INVOICE
JURNAL ILMU AKUNTANSI
p-ISSN: 2714-6359 e-ISSN: 2714-6340
Program Studi Ilmu Akuntansi
Fakultas Ekonomi dan Bisnis
Universitas Muhammadiyah Makassar

Comparison Of BRI Bank Portfolio Performance With BSI In Investment Decisions For Investors (2021)

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Keywords:
Bank, Invest, Portfolio, Capm, Scapm.

Abstract

This study sets out to comprehensively analyze the viability of investing in Islamic banks as a sound financial decision and to evaluate their competitiveness in comparison to conventional bank portfolios. To achieve this objective, the research encompasses a diverse set of financial instruments and performance metrics. The research sample primarily revolves around the stock prices of two prominent banks in Indonesia, namely BRI (Bank Rakyat Indonesia) and BSI (Bank Syariah Indonesia), during the year 2021. In addition to these, the IHSG (Indonesia Stock Exchange Composite Index) serves as the market return indicator for BRI's portfolio. Furthermore, the benchmark interest rate from Indonesia is utilized as the risk-free rate (Rf) in the calculations. For BSI's portfolio, SBIS (Syariah Benchmark Indonesia) is employed as an alternative to Rf, and JII (Jakarta Islamic Index) is designated as the market return indicator. The assessment of the portfolio performance is conducted using three key index formulas: the Treynor index, the Sharpe index, and the Beta Jensen index. Importantly, the research findings reveal that BSI demonstrates superior performance compared to BRI when assessed using these three index formulas. This evaluation was conducted using the Security Characteristic Line (SCL) and the Security Characteristic Adjustment Performance Model (SCAPM) method, as opposed to BRI's portfolio evaluation using the more conventional CAPM (Capital Asset Pricing Model) formula. These results suggest that investing in Islamic banks, represented by BSI in this study, can indeed yield favorable outcomes, highlighting their potential as a competitive and promising investment option in the financial landscape.

1. INTRODUCTION

Banks are financial intermediation institutions that play a crucial role in connecting individuals or entities with surplus funds to those in need of capital. In accordance with the Republic of Indonesia Law on Banking, specifically Law Number 10 of 1998, banks are defined as commercial entities entrusted with the responsibility of gathering financial resources from the public, typically in the form of savings, and subsequently channeling these resources back into the public domain in the form of credit and other financial instruments. This process serves the fundamental purpose of enhancing the overall quality of life for a broader segment of society (Pardede, 2020). The primary and paramount function of banks lies in their capacity to function as intermediaries for funds.

This means that they act as intermediaries between individuals or entities with surplus capital to invest and those seeking financial resources for various purposes. By facilitating the flow of funds from savers to borrowers, banks play a pivotal role in stimulating economic growth, supporting entrepreneurship, and fostering financial stability within a society.

Banks operate as financial institutions through various methods and services. They offer a range of products, some tailored to comply with Sharia principles, such as Sharia banks, while others do not consider conformity in their products and transactions, like conventional banks that commonly rely on interest rates as a benchmark for transaction rationality. The primary principle adhered to by Islamic banks is the prohibition of usury (interest rates) in various transaction forms. They conduct business and trade activities with the goal of obtaining legitimate profits and in accordance with mutual agreements, which often involve profit sharing (Nisa Lidya Muliawati, 2015).

The distinction in objectives between conventional and Sharia banks lies in the fact that conventional banks are solely focused on maximizing profits without considering the content of each transaction (Marimin, Agus, 2017). In contrast, Sharia banks, whose orientation extends beyond profits, prioritize spiritual values based on Sharia principles. Consequently, Sharia banks meticulously consider the products they offer and the transactions they engage in.

Investment is an activity in which a company or multiple companies invest capital to facilitate their business operations in the market. According to Sukirno in 1990, investment refers to the allocation of resources or expenditure by investors or companies aimed at increasing the production capacity of goods or services within the economy (Wahyu, 2013). In Islamic economics, investment must adhere to principles that encompass ethical considerations in muamalah, which include:

1. Avoiding investments in anything deemed haram, both in terms of substance and acquisition methods.
2. Ensuring fairness and justice in all transactions.
3. Promoting equitable distribution of wealth.
4. Conducting transactions based on mutual consent.
5. Excluding elements of maysir, gharar, and usury.

Various financial instruments are traded on the capital market, including securities, stocks, debt securities (bonds), sukuk, mutual funds, sharia-compliant deposits, and others (Noptriyani, 2020). Investors often favor stock investments, as they believe they can yield significant profits. However, it's worth noting that these potential profits are directly proportional to the associated risks (Wicaksono, 2018). For investors with limited capital and a preference for lower risk due to their limited knowledge of the capital market, mutual funds are a suitable option. Additionally, other instruments like bonds or ownership tokens of assets are preferred by investors seeking safer transactions with a predictable rate of return (Maula Nasrifah, 2019).

Investment decisions by investors often begin with risk avoidance or risk minimization, while relying on the potential for high returns. Many investors do not prioritize the feasibility and suitability of Sharia compliance in their investment portfolios. The analysis conducted by investors is primarily concerned with the company's or corporation's anticipated dividends and expected capital gains in the future (Badriatin, 2022). However, investors generally exhibit greater interest in investing in portfolios of conventional companies or corporations compared to their interest in Sharia-compliant portfolios.

2. LITERATURE REVIEW

2.1 Theoretical Foundations

2.1.1 Portfolio Theory

Investment can be defined as the act of allocating a specific amount of funds into an asset with the expectation of generating future profits. However, in accordance with Sharia principles, investments must involve tangible assets known as "Underlying Assets." This fundamental distinction sets apart conventional and Sharia-compliant investments. The investment process outlines the steps necessary for making sound investment decisions to ensure the success of the investment. According to Husnan, this process includes the following stages:

1. Establishing investment policy
2. Conducting securities analysis
3. Formulating the portfolio Revising the portfolio
4. Evaluating portfolio performance

Portfolio theory was introduced by Harry M. Markowitz in 1952. This theory emerged from the desire of investors to minimize their investment risk. Portfolio theory entails the allocation of investments across various assets with different compositions to mitigate potential losses through portfolio diversification (Maf'ula, Zuhrotul, Siti Ragil Handayani, 2018). It explores the methods for constructing a portfolio that can yield optimal

returns from a selection of assets while considering the level of risk that investors are willing to tolerate. Portfolio analysis is a critical aspect of investing because it serves as the foundation for implementing diversification strategies or allocating shares across different portfolios. This allows for the creation of an efficient composition, aiming for the maximum expected return on shares at a given level of risk or the minimum level of risk required to achieve a specific return.

2.1.2 CAPM (Capital Asset Pricing Model) and (Sharia Compliant Pricing Model)

One method that can be employed to construct a portfolio and calculate returns while considering securities' risk is to utilize the Capital Asset Pricing Model (CAPM). CAPM was originally introduced by Treynor, Sharpe, and Lintner. It posits that CAPM is an equilibrium asset pricing model that posits an expected return on a particular security as a positive linear function of the security's sensitivity to changes in market portfolio returns (Muhammad Firliansyah Alqiha, Galuh Lindra, 2021). In contrast, the Sharia Compliant Asset Pricing Model (SCAPM) represents a modified version of the Capital Asset Pricing Model (CAPM) that emerged within a conventional interest-based context. SCAPM aims to formulate an asset pricing model within the Sharia framework. According to Efendi (2016), the Sharia Compliant Asset Pricing Model (SCAPM) is a model employed to predict risk and return levels in Sharia-compliant investments. This model represents an adaptation of the Capital Asset Pricing Model (CAPM), popularized by Markowitz and introduced by Treynor et al. (Adistyaningrum, 2018).

2.1.3 Efficient Portfolio and Optimal Portfolio

According to Tandelilin (2010), in the Markowitz approach, investors select portfolios based on their preferences for the expected return and risk of each portfolio (Pardosi & Wijayanto, 2015). An efficient portfolio is one that offers a higher expected return for a certain level of risk or a portfolio that carries the lowest risk for a given expected return. It can be deemed efficient if a portfolio maintains the same level of risk while providing a higher profit or if it delivers the same profit at a lower risk level. Tandelilin (2010) further states that the optimal portfolio is the portfolio investors choose from the numerous options available among efficient portfolios (Wijayanto, 2019). The portfolio chosen by the investor aligns with their preferences regarding returns and the level of risk they are willing to accept.

2.1.4 Portfolio Performance Evaluation Assessment

Portfolio performance evaluation serves the purpose of assessing whether the formed portfolio can enhance the likelihood of achieving investment objectives concerning both return rate and risk (Cahyadi, 2020). There exist numerous methods and approaches for measuring portfolio performance, including the Treynor Index, Sharpe Index, and Jensen Beta Index..

1. *Treynor Index*

The Treynor Index measures portfolio performance by comparing the portfolio's risk premium, which is the difference between the average portfolio return rate and the average risk-free rate. However, since the Sharia Compliant Asset Pricing Model (SCAPM) asserts that there is no risk-free investment, an alternative is sought. In this case, SBIS (Bank Indonesia Sharia Certificate) is used as a replacement for the risk-free interest rate. Portfolio risk is expressed in terms of beta (market risk or systematic risk). The Treynor Index can be calculated using the following equation:

$$Tp = \frac{R_p - R_f}{\beta_p}$$

Information:
BU = *Treynor index*
RP=Portfolio return or rate of return Results
RF= Risk-free rate of return
BP= Market portfolio beta

2. Sharpe Index

The Sharpe Index method is founded on a concept known as the risk premium. The risk premium represents the difference between the average performance achieved by the portfolio and the average performance of risk-free assets. Portfolio risk is expressed in terms of standard deviation, which encompasses total risk. The benchmark here is that the higher the Sharpe ratio value, the better the performance. This index method can be calculated using the following equation:

$$Sp = \frac{R_p - R_f}{\sigma p}$$

Information:

Sp = *Sharpe index*
Rp = Portfolio return or rate of return.
Rf = Risk-free rate of return
σp = Standard deviation of portfolio fluctuations

3. *Jensen's* Beta Index

By examining the beta and return value of the market, the Jensen index measurement is aimed at determining a high level of return from the CAPM (Yusup, 2023) . The *Jensen* Index method is based on the concept of the security market line (SML), which is a line that connects the market portfolio with risk-free investment opportunities. Risk is expressed in beta (market risk or systematic risk). If the actual rate of return from a portfolio is greater than the rate of return according to the equation, it means the *Jensen index* will have a positive value, conversely, if the actual rate of return from a portfolio is less than the rate of return according to the equation, it means the *Jensen index* will have a negative value. This index method can be calculated using the following equation:

$$\hat{J_p} = R_p - \left[R_f + \beta_p\left(R_M - R_f\right)\right]$$

Information:

$Jp\hat{}$ = *Jensen* portfolio
Rp = Portfolio return or rate of return results.
Rf = Risk-free rate of return
Bp = Market portfolio beta.
RM = Market return

3. RESEARCH METHODS

The research method used is literature review, library research is research carried out only based on written works including research results both that have been published and that have not been published. Research using study literature is research whose preparation is the same as other research, but the sources and methods of data collection are by taking data from the library, reading, taking notes and processing research materials. Thus, research using literature studies is also research and can be categorized as scientific work because data collection is carried out using a strategy in the form of research methodology.

The data taken is from book data sources, journals and several other electronic scientific articles. What is meant by data sources in research is the subject from which the data can be obtained. If research uses documentation, then documents or notes are the data source, while the contents of the notes are research subjects or research variables. The stock or portfolio data taken to calculate the performance of the three indexes is the latest data via the website which shows stock movements in the market index.

4. RESULTS AND DISCUSSION

In this result and discussion, we will present the results of research on portfolio performance through the three indexes discussed previously, using closing share price data of BRI as a conventional bank using CAPM and BSI as a sharia tire with its SCAPM.

4.1 Research Result

4.1.1 Portfolio Performance Measurement

Portfolio performance can be assessed by examining the average portfolio return value (Rp), which is compared to the market return value (Rm) utilizing various benchmarks, including the IHSG (conventional), JII (syariah), SBI, and SBIS as risk-free rates (Rf). Portfolio performance is deemed to have outperformed when the Rp value surpasses the Rm value.

Conversely, portfolio performance is considered underperforming when the Rp value is lower than both Rm and Rf values

4.1.2 BRI Bank Portfolio Performance Analysis

Table 1.1 BRI share returns in 2021

Bank BRI Per 2021		
Date	Price Share closing	Return
01/01/2021	3,934.54	4432,424
01/02/2021	4,433.42	4140,628
01/03/2021	4,141.62	3811.18
01/04/2021	3,812.17	4096,568
01/05/2021	4,097.56	3788.77
01/06/2021	3,789.77	3567.54
01/07/2021	3,568.53	3435,442
01/08/2021	3,436.44	3702,202
01/09/2021	3,703.20	4086.95
01/10/2021	4,087.94	3933,051
01/11/2021	3,934.05	3952,288

Table 1.2 Return Of Market in 2021

Benchmarks interest rate Indonesia (Bank BRI)	IHSG (Rm)	
	Price Closing	Return
0.00000	5,862	6240,796
3.03815	6,242	5984,522
2.79328	5,986	5994,616
2.79188	5,996	5946,463
0.00000	5,947	5984,489
0.00000	5,985	6069,039
2.79288	6,070	6149,299
2.78745	6,150	6285,943
2.79613	6,287	6590,346
2.78994	6,591	6532,932
2.79397	6,534	6580,482
2.79719		

Portfolio returns are obtained using the formula (Dwi Susilowati, Juwari Juwari, 2020):

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

Information:

Rp = portfolio return
Pt = Share price in period t
Pt-1 = Previous share price Period t

Rf is obtained from the average reference interest rate, namely Rf = 2.88; Standard deviation to find the *Sharpe index* , σ 2 = 270.4074; And the portfolio Beta, βp = 4.920416

1. *Treynor Index*

By using the formula:

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

$$Tp = \frac{3904{,}277 - 2{,}88}{4{,}92}$$

$$Tp = \frac{3.901{,}397}{4{,}92}$$

$$Tp = 79.96$$

Information:

Tp *Treynor* index
$\overline{R_p}$: Average portfolio return
R_f: Risk free rate (risk free return)
β_p: Portfolio beta

2. *Sharpe Index*

By using the formula:

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

$$Sp = \frac{3904{,}277 - 2{,}88}{270{,}41}$$

$$Sp = \frac{3.901{,}397}{270{,}41}$$

Sp = 14.43

Information:

Sp: Portfolio *Sharpe Index*
$\overline{R_p}$: Average portfolio return
R_f: Risk free rate (risk free return)
σp: Standard deviation

Jensen's Beta Index

By using the formula:

$$\widehat{J_p} = R_p - [R_f + \beta_p(R_M - R_f)]$$

Results obtained:

$\widehat{J_p} = 3904{,}277 - [2{,}88 + 4{,}92(6214{,}45 - 2{,}88)]$
$\widehat{J_p} = 3.907{,}8 - [7{,}8(6211{,}57)]$
$\widehat{J_p} = 3.907{,}8 - [48450{,}25]$

$\widehat{J_p} = -44542{,}45$

BSI Bank Per 2021		
Date	Price Share closing	Return
01/01/2021	2,410.00	2,902.85
01/02/2021	2,903.85	2,260.84
01/03/2021	2,261.84	2,250.97
01/04/2021	2,251.97	1,880.58
01/05/2021	1,881.58	2,270.72
01/06/2021	2,271.72	2,596.66
01/07/2021	2,597.66	2,191.70
01/08/2021	2,192.70	2,013.92
01/09/2021	2,014.92	2,083.06
01/10/2021	2,084.06	1,929.96
01/11/2021	1,930.96	1,757.11
12/01/2021	1,758.11	$\bar{R}_p$ = 2,194.40

Information:
$\bar{J_p}$: *Jensen* portfolio
R_p: Average portfolio return
β_p: Portfolio beta
R_M: Return of market (market)
R_f: Risk free rate (risk free return)

4.1.3 BSI Bank Portfolio Performance Analysis

Table 1.3 SBIS Prices as of 2021

Date	SBIS Price as of 2021 (In Billions)	(Total SBIS I Price x100%
01/01/2022	Rp. 13,143	6.41
01/02/2022	Rp. 14,108	5.97
03/01/2022	Rp. 12,967	6.50
01/04/2022	Rp. 11,792	7.14
01/05/2022	Rp. 10,022	8.41
01/06/2022	Rp. 7,285	11.56
01/07/2022	Rp. 5,630	14.96
01/08/2022	Rp. 4,465	18.87
01/09/2022	Rp. 2,935	28.70
01/10/2022	Rp. 1,370	61.49
01/11/2022	Rp. 300	280.8
01/12/2022	Rp. 225	374
Amount	Rp. 84,242	$\bar{R}_f$ = 68.77

Table 1.4 BSI Share Prices as of 2021

Table 1.5 JII as of 2021

JII (Rm)	
Price Closing	Return
601.75	630.45
631.45	604.69
605.69	584.43
585.43	566.62
567.62	543.30
544.30	531.79
532.79	539.67
540.67	551.53
552.53	566.93
567.93	557.15
558.15	561.02
562.02	$\bar{R}_m$ = 567.05

When searching for portfolio Betas, you can utilize automated Excel formulas. Start by multiplying the average return of portfolio i by the average risk-free rate (Rf) to obtain variable x. Next, multiply the average market return (Rm) by the average Rf to obtain variable y. Then, calculate x divided by y to determine the portfolio Beta. After conducting the search, we found that portfolio Beta for i is 0.26. Subsequently, you can calculate the standard deviation using Excel's built-in formula, either =STDEVP for population or =STDEVS for sample, while including all the data points. In this case, the result is 300.24.

1. *Treynor Index*

By using the formula:

$$Tp = \frac{R_p - R_f}{\beta_p}$$

$$Tp = \frac{2{,}194.40 - 68.77}{0.26}$$

$$Tp = \frac{2{,}194.40 - 68.77}{0.26}$$

$$Tp = \frac{2{,}125.63}{0.26}$$

$$Tp = 82.25$$

Information:
Tp *Treynor* index

$\overline{R_p}$: Average portfolio return (profit sharing rate)
R_f: risk-free return (SBIS Rate)
β_p: Portfolio beta

2. *Sharpe Index*

$$Sp = \frac{R_p - R_f}{\sigma p}$$

$$Sp = \frac{2{,}194.40 - 68.77}{300.24}$$

$$Sp = \frac{2{,}125.63}{300.24}$$

Sp = 1.825

Information:
Sp: Portfolio *Sharpe Index*
$\overline{R_p}$: Average portfolio return (profit sharing rate)
R_f: risk-free return (SBIS Rate)
σp: Standard deviation

3. *Jensen Index*

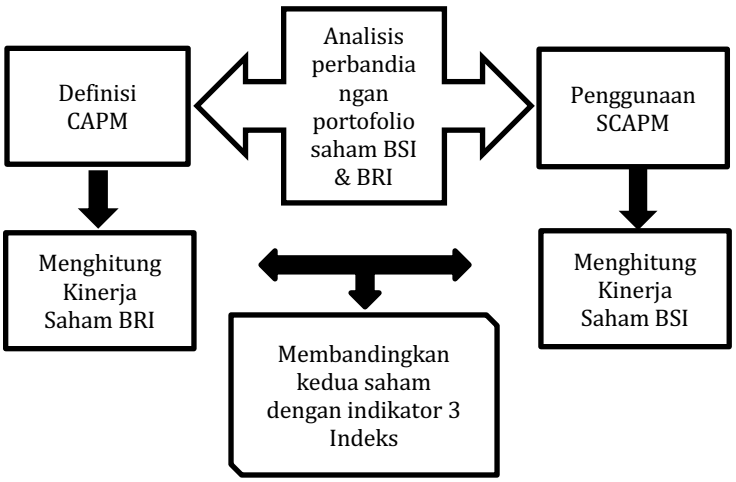
$Jp\hat{} = Rp - [\, Rf + \beta p\, (\, RM - Rf\,)]$

$\widehat{J_p} = 2{,}194.40 - [68.77 + 0.26(567.05 - 0.26)]$

$\widehat{J_p} = 1978.265$

Information:
$\overline{J_p}$: *Jensen* portfolio
R_p: Average portfolio return (profit sharing rate)
β_p: Portfolio beta
R_M: Market returns
R_f: risk-free return (SBIS Rate)

4.1.4 Flow Chart



4.2 Research Discussion

A higher value of the Treynor, Sharpe, and Jensen Beta indices for a portfolio indicates that the portfolio holds potential as an investment choice. The indices we have investigated encompass the BRI and BSI stock portfolios. Our findings demonstrate that the BSI portfolio outperforms in terms of stock portfolio performance, particularly when using SBIS as a substitute for the Risk-Free Rate (Rf) as per the Capital Asset Pricing Model (CAPM). This showcases the potential of the SCAPM (Shariah-compliant Capital Asset Pricing Model) as a new alternative in evaluating the performance of Shariah-based stock portfolios. Conversely, the BRI portfolio, which employs the standard formula with Rf as the primary reference for interest rates, does not align well with investment decisions for investors, especially those following Islamic finance principles.

5. CLOSING

5.1 Conclusion

In conclusion, the results of the three portfolio performance tests employing the Treynor, Sharpe, and Jensen indices indicate that BRI, with Bank Indonesia's (RF) interest rates as a proxy and IHSG as a market benchmark, yielded the following results: Treynor = 79.96, Sharpe = 14.43, and Jensen = -44542.45. These values are lower than the performance of the BSI stock portfolio, which utilized the SBIS yield rate as the risk-free proxy and JII 70 as the market benchmark (Rm). For BSI, the results were as follows: Treynor = 82.25, Sharpe = 1.825, and Jensen = 1978.265. A comparison of the Treynor values between the BRI and BSI stock portfolios demonstrates that BSI outperforms BRI.

A higher Treynor value suggests better portfolio performance, provided that the return-to-risk ratio surpasses the systematic risk value (market Treynor). Similarly, a higher Sharpe index value signifies superior portfolio performance. In this context, BRI surpasses BSI. However, according to Jensen, BRI shares yield a negative value, signifying that these shares are underperforming in the market. On the other hand, BSI shares exhibit positive numbers, signifying commendable portfolio performance.

Nevertheless, it's important to note that solely relying on this performance calculation method does not serve as a definitive indicator for investors to determine which shares or portfolios to invest in. There are numerous other competitive portfolio performance calculation methods, and market conditions, which fluctuate, present an ongoing challenge for every investor.

5.2 Suggestion

This research, while providing valuable insights, does have several limitations and inaccuracies in the calculations of performance indices. These imperfections may not accurately reflect the actual performance in the stock or capital market. It is important to acknowledge these shortcomings to ensure a comprehensive understanding of the results. One limitation is the reliance on historical data, which may not capture the dynamic nature of financial markets. Market conditions can change rapidly, and past performance does not guarantee future results. Additionally, the use of proxies for certain variables, such as the risk-free rate, may introduce errors into the calculations..

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