SHARIA STOCK INDEX AND POST COVID-19 PANDEMIC: WHAT DOES THE CAPM MODEL TELL US?

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Abstract: The aftermath of COVID-19 pandemic has had a major impact on the economic sector, especially the capital market. However, the process of economic recovery took place quite quickly, entering 2021. This study aims to investigate the performance of the Jakarta Islamic Index (JII) stock index, which has not recovered throughout 2021. This research is quantitative descriptive with a sample of 30 stocks listed on the JII index. The analysis technique uses the CAPM model to evaluate and classify stocks on the JII index. The study results show that Islamic stocks listed on the JII index have a negative expected performance throughout 2021. This finding makes the JII index stocks are not recommended as a stock portfolio. The CAPM model also identifies 20 JII index stocks as efficient short-term investments during economic recovery. Furthermore, Islamic stocks tend to be riskier during the economic recovery period after the COVID-19 pandemic.

Keywords: sharia stocks, economic recovery, CAPM, JII index

Abstrak: *Dampak pandemi covid berpengaruh besar pada sektor ekonomi khususnya pasar modal. Namun, proses pemulihan ekonomi berlangsung cukup cepat memasuki tahun 2021. Studi ini bertujuan untuk menginvestigasi kinerja indeks saham Jakarta Islamic Index (JII) yang belum pulih sepanjang tahun 2021. Penelitian ini bersifat deskriptif kuantitatif dengan sampel 30 saham yang terdaftar pada indeks JII. Teknik analisis menggunakan model CAPM untuk mengevaluasi dan mengklasifikasikan saham-saham pada indeks JII. Hasil penelitian menunjukkan bahwa saham-saham syariah yang terdaftar di indeks JII memiliki kinerja ekspektasian negatif sepanjang tahun 2021. Temuan ini membuat saham-saham indeks JII tidak cocok dijadikan portofolio saham. Model CAPM juga mengidentifikasikan bahwa 20 saham indeks JII sebagai saham efisien sehingga dapat menjadi pilihan investasi jangka pendek selama periode pemulihan ekonomi. Lebih lanjut lagi, saham syariah cenderung lebih berisiko di masa pemulihan ekonomi pasca pandemi COVID-19.*

Kata kunci: saham syariah, pemulihan ekonomi, CAPM, indeks JII

INTRODUCTION

COVID-19 pandemic had a major impact on Indonesian economy, specifically on the capital market sector. During 2020, the Jakarta Composite Index (JCI) experienced a deep correction to the point of 4,200. However, entering 2021, the JCI value showed signs of economic recovery by returning to the point of 6,000. This was also supported by positive economic growth throughout 2021. The improved handling of the COVID-19 crisis and the free vaccination program for the public are a good signal for investors to return to invest in Indonesia.

Throughout 2021, the JCI increased by 10.08% year to date (highest at 4.7% per day on October 1, 2021). The higher return was due to the increase in aggregate shares on the Indonesia Stock Exchange (IDX). However, the Jakarta Islamic Index (JII index), one of the IDX indices, experienced a downward trend throughout 2021. The JII index indicated a recovery in early 2021 in line with the JCI. Still, throughout the year until the fourth quarter, the JII index fell to 10.85%, which is inversely proportional to the JCI index. This anomaly of the JII index shows a difference in return expectations for sharia stocks and deserves to be investigated further.

When we invest, return and risk are the two main objects that are considered by investors (Irfan, 2020). The relationship between the two is linear. The higher the risk, the higher the expected return. On the other hand, investors tend to get low expected returns on instruments with low risk (Jogiyanto, 2017). In the scope of investment, the expected return is different from the realized return. Portfolio theory usually makes expected returns as input and output models. The perfect model is a model that produces the same value between realized returns and expected returns.

Rationally, the recovery period is expected to give the higher returns. Various methods can define the determination of expected return. One of them is the Capital Asset Pricing Model (CAPM). The CAPM model measures expected returns based on a linear relationship between systematic risk and expected return{Citation}. All risky assets are on the market portfolio line in the CAPM concept because all investors own the portfolio. One of the CAPM model's main features is that each risky asset will be valued based on a beta metric called beta (β). Beta is a coefficient attached to a specific risky asset that shows the size of the variance of the relationship between the returns and risks of that asset and the returns and risks of the market portfolio. The use of CAPM to measure risk-based expected return has more accurate results than other models (Dotulong et al., 2020)

When linked to the previous statement, the perfect model is a model that produces the same value between realized returns and expected returns. In the CAPM model, investment returns are classified into two factors: unique returns (α) and returns on market beta returns (β . Rm). Unique returns are specific returns on micro-events that affect only certain companies, such as rights issues, mergers, fires, and others. Meanwhile, the return on market beta returns is the sensitivity of a security's return to market returns (Jogiyanto, 2017). However, calculating the expected returns from the CAPM model involves the residual error factor (ε) in calculating the actual realized returns value. The greater the residual error, the wider the difference between the return calculation based on the CAPM model and the realized returns.

Research using the CAPM model is generally used to determine efficient stocks in an index and a certain period range. Jumarni, (2019) researched the LQ-45 index for 5 years. The results showed that 34 out of 68 stocks were categorized as efficient stocks. Investors can form a portfolio based on these 34 efficient stocks. The use of CAPM can provide optimal portfolio returns with minimal risk. Kristina, (2018) found that 11 out of 30 stocks are efficient securities in food sector companies. The CAPM model is a more empirically accurate model in predicting returns and explaining phenomena (Dotulong et al., 2020; Indra, 2018; Muhammad & Maulana, 2020)

This research will provide at least two contributions. First, this study can describe the contradictory performance of the JII index against the main index of the JCI. Second, this research can be empirical evidence of using the CAPM model during the economic recovery period after the COVID-19 pandemic. The findings of this study will assist investors in making investment decisions.

Finally, this article is written based on the following structure. Section 2 will present sample and population data, research indicators, and research methods to interpret CAPM calculation to JII stocks during the economic recovery period. Section 3 describes the findings and results for answering the research question. The last section, section 4, presents the conclusions of this study.

LITERATURE REVIEW

CAPM Model

The Capital Asset Pricing Model (CAPM) is a model developed by Sharpe (1964) that describes the relationship between expected returns and risk for assets, such as stocks. The model suggests that the expected return of an asset can be determined by considering two factors: the asset's risk-free rate of return and its beta, which measures the asset's volatility relative to the overall market. The capital asset pricing model (CAPM) is based on the portfolio theory developed by Markowitz (1959).

The Capital Asset Pricing Model (CAPM) is based on the idea that the expected return of an investment is equal to the risk-free rate of return plus a premium based on the volatility (risk) of the investment. The CAPM is often used to price assets and to evaluate the performance of investment portfolios. One of the key assumptions of the CAPM is that investors are risk-averse, meaning that they prefer investments with lower levels of risk. This assumption is based on the idea that investors are willing to accept a lower return on an investment in order to avoid the uncertainty of higher-risk investments.

The Capital Asset Pricing Model (CAPM) is based on several key assumptions (Jogiyanto, 2017), including:
1. Investors are rational and seek to maximize their expected returns while minimizing their risk.
2. Investors have access to the same information and have the same expectations about future returns.
3. All investors can borrow and lend at the same risk-free rate.
4. Markets are efficient and all assets are priced correctly.

5. Trading is costless and there are no taxes or transaction costs.

Al-Afeef, (2017) studied the ability of CAPM model on Amazon Company listed in S&P 500. The study found statistically significant impact of beta stocks on the US stock market return. Investors can apply CAPM model to assess their decision to build efficient portfolio. Pacho, (2014) with his literature review's study also support the use of CAPM and recommend to use CAPM as management toolkit to project profitability.

Overall, the literature survey suggests that the CAPM remains a widely used and important model in finance, but that there are ongoing debates about its assumptions and accuracy. It is important for investors and analysts to be aware of the limitations of the model and to consider other approaches to asset pricing and portfolio management.

JII Index

The Jakarta Islamic Index (JII) is a stock market index that tracks the performance of Shariah-compliant stocks listed on the Indonesia Stock Exchange (IDX). The JII is designed to provide investors with a benchmark for evaluating the performance of Shariah-compliant stocks and to encourage the development of the Islamic finance industry in Indonesia.

The index includes companies that have been screened and selected by a Shariah Supervisory Board to ensure compliance with Islamic principles, such as the prohibition of interest-based activities and the promotion of ethical and socially responsible business practices. The JII is calculated using a modified market capitalization-weighted method, with a base value of 100 as of December 31, 2000.

The JII is considered one of the leading Islamic indices in Southeast Asia, and is widely used by investors and market participants as a benchmark for the performance of Shariah-compliant stocks in Indonesia. The index is reviewed and rebalanced on a semi-annual basis to ensure that it continues to accurately reflect the performance of the Shariah-compliant stock market in Indonesia. In addition to providing investors with a benchmark for evaluating the performance of Shariah-compliant stocks, the JII also serves as a tool for promoting the development of the Islamic finance industry in Indonesia and increasing awareness of Islamic finance among investors and market participants.

RESEARCH METHODOLOGY

This research is a quantitative descriptive study. The objective of this study is to describe the phenomenon of the decline in the JII index which is contradictory to the main index of the JCI using the CAPM model.

This research objective is stocks listed on the JII index in 2021. Based on the IDX publication in December 2020, 30 stocks are included in the JII index. The data source of this research comes from stock price data and index value from Google Finance. The time period used is exchange days throughout 2021, of which there are 244 trading days. Individual stock returns and market returns are calculated on a daily basis. The market return used is the JII index market return. Determination of the beta of each stock is calculated manually. The following is the calculation flow for the CAPM model in this study:

a. Collecting stock data listed on the JII index during 2021. The stock data collected is the closing price of shares.

b. Calculating individual stock returns based on daily historical returns with the following formula:

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

c. Calculating market return to JII index with the following formula:

$$R_m = \frac{JII_t - JII_{t-1}}{JII_{t-1}}$$

d. Calculating the beta of individual stocks with the following formula:

$$\beta = \sum_{t-1}^{N} \frac{(R_i - \overline{R_\iota})(R_m - \overline{R_m})}{(R_m - \overline{R_m})}$$

e. Calculating risk free return (R_f) using the average rate of return for government sukuk of the Republic of Indonesia throughout 2021.

f. Calculating the expected return with the following formula:

$$E(R_i) = R_f + \beta_i \big[E(R_m) - R_f \big]$$

Expected return will be calculated using the result of beta from market return JII.

The assessment of efficient or inefficient stocks will be based on comparing the realized returns throughout 2021 and the expected returns generated from the CAPM model. If the expected return of the CAPM model is lower than the realized return of the stock, the stock is categorized as efficient.

RESULT AND DISCUSSION

The JII index consists of 30 of the most liquid sharia stocks in a certain period. Based on data sources for 30 daily closing prices on 244 trading days, the average daily return is -0.03% with a standard deviation of 0.11%. A negative return value indicates the realized return obtained on each JII index is -0.03% for each day. A standard deviation value greater than the average indicates a wide and varied distribution of daily return data. MDKA shares have the largest average daily return of 0.22% (per day) while UNVR shares have the smallest average return with a negative return of -0.22% (per day).

There are 20 stocks with an average negative return of 30 stocks listed on the JII index. This is in line with the negative index trend originating from index members. The following provides descriptive statistics for the daily average return variable.

Table 1. Descriptive Statistics of the Individual Stocks Return

N	30
Mean	-0,03%
Maximum	0,22%
Minimum	-0,22%
Standard Deviation	0,11%
Negative Return	20 stocks
Positive Return	10 stocks

Market return is the rate of return based on a particular stock index. The object of this research uses the Jakarta Islamic Index (JII) to measure the market return. Market returns using the average daily method. From 244 trading days, the JII index movement showed an average of -0.05%. A negative value indicates a cumulative downward trend. This value also indicates a difference with the JCI index, which produces an average daily return of +0.03% in the same period. The difference in returns between these indices directly indicates the pace of sectoral recovery. JII shares have a slower rate of return than other indices. It can be seen in table 2 that the JII index has the lowest average daily return compared to other IDX indices.

Table 2. Comparison of Selected IDX Market Return

Indices	Daily Avg. Return
IHSG	0,03%
ISSI	0,02%
LQ45	-0,01%
IDX30	-0,01%
KOMPAS100	-0,02%
IDX80	-0,02%
JII	-0,03%

Source: Based on the author's calculation on google finance stock data

The risk-free return (Rf) is calculated using the applicable risk-free investment return in the same period. The shares' object is sharia shares, so the relevant investment instrument for comparison is the state sukuk instrument. In the 2021 period, there are two retail sukuk in circulation whose the state guarantees return and principal 100% to meet the requirements of a risk-free investment instrument. SR014 and SR015 are circulating throughout 2021 with a respective return of 5.47% and 5.10%, then the Rf value used in this study is 5.28% or equivalent to 0.014% per day.

Beta value can be estimated by collecting the historical return value of a security with market returns in a certain period. This study uses a period of 1 year with 244 trading days. The resulting beta values for the research object can be seen in table 3 below.

Table 3. Individual Beta Stocks Value

| No.	Stock ID	Beta		No.	Stock ID	Beta		No.	Stock ID	Beta
1	IDX:ADRO	1.158		11	IDX:INKP	1.681		21	IDX:PTPP	1.406
2	IDX:AKRA	0.840		12	IDX:INTP	0.925		22	IDX:PWON	1.022
3	IDX:ANTM	1.824		13	IDX:JPFA	0.889		23	IDX:SCMA	0.809
4	IDX:BRPT	1.565		14	IDX:KAEF	0.838		24	IDX:SMGR	1.143
5	IDX:BTPS	0.987		15	IDX:KLBF	0.534		25	IDX:TKIM	1.783
6	IDX:CPIN	0.900		16	IDX:MDKA	1.155		26	IDX:TLKM	1.041
7	IDX:EXCL	0.952		17	IDX:MIKA	0.343		27	IDX:TPIA	0.808
8	IDX:ICBP	0.572		18	IDX:MNCN	0.918		28	IDX:UNTR	0.982
9	IDX:INCO	1.380		19	IDX:PGAS	1.337		29	IDX:UNVR	0.746
10	IDX:INDF	0.668		20	IDX:PTBA	1.031		30	IDX:WIKA	1.353

The average beta value is 1.05, so in general 30 stocks have a market beta that is not too different from the movement of the market index. ANTM shares obtained the highest beta with a value of 1.824, and the lowest beta by MIKA shares with a value of 0.343. A beta value

greater than 1 indicates the stock has a higher risk and tends to fluctuate. (Jumarni, 2019) stated that the smaller the beta value, the smaller the risk of the stock.

Expected Return Calculation

The expected return can be calculated in the CAPM model by combining risk-free returns, beta, and market returns. The expected return of each security can be estimated based on the securities market line (SML). The securities market line shows the trade-off between risk and expected return for individual securities (Jogiyanto, 2017). Figure 1 shows the expected return data based on the JII index CAPM model in 2021.

Based on Figure 1, the market line shows a negative gradient. The highest return point is at a value of 0.014% per day which is a risk-free return value. Investors who invest in the JII index stock portfolio will gain relative daily losses. Based on the CAPM model, the expected return on investment in the JII index is not commensurate with the risk accepted. Investors are better off investing in risk-free products that produce a higher average daily return in this condition.
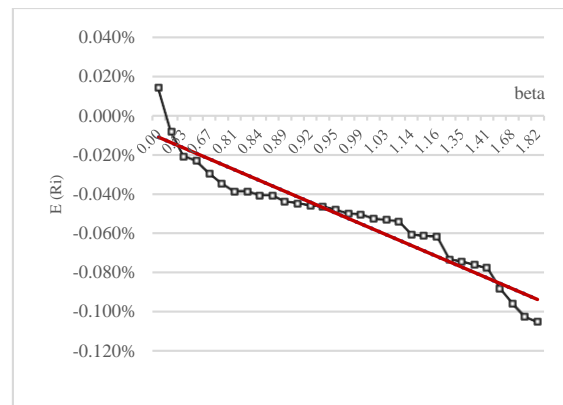
Figure 1. Security Market Line
Source: Based on author's calculation

An interesting finding from this study is that during the recovery period, the JII stock index could not provide the expected return expected by investors. The JII index needs more time to recover. JII shares are difficult to recover because economic recovery usually begins with the improvement of the financial sector first. The JII index does not own any financial stocks. Whereas in the revival of the JCI in 2021, five of the ten stocks with the largest market capitalization were filled by bank stocks. The difficulty of JII stock recovery during 2021 was also due to the deep decline in the 2020 pandemic period. The JII index eroded by -7.85% compared to the JCI which was 'only' -5.09%.

Priyono, (2021) found that daily confirmed cases of COVID-19 had a significant negative effect on sharia stock prices. If seen in Figure 2, it can be seen that 2021 is the highest peak of daily cases. In addition, according to the findings of Saleem et al., (2021), Islamic stocks tend to experience volatility (risky) for a more extended period even during the post-COVID-19 pandemic.

Figure 2. Daily Confirmed Cases Graph
Source: https://covid19.go.id accessed in January 28, 2022

Efficient Stock Grouping

Although based on the CAPM model, the stocks on the JII index have negative expected returns, since in fact there are 10 stocks that produce positive daily realized returns. According to Jumarni, (2019), Hasan et al., (2019), and (Ferrari, 2018), efficient stocks can be identified in the CAPM model by comparing realized returns in the same period with the results of calculating expected returns on the CAPM model. In this study, the comparison resulted in 20 stocks with higher realized returns. Table 4 contains the classification of efficient securities based on the CAPM model.

Table 4. Efficient and Inefficient Stocks List

No.	Stock	Ri	E(Ri)	Desc.
1	ADRO	0.21%	-0.06%	Eff.
2	AKRA	0.12%	-0.04%	Eff.
3	ANTM	0.07%	-0.11%	Eff.
4	BRPT	-0.06%	-0.09%	Eff.
5	BTPS	0.01%	-0.05%	Eff.
6	CPIN	-0.01%	-0.04%	Eff.
7	EXCL	0.07%	-0.05%	Eff.
8	ICBP	-0.03%	-0.02%	Inef.
9	INCO	-0.03%	-0.08%	Eff.
10	INDF	-0.02%	-0.03%	Eff.
11	INKP	-0.08%	-0.10%	Eff.
12	INTP	-0.05%	-0.05%	Eff.
13	JPFA	0.10%	-0.04%	Eff.
14	KAEF	-0.15%	-0.04%	Inef.
15	KLBF	0.06%	-0.02%	Eff.
16	MDKA	0.22%	-0.06%	Eff.
17	MIKA	-0.06%	-0.01%	Inef.
18	MNCN	-0.08%	-0.05%	Inef.
19	PGAS	-0.01%	-0.07%	Eff.
20	PTBA	0.01%	-0.05%	Eff.
21	PTPP	-0.21%	-0.08%	Inef.
22	PWON	-0.02%	-0.05%	Eff.
23	SCMA	-0.10%	-0.04%	Inef.
24	SMGR	-0.19%	-0.06%	Inef.
25	TKIM	-0.08%	-0.10%	Eff.

26	TLKM	0.08%	-0.05%	Eff.
27	TPIA	-0.07%	-0.04%	Inef.
28	UNTR	-0.05%	-0.05%	Eff.
29	UNVR	-0.22%	-0.03%	Inef.
30	WIKA	-0.20%	-0.07%	Inef.

The CAPM model tends to produce negative returns on the object of this research because it has a risk-free input return that has a contrast difference with negative market returns. So, JII index stocks can still be an investment choice for short-term trading even in a downward trend. Efficient stocks tend to be chosen to reduce risk. However, based on the explanation of the findings of this previous study, it is highly discouraged to form a portfolio based on the stocks listed on the JII index as long as COVID-19 cases have not decreased.

CONCLUSION

This study aims to provide empirical evidence related to the contradictory performance of Islamic stocks during the economic recovery post-pandemic period. By using shares listed on the JII index, there are 30 shares traded during 244 exchange days. To obtain an empirical explanation, this study uses the CAPM model to analyze the phenomenon of Islamic stock price trends in the post-pandemic period.

Based on the results of calculations and simulations of the CAPM model, there is a linear relationship between the beta value and the expected rate of return. The resulting linear relationship is negative, meaning that the higher the beta, the smaller the expected return. The CAPM model can also help determine efficient stocks. Of the 30 stocks that become the model input, 20 stocks are categorized as efficient. Using the CAPM method, efficient stocks can be used as short-term investment options because they still offer a higher return than the expected return.

Based on the results of this research we can recommend a valuable consideration for investors. The CAPM model indicates that JII index stocks are not recommended to be used as stock portfolio in the short-term (1-2 years) post-pandemic recovery period. JII shares, all of the sharia category, will take longer to recover. For JII stock member, all companies must take a

For further research, it can proceed the objectives of this research for a more extended period. This research also has implications for investors and regulators. Regulators need to provide more signals that contain confidence in the economic recovery, especially in Islamic stocks. Second, investors need to be more concerned and careful in forming a healthy portfolio in the face of post-pandemic uncertainty.

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