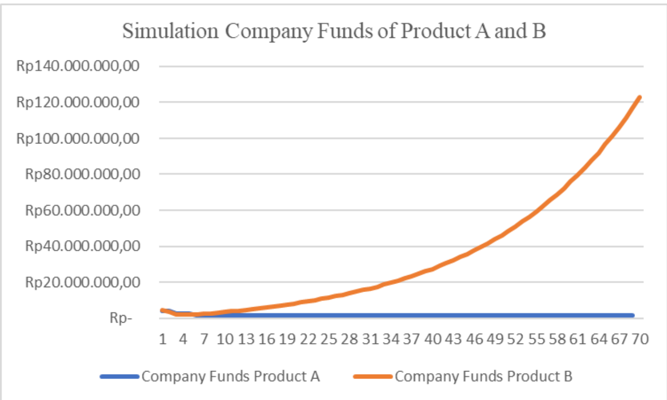

Figure 7. Simulation Company Funds of Product A and B

The company's funds for two insurance products, Product A and Product B, are simulated in the figure for periods 69 and 70. The horizontal axis displays the time period, and the vertical axis displays the total amount of money in rupiah. Over the course of the period, the corporate fund for Product A appears to have remained steady, maintaining a modest level without experiencing any notable growth. The firm fund for Product B, on the other hand, had exponential development, particularly after the 20th period, and reached over IDR 122,793,396.3 in the most recent period. This discrepancy can be a result of the two products' drastically different approaches to fund management and contributions.

3.4 Participant Fund

Participant fund is collected into the participant's account obtained from periodic contributions after deducting fee for the company and tabarru contributions. Participant's funds will be invested in sharia instruments according to the participant's choice. The investment results will go into the participant's account with a share of 50% for both company and participant in product A, also 40% for the company and 60% for the participant in product B. The calculate simulation of tabarru funds based on the scheme each products is shown by Figure 8.

Year	Age	Participants Funds
1	31	Rp 581.860,20
2	32	Rp 581.311,78
3	33	Rp 1.279.527,44
4	34	Rp 1.278.868,83
5	35	Rp 1.278.848,92
6	36	Rp 1.558.141,22
7	37	Rp 1.557.877,96
8	38	Rp 1.557.870,00
9	39	Rp 1.557.869,76
10	40	Rp 1.557.869,75
11	41	Rp 1.720.790,60
12	42	Rp 1.720.637,05
13	43	Rp 1.720.632,40
14	44	Rp 1.720.632,26
15	45	Rp 1.720.632,26
16	46	Rp 1.720.632,26
17	47	Rp 1.720.632,26
18	48	Rp 1.720.632,26
19	49	Rp 1.720.632,26
20	50	Rp 1.720.632,26
21	51	Rp 1.394.790,55
22	52	Rp 1.395.097,66
23	53	Rp 1.395.106,95
24	54	Rp 1.395.107,23
25	55	Rp 1.395.107,24
⋮	⋮	⋮
69	99	Rp 1.395.107,24
Total Participants Funds		Rp 98.356.459,77

Year	Age	Participant Funds
1	31	Rp2.561.328,0
2	32	Rp3.618.388,9
3	33	Rp4.855.445,9
4	34	Rp5.186.950,1
5	35	Rp4.898.288,2
6	36	Rp5.046.047,7
7	37	Rp4.729.589,7
8	38	Rp4.398.245,6
9	39	Rp4.051.315,1
10	40	Rp3.688.065,0
11	41	Rp3.307.727,6
12	42	Rp2.909.499,1
13	43	Rp2.492.537,9
14	44	Rp2.055.962,9
15	45	Rp1.598.851,4
16	46	Rp1.120.237,3
17	47	Rp619.109,3
18	48	Rp94.408,2
19	49	-Rp454.974,8
20	50	-Rp1.030.200,8
21	51	-Rp1.632.485,5
22	52	-Rp2.263.101,6
23	53	-Rp2.923.381,9
24	54	-Rp3.614.721,8
25	55	-Rp4.338.582,3
⋮	⋮	⋮
70	100	-Rp115.722.996,3
Total Participant Funds		-Rp1.908.469.685,5

Figure 8. Calculate Simulation Participants Funds Funds of Product A (left) anda Product B (right)

The graph of the participants funds of the each products can be seen in the following Figure 9.

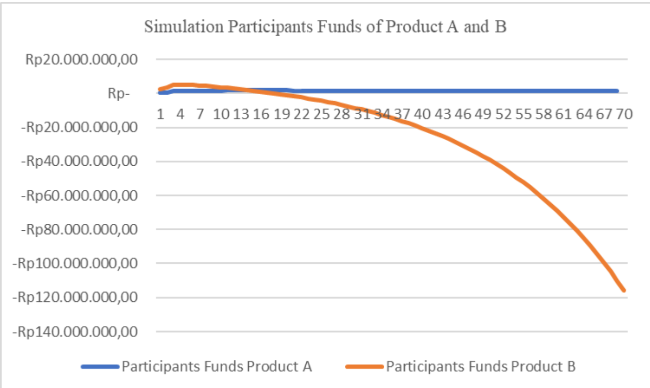

Figure 9. Simulation Participants Funds of Product A and B

Participants funds for two insurance products, Product A and Product B, are simulated in the figure for periods 69 and 70, respectively. Time is displayed on the horizontal axis, and the quantity of money in rupiah is displayed on the vertical axis. Over the course of the period, participant funds for Product A seem to have remained rather constant, at a roughly positive level with no notable fluctuations. In contrast, the participant funds for Product B exhibit a sharp drop, particularly after the twentieth period, until the final period, when it hits a massively negative amount. This trend illustrates how the two products' approaches to participant money management differ greatly, with Product B probably experiencing a sizable deficit as a result of higher costs than revenue.

4. Conclusion

Based on our simulation, it can be concluded that: (1) There are quite many ujrah contained in sharia insurance especially in sharia unit-link, namely acquisition fee, administration fee, management risk fee, investment management fee, transfer of fund fee. (2) Up to the participant's age is 99 years old, the amount of tabarru funds collected in product A and B respectively are IDR 110,040,000 and IDR 9,072,000. These amounts are not enough to fully pay the compensation fund of IDR 200,000,000. (3) The accumulated fund from both Tabarru fund and participant fund can pay fully the amount of the compensation fund for both of products when the participant is 64 years old, if the return of the investment is going as its expectance. The result shows that there are still variety on the existing sharia insurance products. Company B needs to have large enough number of participants joining the insurance so that the Tabarru fund can cover fully the compensation fund if the insured person dies young. If it is not, the other source of fund is from the participant fund that is very heavily dependent onto the return of investment from unit-links, which frequently is not fulfilling the initial expectation.

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