

Investment Analysis at PT Asuransi Takaful Keluarga against Optimal Portfolio

Selvia¹, Nur Ahmadi Bi Rahmani¹, Kusmilawaty¹

¹Universitas Islam Negeri Sumatera Utara

*Corresponding Author: Selvia

E-mail: selviaselvia641@gmail.com



Article Info

Article history:

Received 18 February 2024

Received in revised form 22

March 2024

Accepted 31 March 2024

Keywords:

Investment Instrument

Takaful Insurance

Linear Program

Abstract

This article aims to determine the development of investment and which type of investment is optimal at PT Asuransi Takaful Keluarga. Qualitative and quantitative approaches are used in this research. The author in this case uses a linear program Excel solver maximizing returns to analyze investment development and analyze which type of investment is the most optimal at PT Asuransi Takaful Keluarga in 2020-2022. The investment tools used include mudarabah deposits, sukuk (Sharia Bonds), mutual funds, murabahah financing and stocks. The results of the analysis show that investment development has increased and decreased in each year and at PT Asuransi Takaful Keluarga has the optimal type of investment, namely Mudarabah deposits and sukuk.

Introduction

The development of the Islamic insurance sector is not only driven by the development of the Islamic banking sector, but also by the development of the non-banking sector. The sectors of Islamic bank financial institutions, government and private sukuk as well as the development of Islamic financial institutions sell. The number of Islamic financial institutions is increasing from year to year. Suitable for banking, capital market, non-bank financial institutions, insurance companies and other Islamic companies. Sharia insurance can be a protection option for Muslim communities in Indonesia to avoid usury. The scope of sharia-based risks currently covers all levels of society, both at the individual, family, and business levels (Amrin, 2017). OJK data shows that compared to traditional insurance, sharia insurance has a higher growth rate. From 2014 to 2021, the development of the sharia insurance industry in Indonesia was quite good. This means that sharia-based insurance has been able to attract the interest of the Muslim community in Indonesia. Insurance is a form of Islamic investment that is highly recommended to prevent future situations (Amrin, 2017).

Investment involves investing money or other resources in an asset or project with the expectation of future profits. The main purpose of investing is to increase the value of the investment or make a profitable profit. Every investment requires the right decisions because these decisions affect future investment returns. Public access to financial products and services that are increasing and easily accessible does not have a positive impact (Hasan et al., 2021). As one of the pioneers of sharia insurance companies in Indonesia, it is a family-owned Takaful company that began operations in 1994. Takaful Keluarga has developed various products, one of which is the Takafulink Salam mutual fund product. Takafulink Salam product is a superior program designed to provide life protection as well as investment benefits (Hasanah, 2019). Sharia insurance companies can carry out investment activities to make a profit by using some of the funds obtained from the policy account. Profits from this investment activity can be shared between the fund owner, the owner and the fund managing insurance company (Warto & Khumaini, 2022).

A portfolio is a collection of works or projects that demonstrate individual skills, achievements and experience in a variety of professional or academic contexts. This reinforces the personal brand and is more valued by employers and institutions, and increases career opportunities. Therefore, a portfolio is an important tool in building and managing professional or academic travel (Sukarno, 2007). Sharia insurance companies that can optimize their portfolios to achieve the best returns for sharia insurance companies need further consideration and research. In making investments, investment managers are limited by government regulations in the form of restrictions on sharia insurance investment (Decree of the Minister of Finance of the Republic of Indonesia, number 424/KMK.06/2003). In an insurance company that is able to optimize its portfolio, the task of the investment manager is to manage the company's investment funds with an optimal portfolio for each investment instrument managed by the company in order to achieve the performance targets set by the company. Building a portfolio can reduce risk compared to investing in just one security. One way to create an optimal portfolio is with the Markowitz method. Mittal et al. (2022) research argues that in Markowitz's approach, investors' portfolio choices are based on their preference for the expected return and risk of each portfolio choice.

An optimal portfolio is a combination of investments that provide investors with the highest returns with the lowest risk. To achieve an optimal portfolio, investors should diversify their investments wisely by dividing them into different asset classes such as stocks, bonds, and others. According to Mittal et al. (2022), investors can use all available information as a basis to form an optimal portfolio. Huni & Sibindi (2020) research states that Markowitz's paper theory is based on the mean (average) and variance (variance) approach, where mean is a measure of return and variance is a measure of the level of risk. Markowitz's portfolio theory is also known as the mean-variance method, which emphasizes efforts to maximize expected returns (mean) and minimize uncertainty or risk (variance) in order to select and compile an optimal portfolio. Achieving the ideal investment can involve understanding objectives, portfolio diversification, performance monitoring, financial knowledge, cost management, and consistency in investment approaches.

Theoretical Studies

Investment in General

According to Parinduri (2010), investment is the investment of funds in a certain amount at this time to get greater results in the future. It can also be said that investment is a process of saving that is oriented to certain goals and how to achieve these goals. So investment has a difference with savings that lack specific goals and clarity of methods or strategies in achieving their goals. In addition, investments have advantages in a higher level of profitability and a more diverse choice of instruments compared to savings. In general, investment is divided into two forms, namely: (a) Real investment, This investment generally involves tangible assets such as land, factory machinery and others; (b) Financial investment: This investment involves written contracts such as common stock and bonds.

Sharia Investment

Investing in Islam commands its followers to downsize and invest their money. It is recommended in Islam that we do not spend all our wealth; However, we are encouraged to manage and develop ourselves (Rorizki, 2023). In sharia investment, what determines the success or failure of an investment in the future is the provisions and will of Allah SWT. Islam blends the dimensions of the world and the Hereafter. After the mortal life of the world, there is an eternal afterlife. Every Muslim should strive for happiness in this world and the Hereafter. Earthly life is only the means and time that must pass to achieve eternal life in the hereafter.

Islam commands its people to achieve success and strive to increase investment returns. And Islam commands its people to abandon unprofitable investments as the Holy Prophet said:

"Be the first, do not be the second, let alone the third. Whoever today is better than yesterday belongs to the group that benefits. Whoever today is the same as yesterday belongs to the group of losers. And whoever is worse today than yesterday belongs to the wretched." (HR. Thabrani).

God said:

And say, "Work and Allah and His Messenger and believers will see your work and you will be returned to (Allah) who knows the unseen and the real, and He will tell you what you have done."

Sharia Investment Objectives

In general, investment is divided into two, namely investment in financial assets (financial investment) and investment in real assets (real investment). Investment in financial assets is carried out in the money market, for example in the form of certificates of deposit, commercial paper, money market securities (SBPU) and others. Investment can also be done in the capital market, for example stocks, bonds and others. While investment in real assets can be done by purchasing productive assets, establishing factories, opening mines, plantations and others. The purpose of Islamic investment is to get a certain amount of profit income. In the context of the economy, according to Huni & Sibindi (2020) there are several motives why someone invests, including (Appa, 2014): (a) To get a more decent life is the desire of every human being, so efforts to achieve this in the future will always be made; (b) Reducing inflationary pressures. The inflation factor can never be avoided in economic life, what can be done is to minimize the risk due to inflation. Because inflation can correct all existing income. Investment in a particular business can be categorized as an effective mitigation measure; (c) As an effort to save taxes. Among countries in the world, many policies encourage the growth of investment in the community through providing tax facilities to people who invest in certain businesses.

Sharia Investment Instruments

Sharia Shares

Stock from the word *Suhman* means fate or part. Shares also from the word *Siham* means bow, arrow. So, shares are securities of ownership of the company, which gives the right to participate in regulating the company, which provides profits and losses.

Sukuk (Sharia Bonds)

Sukuk, generally known as Sharia Bonds, can be considered as a certificate of ownership in a particular asset or project. And sukuk is based on the principles of Islamic law, which involves the sukuk holder as the owner of a piece of the asset or project represented by the sukuk.

Sharia Mutual Funds

Sharia mutual funds are a forum used to collect funds from the investor community as fund owners (*shahibul maal*) to be subsequently invested in Securities Portfolios by Investment Managers as representatives of *shahibul maal* according to the provisions and principles of Islamic sharia.

Fund owners (investors) who want halal investment will entrust their funds with a wakalah contract to the Investment Manager. Sharia mutual funds will act in a mudarabah contract as mudharib who manage jointly owned funds from investors. As proof of participation, investors will get Participation Units from sharia mutual funds. Sharia mutual fund pool funds will be

placed back into the activities of issuers (other companies) through the purchase of sharia securities. In this case, sharia mutual funds act as *shahibul maal* and issuers act as mudharib.

Mudarabah Deposit

In operationalization in the banking world, mudarabah deposits have their own characteristics, namely: First, both parties who enter into a contract between the owner of the fund and the mudharib will determine the capacity of both the customer and the owner. In the contract is stated a statement that must be made by both parties entering into the contract with the following conditions: in the agreement must be stated explicitly or implicitly about the purpose of the contract and the offer and acceptance must be agreed by both parties in the contract. Then capital is a sum of money the owner of the fund is given to the mudharib to be invested managed in mudarabah business activities. The conditions contained in the capital are: the amount of capital must be known with certainty including the type of currency, capital must be available in cash not in the form of receivables and mudharib capital is directly paid to the mudharib.

Murabahah Financing

Murabahah financing is a contract or sale and purchase agreement between a bank and a supplier for goods ordered by a customer. Murabahah financing in fiqh terms is a sale and purchase contract for certain goods, in the sale and purchase transaction the seller clearly states the goods being traded including the purchase price and profits taken. Murabahah financing has pillars and conditions that must be met when going to make a sale and purchase contract, namely there are sellers, buyers, prices and goods traded and kabul ijab. In murabahah financing the objects of transaction are goods, such as houses, cars, motor vehicles, land and buildings and others. In murabahah financing, mudharib can only serve the needs of customers (*shahibul maal*) to have the desired goods.

Sharia Insurance Investment

In insurance, it is allowed for the insurance (manager) to manage premium funds by investing funds in investment instruments to make a profit. However, in the perspective of Islamic law (fiqh muamalah), the ability to manage premium funds by the insurance is only if the investment instrument can be free from the elements of maysir, usury, and gharar. Thus, there is a fundamental difference between the conventional insurance investment model and the sharia investment model, where conventional insurance applies an unlimited free investment model, while sharia insurance applies a free investment model but is limited only to investment instruments that are in line with sharia principles (Sula, 2002).

The management of premium funds in the form of investments managed by conventional insurance companies with Islamic insurance companies also has differences in terms of the mechanism applied to premium funds. In conventional insurance, all premium funds are set as cash or company wealth, so that when the premium funds are invested and get profits, they absolutely belong to the insurance company completely. Another is only with sharia insurance, that premium funds are divided into two parts, namely tabarru funds and tijaroh, so that these funds essentially still belong to customers (insurance members). The insurance company will only get a share in the form of fees or profit sharing from the investment profits (Bart et al., 2021).

The principles and foundations of shari'i investment that need to be considered by sharia insurance business people are to have the principle that the company as the trustee (mudharib) entrusted by the owner of the fund (*shahibul maal*) must carry out investment activities after obtaining shari'i approval from the sharia supervisory board for funds that have been

successfully collected from participants' premiums. This is as affirmed in fatwa number 21/DSN-MUI/X/2001 concerning general guidelines for sharia insurance. In the fatwa, DSN MUI allows insurance that is carried out with sharia principles and divides the contract in sharia insurance into two, namely the tabarru contract based on help and the tijarah contract based on mudarabah (Fatwa DSN MUI No: 21 / DSN-MUI / X / 2001, 2014).

Ali Mustafa Ya'qub said that one of the most dominant forms of insurance fund management is investing funds collected from premiums. If the investment is made in the form of capital participation in a company, the insurance must know that the company does not trade prohibited goods. If the investment is in the form of deposits, the insurance must know that the banks where the insurance funds are deposited are banks that operate not with an interest system but with a profit-sharing system (mudarabah).

Scope of Sharia Insurance

Insurance

According to Law Number 40 of 2014 concerning Insurance, the definition of insurance is "an agreement between two parties, an insurance company and a policyholder, which is the basis for an insurance company to collect premiums as compensation for losses suffered by the insured or losses that may be suffered by the policyholder as a result of an uncertain event, or provide benefits based on the death of the insured or benefits based on the life of the insured with a predetermined amount and/or based on the results of fund management".

The National Sharia Council of the Indonesian Ulema Council (DSN-MUI) explained in its fatwa that sharia insurance (*ta'min, takaful, tadhamun*) is an effort to protect and help many people through investment and/or tabarru', which provides a way of return to face certain risks of harm through contracts (agreements) in accordance with Sharia. (Fatwa DSN MUI No: 21/DSN-MUI/X/2001, 2014). According to Hendi Suhendi, the purpose of insurance in Islam which is a fundamental need is the existence of sufficiency (al-Kifayah) and the creation of security (al-Amnu), with this principle Islam commands its people to seek security both for themselves and for their families in the future (Inayah & Haerudin, 2022).

Sharia Insurance

Insurance when viewed in sharia is essentially a form of activity to bear risks between fellow humans so that one another becomes an insurer of other risks. Mutual risk bearing is carried out on the basis of mutual help in good, by each way of issuing worship funds (tabarru) shown to bear the risk, in other words sharia insurance is a system where participants grant part or all of the contribution that will be used to pay claims, in the event of a disaster experienced by some participants. The basic principle of sharia insurance is to invite each participant to intertwine with each other towards something that alleviates the disaster that befalls them (sharing of risk).

Portfolio Theory

Portfolio theory was developed by Markowitz. According to him, the choice of portfolio in investment is done because most capital owners are risk-averse people and want the level of profit they expect. Therefore, to keep capital owners still willing to invest, an investment strategy is created that can meet the basic attitude of capital. This strategy is then known as an optimal/efficient portfolio. In addition, investing will also be faced with various kinds of decisions that must be taken. According to Sharpe & Gordon (1990), there are basically several stages in making investment decisions, including:

Determining investment policy

Investors determine the policy, investment objectives and capabilities (wealth) that can be invested. Since there is a positive relationship between risk and return, it is appropriate for investors to state their investment goals not only to obtain a lot of profits, but also understand that there are possible risks that have the potential to cause losses. Investment objectives should be expressed both in profit and risk.

Securities analysis

Conduct securities analysis which includes an assessment of securities individually or several groups of securities. One of the purposes of conducting such valuations is to identify securities that are mispriced.

Portfolio formation

Forming a portfolio involves identifying which specific assets to invest in and also determining how much to invest in each asset. The issues of selectivity, timing and diversification need to concern investors.

Revise your portfolio

With regard to the periodic repetition of the previous three steps, over time investors will change their investment goals, namely forming a new, more optimal portfolio. Other motivations are tailored to investor preferences about risk and return itself.

Portfolio performance evaluation

Investors assess portfolio performance periodically in the sense that not only returns are considered but also the risks faced. And it requires precise measures of return and risk as well as relevant standards.

Literature Review

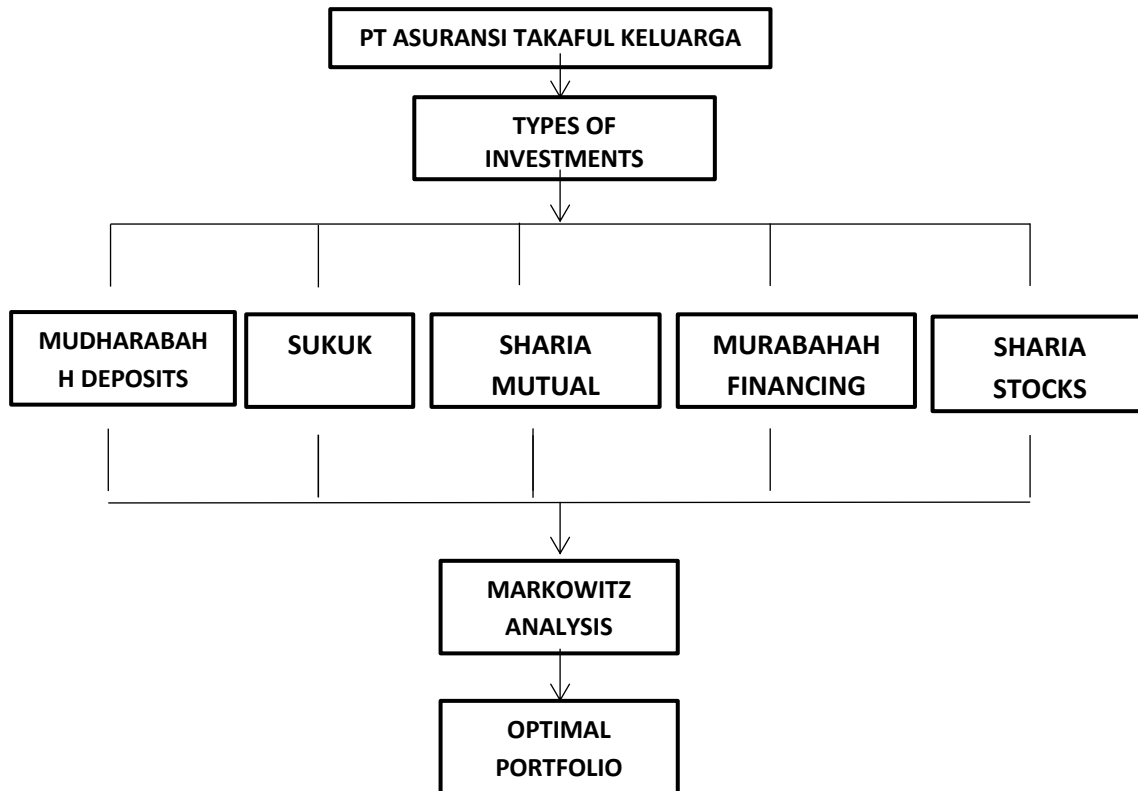
In a previous study conducted by Nasrulloh & Mutaqqin (2020) explained about investment in sharia insurance. But the company taken is only PT Asuransi Takaful Keluarga. Investment in the study also uses Islamic investment. The method used is the Lindo Program. This study used variable JII stocks, mudarabah deposits, sharia bonds, sharia mutual funds and murabahah financing. The problem taken in this study is how much to maximize portfolio results by looking at the return and changing the portion of each investment instrument with the applicable positive law. For data processing using the Lindo Program (maximization of strategy results). From this study, the results obtained by researchers are: (1) In 2013, the actual return was smaller than the return by changing the portion of each investment. The results by using the Lindo Program are higher than what has been the policy of PT Asuransi Takaful Keluarga. (2) Although it remains within the corridors of positive law and Islam, it turns out that greater results can be obtained. And can avoid the proportion of investment that exceeds the provisions of the positive law in Indonesia. Therefore, a sharia insurance company (PT Asuransi Takaful Keluarga) thinks of having a reliable fund manager. Reliable in analyzing the risk and return of each investment; (3) With the development of Islamic economics and the emergence of human resources today, this company began to think about having a fund manager who is reliable in analyzing the risk and return of each investment. And also reliable in maintaining the flexibility of the company's investment process and type.

Methods

This research uses 2 research methods with qualitative methods including development analysis and types of investment and quantitative includes the type of data used in this study.

Meanwhile, the source of data in this study is secondary data, namely financial statement data at PT Asuransi Takaful Keluarga in the 2020-2022 period. Data analysis uses a Linear Program tool, namely excel solver (maximizing return / profit) which aims to see investment development and to analyze what type of investment is most optimal at PT Asuransi Takaful Keluarga.

Frame of Mind



Variables and measurements

The variables and their measurements are as follows:

Sharia Stocks

In this study, what is taken is the stock price included in the financial statements of Islamic insurance companies. The stock price chosen is the closing stock price at the end of each month. Using data on a monthly basis so that the results obtained can be easily compared with other investment instruments. The unit of measurement used is Rp/sheet.

Sukuk

In this study, what is taken is the amount of sukuk investment each year (1 year) in the financial statements of sharia insurance companies sukuk obtained if issued by a company or issuer as a manager (*mudharib*) and purchased by investors (*shahibul maal*). The unit of measurement used is millions of rupiah.

Sharia Mutual Funds

In this study, what is taken is the amount of investment of Islamic mutual funds each year (1 year) in the financial statements of Islamic insurance companies. Sharia mutual funds are obtained if there is a fund owner (*shahibul maal*) who collects his funds to be invested in the

Portfolio according to the provisions and principles of Islamic sharia. The unit of measurement used is millions of rupiah.

Mudharabah Deposit

In this study, what is taken is the amount of investment of mudharabah deposits every year (1 year) in the financial statements of Islamic insurance companies. Mudharabah deposits are obtained if there are investors who invest in cash for a period of 1 month, 3 months, 6 months, 12 months with a certain yield ratio. Withdrawal of funds made at any time will have the impact of reducing the share of business results by customers who invest. The unit of measurement used is millions of rupiah.

Murabahah Financing

In this study, what is taken is the amount of murabahah financing investment every year (1 year) in the financial statements of Islamic insurance companies. Murabahah financing is obtained by financing customers for ownership of houses, motor vehicles, land and buildings. The ownership certificates of houses, motor vehicles, land and buildings are pledged to the company. The unit of measurement used is millions of rupiah.

Analysis of Discussion and Results of Linear Program Processing

As stated in the formulation of the problem, the data processed is the financial statement data of a sharia insurance company (PT Asuransi Takaful Keluarga) in the 2020-2022 period. Data processing uses an analytical tool in the form of Linear Programming, namely excel solver (maximizing return) which aims to see the development of investment and to analyze what type of investment is most optimal at PT Asuransi Takaful Keluarga.

Formulation to find the return of each investment:

$$R_i = \frac{p_t - p_o}{p_o}$$

Information:

R_i = Return per portfolio

P_t = Current year's Portfolio Price

p_o = Portfolio Price of the previous year

Formation of mathematical models

The next step that must be done after understanding the optimization problem is to create a suitable model for analysis. The conventional approach of operational research to modeling is to build a mathematical model that illustrates the core of the problem. The case of the story form is translated to a mathematical model.

A mathematical model is a quantitative representation of limiting goals and resources as a function of decision variables. The mathematical model of the optimal problem consists of two parts. The first part models the purpose of optimization. Mathematical models of goals always use the form of equations. The form of the equation is used because we want to get the optimum solution at one point. The goal function to be optimized is only one. This does not mean that optimization problems are only faced with one goal. The purpose of a venture can be more than one. But in this section we will only be interested in optimal problems with one goal.

On the other hand, mathematical models have disadvantages. Not all system characteristics can be easily modeled using mathematical functions. Although it can be modeled with mathematical functions, sometimes its solution is difficult to obtain due to the complexity of

the functions and the techniques required. Common forms of linear programming are as follows:

Purpose function:

Maximize or minimize $z = c_1x_1 + c_2x_2 + \dots + c_nx_n$

Limiting resources:

$A_{11}x_1 + A_{12}x_2 + \dots + A_{1n}x_n = \geq B_1$

$A_{21}x_1 + A_{22}x_2 + \dots + A_{2n}x_n = \leq B_2$

$a_{m1}x_1 + a_{m2}x_2 + \dots + a_{mn}x_n = \leq/\geq b_m$

$x_1, x_2, \dots, x_n \geq 0$

The symbols x_1, x_2, \dots, x_n (x_i) indicate decision variables. The number of decision variables (x_i) therefore depends on the number of activities or activities carried out to achieve the goal. The symbols c_1, c_2, \dots, c_n are the contribution of each decision variable to the goal, also called the coefficient of the goal function in the mathematical model. The symbol a_{11}, a_{1n}, a_{mn} is the use per unit of the decision variable for limiting resources, also known as the coefficient of the constraint function in the mathematical model. The symbols b_1, b_2, b_m indicate the amount of each resource present. The number of constraint functions will depend on the number of limited resources.

Results and Discussion

Sharia Insurance Companies Included in the Object of Research

PT Asuransi Takaful Keluarga

PT Syarikat Takaful Indonesia was established on February 24, 1994 on the initiative of the Indonesian Takaful Insurance Establishment Team (TEPATI) led by the Indonesian Muslim Scholars Association (ICMI) through the Abdi Bangsa Foundation, together with Bank Muamalat Indonesia Tbk, PT Asuransi Jiwa Tugu Mandiri, Ministry of Finance of the Republic of Indonesia, and several Indonesian Muslim entrepreneurs, as well as technical assistance from the Malaysian Takaful Company, Bhd. (STMB). Through its two subsidiaries, PT Asuransi Takaful Keluarga and PT Asuransi Takaful Umum, the company has provided insurance protection services that apply the first pure sharia principles in Indonesia.

Takaful Keluarga and Takaful Umum began operating on July 2, 1996 and since then began to develop into a leading sharia insurance company in Indonesia. STMB in 1997 in its development has become a shareholder through capital placement and in 2004 has reached a significant value. Furthermore, STMB to continue to expand Takaful Indonesia was also proven through direct capital deposits in 2009 at PT. Family Takaful Insurance. Then Pemodal Nasional Madani (PNM) in 2009 participated in strengthening the company's capital structure, then in 2004 followed by the Islamic Development Bank (IDB).

PT Asuransi Takaful Keluarga is committed to always maintaining the consistency of its services to the community and continues to improve its quality which is shown by obtaining an ISO 9001: 2008 certificate from Det Norske Veritas (DNV), Norway as the latest international standard for quality management systems. As the sharia business is in its development increasingly advanced, the commitment of Takaful Family Insurance to always serve the best for all communities so that it can contribute to strengthening the node of sharia economic development for a better future of Indonesia. (<http://www.takaful.com>)

Application of Using the Linear Program Method of PT Asuransi Takaful Keluarga in 2020 - 2022

Year 2020

Table 1. Comparison of Investment Results between Variables, Current Investments, and Linear Program Results

Variable	Return	Current		Linear Program	
		Investment amount	Result	Investment Amount	Result
X1	0,111419	102.711.000.880	71.387.378.909	88.312.018.054	19.839.64784
X2	0,072396	33.778.650.000	26.924.639.145	88.312.018.054	30.393.4479
X3	0,583806	7.056.861.435	3.818.645.298	8.288.272.107	46.872.7749
X4	0,532763	6.453.753.665	6.469.626.809	6.067.053.803	25.075.5847
X5	0,050087	3.115.803	1.597.426	2.158.039	4.097.429
Total		163.229.580.654	96.654.998.32	224.546.221.17	98.720.2323

Year 2021

Table 2. Comparison of Investment Results between Variables, Current Investments, and Linear Program Results

Variable	Return	Current		Linear Program	
		Investment amount	Result	Investment Amount	Result
X1	0,084615	126.502.051.000	49.626.870.911	67.630.651.757	5.722.56798
X2	0,826054	71.949.205.698	18.003.780.846	67.630.651.757	55.866.5704
X3	0,245778	13.103.199.881	32.204.780.438	49.704.385.929	12.216.2445
X4	0,139614	11.253.427.357	17.499.605.491	20.581.218.114	8.734.2685
X5	-0,176963	2.741.388	-30.816.126.23	174.138.81	30.816.126
Total		194.234.964.820	86.132.556.90	159.951.741.426	76.426.7468

Year 2022

Table 3. Comparison of Investment Results between Variables, Current Investments, and Linear Program Results

Variable	Return	Current		Linear Program	
		Investment amount	Result	Investment Amount	Result
X1	0,181768	154.897.960.400	87.187.861.373	123.424.324.44	22.434.5926
X2	0,145183	129.591.641.770	136.236.463.070	123.424.324.44	17.919.1139
X3	0,044567	10.193.273.344	15.579.488.464	21.040.361.204	9.377.05777
X4	0,102564	15.743.664.438	5.460.872.748	12.072.970.634	2.161.32860
X5	0,033339	2.334.325	5.612.097.89	168.334.32	5.612.0978
Total		291.747.369.559	177.495.418.198	229.218.766.982	120.100120

Application of the Use of the Linear Program Method and Interpretation of Processing Results at PT Asuransi Takaful Keluarga in 2020 - 2022

After processing data at PT Asuransi Takaful Keluarga per year, the results obtained on each type of investment are as follows:

2020 equation

Maximum Destination Function $Z = 0111419X1 + 0.72396 X2 + 0.583806X3 + 0.532763X4 + 0.050087X5$

Constraints $X_1 + X_2 + X_3 + X_4 + X_5 \leq \text{IDR } 163,229,580,654$ $X_1 + X_2 \leq 25\%$ of the total investment

Equation in 2021

Maximum Destination Function $Z = 0.084615 X_1 + 0.826054 X_2 + 0.245778 X_3 + 0.139614 X_4 - 0.176963 X_5$

Constraints $X_1 + X_2 + X_3 + X_4 - X_5 \leq \text{IDR } 194,032.638,820$ $X_1 + X_2 \leq 25\%$ of total investment

Equation in 2022

Maximum Goal Function $Z = 0.181768 X_1 + 0.14518 X_2 + 0.044567 X_3 + 0.102564 X_4 + 0.033339 X_5$ Constraints $X_1 + X_2 + X_3 + X_4 + X_5 \leq \text{IDR } 291,747,369,559$ $X_1 + X_2 \leq 25\%$ of the total investment

Where:

X_1 = Mudarabah Deposit

X_2 = Sukuk

X_3 = Sharia Mutual Fund

X_4 = Murabahah Financing

X_5 = Sharia shares

Interpretation of Linear Program Processing Results at PT Asuransi Takaful Keluarga

PT Asuransi Takaful Keluarga mudarabah deposit in 2020 has an investment amount of Rp. 102,711,000,880 (actual column) with a return rate of 11.14% (0.111419). The total investment of mudarabah deposits using a linear program amounted to Rp. 88,312,018,054 with a fixed rate of return of 11.14% (0.111419). From the difference between the two columns, it can be concluded that the results of the linear program prove that the amount of investment does not exceed $\leq 25\%$ of the total investment.

PT Asuransi Takaful Keluarga mudarabah deposit in 2021 has an investment amount of Rp. 126,502,051,000 (actual column) with a return rate of 8.45% (0.084615). The amount of mudarabah deposit investment using a linear program amounted to Rp. 67,630,651,757 with a fixed rate of return of 8.45% (0.084615). From the difference between the two columns, it can be concluded that the results of the linear program prove that the amount of investment does not exceed $\leq 25\%$ of the total investment.

PT Asuransi Takaful Keluarga's mudarabah deposit in 2022 has an investment amount of Rp. 154,897,960,400 (actual column) with a return rate of 18.17% (0.181768). The amount of mudarabah deposit investment using a linear program amounted to Rp. 123,424,324.44 with a fixed rate of return of 18.17% (0.181768). From the difference between the two columns, it can be concluded that the results of the linear program prove that the amount of investment does not exceed $\leq 25\%$ of the total investment.

Conclusion

From the results of processing sharia insurance data included in the object of research, several conclusions were obtained, namely: (1) Investment development of PT Asuransi Takaful Keluarga in 2020 - 2022. Mudarabah deposits have increased in the amount of investment every year. Sukuk increases in the number of investments every year. Mutual funds experienced an increase in 2021 and decreased the number of investments in 2022. Murabahah financing experiences a significant increase in the amount of investment every year. And Islamic stocks

experience a decrease in the number of investments every year; (2) PT Asuransi Takaful Keluarga in 2020-2022 the most optimal types of investments are mudarabah and sukuk deposits. Where these two types of investments have the same percentage, meaning that the two types of investments have very good prospects so that investors who want to invest their money can choose between the two types of investments.

By looking at the development of the type of investment every year in the insurance company PT Asuransi Takaful Keluarga, managers should be able to overcome the problem of ups and downs in the amount of investment each year. So that the next year can be much better. The managers of this sharia insurance company must be able to retain investors and customers who want to invest their money in the sharia insurance company and who want to transact to buy goods desired by customers through the company. The method used to maintain investors and customers is by always interacting with investors and customers, serving investors and customers well, making permanent investments in accordance with sharia principles, and always following the development of regulations from the Ministry of Finance of the Republic of Indonesia.

Sharia insurance companies can provide direction in terms of placing the funds they manage by taking into account existing business aspects. Linear program techniques can be used to help maximize returns. Sharia insurance companies can appoint investment managers from investment management companies to actively manage types of investments such as Mudarabah deposits, sukuk, sharia mutual funds, murabahah financing and stocks so that optimal investment returns can be obtained. The Government and the Ministry of Finance of the Republic of Indonesia should continue to review regulations, laws related to sharia insurance, especially those related to financial statements and fund management.

References

- Amrin, A. (2017). *Apa bedanya asuransi syariah dengan asuransi konvensional*.
- Appa, Y. (2014). Pengaruh Inflasi dan Kurs Rupiah/Dolar Amerika Terhadap Indeks Harga Saham Gabungan (IHSG) di Bursa Efek Indonesia (BEI). *EJournal Administrasi Bisnis*, 2(4), 498-512.
- Bart, N., Chernonog, T., & Avinadav, T. (2021). Revenue-sharing contracts in supply chains: a comprehensive literature review. *International Journal of Production Research*, 59(21), 6633-6658. <https://doi.org/10.1080/00207543.2020.1821929>
- Hasan, M., Le, T., & Hoque, A. (2021). How does financial literacy impact on inclusive finance?. *Financial innovation*, 7(1), 40. <https://doi.org/10.1186/s40854-021-00259-9>
- Hasanah, U. (2019). Instrumen Investasi Dalam Perusahaan Asuransi Syariah. *Az-Zarqa': Jurnal Hukum Bisnis Islam*, 11(2).
- Huni, S., & Sibindi, A. B. (2020). An application of the Markowitz's mean-variance framework in constructing optimal portfolios using the Johannesburg securities exchange tradeable indices. *The Journal of Accounting and Management*, 10(2).
- Inayah, A., & Haerudin, U. M. (2022). The Urgence of Religious Education (Islam) in the Family Environment. *Attractive: Innovative Education Journal*, 4(3), 204-215. <http://dx.doi.org/10.51278/aj.v4i3.489>
- Mittal, S., Bhattacharya, S., & Mandal, S. (2022). Characteristics analysis of behavioural portfolio theory in the Markowitz portfolio theory framework. *Managerial finance*, 48(2), 277-288. <https://doi.org/10.1108/MF-05-2021-0208>

- Nasrulloh, N., & Mutaqqin, B. (2020). The Implementation of Education Insurance: A Case Study on Takaful Keluarga Insurance. *EkBis: Jurnal Ekonomi dan Bisnis*, 4(2), 469-482. <https://doi.org/10.14421/EkBis.2020.4.2.1273>
- Parinduri, W. S. (2010). *Analisis Pengaruh Inflasi, Return on Investment, dan Kurs Rupiah terhadap Harga Saham BCA* (Doctoral dissertation, Universitas Sumatera Utara).
- Rorizki, F., & Nasution, Y. S. J. (2023). Analisis Dana Investasi dan Biaya Pertanggung jawaban terhadap Pendapatan Asuransi Jiwa Syariah. *Al-Kharaj: Jurnal Ekonomi, Keuangan & Bisnis Syariah*, 5(4), 1932-1956. <https://doi.org/10.47467/alkharaj.v5i4.3395>
- Sharpe, W. F. dan Gordon J. Alexander. 1990. *Investments*.
- Sukarno, M. (2007). *Analisis pembentukan portofolio optimal saham menggunakan metode single indeks di Bursa Efek Jakarta* (Doctoral dissertation, Program Pascasarjana Universitas Diponegoro).
- Sula, M. S. (2002). Prinsip-prinsip dan Sistem Operasional Takaful Serta Perbedaan dengan Asuransi Konvensional. *Jakarta: AAMAI*.
- Warto, W., & Khumaini, S. (2022). Analisis Hasil Investasi Dana Asuransi Jiwa Syariah di Indonesia Periode 2014-2021. *Al Maal: Journal of Islamic Economics and Banking*, 4(1), 68-88. <http://dx.doi.org/10.31000/almaal.v4i1.6651>