

## Comparative Study of Portfolio Group Performance of Blue Chips and Small Chips Shares on the Indonesia Stock Exchange

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**ABSTRACT** : The purpose of this study is to find out how the optimal portfolio performance of the blue chips and small chips stock groups on the Indonesia Stock Exchange in the period July 2018 - July 2019. This study uses the Single Index Model in forming optimal portfolios and Sharpe Index in measuring portfolio performance formed. The population in this study are 45 shares which included blue chips and 61 shares which included small chips. The technique of determining the sample using purposive sampling is a company that has a positive stock return of 80 shares. The method of observation is used in this study for data collection. The results of this study indicate that during the period July 2018 - July 2019, the two forming portfolios have portfolio performance that are greater than the market return, but in absolute terms the performance value of the blue chips stock group are greater than the performance value of the small chips stock group.

**Keywords** -single index model, sharpe index, blue chips, small chips

### I. INTRODUCTION AND LITERATURE REVIEW

Investment is an activity that cannot be separated from the business world. Investment can be defined as a delay in current consumption to be included in productive assets for a certain period of time. With the existence of productive assets, delaying current consumption to invest in these productive assets will increase total utility (Rahmasita, 2015). Investors as fund owners are increasingly aware that in investing for the purpose of wanting to get a higher return, they should not only have to invest in real assets, but there are still attractive alternatives such as investing in financial assets in the capital market. The capital market is one place that offers a variety of investment instruments that are traded, one of which is in the form of financial assets, such as mutual funds, stocks, bonds, preferred shares, warrants, and rights issues (Ariasih, 2018).

Financial assets are preferred by investors because they are more liquid, easier to diversify, and easy to change combinations of purchased securities. Stocks are investment instruments that are most sought after by investors. This is evidenced by the high frequency of stock trading compared to the frequency of trading of other investment instruments in the capital market (Setyoningsih et al., 2015). Investment decisions require consideration of two parameters - risk and return, based on modern portfolio theory. Return and risk have a positive relationship, the greater the risk taken, the greater the return that must be compensated (Nurcahyo & Nurcahyo, 2019). The same thing applies both to choosing individual security and portfolios consisting of securities (Giri & Gayadhar, 2017). This is what causes an investor to prefer investing in financial assets such as stocks.

Investing in stocks is a way for investors who want a quick return. Shares are certificates that state ownership of a company with one of its characteristics is not due and nominal value. If viewed from the investment period, shares can be used for long-term investments and short-term investments. Investors who own shares of a company will benefit in the form of capital gains and dividends. This is the reason why an investor who wants a quick profit, should make a short-term investment in shares because the investor can buy shares today and resell them a few hours later to get capital gains.

Besides getting returns, investors also need to consider the level of risk as a basis for investment decisions. In general, almost all stock investments contain an element of uncertainty. There are two risks in investing, namely systematic risk and unsystematic risk (Gunawan & Sri Artini, 2016). Systematic risk or systematic risk is a market risk that cannot be avoided by investors, while unsystematic risk is an enterprise risk that can be avoided or minimized through diversification by portfolio.

As an investor, it is very important to understand risk and make appropriate strategies to anticipate losses. Therefore, it is very important to diversify investment portfolios. What is very important in portfolio diversification is not to put all the eggs in one basket, because if the basket falls, all the eggs in the basket will break. In investing, this teaching can mean not to invest all the funds we have in just one asset, because if the

asset fails, then all the funds that we have invested will disappear. Diversifying means that investors need to form a portfolio through the selection of a combination of a number of assets such that risks can be minimized without reducing expected returns, because reducing risk without reducing returns is the investor's goal in investing

The purpose of forming a stock portfolio is to get a maximum return with a certain level of risk or get a certain return with minimal risk. To find out the return and risk of any stocks that will be included in the portfolio, portfolio analysis is needed to facilitate investors in determining their investment decisions. Murti (2016) states by combining other shares, investors get an optimal return and can reduce risk, because the existing risk is spread to several stocks with a certain level of risk so that the risk to be borne will not be too heavy.

The single index model is one method of forming a portfolio that can be used by investors. This model is a simplification of the Markowitz model. The single index model is very concerned about market conditions of the expected returns and risks of a stock and its portfolio depending on the market conditions. The single index model shows the relationship between securities and changes in market prices. This can be seen when the market conditions indicated by the market index improve, the value of the stock price will increase, and vice versa if the market conditions deteriorate, the value of the stock price also decreases. The single index model has one important concept, namely Beta ( $\beta$ ) which is a measure of the sensitivity of the security's return to market returns.

Based on research by Ramanathan & Jahnvi (2015) from the results of a study of 20 stocks that fulfill the criteria for inclusion in portfolios listed on the NSE, only the top 5 shares meet the criteria for inclusion in the portfolio according to the single index model. The results Banumathy et al. (2017) of have a very significant positive correlation between beta portfolios and returns and there is a significant correlation between expected returns on portfolios and systematic risk revealing a linear and positive relationship at the 5 percent significance level. Mary & Rathika (2015) who examined the formation of optimal portfolios using a single index model on the Indian stock market. The results of his research that of the 10 listed companies, only one company was selected for investment purposes, namely Pharmaceutical Companies. Nandan & Srivastava (2017) by examining building optimal portfolios using a single index model by calculating risk and return. The results obtained from this study are by using the Sharpe single index model, of the 50 shares listed on the NSE, only 24 shares fulfill the optimal portfolio criteria. This shows that the financial sector is growing fast and the stock of the financial sector provides consistency and guaranteed returns. Poornima & Remesh (2015) who examined building optimal portfolios using the Sharpe single index model, among the 20 securities selected from the Sensex BSE index there were only 3 securities selected for optimal portfolios using the Sharpe single index model, namely 2 banking sectors and one from the information technology (IT) sector.

Portfolios that have been formed need to be evaluated to find out their performance. To see the performance of a portfolio can not only look at the rate of return generated by the portfolio but must also consider other factors such as the level of risk of the portfolio. The evaluation phase is carried out by measuring portfolio performance using risk-adjusted return, which is a portfolio performance measure that includes return and risk factors that can be measured by the sharpe index (1965), treynor index (1966), and jensen index (1968). The three indexes have their own characteristics, the sharpe index emphasizes total risk (standard deviation), the treynor index considers market fluctuations to be very influential in influencing return (beta), while the jensen index emphasizes alpha. This study uses a sharpe index because it bases calculations on the concept of the capital market line as a benchmark and is clarified by using total risk to compare portfolios against capital market lines. Sharpe index to measure its performance must compare with the market index in the observation period. This is reflected in the single index model which has a proxy for market performance as a factor so that it has a match in the use of the sharpe index method. Sharpe index was also chosen because it can rank several portfolios based on performance, where the higher the sharpe index of a portfolio compared to other portfolios, the better the portfolio performance (Levy, 2017).

Research on portfolio performance has been done before by several researchers. Raj & Shahani (2016) in comparing the performance of large cap and ELSS funds resulted that ELSS funds had defeated the large cap scheme and also showed better results than the two benchmark indices namely CNX Nifty and CNX 500. Wiksuana et al. (2019) in his research resulted that the performance of multi-sector portfolios in leading stocks in each of the top sectors in the LQ 45 index was negative in all analysis periods. Negative performance means portfolio returns are lower than risk-free returns (SBI interest rates). The results of Varghese & Joseph (2018) prove that the average small company on the NYSE has a significantly higher risk adjusted return value than the large-sized company on the NYSE for 40 years of observation. Alioui et al. (2015) in his research showed that the performance with high value was significantly greater than the performance with a small value between the years 2010-2012 on the Russel 3000 market index. Budiari & Ratnaningsih (2017) in his research used shares incorporated in the LQ 45 Index by forming a category blue chip and non blue chip in 2015 produced a negative average return (loss). Syahrída et al. (2017) comparing the performance of sharia-based investment instruments with conventional using the sharpe index shows that the performance of sharia mutual

funds shows better results than the performance of conventional mutual funds. Rahmawati & Asandimitra (2016) in their research comparing the performance of the main board index with the development board index on the Indonesia Stock Exchange in the period 2010-2014 showed the results that there were differences in the performance of the stock index between the main board index and the development board index, seen from the risk that the main board a higher average risk than the development board, resulting in a higher return. Darmitha & Purbawangsa (2016) shows that portfolio performance based on the sharpe index formed from the LQ 45 index is better with a value of 0.35964 than the performance of the 50 Most Active Stocks by Trading Frequency stock portfolio of 0.34009. Tudor et al. (2015) who examined the performance of SME stock portfolios in the Romanian capital market (Bucharest Stock Exchange). The results of his research show that investing in SME shares will get the best market performance based on the results of calculations using the risk-adjusted performance method.

In portfolio investment, the value of market capitalization has important meaning for investors. Market capitalization is the value of the company's shares circulating in the market. Capitalization data has the power to influence investor interest to make it a portfolio instrument. The types of shares based on market capitalization value can be divided into three types namely, blue chip / big cap shares with market capitalization values above 10 trillion, middle tier shares (middle cap) with market capitalization values between 1 trillion and 5 trillion, and small chip / small cap shares with a market capitalization value of under 1 trillion. Blue chip shares are usually the market leaders in the industry, liquidity and movement of first-tier stocks is quite good because the number of shares circulating in the market is very large, so many are trading these shares. Middle cap shares have diverse movements, some are liquid and not liquid. In selecting second-tier stocks must be more selective in conducting technical analysis, because many second-tier stocks whose technical movements are not very good. Small chip stocks generally have a not-so-good performance and a market capitalization value of under one trillion. Stocks with small market capitalization indicate a small size of the company in terms of assets and capital. This makes that this company has a high growth and in the end will provide high returns in the future. Conversely, stocks with large market capitalization indicate that the company is already in a mature business cycle, so the potential for growth again is very small.

Portfolio performance analysis in this study compares the blue chip stock group with the small chip stock group on the Indonesia Stock Exchange. Blue chip shares or so-called first-tier shares can be interpreted as top-tier shares or superior shares. Blue chip shares are shares of a company that has a high reputation, as a leader in a similar industry, has a stable income, and is consistent in paying dividends. Shares included in the blue chip category in Indonesia must have a large capitalization above Rp. 10 Trillion. Blue chip shares become the stock of choice for investors for long-term investments that have a conservative risk profile and prioritize profits from dividends that are routinely distributed. Big cap stocks are believed to be safer and more stable but may not have the same growth potential as medium cap or small cap shares. Blue chip stocks in Indonesia can be seen on the Indonesia Stock Exchange on the main board index. The main board index is intended for companies that have large company sizes and have a good track record of performance. The stocks that are included in the main board group have good company condition. Blue chip shares are generally dominated by established company shares. This statement is reinforced by the results of research from Japlani (2015) which states that the January return is stronger for big caps than small caps.

In determining optimal portfolio performance, not all blue chip stocks perform well, so stocks that are included in the small chip stock group are used as parameters. Small chip shares or so-called tier three shares are stocks whose movements are volatile, their stock prices are relatively cheap, and have small capitalization, which means the number of shares outstanding is not too much. Small chip shares have lower liquidity, less experience in the industry, management may not be as good as blue chip company shares. However, investors need to consider small chip stocks in their portfolios because these shares have low valuation values with large growth potential, especially if for long-term investment. Small chip companies are one type of stock that is in great demand by individual investors who have limited capital. Small chip capitalization has a share value of less than Rp. 1 trillion. Small chip shares can be seen on the development board index on the Indonesia Stock Exchange. Issuers that are placed on the development board, does not mean that issuers are not performing well but are still at an early stage.

In general, small chip companies have greater growth potential and from time to time have higher yields, so they are said to have more future prospects but are more volatile and have higher risks. Companies with smaller sizes have a greater level of risk to achieve higher returns. Stocks with small market capitalization values or have a small company size can produce high returns compared to market capitalization with larger company sizes. Research by Maulina & Nuzula (2018) investor sentiment has a significant effect on stock returns in the blue cap and small cap groups, but investor sentiment shows a stronger influence on the small-cap group stock returns. Wahyuni (2019) states that small cap stock portfolios are better than blue cap and middle cap with sharpe index measurements. Smaller companies consistently achieve higher returns. In other words, investors are likely to get excess returns when investing in small capitalized stocks

The purpose of this study is to determine the expected level of return and risk of an optimal portfolio of blue chips shares by using a single index model, the level of expected return and risk of an optimal portfolio of small chips shares by using a single index model and to find out which portfolio performance is better between blue stocks chips with small chips stock on the Indonesia Stock Exchange based on the Sharpe index.

## II. METHODS

The design of this study uses a comparative quantitative approach. This research is conducted at Indonesia stock exchange. The scope of this study only focuses on companies that are included in the blue chip and small chip stocks in the period July 2018 - July 2019. The object of this research are the blue chip stock portfolio is taken from the main board index and the small chips are taken from the development board index contained in Indonesia Stock Exchange period July 2018-July 2019. Variables analyzed in this study are optimal portfolio and sharpe index portfolio performance

The population in this study are stocks that enter blue chip companies with market capitalization above Rp. 10 Trillion as many as 45 shares, and shares of small chip companies that have a market capitalization below Rp 1 Trillion as many as 61 shares. The technique in taking this research sample uses purposive sampling method, namely by determining certain desired criteria. The sample criteria in this study are companies that have a positive stock return during the study period.

**Table 1. Population and Research Samples**

| <i>Blue Chips</i> |                 |                 | <i>Small Chips</i> |                 |                 |
|-------------------|-----------------|-----------------|--------------------|-----------------|-----------------|
| Population        | Negative Return | Positive Return | Population         | Negative Return | Positive Return |
| 45                | 7               | 38              | 61                 | 19              | 42              |

Source: Processed Data

Data collection methods in this study use non-participant observation methods. This method can be done by observing and recording and accessing several websites, such as the Indonesia Stock Exchange (IDX) [www.idx.co.id](http://www.idx.co.id) and the closing price of shares every month is obtained through [www.investing.com](http://www.investing.com). Quantitative data in this study are stock price data on companies that are included in blue chips and small chips in the period July 2018 - July 2019. Sources of data used in this study are secondary data in the form of company stock prices and lists of listed companies that enter blue shares chips and small chips on the Indonesia Stock Exchange which can be accessed through [www.idx.co.id](http://www.idx.co.id) and the official website of Bank Indonesia. Secondary data is data obtained from the second source needed by researchers. The data comes from documents, articles and journals and other relevant and acceptable sources

## III. RESULTS AND DISCUSSION

### 1) Calculates the company's expected return, the company's standard deviation and shares, beta, alpha, unique risk, and excess return to beta (ERB).

Of the 45 issuers included in the blue chips peridoe group, July 2018 - July 2019, there were only 38 issuers that had positive returns. The highest expected return is in shares of PT Solusi Bangun Indonesia Tbk (SMCB) of 0.0718, while the lowest expected return is found in Astra International Tbk (ASII) shares of 0,0002. Expected return is the rate of return expected by investors, a positive expected rate of return will qualify for being a candidate for determining optimal portfolios, which means it is worth considering in an investment. The highest risk ( $\sigma$ ) is in the shares of PT Solusi Bangun Indonesia Tbk (SMCB) of 1.0718, while the lowest risk is in the shares of PT Bank Mandiri (Persero) Tbk (BMRI) of 0.0349.

Beta securities ( $\beta_i$ ) are systematic risk gauges of a security. Beta with a value of 1 indicates that the systematic risk of a security is equal to market risk. A beta of 1 also indicates that if market returns move up (down), securities return also moves up (down). The highest beta was found in PP (Persero) Tbk (PTPP) shares at 5.8246. Alpha securities are part of the level of individual stock returns that are not affected by market changes. Alpha securities ( $\alpha$ ) are obtained from reducing expected returns with beta securities which are then multiplied by market expected returns. The highest alpha was in the shares of PT Solusi Bangun Indonesia Tbk (SMCB) of 0.0769, while the lowest aplha was in the shares of PT Waskita Karya (Persero) Tbk (WSKT) of -0.0197. Unique risk ( $\sigma^2_{ei}$ ) is obtained from the total risk minus beta then multiplied by the standard market deviation whose results are shown in table 4.1. Bank Mandiri (Persero) (BMRI) of 0.0012. ERB is a ratio that shows the performance value of assets, namely the relationship between excess returns and risks. The optimal portfolio will contain assets with a high ERB ratio. The highest ERB value is in the shares of PT. Sido Muncul Tbk (SIDO) was 7.3701, while the lowest ERB value was found in Bank Pan Indonesia Tbk shares at -1.2507.

Of the 61 listed companies included in the small chips stock group in the period July 2018 - July 2019, 42 companies had positive returns. The highest expected return is in the shares of PT Trisula Textile Industries Tbk (BELL) of 0.1074, while the lowest expected return is in the Indal Alumunium Industry Tbk (INAI) share of

0.0015. The highest risk ( $\sigma_i$ ) was found in Pelangi Indah Conindo Tbk (PICO) shares at 1.0361 while the lowest risk was in PT Duta Intidaya Tbk (DAYA) shares at 0.0336.

The highest beta is in the shares of PT Indo Komoditi Korpora Tbk (INCF) of 10.6113. The highest alpha was found in Pelangi Indah Conindo Tbk (PICO) shares at 0.3206, while the lowest alpha was in PT Indo Komoditi Korpora Tbk (INCF) shares at -0.0439. The highest unique risk was found in Pelangi Indah Conindo Tbk (PICO) shares at 1.0734, while the lowest unique risk was in PT Duta Intidaya Tbk (DAYA) shares at 0.0336. The highest ERB value is in Trans Power Marine Tbk (TPMA) shares of 0.4255 while the lowest ERB value is in Pelangi Indah Conindo Tbk (PICO) shares of -1.8081.

## 2) Ranks shares based on the largest ERB, calculates $C_i$ , and determines portfolio candidate shares.

Of the 38 listed companies, only 11 shares have a positive ERB with PT Sido Muncul Tbk (SIDO) shares having the highest ERB.  $A_i$  value is determined by subtracting the expected return with a risk-free return and multiplied by the results of the division of beta and unique risk.  $B_i$  values are calculated by squaring beta then divided by unique risk.  $A_i$  and  $B_i$  values are calculated to find the Cut off Rate ( $C_i$ ) value. From the value of  $C_i$  can be determined Cut off Point value ( $C^*$ ) which is used to determine the limit of shares to be included in the portfolio.  $C^*$  value is the largest  $C_i$  value, in Table 4.3  $C^*$  is in the shares of Indofood CBP Tbk (ICBP) with a value of 0.0152. So shares that can be included in the portfolio are shares of PT Sido Muncul Tbk (SIDO), Kimia Farma Tbk (KAEF), Barito Pacific Tbk (BRPT), PNB, Indocement Tunggal Prakarsa Tbk (INTP), PT Puradelta Lestari Tbk (DMAS), PT Sumber Alfaria Trijaya Tbk (AMRT), Aces Hardware Indonesia Tbk (ACES), Kalbe Farma Tbk (KLBF), PT Bank Central Asia Tbk (BBCA), Indofood CBP Sukses Makmur Tbk (ICBP) because it has an ERB value  $> C_i$ .

Point  $C^*$  is in the TRUS share with a  $C_i$  value of 0.0093. There are 16 shares at point  $C^*$  namely TPMA, PEGE, ITMA, LPIN, MTSM, ARTO, KDSI, GOLD, RUIS, SMDM, NELY, RIGS, TIRA, MAMI, ALKA, TRUS. After comparison, these shares have an ERB value greater than the value of  $C_i$ , then these stocks are worthy of being included in the portfolio.

## 3) Determine Proportion of Funds

After determining the stocks that are the optimal portfolio candidates, the next step is to determine the size of the proportion of funds ( $W_i$ ) of each share that goes into the portfolio. The proportion of funds is calculated by dividing  $Z_i$  by total  $Z_i$  ( $\sum Z_i$ ), where  $Z_i$  is obtained by dividing beta with a unique risk then multiplied by the difference in the ERB $_i$  value by the cut off point. The proportion of funds from stocks that form the optimal portfolio in the blue chips group is BRPT by 17.4%, KAEF by 15.6%, PNB by 13.4%, INTP by 12.4%, DMAS by 12.8%, SIDO 11.4%, BBCA at 7.1%, ACES at 4.3%, KLBF at 1.9%, AMRT at 1.8%, ICBP at 1.8%. Whereas in the small chip stock group the highest funds were found in PEGE at 31.4%, ITMA at 16.4%, SMDM at 10.9%, LPIN at 9.8%, ARTO at 6.2%, TIRA at 5.7%, ALKA at 4.8%, KDSI at 4.0%, TRUS at 3.4%, MTSM at 3.1%, MAMI at 2.1%, TPMA at 1.9%, RIGS at 1.9%, GOLD of 1.4%, NELY of 0.1%, and RUIS 3.2%.

## Expected Return and Portfolio Risk

Portfolios formed from the group of blue chips shares have a return of 0.03986 or if rounded at 4.0% with a risk of 0.44686 or if presented at 4.7%, while portfolios formed from the small chips stock group have an expected return of 0.03831 or if rounded at 3.8% with a risk level of 0.05328 or if presented at 5.3%. Returns of 0.03986 and 0, 03831 indicate that portfolio returns are higher than investing in risk-free returns of only 0.0049. The explanation above shows that the risk formed by the small chips stock group was 5.3% higher than the risk of the blue chips stock group by 4.7%.

**Table 2. Calculation of Portfolio Performance**

|                                   | Blue Chips Stock Group | Small Chips Stock Group |
|-----------------------------------|------------------------|-------------------------|
| E( $R_p$ )                        | 0.0399                 | 0.0383                  |
| Risk Free Return                  | 0.0049                 | 0.0049                  |
| $\sigma_p$                        | 0.0469                 | 0.0533                  |
| $S_p = (E(R_p) - RBR) / \sigma_p$ | 0.7465                 | 0.6276                  |
| $R_m$                             | 0.0777                 | 0.0777                  |

Source: data processed, 2020

The portfolio performance of the blue chips group was 0.7465, while the portfolio of the small chips group had a sharpe index of 0.6276. This means that the portfolio performance of the blue chips group and the portfolio performance of the small chips group are greater than the market performance of 0.0777. So when compared, the portfolio performance of the blue chips stock group is better than the portfolio performance of the small chips stock group.

#### IV. CONCLUSION

Equitable stocks are included in the formation of optimal portfolios using a single index model in the blue chips group of the period July 2018 - July 2019 and the proportion consists of 11 shares, namely: BRPT of 17.4%, KAEF of 15.6%, PNBK at 13.4%, INTP at 12.4%, DMAS at 12.8%, SIDO at 11.4%, BBCA at 7.1%, ACES at 4.3%, KLBF at 1.9%, AMRT at 1.8%, ICBP of 1.8%. The blue chip stock portfolio group's portfolio return is 4.0% with a risk of 4.7%,

Equitable stocks are included in the formation of optimal portfolios using the single index model in the small chips group of the period July 2018 - July 2019 and the proportion consists of 16 shares, namely: PEGE of 31.4%, ITMA of 16.4%, SMDM at 10.9%, LPIN at 9.8%, ARTO at 6.2%, TIRA at 5.7%, ALKA at 4.8%, KDSI at 4.0%, TRUS at 3.4%, MTSM at 3.1%, MAMI at 2.1%, TPMA at 1.9%, RIGS at 1.9%, GOLD at 1.4%, NELY at 0.1%, and RUIS 3.2%. The portfolio returns of the small chips stock group gained 3.8% with a risk of 5.3%.

Basically, the two groups of stocks have greater performance than market returns, but in absolute terms, the value of portfolio performance formed using the sharpe index measuring instrument of the blue chips group of 0.7465 is better than the portfolio performance of the small chips group of 0.6276. This is because the portfolio risk of the small chips group is greater than the risk of the blue chips group.

For investors who want to form a portfolio it is best to choose a portfolio formed from the blue chips stock group because it has better performance. For further researchers, it is better to compare portfolio performance from other stock indexes so that the research conducted can be expanded.

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