Lampiran 2 Artikel

THE DIFFERENCES IN STOCK PORTFOLIO PERFORMANCE BEFORE AND DURING THE COVID-19 PANDEMIC: STUDY ON THE LQ-45 INDEX AND THE JAKARTA ISLAMIC INDEX

Eristy M. Utami[1], Irfan Afrian[2], Aldora A. Rosano[3], Maritha A. Nabilqis[4], Reinsya E. Fahrenthy[5], Mega C. Florensita[6].

[1-6] Faculty of Economics and Business, Widyatama University, Bandung – Indonesia

Corresponding author: eristy.minda@widyatama.ac.id

Abstract

The purpose of this research was determine differences in stock portfolio performance before and during the pandemic on the LQ-45 and JII indexes. The performance measurement method used is the Sharpe, Treynor, and Jensen index. The population of this research is all shares of LQ-45 and JII companies listed on the Indonesia Stock Exchange during the period of a year before the pandemic, there are March 2019-February 2020, and a year during the pandemic, there are April 2020-March 2021. Then a sample of 34 companies was obtained for the LQ-45 and 19 companies for the JII index. The results of the analysis show that by using this method approach, there is no difference in portfolio performance before and during the covid-19 pandemic, both on the LQ-45 index and on the JII index.

Keywords: Portfolio Performance, LQ-45, JII, Pandemic Covid-19.

Introduction

Coronavirus Disease (COVID-19) has been a full year pandemic, a global outbreak, spreading across continents. The number of people worldwide infected is still increasing aggressively. Until the second week of March 2021, there were at least 122 million cases of corona virus infection worldwide (2.69 million of then died). COVID-19 has changed the world in many ways, changing lifestyles, whether it's the way you work, study, worships, socialize, exercise, and so on.

The COVID-19 pandemic affects stock market dynamics (He et al., 2020; Junaedi and Salistia, 2020; Liu et al., 2020) and increases inefficiencies in the stock market (Lalwani and Meshram, 2020). Many industries have been affected by COVID-19 where since March 2020 the Composite Stock Price Index (IHSG) of the Indonesia Stock Exchange has decreased because many investors have sold their shares. As of January 3, 2020, the JCI is still perched at 6,323. Entering March 2020, the index seemed to be in free fall and headed to its lowest point on MARCH 24, 2020. At the time, the JCI closed at the level of 3,937 or down 26.55 percent since the beginning of the year (market.bisnis.com).

The pandemic caused panic on the stock exchange floor. The selling action was carried out by many investors. The trading halt was carried out several times by the Indonesia Stock Exchange (IDX) to restrain the correction rate. However, domestic retail investors took advantage of this momentum to enter the stock market when the JCI was at its lowest level. Starting from the third week of May 2020, there was an increase which indicated that stock trading began to show improvement. According to the Financial Service Authority (OJK) report, as of March 2020 there was an increase of 60%, and on November 27, 2020 the JCI was at the level of 5,783. The average value of Daily Transaction (RNTH) in January was IDR 6.4 Trillion/day, and in 27 November 2020 to 12.9 Trillion/day.

The rise of return on investment in the capital market has made the need for securities analysis also increasing (Utami, et al, 2021). This is because investors who will invest their funds in the capital market increasingly need information about securities which will later be closely related to the expected rate of return and the risks faced (Utami and Susanti 2013). Every investor who invests, of course, expects a high return with low risk. To overcome or reduce risk, diversification through portfolio formation needs to be done. In the financial environment in the midst of the COVID-19 pandemic, investors must be more careful in carrying out a holistic and diversified investment portfolio, because stock markets around the world have experienced a decline on average (Collins, 2020).

In Indonesia, the formation of a portfolio can be done by selecting stocks on the Indonesia Stock Exchange. There are two types of capital markets that are developing in Indonesia, namely the Conventional Capital Market and the Islamic Capital Market is the requirement for halal and haram aspects on shares listed on the stock exchange. However, in general, both Islamic and Conventional market activities don't have any

differences, only some special characteristics of the Islamic capital market, namely the product and transaction mechanisms don't conflict with Sharia principles (Sholihah and Asandimitra, 2017).

The facilitate the formation of portfolio, investors can choose Blue Chips stocks, which are a collection of stocks with high level of liquidity that promise high returns for invetors. Such as the LQ-45 index for the conventional market and the Jakarta Islamic Index (JII) index for the sharia index. Both are the reference for many leading investment management companies in forming portfolios and mutual fund bases, including individual investors. In addition, the index is also most often used as reference for stock selection in various financial and investment studies (Utami and Susanti 2013).

Pratitis and Setiyono (2021) showed that there was no significant difference between the average ISSI stock price before and during the COVID-19 pandemic. Likewise, with the results of research from Darmawan (2018) which shows that there is no significant difference in performance between the sharia stock portfolios formed from the Jakarta Islamic Index before and after the Indonesian economic downturn in 2015. The results of research from Yusuf and Anthoni (2020) also show that there is significant difference between the JCI movement and the ISSI movement, both before and during the COVID-19 pandemic.

Analysis of the comparison of portfolio performance has been carried out by several researchers, but comparative analysis of portfolio performance before and during the COVID-19 pandemic is still very rarely done. Information related to differences in the performances of stock portfolios on conventional and sharia indices will help potential investors or investors in making decisions to meet their investment needs.

Literature Review

Investment

Investment is a delay in current consumption to be included in productive assets for a certain period of time (Hartono, 2017). Investment is the placement of funds in various financial assets as an effort to increase capital or wealth, either through investment in real assets or investment through financial assets with the aim of obtaining optimal income with minimal risk in the future.

Share

According to Kasmir (2016) shares are securities that are ownership. This means that the shareholder is the owner of the company, the larger the shares he has, the greater his power in the company. According to Irham Fahmi (2015) "stocks are one of the most sought after capital market instruments by investors, because they are able to provide an attractive rate of return. Shares are papers that clearly state the nominal value, company name, and are followed by rights and obligations that have been explained to each holder.

Portfolio Theory

Portfolio are several alternative investment opportunities by making combinations that can provide a choice of a higher level of profit with a certain level of risk. In fact, investors often diversify their investments, namely combining various securities of forming portfolios. Keep in mind that the main objective of the portfolio is to find the optimum combination of various securities to obtain the maximum level of profit.

Single Index Model (SIM)

SIM is a technique for measuring the returns and risks of a stock or portfolio. The model assumes that stock returns are only related to market movements. If the market moves up, in the sense that the demand for shares increases, to the stock price in the market will also rise. Conversely, if the market moves down, then the stock price in the market will also fall. Thus, stock returns are correlated with market returns. Every company is not the same in responding to market changes, some are less sensitive (Zubir, 2011).

Portofolio Performance

Portofolio performance is the result achieved by a portofolio that has been formed by investors in order to minimize risk. Portofolio performance also needs to be evaluated. Portofolio performance evaluation is a form of portofolio assesment process. Porofolio is the formation of a set of several invesments selected by investors. Portofolio performance evaluation actually aims to asses whether the portofolio that has been formed has a good performance and is in accordance with investment objectives. Portofolio performance can be measured using 3 measurement models, namely the Sharpe model, Treynor model, and Jensesn model. The Sharpe model is a calculation that measures the total level of risk. Total risk is the sum of systematic risk calculation to measure porofolio performance.

Hypotesis

H_1: There is a difference in stock portofolio performance before and during the COVID-19 pandemic pandemic on the LQ-45 index

H_2 There are difference in stock portofolio perfonmance before and during the COVID-19 pandemic on the JII index

Resarch Methods

Resears Design

The research method used in this research is descriptive and verification method. The objects in this research are companies that have gone public, and are listed on the Indonesia Stock Exchange. The performance of the conventional stock portofolio will be assessed from the LQ-45 index portofolio, and the performance of the Islamic stock portofolio will be assessed from the JII index portofolio.

Population and Research Sample

In this resarch, the population is all shares of LQ-45 and JII companies listed on the Indonesia Stock Exchange during the period of a year before the pandemic, there are March 2019-February 2020, and a year during the pandemic, there are April 2020-March 2021. The sampling technique was carried out by the method of sampling. Purposive sampling, namely determining the sample based on certain considerations or criteria in accordance with the research objectives. The sample studied must be in accordance with the criteria set by the researcher, namely the company's shares that continuously appear in the LQ-45 and JII groups on the Indonesia Stock Exchange during that period. From these criteria, a sample that meets the requirements is 34 companies for the LQ-45 Index and 19 companies for the JII Index.

Data collection technique

The resarch data used are all stocks belonging to the LQ-45, JII, Interest Rate (BI rate), and JCI during the one-year period before the pandemic, there are March 2019-February 2020 and a year during the pandemic, there are April 2020-March 2021.

Analysis Method

The hypotesis that will be used in this study relates to whether there are difference between the variables studied. The null hypotesis (H) established in this study indicates that there is no difference between the variables studied. While the alternatives hypotesis (H) that was detemined showed a difference between the variables studied, then used the analysis of difference using the SPSS program, namely Paired Sample t-Test, in addition, this study uses variables that must be analyzed first using quantitative analysis techniques. The quantitative data processing is assisted by the Microsoft Excel program, Data analysis was carried out using the following steps and methods:

1. Formation of a Stock Portofolio

Stocks from the LQ-45 and JII indexes will be selected and an optimal portofolio formed through the Single Index Model (SIM) method. The steps are as follows:

1) Calculating stock returns (Ri) during the observation period using the following formulation:

$$R_i = \frac{P_t - P_{t-1}}{P_{t-1}}$$

Information:

R_i : *stock returns*

P_t : stock price at time t

P_{t-1} : stock prive at time t-1

2) Calculating the JCI index market return (Rmt) during the ovservation period with the following formulation:

$$R_{mt} = \frac{I_t - I_{t-1}}{I_{t-1}}$$

Information:

R_{mt} : Market returns

I_t : JCI index period t

I_{t-1} : JCI index period t-1

3) Calculating the expected return (mean return) of the stock during the observation with the following formulation:

$$E(R_i) = \frac{\sum(R_i)}{n}$$

Information:
$E(R_i)$: *Mean return* stock i
R_i : *return* individual stock each period
n : lots of data

4) Calculationg stock risk during the observation period with the following formulation:

$$\sigma_i^2 = \frac{\sum_{i=1}^{n}(R_i - \overline{R_i})\ 2}{n-1}$$

Information:
σ_i^2 : stock variance or risk I
Ri : *return* stock i
$\overline{Ri}$: *mean return* stock I
n : amount of data

5) Calculating stock beta with the formulation:

$$\beta_i = \frac{\sigma_i m}{\sigma m^2}$$

6) Calculating the risk-free return symbolized by the SBI interest rate with a calculation per semester or six months

7) Develop optimal portofolio based on Single Index Model
Rangking stocks by Excess Return to Beta (ERB)

$$ERB = \frac{R_i - R_f}{\beta_i}$$

Where:
ERB : *excess return to beta*
R_i : *expected return* saham
R_f : *risk free return*
β_i : beta sekuritas i

Stocks with a low excess return to beta ratio will not be included in the optimal portofolio. Thus, it takes a cut off limiting point that determines the limit of the excess return to beta value which is said to be high. The magnitude of this point can be determined by the following steps:

a. Sort the stocks based on the largest excess return to beta value to the smallest excess return to beta value. Stocks with the largest excess return to beta value are candidates for inclusion in the optimal portofolio
b. Calculate the value of B_i for each of the I shares with the formula below:

$$B_i = \frac{\beta_i^2}{\sigma_{ei}^2}$$

c. Calculate the value of C_i with the formula:

$$C_i = \frac{\sigma^2 m \sum_j^n (\overline{R_j} - R_f)\beta_i}{1 + \sigma_m^2 \sum_{j=1}^{i}\left\{\frac{\beta_j^2}{\sigma_{ej}^2}\right\}}$$

d. Determ ine the cutoff point value, which is the largest C_i value.

e. Stocks that make up the optimal portofolio are stocks that have a greater excess return to beta or sticks with a value of excess return to beta at point C*. While stocks that have a value of excess return to beta that is smaller han the excess return to beta at point C* are not included in the formation of an optimal portofolio (Elthon & Gruber, 2007).

f. Determining Optimal Proportions

Determining the optimal proportion can be done by first finding the Zi of each asset that is included in the optimal portofolio combination. The Zi value is found by the following formula:

$$Z_i = \frac{\beta_i}{\sigma ei^2}(ERB_i - C^*)$$

After that, the optimal weight of each asset included in the optimal portofolio combination can be calculated with the following equation:

$$X_i = \frac{Z_i}{\sum_{j=1}^{k} Z_j}$$

Where:

Z_i	: security proportion scale i
B_i	: Beta security i
σ_{ei}^2	: the variance of the I-th securities residual error which is also an unsystematic risk
ERB	:*Excess Return to Beta* securities
X_i	: Proportion of the i-ih security

g. Calculating the expected return and portofolio risk

$$R_p = \sum X_i \overline{R_i}$$

$$\sigma_p^2 = \beta_p^2 . \sigma^2 m + (\sum_{i=1}^{n} (W_i . \sigma_{ei})^2$$

2. Portofolio Performance Evaluation

The optimal portofolio formed will be measured its performance through the risk adjusted return method as a benchmark in the comparison of portofolio performance between before and during the COVID-19 pandemic, there are:

a. Sharpe Index

$$\overline{S_p} = \frac{\overline{R_p} - R_f}{\sigma p}$$

Where:

S_p	: Sharpe Index
R_p	: Portofolio average return
R_f	: Average return on risk-free assets
σ_p	: Portofolio standard deviation

b. Treynor Index

$$T_p = \frac{\overline{R_p} - \overline{R_f}}{\beta_p}$$

Where:

T_p	: Treynor index
R_p	: Portofolio average return
R_f	: Average return on risk-free assets
β_p	: Portofolio systematic risk

c. **Jensen Index**

$$J_p = R_p - [R_f + \beta(R_m - R_f)]$$

Information:
J_p : Jensen Portofolio Index
R_p : Average portofolio return p during the observation period
R_f : Average risk-free rate of return during the observation period
R_m : Average market rate of return during the observation period
β_p : Beta portofolio p

3. **Normality Test**
This research uses the Kolmogorov-Smirnov test technique because this method is designed to test the alignment of continuous data.
4. **t-test**
In analyzing the differences in portofolio perforamance, it can be done by using a two-average difference test, namely the Paired Sample T-test, because we want to test whether there is a difference in the performance of each portofolio on two paired data.

Result and Discussion

Performance Before and During the Pandemic

The performance assessment of the two portfolio strategies uses the Risk Adjusted Return method which consists of three methods, namely: Sharpe, Treynor, and Jensen's Alpha. The results of the calculation of stock portfolio performance are as follows:

Table 1. Stock Portfolio Performance Before and During the Pandemic

Index	Sharpe Ratio		Treynor Ratio		Jensen Ratio	
	Before	During	Before	During	Before	During
LQ-45	0.165106	0.439042	0.010857	0.055261	0.024899	0.036169
JII	0.189492	0.410229	0.018618	0.046727	0.051319	0.028499

Based on the tabel above, the stock portfolio using the Sharpe ratio, Treynor ratio, and Jensen alpha methods both before and during the pandemic resulted in positive performance. This means that the portfolio has been quite good at compensating its total risk and systematic risk with a higher return, and the actual return from its investment is higher than the theoretical return of the investment and its performance is better than the market index.

From table 1, it can be seen that the performance of the LQ-45 and JII portfolios during the pandemic using the Sharpe method had a higher value than before pandemic. This shows that the portfolio during the pandemic is better at compensating for the total risk. Portfolio performance during the pandemic using the Treynor method, both LQ-45 and JII, was also of higher value than the portfolio before the pandemic. This means that the portfolio during the pandemic is better in terms of compensating the portfolio return against its systematic risk as measured by portfolio beta. This is different from the performance using the Jensen method, where JII's portfolio before the pandemic was langer than during the pandemic. This indicates that the portfolio provides a return that is greater than expected or the portfolio performance is better than the market index.

Test Result

Before performing the analysis of differences using the Paired Sample t-Test, a normality test was carried out first to test the alignment of the continuous data.

Table 2. Kolmogorov Smirnov Test Results

Indes	Before		Information	During		Information
	Sig	Alpha		Sig	Alpha	
LQ-45	0.842	0.05	Pass	0.805	0.05	pass
JII	0.923	0.05	Pass	0.806	0.05	pass

Form table 2 it can be seen that all data both before and during the pandemic, both for the LQ-45 and JII indexes, have passed the normality test. This is evidenced by the significance value of each data being greater than the value of α 5%.

After the data is confirmed to have passed the normality test, then testing is carried out to find out whether there is a difference between before and during the pandemic. The results of these tests can be seen in the following table:

Table 3. Different Test Results

Before – During	Mean	T	Sig.
LQ-45	-1.0987	-1.330	0.315
JII	-0.0753	-1.016	0.417

Based on the results of the above calculations, a decision can be made to accept H0 because the value of the degree of significance (0.315 and 0.417) is greater than alpha (0.05). So the conclusion in this test is that there is no difference in portfolio performance between before and during the COVID-19 pandemic, both on the LQ-45 index and the JII index. This means that the COVID-19 pandemic did not cause sharp changes to the Blue Chip stock portfolio such as LQ-45 and JII, because these stocks are the best stocks in the industry that have high durability and a solid foundation in the face of various shocks. The results of this study are also in line with research from Pratitis and Setiyono (2021) which showed that there was no significant difference between the average ISSI stock price before and during the COVID-19 pandemic.

Conclusions

Based on the results of the tests carried out, it can be concluded that there is no difference in portfolio performance between before and during the COVID-19 pandemic, both on the LQ-45 index and the JII index. This means that the COVID-19 pandemic will not cause sharp changes to the Blue Chip stock portfolio, both conventional, such as the LQ-45 index, and sharia, such as the JII index. Therefore, the Indonesia Stock Exchange as a stakeholder is expected to continue to conduct training and education to improve the literacy of investors and the general public so that they have the confidence to invest in stocks that are included in the LQ-45 and JII indices. In addition, this research is expected to be a reference for investors and potential investors in investing their funds in Blue Chip stocks such as LQ-45 and JII, because these stocks are the best stocks in their respective industries, which have high durability and a solid foundation in the face of various shocks, especially if it is supported by adequate literacy in the investment process, especially in the stages of formation, revision, assessment and evaluation of portfolio performance as well as the right timing in making decisions.

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