

Selection of Leading Sectors Share Portfolio using Capital Asset Pricing Model (Capm) in Indonesia Stock Exchange (IDX) Period February 2012-March 2016

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Abstract:- The establishment of the investment portfolio was intended to minimize the risk of investment. The purpose of this study was choose the optimal portfolio of stock from six different industrial sectors in the Indonesia Stock Exchange (IDX). The sample was 45 leading stocks within the sector were Referred LQ 45 index from 2012 to 2016 in the Indonesia Stock Exchange (IDX). Portfolio method used in this research was the Markowitz method by using Capital Asset Pricing Model (CAPM) approach and the weighted average proportion. The study concluded that the alternative portfolio 5 (P₅) of the most optimal been shown to have the smallest variation coefficient Compared to the five other alternative.

Keywords:- Optimal Portfolio, Individual Stocks, Capital Asset Pricing Model.

I. INTRODUCTION

Portfolio was established to minimize the risk borne by investors in investing the wealth, not to eliminate risk, because the risk of investors in the capital markets may not be removed. Therefore, the determination of the optimal portfolio is very important for investors to risks that would be faced by investors can be as low as possible. Optimal portfolio is selected portfolio of an investor of the many options that exist in an alternative set of efficient portfolios (Tandelilin, 2010). Brigham and Houston (2011) said the risk and return of a particular stock investment should be analyzed in terms of how they affect the stock investment risk and return portfolio where they affect the investment risk and return portfolio.

Objective portfolio for investors to maximize the expected return of a certain level of risk or minimize the risk at a particular rate of return. Return the results obtained from stock investments (Hartono, 2015). Therefore, an investor needs to consider the balance between risk and return in investment, as there is a positive relationship between the amount of return and risk are known with high risk-high return. When the greater the expected return, the greater the risks to be faced. Philosophical diversification Markowitz (Fahmi, 2015) "Do not put all your eggs in one basket". The concept of this theory is known as diversification of investment or investment that are not concentrated in one area, but more than one field and do not

unidirectional. The concept of diversification that is often used by investors is the portfolio. In this case, the portfolio can be an alternative to investing. Portfolio is not possible to get the maximum return, but can generate optimal returns with the risks of minimal.

To predict the expected stock returns, can be used Capital Assets Pricing Model (CAPM). Capital Asset Pricing Model (CAPM) is one model of balance. According Tandelilin (2010), the CAPM is a model of balance to determine the relationship between the level of expected returns of an asset at risk with the risk of the asset in a balanced market conditions. The main purpose of the use of the CAPM is to provide precise predictions about the relationship between the risk of an asset with the expected return, determine the price of an asset and CAPM as a basis for determining a group of stocks that can be selected as a location for investment.

Investing in stocks is uncertain and the value that is always changing. Therefore the Indonesian Stock Exchange to create an index that contains shares in companies that have large-sized company, has a high reputation, have a good performance and fundamentals as a leader in similar industries, and its shares are liquid, which is the leading stocks (blue chips). Blue chips stocks will be updated on a quarterly basis, ie whenever the issuer released the latest LK. shares that were not able to maintain good performance, will be removed and replaced by another stock. Although the blue chips have many advantages when compared to other stocks, blue chips did not escape the ups and downs of the return.

A. Research Purposes

- Alternative proportion of the optimal portfolio of stocks featured sectoral using the capital asset pricing model (CAPM)?
- The level of expected return and risk of the optimal portfolio?

B. Restricting The Problem

In this study, there are some limitations, be used to facilitate research. This study is limited to the selection of the portfolio by using a model of capital asset pricing model (CAPM). The object to be studied is the leading stocks sectoral incorporated in Indonesia Stock Exchange

(IDX) with shares that are used are stocks of PT Jasa Marga Tbk, PT Unilever Indonesia Tbk, PT Astra Agrolestari Tbk, PT Lippo Karawaci Tbk, PT Tambang Batu Bara Bukit Asam Tbk and PT Bank Central Asia Tbk in the period February 2012-March 2016.

C. *Benefits Of Research*

This study is expected to provide information in addition to science, especially to expand a real insight into the investment at the desired companies and concerning about the portfolio selection by using the Capital Asset Pricing Model (CAPM) can be used as a reference for basic research on portfolio selection using the Capital Asset Pricing Model (CAPM) to the company Blue chips. And for investors or prospective investors that can be used as an ingredient in evaluating and making investment decisions. Selection of portfolios using the Capital Asset Pricing Model (CAPM) can facilitate investors choose stocks that have a maximum return at a certain risk level.

II. STUDY LITERATURE

A. *Portfolio Theory*

A portfolio is a collection of investment opportunities (Husnan, 2015). The goal is to reduce risk by diversification and generate profits in accordance with our goals. The portfolio is a combination or a combination or set of assets, either real assets and financial assets owned by the investor. The nature of the formation of the portfolio is to reduce risk by way of diversification, which allocate some funds in various investment alternatives negatively correlated (Halim, 2015). In portfolio theory is how to make the selection portfolios of many assets, to maximize the expected return on a certain level of risk investors are willing to bear.

B. *Efficient Portfolio*

Efficient Portfolio is a portfolio that was in the group (set) decent offer to investor expectations of maximum return on the various levels of risk and minimum risk for various levels of expected return (Hartono, 2015). Efficient Portfolio (efficient frontier) by Husnan (2015) is a portfolio that generates a certain profit level with the lowest risk, or certain risks with the highest profit rate.

C. *Optimal Portfolio*

According Tandelilin (2010) Optimal portfolio is selected portfolio of an investor of the many options that exist on the set of efficient portfolios. Optimal portfolio is a portfolio selected by an investor of efficient portfolio with a combination of expected return and risk best (Hartono, 2013).

D. *Return*

According Tandelilin on Sinaga (2014) return is one of the factors that motivate investors to interact and also a reward for the courage of investors to guarantee of the risk the investments. In short return is the investor profits from funds invested in an investment. Return may be a return realization has occurred or return expectations that has not happened yet but is expected to happen in the future (Hartono, 2015).

E. *Risk*

Risk is the possibility of actual return with the expected return (Tandelilin, 2010). According to Halim (2015) risk is the amount of deviation between the expected rate of return with the rate of return achieved significantly (actual return). The greater the deviation means the greater the risk levels.

F. *Capital Asset Pricing Model(CAPM)*

According Husnan (2015) CAPM is an equilibrium model which states that the market portfolio has a central position is an efficient portfolio. Because of all the relevant risk made into a risk that the market beta.

G. *LQ-45*

LQ 45 indexes are liquidity forty-five companies that had been considered to have a performance that can be accounted for and meet the criteria required by management in accordance with the LQ 45 (Fahmi, 2015). Some stocks that have been categorized as LQ 45 is often referred to as shares in Blue Chips. Stocks Blue Chips have values that tend to be stable condition and is a constant increase (constant growth), so for investors averter risk categories (risk avoidance) tend to pick stocks this category.

According Darmadji and Fakhruddin (2011) of leading shares (Blue Chips Stock) are ordinary shares of a company that has a high reputation as a leader in similar industries, have a stable income, and consistent in paying dividends. Although it may not all shares are LQ 45 can not be included in the category of Blue Chips. But for Blue Chips stock analyzer can make footing LQ 45 as supporting its decision.

III. METHODOLOGY

This research can be categorized as a descriptive quantitative research. According Sugiyono (2013) descriptive research is research carried out to determine the value of an independent variable, either a variable or more without making comparisons or connect with other variables. Quantitative research generally emphasis on experimentation, desc, survey and found the correlation.

Source of research data obtained from the Indonesian Stock Exchange (IDX) during the period February 2012 to March 2016. In addition, reference is obtained through the form of reports issued by Saham OK and various websites that provide the data required in this study such as stock prices obtained from the website of Indonesia Stock Exchange and www.finance.yahoo.com.

The population in this study is the Blue Chips shares included in the LQ 45 listed in the Indonesia Stock Exchange (IDX) on the period February 2012-March 2016.

The samples in this study using purposive sampling means that sample from a population based on specific criteria in accordance with the study. In this study, samples taken are stocks of companies that always go in a group of stocks and blue chips did stock split during the observation period is 9 February 2012-March 2016.

The data used in this research is secondary data based on collection Study Data Library techniques (Library Research) and documentation. Data analysis technique used is the analysis of the data were calculated using prining capital assets (CAPM) to determine the set of efficient portfolios. While the calculation is done using MS Excel program.

The following stages of research analysis:

A. Individual Performance Shares

1. Return Stock

$$R_i = \frac{P_1 - P_0}{P_0}$$

(Husnan, 2015)

Explanation :

R_i = Return Shares

P₁ = Price at end of period

P₀ = Price at beginning of period

1. ReturnMarket

$$R_m = \frac{ICI_t - ICI_{t-1}}{ICI_{t-1}}$$

(Hartono, 2015)

2. Expected Return[E (R)]

$$E(R_x) = \frac{\sum R_x}{n-1}$$

Explanation

$$R_i = \frac{P_1 - P_0}{P_0} \times 100\%$$

(Jones 2007)

Explanation :

R_x = Return x

P₁ = The share price at the time of the applicable

P₀ = The share price at the time the basis

3. Variance Shares

$$\sigma_i^2 = \frac{\sum_{t=1}^n (R_{it} - \bar{R}_j)^2}{(N-1)}$$

(Tandelilin, 2010)

4. Variance of Market Models

$$\text{Var}(R_i) = \beta_i^2 \text{Var}(R_m) + \text{Var}(e_i)$$

(Hartono, 2013)

5. Standard Deviation (σ) Stock Return

$$\sigma = \sqrt{\frac{\sum [R_x - E(R_x)]^2}{n-1}}$$

(Elton and Gruber 2004)

Explanation :

R_x = Return x

E (R_x) = Expected return x

6. Standard Deviation (σ_m) Return the Market

$$\sigma_m = \sqrt{\text{Var}(R_m)}$$

(Hartono, 2015)

7. Covariance (cov)

$$\text{cov}(R_m, R_j) = \frac{\sum [R_m - E(R_m)] \times [R_j - E(R_j)]}{n-1}$$

(Brealey and Myers 2016)

Explanation :

Cov(R_m, R_j) = Covariance market returns and stock returns and stock

E [R_m] = Return market / market returns

R_j = Return stock

E [R_j] = Expected return of stock

8. Beta (β)

$$\beta_j = \frac{\text{COV}(j,m)}{\text{VAR}_m}$$

(Robert hill, 2010)

9. Shares Risk (Variance Shares)

$$\sigma_{ei}^2 = \beta_i^2 \sigma_{ei}^2$$

(Mayes and Shank 2013)

10. Correlation r (Rm, Rf)

$$r (Rm, Rf) = \frac{Cov (Rm, Rj)}{\sigma Rm, \sigma Rj}$$

(Elton and Gruber 2004)

Explanation :

Cov (Rm, Rj) = Covariance market returns and stock returns

σRm = Standard deviation of the market

σRj = standard deviation of stock

11. Required Return(Rj)

$$Rj = Rf + [E (Rm) - Rf] \beta$$

(Husnan 2015)

Explanation :

E (Rm) = Expected market return

Rf = Risk free interest rate

β = Beta

B. Calculation of Individual Performance Shares

- Calculating Covariance (COV (Rm, Ri))
- Calculating the correlation coefficients (r(Rm,Rs))
- Calculating Beta (β) and Required Return E (Rj)
- Calculating Expected return (Er) Calculating the standard deviation (β_i) and
- Calculate the coefficient of variation (CV).

C. Calculation of Portfolio Performance Shares

- Calculating Return Portfolio
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$$E(R_p) = R_f + \beta_p (E(R_m) - R_f)$$

(Bodie, 2014)

- Calculating Portfolio Risk

$$\sigma_p^2 = [\beta_p^2 \times \sigma_m^2] + [\sum x_i^2 \cdot \sigma_{ei}^2]$$

(Sharpe, 2005)

- Calculating Expected Rate of Return (Return rate expected)

$$E(R_p) = X_A E(R_A) + X_B E(R_B) + X_C E(R_C) + X_D E(R_D) + X_E E(R_E) + X_F E(R_F)$$

(Husnan 2015)

Explanation :

E(R_p) = Level of expected gains from portfolio

X_A = The proportion of funds invested in shares A

X_B = The proportion of funds invested in shares B

X_C = The proportion of funds invested in shares C

X_D = The proportion of funds invested in shares D

X_E = The proportion of funds invested in stocks E

X_F = The proportion of funds invested in the stock F

E(R_A) = Rate of return expected from the A shares

E(R_B) = Level of expected gains from stock B

E(R_C) = Level of expected profit from shares C

E(R_D) = Level of expected profit from the stock D

E(R_E) = Profitability expected in stock E E(R_F) = Level of expected profit from a stock F

- Calculating Standard Deviation Portfolio 6 Stocks

$$\sigma_p = ((X_A^2 \sigma_A^2 + X_B^2 \sigma_B^2 + X_C^2 \sigma_C^2 + X_D^2 \sigma_D^2 + X_E^2 \sigma_E^2 + X_F^2 \sigma_F^2 + 6(X_A \cdot X_B \cdot X_C \cdot X_D \cdot X_E \cdot X_F \cdot r_{ABCDEF} \cdot \sigma_A \sigma_B \sigma_C \sigma_D \sigma_E \sigma_F))^{1/2}$$

or

$$\sigma_p = ((X_A^2 \sigma_A^2 + X_B^2 \sigma_B^2 + X_C^2 \sigma_C^2 + X_D^2 \sigma_D^2 + X_E^2 \sigma_E^2 + X_F^2 \sigma_F^2 + 6(X_A \cdot X_B \cdot X_C \cdot X_D \cdot X_E \cdot X_F \cdot COV(R_i, R_j, R_k, R_l, R_m, R_n)))^{1/2}$$

(Husnan 2015)

Explanation :

σ_p = The standard deviation of the portfolio profit rate

σ_A^2 = Variance rate of profit shares A

σ_B^2 = Variance rate of dividend B

σ_C^2 = Variance rate of profit shares C

σ_D^2 = Variance rate of dividend D

σ_E^2 = Variance rate of dividend E

σ_F^2 = Variance F stock profit rate

σ_{ABCDEF} = Covariance between the profit rate A shares, B shares, C shares, D shares, E shares, and the stock F

r_{ABCDEF} = The correlation between the return of A shares, B shares, C shares, D shares, E shares, and the stock F.

IV. RESULTS AND DISCUSSION

A. Research Object Description

Object of this research is the selection of an optimal portfolio on stocks that are included in the LQ 45, PT Jasa Marga Tbk, PT Unilever Indonesia Tbk, PT Astra Agrolestari Tbk, PT Lippo Karawaci Tbk, PT Tambang Batu Bara Bukit Asam Tbk, PT Bank Central Asia Tbk in Indonesia Stock Exchange.

B. Results and Discussion

1. ICI developments

MONTH	YEAR				
	2012	2013	2014	2015	2016
December (n-1)	-	4.316	4.274	5.226	4.593
January	-	4.453	4.418	5.289	4.615
February	3.985	4.795	4.620	5.450	4.770
March	4.121	4.940	4.768	5.518	4.845
April	4.180	5.034	4.840	5.086	-
May	3.832	5.068	4.893	5.216	-
June	3.955	4.818	4.878	4.910	-
july	4.142	4.610	5.088	4.802	-
August	4.060	4.195	5.136	4.509	-
September	4.262	4.316	5.137	4.224	-
October	4.350	4.510	5.089	4.455	-
November	4.276	4.256	5.149	4.446	-
December	4.316	4.274	5.226	4.593	-

Table 1. Development of Indonesia Composite Index (ICI) February 2012 - March 2016
Source: Yahoo.Finance.com

Table 1. shows the development of the Indonesia Composite Index (ICI) in Indonesia Stock Exchange (IDX) during the period February 2012 to March 2016. During this period, the stock price index fluctuated tended to increase from 3,985 in February 2012 to 4.845 in March 2016. Indonesia Composite Index (ICI) is the highest for 5.518 that occurred in March 2015.

Table 2. Developments Expected Return ICI (ER_M), Variance ICI (Var_M), Standard Deviation ICI (σ_m), and Coefficient of Variation ICI (CV_M)

Year	2012	2013	2014	2015	2016
Information					
ER_m	0.88	0.03	1.70	-0.97	1.80
Var_m	14.47	22.23	2.93	18.84	1.41
σ_m	3.80	4.71	1.71	4.34	1.19
CV_m	4.35	0.21	0.58	0.23	0.66

Table 2. shows that the expected return of ICI (ER_M) at the Indonesian Stock Exchange (IDX) tend to fall from 0.88% in 2012 to 0.03%, in 2014, while in 2016 the expected return tends to rise to 1.80%. It is generally identify decrease in trading activity during the period from February 2012 to March 2016.

Variance is a quadratic form (σ^2) of the standard deviation or commonly called the risk (σ). Magnitude VAR_M in 2012 amounted to 0.1447% or 14.47% . Whereas magnitude of VAR_M in 2016 amounted to 0.0141 or 1.41%. This indicates that the magnitude of the deviation of return market (R_M), which may be against expectations of yield (Expected Retun) which was expected to decline from 14.47% to 1.41%. With the variant, it can be seen the amount of risk in 2012 is equal to 3.80%. whereas in 2016 the risk is equal to 1.19%.

ICI standard deviation (σ_m) at the Indonesian Stock

Exchange (IDX) tends to decrease during the period from February 2012 to March 2016, from 3.80% in 2012 fell to 1.19% in 2016. This indicates a decrease in fluctuation changes ICI in the Indonesia Stock Exchange (IDX) during the period from February 2012 to March 2016.

The coefficient of variation (CV_M) at the Indonesian Stock Exchange (IDX) tends to decrease, from 4.35% in 2012 decreased to 0.66% in 2016. But the highest coefficient of variation ICI in 2012 that is equal to 4.35%.

2. Interest Rate

To determine the required return stock JSMR, stock UNVR, stock AALI, stock LPKR, stock PTBA, stock BBKA, data required risk free rate (R_f) determined based on the interest rate of Bank Indonesia Certificates (SBI).

The following will be presented Table 3, the development of the interest rate of Bank Indonesia Certificates (SBI) in Bank Indonesia (BI) from 2012 to 2016.

MONTH	YEAR				
	2012	2013	2014	2015	2016
January	-	5.75	7.5	7.75	7.25
February	5.75	5.75	7.5	7.75	7
March	5.75	5.75	7.5	7.75	6.75
April	5.75	5.75	7.5	7.75	-
May	5.75	5.75	7.5	7.75	-
June	5.75	6	7.5	7.75	-
July	5.75	6.5	7.5	7.75	-
August	5.75	7	7.5	7.75	-
September	5.75	7.25	7.5	7.75	-
October	5.75	7.25	7.5	7.75	-
November	5.75	7.25	7.75	7.75	-
December	5.75	7.5	7.75	7.75	-
Σ	63.25	2090.5	2104.5	2108	6366.25
Average	5.75	6,46	7.54	7.75	7.00
Average of 4 years	6.9				

Table 3. Interest Rate

3. Combination Proportion Portfolio Six Stocks

To calculate the return and risk of stock portfolios stock JSMR, stock UNVR, stock AALI, stock LPKR, stock PTBA and stock BBKA, required the calculation of combination among six stocks.

Combination Alternative Portfolio	PROPORTION						
	A	B	C	D	E	F	
	JSMR	UNVR	AALI	LPKR	PTBA	BBCA	
P ₁	0.25	0.12	0.13	0.15	0.18	0.17	1
P ₂	0.12	0.13	0.15	0.18	0.17	0.25	1
P ₃	0.13	0.15	0.18	0.17	0.25	0.12	1
P ₄	0.15	0.18	0.17	0.25	0.12	0.13	1
P ₅	0.18	0.17	0.25	0.12	0.13	0.15	1
P ₆	0.17	0.25	0.12	0.13	0.15	0.18	1
	1	1	1	1	1	1	

Table 4. Alternative combination the portfolio stock JSMR, UNVR, AALI, LPKR, PTBA, BBCA.

Source: Table 4.

In Table 4. shows that an alternative combination of six stocks selected portfolio of alternative portfolio P₅ with the largest alternative composition formed AALI shares of 0.25, followed JSMR shares of 0.18, UNVR shares of 0.17, BBCA shares of 0.15, PTBA shares of 0.13, and stocks LPKR of 0.12.

4. Stock Portfolio Performance

a. Expected Return Portfolio (ER_p) between Six Stocks

In the calculation of Table 5. below shows the expected return of the portfolio of each stock. Alternative combinations of 1.3705 portfolio P₁, P₂ at 1.3663, at 1.7530 P₃, P₄ at 1.5733, P₅ at 2.1746, P₆ at 1.8676. The highest expected return of the entire portfolio of alternative combinations is the alternative combination with the return of P₅ portfolio amounted to 2.1746. And the smallest in the alternative combination with the P₂ portfolio return of 1.3663.

Combination Alternative Portfolio	Return JSMR		Return UNVR		Return AALI		Return LPKR		Return PTBA		Return BBCA		Return Portfolio (ER _p)
	(W1)	(R1)	(W2)	(R2)	(W3)	(R3)	(W4)	(R4)	(W5)	(R5)	(W6)	(R6)	
	n												
P ₁	0.25	.6650	0.12	4.6864	0.13	5.2295	0.15	-1.5432	0.18	1.2042	0.17	-0.1366	1.3705
P ₂	0.12	.6650	0.13	4.6864	0.15	5.2295	0.18	-1.5432	0.17	1.2042	0.25	-0.1366	1.3663
P ₃	0.13	.6650	0.15	4.6864	0.18	5.2295	0.17	-1.5432	0.25	1.2042	0.12	-0.1366	1.7530
P ₄	0.15	.6650	0.18	4.6864	0.17	5.2295	0.25	-1.5432	0.12	1.2042	0.13	-0.1366	1.5733
P ₅	0.18	.6650	0.17	4.6864	0.25	5.2295	0.12	-1.5432	0.13	1.2042	0.15	-0.1366	2.1746
P ₆	0.17	.6650	0.25	4.6864	0.12	5.2295	0.13	-1.5432	0.15	1.2042	0.18	-0.1366	1.8676

Table 5. Return Portfolio of Shares JSMR, UNVR, AALI, LPKR, PTBA, BBCA February 2012-March 2016

Note: $E(R_p) = W_A E(R_A) + W_B E(R_B) + W_C E(R_C) + W_D E(R_D) + W_E E(R_E) + W_F E(R_F) + \dots$ etc

Combination Alternative Portfolio	Risk JSMR		Risk UNVR		Risk AALI		Risk LPKR		Risk PTBA		Risk BBCA		(Cov(RA, RB, RC, RD, RE, RF))	(σ _p)
	(R1)	(R2)	(R3)	(R4)	(R5)	(R6)								
	(W1)	(W2)	(W3)	(W4)	(W5)	(W6)								
P ₁	0.25	.9705	0.12	.3451	0.13	.2606	0.15	1.3140	0.18	.8867	0.17	1.0952	12.0876	0.08
P ₂	0.12	.9705	0.13	.3451	0.15	.2606	0.18	1.3140	0.17	.8867	0.25	1.0952	12.0876	0.09
P ₃	0.13	.9705	0.15	.3451	0.18	.2606	0.17	1.3140	0.25	.8867	0.12	1.0952	12.0876	0.07
P ₄	0.15	.9705	0.18	.3451	0.17	.2606	0.25	1.3140	0.12	.8867	0.13	1.0952	12.0876	0.08
P ₅	0.18	.9705	0.17	.3451	0.25	.2606	0.12	1.3140	0.13	.8867	0.15	1.0952	12.0876	0.05
P ₆	0.17	.9705	0.25	.3451	0.12	.2606	0.13	1.3140	0.15	.8867	0.18	1.0952	12.0876	0.06

Table 6. Portfolio Risk of Shares JSMR, UNVR, AALI, LPKR, PTBA, BBCA February 2012-March 2016

Note: $\sigma_p = ((W_A^2 \cdot \beta_A^2 + W_B^2 \cdot \beta_B^2 + W_C^2 \cdot \beta_C^2 + W_D^2 \cdot \beta_D^2 + W_E^2 \cdot \beta_E^2 + W_F^2 \cdot \beta_F^2) + 6(W_A \cdot W_B \cdot W_C \cdot W_D \cdot W_E \cdot W_F \cdot COV_{ABCDEF}))^{1/2}$

From the calculations above Table 6. shows each portfolio risk stock portfolio of alternative combinations of 0.08 P₁, P₂ at 0.09, P₃ at 0.07, P₄ at 0.08, P₅ at 0.05, P₆ at 0.06. the risk that the smallest of all alternative combinations P₅ risk portfolio is 0.05. And the highest risk of the entire portfolio was P₂ risk alternative for 0.09.

c. Six Stocks Portfolio Selection

Alternative Combinatio Portfolio	February 2012-March 2016		
	Erp	σp	CVP
P ₁	1.3705	0.0810	0.0591
P ₂	1.3663	0.0860	0.0630
P ₃	1.7530	0.0692	0.0395
P ₄	1.5733	0.0839	0.0533
P ₅	2.1746	0.0523	0.0241
P ₆	1.8676	0.0613	0.0328

Table 7. Portfolio Selection Six Stocks
Source: Table 7.

Note: $CVP = \sigma_p / \epsilon R_p$

Table 7. shows the greatest expected return is a combination of alternative portfolios P₅ 2.1746 with the lowest risk 0.0523 and a small variation coefficient 0.0241. The conclusion of the selection of alternative combinations of the best portfolio of six stocks that alternative combinations P₅ portfolio because it has a risk of 0.0523 with the smallest variation coefficient of 0.0241 and 2.1746 for the greatest return.

V. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

This study found that the proportion Alternative optimal portfolio of leading shares using the capital asset pricing model (CAPM) is a portfolio Alternative 5 (P₅).

- The study also found that alternative P₅ optimal portfolio is performing better than the performance of individual stocks.
- To obtain optimal portfolio investor should provide a weighted proportion (w) greater on stocks that have the greatest return and the lowest risk as found in this study.

B. Recommendations

- For investors or prospective investors that will establish a portfolio of shares in the Indonesian Stock Exchange should not be focused chose the greatest return and the lowest risk, but proportional portfolio analysis to obtain the smallest variation coefficient (relative risk portfolios).
- Investors should choose stocks that are more varied in various industrial portfolio and sub-sectors listed in

Indonesia Stock Exchange in order to be formed can be optimized to minimize the risks at the level of a certain return.

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