

EQUILIBRIUM: Jurnal Ekonomi Syariah Volume 9, Nomor 1, 2021, 65-82 P-ISSN: 2355-0228, E-ISSN: 2502-8316 http://journal.iainkudus.ac.id/index.php/equilibrium DOI: 10.21043/equilibrium.v9i1.9433

# Risk-Return Analysis on Optimum Portfolio Selection of Islamic Stocks

## Siti Amaroh<sup>1</sup>, Chanif Nasichah<sup>2</sup>

### Abstract

This study aims to determine the optimum portfolio category and analyze the risk-return on a formed portfolio. Data was taken from eighteen listed companies indexed by Jakarta Islamic Index during 2015-2018. Stock returns are calculated based on the closing price at the end of each month in the period. Sharia Certificate of Bank Indonesia is a proxy of risk-free return, while the market return is measured by the value of the Jakarta Islamic Index. Stocks are sorted by the value of excess return to beta (ERB) from highest to lowest, and to obtain optimal stock portfolio candidates, and the ERB value must be compared with the cut-off rate value. Seven issuers qualify for forming the optimum portfolio of shares. The results show that the optimum portfolio return is greater than the expected return and the expected risk-free returns, some individual stocks provide higher returns than portfolio returns. However, the risk of individual shares was also higher than the risk of the portfolio. This finding proves that risk can be reduced optimally in Islamic stocks selection by forming an optimum portfolio.

Keywords: Risk; Return; Optimum Portfolio; Portfolio Selection.

### **INTRODUCTION**

The Islamic capital market has shown its development in the last few decades. Islamic financial products have differences from conventional products (Abbes, 2012). Islam emphasizes the operational of Islamic financial products

<sup>&</sup>lt;sup>1</sup>Institut Agama Islam Negeri (IAIN) Kudus, Indonesia <sup>2</sup>Institut Agama Islam Negeri (IAIN) Kudus, Indonesia e-mail : sitiamaroh@iainkudus.ac.id



based on avoidance of usury (*riba*), uncertainty (*gharar*), gambling (*maysir*), and exploitation. Investment in the Islamic capital market requires knowledge and experience to evaluate well-performed securities according to Islamic values. Securities can be categorized as Islamic share if issued by issuers and public companies that clearly state in the basic rules that their business is not in conflict with Islamic principles (Nurlita, 2014). Islamic jurists agree that it is not permissible (*haram*) to trade shares on the capital market from companies engaged in haram business. However, it is allowed if shares are from companies in halal business (Yulianti, 2017).

The investment aims to generate profit (return) in the future for funds invested at this time. Investors expect of high return to raise prosperity and wealth. Return in a positive direction is the expectation of every investor because it shows an increase in shares price. Investment in capital market instruments is not risk-free and requires sufficient information. Risk can be translated as uncertainty about a situation in the future due to a recent decision. Risk in the capital market is related to securities movements and fluctuations. Investors must find out the risk profile of investment both for individual securities and portfolio to determine good ways of minimizing. In the Islamic perspective, return and risk must also be ethically accountable (Irkhami, 2010).

Investor gains return as a reward for the effort to encounter risk. Realized return is urgent to measure the performance of firms. Realized return or historical return is also helpful as a basis for determining the expected return and risk in the future (Hartono, 2016). However, return alone for an investment consideration is insufficient. Return and risk have a positive relationship where a more significant risk must be compensated with a greater return. Islam encourages investing in creating more productive assets but must consider all aspect, lower risk, and not a misleading investment (Hayati, 2016).

The possibility of the realized return that deviates from the expected return or risk has two dimensions in which the deviations are more significant or smaller than expected (Husnan, 2015). Markowitz used Mean-Variance Model to solve problems in a portfolio of securities. Rational investors generally minimize risk for fixed expected return or maximize expected return for a certain level of risk (Zhang, Li, & Guo, 2018). If the risk of individual securities is discovered from



the expected return variance, the portfolio risk considers the individual risk and interactions between variance and covariance (Rutterford & Sotiropoulos, 2016). Modern portfolio theory studied how rational investors diversify their wealth by considering a trade-off between risk and return (Yama, Yung, & Zhou, 2013),

Single Index Model (SIM) simplifies calculations of the Markowitz model by providing input parameters and replacing the covariance return between assets with the market return. Return of assets must not be influenced by the return of other assets except market return. This model also can be used to calculate expected return and portfolio risk. The difference between the Markowitz Model and SIM lies in its ability to predict risk. The Markowitz Model shows that if the correlation between securities in a portfolio is perfectly negative, the risk might be reduced to zero. Whereas in the SIM, risk could be reduced through diversification except for market risk (Varghese & Joseph, 2018).

Some researchers measured the optimal value of a portfolio by using Single Index Model. The development of an optimal portfolio resulted in a higher expectations rate of return than the Markowitz Model on the Kompas 100 index (Setyantho & Wibowo, 2019). Based on this model, investors consider choosing stocks that are included in the optimal portfolio by considering the value of excess return to beta and cut-off value than trading volume (Setiawan, 2017). Diversification in this model proved profitable in forming an optimal portfolio (Oktaviani & Wijayanto, 2015). The optimal portfolio calculation using a single index model resulted in the candidate as an optimal portfolio compiler (Sari & Nuzula, 2017). However, this study analyzed the risk and return of optimal portfolio formation on Islamic stocks in Indonesia listed in the Jakarta Islamic Index. The Single Index Model approach is used as a tool to measure portfolio return and risk to find out whether diversifications can reduce risk or not.

This study seeks to determine the optimum portfolio for Islamic stocks in Indonesia. Islamic stocks included in the Islamic index have been explicitly determined by specific criteria according to Islamic law. However, it is necessary to select efficient stocks to be included in the optimum portfolio. This research is expected to provide investors or securities companies with information in selecting stocks that have optimal performance consistently.



#### LITERATUR REVIEW

Portfolio theory was developed by Harry Markowitz (1952) through the publication of his articles discussing the basic principles of portfolio theory (Megginson, 1997). The essence of rational portfolio allocation is expressed in the phrase "do not put all your eggs in one basket". Markowitz showed that if an asset is added to the portfolio, the total portfolio risk measured by the variance (standard deviation) of the total return will decrease. The selection of many securities in a portfolio is intended to reduce the risk and stand with profit maximization. This step is taken to avoid; thus, the portfolio is seen as diversifying investment by applying funds to more than one securities. At least a portfolio decision that two securities are better than one securities (Fahmi, 2015). The portfolio that investors should choose is efficient. An efficient portfolio provides a high expected return with low risk that investors can recommend. The choice of this efficient portfolio is the optimal portfolio.

The portfolio is a combination of individual assets or securities based on the assumption that investors tend to averse to risk (Singh & Gautam, 2014). In the view of aversion investors, the risk is the primary consideration for holding or dismissing assets or securities. Rational investor desires to maximize return with less risk. Portfolio help and assist investors to combine securities and minimize risk all at once (Dewi, Handojo, & Chrislie, 2017). Diversification is a strategy used to reduce risk by distributing the portfolio across many investments (Sun, 2010). A diversified and more extensive portfolio provides a good portfolio (Saleem et al., 2013). The research evidence showed that forming an optimal portfolio can reduce risk (Christiana & Fadhila, 2018).

The Markowitz method formed a set of efficiency and optimal portfolios with a quantitative approach that relates risk as measured by the standard deviation or variance with the expected return or the average return (mean). This model is also called the mean-variance method. This method is not an optimal portfolio but merely optimal for the minor portfolio risk (minimum portfolio variance), because it still depends on investors' preference. This method begins by forming the efficiency set first before forming an optimal portfolio. The weakness of the Markowitz model is sensitive to misspecification or uncertainty because an efficient portfolio constructed with an expected return vector and covariance of



asset returns can give a poor performance for another set of parameters and not consistent with axiomatic models of risk preference (Ogryczak, 2000).

The single Index Model is used to simplify calculations in the Markowitz model by providing the required input parameters for the Markowitz model by replacing the covariance return between assets and asset covariance returns with market index return. The relationship between assets return is replaced by the relationship between asset return and market index return. With this idea, the return of an asset should not be influenced by the return of other assets and may only be impacted by a market return index. The stock price index is an indicator that shows the movement of stock prices and serves as an indicator of market trends, so it describes market conditions at any time, whether in good or stormy conditions. The single index model also is used to calculate expected return and portfolio risk based on the observation that the market improved and the price of individual stocks also increased. Likewise, on the contrary, the price of shares decreases when the market in the worst condition. This condition shows that the level of stock profit is correlated with market changes.

# **RESEARCH METHOD**

This research uses monthly data from firms listed in Jakarta Islamic Index from 2015 to 2018. The elements of Single Index Model calculations are in the following descriptions and formulations:

# **Realized Return**

Realized return is a return that has already occurred; it has a specific value and does not contain measurement error, and denoted by  $R_{it}$ .  $R_{it}$  is formulated in the percentage change in the closing price of shares in the *t* month minus the shares in the *t*-1 month plus current dividend. The results are divided by the closing price of the shares in the t-1 month

$$R_{it} = \frac{P_t - P_{(t-1)} + D_t}{P_{t-1}}$$



### **Expected Return**

The expected return is the difference in value between expected return and realized return then deviate from the actual value. Expected Return  $(ER_{it})$  is formulated by the average percentage of realized stock return divided by the number of realized stock returns. This formulation as follows calculate using Excel Program (Hartono, 2014):

$$E(R_{it}) = \frac{\sum_{t=1}^{n} R_{it}}{n}$$

### Standard Deviation

Standard Deviation (SD) is used to measure risk as to the deviation between realized return and its expectation with the formulation as follows:

$$SD = \sqrt{\frac{\sum_{t=1}^{n} (R_{it} - E(R_i)^2)}{n}}$$

#### Variance

Variance  $(\sigma_{it})$  is used to manage the risk of expected stock return *i* and calculated utilizing squaring the standard deviation using this formulation below:

$$\sigma_{it} = \frac{\sum_{t=1}^{n} (R_{it} - E(R_i)^2)}{n}$$

#### Beta

Beta ( $\beta_i$ ) is an indicator to measure stock sensitivity on market risk. Volatility is the fluctuation of stock returns in a certain period. Beta calculates the slope of stock realized return with realized market return within a certain period and also used to find Excess Return to Beta (ERB) and Cut-off point in a formulation as below (Morey & Ricard, 2000):

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

EQUILIBRIUM, Volume 9, Nomor 1, 2021



### Alpha

Alpha ( $\alpha_i$ ) is the intercept of realized stock return with a return market (*RM*) and used to measure the variance error (ei) in the formulation as follow:

 $\alpha_i = E(R_i) - \beta_i RM$ 

## Variance Error Residual

Variance Error Residual (oei) is a stock variance of residual error which also unique on non-systematic risk, calculated using the formula below:

 $\sigma^2 e i = \sigma^2 i - (\sigma^2 m (\sigma_i)^2)$ 

## **Excess Return to Beta**

Excess Return to Beta (ERB) is the excess of expected return and risk-free asset return (Rf). ERB means measuring excess return relative to one unit of risk that cannot be diversified and shows the relationship between risk and return. The result of the ERB calculation is used to rank stocks from highest to lowest value. The formulation of ERB as below:

$$ERB_i = \frac{ER_i - Rf}{\beta_i}$$

## Cut-off Value

Cut value ( $C_i$ ) is counted through a set of formulations which are interrelation.  $C_i$  is the value of C for stock i, from the accumulated values of A1 through Ai and values of B1 through Bi. Ci value is a result of market variance and premium returns to stock variance and individual stock sensitivity to stock variance error in the formulation below:

$$C_i = \frac{\sigma^2 m \sum A_j}{1 + \sigma^2 m \sum B_j}$$

Where:



$$A_i = \frac{[E(R_i) - Rf]\beta_i}{\sigma^2 ei}$$

and;

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

*Cut-Off Point* (C\*) is the value of  $C_i$  where the ERB value last time was still more significant than the value of  $C_i$ 

#### **The Proportion of Funds**

After the securities that build the optimum portfolio are determined, the next step is to calculate the proportion of each of these securities into the actual optimum portfolio. The percentage of funds ( $W_i$ ) as weighted of each stocks forming an optimal portfolio is in the formulation below:

$$W_i = \frac{Z_i}{\sum Z_i}$$

The proportion of funds  $(Z_i)$  of each stock in an optimal portfolio is calculated using the formulation below:

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

#### **RESULTS AND DISCUSSION**

During the observation period, This study using 18 firms listed in Jakarta Islamic Index. We calculated the expected return, standard deviation (SD), and variance in the first step. If a stock has a negative expected return, it is excluded in calculating the optimum portfolio. Conversely, if the stock has a positive expected return, the stocks included in the formation. Table 1 shows the data of each measurement.



### Table 1

Code	Expected Return	SD	Variance
ADRO	0.0296	0.1108	0.0123
AKRA	-0.0095	0.0770	0.0059
ASII	0.0117	0.0550	0.0030
BSDE	-0.0032	0.0775	0.0060
ICBP	0.0137	0.0513	0.0026
INCO	0.0279	0.1533	0.0235
INDF	0.0105	0.0669	0.0045
KLBF	0.0054	0.0588	0.0035
LPPF	-0.0273	0.1019	0.0104
MPPA	-0.0588	0.1138	0.0130
PGAS	0.0006	0.1449	0.0210
PTPP	-0.0107	0.1177	0.0139
SMGR	0.0078	0.0982	0.0096
SMRA	-0.0114	0.1134	0.0129
TLKM	0.0081	0.0589	0.0035
UNTR	0.0179	0.0827	0.0068
UNVR	0.0054	0.0579	0.0034
WIKA	-0.0077	0.1283	0.0165

Expected Return, Standard Deviation, and Variance of Individual Securities

Table 1 above shows that ADRO has the highest expected return and BSDE has the lowest expected return. In this study, seven stocks have a negative expected return, so that AKRA, BSDE, LPPF, MPPA, SMRA, and WIKA excluded from this calculation. INCO has the highest standard deviation, and ICBP has the lowest standard deviation. Standard deviation is a measurement to indicate the risk of the shares. In this step, the stocks with positive expected return and low risk included as candidates in the portfolio due to the possibility to give a good performance in investment planning. Furthermore, eleven issuers are used in the following stages.

The second step calculates market return by subtracting the Jakarta Islamic Index (JII) current return from the previous. The result described in table 2 that expected market return is 0.0042, the standard deviation is 0.0326, and variance is 0.0011, and it is in the table below:



74

Table 2				
Expected Return, Standard Deviation and Variance				
Expected Market Return	0.0042			
Standard Deviation	0.0326			
Variance	0.0011			

In the third step, we collect the Sharia Certificate of Bank Indonesia rate as a risk-free proxy. This data was taken from the official website of Bank Indonesia (www.bi.go.id) and presented in the table below:

Period	2015	2016	2017	2018
January		7.15%	6.00%	5.27%
February		7.15%	6.00%	5.27%
March		7.15%	6.00%	5.27%
April		7.15%	6.00%	5.27%
May		7.15%	6.00%	5.27%
June		7.15%	6.00%	5.27%
July		7.15%	6.00%	5.27%
August		7.15%	6.00%	5.27%
September		7.15%	6.00%	5.27%
October		7.15%	6.00%	5.27%
November		7.15%	6.00%	5.27%
December	7.15%	6.00%	5.27%	
Total	7.15%	84.65%	71.27%	57,97%
Average/Year	7.15%	7.05%	5.94%	5,27%
Average/4 Years	6.35%			
Average/Month	0.18%			
Rf/Month	0.0018			

# Table 3 Average Rate of Sharia Certificate of Bank Indonesia 2015 - 2018

The fourth step compares the value of the expected return with the risk-free return. A risk-free rate is the rate of return on a risk-free investment using the Sharia Certificate of Bank Indonesia Rate. The average risk-free return per year is 7.15% in 2015, 7.05% in 2016, 5.94% in 2017, and 5.27% in 2018. This range fluctuated year by year adjust with government regulation. The data can be interpreted that if investors allocate their funds in the money market during the period, they gain 0.0018 per month with a zero risk for average.

The risk-free rate result is compared with the expected return to select stocks as candidates for optimum portfolio. If E(Ri) > Rf, the stocks are selected to analyze in the next step. This selection resulted in 11 shares and presented in the table below:

Code	Expected Return E(R <sub>i</sub> )	<b>Risk Free Rate Rf</b>	Result
ADRO	0.0296	0.0018	$E(R_{ADRO}) > Rf$
ASII	0.0117	0.0018	$E(R_{ASII}) > Rf$
ICBP	0.0137	0.0018	$E(R_{ICBP}) > Rf$
INCO	0.0279	0.0018	$E(R_{INCO}) > Rf$
INDF	0.0105	0.0018	$E(R_{INDE}) > Rf$
KLBF	0.0054	0.0018	$E(R_{KIBE}) > Rf$
PGAS	0.0006	0.0018	$E(R_{PCAS}) < Rf$
SMGR	0.0078	0.0018	$E(R_{SMGR}) > Rf$
TLKM	0.0081	0.0018	$E(R_{TLKM}) > Rf$
UNTR	0.0179	0.0018	$E(R_{UNTR}) > Rf$
UNVR	0.0054	0.0018	$E(R_{UNVR}) > Rf$

## Comparison between Expected Return and Risk Free Rate

Table 4

The fifth step calculates Excess Return to Beta. Beta is measured by comparing the stock covariance with market variance. Alpha is calculated by subtracting expected stock returns with beta multiply with expected market returns. It would be used to find variance error residual (ei). While Excess Return to Beta is Excess return on risk-free return on other assets. The result presented in table 5 as follows:

Table 5

Beta, Alpha, Variance Error Residual and Excess Return to Beta

Code	Beta	Alpha	Σei	ERB
ADRO	1.3785	0.0296	0.0103	0.0202
ASII	1.1225	0.0117	0.0017	0.0088
ICBP	0.8392	0.0137	0.0019	0.0142
INCO	0.5707	0.0279	0.0232	0.0457
INDF	1.0944	0.0105	0.0032	0.0080
KLBF	1.1289	0.0054	0.0021	0.0032
PGAS	1.2885	0.0006	0.0192	-0.0009
SMGR	1.2028	0.0078	0.0081	0.0050
TLKM	0.7740	0.0081	0.0028	0.0081
UNTR	0.6873	0.0179	0.0063	0.0234
UNVR	1.0276	0.0054	0.0022	0.0035



Based on the data, ADRO has the highest beta 0f 1.3785. This means that if the market return increase by one unit, the stock return increase by 1.3785. If a beta value is more than one ( $\beta$ i>1), the stocks' systematic risk is smaller than the systematic risk of the market. Whereas beta is less than one ( $\beta$ i<1), the systematic risk of the stock is smaller than the systematic risk of the market. In order to obtain a portfolio candidate, the ERB calculation is performed with INCO has the highest and the lowest is PGAS. Optimum portfolio stocks must have a high ERB.

The sixth step is determining the cut-off rate by multiplying the market variance with the Aj value then divided by the sum of the constants with the market variance times the Bj value. The highest Ci vale is the cut-off point (C\*).

Cut off huite					
Code	$\mathbf{A}_{\mathbf{i}}$	B <sub>i</sub>	A <sub>i</sub>	B <sub>i</sub>	$C_i$
INCO	0.6420	14.0387	0.6420	14.0387	0.0007
UNTR	1.7564	74.9812	2.3984	89.0199	0.0023
ADRO	3.7206	184.4915	6.1190	273.5114	0.0050
ICBP	5.2560	370.6614	11.3751	644.1728	0.0072
ASII	6.5369	741.1801	17.9120	1385.3529	0.0077
TLKM	1.7415	213.9557	19.6535	1599.3086	0.0077
INDF	2.9754	374.2848	22.6289	1973.5934	0.0078
PGAS	-0.0805	86.4704	27.6085	3436.2564	0.0063
SMGR	1.4434	289.3456	24.0723	2262.9390	0.0075
UNVR	1.6815	479.9826	25.7538	2742.9216	0.0070
KLBF	1.9353	606.8644	27.6890	3349.7860	0.0065

Table 6 Cut-Off Rate

The seventh step, determining cut-off point (C\*) is the value of Ci where ERB value was more significant than cut-off rate (Ci). Stocks are sorted by value of ERB from highest to lowest. To obtain an optimal stock portfolio candidate, the ERB value must be compared with Ci. The calculation resulted in seven shares are INCO, UNTR, ADRO, ICBP, ASII, TLKM, and INDF, with the cut-off point is 0.0078.

Table 7

Cut-Off Point (C*)				
Code	ERB	$C_i$	Result	
INCO	0.0457	0.0007	Selected	
UNTR	0.0234	0.0023	Selected	
ADRO	0.0202	0.0050	Selected	
ICBP	0.0142	0.0072	Selected	
ASII	0.0088	0.0077	Selected	



TLKM	0.0081	0.0077	Selected
INDF	0.0080	0.0078	Selected
SMGR	0.0050	0.0075	Not
UNVR	0.0035	0.0070	Not
KLBF	0.0032	0.0065	Not
PGAS	-0.0009	0.0063	Not
	C*	0.0078	

Risk-Return Analysis on Optimum Portfolio Selection of Islamic Stocks

After obtaining seven shares that included in the formation of an optimal portfolio, in this step, we calculate the proportion of funds (Wi) for each share by determining the weighted scale of each share. The most significant proportion of funds found in ICBC company shares of 35.53%, while the lowest is INDF of 0.99%. Stocks with the highest proportion are alternatives for a rational investor in their investment decision. The result of the calculation is presented in table 8.

Table 8						
The Proportion of Funds						
Code	Z,	W <sub>i</sub>				
INCO	0.9331	11.67%				
UNTR	1.7053	21.33%				
ADRO	1.6637	20.81%				
ICBP	2.8405	35.53%				
ASII	0.6808	8.52%				
TLKM	0.0915	1.14%				
INDF	0.0790	0.99%				

In this step, optimum portfolio return can be determined by calculating the alpha and beta of the portfolio. The Alpha portfolio obtained from the weighted average of the alpha of each stock, while portfolio beta from the weighted average of each share.

Table 9
<b>Optimum Portfolio Return</b>

Code	$\mathbf{W}_{i}$	Beta (B <sub>i</sub> )	Alpha (a <sub>i</sub> )	$a_p = W_i \cdot a_i$	$B_p = W_i \cdot \beta_i$
INCO	0.1167	0.5707	0.0279	0.0033	0.0666
UNTR	0.2133	0.6873	0.0179	0.0038	0.1466
ADRO	0.2081	1.3785	0.0296	0.0062	0.2869
ICBP	0.3553	0.8392	0.0137	0.0049	0.2982
ASII	0.0852	1.1225	0.0117	0.0010	0.0956



Siti Amaroh and Chanif Nasichah

TLKM	0.0114	0.7740	0.0081	0.0001	0.0089
INDF	0.0099	1.0944	0.0105	0.0001	0.0108
				0.0193	0.9136

 $E(R_p) = \alpha_p + \{ \beta_p \ge E(R_m) \}$   $E(R_p) = 0.0193 + (0.9136 \ge 0.0042)$  $E(R_p) = 0.0231$ 

The result shows that the portfolio return of the seven shares selected in the optimum portfolio formation is 0.0231. This return might affect investor decision to invest in the firm share due to it has a higher expected return than the expected market return of 0.0042 or expected risk-free return of 0.0018.

Optimum portfolio risk is determined by some components includes beta of the squared portfolio, market variance, and unsystematic risk. The following table shows the calculation:

Code	W <sub>i</sub>	σ <sub>ei</sub>	$\sigma_{ep}^{2} = W_{i} \cdot \sigma_{ei}$	βp²	$\sigma_m^2$
INCO	0.1167	0.0232	0.0027	0.8347	0.0011
UNTR	0.2133	0.0063	0.0013		
ADRO	0.2081	0.0103	0.0021		
ICBP	0.3553	0.0019	0.0007		
ASII	0.0852	0.0017	0.0001		
TLKM	0.0114	0.0028	0.0000		
INDF	0.0099	0.0032	0.0000		
			0.0069		
Portfolio Variance $\sigma_p^2 = \beta p^2 \cdot \sigma^2 + \sigma e p^2$		0.0078			
Portfolio risk		0.0883			

Table 10 Optimum Portfolio Risk

Based on the calculation, it is known that the portfolio variance is 0.0078 and the standard deviation is 0.0883. When compared between individual stock return and portfolio stock return, some returns have higher returns than portfolio returns. However, the risk of the individual securities was also higher than the risk of the portfolio. This study proves that risk can be reduced by diversification.



Risk-Return Analysis on Optimum Portfolio Selection of Islamic Stocks

The selection of stocks that provide optimal result is carried out through several stages. Portfolio selection does not stop at efficient portfolios because it does not mean the best portfolio. An efficient portfolio and an optimum portfolio lie in the relationship between expected return and risk. However, the optimum portfolio is chosen based on the best combination of return and risk from an efficient portfolio. The Single Index Model is one tool to assist investors in determining proven stocks that display good performance and feasible to be selected.

This study also indicates that there are several Islamic stocks from various industries that can be combined as an optimum portfolio. This result was based on an observation period of approximately three years. Investors might choose Islamic stocks because they have several advantages, including in accordance with Islamic provisions. It provides a safe investment, dividend get priority to be paid, and halal because the Indonesia Ulama Council guarantees it as known MUI. Islamic stocks contain issuers engaged in the real sector with minimal speculation, promising regular and stable profit for investors.

# CONCLUSION

Investment is not merely how to gain a return for several investment funds in one or more instruments. Investment also needs to pay attention to the period of investment, financial resources, and ability to determine the alternatives choices except for return and risk. Investment also needs to consider the spiritual aspects of halal investment.

Based on the results of the portfolio selection formed from JII along with the proportion of funds in the order of ICBP (35.53%), UNTR (21.33%), ADRO (20.81%), INCO (11.67%), ASII (8.52%), TLKM (1.14%), dan INDF (0.99%). This portfolio fulfils assumptions with the lowest risk at a specific rate of return. The single index model provides stock investment options with optimal returns and low risk. The portfolio also meets the criteria as sharia stocks so that investors do not doubt its halal aspects.

If the public desires to invest in Islamic stocks, they are advised to choose stocks in certain Jakarta Islamic Index indexes. Investors also can choose individual securities or portfolio. This study indicates that the seven Islamic stocks offer adequate returns with a more negligible risk than individual securities. The results support the Single Index Model to select the optimum portfolio that produces certain returns with lower risk. Risk preference becomes the benchmark for rational selection of stock combination in a portfolio, and a single-index model can be used as a guide.



#### REFERENCES

- Abbes, M. B. (2012). Risk and Return of Islamic and Conventional Indices. International Jornal of Euro-Mediterranean Studies 5, 1-23.
- Christiana, I., & Fadhila, N. (2018). Analisis Optimalisasi Portofolio Saham dengan Menngunakan Model Indeks Tunggal. Jurnal Riset Finansial Bisnis 2(2), 51-60.
- Dewi, L., Handojo, A., & Chrislie, Y. (2017). Single Index Model Portfolio Formation Application. *Journal of Telecommunication, Electronic and Computer Engineering* 10(10), 1-5.
- Fahmi, I. (2015). Manajemen Risiko Teori: Kasus dan Solusi. Bandung: Alfabeta.
- Hartono, J. (2014). Teori dan Praktik Portofolio dengan Excel. Jakarta: Salemba Empat.
- Hartono, J. (2016). Teori Portofolio dan Analisis Investasi: Edisi Kesebelas. Yogyakarta: BPFE.
- Hayati, M. (2016). Investasi Menurut Perspektif Ekonomi Islam. *Ikonomika* 1(1), 66-78.
- Husnan, S. (2015). Dasar Dasar Teori Portofolio & Analisis Sekuritas. Yogyakarta: UUP STIM YKPN.
- Irkhami, N. (2010). Analisis Risiko dalam Investasi Islam. *Jurnal Muqtasid* 1(2), 209-225.
- Megginson, W. L. (1997). Corporate Finance Theory. New York: Addison-Wesley .
- Morey, R. M., & Ricard, C. M. (2000). An Analytical Confidence Interval for the Treynor Index: Formula, Conditions and Properties. R.. M. Morey and C. M. Ricard. 2000. An Analytical Confidence Interval for the Treynor Index: Journal of Business Finance & Accounting, 27(1-2), 127-154.
- Nurlita, A. (2014). Investasi di Pasar Modal Syariah dalam Kajian Islam. Kutubkhanah: Jurnal Penelitian sosial keagamaan 17(1), 1-20.
- Ogryczak, W. (2000). Multiple Criteria Linear Programming Model for Portfolio Selection. *Annals of Operations Research* 97, 143-162.



- Oktaviani, B. N., & Wijayanto, A. (2015). Aplikasi Single Index Model Dalam Pembentukan Portofolio Oprimal Saham LQ45 dan Jakarta Islamic Index. *Management Analysis Journal*, 4(1), 189-202.
- Rutterford, J., & Sotiropoulos, D. P. (2016). Financial Diversification Before Modern Portfolio Theory: UK Financial Advice Documents in The Late Nineteenth and The Beginning of The Twentieth Century. *The European Journal of the History of Economic Thought*, 23(6), 919-945.
- Saleem, K., Irwanto, A. K., & Nugrahani, E. H. (2013). Analysis of Portfolio Optimization With and Without Shortselling Based on Diagonal Model: Evidence from Indonesian Stock Market. ASEAN Journal of Economics, Management and Accounting 1(2), 23-33.
- Sari, F. A., & Nuzula, N. F. (2017). Pembentukan Portofolio Optimal dengan Model Indeks Tunggal (Studi Pada Perusahaan Property, Real Estate And Building Construction Yang Tercatat Di Bursa Efek Indonesia Periode 2013-2015). Jurnal Administrasi Bisnis 45(1), 1-9.
- Setiawan, S. (2017). Analisis Portofolio Optimal Saham-Saham LQ45 Menggunakan Single Index Model Di Bursa Efek Indonesia Periode 2013-2016. *Journal of Accounting and Business Studies*, 1(2), 1-19.
- Setyantho, K. S., & Wibowo, S. H. (2019). Comparison of Optimal Portfolio Performance Between Single Index Models and Markowitz Models (Case Study of Daily Return Implementation of OJK Rules Regarding Investments of State Values For NonBank Financial Institutions 2016-2017). Business and Entrepreneurial Review, 19(1), 43 - 66.
- Singh, S., & Gautam, J. (2014). The Single Index Model & The Construction of Optimal Portfolio: a Case of Banks Listed on NSE India. *Risk governance* & control: financial markets & institutions 4(2), 110-115.
- Sun, Y. (2010). Optimization Stock Portfolio with Mean-Variance and Linear Programming: Case in Indonesia Stock Market. *Binus Business Review* 1(1), 15-26.
- Varghese, J., & Joseph, A. (2018). A Comparative Study on Markowitz Mean-Variance Model and Sharpe's Single Index Model in the Context of Portfolio Investment . *PESQUISA*, 3(2), 36-41.



- Yama, S., Yung, S., & Zhou, J. (2013). A Mean–Variance Portfolio Selection Problem Subject to a Benchmark Constraint: An Existence Result. *Risk* and Decision Analysis 4 (2013) 25–38, 4, 25–38.
- Yulianti, R. T. (2017). Direct Financial Market: Islam Equity Market (Bursa Saham dalam Islam). *Al-Mawarid* 11(1), 17-38.
- Zhang, Y., Li, X., & Guo, S. (2018). Portfolio Selection Problems with Markowitz's Mean–Variance Framework: a Review of Literature. *Fuzzy Optimization* and Decision Making, 17, 125-158.

