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Performance Comparison of Sharia Mutual Funds and Conventional Mutual Funds Based on Risk and Return (2017–2020 period) Using the DEA Method

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ABSTRACT

Investment managers use mutual funds as a platform to gather money from the investor community, which is then invested in securities portfolios. The goal of the study is to compare the performance of sharia mutual funds and conventional mutual funds in terms of risk and return levels from 2017 to 2020. Microsoft Excel and software frontier analysis are used in this study to compare performance effectiveness using the Data Envelopment Analysis (DEA) method. According to the study's findings, both conventional and sharia mutual funds had a performance efficiency of 100% in 2017. In 2018, the performance of mutual funds was generally inefficient, but the performance of conventional mutual funds was more efficient than the performance efficiency of Islamic mutual funds, with a ratio of 33.90%: 29.60%. In 2019, Islamic mutual funds and conventional mutual funds both have inefficient scores, but sharia performance is more efficient than conventional, with a ratio of 80.00%: 13.20%. The two mutual funds will then have 100% performance efficiency in 2020.

Keywords: *Islamic mutual funds, conventional mutual funds, Return and Risk*

Introduction

The term "investment" refers to the practice of funneling money from a business into an asset (asset) in the hopes of making a profit in the future (Jannah, 2015). Investing in mutual funds has several benefits, one of which is that it does not require a sufficiently big amount of capital because investments are made together. In addition, investors do not need to assess their performance in order to keep track of it. Therefore, mutual funds offer an alternative investment for the investor community, particularly for small investors and financiers who do not have a lot of time or ability to determine the level of risk associated with their investment portfolio.

Since the year 2000, the industry of mutual funds in Indonesia has been expanding, and this expansion has continued at a very rapid pace up until the present day. In tandem with the expansion of the economy in Indonesia, mutual funds have developed into a much more appealing investment vehicle than traditional banking instruments. Mutual funds are defined by Capital Market Law Number 8 of 1995 as a forum that is used to gather funds from the investor community. These funds are then invested in a securities portfolio by investment managers. The law was passed in 1995. Investing directly in stocks or bonds requires knowledge, experience, access to information, and time that requires analysis or monitoring market conditions on an ongoing basis. This is why novice investors find it difficult to make their investments directly in securities, which is why mutual funds were created. Mutual funds are a solution to this problem. When investing in mutual funds, investors place their complete trust in investment managers to handle their money in a responsible manner. They also grant investment managers the authority to assemble a diversified securities portfolio in order to maximize earnings (Iman, 2008).

Since 2004, Indonesia's efforts have been directed toward furthering the growth of the country's capital market. Nevertheless, in 2005 it was plagued by oscillations brought on by large-scale redemptions, which ultimately led to a worsening of the performance of these mutual funds. In 2006, mutual funds started to make a comeback, and the following year, mutual funds witnessed a very quick growth in value. In 2008, many investors started to become associated with mutual fund investment. These investors predicted that in 2008, mutual funds would experience a higher increase than in 2007, but this did not occur as a result of the financial crisis that caused the global economy until Indonesia to experience a decline. In 2008, returns on mutual funds went down, and they have continued to go down throughout this year. This is because of the uncertainty surrounding the Federal Reserve's interest rate hike, as well as the problem of the Rupiah being one of the negative sentiments as it weakens.

The performance of mutual funds experienced a decline in 2013, which was again caused by the performance of the Composite Stock Price Index (JCI) and depressed bond prices, which in turn affected the performance of mutual fund yields. In 2009, the performance of mutual funds experienced an increase that was in line with the increase in the

Jakarta Composite Index (JCI). The value of the Jakarta Composite Index (JCI) experienced a decline simultaneously with mutual funds caused by the trade war between the United States and China, and with the exchange rate crisis in developing countries such as Turkey and Venezuela, however, over time the performance of mutual funds began to improve due to the pressure of lower interest rate increases in December of last year. In 2018, the performance of the capital market was not as bright as it had been the previous year (OJK, 2021).

Mutual funds need to maintain performance to operate optimally. One of the factors that must be considered by mutual funds to survive in financial institutions is a good performance which can be used by the wider community. In terms of efficiency, one of the performance parameters theoretically underlies the entire performance in order for the financial institution to produce outputs and inputs that can be used to measure the expected performance. The following is data on mutual funds registered with BAPEPAM-LK in the 2017-2020 period.

Table 1.
Development of Mutual Funds in 2017-2020

Period		**Net Asset Value**	**Number of Participation Units**
Year	Quarter	(in Rupiah)	(in Rupiah)
2017	I	357.998.170.800.612,00	256.647.153.191,92
	II	375.229.425.758.096,00	268.724.798.855,13
	III	403.711.270.856.387,00	288.461.163.963,69
	IV	441.274.292.393.095,00	317.885.278.863,90
2018	I	488.341.048.854.247,00	346.041.921.291,41
	II	499.209.345.113.275,00	361.928.639.712,97
	III	493.744.044.653.491,00	362.668.827.381,41
	IV	499.887.219.077.053,00	372.413.818.584,06
2019	I	518.500.098.230.235,00	384.076.664.261,94
	II	511.736.745.151.824,00	382.189.122.331,53
	III	538.306.046.659.433,00	385.899.223.953,13
	IV	546.627.631.376.125,00	426.585.743.100,25
2020	I	511.494.280.547.145,00	420.135.048.461,05
	II	477.450.732.804.905,00	406.757.958.061,91
	III	511.667.924.596.676,00	421.986.652.468,94
	IV	550.417.171.814.964,00	432.377.853.190,32

According to the table located above, the growth of mutual funds in 2017-2020 with the period of the mutual fund data quarter has increased. This can be seen in 2017 when the nav value in the fourth quarter was Rp. 441,274,292,393,095, and in 2018 when the fourth quarter was Rp. 499,887,219,077,053, and in 2019 when the fourth quarter was Rp.

546,627,631,376,125, and in 2020 when the fourth quarter was It is clear from looking at the table that the NAV has gone up each year since it was first calculated. Along the same lines as NAB, the total number of UPs from 2017 to 2019 has steadily climbed each year. It is possible to draw the following conclusion from the table: the performance of mutual funds improves on an annual basis, both in terms of the amount of UP earned and the NAV value. Contracting is one of the many areas in which one must take into consideration based on the results of the computation of the NAV value and the quantity of UP that is accrued annually. Contracting must be based on a specific covenant, as the Word of Allah Almighty states in verse 29 of the Quranic chapter An-Nisa (kemenag, 2021).

The Data Envelopment Analysis (DEA) method is a technique that can be utilized to measure the performance efficiency of a mutual fund or other investment products. This technique, which can describe the manager's capacity to manage each mutual fund, was developed in response to the development of mutual funds that are continually increasing. Let's say you go back and look at a number of different studies that have used the DEA approach to evaluate how effective something was. In such an instance, the Sharpe method, the Treynor method, Jensen's Alpha approach, and a number of other methodologies are frequently paired with this method. Although it is not always certain that the performance of a mutual fund can be good in the past, there is a possibility that good performance in the past has the opportunity to have good performance in the future and the present. This is because good performance tends to be predictive of future performance. Therefore, academics are interested in examining a comparison of the performance of Islamic mutual funds and conventional mutual funds using the DEA approach. The comparison will be based on the amount of risk and return that each fund offers.

Literature Review

Investing is simply making a sacrifice in the now in anticipation of future gains (Iman, 2008). An investment is a long-term commitment to earn future returns on one or more of one's assets (Sunariyah, 2011). Investment is the activity of managing funds and investing cash or capital in the present with the expectation of receiving several profitable future payment flows. By purchasing securities or financial assets such as stocks, bonds, or derivatives such as options and futures contracts, funds are managed (Nuzula & Nurlaily, 2020).

Mutual funds are one of the alternative investments in the field of financial investment utilized by investors who are attracted to stocks and bonds but have weaknesses in the field of financial investment, so the funds can be entrusted to institutions mutual funds to be managed and given benefits based on the size of the portion of funds deposited and following and signing administrative requirements as promised (Fahmi, 2014). Sharia funds are mutual funds that adhere to the principles of sharia.

Data Envelopment Analysis (DEA) is a non-parametric technique that employs linear program approaches to measure the performance or efficiency of a decision-making unit (DMU) (Dwiastuti, 2017).

NAV is calculated by summing the total net assets of all funds in a mutual fund divided by the total number of units outstanding. The total net assets themselves come from the market value of each type of investment assets, such as stocks, bonds, securities, and deposits, plus stock dividends and bond coupons, then minus mutual fund operating costs such as investment management fees, custodian bank fees, and others (Abi, 2016). Mutual fund risk is the possibility of variability in the level of yield obtained from an asset. One of the measures used to measure the risk of this mutual fund is the standard deviation. Return of a mutual fund is a change in the value of a mutual fund plus *income* that reflects the performance of a type of mutual fund (Syahrizal, 2019).

Method

The objects chosen to conduct this research are the number of Islamic mutual funds and the number of conventional mutual funds using quantitative analysis. The data used is secondary data in the form of financial statements from each Islamic mutual fund and conventional mutual fund in 2017-2020 from the official OJK website. This study is to compare the level of efficiency of the performance of Islamic mutual funds and conventional mutual funds using the Data Envelopment Analysis (DEA) method (Sugiyono, 2013). The approach used is an input-oriented approach with the CRS / CCR model to determine the performance efficiency of the mutual fund to be studied. The research variables are used as input variables and output variables. Variable input includes the number of mutual funds and Net Asset Value (NAV) and variabel output, which provides for return and risk.

Results and Discussion

Table 2.
Sharia Mutual Fund Performance Efficiency Test Results for 2017-2020

DMU	Score Efficient	Condition
RDS 2017	100,00%	TRUE Green
RDS 2018	29,60%	FALSE Red
RDS 2019	80,00%	FALSE Red
RDS 2020	100,00%	TRUE Green

Source : Data Processing Results of Sofware Frontier Analysis

The table above results in calculating the efficiency of 5 Sharia Commercial Banks (BUS) using MaxDEA 8 software. A value of 100% indicates BUS on an efficient scale, if it is less than 100% then BUS is on an inefficient scale. From the test results above, in 2017 the efficiency level of islamic mutual fund performance has an efficient level of 100%, which means that in that year the performance efficiency of mutual funds is said to be efficient because 100% is equal to 1. In 2018, the performance efficiency of mutual funds had an efficient score of 29.60% of the score, so it can be said to be Inefficient because it is less than 1. In 2019 the efficient score owned by Islamic mutual funds is 80.00%, this cannot be said to be efficient because the score is less than 1, so the performance is said to be Inefficient. Then in 2020 the efficient score owned by Islamic mutual funds is 100.00%, thus the performance can be said to be efficient because it has a score equal to 1.

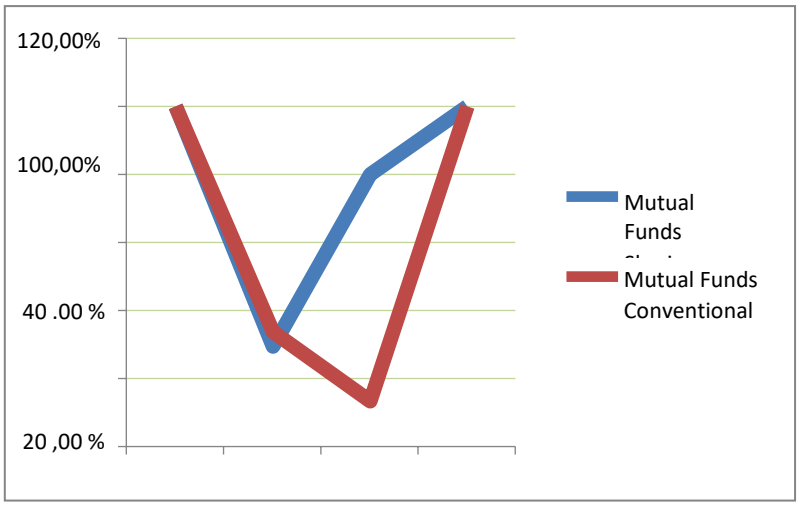
Table 3.
Results of Conventional Mutual Fund Performance Efficiency Test 2017-2020

DMU	Score Efficient	Condition
RDK 2017	100,00%	TRUE Green
RDK 2018	33,90%	FALSE Red
RDK 2019	13,20%	FALSE Red
RDK 2020	100,00%	TRUE Green

Source: Data Processing Results of Sofware Frontier Analysis

From the data above, it can be said that in 2017 the performance efficiency of conventional mutual funds can be said to be efficient because it has an efficient rate of 100% or equal to 1. Then in 2018 it has an efficiency level of 33.90% which means that the performance cannot be said to be efficient because the Efficient score is less than 1. In 2019, the performance has not been said to be efficient because the efficient score is less than 1, which is 13.20%, so the performance is said to be Inefficient. Furthermore, in 2020 the performance has an efficient score of 100.00% so it can be said to be efficient because the score is equal to 1.

Figure 1.
Comparison Efficiency Performance Mutual DanaSharia And Mutual Dana Conventional Period 2017-2020



It is possible to draw the following conclusion from the chart that is located above: in 2017, the comparison of the performance of Islamic mutual funds and conventional mutual funds based on the level of risk and return using the method of data envelopment analysis has shown that Islamic mutual funds have performed better than conventional mutual funds. The same performance with an efficiency score of 100.00% indicates that the score is equivalent to 1, and one may say that it is efficient. In 2018, it is possible to compare the performance of Islamic mutual funds and conventional mutual funds using the Data Envelopment Analysis method. This comparison can be made based on the amount of risk and return associated with each type of fund using the Data Envelopment Analysis method. Analysis shows that it is inefficient due to the fact that it has an efficient score that is less than 1. However, when compared, the performance with a better level of efficiency is found in conventional mutual funds with a ratio of 33.90%: 29.60%, which indicates that the performance of conventional mutual funds is more efficient when compared to the performance of islamic mutual funds. In 2019, it is also considered inefficient due to the fact that it has an efficient score that is less than 1. However, when contrasted, the performance of Islamic mutual funds has an efficient score of 80.00%, while conventional mutual funds have an efficient score of 13.20%. The comparison of the performance of Islamic mutual funds and conventional mutual funds based on the degree of risk and return using the Data Envelopment Analysis approach shows the same results in the next year, namely 2020, the same as it did in 2017. Performance with an efficient score of 100.00% indicates that the score is equal to 1, and it is possible to say that the performance between Islamic mutual funds and conventional mutual funds is efficient.

Conclusion

Based on the analysis and interpretation of data that has been tested in the previous chapter on measuring performance efficiency using the Data Envelopment Analysis method, the following conclusions can be drawn:

When the performance of conventional mutual funds and Islamic mutual funds are compared using the method of data envelopment analysis, it is possible to draw the conclusion that in 2017, the performance efficiency of Islamic mutual funds and conventional mutual funds both have the same performance efficiency of 100.00%. This conclusion can be reached by comparing the performance of both types of mutual funds based on the level of risk and return involved. In 2018, the performance efficiency of mutual funds was considered to be inefficient due to the fact that it was less than 1 or less than 100.00%; however, when compared, the performance efficiency of conventional mutual funds was more efficient when compared to the performance efficiency of syariah mutual funds, specifically with a ratio of 33.90%:29.60%. When compared, it can be concluded that the performance efficiency of Islamic mutual funds is higher when compared to the performance efficiency of conventional mutual funds. In 2019, the efficient score between Islamic mutual funds and conventional mutual funds also has an inefficient score because it is less than 1. That works up to a percentage split of 80.00:13.20%. Then, in 2020, the performance efficiency of Islamic mutual funds and conventional mutual funds both have an efficient score of 100.00%, and it can be concluded that in 2020, the efficiency of mutual fund performance can be said to be efficient because it has a score of 100.00%, which is equal to 1, and it is possible to draw the conclusion that in 2020, the performance efficiency of Islamic mutual funds and conventional mutual funds both have an efficient score of 100.00%.

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