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Portfolio Design of Smart Beta and Smart Alpha in the Indonesian Stock Market

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Abstract

This study aims to compare smart beta and smart alpha investment strategies in portfolios of stocks that are not consistently included in the LQ-45 index during the period April 2019 to March 2024. In addition, this study also involves the application of active strategies and passive strategies to maximize portfolio performance. Smart beta, which has reached maturity point, is then compared to the smart alpha that emerged as an alternative. Stocks are put into alpha portfolios and beta portfolios to be compared using investment performance measurement indices such as the Sharpe, Treynor, and Jensen indices. The results showed that smart alpha outperformed smart beta, and active strategies were more effective than passive strategies in maximizing returns. Based on these findings, the authors recommend using a smart alpha portfolio with an active strategy. Smart alpha focuses on stocks that have the potential to outperform their expected returns, while active strategies provide flexibility in adjusting the portfolio to market conditions. This research is expected to be an informative reference for investors in making more effective investment decisions with adjusted risks.

Keywords: *Active Strategy, Passive Strategy, Portfolio, Smart Alpha, Smart Beta.*

Introduction

Investing in the stock market is an effort that has many aspects, influenced by various factors that shape market dynamics and investor behavior. One important aspect of stock market investing lies in building a well-diversified portfolio, which aims to achieve optimal returns while effectively managing risk. In the context of the Indonesian capital market, the Indonesia Stock Exchange (IDX) LQ45 index is a reference for investors, consisting of 45 selected stocks that are famous for their liquidity and market capitalization. However, the criteria for inclusion of stocks in this index are very strict, leading to the exclusion and re-inclusion of certain stocks over time. Understanding the dynamics of these excluded stocks and their investment potential presents an exciting avenue for research.

The inclusion of stocks in the index provides certain advantages, such as an increase in stock prices and trading volume. Conversely, stocks that exit the index will face adverse effects after the announcement, thus causing a decline in share prices due to reduced investor confidence. The company's exit signifies a decline in the company's performance, which has the potential to provide bad prospects for the company's future (Bender, Nagori, and Tank 2019; Wilkens 2022). However, the removal of a stock from an index can be viewed positively from another point of view. Stocks that come out often experience price declines, so it is the right moment for investors to buy them. This strategy is generally adopted by anti-trend investors, who take advantage of opportunities to buy when other investors sell. Such behavior must be based on the belief that the company's performance will improve, thus causing stock price appreciation, thus profiting from the price difference between future purchases and sales.

Investors who adopt a contrarian approach require careful consideration in buying stocks that have just been delisted from the index, especially with regard to risk. Although investment risk is inherent in stocks under any circumstances, they will grow even greater as stocks are written off due to their deteriorating performance. Diversification serves to mitigate these risks. Putting together the right portfolio with the right composition and proportion of constituent stocks can minimize risk while generating optimal profits. Since the inception of portfolio theory in 1952 introduced by Harry Markowitz, investment experts have

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continued to devise various methods of portfolio construction (Liu 2022). Single index models, cap-weighted models, smart beta, and Black-Litterman are some of the most popular methods of portfolio formation. Each method focuses on specific stock characteristics, such as volatility, market capitalization, risk, and stock momentum.

Stock characteristics become guidelines in investment decision making. A stock's past performance can describe a stock's future performance. The beta value on a stock indicates the sensitivity of a stock to market movements. However, research (Ali, Badhani, and Kumar 2022) revealed that higher beta values result in relatively lower alpha. The alpha value on a stock indicates the ability to generate returns beyond the benchmark. The interaction between beta and alpha captured in study (Ali, Badhani, and Kumar 2022) drew attention for further research. The essence of our research is to utilize the beta and alpha values of stocks as the main determinants in portfolio formation and then given an active/passive strategy in managing the portfolio so that the portfolio return can be maximized. This metric serves as a fundamental indicator of stock market sensitivity and shows the potential for better performance, so it can provide information in strategic investment decisions.

The paper initiates an empirical investigation over a five-year period from 2019 to 2024, focusing on 53 stocks that show inconsistencies in their inclusion in the LQ 45 index. This research seeks to fill an important gap in the existing literature by highlighting the investment potential of these excluded stocks and their role in portfolio optimization strategies. By analyzing the performance of these stocks over a defined period, we aim to spot patterns, trends, and opportunities that can feed into more effective portfolio management practices.

Literatur Review

The management of stock investments, especially the use of beta attributes, is increasingly being refined. A strategy known as Smart Beta is based on the beta value of a stock. The leading US financial services company, Morningstar, states smart beta has reached a mature stage, and its adoption has increased significantly over the past decade (Ryan Jackson 2023). This growth is due to the convenience and simplicity offered by smart beta. In 2022, Morningstar, a U.S.-based financial services company, received $1.2 billion from investors for a smart beta ETF, reflecting an organic growth rate of 9.8%.

As the smart beta grew, investors sought alternative investment strategies, leading to the emergence of the smart alpha. Like smart beta, smart alpha is a method of selecting investment products and forming a portfolio that aims to outperform certain benchmarks, such as market indices. The concept of alpha in portfolio construction has been used since the beginning of the 21st century, although the origins of smart alpha remain unclear. The development of smart alpha is driven by the evolution of the investment industry and technological advancements. Today, leading financial management firms such as JP Morgan Asset Management offer smart alpha products (Nutmeg 2024). Research shows that smart alpha can outperform smart beta by focusing on maximizing alpha while minimizing risk, whereas smart beta strategies sometimes involve higher risk (Boucher et al. 2021; Fabozzi and Fabozzi 2020a; Henriksson et al. 2019).

This study aims to examine the phenomenon of smart beta and smart alpha. With the smart beta having reached maturity in the US market (Morningstar), this is the right moment to implement this strategy in the Indonesian market. Previous research has tested the effectiveness of smart beta in developed countries such as Sweden (Nazaire, Pacurar, and Sy 2021) and America (Fons et al. 2021) as well as investment in emerging markets such as Indonesia (Salim and Rizal 2021), India (Monga, Aggrawal, and Singh 2022), China (Huang et al. 2023) and Iran (Bajalan and Bidokhti 2022).

Smart alpha, as a newer method than smart beta, presents an exciting opportunity to assess its effectiveness in stock performance. The concept of smart alpha seems promising to achieve higher profits. While smart beta, or cap-weighted strategies, select stocks based on risk and market capitalization, resulting in variable returns, smart alpha focuses on generating profits that go beyond the market. Regardless of the results, the superior methods identified in the study can provide valuable insights for investors.

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An investment portfolio cannot be efficient if it consists only of individual stocks, because efficiency is achieved through the combination of various stocks (diversification) in the portfolio (Kristanti et al. 2022). A portfolio combines several investment assets to diversify risk. Harry Markowitz (1952) introduced the idea that investors should diversify to reduce risk and achieve optimal returns by using statistical methods to distribute risk across portfolios and assess the most profitable returns (Liu 2022).

Various well-known portfolio construction methods exist globally, including cap-weighted approaches, single index models, mean-variance, each using a specific technique. The capital-weighted method uses market capitalization as a benchmark, sometimes leading to overvaluation of large stocks and poor performance, thus encouraging investors to put money on inefficient stocks (Abate, Bonafini, and Ferrari 2021). The single index model assumes market efficiency and systematic factors reflect asset prices, using stock beta as a portfolio guide, although the market is not always efficient (Srivastava 2022). The mean-variance approach analyzes the interaction between return (mean) and portfolio risk (variance), aiming to build a portfolio that provides the best return for a given level of risk or the lowest risk for a given level of return (Yusup 2022; Kim et al. 2021). Conclusion making related to tolerated returns and risks is popularly done with indices that consider not only return but also risk. The Sharpe index, considers the return on the value of the return obtained with the overall risk depicted by standard deviation. The treynor index focuses more on the systematic risk that an investment asset has, so it uses the beta value in its measurement. While the Jensen index (alpha) will show the ability of investment assets to provide better returns than expected returns according to CAPM (Utami, Prasetya, and Riyadi 2022; Ruma and Tawe 2023).

This research will use smart alpha and smart beta portfolio construction methods, evaluating and comparing their performance. A smart alpha portfolio aims to minimize risk while maximizing alpha, focusing on the alpha value of a stock. Instead, smart beta portfolios are built on several factors, including volatility, represented by beta.

Beta measures the systematic risk of an asset, which is the share of the total variance of an asset caused by overall market fluctuations (Reilly and Brown 2019). It shows the sensitivity of a stock to market movements, reflecting whether a stock moves more aggressively or passively compared to the market. Beta is calculated from the covariance of aet to the market divided by the market variance. Market beta is set at 1. Stocks with betas higher than 1 have higher volatility and are easier to respond to market changes. Beta positively impacts performance in bull markets and negatively in bear markets (Gopane, Moyo, and Setaka 2023; Jogiyanto 2022; Alkhazali 2020).

Stock market volatility refers to variations in asset prices over a certain period (Bhatia 2020). The beta value of a stock can serve as a proxy for its volatility (Skorupski 2023), as volatile stocks usually have a beta that is also high and vice versa. Beta describing volatility has been shown to affect returns (Skorupski 2023; Harvey et al. 2018; Salim et al. 2022).

The concept of beta and volatility is utilized by smart beta as a key factor in building an investment portfolio. Smart beta is an investment strategy that aims to optimize risk and return in a portfolio. It improves portfolio performance by considering factors such as value, company size, growth characteristics, momentum, financial performance, and volatility (Raza and Ashraf 2018; Sivaramakrishnan 2021). Introduced by Robert Arnott of Research Affiliates in 2005, smart beta perfects the traditional cap-weighted index, where stock weighting is based on market capitalization (Arnott and Sherrerd 2022).These refinements help eliminate overvaluation and undervaluation caused by imperfections in cap-weighted calculations.

Alpha represents the difference between a stock's return and expected return, exceeding a set benchmark (Salim and Rizal 2021). Alpha is calculated from the excess return compared to the expected return, positive alpha is obtained from the positive intercep value because the return continuously exceeds the expected return (Reilly and Brown 2019). It indicates the ability of a portfolio or investment to generate profits above the expected level based on the risk taken. A positive alpha indicates better-than-expected performance, while a negative alpha indicates poor performance. Utilizing alpha in portfolio construction is a viable alternative, as it selects stocks based on their ability to yield good returns. Studies have shown that portfolios

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built on alpha outperform other portfolios over the years (Tang 2023). Alpha efficiency in improving portfolio performance led to the development of smart alpha.

Smart alpha focuses on achieving positive alpha, aiming to enhance the construction of traditional beta-based portfolios. Beta portfolios often have high risk with disproportionate returns, thus encouraging smart alpha portfolios to seek minimal risk while aiming for the best returns (Boucher et al. 2021). Studies have shown that smart alpha can provide better benefits than smart beta, even in extreme economic conditions such as pandemics (Kantos and diBartolomeo 2020). Alpha strategies are often combined with active strategies because the goal is to exceed the underlying return. Combining an alpha strategy with an active strategy result in a strong portfolio compared to a passive (indexing) strategy, even after accounting for transaction costs (Fabozzi and Fabozzi 2020a). Smart alpha represents an active strategy, while smart beta is considered passive (Fabozzi and Fabozzi 2020b).

Active strategies involve investors actively seeking information, monitoring price movements, and frequently buying and selling stocks in pursuit of abnormal profits. Activities such as periodic sector rotation, changes in portfolio composition, and capitalizing on price momentum characterize active investors. In contrast, passive strategies involve investors following market movements without attempting to achieve abnormal profits. Passive investors buy stocks and hold them, following the index until a certain time or price is reached.

Many researchers have compared these strategies, and produced mixed results. Some studies, such as Markov & Markov (2023) state that passive strategies are better for the long term, and found that passive strategies are superior and more predictable, whereas active strategies struggle to achieve superior alpha (Busse, Chung, and Kottimukkalur 2021) suggest that active strategies may lose a lot of stock Markov & Markov (2023). In contrast, other studies have produced the opposite findings. For example, Chang & He (2020) conclude that active strategies are better for the long term in the Taiwan market Madhogarhia (2019) shows that active strategies outperform passive strategies (S&P 500 indexing) over the years [40]. In addition, Wermers (2019) reports that active strategies have a positive impact on the US market due to continuous transactions and other factors.

This research will compare smart alpha and smart beta in determining optimal portfolio construction, with the help of two kinds of investment strategies to strengthen portfolio performance. This research will follow a similar modeling approach to Salim & Rizal (2021), which compared alpha and beta portfolios using stocks that were consistently listed on the LQ-45 index from 2013 to 2019. Meanwhile, in this study, stocks that do not consistently appear in the LQ-45 index are used as research objects to find the best investment strategy to respond to stocks that cannot maintain their position in the group of high-liquidity stocks on the Indonesia stock exchange. So the hypothesis in this study is:

H1: There is a difference between smart alpha and smart beta in providing returns on portfolios of stocks that are not consistently included in LQ-45 for the period April 2019 – March 2024.

Material and Methods

Material

Penelitian This research involves 52 stocks that are not included in the LQ-45 index on the Indonesia Stock Exchange (IDX) during April 2019 – March 2024. The list of stocks emerged from the LQ-45 index update issued by the IDX every February and August. Daily historical clossing price data is obtained from Refinitiv Eikon financial tools, from April 1, 2019 to March 31, 2024. The supporting data needed, namely the Risk Free Rate obtained from the Central Bureau of Statistics Indonesia.

Methods

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Data processing is done in several stages, namely initial calculations, portfolio management, portfolio performance evaluation and statistical tests.

Initial Calculation

All closing price data of 52 stocks from April 2019 to March 2024 are processed to obtain their daily Return, Risk, Alpha and Beta values. In calculating the return, we use daily stock price data. The formula used is as follows:

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

Risk is described by deviation so the standard deviation formula was chosen to calculate the total stock risk. The formula is written as follows:

$$\sigma_i = \sqrt{\sum_{j=1}^{n} \left(R_{ij} - E(R_i)\right)^2} \quad (2)$$

The beta calculation uses the stock covariance divided by the market variance. So the formula is written as follows:

$$\beta_i = \frac{\sigma_{i,M}}{\sigma^2} \quad (3)$$

The alpha calculation will show the difference between the actual return and the expected return:

$$\alpha_i = E(Ri) - \beta_i \cdot E(Rm) \quad (4)$$

Portfolio Management

Two different portfolios are formed with different references. The smart alpha portfolio is formed and structured with qualified stocks that do not have negative alpha accumulation in the period. It's the same with smart beta portfolios. Stocks that enter the portfolio are stocks that have accumulated positive beta in the period. Weighting in a portfolio adapts the cap-weighted method, the greater the alpha/beta value a stock has, the greater its weight in the portfolio. As for mathematically, the weighting calculation is written as follows:

$$W_i = \frac{\beta_i}{\Sigma\beta_p} \quad (5)$$

After that, the portfolio is given two different treatments, namely passive strategy and active strategy. In the passive strategy, a buy and hold technique is used where the portfolio does not experience changes in stock composition from the beginning of the period to the end. While in the active strategy used recomposition techniques, the portfolio will experience changes in stock composition and weight every 6 months, recomposition is carried out every February and August. Therefore, in this study, there will be 11 periods in the active portfolio, namely April-July 2019, August 2019 - January 2020, February – July 2020, August 2020 - January 2021, February – July 2021, August 2021 - January 2022, February – July 2022, August 2022 - January 2023, February – July 2023, August 2023 - January 2024, February – March 2024. At the end of the study, all values in the active strategy will be accumulated.

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P*ortfolio Performance Evaluation and Difference Tests*

Smart alpha and smart beta portfolio performance measurement will use 3 indices to get strong conclusions. The three indices are the Sharpe index, the Treynor index and the Jensen index. The Sharpe Index will measure portfolio performance taking into account total risk, i.e. systematic risk and non-systematic risk. The calculation of the Sharpe index uses the following formula:

$$S_p = \frac{(R_p - R_f)}{\sigma_p} \quad (6)$$

The treynor index is similar to the Sharpe index, but only non-systematic risk is considered. The formula is then written as follows:

$$T_p = \frac{(R_p - R_f)}{\beta_p} \quad (7)$$

The Jensen Index will show the difference between the actual return and the expected return based on CAPM, so the formula is written as follows:

$$\alpha_p = R_p - (R_f + \beta_p(R_M - R_f)) \quad (8)$$

Then, in order to strengthen the calculation results and answer the research hypothesis, the ANOVA test was carried out with SPSS tools to show whether there is a difference in the return of the smart alpha portfolio and the smart beta portfolio.

Results and Discussion

There are 52 stocks included in this research test. The calculation of the rate of return, total risk, beta and alpha is done daily. The calculation results on all stocks are as follows:

Table 1: Return, Risk, Alpha And Beta Of All Stocks (Daily)

NO	STOCK	RETURN	RISK	ALPHA	BETA		NO	STOCK	RETURN	RISK	ALPHA	BETA
1	ACES	-0,0002	0,0266	-0,0002	0,0104		27	LPPF	-0,0001	0,0357	-0,0001	0,2221
2	ADHI	-0,0009	0,0317	-0,0010	0,6046		28	MAPI	0,0009	0,0289	0,0009	0,2381
3	AKRA	0,0008	0,0266	0,0008	0,0429		29	MBMA	-0,0004	0,0130	-0,0004	-0,0176
4	AMRT	0,0013	0,0254	0,0013	-0,1091		30	MDKA	0,0015	0,0302	0,0015	-0,0923
5	BFIN	0,0010	0,0294	0,0010	-0,0687		31	MEDC	0,0011	0,0353	0,0012	-0,1739
6	BJBR	-0,0002	0,0207	-0,0002	-0,0348		32	MIKA	0,0006	0,0252	0,0006	-0,2161

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7	BKSL	-0,0005	0,0268	-0,0005	0,0411	33	MNCN	-0,0003	0,0272	-0,0003	0,1233
8	BRIS	0,0021	0,0382	0,0020	0,2947	34	MTEL	-0,0001	0,0099	-0,0001	-0,0435
9	BRPT	0,0009	0,0364	0,0008	0,2108	35	PGEO	0,0004	0,0159	0,0004	-0,0173
10	BSDE	0,0000	0,0251	-0,0001	0,2563	36	PTMP	0,0006	0,0311	0,0005	0,0154
11	BTPS	0,0001	0,0316	0,0001	0,2121	37	PTPP	-0,0007	0,0326	-0,0008	0,3234
12	BUKA	-0,0013	0,0243	-0,0013	0,0938	38	PWON	-0,0001	0,0248	-0,0002	0,0437
13	CPIN	0,0002	0,0262	0,0002	0,0332	39	SCMA	-0,0002	0,0313	-0,0002	-0,0665
14	CTRA	0,0005	0,0281	0,0005	0,0957	40	SIDO	0,0004	0,0190	0,0004	0,0312
15	ELSA	0,0004	0,0273	0,0004	0,0832	41	SMRA	-0,0001	0,0307	-0,0001	0,0085
16	EMTK	0,0001	0,0360	0,0001	0,0974	42	SRIL	-0,0005	0,0179	-0,0006	0,1009
17	ERAA	0,0007	0,0330	0,0007	-0,0027	43	SRTG	0,0009	0,0278	0,0009	0,0250
18	ESSA	0,0012	0,0412	0,0012	0,2584	44	SSMS	0,0004	0,0278	0,0004	-0,1296
19	GGRM	-0,0009	0,0233	-0,0009	-0,0301	45	TBIG	0,0011	0,0266	0,0011	-0,2610
20	GOTO	-0,0010	0,0293	-0,0010	0,0369	46	TINS	0,0002	0,0336	0,0001	0,1702
21	HMSP	-0,0010	0,0219	-0,0010	-0,0790	47	TKIM	0,0002	0,0345	0,0002	0,1175
22	HRUM	0,0018	0,0317	0,0018	-0,0274	48	TOWR	0,0003	0,0217	0,0004	-0,1583
23	INDY	0,0005	0,0361	0,0004	0,1922	49	TPIA	0,0016	0,0284	0,0017	-0,0260
24	JPFA	0,0000	0,0260	0,0000	0,0670	50	WIKA	-0,0013	0,0329	-0,0013	0,2659
25	JSMR	0,0002	0,0234	0,0002	0,1128	51	WSBP	-0,0017	0,0243	-0,0018	0,8545

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26	LPKR	-0,0006	0,0290	-0,0007	0,3016		52	WSKT	-0,0013	0,0303	-0,0015	1,5344

Source: processed data

Out of 52 stocks, 30 stocks managed to get positive daily accumulated return (58%) with the 3 best stocks being BRIS (0.0021), HRUM (0.0018) and TPIA (0.0016). BRIS as the stock with the best return shows its impressive performance and real growth since its IPO in mid-2018. While the other 22 stocks have negative accumulative daily returns (42%), the 3 stocks with the lowest returns are WSBP, BUKA, WIKA (-0.0013). WSBP and WIKA are state-owned companies in Indonesia, but internal problems make the stock performance continue to decline, while BUKA is a company that IPOed in August 2021 but until the end of the study, the stock has not been able to show good performance on the Indonesia Stock Exchange.

Regarding total risk, the stocks with the greatest risk are owned by ESSA (0.041), BRIS (0.038) and BRPT (0.036). The three stocks with the greatest risk have daily returns that are at the top of the group of stocks, even ESSA is ranked 6th and BRIS is ranked 1st in the ranking of stocks with the best returns. This is in line with the investment principle of 'high risk, high return'. Meanwhile, stocks with the smallest risk are owned by MTEL (0.009), MBMA (0.013) and PGEO (0.015).

The object in this study illustrates that the beta value is always in line with the actual return value. Stocks that have a positive return value then the alpha value is also positive, the difference is slightly higher or lower than the return. MEDC stock has an actual return of 0.0011 while the alpha value is 0.0012. This also happens when the actual return is negative. ADHI shares have an actual return of -0.0009 and an alpha value of -0.0010.

Meanwhile, based on the beta value in the table, it can be seen that the most volatile stock based on beta calculation is WSKT stock (1.5344) and the least volatile stock is SMRA (0.0085). In this research period, 18 out of 52 stocks were observed to have opposite movements to the market, stocks performed well when stocks were declining or perhaps stock prices moved down when the overall market performance was good.

All stocks were included in the portfolios tested. A total of 52 stocks were included in each portfolio when they met the conditions based on the research method, namely: no stocks with negative alpha during the period for the alpha portfolio and no stocks with negative beta during the period for the beta portfolio. In an active portfolio, the movement of each portfolio from one period to the next is visible. The active strategy allows the portfolio to continue to make adjustments and try to get the best possible return. The movement of each portfolio is projected with the following line graph:

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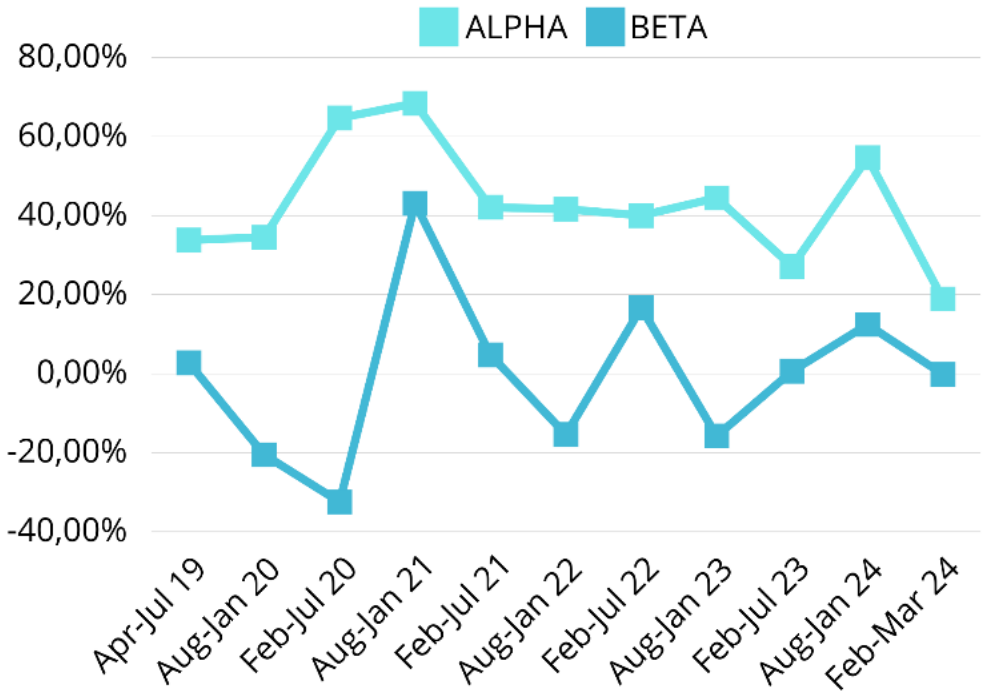

Source: processed data

Fig. 1. Comparison Of Alpha And Beta Portfolio Return Movements

Figure 1 shows that both portfolios experienced fluctuations throughout the research period (April 2019 - March 2024). It appears on the graph that both portfolios have the same direction of movement, both experiencing an increase and decrease in value in each period. The alpha portfolio shows better performance than the beta portfolio. Overall, the alpha portfolio provides higher and more consistent positive returns. While the beta portfolio shows fluctuating movements, there are significant increases and decreases in returns, and touches negative values.

The movement of the two portfolios illustrates the characteristics of the constituent stocks. The alpha portfolio is formed by stocks that have a positive alpha value, so the portfolio will get a return that always exceeds the benchmark. While the beta portfolio is composed by volatile stocks, where the greater the value of the stock, the greater the proportion of the stock in the portfolio. So it appears that the movement of the portfolio is very volatile and sensitive to market changes.

Statistical tests (ANOVA) are also carried out to strengthen the findings of the calculation and answer the hypothesis in this study. Alpha and beta portfolio returns were tested to determine whether there was a difference between the two returns. The test shows the following results:

Table 2: ANOVA Test Results

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3,347	1	3,347	9,965	0,002
Within Groups	33,918	101	0,336		
Total	37,264	102			

Source: processed data

The ANOVA test results show a Sig value. 0.002> 0.05, so it can be stated that there is a difference in the

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rate of return between the alpha portfolio and the beta portfolio. The difference shown through the movement on the graph and the results of the ANOVA test is worth concluding that one method outperforms the other method. To get the conclusion of the best method, the final calculation is carried out using the investment performance measurement index as the basis for its conclusion.

In the final calculation, the performance results of the active alpha portfolio, passive alpha portfolio, active beta portfolio and passive beta portfolio are compared. The performance of each portfolio can be projected by the rate of return, the amount of risk and the value of sharpe treynor and jensen (alpha) portfolios.

Table 3: Comparison of Alpha and Beta Portfolio Performance Measures

		Return	Risk	Sharpe	Treynor	Jensen
Alpha	Passive	136,20%	0,01%	0,0032	0,048	0,001
	Active	470,30%	1,07%	0,110	0,011	0,004
Beta	Passive	-56,45%	4,55%	-0,020	-0,001	-0,001
	Active	-4,03%	12,60%	-0,003	0,000	0,000

Shown in Table 3 is a comparison of the return, risk, sharpe index, treynor index and jensen index of all portfolios. Overall, the alpha portfolio outperforms the beta portfolio from all factors of consideration. On the return value, the portfolio formation method using alpha shows that it can provide outstanding portfolio performance with a risk that tends to be small, in contrast to the beta portfolio formation method, the return generated by the portfolio is negative in any investment strategy. Also considering the risk received by investors, beta portfolios are increasingly not recommended by the author.

And when we analyze more specifically, on the calculation of returns, the active alpha portfolio provides the best return, with a difference of up to almost 3x the same portfolio with a passive strategy. The method of portfolio formation that prioritizes stocks that can generate high returns and is supported by an active strategy that is agile to adjust makes it successful in getting high returns. And passive beta returns are very worrying, investors lose more than half of the total funds invested at the beginning of the period.

While based on the risk, the alpha portfolio with a passive strategy has a very small risk. Stock selection at the beginning with the right method and with a passive strategy that does not try to capture price changes and tends to survive, making it relatively low risk. Meanwhile, the biggest risk is owned by beta portfolios with active strategies. In active beta portfolios, stocks with the highest beta are given the greatest weight in each period, this invites high risk as well.

The sharpe index shows portfolio performance by considering total risk, namely systematic risk and non-systematic risk. The active alpha portfolio has the highest index, indicating its good ability to provide returns after adjusting for risk. While the negative sharpe index value owned by the passive beta and active beta portfolios shows the portfolio fails to provide a higher return than its benchmark, the market (JCI).

The treynor index shows portfolio performance that considers systematic risk (beta), which is a risk that can no longer be eliminated by diversification. In the treynor index, the best portfolio is the passive alpha portfolio. The active alpha portfolio does not produce a treynor index that does not beat the passive alpha portfolio, this is because in some periods, the portfolio has a negative index value. This is not caused by actual returns that cannot beat market returns but due to the negative beta value as a divisor in the treynor index formula. Negative values arise due to portfolio movements that are opposite to market movements. Occurring in 4 periods, the portfolio return is positive while the market return is negative. Unlike the negative value obtained by the passive beta portfolio. The negative value is obtained from the negative portfolio return and its inability to beat the risk free, not because of the negative beta value.

The Jensen index (alpha) shows the ability of the portfolio to provide a higher return than the expected

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return based on CAPM predictions. The best Jensen index is successfully generated by active alpha portfolios. While the passive beta portfolio has a negative Jensen index, this indicates that the portfolio cannot achieve the expected return based on the risk taken. Portfolios formed by active smart beta provide the best returns compared to passive portfolios. This result indicates that portfolios that are periodically repositioned provide more returns than return pods that are managed passively, (Salim, Rizki, Rizal, 2024).

In the comparison between smart alpha and smart beta, it appears in the table that in both active and passive strategies, the use of alpha in portfolio formation is superior to beta. This is in line with the results obtained by (Tang 2023; Salim and Rizal 2021; Boucher et al. 2021; Fabozzi and Fabozzi 2020a; Henriksson et al. 2019; Kantos and diBartolomeo 2020). While in the comparison of the best investment strategies, active strategies outperform passive strategies in both alpha portfolios and beta portfolios. The results of this study are in line with research (Chang and He 2020; Madhogarhia 2019; Salim, Disman, and Waspada 2021; Waspada, SALIM, and Fariska 2021; Kristanti et al. 2022). And different conclusions with research (Markov and Markov 2023; Hendrawan, Fadhyla, and Aminah 2020; Alford and Rakhlin 2017; Busse, Chung, and Kottimukkalur 2021).

The conclusion formulated based on three indices, the alpha portfolio with an active strategy is the best portfolio. Its value is the most superior in the sharpe and jensen indices, and the cause of the portfolio not winning in the treynor index has also been proven not to be due to poor portfolio performance. In this study, evidence has also been obtained that smart alpha and active strategies are a good match, as stated by (Fabozzi and Fabozzi 2020b).

Conclusion

The study, which investigated an investment portfolio consisting of 52 stocks that were not consistently included in the LQ-45 index during the period April 2019 to March 2024, found that the smart alpha portfolio, which uses an active strategy, outperformed the other portfolios, measured by the Sharpe, Treynor, and Jensen performance indices. Among smart beta and smart alpha strategies, the smart alpha strategy showed superior performance due to its focus on stock selection that exceeds expected returns. Moreover, in the investment strategy comparison, the active approach proved to be more effective, utilizing the flexibility of adjusting the portfolio every six months. These results underscore the efficacy of a strategic and adaptive methodology. Future research could re-examine smart alpha on stock groups in other developed and developing countries.

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