

# THE IMPORTANCE OF INVESTMENT DECISIONS USING CAPITAL ASSET PRICING MODEL (CAPM) IN STOCK SECTOR TELECOMMUNICATION

Pristiwantiyasih  
Mochammad Ardi Setyawan  
Universitas 17 Agustus 1945 Banyuwangi  
Email : pris.tiwantiyasih@gmail.com, ardiraffi8830@gmail.com

<i>Received</i>	: <i>January 19<sup>th</sup> 2020</i>
<i>Revised</i>	: <i>March 15<sup>th</sup> 2020</i>
<i>Accepted</i>	: <i>May 30<sup>th</sup> 2020</i>

## ABSTRACT

The purpose of this study is to analyze the overall performance of company shares in the telecommunications sector based on stock returns and risks, and determine the grouping and valuation of shares that are efficient and inefficient based on the Capital Asset Pricing Model (CAPM) method for companies in the telecommunications sector that listed on the Indonesia Stock Exchange (IDX) for the period 2015-2018. From the 4 shares of the research sample company, there were 3 shares that were considered efficient (undervalued). An undervalued stock is a stock that has an individual Return ( $R_i$ ) greater than the expected rate of return [ $E(R_i)$ ] and is above the Security Market Line (SML).

Keywords: Stock Return Rate, CAPM, Stock Efficiency

## INTRODUCTION

The development of a country's economy can be measured in various ways, one of which is by knowing the level of development of the world capital markets and securities industries in that country. The capital market is defined as a market for a variety of long-term financial instruments (securities) that can be traded, both in the form of debt or equity, whether issued by the government, public authorities, or private companies (Husnan, 2014).

One supporting factor for the survival of a company is the availability of funds. Cheap source of funds that can be obtained by a company by selling shares to the public on the capital market. The capital market in Indonesia, namely the Stock Exchange which can be a media meeting between investors and companies. Capital market (capital market) is a market for a variety of long-term financial instruments that can be traded, both debt instruments (bonds), securities (stocks), mutual funds,

derivative instruments and other instruments.

An investment plan needs to be analyzed carefully. Investment plan analysis is basically a research about whether or not a project can be carried out successfully. An investment project generally requires large funds. Investment activities basically aim to obtain a profit in the future. The purpose of seeking profit is the difference between investment and saving.

Investment is an activity to put a number of funds in the form of money or goods that are expected to provide benefits to their owners in the future. One investment option that can provide benefits is stock investment. The portion of ownership can be seen from how much the shares are invested in the company.

Investors investing in the capital market certainly expect more profit. In investing there are two factors that must be considered by investors, namely the rate of return (return) and the level of risk (risk). These two factors are the opposite, in this case the investor likes a

high rate of return but does not like a high risk. In fact there is a linear relationship between the rate of return (return) and the level of risk (risk), because the higher the expected rate of return, the greater the risk that will be faced or called high risk high return. There are several sources of risk that can affect the size of the risk of an investment risk, including: Interest rate risk, market risk, inflation risk, business risk, financial risk, liquidity risk, and currency exchange risk.

In addition to the above sources of risk, investors also need to pay attention to the uncertainty in the future that can lead to the emergence of two types of risk, namely systematic risk and unsystematic risk. Systematic risk is usually influenced by market conditions or this risk will be faced by all assets listed on the exchange. While the unsystematic risk is usually caused by company policies and only affects the company concerned.

The equilibrium model is one way to determine the relevant risk gauges for an asset, and to understand how the risk relationship and the expected rate of return for an asset in a balanced market condition. One of the commonly used balance models is the Capital Asset Pricing Model (CAPM). The rate of return is the main goal of investors in investing. The Capital Asset Pricing Model explains the importance of maximizing returns with a certain level of risk, by diversifying shares. The rapid development of the capital market can create various investment opportunities for investors.

Currently investors are required to have a number of information relating to stock prices. This information will be used by investors in making decisions regarding company stock investments. In the stock exchange, investors can find out various information about the condition and performance of a company. The condition of the company can be known by the financial statement data, while the financial performance of a company can be assessed by analyzing

the company's financial statements using profitability ratios. The purpose of analyzing financial statements is to provide information for users of financial statements in order to predict, compare and evaluate the company's ability to generate profits.

The presence of the capital market or stock market to increase the choice of sources of funds for the company, as well as adding investment options that can also mean the opportunity to obtain additional funds for the company will be even greater. Related to the role and function of the capital market, the need for relevant information in making investment decisions in the capital market is also getting stronger.

Valuation of stock investments can be done in various ways such as by using technical analysis and fundamental analysis. According to Halim (2003: 17-25), there are various models of analysis of stock prices, namely fundamental analysis and technical analysis. Companies listed on the Indonesia Stock Exchange (IDX) can obtain long-term investment funds for the development of existing businesses as well as vertical or horizontal expansion. Investors have the opportunity to invest in companies or business sectors that are considered to have good and consistent financial fundamentals and have bright prospects in the future. While companies have the opportunity to develop and expand their business and capture every business opportunity that exists.

#### Formulation Of The Problem

The formulation of the problem in this study is:

1. What is the expected rate of return and risk level of each telecommunications company share?
2. How stock efficiency is shifted and the decisions taken by investors regarding company shares in the telecommunications sector.

## Research Purposes

The purpose of this study is to analyze the rate of return and risk of each company's shares in the telecommunications sector. It also aims to analyze the grouping of company shares as well as to determine investment decisions for each of the company's shares in the telecommunications sector.

## LITERATURE REVIEW

### Investment

Investment is an act of investing resources or capital at this time, with the hope of getting more benefits in the future, or the definition of investment is an act of investing funds now or now, with the hope of producing more funds than the funds invested when starting to invest. According to Sunariyah (2004: 4) investment is investment for one or more assets that are owned and usually for a long time in the hope of getting profits in the future. According to Tandelilin (2010: 2) investment is a commitment to a number of funds or other resources made at this time, with the aim of obtaining a number of benefits in the future.

Stock investment is the ownership or purchase of company shares by another company or individual for the purpose of obtaining additional income outside the income from its business. Thus, shares are one of the capital market instruments that are compared on the floor of the Stock Exchange, which is used by companies for the survival of companies in need of funds from the public (Subroto, 1986).

### Investment in the Capital Market

The definition of the capital market is explained more specifically as activities related to public offering and trading of securities, public companies related to the issuance of securities, and institutions and professions related to securities. The capital market provides a major role for a country's economy because the capital market provides two functions at once, economic function and financial function (Capital Market

Law No. 8 of 1995). With the existence of this capital market, those who have excess funds can invest these funds in the hope of getting a return. Basically, investment in the capital market is the same as other forms of investment, it's just that investment in the capital market of goods which are used as investment instruments are securities. One of the instruments in the capital market is stocks. Shares are proof of ownership of the assets of the company that issued the shares. Shares are divided into preferred shares and ordinary shares. Preferred shares are shares that have a combination of the combined characteristics of bonds and ordinary shares, because preferred shares provide a fixed income like bonds and also get ownership rights as in common shares. Common stock is a security that shows that the ordinary shareholder has ownership of the company's assets.

Stock is defined as a sign of ownership or ownership of a person or entity in a company (Sunariyah, 2006). Another meaning of shares is the ownership interest in a company (Bodie, 2014). Based on the two meanings above, it can be concluded that the definition of shares is evidence / signs of investor ownership of a company. Every investment is always related to profit and loss. Investments in the form of shares also do not always run smoothly, sometimes they also get profits, but not infrequently those who also get losses. Therefore, investors must also really know the advantages and disadvantages of owning shares. The advantages and disadvantages are:

### Benefits of Owning a Stock:

1. Dividends is the distribution of profits provided by the issuing company of the profits generated by the company. Dividends are given after obtaining approval from the shareholders at the General Meeting of Shareholders (GMS).
2. Capital gain is the difference between the purchase price and the selling price. Capital gains are

formed by transactions on the secondary market. Generally investors with short-term orientation pursue profits through capital gains.

#### Loss of Ownership of Shares

1. Not Receiving Dividends. The company will distribute dividends if the company's operations make a profit.
2. Capital Loss. There are times when investors have to sell shares at a selling price lower than the purchase price called capital loss. In buying and selling shares, sometimes to avoid the potential for greater losses along with the continued decline in stock prices, investors are willing to sell shares at low prices, known as cut loss.
3. Bankrupt or liquidated companies. In accordance with the rules of listing shares on the Stock Exchange, then if a company goes bankrupt or is liquidated, then the company's shares will automatically be removed from the exchange or delisted. In the condition of the company being liquidated, shareholders will occupy a lower position than creditors or bondholders, meaning that after all of the company's assets are sold, it will be distributed to creditors or bondholders first, and if there is still leftover, then it will be distributed to shareholders.

#### Return on Investment

"Return is the level of investment returns" (Tandelilin, 2010). According Jogiyanto (2009), "Return is the result obtained from investment". Based on the expert's definition, a conclusion can be drawn that the return is the rate of return or the results of the benefits obtained from the investments made. Returns are divided into 3 types. Types of returns include:

- a. Realized Return. Realized return is a return that has occurred. Realized returns are calculated using

historical data. Realized returns are important because they are used as a measure of the company's performance. Realized returns are also useful as a basis for determining future expectations and risks.

- b. Expected Return. Expected return is the return that is expected to be obtained by investors in the future. Return expectations are not yet happening.
- c. Total Return. Total return is the overall return of an investment in a certain period. Total return consists of capital gain (loss) and yield, which is the percentage of periodic cash receipts to the investment price of a certain period of time investment (Jogiyanto, 2009).

#### Investment Risk

Risk is a deviation from the actual results expected, the risk is a different outcome than expected (Najmudin, 2011: 129). Risk is the possibility of an unfavorable event (Brigham and Weston, 1990). Risk is also defined as the possibility of deviation or variability in the actual return of an investment with an expected return. In modern investment theory the various risks are classified into two, namely:

- a. Systematic risk (systematic risk / non-diversion risk). Is the risk that is influenced by conditions outside the company such as economic, political and other macro factors that cannot be eliminated through diversification.
- b. Unsystematic risk / divers able risk. Risk is influenced by the condition of a particular company or industry and can be reduced by diversifying (Brigham and Daves, 2004).

#### Beta

"Beta is a covariance of securities returns with market returns that are standardized with stock return variance" (Tandelilin, 2010: 521). According to Jogiyanto (2009), "Beta is

a measure of the volatility of a security or portfolio return on market returns ". Volatility can be defined as fluctuations in the returns of a security or portfolio in a certain time period.

If fluctuations in securities or portfolio returns statistically follow the fluctuations of market returns, then the beta of the security or portfolio is said to be worth 1. It also means that the systematic risk of a security or portfolio is equal to market risk. The beta of a security can be calculated using estimation techniques that use historical data which can then be used to estimate beta in the future. The use of historical data in calculating beta securities is also a weakness of the beta itself because the data used is past and has occurred, so the assumption that occurs is beta in the future is the same as beta in the past. Based on some of the definitions above, it can be said that beta is a measurement tool to measure the relationship between investment returns and overall market returns. Stocks with high standard deviations will also have high beta. A company that has  $\beta = 1$  can be said that a stock is at an average market risk. While a stock that has a  $\beta > 1$  can be said that the stock is more risky than market risk, conversely if a company that has a  $\beta < 1$  can be said that the stock has a risk below market risk.

According to Husnan (2005), these factors are:

- a. Cyclicity. This factor shows how far a company is influenced by economic conjuncture. Companies that are very sensitive to changes in economic conditions are companies that have a high beta and vice versa.
- b. Operating leverage. This factor shows the proportion of company costs that are fixed costs, i.e. costs that do not change if the company changes its level of activity. Companies that have high operating leverage will tend to have high beta, and vice versa.

- c. Financial leverage. This factor shows the greater the proportion of debt used by the company, the greater the financial leverage. Estimating beta shares is the same as beta equity, so that the greater the proportion of debt used by companies, the owners of capital themselves will bear greater risks. Therefore the higher the financial leverage, the higher the beta equity.

#### Capital Asset Pricing Model (CAPM)

The Capital Asset Pricing Model (CAPM) was first introduced by Sharpe, Lintner, and Mossin in the mid-1960s. Estimating or estimating the size of a security's return is something that investors must do. Investors must know the relationship between the amount of return with the risk inherent in securities. The appropriate estimation model used is the Capital Asset Pricing Model (CAPM).

The Capital Asset Pricing Model (CAPM) aims to determine the expected rate of return from a risky investment.

In addition, CAPM can assist investors in calculating risks that cannot be diversified in a portfolio and compare with the rate of return. "CAPM is a model that links the expected rate of return of a risky asset with the risk of the asset in a balanced market condition" (Tandelilin, 2010). According to Bodie (2014), "CAPM is a set of predictions regarding the estimated balance of returns on risk assets. Jogyanto (2009) also proposed the definition of CAPM, which is a model used to determine asset prices in equilibrium. Based on the experts' definition above, a conclusion can be drawn that the CAPM is a model for estimating returns obtained against risky securities that can only be used for short periods and in stable economic conditions.

Main Function of Capital Asset Pricing Model (CAPM).

According to Zubir (2011), the main functions of the CAPM are:

- a. As a benchmark (benchmark) in evaluating the rate of return of an investment.
- b. Assist in predicting or predicting the expected return of an asset that is not or has not yet been traded on the market.

#### Assumptions used in CAPM

Assumption is one way to simplify a complex thing. The assumptions of each person is different depending on how a person looks at something. The basic assumption of the CAPM method is that the nature of the future is the same as the past and can only be used in stable economic conditions. According Jogiyanto (2009), the assumptions used in the CAPM model are:

- a. Investors will diversify portfolios and choose optimal portfolios according to efficient portfolio lines.
- b. All investors have identical probability distributions.
- c. All investors have the same time period
- d. All investors can borrow or lend money at a risk-free rate of return.
- e. There are no transaction fees, income taxes and inflation
- f. The market is balanced

#### Relationship between Risk and Return in the Capital Asset Pricing Model (CAPM)

The relationship between the magnitude of risk and return obtained by the CAPM method can be seen from the capital market line (GPM) or capital market line (CML) and also the securities market line (GPS) or security market line (SML). Market equilibrium conditions related to expectations and risk returns can be described by the Capital Market Line (CML), while for individual securities the relationship between expectation returns and risks can be described by the Security Market Line (SML). These lines are:

#### 1) Capital Market Line (CML)

"Capital market lines are lines that show all possible combinations of efficient portfolios consisting of risk assets and risk free assets" (Jogiyanto, 2009). The capital market line (CML) also illustrates the relationship between the size of portfolio risk and the expected portfolio return in equilibrium market conditions. For clarity, the capital market lines will be described as follows:

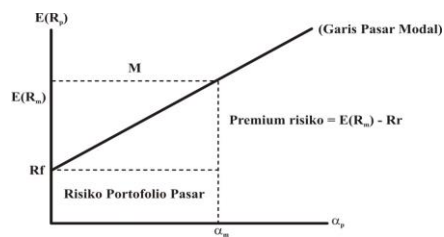


Figure 1. Capital Market line

Source : data proceed

#### Information :

$E(R_p)$ : Expected return requested for the portfolio with a risk of  $\sigma_p$

$R_f$ : Risk-free rate of return

$\sigma_m$ : Risk of market returns

$\sigma_p$ : Portfolio risk from other portfolio returns in CML (Jogiyanto, 2009)

Based on the picture, a conclusion can be drawn, namely if the market portfolio only contains no-risk assets, then the risk will be equal to zero ( $\sigma_p = 0$ ) and the expected return is the same as risk free ( $R_f$ ). In addition, if the portfolio consists of all existing assets, then the risk of GPM (Capital Market Line) is equal to ( $\sigma_m$ ) with an expected return of  $E(R_m)$ . The difference between [ $E(R_m) - R_f$ ] is the risk premium of the market portfolio because it bears a greater risk, which is  $\sigma_m$ .

#### 2) Security Market Line (SML)

"Securities market lines are lines that show trade-offs between risk and expected returns for individual securities" (Jogiyanto, 2009).

The Security Market Line (SML) is a graphical depiction of the CAPM model. The picture from SML clearly is:

Figure 2. Security Market Line  
Source : data proceed

**Information :**

- E (R<sub>i</sub>): Expected rate of return
- RF: Risk-free rate of return
- [E (R<sub>m</sub>)]: The expected rate of return on a market portfolio
- Beta: Risk of individual securities (Jogiyanto, 2009)

Based on this figure, it can be concluded that the additional expected return for individual securities is due to the additional risk of individual securities as measured by beta. The beta determines the additional expected return for individual securities assuming that for a perfectly diversified portfolio, unsystematic risk tends to disappear and only systematic risk is measured in beta.

The beta for a market portfolio is worth 1. A security that has a beta smaller than 1 is said to have a risk less than the risk of a market portfolio. Conversely, a security that has a beta value greater than 1 is said to have a risk greater than market risk. If a security has a beta equal to 1, then this security has the same expected return as the market portfolio expectation return.

**Efficient Stock Grouping and Stock Investment Decisions based on the Capital Asset Pricing Model (CAPM)**

Efficient grouping of shares must be a top priority in investment decisions because only efficient stocks can be purchased. This can happen because efficient stocks offer greater returns than expected returns. Efficient stock groups when seen in the Security Market Line (SML), it appears that efficient shares are above the Security

Market Line (SML). According to Tandelilin (2010) "Efficient stocks are stocks with individual returns greater than the expected level [E (R<sub>i</sub>)], in other words the stock price is lower than the security price of the market price or fair price. When prices go down, investors will buy and then when prices go up investors will resell them.

**2) Inefficient**

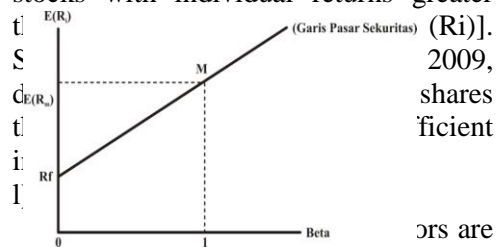
The decision taken by investors is to sell shares before the stock price falls. This situation indicates an individual level (R<sub>i</sub>) which is smaller than the expected level [E (R<sub>i</sub>)], in other words the price of an overpriced / overvalued stock repair. Higher valued is a condition where the price of this security is higher than the price of a market security or fair price.

**RESEARCH METHODS**

**Population And Sample**

The population in this study is a generalization area that consists of objects or subjects that have certain qualities and characteristics that are determined and then drawn conclusions (Sugiyono, 2006). The population of this study is the shares of companies in the telecommunications sector which are listed on the Indonesia Stock Exchange (BEI) for the period of 2016 to 2018 amounting to 6 (six) companies.

The research sample is company shares in the telecommunications sector which are listed on the Indonesia Stock Exchange (IDX) for the period January 2016 to December 2018 that meet the requirements and criteria.



The method used in this research is to use a purposive sampling method, which is the selection of a non-random sample whose information is obtained by using certain considerations that are adjusted to the purpose of the study. Some criteria that must be met to be sampled, are as follows:

- a. Company shares that are active in telecommunications are listed or traded on the Indonesia Stock Exchange during the sampling period of January 2016 to December 2016
- b. The available data is complete from the period January to December 2016
- c. Issuers or companies that are used as samples of listed companies listing investment in shares on the Indonesia Stock Exchange (IDX) during the study period.
- d. Companies that meet the criteria of 4 (four) companies with a research period of 3 (three) years. With company code: TLKM, ISAT, EXCL, FREN.

Following are the data or names of companies in the telecommunications sector, which are 4 companies that meet the criteria and will be used as research objects for the period of 2016 to 2018.

Table 1. Research Objects

No.	Data Sampel Perusahaan Telekomunikasi	
	Nama Perusahaan	Kode Emiten
1.	Telekomunikasi Indonesia, Tbk	TLKM
2.	XL Axiata, Tbk	EXCL
3.	Indosat, Tbk	ISAT
4.	Smartfren Telecom, Tbk	FREN

Sumber : [www.yahoo.finance.com](http://www.yahoo.finance.com)

#### Data Collection Technique

Data was collected from the Indonesian Capital Market Director (ICMD) for the period of 2016 - 2018. The research location was at the

Indonesia Stock Exchange (IDX). The data source is used to find information about interest rates (SBI) during the study period, adjusted closing prices of shares and adjusted composite share price indices.

#### Analysis Technique

Calculate the Return Rate of Individual Shares ( $R_i$ )

The rate of return of an individual stock is income received in the form of dividends or income from changes in market prices from stock trading transactions calculated within a period of one month.

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

Keterangan :

$R_m$  = Rata-rata tingkat pengembalian pasar

IHSG<sub>t</sub> = Indeks harga saham gabungan periode sekarang

IHSG<sub>t-i</sub> = Indeks harga saham gabungan periode yang lalu

(Jogiyanto, 2008:324)

Calculate the Risk Free Return ( $R_f$ )

Risk-free rate of return is the rate of return obtained from risk-free financial assets.

$$R_f = \frac{\sum_j^n \text{Tingkat Suku Bunga SBI}}{n}$$

Keterangan :

$R_f$  = Tingkat pengembalian bebas risiko

$n$  = Banyaknya Periode

#### Calculating Systematic Risk ( $\beta$ )

Beta is the sensitivity of the level of profit to market changes. The greater the beta, the greater

expected level of profit. Stocks that have a beta greater than one ( $\beta > 1$ ) are high risk stocks, and conversely stocks that have a beta of less than one ( $\beta < 1$ ) are low risk stocks.

$$\beta_i = \frac{\sigma_{im}}{\sigma_m^2}$$



$$\beta_i = \frac{n(\sum R_i R_m) - (\sum R_i)(\sum R_m)}{n(\sum R_m)^2 - (\sum R_m)(\sum R_m)}$$

Information :

$\beta_i$  = Benchmark of risk that cannot be diversified from securities / systematic risk.

$\sigma_{im}$  = Covariance between stock income i with market revenue

$\sigma_m^2$  = Market variant

n = Research period (month)

$\sum R_i$  = Number of individual stock returns

$\sum R_m$  = Number of market returns

$\sum R_i R_m$  = Number of individual stock returns times the market return

(Jogiyanto, 2008: 365).

Calculate the expected Return Rate E (Ri)

The expected rate of return is the level of actual profit expected or expected by investors in the future.

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

Information :

E (Ri) = Expected Return

Rf = Risk-free rate of return

E (Rm) = The expected market rate of return

$\beta_i$  = Systematic Risk

(Jogiyanto, 2008: 176)

Portrayal of Security Market Line (SML)

The Security Market Line is a graphical depiction of the CAPM model. Securities market lines are lines that connect the expected rate of return to the risk of a security.

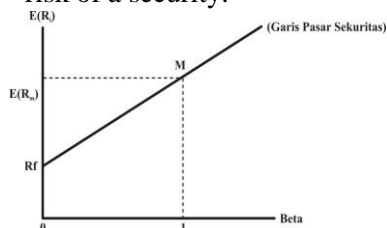


Figure 3. Security Market Line

Source : data proceed

Efficient Stock Grouping

The classification of efficient shares is based on the rate of return of individual shares greater than the expected return [(Ri) > E (Ri)]. (Susanti, Suhadak, Topowijono: 2014) so that by grouping shares it will get a maximum rate of return by means of stock diversification so that stock investment can be maximized as expected by an investor.

By means of this CAPM method, investors or potential investors can choose and sort shares to be bought or will be sold by trying to find out whether these shares are undervalued / cheap or Overvalued / high prices.

Where a stock is said to be undervalued if the rate of return is above the minimum return, and said to be overvalued if the return is below the minimum return. The term used for minimum return is expected return or required rate of return.

## RESULTS

The results of the calculation of the rate of return of shares of the 4 shares taken from the IDX gallery used as research samples are:

Table 2. Stock Return List Table

No	Nama Perusahaan	Kode Saham	R <sub>i</sub>
1.	Telekomunikasi Indonesia, Tbk	TLKM	0.935276908
2.	XL Axiata, Tbk	EXCL	-0.573315519
3.	Indosat, Tbk	ISAT	0.569571235
4.	Smartfren, Tbk	FREN	0.348093925

Source : data proceed

Table 3. List Stock Return (R<sub>m</sub>)

No	Bulan	Tahun			
		2015	2016	2017	2018
1.	Januari	4453.70	4,418.76	5,289.40	4,615.16
2.	Pebruari	4795.79	4,620.22	5,450.29	4,770.96
3.	Maret	4940.99	4,768.28	5,518.67	4,845.37
4.	April	5034.07	4,840.15	5,086.42	4,838.58
5.	Mei	5068.63	4,893.91	5,216.38	4,796.87
6.	Juni	4818.90	4,878.58	4,910.66	5,016.65
7.	Juli	4610.38	5,088.80	4,802.53	5,215.99
8.	Agustus	4195.09	4,136.86	4,509.61	5,386.08
9.	September	4316.18	5,137.58	4,223.91	5,364.80
10	Oktober	4510.63	5,089.55	4,455.18	5,422.54
11	Nopember	4256.44	5,149.89	4,446.46	5,148.91
1.	Desember	4274.18	5,226.95	4,593.01	5,296.71

Source : www.yahoo.finance.com

Table 4. Risk Free Rate Calculation (Rf) 2016 – 2018

SBI Rate				
No	Periode	Tahun		
	Bulan	2016	2017	2018
1.	Januari	0.00625	0.00646	0.00604
2.	Pebruari	0.00625	0.00625	0.00583
3.	Maret	0.00625	0.00625	0.00563
4.	April	0.00625	0.00625	0.00563
5.	Mei	0.00625	0.00625	0.00563
6.	Juni	0.00625	0.00625	0.00542
7.	Juli	0.00625	0.00625	0.00542
8.	Agustus	0.00625	0.00625	0.00542
9.	September	0.00625	0.00625	0.00542
10.	Oktober	0.00625	0.00625	0.00542
11.	Nopember	0.00646	0.00625	0.00542
12.	Desember	0.00646	0.00625	0.00542
Rata-rata per tahun		0.006284722	0.006267361	0.00555556
Rata-rata 2016 – 2018				0.00603588
R <sub>f</sub>				0.00201196

Source: processed data

Table 7. Efficient Stocks and Groupings Investation decision

No	Nama Perusahaan	Kode Saham	R <sub>i</sub>	E(R <sub>i</sub> )	Keterangan	Keputusan
1.	Telekomunikasi Indonesia, Tbk	TLKM	0.02598	0.00644	Efisien	Membeli
2.	XL Axiata, Tbk	EXCL	0.01593	0.00649	Tidak Efisien	Membeli
3.	Indosat, Tbk	ISAT	0.01582	0.00622	Efisien	Membeli
4.	Smartfren Telecom, Tbk	FREN	0.00967	0.00628	Efisien	Membeli

Source: processed data

Source : data proceed

Table 5. List of Systematic Risks ( $\beta$ )

No	Nama Perusahaan	Kode Saham	Beta ( $\beta$ )
1.	Telekomunikasi Indonesia, Tbk	TLKM	0.83223
2.	XL Axiata, Tbk	EXCL	0.91989
3.	Indosat, Tbk	ISAT	0.37288
4.	Smartfren, Tbk	FREN	0.49397

Source : data proceed

Table 6. List of Expected Returns (*Expected Return* [E(R<sub>i</sub>)])

No	Nama Perusahaan	Kode Saham	E(R <sub>i</sub> )
1.	Telekomunikasi Indonesia, Tbk	TLKM	0.00644
2.	XL Axiata, Tbk	EXCL	0.00649
3.	Indosat, Tbk	ISAT	0.00622
4.	Smartfren, Tbk	FREN	0.00628
TOTAL			0.02543

Source : data proceed

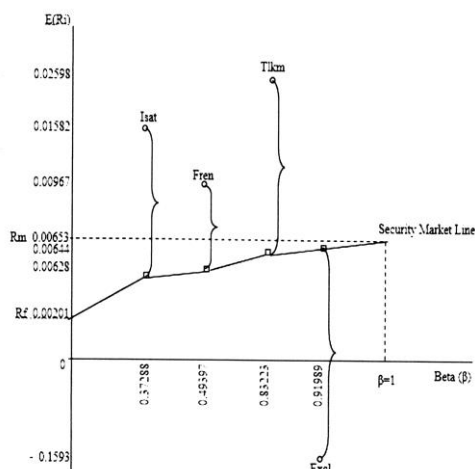


Chart 1. Security Market Line (SML)

### Discussion

The results showed that the average number of stock returns of the 4 shares that were sampled showed that there were two shares with negative  $R_i$  value, namely EXCL shares and the highest stock return owned by PT. Telekomunikasi Indonesia, Tbk (TLKM). High and low market returns ( $R_m$ ) is strongly influenced by the movement of the stock price index itself. Whereas JCI is greatly influenced by many factors, both internal and external factors. Several factors that can trigger the strengthening or weakening of the CSPI are currency exchange rates, interest rates and inflation. The risk-free rate of return ( $R_f$ ) is based on the results of the study that the SBI interest rate is at the highest level in February 2016 and December 2017. The lowest level of the SBI interest rate occurs in January to December 2018.

Beta is a systematic risk inherent in a stock. Beta shows the relationship between the rate of return of a stock with the rate of market return because it is the quotient of covariance of shares with market variants. The CAPM method also explains that investors should consider beta on a stock because it affects the fluctuations in the price of a stock and also the size of the expected rate of return.

Expected rate of return [E (R<sub>i</sub>)] is the amount of profit expected by investors from stock investments made. The CAPM method itself is used to calculate the expected rate of return

using the risk-free return ( $R_f$ ) variable, the average market return [ $E(R_m)$ ], and also the systematic risk of each stock ( $\beta$ ).

#### Grouping of Efficient Stocks and Investment Decisions

Efficient stock is a stock with an individual rate of return greater than the expected rate of return [ $R_i > E(R_i)$ ]. Inefficient stocks are stocks with individual returns lower than expected returns [ $R_i < E(R_i)$ ].

With stock grouping, investors can find out which stocks have individual returns greater than the expected rate of return from the results of research that we can find out which stocks are efficient and inefficient, as well as investment decision recommendations that can be taken by investors. Based on calculations, there are three (3) of the four (4) shares that became a research sample that were considered inefficient because the value of the stock return is smaller than the expected return value. Shares that are considered inefficient (overvalued) are, EXCL. Other shares namely, TLKM, ISAT, and FREN. The decision that can be taken by investors in the group of shares is not efficient (overvalued) is to sell shares, while for groups of stocks that are classified as efficient, investors can buy shares or hold shares if the shares are already owned.

#### CONCLUSION

From this study it can be concluded that individual stock returns are greater than the average market stock returns. This condition illustrates the stock in good performance. Telekomunikasi Indonesia, Tbk (TLKM) shares are stocks with the highest stock returns while the lowest returns are owned by XL Axiata, Tbk (EXCL) shares. The size of the beta ( $\beta$ ) or the systematic risk of company shares in the telecommunications sector will affect the size of the expected rate of return [ $E(R_i)$ ] of a company's shares. XL Axiata, Tbk (EXCL) shares have the

highest beta value compared to other company shares. The lowest beta value is owned by Indosat, Tbk (ISAT) company shares.

Efficient stock is a stock that has an individual return ( $R_i$ ) that is greater than the expected rate of return [ $E(R_i)$ ] and is above the Security Market Line (SML), whereas an inefficient stock is a stock that has an individual return ( $R_i$ ) that smaller than the expected rate of return [ $E(R_i)$ ] and is below the Security Market Line (SML) line. In the study, there were 3 efficient shares of the 4 company shares that were used as research samples. As for the 3 efficient shares, namely: TLKM, ISAT and FREN, and shares that are classified as inefficient are EXCL.

Based on the description above it can be concluded that the calculation results are greatly influenced by several factors. The value of individual stock returns is strongly influenced by the stock price movements themselves, while the systematic risk of beta itself is influenced by stock returns and also market movements.

This will greatly affect the efficiency or not of a stock, where shares that are efficient or undervalued are aggressive stocks or in other words these shares are very sensitive to market changes, and vice versa. Shares that are classified as inefficient or overvalued are stocks with beta values below zero or in other words these stocks are defensive stocks that are not sensitive to market changes.

#### SUGGESTION

The results of this study are expected to be used as a reference and additional information for investors and potential investors who will invest in shares, before investing, an investor or prospective investor is expected to be more selective in choosing stocks so that the investment process is carried out on target so that the investment can provide benefits instead get a loss. Therefore,

investors must have sufficient and continuous information regarding the development of the company's shares. To know this, we need a method of calculating how much the expected rate of return is acceptable, and how much risk that accompanies it so that investors can know the company's stocks efficiently so that the risks faced can be minimized properly, and the investor's goal to get the expected return can be achieved.

Based on the conclusions of the above research, it can be seen that from the 4 stocks that were sampled as a research there are 3 (three) shares that are classified as efficient or undervalued, then the decision suggested by the researcher can be taken by investors is to buy the 3 shares (TLKM, ISAT , FREN) if the investor does not have one, and if he already has the decision to keep or increase the number of shares.

## REFERENCES

### Book

- Ang, Robert. (2007). "Buku Pintar Pasar Modal Indonesia (*The Intelligent Guide To Indonesia Capital Market*)". Edisi Pertama. Jakarta : Mediasoft Indonesia.
- Bodie, and Kane Alex. 2014. *Manajemen Portofolio dan Investasi*. Jakarta : Salemba Empat.
- Brigham, E. F dan Houston. 2006. *Dasar-dasar Manajemen Keuangan*, Edisi. Sepuluh. Alih Bahasa Ali Akbar Yulianto. Penerbit Salemba.
- Darmadji, Tjiptono dan Hendy M. Fakhruddin. 2006. *Pasar Modal di Indonesia Pendekatan Tanya Jawab*. PT Salemba Empat. Jakarta
- Deny Saputra, Wildan. 2015. *Penggunaan Metode CAPM dalam menentukan saham efisien*.
- Eduardus, Tandelilin, 2001. *Analisa Investasi dan Manajemen Portofolio*, Edisi Pertama, BPFE, Yogyakarta.
- Fahmi, Irham (2012). *Manajemen Investasi : Teori Dan Soal Jawab*. Jakarta : Salemba Empat.
- Fahmi, Irham dan Yovi Lavianti. 2009. *Teori Portofolio dan Analisis Investasi*. Cetakan kedua. Bandung Alfabeta.
- Halim, Abdul. 2003. *Analisis Investasi*. Jakarta : Salemba Empat.
- Husnan, Suad. 2014. *Dasar-dasar Teori Portofolio dan 11 Analisis Sekuritas*. Yogyakarta : UPP STIM YKPN.
- Jogiyanto. 2009. *Teori Portofolio dan Analisis Investasi*. Edisi 3. Cetakan Pertama. BPFE. Yogyakarta.
- Jogiyanto. 2012. *Teori Portofolio dan Analisis Investasi*, Edisi ketujuh. Yogyakarta : BPFE.
- Kasmir. 2011. *Analisis Laporan Keuangan*. Rajawali Pers. Jakarta.
- Najmudin. 2011. *Manajemen Keuangan dan Aktualisasi Syar'iyah Modern*. Yogyakarta : Andi.
- Samsul, Mohammad. 2006. *Pasar Modal dan Manajemen Portofolio*. Erlangga, Jakarta.
- Sartono, Agus. (2010). *Manajemen Keuangan dan Teori Aplikasi*. Edisi keempat. Yogyakarta : BPFE.
- Sugiyono. 2014. *Metode penelitian Kuantitatif, Kualitatif, dan kombinasi (Mixed Method)*. Bandung : Alfabeta.
- Sunariyah. 2006. *Pengantar Pengetahuan Pasar Modal*. Yogyakarta : UPP STIM YKPN.
- Tandelilin, Eduardus. 2010. *Portofolio dan Investasi Teori dan Aplikasi*, Yogyakarta : Kanisius.
- Weston, Brigham., 2005. *Manajemen Keuangan*. Edisi Kesembilan, Ahli Bahasa A. Jaka Wasana, MSM dan Kibrandon, MSM, Binarupa Aksara, Jakarta.
- Zubir, Zalmi 2011. *Manajemen Portofolio : Penerapan dalam investasi saham*. Jakarta : Salemba empat.

### Journal

- Andayani, Fitri. 2013. Analisis keputusan berinvestasi saham dengan menggunakan metode *Capital Asset Pricing Model*. Jurnal administrasi bisnis Vol. 17 No. 2
- Cherie, Darminto., et al. 2014. Penerapan Metode *Capital Asset Pricing Model* untuk menentukan pilihan investasi pada saham. Jurnal Administasi Bisnis Vol. 13 No. 02
- Engineering bunga, Darminto dan Saifi M. 2014. Jurnal Tentang Analisis Metode *Capital Asset Pricing Model* (CAPM) Sebagai Dasar Pengambilan Keputusan Investasi Saham., Universitas Brawijaya. Malang.
- Susanti, Suhadak., et al. 2014. Penerapan Metode *Capital Asset Pricing Model* (CAPM) sebagai salah satu upaya untuk menentukan kelompok saham efisien. Jurnal Administrasi Bisnis. Vol. 9 No. 1.
- Skripsi, Thesis and Dissertation
- Aditya Dwi Putra, Rendhi. 2013. Analisis Risiko dan *Return* saham dengan menggunakan metode CAPM untuk menentukan pilihan berinvestasi pada saham LQ 45 di BEI.
- Ayu Meyske. 2017. Penerapan metode *Capital Asset Pricing Model* (CAPM) untuk menentukan keputusan investasi saham. Universitas 17 Agustus 1945 Banyuwangi.
- Yohantine, Yesicca. 2008. Penggunaan metode CAPM dalam menilai resiko dan *return* saham untuk menentukan pilihan berinvestasi pada saham JII.
- Internet  
[www.bi.go.id](http://www.bi.go.id)  
[www.idx.com](http://www.idx.com)  
[www.yahoo.finance.com](http://www.yahoo.finance.com)