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Comparative Analysis of Sharia and Conventional Stocks Portfolio Performance Using Sharpe, Treynor and Jensen Methods

Fanji Muchlisina
Email: fmuchlisina101@gmail.com
Gunadarma University, Indonesia

Riskayanto
Email: riskayanto@staff.gunadarma.ac.id
Gunadarma University, Indonesia

Abstract : The Sharia capital market emerged as an alternative vehicle for the investor community to invest in the financial world in accordance with Sharia principles. As an alternative investment vehicle, the Sharia capital market is of course also targeted by investors who care about Sharia in addition to the general objective as a vehicle used to a profitable investing. Based on this basic framework, this research was conducted with the aim of analyzing and comparing stock performance in the form of stock portfolios between Sharia-based and conventional one. The JII70 stock index was used as an object for the Sharia stock portfolio, while the conventional stock portfolio was represented by the LQ45 index. The performance assessment used on these two portfolios was a portfolio performance assessment using the Sharpe, Treynor, and Jensen methods during the Covid-19 pandemic. The performance of these stock portfolios according to the three methods showed positive results. The performance of the JII70 stock portfolio was lower than the LQ45 index although it is insignificant. Meanwhile, according to the Treynor index, the performance of the JII70 was better than the LQ45 although it is insignificant.

Keywords: Jensen index; JII70 Index; LQ45 Index; stock portfolio; Sharpe index; Treynor index

INTRODUCTION

The Covid-19 pandemic has many impacts on many countries. Covid-19 does not only bring an impact on public health but also the economic and social sectors. One of the impacts of Covid-19 on the economic sector in Indonesia is the decline in the movement of the Composite Stock Price Index (JCI) on the Indonesia Stock Exchange. The decline actually was caused by the large volume

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of sales made by investors due to concerns over the Corona virus[1]. On the other hand, the Sharia capital market showed an improved performance.

The resilience of Indonesia's Sharia capital market to the pandemic can be proven through the achievement of awards by GIFA Awards. It was recorded that the Indonesia Stock Exchange (IDX) received The Best Sharia Capital Market award in 2019, 2020, 2021 and 2022. This achievement is attributed to the continuous growth and development of Indonesia's Sharia capital market. The Indonesian Sharia Capital Market shows a very significant growth performance in the number of Sharia stock investors. In the last 5 years, the amount of Sharia stock investors in Indonesia has increased by 383 percent.

The development of the Sharia capital market is considered significant enough to make investors start looking at sharia-based stocks, not only investors who require sharia requirements in investing. Sharia stocks also have good resilience when the economy is experiencing a crisis. This was revealed by Ahmad and Albaity[2], who stated that it was because the Sharia capital market has a better ability to adjust to external crisis disruptions.

In making an investment, investors certainly want to get a high return with a low risk. A way that can be applied to minimize the risk is to form a portfolio. In constructing an optimal portfolio, investors can use several models. The optimal portfolio that has been constructed has off course to be evaluated. Portfolio performance evaluation is carried out to determine whether the portfolio is able to provide the expected results or not. Portfolio performance evaluation can be done with several models such as the Sharpe index, Treynor, Jensen, different return, appraisal ratio (information index), M-Squared (M^2), Sortino and Treynor-Squared (T^2).

There are several studies that aim at comparing the performance of Sharia stocks with conventional, including Heryanti's[3] that compared the risk of the optimal portfolio of Sharia stocks with conventional using the Jakarta Islamic Index (JII) and LQ45. Another study compared the performance of the conventional stock price index represented by the LQ45 index with the performance of the Sharia stock price index represented by the Jakarta Islamic

[1] LAKAF Aicha and BOUKERDID Abdelkader, "Implications of the Corona Virus (Covid-19) for Financial Reporting, BMW Case Study," *Revue Organisation & Travail Volume* 11, no. 1 (2022).

[2] Mohamed Albaity and Rubi Ahmad, "Performance of Syariah and Composite Indices: Evidence from Bursa Malaysia," *Asian Academy of Management Journal of Accounting and Finance* 4, no. 1 (2008): 23–43.

[3] Reni Heryanti, M Sucipto, and Makmur Makmur, "The Analysis of Common Grammatical Errors in Writing Narrative Essay of English Study Program Students at Jambi University," *Edukasi: Jurnal Pendidikan dan Pengajaran* 4, no. 2 (2017): 83–92.

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Index (JII) seen during the 2016-2017 period[4]. Research related to the comparison of stock portfolio performance during the COVID-19 pandemic has been conducted[5] by comparing the LQ45 index with the SRI-KEHATI.

LITERATURE REVIEW

Investment and Capital Market

Investment can be defined as a form of fund management to provide benefits by placing these funds in an instrument that is expected to provide additional benefits in the future with measurable risk. Economically, investment has several benefits including the creation of business and employment opportunities, distribution of assets, security of funds and increase in asset value. According to Law No. 8 of 1995, capital markets are activities related to the public offering and trading of securities, public companies related to the securities they issue, as well as institutions and professions related to securities. The capital market acts as a source of long-term funds, an investment alternative, a vehicle for restructuring the company's capital, and a medium for divestment.

Sharia Capital Market

The sharia capital market in Indonesia is regulated by the National Sharia Council of the Indonesian Ulama Council number 40/DSN-MUI/X2003. Second, the implementation of transactions must be in accordance with the principles of prudence and is not allowed to speculate and manipulate the elements of dharar, gharar, usury, maisir, riswah, immorality and injustice. The sharia capital market in Indonesia continues to experience significant growth. Currently, there are two major indices in the Indonesian sharia capital market, namely the Jakarta Islamic Index and the Indonesian Sharia Stock Index .

Stocks and Stock Price Index

Stocks are one of the most popular investment instrument choices. Stocks are the most widely chosen investment instrument by investors because they are able to provide an interesting level of profit with certain risks. Broadly speaking, the development of Indonesia's capital market industry has caused, the stocks traded on the Indonesia Stock Exchange to be divided into 2 category, that are conventional and sharia stocks. A stock index is a statistical measure that reflects the overall price movement of a set of stocks selected based on

[4] Chatarina Febriyanti, Rendi Prasetya, and Ari Irawan, "Etnomatematika Pada Permainan Tradisional Engklek Dan Gasing Khas Kebudayaan Sunda," *Barekeng: Jurnal Ilmu Matematika Dan Terapan* 12, no. 1 (2018): 1–6.

[5] Nurwahidah Nurwahidah and Asriani Hasan, "Perbandingan Kinerja Portofolio Global Minimum Variansi Tanpa Short Sale Pada Saham-Saham Yang Terdaftar Dalam Indeks LQ45 Dan Sri-Kehati Selama Pandemi Covid-19 Periode 2020-2021," *Jurnal MSA (Matematika dan Statistika serta Aplikasinya)* 10, no. 1 (2022): 110–117.

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certain criteria and methodology and evaluated on a regular basis. By 2021, the Indonesia Stock Exchange has 40 stock indices including the Jakarta Islamic Index and the LQ45 Index. The goal is to guide investors in making investments in the capital market that still pay attention to Islamic sharia. Currently, the number of stocks that are still listed in the JII has reached 30 sharia stocks.

Stock Portfolio

One of the strategies in investment is investing in a portfolio. Investment in the form of a portfolio is one of the investment strategies to minimize the risk level. In general, a portfolio that can generate an optimal rate of return with minimum risk will be chosen by investors. Such a portfolio can be referred to as an efficient portfolio. After forming an efficient portfolio, an optimal portfolio will be arranged. This optimal portfolio selection aims to allocate funds to various investment alternatives that exist and maximize returns at a certain level of risk borne by an investor.

There are two analytical tools that can be used to create an optimal portfolio that investors can build to facilitate the formation of the portfolio, known as the Markowtiz and the Single Index model. However, investors prefer to use the single index model, as it is considered easy and it is a simplification of the Markowitz model that requires fewer calculations. This model also highly considers the market condition of the expected return and risk of a stock and its portfolio depends on the market condition.

Single Index Model

The single index model is a method for determining a portfolio based on the observation that the share price of a security fluctuates in the same direction as the market price index so that when the stock index price rises, the share price rises in the same direction, and vice versa[6]. Hartono further states that determining the optimal portfolio with a single index model is carried out by selecting stock returns, ranking stocks based on excess return to beta, and determining stocks that are eligible for a stock portfolio through setting cut-off points[7]. The single index model is a method used in measuring the value of

[6] Mohammad Ichsanuddin and Budiyanto Budiyanto, "Analisis Portofolio Optimal Dengan Model Indeks Tunggal Pada Perusahaan Retail Di Bei," *Jurnal Ilmu Dan Riset Manajemen (JIRM)* 5, no. 5 (2016).

[7] Jatu Indri Puspasari, "Perbandingan Kinerja Portofolio Optimal Saham Syariah Emiten Di Malaysia Dan Indonesia Periode Januari 2013–Desember 2017" (Jakarta: Fakultas Ekonomi Dan Bisnis UIN Syarif Hidayatullah, 2019).

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stock returns and portfolio risk levels with the assumption that the movement of stock returns is only related to market returns.

Sharpe Index

The Sharpe Index was developed by William Sharpe in 1966 and is commonly referred to as the reward to variability ratio. The Sharpe Index bases its calculation on the concept of the capital market line as a benchmark, by dividing the portfolio risk premium by its standard deviation. Standard deviation is an estimate of the probability of the difference between real returns and expected returns. The basic advantage of the Sharpe index is that it provides an additional return per unit of total risk between unsystematic and systematic risk. The Sharpe ratio explains how well an investor is compensated by the assumption of additional risk. The Sharpe ratio is also used to evaluate the performance of mutual funds so that investors know which portfolio is the most optimal. A higher Sharpe ratio reflects better performance.

Treynor Index

The Treynor Index is a portfolio performance measure that is developed by Jack Treynor and is also called the reward to volatility ratio. The Treynor Index explains how to measure the portfolio performance index using a volatility ratio based on systematic risk. This approach assumes that the portfolio is well diversified, thus, the relevant risk is a systematic risk (beta). The calculation of the Treynor index is carried out by subtracting the portfolio return from the risk-free return and dividing by the beta of the portfolio. The Treynor index is considered a better performance measure compared to the Sharpe ratio because it provides a better picture of a diversified portfolio calculated from the CAPM equation. The larger the Treynor index a portfolio has, the better it will perform relative to a portfolio with a lower Treynor index.

Jensen Index

The Jensen Index is known as a measure of absolute risk-adjusted returns. Michael Jensen used Jensen's Alpha in 1970 to estimate the excess returns earned by securities. The Jensen Index is an index that shows the difference between the actual rate of return obtained by the portfolio and the expected rate of return if the portfolio is in the capital market line. The similarity between Jensen and Treynor indices is that both portfolio performance measures use the securities market line as the basis to create equations. While the difference is that the Treynor index is equal to the slope of the line connecting the portfolio position with the risk-free return, while the Jensen

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index is the difference between the portfolio return and the portfolio return that is not managed in a special method (just following market returns)

RESEARCH METHODS

Research Design and Method

The research method used in this research is quantitative research. The statistical tool used in this study is a t-test. This test is conducted to compare the performance of sharia stock portfolios in JII70 index and conventional stock portfolios in LQ45 index. This comparative test is carried out by comparing the performance of stock portfolios measured through three indicators mentioned before of Sharpe index, Treynor index, and Jensen index.

Population and Sample

The population of this study are issuers included in JII70 and LQ45 index categories during the pandemic period. The population of this study are 70 JII70 stocks and 45 LQ45 stocks. The sample selection method in this study is purposive sampling method. The criteria used to determine the sample in this study are: (1) The company is included in JII70 and LQ45 indices during the pandemic period from March 2020 - November 2022; (2) Companies that are belong to JII70 and LQ45 indices from March 2020 - November 2022 during the pandemic period are consecutively irreplaceable; (3) Companies that are not included in JII70 or LQ45 indexes from March 2020 - November 2022 during the pandemic period.

RESEARCH RESULT

Descriptive Analysis

To analyze the data in this study, there are 3 (three) steps that have been carried out. First, selecting stocks that will be included in the optimal portfolio construction using single index model analysis. Second, calculating the performance of sharia stock portfolios from the Jakarta Islamic Index 70 (JII70) and conventional stocks from the LQ45 index using the Sharpe, Treynor and Jensen indices. Third, testing the hypothesis to determine the difference between the optimal portfolio performance of Sharia stocks from the Jakarta Islamic Index 70 (JII70) and conventional stocks from the LQ45 index, using an independent sample t-test.

Optimal Portfolio Construction

The optimal portfolio construction on Jakarta Islamic Index 70 (JII70) sharia and conventional stocks from the LQ45 index uses a single index model method. The optimal portfolio formation is selected from stocks that have a positive Z score. If the Z score is negative, it cannot be selected. The following

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table showed the results of the single index model analysis to construct the optimal portfolio on sharia stocks from the Jakarta Islamic Index 70 (JII70).

Table 4. Optimal Portfolio Construction of Sharia Stocks from Jakarta Islamic Index 70 (JII70)

No.	Stocks Symbol	Company	Z Score	Portfolio Candidate
1	AALI	Astra Agro Lestari Tbk.	(0,96230)	cannot be selected
2	ACES	Ace Hardware Indonesia Tbk.	(5,92335)	cannot be selected
3	ADHI	Adhi Karya (Persero) Tbk.	(0,41272)	cannot be selected
4	AKRA	AKR Corporindo Tbk.	0,58139	selected
5	BMTR	Global Mediacom Tbk.	(0,54761)	cannot be selected
6	BRIS	Bank BRIsyariah Tbk.	0,15457	selected
7	BRPT	Barito Pacific Tbk.	(0,23750)	cannot be selected
8	CTRA	Ciputra Development Tbk.	(0,69608)	cannot be selected
9	DMAS	Puradelta Lestari Tbk.	(1,25841)	cannot be selected
10	ISAT	Indosat Tbk.	0,11138	selected
11	LINK	Link Net Tbk.	(0,47823)	cannot be selected
12	LPPF	Matahari Department Store Tbk.	(0,02594)	cannot be selected
13	LSIP	PP London Sumatra Indonesia Tbk.	(0,64053)	cannot be selected
14	MAPI	Mitra Adiperkasa Tbk.	(0,11735)	cannot be selected
15	MIKA	Mitra Keluarga Karyasehat Tbk.	1,03816	selected
16	MYOR	Mayora Indah Tbk.	600,12270	selected
17	PTPP	PP (Persero) Tbk.	(0,66092)	cannot be selected
18	PWON	Pakuwon Jati Tbk.	(1,02313)	cannot be selected
19	SCMA	Surya Citra Media Tbk.	(0,39881)	cannot be selected
20	SIDO	Industri Jamu dan Farmasi Sido Muncul Tbk.	4,38341	selected
21	SMRA	Summarecon Agung Tbk.	(0,81187)	cannot be selected
22	TPIA	Chandra Asri Petrochemical Tbk.	(0,06687)	cannot be selected

Source: data processed by author, 2022

Based on the single index model analysis, the following is the Z Score of each Jakarta Islamic Index 70 (JII70) stock: Astra Agro Lestari Tbk. (AALI) has a Z Score (0.96230), Ace Hardware Indonesia Tbk. (ACES) has a Z Score (5.92335),

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Adhi Karya (Persero) Tbk. (ADHI) has a Z Score (0.41272), AKR Corporindo Tbk. (AKRA) has a Z Score of 0.58139, Global Mediacom Tbk. (BMTR) has a Z Score (0.54761), Bank BRIsyariah Tbk. (BRIS) has a Z Score of 0.15457, Barito Pacific Tbk. (BRPT) has a Z Score (0.23750), Ciputra Development Tbk. (CTRA) has a Z Score (0.69608), Puradelta Lestari Tbk. (DMAS) has a Z Score (1.25841), Indosat Tbk. (ISAT) has a Z Score of 0.11138, Link Net Tbk. (LINK) has a Z Score (0.47823), Matahari Department Store Tbk. (LPPF) has a Z Score (0.02594), PP London Sumatra Indonesia Tbk. LSIP has a Z Score (0.64053), Mitra Adiperkasa Tbk. (MAPI) has a Z Score (0.11735), Mitra Keluarga Karyasehat Tbk. (MIKA) has a Z Score of 1.03816, Mayora Indah Tbk. (MYOR) has a Z Score of 600.12270, PP (Persero) Tbk. (PTPP) has a Z Score (0.66092), Pakuwon Jati Tbk. (PWON) has a Z Score (1.02313), Surya Citra Media Tbk. (SCMA) has a Z Score (0.39881), Sido Muncul Tbk. (SIDO) Herbal and Pharmaceutical Industry has a Z Score of 4.38341, Summarecon Agung Tbk. (SMRA) has a Z Score (0.81187), Chandra Asri Petrochemical Tbk. (TPIA) has a Z Score (0.06687).

Table 4 showed candidate stocks included in the optimal portfolio of sharia stocks from the Jakarta Islamic Index 70 (JII70) consisting stocks that have a positive Z score value. They are AKR Corporindo Tbk, Bank BRI syariah Tbk, Indosat Tbk, Mitra Keluarga Karyasehat Tbk, Mayora Indah Tbk and Herbal and Pharmaceutical Industry Sido Muncul Tbk respectively. The remaining 16 stocks have negative Z score values. Based on the requirements of stock candidates that can be included in the formation of optimal portfolios, namely stocks that have a positive Z score value, out of 22 stocks research samples, six (6) stocks are fit into the criteria for optimal portfolio formation.

The selection result of candidate stocks included in the formation of an optimal portfolio of conventional stocks from the LQ45 index are as follow:

Table 5. Optimal Portfolio Construction of Conventional Stocks from LQ45 Index

No.	Stocks Symbol	Company	Z Score	Portfolio Candidate
1	ASII	Astra International Tbk.	(0,43314)	cannot be selected
2	BBCA	Bank Central Asia Tbk.	1,09697	selected
3	BBNI	Bank Negara Indonesia (Persero) Tbk.	(0,26828)	cannot be selected
4	BBRI	Bank Rakyat Indonesia (Persero) Tbk.	(0,56988)	cannot be selected
5	BBTN	Bank Tabungan Negara (Persero) Tbk.	(0,29580)	cannot be selected

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6	BMRI	Bank Mandiri (Persero) Tbk.	(0,08081)	cannot be selected
7	HMSP	H.M. Sampoerna Tbk.	(3,44892)	cannot be selected
8	INKP	Indah Kiat Pulp & Paper Tbk.	0,34607	selected
9	SMGR	Semen Indonesia (Persero) Tbk.	(0,89951)	cannot be selected
10	TBIG	Tower Bersama Infrastructure Tbk.	2,09110	selected
11	TOWR	Sarana Menara Nusantara Tbk.	0,55062	selected

Source: data processed, 2022

Based on the analysis of the single index model, the following is the Z Score value of each LQ45 index stock: Astra International Tbk. (ASII) has a Z Score (0.43314), Bank Central Asia Tbk. (BBCA) has a Z Score of 1.09697, Bank Negara Indonesia (Persero) Tbk. (BBNI) has a Z Score (0.26828), Bank Rakyat Indonesia (Persero) Tbk. (BBRI) has a Z Score (0.56988), Bank Tabungan Negara (Persero) Tbk. (BBTN) has a Z Score (0.29580), Bank Mandiri (Persero) Tbk. (BMRI) has a Z Score (0.08081), H.M. Sampoerna Tbk. (HMSP) has a Z Score (3.44892), Indah Kiat Pulp & Paper Tbk. (INKP) has a Z Score of 0.34607, Semen Indonesia (Persero) Tbk. (SMGR) has a Z Score (0.89951), Tower Bersama Infrastructure Tbk. (TBIG) has a Z Score of 2.09110, Sarana Menara Nusantara Tbk. (TOWR) has a Z Score of 0.55062.

It could be seen that the candidate stocks selected in the optimal portfolio of conventional stocks from the LQ45 index are stocks that have a positive Z score value. There are 4 (four) stocks that have a positive Z score value. Based on the requirements of stock candidates that can be included in the optimal portfolio construction that have positive Z score value, out of 11 stocks, there are 4 stocks that fit to the criteria for optimal portfolio construction.

Optimal Portfolio Performance

In this study, 3 (three) indices calculation method are used to measure the optimal portfolio performance of sharia stocks from the Jakarta Islamic Index 70 (JII70) index and conventional stocks from the LQ45 index. They are the Sharpe, Treynor and Jensen. The optimal portfolio performance gained with Sharpe Index. The calculation of stock performance using the Sharpe index method of JII sharia stocks and LQ45 conventional stocks is resumed as follows:

Table 6. Calculation of Optimal Portfolio Performance of Sharia Stocks from Jakarta Islamic Index 70 (JII70) with Sharpe Index

No.	Stocks Code	Company	Sharpe

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1	AKRA	AKR Corporindo Tbk.	0,28576
2	BRIS	Bank BRIsyariah Tbk.	0,29691
3	ISAT	Indosat Tbk.	0,20054
4	MIKA	Mitra Keluarga Karyasehat Tbk.	0,05047
5	MYOR	Mayora Indah Tbk.	0,11923
6	SIDO	Industri Jamu dan Farmasi Sido Muncul Tbk.	0,09766
Market			**0,12751**

Source: data processed, 2022

The following is the calculation of the optimal portfolio performance of sharia stocks from the Jakarta Islamic Index 70 (JII70) using the Sharpe index: AKR Corporindo Tbk. (AKRA) has a value of 0.28576, Bank BRIsyariah Tbk. (BRIS) has a value of 0.29691, Indosat Tbk. (ISAT) has a value of 0.20054, Mitra Keluarga Karyasehat Tbk. (MIKA) has a value of 0.05047, Mayora Indah Tbk. (MYOR) has a value of 0.11923, Sido Muncul Tbk. Herbal and Pharmaceutical Industry (SIDO) has a value of 0.09766.

It can be seen that the calculation of performance with the Sharpe index on the optimal portfolio of sharia stocks from the Jakarta Islamic Index 70 (JII70) index are positive. The market performance value calculated by the Sharpe index is 0.12751 or 12.751%. There are 3 (stocks) which performance value is higher than the market performance value of AKR Corporindo Tbk (AKRA), Bank BRIsyariah Tbk (BRIS), and Indosat Tbk (ISAT), while 3 (three) other stocks have lower performance value than the market performance value of Mitra Keluarga Karyasehat Tbk (MIKA), Mayora Indah Tbk (MYOR) and Herbal and Pharmaceutical Industry Sido Muncul Tbk (SIDO). Stock performance with greater than market performance can be judged as good and at the same time the higher the performance value, the better the stock performance[8]. The calculation of the optimal portfolio performance of conventional stocks from LQ45 using the Sharpe index is presented below:

Table 7. Calculation of Optimal Portfolio Performance of Conventional Stocks from LQ45 Index with Sharpe Index

No.	Stocks Code	Company	Sharpe
1	BBCA	Bank Central Asia Tbk.	0,51671
2	INKP	Indah Kiat Pulp & Paper Tbk.	0,57632
3	TBIG	Tower Bersama Infrastructure Tbk.	0,40578
4	TOWR	Sarana Menara Nusantara Tbk.	0,03697

[8] Eduardus Tandelilin, "Beta Pada Pasar Bullish Dan Bearish: Studi Empiris Di Bursa Efek Jakarta," *Journal of Indonesian Economy and Business (JIEB)* 16, no. 3 (2001).

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Market	**0,12751**

Source: data processed by the researchers, 2022

The following is the result of calculating the optimal portfolio performance of Islamic stocks from the LQ45 index using the Sharpe index: Bank Central Asia Tbk. (BBCA) has a value of 0.51671, Indah Kiat Pulp & Paper Tbk. (INKP) has a value of 0.57632, Tower Bersama Infrastructure Tbk. (TBIG) has a value of 0.40578, Sarana Menara Nusantara Tbk. (TOWR) has a value of 0.03697.

It can be seen from table 7 that the calculation of performance of all stocks with the Sharpe index on the optimal porfotolio of conventional stocks from the LQ45 index are positive. The market performance value calculated by Sharpe index is 0.12751 or 12.75%. There are 3 (stocks) which performance value is higher than the market performance value. They are Bank Central Asia Tbk (BBCA), Indah Kiat Pulp & Paper Tbk (INKP), and Tower Bersama Infrastructure Tbk (TBIG). One other stock has a lower performance value than the market performance value. It was Sarana Menara Nusantara Tbk (TOWR). Stock performance greater than market performance can judged as good. The higher the performance value, the better the stock performance[9].

Optimal Portfolio Performance with Treynor Index

The calculation of the optimal portfolio performance of sharia stocks from the Jakarta Islamic Index 70 (JII70) using the Treynor index is shown below:

Table 8. Calculation of Optimal Portfolio Performance of Sharia Stocks from Jakarta Islamic Index 70 (JII70) with Treynor Index

No.	Stocks Code	Company	Treynor
1	AKRA	AKR Corporindo Tbk.	0,02035
2	BRIS	Bank BRIsyariah Tbk.	0,03057
3	ISAT	Indosat Tbk.	0,02416
4	MIKA	Mitra Keluarga Karyasehat Tbk.	0,01218
5	MYOR	Mayora Indah Tbk.	4,82271
6	SIDO	Industri Jamu dan Farmasi Sido Muncul Tbk.	0,02925
Market			**0,00583**

Source: data processed by the researchers, 2022

The following is the calculation of the optimal portfolio performance of sharia stocks from the Jakarta Islamic Index 70 (JII70) using the Treynor index:

[9] Ibid.

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AKR Corporindo Tbk. (AKRA) has a value of 0.02035, Bank BRIsyariah Tbk. (BRIS) has a value of 0.03057, Indosat Tbk. (ISAT) has a value of 0.02416, Mitra Keluarga Karyasehat Tbk. (MIKA) has a value of 0.01218, Mayora Indah Tbk. (MYOR) has a value of 4.82271, Sido Muncul Tbk. Herbal and Pharmaceutical Industry (SIDO) has a value of 0.02925.

It can be seen from table 8 that the calculation of performance of all stocks with the Sharpe index on the optimal portfolio of Sharia stocks from the Jakarta Islamic Index 70 (JII70) index are positive. The market performance value calculated by the Sharpe index is 0.00583 or 0.58%, which means that all stocks have a better performance than the individual performance value. Stock performance can be said as good if the value of its performance is greater than market performance, and the greater the value of stock performance, the better the stock performance[10]. The calculation of the optimal portfolio performance of conventional stocks from LQ45 using the Treynor index could be seen below:

Table 9. Calculation of Optimal Portfolio Performance of Conventional Stocks from LQ45 Index with Treynor Index

No.	Kode Saham	Nama Perusahaan	Treynor
1	BBCA	Bank Central Asia Tbk.	0,03387
2	INKP	Indah Kiat Pulp & Paper Tbk.	0,05341
3	TBIG	Tower Bersama Infrastructure Tbk.	0,08208
4	TOWR	Sarana Menara Nusantara Tbk.	0,00456
Market			**0,00583**

Source: data processed by the researchers, 2022

The following is the result of calculating the optimal portfolio performance of Islamic stocks from the LQ45 index using the Treynor index: Bank Central Asia Tbk. (BBCA) has a value of 0.03387, Indah Kiat Pulp & Paper Tbk. (INKP) has a value of 0.05341, Tower Bersama Infrastructure Tbk. (TBIG) has a value of 0.08208, Sarana Menara Nusantara Tbk. (TOWR) has a value of 0.00456.

The performance of all stocks with the Sharpe index on the optimal porfotolio of conventional stocks from the LQ45 index are positive. The market performance value calculated by Sharpe index is 0.00583 or 0.58%. There are 3 (stocks) which performance value is higher than the market performance value. They are Bank Central Asia Tbk (BBCA), Indah Kiat Pulp & Paper Tbk (INKP), and Tower Bersama Infrastructure Tbk (TBIG). One other stock has a lower performance value than the market performance value. It was Sarana Menara Nusantara Tbk (TOWR). Stock performance can be said as good if the value of

[10] Ibid.

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its performance is greater than market performance, and the greater the value of stock performance, the better the stock performance[11].

Optimal Portfolio Performance with Jensen Index

The calculation of the optimal portfolio performance of sharia stocks from the Jakarta Islamic Index 70 (JII70) using the Jensen index is shown below:

Table 10. Calculation of Optimal Portfolio Performance of Sharia Stocks from Jakarta Islamic Index 70 (JII70) using Jensen Alpha Index

No.	Kode Saham	Nama Perusahaan	Jensen Alpha
1	AKRA	AKR Corporindo Tbk.	0,02333
2	BRIS	Bank BRIsyariah Tbk.	0,06577
3	ISAT	Indosat Tbk.	0,04042
4	MIKA	Mitra Keluarga Karyasehat Tbk.	0,00216
5	MYOR	Mayora Indah Tbk.	0,01067
6	SIDO	Industri Jamu dan Farmasi Sido Muncul Tbk.	0,00585

Source: data processed by the researchers, 2022

The following is the calculation of the optimal portfolio performance of sharia stocks from the Jakarta Islamic Index 70 (JII70) using the Jensen Alpha index: AKR Corporindo Tbk. (AKRA) has a value of 0.02333, Bank BRIsyariah Tbk. (BRIS) has a value of 0.06577, Indosat Tbk. (ISAT) has a value of 0.04042, Mitra Keluarga Karyasehat Tbk. (MIKA) has a value of 0.00216, Mayora Indah Tbk. (MYOR) has a value of 0.01067, Sido Muncul Tbk. Herbal and Pharmaceutical Industry (SIDO) has a value of 0.01067.

Table 10 shows that the highest performance value is in Bank BRIsyariah Tbk (BRIS). This is because Bank BRIsyariah Tbk (BRIS) has the difference in average stock returns with the highest average risk-free investment return compared to other stocks. The lowest is in Mitra Keluarga Karyasehat Tbk (MIKA) with a value of 0.00216. This is because the difference between the average stock return and the average risk-free investment return is the lowest compared to other stocks. The higher the portfolio performance value, the better the portfolio performance. So it can be concluded that the best stock performance under Jensen index is BRIsyariah Tbk (BRIS) and the worst is Mitra Keluarga Karyasehat Tbk (MIKA).

The calculation of the optimal portfolio performance of conventional stocks from LQ45 using the Jensen index is shown below:

[11] Ibid.

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Table 11. Calculation of Optimal Portfolio Performance of Conventional Stocks from LQ45 Index using Jensen Alpha Index

No.	Stocks Code	Company	Jensen Alpha
1	BBCA	Bank Central Asia Tbk.	0,02707
2	INKP	Indah Kiat Pulp & Paper Tbk.	0,07240
3	TBIG	Tower Bersama Infrastructure Tbk.	0,04950
4	TOWR	Sarana Menara Nusantara Tbk.	(0,00115)

Source: data processed by the researchers, 2022

The following is the result of calculating the optimal portfolio performance of Islamic stocks from the LQ45 index using the Jansen Alpha index: Bank Central Asia Tbk. (BBCA) has a value of 0.02707, Indah Kiat Pulp &; Paper Tbk. (INKP) has a value of 0.07240, Tower Bersama Infrastructure Tbk. (TBIG) has a value of 0.04950, Sarana Menara Nusantara Tbk. (TOWR) has a value of (0.00115).

Table 11 shows that the highest performance value is in Indah Kiat Pulp & Paper Tbk (INKP). This is due to Indah Kiat Pulp & Paper Tbk (INKP) which has the difference in average stock returns with the highest average risk-free investment return compared to other stocks. On the contrary, the lowest is on Sarana Menara Nusantara Tbk (TOWR) with a value of -0.00115. This is because the difference between the average stock return and the average risk-free investment return is smaller than the difference between the average market return and the average risk-free investment return. The higher the portfolio performance value, the better the portfolio performance. Thus, it can be said that the best stock performance under the Jensen index is Indah Kiat Pulp & Paper Tbk (INKP) because of its highest value while the worst is Sarana Menara Nusantara Tbk (TOWR).

Hypothesis Test

The test is conducted using the Independent Sample t-Test to determine the significancy difference between the performance of sharia and conventional stocks. This study will analyze how the comparison between the optimal portfolio performance of Islamic stocks from the Jakarta Islamic Index 70 (JII70) and the optimal portfolio performance of conventional stocks from the LQ45 index using the Sharpe index, Treynor index and Jensen index, whether the optimal portfolio performance of Islamic stocks or the optimal portfolio performance of conventional stocks is better.

Table 12. Descriptive Statistics of Optimal Portfolios of Sharia and Conventional Stocks

No.	Method	Mean	
		Sharia Stock	Conventional Stocks

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1	Sharpe	0.175	0.384
2	Treynor	0.823	0.043
3	Jensen	0.025	0.037

Source: data processed by the researchers, 2022

Table 12 resume the result of a comparison using the Independent Sample t-Test statistical test on the Sharpe, Treynor and Jensen indices on the optimal portfolio of sharia stocks from the Jakarta Islamic Index 70 (JII70) and conventional stocks from the LQ45 index. Previous descriptive statistics on JII70 using 3 (three) methods resulting that the average (mean) for the optimal portfolio of sharia stocks in Sharpe is 0.175, Treynor is 0.823, and Jensen is 0.025. The descriptive statistics of testing the difference in the optimal portfolio of conventional stocks from the LQ45 index using 3 (three) methods resulting that the average (mean) for the optimal portfolio of conventional stocks in Sharpe is 0.384, Treynor is 0.043, and Jensen is 0.037.

The test of mean difference in table 12 show that the optimal portfolio performance value of sharia stocks is better than the conventional stocks by the Treynor method. On the contrary, the performance of the optimal portfolio of conventional stocks is better than sharia under the Sharpe and Jensen methods. Therefore, it could be concluded that from the average difference test value in table 12, the optimal portfolio of conventional stocks from the LQ45 index is better than the Jakarta Islamic Index 70 (JII70). The following table show the result of an independent sample t-test on the optimal portfolio of sharia and conventional stocks.

Table 13. Independent Sample t-Test of Optimal Portfolio of Sharia and Conventional Stocks

No.	Method	T	Sig.
1	Sharpe	-1.9171	0.0915
2	Treynor	0.7797	0.4580
3	Jensen	-0.6943	0.5071

Source: data processed by the researchers, 2022

Table 13 show that the t value in the statistical calculation is positive, which means that the optimal portfolio performance of first group (optimal portfolio performance of Sharia stocks from the Jakarta Islamic Index 70) is higher than the optimal portfolio performance of second group (optimal portfolio performance of conventional stocks from the LQ45 index). If the t-value is negative, the optimal portfolio performance of second group (optimal portfolio performance of conventional stocks from the LQ45 index) is higher than the optimal portfolio performance of first group (optimal portfolio

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performance of Sharia stocks from the Jakarta Islamic Index 70). Based on this result, the positive t value is found in the Treynor index with a t-value of 0.7797, while the negative t-value is found in the Sharpe and Jensen indices with a value of -1.9171 and -0.6943. The significance value of each index is 0.0915 for Sharpe index, 0.4580 for Treynor index 0.4580, and 0.5071 for Jensen index. If the significance value is smaller than 0.05 then there is a significant difference from the two optimal portfolio performances while if the significance value is greater than 0.05 then it means that there is no significant difference from the two optimal portfolio performances.

Comparison of Optimal Portfolio Performance between Sharia and Conventional Stocks using Sharpe Index

Comparison of the optimal portfolio performance between sharia and conventional stocks can be seen through the results of the 2 independent samples difference test (t-test). From the test results it can be seen that the Sharpe index has a probability value of 0.0915. Since the probability value is greater than 0.05 then with the use of the t test it is concluded that the two variants do not have a significant difference when calculated using the Sharpe index.

The t value in the statistical calculation results above can be seen that for the Sharpe index is negative with a value of -1.9171 which means that the optimal portfolio performance of sharia stocks from the Jakarta Islamic Index 70 (JII70) is lower than conventional stocks from the LQ45 Index. This answers the first hypothesis "The performance of Islamic optimal portfolio stocks is better than the performance of conventional optimal portfolio stocks based on the Sharpe index" is rejected. So, it can be concluded from the t value and the results of the probability value difference test that based on the Sharpe index, the optimal portfolio performance of sharia stocks from the Jakarta Islamic Index 70 (JII70) is lower than the optimal portfolio performance of conventional stocks from the LQ45 Index but the difference is insignificant.

Comparison of Optimal Portfolio Performance between Sharia and Conventional Stocks using Treynor Index

Comparison of the optimal portfolio performance between sharia and conventional stocks can be seen through the results of the 2 independent sample difference tests (t-test). From the test results it can be seen that the Treynor index has a probability value of 0.4580. because the probability value is greater than 0.05, it is concluded that the two variants do not have a significant difference when calculated using the Treynor index.

The t value in the statistical calculation results above can be seen that for the Treynor index is positive with a value of 0.7797 which means that the optimal portfolio performance of Sharia stocks from the Jakarta Islamic Index

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70 (JII70) is better than the optimal portfolio performance of conventional stocks from the LQ45 Index. This answers the first hypothesis "The performance of Sharia optimal portfolio stocks is better than the performance of conventional optimal portfolio stocks based on the Treynor index" is accepted. Therefore, it can be concluded from the t value and the results of the probability value difference test that based on the Treynor index, the optimal portfolio performance of Sharia stocks from the Jakarta Islamic Index 70 (JII70) is better than the optimal portfolio performance of conventional stocks from the LQ45 Index but the difference is insignificant.

Comparison of Optimal Portfolio Performance between Sharia and Conventional Stocks using the Jensen Index

Comparison of the optimal portfolio performance between Sharia stocks and conventional stocks can be seen through the results of the 2 independent samples difference test (t-test). From the test results it can be seen that the Jensen index has a probability value of 0.5071. because the probability value is greater than 0.05, it is concluded that the two variants do not have a significant difference between the optimal portfolio performance of Sharia stocks and the optimal portfolio performance of conventional stocks when calculated with the Jensen index.

The t value in the statistical calculation results above can be seen that for the Jensen index is negative with a value of -0.6943 which means that the optimal portfolio performance of sharia stocks from the Jakarta Islamic Index 70 (JII70) is lower than the optimal portfolio performance of conventional stocks from the LQ45 Index. This answers the first hypothesis "The performance of sharia optimal portfolio stocks is better than the performance of conventional optimal portfolio stocks based on the Jensen index" is rejected. Thus, it can be concluded from the t value and the results of the probability value difference test that based on the Jensen index, the optimal portfolio performance of Sharia stocks from the Jakarta Islamic Index 70 (JII70) is lower than the optimal portfolio performance of conventional stocks from the LQ45 Index but the difference is insignificant.

CONCLUSION

Based on the results and discussion previously described, the conclusion can be drawn as follows:

1. The calculation of the optimal portfolio performance of sharia stocks from the Jakarta Islamic Index 70 (JII70) using the Sharpe, Treynor and Jensen indices shows a positive value with the highest performance is on the Treynor index and the lowest performance is on the Jensen index.
2. Calculation of the optimal portfolio performance of conventional stocks from the LQ45 index using the Sharpe, Treynor and Jensen indices shows a

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positive value with the highest performance being the Sharpe index and the lowest performance is the Jensen index.

3. Comparison of the optimal portfolio performance between Sharia stocks from the Jakarta Islamic Index 70 (JII70) is lower than the optimal portfolio performance of conventional stocks from the LQ45 index based on the Sharpe and Jensen indices. However, the difference is insignificant. On the other hand, based on the Treynor index, the optimal portfolio performance of Sharia stocks from the Jakarta Islamic Index 70 (JII70) is better than the optimal portfolio performance of conventional stocks from the LQ45 Index. However, this difference is also insignificant. Generally, it can be concluded that the optimal portfolio performance of sharia stocks from the Jakarta Islamic Index 70 (JII70) is lower than the optimal portfolio performance of conventional stocks from the LQ45 Index.

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