




Analysis of the feasibility of investing in consumer goods industry stocks using the capm approach for the period January 2005 - December 2007

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Article Info	ABSTRACT
<p>Article history:</p> <p>Received Mar 02, 2021 Revised Mar 15, 2021 Accepted Mar 29, 2021</p> <hr/> <p>Keywords:</p> <p>Beta; Capital asset pricing model; Expected return; Required of return.</p>	<p>The purpose of this research is to know whether some stocks are worthy or not to be bought. The objective of this research is to find out the investment advisability of consumer goods industry stocks in Indonesia Stock Exchange. The object of this research is stock which listed in Indonesia Stock Exchange (BEI). The writer takes example of 30 stocks of consumer goods industry as the object of the research. The research's period is from January 2005 up to December 2007. The method being used in this research is Capital Asset Pricing Model (CAPM). The result of the CAPM model, it is found that there are 20 undervalued stocks and 10 overvalued stocks in consumer goods industry in a research's period.</p> <p style="text-align: right;"><i>This is an open access article under the CC BY-NC license.</i></p> 

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1. INTRODUCTION

Indonesia's economic development after experiencing the economic and monetary crisis in 1997 has now gradually improved. Factors driving the increase in the capital market included a decline in bank interest rates which caused investors to divert their funds to other instruments, the strengthening of share prices on most global stock markets which affected the domestic capital market, the recovery of foreign investor confidence which prompted investors to start investing again. on the Indonesian stock exchange, namely the Indonesia Stock Exchange (IDX).

On the website of the Indonesia Stock Exchange (IDX) it is stated that the capital market is a market for various long-term financial instruments that can be traded, both debt securities (bonds), equities (stocks), mutual funds, derivative instruments and other instruments. Capital Market Law No. 8 of 1995 concerning Capital Markets defines capital markets as "activities concerned with public offerings and securities trading, public companies related to the securities they issue, as well as institutions and professions related to securities".

The capital market has an important role for the economy of a country because the capital market performs two functions, namely first as a means for business funding or as a means for companies to obtain funds from the investor community (investors). The second function of the capital market is to become a means for the public to invest in financial instruments such as stocks, bonds, mutual funds, and others. In securities buying and selling transactions on the stock exchange, stocks are the most dominant instrument traded. To invest in the capital market, especially in the

form of shares, requires the ability to read macro (economic, market, industry) and micro (performance of companies issuing shares) situations.

Investors do not know for sure what investment returns they will receive, so there are various estimates that will occur whether the investor will make a profit (gain) or a loss (loss). When making investment decisions, many investors use the services of investment managers. One of the balance models is the theory of the Capital Asset Pricing Model (CAPM). In accordance with the definition of the CAPM theory, namely the balance model (equilibrium model) which is useful for determining the relationship between risk and relevant returns to find estimates of the required level of return by investors.

Harry M. Markowitz (1952 – 1959) was the first to instigate the portfolio theory which was the forerunner to the formation of the CAPM theory. To reduce the risk of a number of stocks invested, diversification must be carried out in preparing the portfolio. In the CAPM approach, beta is used as a measure of risk level and an indicator of stock sensitivity, meaning that the greater the investment risk, the greater the beta of the stock.

This study uses SBI as a risk-free interest rate because the instrument can be traded at the same interest rate so that the rate of return on SBI can be accurately ascertained. In addition, Bank Indonesia Certificates (SBI) are guaranteed by Bank Indonesia, so they have a low risk of default. The existence of an index is expected to help investors, capital market observers and investment managers to be able to assess the movement of shares traded on the Indonesia Stock Exchange sharply and objectively.

This study uses consumer goods industry stocks which include the food-beverage, cigarettes, cosmetics and household goods and pharmaceuticals sub-sectors. The consideration in choosing industrial shares is because consumption industry shares are an important sector in the Indonesian capital market. Apart from having a relatively large market capitalization and good trading liquidity, the type of business and products of issuers in the consumption sector are well known to investors. In addition, the consumer goods industry was able to survive during a crisis.

2. RESEARCH METHOD

This research uses a type of quantitative descriptive research. Quantitative descriptive method is a research model where research is conducted by the author by studying and analyzing which is assisted or supported by data in the form of numbers and is concrete or real in nature. The purpose of the quantitative descriptive method in this study was to describe the use of the CAPM in measuring the required return of a stock, namely consumer goods industry stocks on the Indonesia Stock Exchange for the period January 2005 to December 2007.

The research model used is the Capital Asset Pricing Models (CAPM), namely to determine stocks that can provide optimal profit levels. The use of the CAPM model as the formation of general equilibrium models allows us to measure the relevant risks and returns, and to find estimates of the expected return on each asset if the capital market is in a state of balance.

In this study, data can be grouped based on the type of variable, namely the independent variable and the dependent variable. The independent variable is a variable that can stand alone and is not influenced by other variables⁴¹. And the independent variables are the market rate of return $E(R_m)$, the rate of return on risk-free assets (R_f) and the level of risk (β). The dependent variable is a variable whose condition is influenced by the independent variables. And the dependent variable is the expected stock return when market conditions are in balance $E(R_j)$. Variable Operational Definition; The market index (Market Index), can be seen from the Composite Stock Price Index (IHSG) on the Indonesia Stock Exchange,

In this study using secondary data needed to analyze the object of research. Namely data from Bank Indonesia and the capital market reference center (PRPM) on the IDX. Not only in a secondary way, this research also uses library research methods from various places, scientific books, literature presented in newspapers, research conducted by other researchers, magazines, journals,

market news, and other related sources. closely related to the issues to be discussed. For data processing, researchers use the following steps:

Calculating market parameters, namely expected return, variance and standard deviation:

Working capital efficiency ratio

Working Capital Turnover (WCT)

$$R_{om} = \frac{JCI_t - JCI_{t-1}}{JCI_{t-1}} \dots\dots\dots(1)$$

$$E(R_m) = \frac{\sum R_{om}}{N} \dots\dots\dots(2)$$

$$var(R_m) = \frac{\sum \{R_{om} - E(R_m)\}^2}{N} \dots\dots\dots(3)$$

Calculating the amount of return and covariance of the stocks analyzed in a certain period:

$$R_i = \frac{P_t - P_{t-1}}{P_{t-1}} \dots\dots\dots(4)$$

Calculating the amount of systematic risk:

$$B_j = \frac{Cov(r_i, r_m)}{Var(R_m)} \dots\dots\dots(5)$$

find the amount of return required by investors (required of return) of the shares:

$$RR = R_f + \{E(R_m) - R_f\} \beta \dots\dots\dots(6)$$

With the following information:

RR < E(Ri), then the shares are worth buying or investing.
 RR > E(Ri), then the shares are not worth buying or investing in and the shares should be sold.

Information :

- R_{om} = market returns
- E(r_m) = average market return
- N = period
- ∑_m = market variance
- r_i = returnsshare
- E(r_i) = expected returnsshare
- ∑_i = stock variance
- ∑_{im} = covariance of the stock with the market
- R_f = risk free rate of return
- RR = return whichrequired
- β = risk (systematic risk).

3. RESULTS AND DISCUSSIONS

This study uses shares listed in the Consumer Goods Company during 2005-2007. Food and Beverage (food and beverage), a. PT Ades Waters Indonesia Tbk, b. PT Aqua Golden Mississippi, c. PT Cahaya Kalbar Tbk, d. PT Delta Djakarta Tbk, e. PT Indofood Sukses Makmur Tbk, f. PT Mayora Indah Tbk, g. PT Multi Bintang Indonesia Tbk, h. PT Prasadha Aneka Niaga Tbk, i. PT Siantar Top Industri Tbk, j. PT Tiga Pilar Sejahtera Tbk, k. PT Ultra Jaya Milk Tbk. Tobacco Manufacture, a. PT BAT Indonesia Tbk, b. PT Gudang Garam Tbk, c. PT Hanjaya Mandala Sampoerna Tbk, d. Bentoel International Investama Tbk. Pharmaceuticals, a. PT Darya-Varia Laboratoria Tbk, b. PT Indofarma Tbk, c. PT Kimia Farma Tbk, d. PT Kalbe Farma Tbk, e. PT Merck Indonesia Tbk, f. PT Pyridam Farma Tbk, g. PT Bristol-Myers Squibb Indonesia Tbk. Cosmetic and Household, a. PT Mustika Ratu Tbk, b. PT Mustika Ratu Tbk, c. PT Mandom Indonesia Tbk.

Data interpretation. The first step that investors must take when they are going to invest in the capital market is to know market conditions. This is intended so that the risk of loss can be minimized so that the investment provides a profit. To find out market conditions, the market index is used as an indicator, in this paper using the Composite Stock Price Index (IHSG). Return, Expected Return, Variance and Market Standard Deviation. Calculation of market returns is based on the Composite Stock Price Index (IHSG) from 2005 to 2007. The JCI is a barometer of stock activity and is a description of market conditions and developments. by all shares that are active and make up the JCI, the final value of the JCI will change according to the movement in the final value of the shares that experience transactions. Movements experienced on the stock exchange. The final value of the JCI does not change if the shares do not experience transactions. The market return calculation formula is:

$$R_m = \frac{IHSG_t - IHSG_{t-1}}{IHSG_{t-1}} \dots\dots\dots(7)$$

After getting the market returns every month (R_m) and the market returns expected by investors [$E(R_m)$], it is also necessary to find the standard deviation [$\sigma(R_m)$], namely the amount of risk deviation that may occur from the expected returns. food-beverages, cigarettes, cosmetics and household goods, pharmaceuticals and household appliances are the most important sectors in the Indonesian capital market. Some of the advantages of consumer goods industry stocks are: a. Have a large capitalization and good trading liquidity, b. The types of business and products of issuers in the consumption sector are also well known, c. The consumption sector promises bright long-term prospects because it is supported by the potential of Indonesia's demographic factors, which have more than 220 million inhabitants, d.

Table 1 Stocks in the Consumer Goods industry Period January 2005- December 2007

No	Share Name	Code
I.	Food and beverage	
	Ades Alfindo Tbk	ADES
	Aqua Golden Mississippi Tbk	AQUA
	Cahaya Kalbar Tbk	CHECK
	Delta Djakarta Tbk	DLTA
	Indofood Sukses Makmur Tbk	INDF
	Mayora Indah Tbk	MYOR
	Multi Bintang Indonesia Tbk	MLBI
	Prasadha Aneka Niaga Tbk	PSDN
	Sekar Laut Tbk	SKLT
	Siantar TOP Tbk	STTP
	Three Pillars of Prosperity Tbk	AISA
	Ultra Jaya Milk Tbk	ULTJ

II.	Tobacco Manufacturers	
	BAT Indonesia Tbk	BATH
	Gudang Garam Tbk	GGRM
	Bentoel Internasional Tbk	RMB
III.	HM Sampoerna Tbk	HMSP
	Pharmaceuticals	
	Bristol-Myers Squibb Tbk	SQBB
	Bristol-Myers Squibb (PS) Tbk	SQBI
	Darya Varia Laboratories Tbk	DVLA
	Indofarma Tbk	INAF
	Kalbe Farma Tbk	KLBF
	Kimia Farma Tbk	KAEF
	Merck Tbk	BRAND
	Pyridam Farma Tbk	PYFA
	IV	Cosmetic And Household
Mandom Indonesia Tbk		TCID
Mustika Ratu Tbk		MRAT
Unilever Indonesia Tbk		UNVR
V	Houseware	
	Kedaung Indah Can Tbk	KETCH
	Kedawung Setia Industrial Tbk	KDSI
	Langgeng Makmur Plastic I Tbk	LMPI

Determining the Rate of Return, Covariance and Risk of Consumer Goods Industry Stocks, to form a portfolio, it is necessary to analyze various investment tools that will be used as a portfolio. In this case the shares listed in the Consumer Goods Industry from January 2005 to December 2007 on the Indonesia Stock Exchange, Determining the Risk Level of Stocks in the Consumer Goods Industry, there are two types of risk, namely non-systematic risk and systematic risk. Non-systematic risk is risk that can be eliminated by diversification, in the CAPM unsystematic risk is eliminated or equal to zero. While systematic risk is the risk that cannot be eliminated by diversification and is called beta,

Determining the required rate of return for consumer goods industry stocks. The required rate of return is the minimum rate of return required by investors to be obtained from an investment when market conditions are in balance (equilibrium). Determining Overvalued or Undervalued Stocks After an investor determines the expected return on an asset, investors can make a comparison between the expected return and the required return. A stock can be said to be undervalued if $RR < E(R)$, meaning that the stock is worth buying or investing in. Meanwhile, a stock is said to be overvalued if $RR > E(R)$, meaning that the stock is not worth buying or investing in. obtained from an investment when market conditions are in balance (equilibrium).

4. CONCLUSION

Based on the analysis described in the previous chapters, the following conclusions can be drawn: a. positive expected return. Stocks that have a positive expected rate of return are Aqua Golden Mississippi, Cahaya Kalbar, Delta Djakarta, Indofood Sukses Makmur, Mayora Indah, Multi Bintang Indonesia, Prasadha Aneka Niaga, Siantar TOP, Tiga Pilar Sejahtera, Ultra Jaya Milk, Bentoel Internasional, HM Sampoerna, Bristol- Myers Squibb, Bristol-Myers Squibb (PS), Darya Varia, Indofarma, Kalbe Farma, Kimia Farma, Merck Indonesia, Pyridam Farma, Mandom Indonesia, Unilever Indonesia, Kedaung Indah Can, Kedawung Setia Industrial, Langgeng Makmur Plastik . While as many as 5 stocks have a negative expected rate of return, b. From the results of the analysis it can be seen that stocks with a beta value of more than one or as many as 7 shares means that these stocks are aggressive or strong stocks (aggressive stock). The strong stocks include Indofood Sukses Makmur, Mayora Indah, Darya Varia, Pyridam Farma, MustikaRatu, Kedaung Indah Can and Kedawung Setia Industrial. Meanwhile, there were 19 shares that had a beta of less than one ($\beta < 1$).

While the other 10 stocks are overvalued stocks where these stocks have an expected return that is smaller than the required return. Stocks that are overvalued stocks are stocks that are not worth buying. The strong stocks include Indofood Sukses Makmur, Mayora Indah, Darya Varia, Pyridam Farma, MustikaRatu, Kedaung Indah Can and Kedawung Setia Industrial. Meanwhile, there were 19 shares that had a beta of less than one ($\beta < 1$). While the other 10 stocks are overvalued stocks where these stocks have an expected return that is smaller than the required return. Stocks that are overvalued stocks are stocks that are not worth buying. The strong stocks include Indofood Sukses Makmur, Mayora Indah, Darya Varia, Pyridam Farma, MustikaRatu, Kedaung Indah Can and Kedawung Setia Industrial. Meanwhile, there were 19 shares that had a beta of less than one ($\beta < 1$). While the other 10 stocks are overvalued stocks where these stocks have an expected return that is smaller than the required return. Stocks that are overvalued stocks are stocks that are not worth buying. While the other 10 stocks are overvalued stocks where these stocks have an expected return that is smaller than the required return. Stocks that are overvalued stocks are stocks that are not worth buying. While the other 10 stocks are overvalued stocks where these stocks have an expected return that is smaller than the required return. Stocks that are overvalued stocks are stocks that are not worth buying.

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