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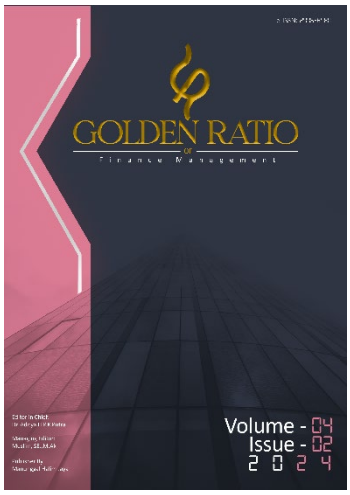

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FINANCE | RESEARCH ARTICLE

Analysis of the Application of the Capital Asset Pricing Model (CAPM) Method in Making Islamic Stock Investment Decisions

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Abstract: This study aims to analyze the application of the Capital Asset Pricing Model (CAPM) in sharia stock investment decision making, especially JII70. The research design used is a quantitative approach. The type of research used is descriptive research. This research leads to the shares of companies included in the Jakarta Islamic Index 70 (JII70) on the Indonesia Stock Exchange. The population in this study were all shares of companies listed on the Jakarta Islamic Index 70 (JII70) in the period January 2019-January 2024. The research sample was 32 JII70 stock issuers who consistently entered JII70 during the period January 2019-January 2024. The results showed that there were 14 issuers of JII70 stocks in the efficient category because they had individual stock returns greater than the expected rate of return [Ri > E(Ri)] with positive individual returns.

Keywords: CAPM, JII70, Stock Investment Decisions.

JEL Classification Code: G12, G11, G15, G20, Z12

1. INTRODUCTION

In the era of the 4.0 revolution, many Indonesians have a considerable interest in investment. One of the important components of economic growth and development towards a more advanced direction that has an impact on the welfare of society is investment. Thus, the Islamic capital market in Indonesia has very good prospects. One of the factors that support the growth of the Islamic capital market in Indonesia is financial technology that facilitates quick and easy access for investors. The Indonesia Stock Exchange said that currently there are 652 sharia stocks listed in the Sharia Securities List as of June 2024. (Financial Services Authority, 2024). According to data from the Indonesia Stock Exchange (2018), sharia stocks are defined as stock securities that do not violate sharia regulations in the capital market. In the context of sharia stocks, the term "stocks" refers to the general definition of stocks regulated by the law and other OJK regulations. In addition, an Islamic stock index is a statistical measure that shows the price movement of a number of Islamic stocks selected according to certain standards. To select sharia stocks, the Financial Services Authority (OJK) publishes the List of Sharia Securities (DES). The IDX only uses the DES as a reference for selecting Islamic stocks on the Indonesia Stock Exchange.

The Jakarta Islamic Index 70 (JII70) is one of the most well-known Islamic stock price indices in Indonesia due to the high public interest in investing in Islamic stocks. The JII70 is an Islamic stock index launched by the Indonesia Stock Exchange on May 17, 2018 and consists of only 70 of the most liquid Islamic stocks listed on the IDX. Most of the stocks in JII70 are in blue chip or large capitalization on the Indonesia Stock Exchange, which are considered safe, and attract many investors to invest. Blue chip companies are also considered to have solid fundamentals and are expected to generate significant profits. Therefore, investors must do a smart analysis before buying stocks. The way that investors can use in determining investment in the capital market is with equilibrium models in determining the level of return and risk. The analysis is carried out to determine the various risks and levels of return that will be received, because stocks are financial instruments that are highly variable and volatile. (Putra & Dana, 2020). In addition, the analysis of stocks is carried out to adjust

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the ability of investors to buy shares or buy shares based on their preferences. The analysis will be used as a reference material to determine an investor's investment decision in fulfilling the achievement of investment goals, especially for novice investors.

According to Tambunan (2020) investors in this case should also compare average prices over various times to determine the strength and weakness of the market. A bull market occurs if the average price or index shows an upward price trend, but a bear market occurs if it shows a downward price trend. In addition, as the average global stock exchange is in decline, investors should be cautious when creating a diversified and holistic portfolio. (Tambunan, 2020). Therefore, stocks of companies from other sectors can make up for investors' losses and even generate good returns. To determine the ideal level of risk and return, various measurement tools are created. The Capital Asset Pricing Model (CAPM), originally developed by Sharpe, 1964, and Lintner, 1965, is one such tool. This method links a measure of systematic risk to expected return. The main advantage of CAPM is the ability to estimate the cost of equity that can be generated by the model, which makes it an important tool for portfolio performance assessment, portfolio diversification, investment assessment, and portfolio strategy selection (Rossi, 2016) in Turlinda and Hasnawati (2021).

One model that can be used to relate the expected return of a risky asset to its risk under balanced market conditions is the Capital Asset Pricing Model (CAPM). This model was developed by Markowitz's portfolio theory and adds new terms: systematic risk and specific/unsystematic risk. According to Markowitz's model, each investor is assumed to diversify their portfolio and choose an ideal portfolio based on their preferences for return and risk at points where their portfolio falls along the efficient portfolio line. It is expected that the CAPM helps investors describe complex market conditions, reduce investment risk, and estimate the amount of return earned. CAPM also aims to assist them in making stock selections and minimizing risky investments. In addition, CAPM can help investors determine the risk of a non-diversifiable portfolio and compare it with the predicted rate of return. The relationship between the stated rate of return and the level of risk is positive and linear. The variable "Beta" indicates the level of risk, which is a measure of stock sensitivity in CAPM. The larger the stock, the greater the risk it contains. The market rate of return used is the average rate of return of investment opportunities in the capital market (market index). Thus, the research title developed is Analysis of the Application of the Capital Asset Pricing Model (CAPM) Method in Sharia Stock Investment Decision Making.

2. RESEARCH METHOD AND MATERIALS

The research design used is a quantitative approach. This quantitative approach also shows the determination of the optimal portfolio model with data processed using the formula from the Capital Asset Pricing Model (CAPM). The type of research used is descriptive research. This descriptive research review is intended to find out and analyze secondary data processed in Microsoft excel to get efficient and inefficient stocks on the Jakarta Islamic Index 70 (JII70) for the period January 2019-January 2024. This research leads to the shares of companies included in the Jakarta Islamic Index 70 (JII70) on the Indonesia Stock Exchange. The related data can be taken on the official website of the Indonesia Stock Exchange or by visiting the Indonesia Stock Exchange office in Makassar City which is located at Jl. DR. Ratulangi No. 124, Mario, Kec. Mariso, Makassar City, South Sulawesi, 90125. Data can also be obtained by accessing Yahoo Finance and Bank Indonesia sites. The population in this study were all shares of companies listed on the Jakarta Islamic Index 70 (JII70) in the period January 2019-January 2024. This study took samples with purposive sampling technique. Given the research needs, the researchers determined the considerations that were used as sample criteria, namely companies whose shares were consistently included in the Jakarta Islamic Index 70 (JII70) January 2019-January 2024. Thus, there are 32 stock issuers that consistently entered the JII70 during the period January 2019-January 2024. This study uses quantitative data, which consists of financial data and can be calculated with counting units. The data source in this study is secondary data. The secondary data referred to in this study are monthly closing stock price data for each stock issuer in the Jakarta Islamic Index 70 (JII70) for the period January 2019-January 2024, the monthly closing value of the composite stock price index (JCI), and monthly BI-7 Day Reverse Repo Rate (BI7DRR)

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or BI Rate data as a reference for risk free assets (risk free rate) which can be accessed through the Bank Indonesia website.

CAPM calculation is done by using Microsoft Excel program. Analysis of the application of the CAPM method in determining investment is carried out in a way (Hasan et al., 2019):

1. Collect stock data, namely *closing price* data.
2. Calculate the profit rate of each stock.

$$Ri = \frac{Pt - Pt - 1}{Pt - 1}$$

3. Calculate the market rate of return.

$$Rm = \frac{IHSG_t - IHSGt - 1}{IHSGt - 1}$$

4. Calculating Beta of the stock

$$\beta = \sum_{t-1}^{N} \frac{(Ri - \bar{R}i)(Rm - \bar{R}m)}{(Rm - \bar{R}m)}$$

5. Calculating the risk-free rate of return (Rf) with monthly BI-7 Day Reverse Repo Rate (BI7DRR) or BI Rate data.
6. Calculating the expected rate of return according to CAPM
   E(Ri) = Rf + βi [E(Rm)-Rf].
7. Stock Classification as an Investment Decision
8. Depiction of Security Market Line (SML)
   The Security Market Line (SML) is a graphical depiction of the CAPM model.

3. RESULTS AND DISCUSSION

3.1 Data Analysis Results

Table. 1. Data Analysis Results

No	Kode	Ri	Rf	Beta	Rm	E(Ri)
1	ACES	-0.46%		0.351888282		3.14%
2	ADRO	1.92%		1.350349616		-1.19%
3	AKRA	1.66%		1.80794002		-3.17%
4	ANTM	2.36%		2.653172766		-6.83%
5	BMIR	0.95%		1.791271616		-3.10%
6	CPIN	-0.45%		0.374172292		3.04%
7	CTRA	1.20%		2.137594236		-4.60%
8	ERAA	1.12%		1.885754616		-3.51%
9	EXCL	0.80%		1.125692483		-0.21%
10	ICBP	0.42%		0.022334016		4.76%
11	INCO	1.05%		1.848402945		-3.34%
12	INDF	-0.07%	4,66%	0.212138048	0,33%	3.74%
13	INTP	-0.80%		1.061354039		0.07%
14	ISAT	4.81%		2.366315197		-5.59%
15	ITMG	1.53%		1.848996862		-3.35%
16	JPFA	-0.41%		1.193858096		-0.51%
17	KLBF	0.17%		0.467626861		2.64%
18	LPPF	0.16%		2.041725145		-4.18%
19	MAPI	2.29%		1.75453674		-2.94%
20	MIKA	1.23%		0.268429751		3.50%
21	MNCN	-0.28%		1.476449319		-1.73%
22	MYOR	0.09%		0.033820238		4.52%
23	PTBA	-0.29%		1.012003842		0.28%

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No	Kode	Ri	Rf	Beta	Rm	E(Ri)
24	PTPP	-0.92%		3.156712286		-9.01%
25	PWON	-0.11%		1.778092827		-3.04%
26	SCMA	-0.64%		1.803803069		-3.15%
27	SIDO	0.67%		0.187831914		3.85%
28	SMRA	0.42%		2.118884446		-4.52%
29	TLKM	0.28%	4,66%	0.973179787	0,33%	0.45%
30	TPIA	3.45%		1.431655033		-1.54%
31	UNTR	0.22%		0.908392884		0.73%
32	UNVR	-1.52%		0.150457723		4.01%

Source: Data Processed (2024)

3.2 Individual Stock Rate of Return (Ri) for the Period January 2019-January 2024

Table 1 shows the level of individual stock returns (Ri) on 32 JII70 stocks that became the research sample, namely there are 21 shares of companies that have positive returns, namely [(Ri) > 0] and there are 11 shares of companies that have negative returns, namely [(Ri) < 0]. PT Indosat Ooredoo Hutchison Tbk (ISAT) has the largest average return of 4.81%. While PT Unilever Indonesia Tbk. (UNVR) has the smallest average rate of return, namely -1.52%.

3.3 Market Rate of Return (Rm) Period January 2019-January 2024

The rate of return based on the increase in the composite stock price index is called the market rate of return. JCI was chosen because it can describe all stock trades listed on the IDX. In table 1, the average market rate of return in the January 2019-January 2024 period was 0.331%. The highest market return was in November 2020 at 0.094417. Thus, investors will benefit from the high market rate of return on their investment returns. The lowest rate of return is in March 2020 amounting to -0.16758. This indicates that in March 2020 the JCI experienced the lowest value which could make investors suffer losses.

3.4 Risk-free Rate of Return (Rf)

The calculation of the risk-free rate of return during the January 2019-January 2024 period uses data on the BI-7 Day Reverse Repo Rate (BI7DRR) benchmark interest rate, but starting December 21, 2023, Bank Indonesia uses the name BI-Rate as a policy interest rate replacing BI7DRR. Based on table 1, the average Bank Indonesia benchmark interest rate during the January 2019-January 2024 period was 4.66%.

3.5 Individual Stock Systematic Risk (β)

In the CAPM method, investors should consider Beta, which is the systematic risk of a stock, to assess the relationship between the stock's rate of return and the market rate of return. Based on table 1, there are 21 stock issuers that have a Beta value> 1, meaning that these stocks have a rate of change above the market or it can be said that these stocks tend to rise or fall higher than the market price.

3.6 Expected rate of return E(Ri)

Of the 32 companies included in the research sample, PT Indofood CBP Sukses Makmur Tbk (ICBP) has the highest expected return of 4.76% and PT PP (Persero) Tbk (PTPP) has the lowest expected return of -9.01%.

3.7 Stock Classification as an Investment Decision

Based on the calculations that have been carried out from 32 issuers of JII70 stocks that became the research sample, there are 14 efficient stocks because they have individual stock returns greater

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than the expected rate of return [Ri > E(Ri)] with positive individual returns. In addition, there are 18 stocks that are inefficient because they have a smaller individual stock return than the expected rate of return [Ri < E(Ri)] and a negative individual return.

Table 2. Classification of Shares

No	Code	Category	No	Code	Category
1	ACES	Inefficient	17	KLBF	Inefficient
2	ADRO	Efficient	18	LPPF	Efficient
3	AKRA	Efficient	19	MAPI	Efficient
4	ANTM	Efficient	20	MIKA	Inefficient
5	BMTR	Efficient	21	MNCN	Inefficient
6	CPIN	Inefficient	22	MYOR	Inefficient
7	CTRA	Efficient	23	PTBA	Inefficient
8	ERAA	Efficient	24	PTPP	Inefficient
9	EXCL	Efficient	25	PWON	Inefficient
10	ICBP	Inefficient	26	SCMA	Inefficient
11	INCO	Efficient	27	SIDO	Inefficient
12	INDF	Inefficient	28	SMRA	Efficient
13	INTP	Inefficient	29	TLKM	Inefficient
14	ISAT	Efficient	30	TPIA	Efficient
15	ITMG	Efficient	31	UNTR	Inefficient
16	JPFA	Inefficient	32	UNVR	Inefficient

Source: Data Processed (2024)

The decision on efficient stocks is to take or buy shares (underpriced). The decision on inefficient stocks is to sell shares before the stock price drops (overpriced). This CAPM model is one method that is good or feasible to use as a basis for making investment decisions. This statement is reinforced by the research conducted by Crisdianto, (2016) that the CAPM method has a low standard deviation compared to the Single Index Model. In addition, CAPM is a model that can simply describe or predict complex market realities. CAPM can help investors understand the complex relationship between return and risk. (Tandelilin, 2010).

4. CONCLUSION

The conclusion of this study is that there are 14 stocks with efficient categories, namely, ADRO, AKRA, ANTM, BMTR, CTRA, ERAA, EXCL, INCO, ISAT, ITMG, LPPF, MAPI, SMRA, and TPIA so they are worth buying and investing in. This research only focuses on one index, namely JII70. This research can be used as a reference for investors in making investment decisions, especially Islamic stocks. The suggestion for further research is to analyze other stock indices. In addition, CAPM also has very idealistic assumptions, the use of limited historical data, and does not consider unsystematic risk. Therefore, future research is expected to use other analytical methods as a comparison to the CAPM method so that investors have more references in making their investment decisions.

REFERENCES

Amalia, Naili. 2018. Formation of Optimal Stock Portfolios Using the Sim Model (Single Index Model), and Capm (Capital Asset Pricing Model). Publication Manuscript: Management Study Program, Faculty of Economics and Business, Universitas Muhammadiyah Surakarta.

Azizah, Siti, Tika Ifrida Takayasa, and Muhammad Nuqlir Bariklana. (2019). Investment Risk Management in the Compilation of Sharia Liquid Stock Portfolios Based on Capital Asset Pricing Model (CAPM) Analysis of Indonesian Stock Case Studies for the 2009-2013 Period. Statistics, 7(2), 157-166

Crisdianto, O. V. (2016). Analysis Of Capital Asset Pricing Model (CAPM) Application As A Basis

https://doi.org/10.52970/grfm.v4i2.635

Website: https://goldenratio.id/index.php/grfm ISSN [Online]: 27766780

For Investment Decision Making (Study on Banking Stocks Listed on the IDX 2013-2014 Period).

Fahmi, I. (2018). Introduction to the Capital Market. Alfabeta.

Hartono, Jogiyanto. (2014). Portfolio Theory with Excel. Jakarta: Salemba Empat.

Hartono, J. (2017). Portfolio Theory and Investment Analysis (11th ed.). Yogyakarta: BPFE.

Hasan, N., Pelleng, F. A. O., & Mangindaan, J. V. (2019). Capital Asset Pricing Model (CAPM) Analysis as a Basis for Stock Investing Decisions (Study on the Business-27 Index on the Indonesia Stock Exchange). Journal of Business Administration, 8(1), 36-43.

Hendrawan, Bambang. (2010). Empirically Testing the Capital Asset Pricing Model (CAPM) Against the Kompas 100 (K-100) Stock Group.Journal of Integration 2(1). 10-17.

http://eprints.dinus.ac.id/. Beta Portfolio. Accessed on April 10, 2021 from http://eprints.dinus.ac.id/14555/1/[Material]_9._Capital_Asset_Pricing_Model_-_Arbitrage_Pricing_Theory.pdf.

Maryanti, Lilis, et al. (2018). Capital Asset Pricing Model (CAPM) & Arbitrage Pricing Theory (APT) Paper. Accessed on April 10, 2021, from https://pdfcoffee.com/qdownload/5-capm-amp-apt-pdf-free.html.

Muslim, A. (2020). Return and Risk Comparative Analysis in the Formation of Optimal Share Portfolio with Random Model, Markowitz Model, and Single Index Model. Wise Scientific Magazine, 17(2), 184-203. https://doi.org/10.31334/bijak.v17i2.896

Financial Services Authority. (2011). Investment Management. https://www.ojk.go.id/id/kanal/pasar-modal/Pages/Pengelolaan-Investasi.aspx.

Financial Services Authority. (2024). Sharia Stock Statistics - June 2024. https://ojk.go.id/id/kanal/syariah/data-dan-statistik/saham-syariah/Pages/Statistik-Saham-Syariah---Juni-2024.aspx

Pasha, A. C. (2019). Capital Market Function and Role in National Economy. Liputan6.Com. https://www.liputan6.com/citizen6/read/3921829/fungsi-pasar-modal-dan-peran-dalam-perekonomian-nasional

Pattiruhu, Sibarandus (2020). Investment Analysis and Portfolio Theory Paper. Accessed on April 9, 2021, from https://xdocs.cz/download/ibu-icha-tugas-capm-2-qoedp4w3v0n6?hash=d9d96204f8348cbf23ad8a50183c2b8d.

Putra, I. K. A. A. S., & Dana, I. M. (2020). Study of Optimal Portfolio Performance Comparison: Single Index Model and Markowitz Model on LQ45 Stocks in Indonesia Stock Exchange. 4(12), 237-244.

Saputra, Wildan Deny, et al. (2015). The Use of the Capital Asset Pricing Model (Capm) Method in Determining Efficient Stocks (Study on Shares of Companies Listed in the Kompas100 Index for the Period 2010-2013). Journal of Business Administration (JAB), 25 (1).

Sunaryo, D. (2019). Investment And Portfolio Management. CV. Qiara Media Publisher. https://books.google.co.id/books?id=DtSWDwAAQBAJ

Tambunan, D. (2020). Stock Investment during the COVID-19 Pandemic. Widya Cipta: Journal of Secretarial and Management, 4(2), 117-123. https://doi.org/10.31294/widyacipta.v4i2.8564

Tandelilin, E. (2010). Portfolio and Investment (Theory and Application). Kanisius.

Turlinda, Arly & Hasnawati. (2021). Capital Asset Pricing Model (Capm) and Accumulated / Distribution Line for Determining Efficient Stock Groups. PKN: Journal of Tax and State Finance. 2(2), 71-86.

Yuliansyah, Fikry. (2018). Comparison of Portfolio Formation Using the Tungal Index Method and the Capital Asset Pricing Model (CAPM) Study on Jakarta Islamic Index (JII) Shares for the 2013-2016 Period. Thesis: Department of Management, Faculty of Economics, State Islamic University (UIN) Maulana Malik Ibrahim. Malang.