

# Socially Responsible Investment (SRI) versus Islamic Portfolio: Case in Indonesia Stock Market

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**Keywords:** Socially Responsible Investment, Islamic Portfolio, Indonesia.

**Abstract:** This paper aims to evaluate the socially responsible investment portfolio in Indonesia as an alternative investment for investors who concerned about ethical, ESG, and social environment. This study uses a quantitative approach and portfolio performance model (Jensen measurement, Treynor Index, and Sharpe Index) as performance indicators. The hypothesis of this study based on the current study is that SRI portfolio has better performance than conventional performance. The result of this study may be an alternative for an investor to construct their portfolio. This study expands the existing literature on portfolio management, also the theory of SRI. It will illustrate how the portfolio performance approach could be integrated into our daily needs in managing funds.

## 1 INTRODUCTION

Along with the increasing interest of the public in investing in capital market instruments, the more diverse the objectives of the community in investing. The purpose of investment, in general, is to earn income, so that the value of assets or the value of wealth increases (Warsini, 2009). Furthermore, various stock portfolios are available throughout the world, consisting of various sectors, finance, development, or property, for example. Everything has its charm.

In Indonesia, the portfolio that is of interest to investors is the LQ45 Index, which consists of companies with an excellent stock performance that offers competitive returns. However, it does not rule out the possibility that as the times develop, investors' objectives in investing will not only based on expected returns, but also investment choices related to ethical issues. The Socially Responsible Index is an example of an investment that pays attention to ethical issues, namely having an investment strategy that considers financial and social benefits. Socially responsible investors encourage corporate practices that promote human rights, diversity, environmental management, or consumer protection. In the UK, SRI has reached £ 7.1 billion. In the United States, ethical investment schemes reached US \$ 153 billion by

2000 (Hindrayani, 2013). SRI itself was present for potential reasons, in the background in 1970 where there was a rigorous screening process for arms, tobacco and the like.

In addition to SRI, the portfolio that investors consider is the Islamic financial index, which is a portfolio that uses Islamic law as its legal basis. Investment in this portfolio has another name for Islamic investment. The development of Islamic financial index in the world is also significant, especially in the United Kingdom, where it was the first non-Muslim country to issue Sukuk or bonds based on sharia principles. Also, Islamic financial index has better performance than the conventional index. It is interesting to note that due to the enormous growth of Islamic funds, even conventional funds have started offering similar customized financial products to cater to the growing needs of all investors. It might happen because regardless of the religious influence on the characteristics of these funds, they are equally desirable for both Muslim and non-Muslim investors. It is essential to make a fair comparison among Islamic, conventional and SRI funds on neutral grounds in order to make the benefits of one product over the other access to the broader spectrum of investors, including Muslims and non-Muslims (Kabir Hassan, Nahian Faisal Khan, & Ngow, 2010; Reddy, Mirza, Naqvi, & Fu, 2017).

In Indonesia, the SRI portfolio and Islamic financial investments are named SRI-KEHATI and the Jakarta Islamic Index (JII). Both have relatively significant growth. Based on data on the Indonesia Stock Exchange, the SRI-KEHATI Index and JII as of November 21, 2018, the SRI-KEHATI Index ranks 2.12 basis points and JII at 3.57 basis points.

This study uses a quantitative approach and portfolio performance models (Jensen measurement, Treynor Index, and Sharpe Index) as performance indicators, with the current portfolio hypothesis that SRI portfolios have better performance than conventional performance.

## 2 LITERATURE REVIEW

The ethical investment that develops in Indonesia is sharia investment which aligned with ethical investment because it develops values in investment activities (Toni, 2004). Meanwhile, in the West, ethical investment places more emphasis on environmental and social issues, such as war, environmental destruction, and the use of alternative energy. At the same time, sharia emphasizes the criteria of haram and halal such as alcohol, gambling, usury practices and others.

Sjöström (2012), summarizes the findings of studies that compare SRI with conventional funds undertaken between 2008 to 2010 into four groups, that are, (i) neutral performance ; (ii) positive performance; negative performance; and (iv) mixed performance. (Sjöström, 2012) also concludes that there is no standard SRI concept, Spanish SRI fund is defined differently to an Australian SRI fund, and a Shariah fund may include different investment criteria than an environmental and so on. His finding is there's positive performance of SRI compared to conventional investment. Although studies that have reported negative results for SRI are in the minority, those results are not disqualified.

The inherent differences between Islamic and SRI funds regarding the restrictions applied to both funds make it difficult to theorize which fund should perform better or worse. Islamic funds are characterized by strict limitations such as a purification process and the exclusion of investment in interest-bearing securities, which SRI funds are not subjected. On the portfolio theory, it could be likely that Islamic funds will underperform SRI and conventional funds because fewer investment alternatives exist (restricted diversification) for Islamic funds and may also have an adverse selection effect on the fund's financial performance.

Alternatively, Islamic funds could outperform SRI and conventional funds because less diversification exposes them to more systemic risk, or possibly that fund managers have a small number of funds to choose from and will be careful in selecting securities (Alam, Tang, & Rajjaque, 2013).

The literature has previously compared SRI, and conventional funds, Islamic and conventional funds, and there exists sparse literature on the comparative performance of SRI and Islamic funds with Abdelsalam, Duygun, Matallín-Sáez, & Tortosa-Ausina (2014) pointing out that no other research had been carried out in that domain before their study. They find that a difference in performance between SRI and Islamic funds is only visible when funds are divided into several quantiles classifying their performance from best to worst. However, their findings do not point to one conclusion and similar to the debate regarding Islamic and conventional funds, the comparative performance literature for Islamic and SRI funds has no clear consensus (Boo, Ee, Li, & Rashid, 2017; Reddy et al., 2017).

## 3 METHODOLOGY

This study refers to a performance approach with comparative risk adjustment where the results show that the SR portfolio based on current research is that SRI portfolios have better performance than conventional performance using quantitative approaches and portfolio performance models of Jensen measurement, Treynor Index and Sharpe Index. The data used is the performance of SRI and JII in 2015-2018 and uses the interest rate from Bank Indonesia and monthly calculations.

### 3.1 Jensen Index

Portfolio performance measurement using the Jensen method is based on the Capital Asset Pricing Model (CAPM). (Hudori, 2015). The equation of measuring the performance of the Treynor method measures the differences from the average portfolio return with the expected portfolio return value obtained from the CAPM calculation results (Sutawisena, 2011; Hudori, 2015). Treynor, what is considered as fundamental risk-adjusted is systematic risk, by modifying it to reflect the superiority or priority of investment managers in forecasting security prices. Jensen believes that good portfolio performance is a portfolio that has a portfolio performance that exceeds market performance following its systematic risk. The first risk-adjusted model of equilibrium used

in regression analysis is Jensen alpha. It is calculated based on the Capital Assets Pricing Model (CAPM) as follows: (Bodie, Kane, & Marcus, 2011)

$$(R_{pt} - R_{ft}) = \alpha_p + \beta_p(R_{mt} - R_{ft}) + \varepsilon_{it} \quad (1)$$

Where,

$\alpha_p$  = model constant;

$(R_{pt} - R_{ft})$  = Excess return of portfolio over the risk-free rate at time- $t$ ;

$(R_{mt} - R_{ft})$  = Market risk premium over risk free rate for time- $t$ ;

$\beta_p$  = Beta for portfolio  $p$ , and represents its systematic risk;

$\varepsilon_{pt}$  = zero mean, error term.

The additional advantage of the multi-index model is that it controls for investment style bias and different risk exposures (Kabir Hassan et al., 2010; Binmahfouz & Kabir Hassan, 2013), and it has also empirically proven to be a superior model to the single CAPM. The model is determined as follows:

$$(R_{pt} - R_{ft}) = \alpha_p + \beta_{1p}(R_{mt} - R_{ft}) + \beta_{2p}SMB_t + \beta_{3p}HML_t + \varepsilon_{it} \quad (2)$$

Where,

$\alpha_p$  = model constant;

$(R_{pt} - R_{ft})$  = Excess return of portfolio over the risk-free rate at time- $t$ ;

$(R_{mt} - R_{ft})$  = Market risk premium over risk free rate for time- $t$ ;

$\beta_i$  = Beta for portfolio  $p$ ;

$HML_t$  = Difference in return between a cyclical stock portfolio and growth stock portfolio at time  $t$ ;

$\varepsilon_{pt}$  = Zero mean, error term.

Jensen takes measurements by assessing the performance of investment managers based on how much the investment manager can provide performance above-market performance according to the risk he has. Therefore, the higher the yield of  $\alpha_p$ , the better the performance of the portfolio measured (Sutawisena, 2011).

### 3.2 Jensen Index - Capital Asset Pricing Model

Capital Asset Pricing Model (CAPM) is a model for determining the level of return on assets required or expected. It assumes that investors are planners in a single period that have the same perception of market conditions and look for the mean-variance of an

optimal portfolio. The Capital Asset Pricing Model also assumes that the ideal stock market is a massive stock market and investors are price-takers, there are no taxes or transaction costs, all assets can be traded in general, and investors can borrow an unlimited amount at a fixed risk-free rate. With this assumption, all investors have portfolios with identical risks. The Capital Asset Pricing Model (CAPM) states that in equilibrium, the market portfolio is tangential to the average portfolio variance. The Capital Asset Pricing Model (CAPM) implies that the risk premium of any individual asset or portfolio is the product of the risk premium in the market portfolio and the beta coefficient (Bodie et al., 2011)

CAPM takes into account only the systematic or market risk or not the company only inherent or systemic risk. This factor eliminates the vagueness associated with an individual company risk, and only the general market risk, which has a degree of certainty becomes the primary factor. The model assumes that the investor holds a diversified portfolio, and hence the unsystematic risk is eliminated between the stock holdings.

It is widely used in the finance industry for calculating the cost of equity and ultimately for calculating the weighted average cost of capital which is used extensively to check the cost of financing from various sources. It is seen as a much better model to calculate the cost of equity than the other present models like the Dividend growth model (DGM). It is universal and easy to use the model. Given the extensive presence of this model, this can efficiently be utilized for comparisons between stocks of various countries.

### 3.3 Treynor Measure

The size of the Treynor index is also called the reward-to-volatility ratio (RVOL). This model was developed by Jack Treynor (1965). Not much different from the Sharpe index, the Treynor index also links portfolio returns to the risks. The difference is that the risk used in the calculation is not a total risk but systematic risk. In its calculation, the Treynor index assumes that non-systematic risk can be eliminated through a portfolio diversification process so that the risk does not need to be considered in measuring portfolio performance.

The Treynor ratio is equal to the portfolio excess return per unit of systematic risk (beta) and is determined as follows:

$$T_p = \left( \frac{R_p - R_f}{\beta_p} \right) \quad (3)$$

Where,

$T_p$  = Treynor ratio of the portfolio;  
 $\beta_p$  = Portfolio Beta.

The Treynor Index will provide results as good as the Sharpe index when the investment portfolio can be ascertained to be well-diversified so that non-systemic risk does not need to be considered in evaluating portfolio performance. Sharpe and Treynor indices are very likely to produce the same mutual fund ranking even though the value produced is different (Siagian, 2012). Different values occur because Sharpe and Treynor index uses different denominator variables, namely cumulative risk and systematic risk. The higher the difference in Sharpe and Treynor index values, it will show that the portfolio is not well diversified. A well-diversified portfolio will produce Sharpe and Treynor index values that are not much different. According to Reilly and Brown (2003), these two measurement methods produce different but complementary measures of investment management performance.

### 3.4 Sharpe Index

The sharper index is a measure of portfolio performance developed by William Sharpe in 1966. The measurement using the Sharpe method focuses on Risk Premium, which is the difference between the average performance produced by the portfolio and the average risk-free investment performance free asset) (Sharpe, 1994). Investment without risk is assumed to be the average interest rate of a Bank Indonesia Certificate (SBI). Risk-free assets in this study are assumed to be SBI (Hudori, 2015). Sharpe measurement is formulated as a ratio of risk premium to its standard deviation. The standard deviation is the total risk of the portfolio concerned.

Pratomo and Nugraha (2009) in the research of Ratnawati and Khairani (2012) explained that Sharpe measures risk premium through the method of dividing risk premium by the resulting standard deviation per unit of risk taken.

It is determined as follows:

$$S_p = \left( \frac{R_p - R_f}{\sigma_p} \right) \quad (4)$$

Where,

$S_p$  = Sharpe ratio;

$R_f$  = the return on UK interbank daily interest rate during t period (the risk-free rate);

$\sigma_p$  = the standard deviation of portfolio.

This is based on the fact that the measured portfolio risk has risks, whereas risk-free assets such as SBI have no risk (Sutawisena, 2011). Therefore, the higher the Sharpe ratio value, the better the performance of the portfolio.

## 4 RESULTS

Using a quantitative approach and a portfolio performance model measuring Jensen, Treynor Index and Sharpe Index, the SRI and JII performance data for the 2015-2018 period are calculated monthly and using the interest rate from Central Bank of Indonesia.

### 4.1 The Difference in Returns from SRI and JII in 2015 – 2018

Based on the analysis, the average return on the Composite Stock Price Index is 0.37% with a daily average of 0.55%. JII got the highest return in March 2017, which was 5.43% and the lowest return was -4.13% in June 2015. Besides, the SRI-KEHATI index had the highest return of 9.38% in July 2016, and the lowest return was -10.88% in May 2018. Meanwhile, the average JII was 0.82%, and the SRI portfolio was 0.38%.

### 4.2 JII and SRI Performance based on Jensen Index in 2015 – 2018

Table 1: Jensen return analysis to JII and SRI-KEHATI portfolio from 2015 2018.

	Return Market	Daily Interest Rate	JII	SRI-KEHATI
Average	0,37%	0,55%	0,82 %	0,38%
Standar Deviation	3,47%	0,06%	2,23 %	4,45%
Variance	0,12%	0,00%	0,05 %	0,20%
Covariance			0,05 %	0,11%
Beta			0,44	0,88
			0,4	1,26
Jensen Index			0,00351	-0,00007

Based on the results of JII and SRI in the 2015-2018 period using the Jensen Index, JII has a Jensen Index of 0.00351 and SRI-KEHATI, has a value of -0.00007. JII has relatively higher performance

compared to SRI-KEHATI. It is concluded that the ability of investors to predict market movements and respond to changes in the market is high. So that, the position of the performance of each portfolio is the above-market following its risks.

#### 4.3 JII and SRI Performance based on CAPM in 2015 – 2018

Table 2: CAPM return analysis to JII and SRI-KEHATI portfolio in 2015 2018.

	Return Market	Daily Interest Rate	JII	SRI-KEHATI
Average	0,37%	0,55%	0,82%	0,38%
Standar Deviation	3,47%	0,06%	2,23%	4,45%
Variance	0,12%	0,00%	0,05%	0,20%
Covariance			0,05%	0,11%
Beta			0,44	0,88
			0,4	1,26
CAPM			0,00469	0,00389

The results indicate that JII and SRI portfolio return using the CAPM model was lower than the market rate of return. The portfolio return of JII Index was 0.00469, while SRI-KEHATI was 0.00389. Both of them still have a beta less than 1, so the return of each portfolio fluctuates less than the fluctuation of market returns. Thus, the required rate of return is lower than the rate of return on the market.

#### 4.4 JII and SRI Performance based on Treynor Index in 2015 – 2018

Table 3: Treynor return analysis to JII and SRI-KEHATI portfolio in 2015 – 2018.

	Return Market	Daily Interest Rate	JII	SRI-KEHATI
Average	0,37%	0,55%	0,82%	0,38%
Standar Deviation	3,47%	0,06%	2,23%	4,45%
Variance	0,12%	0,00%	0,05%	0,20%
Covariance			0,05%	0,11%
Beta			0,44	0,88
			0,4	1,26
Treynor Index			0,00617	-0,00187

Table 3 shows JII and SRI-KEHATI portfolio performances using the Treynor Index. JII in the

2015-2018 period has a Treynor value of 0.00617 and an SRI-KEHATI portfolio of -0.00187. It is suggested that the SRI portfolio is relatively lower based on the additional investment obtained for each unit of total systematic risk that arises when compared to another index in the study.

#### 4.5 JII and SRI Performance based on Treynor Index in 2015 – 2018

Table 4: Jensen return analysis to JII and SRI-KEHATI portfolio in 2015 – 2018.

	Return Market	Daily Interest Rate	JII	SRI-KEHATI
Average	0,37%	0,55%	0,82%	0,38%
Standar Deviation	3,47%	0,06%	2,23%	4,45%
Variance	0,12%	0,00%	0,05%	0,20%
Covariance			0,05%	0,11%
Beta			0,44	0,88
			0,4	1,26
Sharpe Index			0,12199	-0,0371

The results of table 4 show that the JII in the 2015-2018 period has a Sharpe value of 0.12199 and SRI-KEHATI of -0.0371. It is implied that JII has a relatively higher performance based on the additional investment generated for each unit of total risk arising.

JII and SRI-KEHATI have the average portfolio return 0.82% and 0.38% for four years. Even though it is above the average of the IHSG portfolio (at 0.37%), the two portfolios return are still below one. So, the required rate of return is almost the same as the fluctuations in the market. Furthermore, several models used to measure the performance of JII and SRI-KEHATI for the 2015-2018 period also showed that most were still in the lower position. When viewed from each portfolio's performance, JII still has more leadership than SRI-HAYATI, this indicates that the management of funds in JII is acknowledged to be relatively close to the rate of return required by conditions in the market. Also, the result shows that the JII performance has a positive and significant effect on the market.

Table 5: Jensen return analysis to JII and SRI-KEHATI portfolio from 2015-2018.

	JII	SRI-KEHATI
Jensen Measurement	0,00351	-0,00007
Jensen Index - CAPM	0,00469	0,00389
Treynor Index	0,00617	-0,00187
Sharpe Index	0,12199	-0,0371

Jensen takes measurements by assessing the performance of investment managers based on how much the investment manager can provide a higher return than market return according to its risk. Therefore, the higher the yield of  $\alpha$ , the better the performance of the portfolio is measured. JII has a Jensen Index of 0.00351 and SRI-KEHATI has a value of -0.00007. JII has relatively higher performance compared to SRI-KEHATI.

The Capital Asset Pricing Model assumes that the ideal stock market is a massive stock market and investors are price-takers, there are no taxes or transaction costs, all assets can be traded in general, and investors can borrow an unlimited amount at the level a risk-free fixed rate. The results of the measurement using CAPM, JII has a return of 0.00469 and SRI-KEHATI has a return of 0.00389. Both of them still have a beta less than 1, so the return of each portfolio fluctuates less than the fluctuation of market returns.

The Treynor Index will provide results as good as the Sharpe index when the investment portfolio can be ascertained to be well-diversified so that non-systemic risk does not need to be considered in evaluating portfolio performance. JII in the 2015-2018 period had a Treynor value of 0.00617 and an SRI portfolio of -0.00187. It proves that the SRI portfolio is relatively lower based on the additional investment obtained for each unit of total systematic risk that arises when compared to other mutual fund products in the study sample.

The Sharpe index is a measure of portfolio performance developed by William Sharpe in 1966. The measurement using the Sharpe method focuses on Risk Premium which is the difference between the average performance produced by mutual funds and the average investment performance that is risk-free (risk-free assets, JII and SSRI using the Sharpe Index show that JII in the 2015-2018 period has a Sharpe value of 0.12199 and SRI-KEHATI of -0.0371. It shows that JII has a relatively higher performance

based on additional investment generated for each unit of total risk that arises.

Besides SRI, the portfolio that is considered by investors is the Islamic financial index. The development of Islamic financial index in the world is also significant, especially in the United Kingdom, where it was the first non-Muslim country to issue Sukuk or bonds based on sharia principles. Besides, Islamic financial index has better performance than conventional index. In Indonesia, the SRI portfolio and Islamic financial investments are named SRI-KEHATI and the Jakarta Islamic Index (JII). Both have adequately significant growth. Based on data on the Indonesia Stock Exchange, the SRI-KEHATI Index and JII as of November 21, 2018, the SRI-KEHATI Index ranks 2.12 basis points and JII at 3.57 basis points.

This study refers to a performance approach with comparative risk adjustment where the results show that the SR portfolio based on current research is that the SRI portfolio has a better performance than conventional performance using a quantitative approach and a portfolio performance model measuring Jensen, Treynor Index and Sharpe Index. The data used is the performance of SRI and JII in 2015-2018 and uses the interest rate from Bank Indonesia and monthly calculations. Based on the above analysis, the average return on the Composite Stock Price Index is 0.37% with a daily average of 0.55%. JII got the highest return in March 2017, which was 5.43% and the lowest return was -4.13% in June 2015. Other than that, the SRI-KEHATI index had the highest return of 9.38%, namely in July 2016 and the lowest return was -10.88% in May 2018. Meanwhile, the average JII was 0.82%, and the average SRI portfolio was 0.38%.

## 5 CONCLUSIONS

Along with the increasing interest of the public in investing in capital market instruments, there are also increasingly diverse objectives of the community in investing that is not only based on expected returns, but also investment choices related to ethical issues. The Socially Responsible Index (SRI) is an example of an investment that pays attention to ethical issues, namely having an investment strategy that considers financial and social benefits. SRI itself was present for potential reasons, in the background in 1970 where there was a strict screening process for weapons, tobacco and the like.

JII and SRI-KEHATI have the average portfolio return 0.82% and 0.38% for four years. Even though

it is above the average of the IHSG portfolio (at 0.37%), the two portfolios return are still below the market overall. So, the required rate of return is almost the same as the fluctuations in the market. Furthermore, several models used to measure the performance of JII and SRI-KEHATI for the 2015-2018 period also showed that most were still in the lower position. When viewed from each portfolio's performance, JII still has more leadership than SRI-HAYATI, this indicates that the management of funds in JII is acknowledged to be relatively close to the rate of return required by conditions in the market. Also, the result shows that the JII performance has a positive and significant effect on the market.

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