Budapest International Research and Critics Institute-Journal (BIRCI-Journal)
Humanities and Social Sciences
ISSN 2615-3076 Online)
ISSN 2615-1715 (Print)
www.bircu-journal.com/index.php/birci
Budapest Institute

Stock Investment Decision Making Analysis with Price Earning Ratio (PER) and Capital Asset Pricing Model (CAPM) Approaches

Rizma Nazriah Hasibuan[1], Iskandar Muda[2], Rina br Bukit[3]
[1,2,3]*Management Department, University of Sumatera, Indonesia*
rizma.nazriah@gmail.com

Abstract

The occurrence of the Covid-19 pandemic that hit the whole world including Indonesia in early 2020 resulted in a decline in various sectors, including the stock market where many people were hesitant to invest in stocks. Various industries in Indonesia have been affected by Covid-19 where since early March 2020 there has been a decline in the LQ45 Index because many investors have sold their shares. This study aims to analyze the use of the Price Earning Ratio (PER) and Capital Asset Pricing Model (CAPM) approaches as the basis for making stock investment decisions in companies in the LQ45 Index and compare the accuracy of the Price Earning Ratio (PER) and Capital Asset Pricing Model (CAPM) approaches. This research was conducted on LQ45 Index stocks in the period February 2019 – January 2021. This study has a population of 54 stocks and a sample of 9 stocks. The sampling technique used purposive sampling technique. The results of this study indicate that with the Price Earning Ratio (PER) approach, 2 stocks are in an overvalued condition and 7 stocks are in an undervalued condition overvalued condition and 6 efficient shares or company shares that are in undervalued condition. Based on the use of the Mean Absolute Deviation (MAD) method, the results show that the MAD CAPM value is smaller than the MAD PER value (0.011 < 0, 077) which means that the CAPM method is more accurate than the Price Earning Ratio (PER) approach as the basis for making stock investment decisions. Thus, the CAPM method can be used by investors as a basis for making investment decisions to get maximum returns and minimize risk during the Covid-19 pandemic.

Keywords
covid-19; Price Earning Ratio (PER), Capital Asset Pricing Model (CAPM), stocks, LQ45 index

I. Introduction

Globalization that occurs and continues to grow encourages the emergence of more competitive business activities. The increasingly competitive business activities encourage business people to develop their business. However, to develop their business, business people need substantial funds. This then encourages fund owners to invest their funds in businesses that need these funds with the aim that fund owners can make profits in the future. This investment is also known as investment. According to Tandelilin (2010) investment is a

commitment to a number of funds or other resources carried out at this time, with the aim of obtaining a number of benefits in the future.

In general, investment is divided into two, namely: investment in real assets and investment in financial assets. Investment in real assets is an investment in tangible assets, such as property, precious metals and so on. Meanwhile, investment in financial assets is carried out in the money market, such as: deposit certificates, commercial paper, Money Market Securities (SBPU) and so on. Besides being made in the money market, this investment can also be made in the capital market, such as: stocks, bonds, mutual funds, warrants and so on.

Several studies that have been conducted previously by Elly Susanti (2021) with the title Investing Decisions Using the Capital Asset Pricing Model (CAPM) Method on LQ45 Index Companies for the 2015-2019 Period showed that of 28 companies, 13 companies were undervalued and 15 companies were overvalued. . Similarly, Samanoi (2021), regarding the Analysis of Stock Investment Decisions with the Price Earning Ratio Approach (Case Study of Companies Listed in the 2015-2018 BEI LQ45 Index, shows that of 8 companies, 5 companies are undervalued and 3 other companies are undervalued) overvalued condition.

Based on the problems above, the purpose of this study is to analyze the use of Price Earning Ratio (PER) and Capital Asset Pricing Model (CAPM) as the basis for making stock investment decisions in companies in the LQ 45 Index listed on the Indonesia Stock Exchange. And to find out the comparison of the accuracy between the Price Earning Ratio (PER) approach and the Capital Asset Pricing Model (CAPM) method as the basis for making stock investment decisions in companies in the LQ 45 Index listed on the Indonesia Stock Exchange. This research was conducted in order to assist investors in making stock investment decisions that will be carried out during the current Covid-19 pandemic. Sihombing (2020) state that Covid-19 pandemic caused everyone to behave beyond normal limits as usual. The outbreak of this virus has an impact especially on the economy of a nation and Globally (Ningrum, 2020). The problems posed by the Covid-19 pandemic which have become a global problem have the potential to trigger a new social order or reconstruction (Bara, 2021).

.

II. Research Methods

This study uses a descriptive type of research using a quantitative approach. In this research, hypothesis testing is not carried out, but rather systematically describes the research object as it is. This research was conducted on the LQ45 index listed on the Indonesia Stock Exchange. In this study, the data used is the company's annual report in the LQ45 stock index. Data taken from the websitewww.idx.co.idand the company's website in question. The population in this study are 54 companies that are included in the LQ45 stock index listed on the Indonesia Stock Exchange for the period February 2019 – January 2021.

III. Discussion

3.1 *Price Earning Ratio* (PER)

Price Earning Ratio(PER) is the ratio used by investors to value a stock. PER is one of the company's fundamental analysis that can be used to analyze the stock in order to obtain the intrinsic value of the stock. Intrinsic value in this approach is calculated by multiplying the estimated Earning Per Share (EPS) with the Price Earning Ratio (PER).

3.2 Result of Analysis of Expected Dividend Growth Rate (g)

Dividens are the distribution of company profits to shareholders based on the number of shares owned. Investors certainly hope that the dividends from the shares invested will continue to grow. This is because dividends are profits that investors get in conducting stock investment activities. After the calculations are done, the following is expected dividend growth rate of investorm from the 9 shares of companies that are sampled, namely:

Table 1. Expected Dividend Growth Rate 2019-2020 Period

No	Code	g2019	g2020	average
1	ANTM	0.69%	3.92%	2.31%
2	BBCA	8.55%	7.62%	8.09%
3	BBNI	9.33%	2.25%	5.77%
4	BBRI	6.61%	3.27%	4.94%
5	BMRI	5.72%	3.81%	4.76%
6	ICBP	10.70%	9.76%	10.23%
7	PTBA	2.11%	9.28%	5.70%
8	SMGR	2.67%	1.99%	2.33%
9	UNTR	10.82%	5.12%	7.97%

Source: Author Processed Data, 2021

From the table above, it can be explained that in 2019 the highest expected dividend growth rate is UNTR shares of 10.82%, while the lowest dividend growth rate is ANTM shares of 0.69%. This is because in 2019 PT. Aneka Tambang, Tbk experienced a decrease in net profit from 2018 of Rp.1,636,002,592 to Rp.193.852,031. This decrease in net income causes the expected dividend growth rate to be very low.

From the data above, it is shown that the highest expected dividend growth rate (g) is ICBP shares. This is because the dividend growth rate of ICBP shares in 2019 was quite high at 10.70% and in 2020 experienced a slight decline, but the expected dividend growth rate (g) from ICBP shares was the highest compared to the 8 sample companies. others in 2020 which declined quite sharply due to the impact of the pandemic which affected the company's profits. The lowest expected dividend growth rate (g) is ANTM's stock.

3.3 Results of the Estimated Earnings Per Share (EPS) Analysis

Earning Per Share (EPS) is the amount of earnings per each share outstanding. EPS is a ratio that measures how profitable the company is per share. Calculating EPS can be done by dividing the company's net profit by the number of company shares outstanding. After calculating the above formula, the following is the estimated Earning Per Share (EPS) of the 9 sample company stocks, namely:

Table 2. Estimated Earnings Per Share 2019-2020 Period

No	Code	EPS0	g	EPS1
1	ANTM	Rp.47,83	2.31%	Rp.48,93
2	BBCA	Rp.1.101	8.09%	Rp.1.190
3	BBNI	Rp.178	5.77%	Rp.188,27
4	BBRI	Rp.151	4.94%	Rp.158,45
5	BMRI	Rp.378	4.76%	Rp.395,99
6	ICBP	Rp.636	10.23%	Rp.701.06
7	PTBA	Rp.215	5.70%	Rp.227.25

8	SMGR	Rp.451	2.33%	Rp.461.51
9	UNTR	Rp.1,609	7.97%	Rp.1,737

Source: Author Processed Data, 2021.

From the data calculated above, it can be explained that the highest estimated Earning Per Share (EPS) is UNTR shares of Rp. 1,737, which means that each share of UNTR will have a profit of Rp. 1,737. This is because the EPS of UNTR shares in the previous year had a higher value than the other 8 stocks. The United Tractor, Tbk company has the least outstanding shares compared to 8 other companies, therefore UNTR shares have a higher EPS value than the others.

The data above can be seen that the lowest estimated Earning Per Share (EPS) is ANTM's share of Rp.48.93, which means that each share of UNTR will have a profit of only Rp.48.93. Aneka Tambang company generates less profit than 8 other companies and has more outstanding shares than United Tractor. This is what causes the EPS value obtained by ANTM's shares to be the lowest compared to 8 other companies' shares.

3.4 Result of Analysis of Estimated Dividend Per Share (DPS)

Dividend Per Share (DPS) is the ratio used to measure the amount of dividends to be paid for each share. DPS can be calculated by dividing the amount of dividends by the number of shares outstanding. In contrast to EPS, where EPS is calculated based on the company's net profit while DPS is calculated based on the amount of dividends that have been decided in the GMS to be paid to investors. After calculating the above formula, the following is the estimated Dividend Per Share (DPS) of the 9 sample company stocks, namely:

Table 3. Estimated Dividend Per Share (DPS) for the 2019-2020 Period

No	Code	D0	g	D1
1	ANTM	Rp.16,74	2.31%	Rp.17,13
2	BBCA	Rp.530	8.09%	Rp.572.87
3	BBNI	Rp.43,98	5.77%	Rp.46,52
4	BBRI	Rp.98,31	4.94%	Rp.103,16
5	BMRI	Rp.220.10	4.76%	Rp.230.58
6	ICBP	Rp.215	10.23%	Rp.236,99
7	PTBA	Rp. 74.69	5.70%	Rp.78,95
8	SMGR	Rp.188.30	2.33%	Rp.192,68
9	UNTR	Rp.644	7.97%	Rp.695.33

Source: Author Processed Data, 2021.

The data above shows that the highest estimated Dividend Per Share (DPS) is UNTR shares, which is Rp. 695.33, meaning that the dividend to be paid per share is Rp. 695.33. In the previous year, UNTR shares also had the highest DPS compared to the other 8 shares, which was Rp.644 per share. The estimated value of the lowest Dividend Per Share (DPS) is ANTM's shares, which is Rp. 17.13 for each share.

3.5 Result of Analysis of Return Required by Investor (k)

*Return*is the profit that investors get from the investment activities carried out. The level of return required by investors can be calculated by dividing the estimated Dividend Per

Share (DPS) by the stock price of the previous year and then adding up the expected dividend growth rate. The following is a table of the level of return required by investors, namely:

Table 4. Investor Required Return Rate (k)

No	Company name	Code	Investor Required Rate of Return (k)
1	PT. Aneka Tambang, Tbk	ANTM	0.0319
2	Bank Central Asia,Tbk	BBCA	0.0978
3	Bank Negara Indonesia (Persero), Tbk	BBNI	0.0652
4	Bank Rakyat Indonesia (Persero), Tbk	BBRI	0.0741
5	Bank Mandiri (Persero), Tbk	BMRI	0.0841
6	Indofood CBP Sukses Makmur, Tbk.	ICBP	0.1271
7	Bukit Asam, Tbk.	PTBA	0.0851
8	Semen Indonesia (Persero) Tbk.	SMGR	0.0388
9	United Tractors,Tbk	UNTR	0.1058

Source: Author Processed Data, 2021

The level of return required by investors is the minimum rate of return expected by investors as risk compensation for the investments made. From the data above, the highest level of return required by investors is ICBP shares of 0.1271 or 12.71%, while the lowest level of return required by investors is ANTM shares of 0.0319 or 3.19%.

3.6 Result of Analysis of Estimated Price Earning Ratio (PER)

Price Earning Ratio(PER) is a ratio that is often used by investors to assess whether a stock is expensive or cheap. After calculating, the following is the estimated PER value of the 9 shares of the companies that are sampled, namely:

Table 5. Estimated Price Earning Ratio (PER)

No	Company name	Code	PER . estimate
1	PT. Aneka Tambang, Tbk	ANTM	39.77 times
2	Bank Central Asia,Tbk	BBCA	28.46 times
3	Bank Negara Indonesia (Persero), Tbk	BBNI	32.93 times
4	Bank Rakyat Indonesia (Persero), Tbk	BBRI	26.36 times
5	Bank Mandiri (Persero), Tbk	BMRI	16.16 times
6	Indofood CBP Sukses Makmur, Tbk.	ICBP	13.63 times
7	Bukit Asam, Tbk.	PTBA	12.35 times
8	Semen Indonesia (Persero) Tbk.	SMGR	26.94 times
9	United Tractors,Tbk	UNTR	15.29 times

Source: Author Processed Data, 2021

From the data above, it can be seen that when compared to 9 shares of the research sample companies, the highest PER value is BBNI shares, which is 32.93 times, while the lowest PER value is PTBA shares, which is 12.35 times. However, the PER value of shares in a sector is not the same as one another. Therefore, the PER of companies in the mining sector cannot be compared with the PER of companies in the food and beverage sector. In this study, there were 9 company stocks that were used as research samples consisting of several

different stock sectors. The high and low value of PER must be adjusted to the business sector of each company. PER value that is higher than the standard is considered risky because the stock may experience an overvalued condition, thereby reducing investor interest in investing in the stock in question. On the other hand, if the PER value is too low, it does not always indicate that the situation is a good opportunity to buy shares. This is because a low PER can also indicate that the company's performance is decreasing.

3.7 Results of Intrinsic Stock Value Analysis

The intrinsic value of the stock is the actual share value of the company. Intrinsic value of shares can be calculated by estimating EPS multiplied by PER. The following is a table of the intrinsic value of shares, namely:

Table 6. Intrinsic Value of Shares

No	Code	EPS1	PER	Intrinsic Value
1	ANTM	Rp.48,93	39.77 times	Rp.1,946
2	BBCA	Rp.1.190	28.46 times	Rp.33,869
3	BBNI	Rp.188,27	32.93 times	Rp.6,200
4	BBRI	Rp.158,45	26.36 times	Rp.4.176
5	BMRI	Rp.395,99	16.16 times	Rp.6.401
6	ICBP	Rp.701.06	13.63 times	Rp.9.554
7	PTBA	Rp.227.25	12.35 times	Rp.2.808
8	SMGR	Rp.461.51	26.94 times	Rp.12,430
9	UNTR	Rp.1,737	15.29 times	Rp.26,552

Source: Author Processed Data, 2021

The data above shows that the highest intrinsic value is BBCA shares, which is Rp.33,869. in other words, the intrinsic value of BBCA shares in that period was Rp.33,869. However, as of October 13, 2021, BCA officially conducted a stock split with a ratio of 1:5. Therefore, if you want to compare the current market value with the intrinsic value of BBCA shares after the stock split, the intrinsic value must first be divided by the ratio determined by the issuer so that it can be compared with the market price. The lowest intrinsic value is ANTM's shares when compared to the 8 companies' stocks that are sampled, which is Rp.1,946.

3.8 Stock Grouping and Investment Decisions

Cheap or expensive a stock can be determined by comparing the intrinsic value of the stock with the current market price. The market price used is the closing share price on February 26, 2021. After making a comparison, then the shares can be grouped into overvalued, undervalued and correctly valued shares and in the end a stock investment decision can be made. The following is a table of stock groupings and stock investment decisions, namely:

Table 7. Grouping and Stock Investment Decisions

No	Code	Intrinsic Value	Current Market Price (P0)	Stock Grouping	Investation decision
1	ANTM	Rp.1,946	Rp.2,840	*Overvalued*	Selling Shares

2	BBCA	Rp.33,869	Rp.33,550	*Undervalued*	Buying Stock
3	BBNI	Rp.6,200	Rp.5,950	*Undervalued*	Buying Stock
4	BBRI	Rp.4.176	Rp.4.710	*Overvalued*	Selling Shares
5	BMRI	Rp.6.401	Rp.6.150	*Undervalued*	Buying Stock
6	ICBP	Rp.9.554	Rp.8,575	*Undervalued*	Buying Stock
7	PTBA	Rp.2.808	Rp.2,710	*Undervalued*	Buying Stock
8	SMGR	Rp.12,430	Rp.10.200	*Undervalued*	Buying Stock
9	UNTR	Rp.26,552	Rp.22,550	*Undervalued*	Buying Stock

Source: Author Processed Data, 2021

From the table above, it can be seen that of the 9 company stocks that were used as research samples, 2 company shares were considered overvalued and 7 company shares were considered undervalued. Stocks in an overvalued state are if the intrinsic value of the stock is less than the current market price (NI < current market price), which means the stock has an expensive price or above its fair price, so the investment decision is to sell the stock. Meanwhile, undervalued stocks are stocks whose intrinsic value is greater than the current market price (NI> current market price), which means that the stock has a low price or has a price below its fair price so that the investment decision is to buy the stock or hold it. the shares if you already have them.

3.9 Capital Asset Pricing Model (CAPM)

a. Results of Analysis of Individual Stock Returns (Ri)

The rate of return on individual shares is one indicator for investors in carrying out investment activities. The rate of return on individual shares is the amount of profit received in real by investors when conducting stock investment activities. The rate of return for individual shares can be calculated by comparing the closing price (closing price) of a stock in this period (denoted by period t) minus the closing price (closing price) in the previous period (denoted by period t-1) which is then divided by the closing price of shares in period t-1. The following are the results of calculating the rate of return on individual shares from 9 company stocks that are used as research samples, namely:

Table 8. Individual Stock Returns for the Period February 2019 – January 2021

No	Company name	Code	Ri
1	PT. Aneka Tambang, Tbk	ANTM	0.03107
2	Bank Central Asia,Tbk	BBCA	0.00939
3	Bank Negara Indonesia (Persero), Tbk	BBNI	-0.00972
4	Bank Rakyat Indonesia (Persero), Tbk	BBRI	0.00820
5	Bank Mandiri (Persero), Tbk	BMRI	0.00112
6	Indofood CBP Sukses Makmur, Tbk.	ICBP	-0.00459
7	Bukit Asam, Tbk.	PTBA	-0.01621
8	Semen Indonesia (Persero), Tbk.	SMGR	-0.000009
9	United Tractors,Tbk	UNTR	0.000004

Source: Author Processed Data, 2021

From table 8 above, it can be seen that the highest rate of return for individual shares is the stock of PT. Aneka Tambang, Tbk, namely0.03107or 3.107% while the lowest individual stock returns are shares of PT. Bukit Asam Tbk, namely-0.01621 or -1.621%. Stocks with a negative rate of return are stocks that will not bring profits or benefits to investors during the study period.

a. Market Returns (Rm) Analysis Results

The market rate of return is the magnitude of the rate of return based on the development of the stock index. In this study, the market index used is the LQ45 Market Index. This market rate of return can be calculated by measuring the difference between the LQ45 market index in the current period (LQ45t) and the LQ45 market index in the previous period (LQ45t-1) which is then divided by the LQ45 market index in the previous period. The following is the result of calculating the market rate of return (Rm) as follows:

Table 9. Market Returns for the Period February 2019 – January 2021

Period		LQ45 Indeks Index	rm
Year	**Month**		
2019	February	1006.099	-0.02350
	March	1019,035	0.01286
	April	1019.33	0.00029
	May	982,879	-0.03576
	June	1013,963	0.03163
	July	1022,433	0.00835
	August	995,764	-0.02608
	September	968,147	-0.02773
	October	984,844	0.01725
	November	956.82	-0.02846
	December	1014,473	0.06025
2020	January	961,976	-0.05175
	February	879.531	-0.08570
	March	691,126	-0.21421
	April	713,635	0.03257
	May	725,827	0.01708
	June	756,198	0.04184
	July	803,014	0.06191
	August	824,168	0.02637
	September	737,154	-0.10560
	October	790,503	0.07237
	November	883,061	0.11709
	December	934,887	0.05869
2021	January	911.98	-0.02450
Amount			**-0.06475**
E(Rm)			**-0.002698**

Source: Author Processed Data, 2021

In table 9 above shows that the average value of the market rate of return is negative, namely-0.002698. This figure comes from the amount of Rm of -0.06475 divided by the total months in the research period, which is 24 months. The lowest market rate of return occurred in March 2020, which was -0.21421 or -21.4%. The negative results were obtained because in the same period the first cases of Covid-19 patients appeared in Indonesia which caused panic for investors which then affected the performance of the stock market. In 2019 the LQ45 market index tends to often experience a decline when compared to 2020 which tends to increase, resulting in a negative average market return.

The market rate of return can also be used as a basis for measuring the performance (performance) of stock investment by investors. If the market rate of return is greater than the risk-free rate of return, then the investment performance is said to be good, otherwise if the market return is less than the risk-free rate of return, the investment performance is said to be poor.

b. Risk Free Rate (Rf) Analysis Results

Risk free rate (Rf) is the risk-free investment return using BI rate data. The following is data on the BI rate, namely:

Table 10. BI Rate for the Period February 2019 – January 2021

Period		**BI Rate**
Year	**Month**	
2019	February	6.00%
	March	6.00%
	April	6.00%
	May	6.00%
	June	6.00%
	July	5.75%
	August	5.50%
	September	5.25%
	October	5.00%
	November	5.00%
	December	5.00%
2020	January	5.00%
	February	4.75%
	March	4.50%
	April	4.50%
	May	4.50%
	June	4.25%
	July	4.00%
	August	4.00%
	September	4.00%
	October	4.00%
	November	3.75%
	December	3.75%
2021	January	3.75%
Amount		**1.1625**
Average		**0.0484**
Risk Free Rate		**0.004036**

Source: www.bi.go.id

From the table above shows that the average *risk free* period February 2019 – January 2021 is 0.0484 with a risk-free rate of return of 0.004036 or 0.40%, which means that in the research period the risk-free rate of return provides a profit of 0.40%. The data above shows that the interest rate for the period February – June 2019 is 6.00%. In the July – September 2019 period, interest rates decreased by 5.75%, 5.50% and 5.25%, respectively. This decline was triggered by the emergence of new crises such as tensions in trade relations between the US and China as well as international trade pressures which resulted in a global economic slowdown (bi.go.id). In the period October 2019 – January 2020 the interest rate is 5.00% per annum, February 2020 is 4.75% and March – May 2020 decreased by 4.50%. The decline in interest rates was triggered by the entry of Covid-19 into Indonesia. In the period June 2020 the interest rate decreased again by 4.25%, July - October 2020 by 4.00% per year and in the period November 2020 - January 2021 the interest rate decreased to 3.75% per year. This decline was carried out to help the domestic economy which had experienced a decline due to the pandemic.

The data in the table above can be interpreted that if investors invest their funds in the money market in January 2020, the profits obtained by investors are 5.00% per year with 0% risk. This profit will certainly be accepted by investors because saving money in SBI or time deposits does not involve risk.

3.10 Results of Systematic Risk Analysis of Each Individual Stock (βi)

Beta (βi) is the systematic risk that comes from the relationship between the rate of return of a stock with the market rate of return. Beta is the systematic risk inherent in a stock that can be used to estimate the return to be obtained. Therefore, investors should consider beta on a stock because beta can affect stock price fluctuations and the size of the expected rate of return. The following are the results of the calculation of the systematic risk (βi) of the 7 company stocks that are used as research samples, namely:

Table 11. Company Stock Beta

No	Company name	Code	(βi)
1	PT. Aneka Tambang, Tbk	ANTM	2,135
2	Bank Central Asia,Tbk	BBCA	0.735
3	Bank Negara Indonesia (Persero), Tbk	BBNI	1,744
4	Bank Rakyat Indonesia (Persero), Tbk	BBRI	1,231
5	Bank Mandiri (Persero), Tbk	BMRI	1.381
6	Indofood CBP Sukses Makmur, Tbk.	ICBP	0.095
7	Bukit Asam, Tbk.	PTBA	0.641
8	Semen Indonesia (Persero) Tbk.	SMGR	1.336
9	United Tractors,Tbk	UNTR	0.611
Amount			**9,909**
Average			**1,101**

Source: Author Processed Data, 2021

Based on table 11 there are 5 company shares that have >1. This means that the stock is an aggressive stock. Where, the risk of the stock is greater than the market risk (β = 1) and the stock price tends to be more volatile than the market index. If the market (LQ45) experiences an increase, the stock will also increase with an increase that exceeds the market. Conversely, if the market is declining, the stock will also experience a decline that exceeds the market decline.Shares of companies that have the highest beta (β) are shares ofPT. Aneka Tambang, Tbk (ANTM) which is2,135, it can be interpreted that if the market is experiencing an increase or decrease of 3%, then ANTM's shares will increase by2,135times of 3% or will decrease by2,135times of 3%.

From the data above, there are also 4 companies that have <1. Beta which is positive and is worth less than one can be interpreted that if the market index increases, then the stock will also increase, where the increase is always lower than the market increase.

3.11 Results of the Analysis of the Expected Rate of Return [E(Ri)]

The expected rate of return E(Ri) is the amount of return or profit that investors expect from their stock investment. The following is the result of calculating the expected rate of return from 9 sample company stocks, namely:

Table 12. Expected Rate of Return

No	Code	Rf	□	E(Rm)	E(Rm) -Rf	*[E(Rm)-Rf]	E(Ri)
1	ANTM	0.00404	2,135	-0.00269	-0.00673	-0.01438	-0.01034
2	BBCA	0.00404	0.735	-0.00269	-0.00673	-0.00495	-0.00091
3	BBNI	0.00404	1,744	-0.00269	-0.00673	-0.01175	-0.00771
4	BBRI	0.00404	1,231	-0.00269	-0.00673	-0.00829	-0.00425
5	BMRI	0.00404	1.381	-0.00269	-0.00673	-0.00930	-0.00526
6	ICBP	0.00404	0.095	-0.00269	-0.00673	-0.00064	0.00339
7	PTBA	0.00404	0.641	-0.00269	-0.00673	-0.00431	-0.00028
8	SMGR	0.00404	1.336	-0.00269	-0.00673	-0.00899	-0.00496
9	UNTR	0.00404	0.611	-0.00269	-0.00673	-0.00412	-0.000008
Amount							**-0.03040**
Average							**-0.00338**

Source: Author Processed Data, 2021

From the data above, it can be seen that the average rate of return expected from 9 stocks is negative, which is -0.00338. This is because of the 9 company stocks that were sampled, only 1 stock had a positive expected rate of return, namely ICBP shares. The stock with the lowest expected rate of return is ANTM's stock at -0.01034. Thus it can be concluded that the company's shares contained in the LQ45 index have a negative expected rate of return in that period.

3.12 Security Market Line (SML) Graphing

Security Market Line(SML) is a line that graphically describes the CAPM model. SML shows the relationship between the expected rate of return with the systematic risk (β) of an asset. The following is a description of the Security Market Line (SML) of 9 companies that are used as research samples, namely:

Table 13. Beta Level and Expected Return

Name	Beta (β)	E(Ri)
LQ45	1.0000	-0.270%
BI Rate	0.0000	4.844%
ANTM	2,135	-1.034%
BBCA	0.735	-0.091%
BBNI	1,744	-0.771%
BBRI	1,231	-0.425%
BMRI	1.381	-0.526%
ICBP	0.095	0.339%
PTBA	0.641	-0.028%
SMGR	1.336	-0.496%
UNTR	0.611	-0.008%

Source: Author's Processed Data, 2021

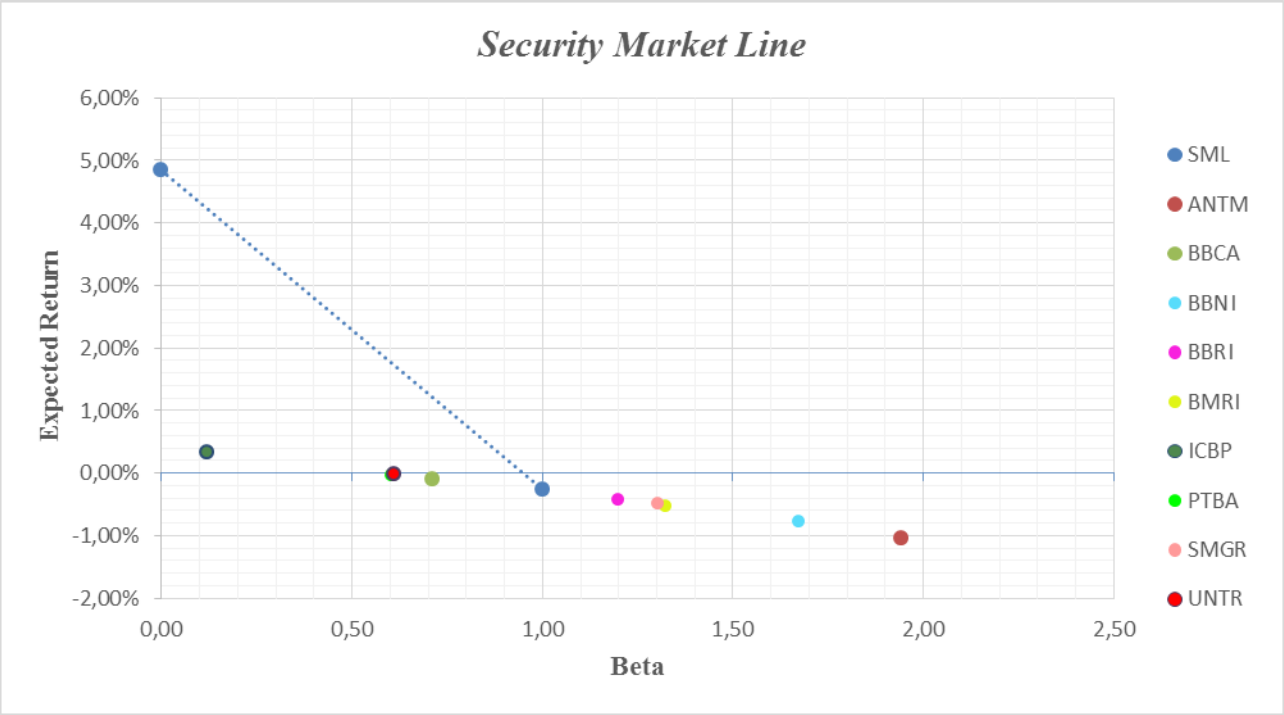

Figure 1. *Security Market Line Chart*

From the graphic above, it can be seen that the greater the systematic risk (β), the smaller the expected rate of return [E(Ri)]. Where, the line graph is descending downwards. This shows that there is a non-unidirectional relationship between risk and the expected rate of return [E(Ri)]. The picture above also shows that when the beta value is equal to one (β = 1), the expected rate of return is -0.270% or equal to the average expected market rate of return. From the picture above, it can also be seen that risk free has the highest expected rate of return compared to the others, therefore:

a. Efficient Grouping of Stocks and Investment Decisions

Efficient stocks are stocks with individual returns greater than the expected rate of return [(Ri) > E(Ri)], on the other hand, inefficient stocks are stocks that indicate that the individual rate of return is smaller than the expected rate of return [(Ri) < E(Ri)]. The

following is a table of efficient stock grouping of 9 company stocks that are used as research samples, namely:

Table 14. Grouping of Shares

No	Company name	Code	Ri	E(Ri)	Stock Evaluation
1	PT. Aneka Tambang, Tbk	ANTM	0.03107	-0.01034	Efficient (Undervalued)
2	Bank Central Asia,Tbk	BBCA	0.00939	-0.00091	Efficient (Undervalued)
3	Bank Negara Indonesia (Persero), Tbk	BBNI	-0.00972	-0.00771	Inefficient (Overvalued)
4	Bank Rakyat Indonesia (Persero), Tbk	BBRI	0.00820	-0.00425	Efficient (Undervalued)
5	Bank Mandiri (Persero), Tbk	BMRI	0.00112	-0.00526	Efficient (Undervalued)
6	Indofood CBP Sukses Makmur, Tbk.	ICBP	-0.00459	0.00339	Inefficient (Overvalued)
7	Bukit Asam, Tbk.	PTBA	-0.01621	-0.00028	Inefficient (Overvalued)
8	Semen Indonesia (Persero) Tbk.	SMGR	-0.000009	-0.00496	Efficient (Undervalued)
9	United Tractors,Tbk	UNTR	0.000004	-0.000008	Efficient (Undervalued)

Source: Author Processed Data, 2021

Based on the table above, there are 6 efficient company shares and 3 inefficient company shares. The criteria in determining investment decisions are choosing efficient stocks that have individual returns greater than the expected return [Ri > E(Ri)] or it can be said that these stocks are undervalued and eliminate inefficient stocks that have smaller individual returns than with the expected return [Ri < E(Ri)] or in an overvalued condition.

The investment decision made on efficient shares is to consider buying these shares and the investment decision made on inefficient shares is to consider selling the shares. The following is a table of stock investment decisions made by investors, namely:

Table 15. Stock Investment Decision

No	Company name	Code	Ri	E(Ri)	Stock Evaluation	Investation decision
1	PT. Aneka Tambang, Tbk	ANTM	0.03107	-0.01034	Efficient (Undervalued)	Buy
2	Bank Central Asia,Tbk	BBCA	0.00939	-0.00091	Efficient (Undervalued)	Buy
3	Bank Negara Indonesia (Persero), Tbk	BBNI	-0.00972	-0.00771	Inefficient (Overvalued)	Sell
4	Bank Rakyat Indonesia (Persero), Tbk	BBRI	0.00820	-0.00425	Efficient (Undervalued)	Buy

5	Bank Mandiri (Persero), Tbk	BMRI	0.00112	-0.00526	Efficient (Undervalued)	Buy
6	Indofood CBP Sukses Makmur, Tbk.	ICBP	-0.00459	0.00339	Inefficient (Overvalued)	Sell
7	Bukit Asam, Tbk.	PTBA	-0.01621	-0.00028	Inefficient (Overvalued)	Sell
8	Semen Indonesia (Persero) Tbk.	SMGR	-0.000009	-0.00496	Efficient (Undervalued)	Buy
9	United Tractors,Tbk	UNTR	0.000004	-0.000008	Efficient (Undervalued)	Buy

Source: Author Processed Data, 2021

b. Mean Absolute Deviation (MAD)

The level of accuracy of the Price Earning Ratio (PER) and Capital Asset Pricing Model (CAPM) approaches can be measured by the average absolute deviation or MAD (Mean Absolute Deviation). MAD can be calculated by calculating the average of the absolute value of the difference between the actual return of the stock and the expected return. The following is a table of the results of calculating the MAD value between the PER and CAPM approaches, namely:

Table 16. Calculation Results of MAD . Value

No	Code	Ri	E(Ri) PER	E(Ri) CAPM	PER Absolute Value	CAPM Absolute Value
1	ANTM	0.03107	0.0319	-0.01034	0.0008	0.04041
2	BBCA	0.00939	0.0978	-0.00091	0.0884	0.01030
3	BBNI	-0.00972	0.0652	-0.00771	0.0749	0.00201
4	BBRI	0.00820	0.0741	-0.00425	0.0659	0.01245
5	BMRI	0.00112	0.0841	-0.00526	0.0830	0.00638
6	ICBP	-0.00459	0.1271	0.00339	0.1317	0.00798
7	PTBA	-0.01621	0.0851	-0.00028	0.1013	0.01593
8	SMGR	-0.000009	0.0388	-0.00496	0.0389	0.00487
9	UNTR	0.000004	0.1058	-0.000008	0.1058	0.00012
Total Value Absolute					**0.691**	**0.101**
Mean Absolute Deviation (MAD)					**0.077**	**0.011**

Source: Author Processed Data, 2021

From the test results, it was found that the MAD CAPM value was smaller than the MAD PER value (0.011 < 0.077). This shows that the CAPM model is more accurate in predicting stock returns on the LQ45 index as a basis for making stock investment decisions, so the CAPM model is more accurately used to assist investors in making investment decisions during the Covid-19 pandemic. This result is different from that done by Lo Kheng Hong, namely by using the PBV (Price Book Value) or PER (Price Earning Ratio) method in assisting investment decision making. Where he stipulates that PER must be less than 5 times and for PBV it must be less than 1 (one). However, in the results of this study, the CAPM method is more accurate than the PER method.

IV. Conclusion

Based on the results of data analysis that has been done, it can be concluded as follows:

1. Based on the use of the Price Earning Ratio (PER) approach on the 9 company stocks that were sampled, it was found that 2 company shares, namely ANTM and BBRI shares, were in an overvalued condition or the intrinsic value of the shares was smaller than the market price, so that the investment decision made was to sell the shares. There are 7 other shares, namely BBCA, BBNI, BMRI, ICBP, PTBA, SMGR and UNTR shares which are undervalued or the intrinsic value of the shares is greater than the market price so that the investment decision is to buy the shares or hold the shares in question if they already have them.
2. Based on the use of the Capital Asset Pricing Model (CAPM) method on 9 company stocks that were sampled, 6 company shares were obtained, namely ANTM, BBCA, BBRI, BMRI, SMGR and UNTR stocks which were grouped into efficient stocks or stocks in undervalued conditions, namelystocks with individual returns greater than the expected rate of return [(Ri) > E(Ri)], so the investment decision is to buy or hold shares if they already have them. There are 3 other stocks, namely BBNI, ICBP and PTBA stocks which are grouped into inefficient stocks or stocks in an overvalued condition, namely stocks with individual returns less than the expected rate of return [(Ri) < E(Ri)], so that investment decisions are done is to sell the shares in question.
3. Based on the use of the Mean Absolute Deviation (MAD) method, the results show that the MAD value of the CAPM method is smaller than the MAD value of the PER approach, which is equal to0.011 < 0.077 which means thatThe CAPM method is more accurate than the PER approach in predicting future returns which can be used as a basis for making stock investment decisions.

References

Aganta, Charistantya Tegar, Topowijono & Zahroh ZA 2015. Stock Investment Decision Making Using Fundamental Analysis Through Price Earning Ratio (PER) Approach. Journal of Business Administration (JAB). Vol.27. No.2. Pages:1-8.

Bara, A., et.al. (2021). The Effectiveness of Advertising Marketing in Print Media during the Covid 19 Pandemic in the Mandailing Natal Region. Budapest International Research and Critics Institute-Journal (BIRCI-Journal) Vol 4 (1): 879-886.

Darmadji, Tjiptono and Hendi M. Fakhruddin. 2012. Capital Markets in Indonesia: A Question and Answer Approach. Salemba Four. Jakarta.

Fahmi, Irham. 2012. Investment Management: Theory and Questions and Answers. Salemba Four. Jakarta.

Fahmi, Irham. 2015. Introduction to Portfolio Theory and Investment Analysis. Alphabet. Bandung.

Ningrum, P.A., Hukom, A., and Adiwijaya, S. (2020). The Potential of Poverty in the City of Palangka Raya: Study SMIs Affected Pandemic Covid 19. Budapest International Research and Critics Institute-Journal (BIRCI-Journal) Vol 3 (3): 1626-1634.

Putra, RD, Darminto, & Zuhro, ZA 2013. Analysis of Stock Investment Selection Using the Capital Asset Pricing Model (CAPM) and Reward to Variability Ratio (RVAR) as Determinants of Stock Investment Decision Making (Study on Corporations Listed on the LQ45 Index in Indonesia Stock Exchange Period February 2009-July 2012. Journal of Business Administration (JAB) Vol.1 No.2 Page: 21-30.

Rivan, Muhammad and Muhammad Azhari. 2020.Analysis of the Accuracy of the Capital Asset Pricing Model (CAPM) and Arbitrage Pricing Theory (APT) in Predicting Stock

Returns in Banking Sector Companies on the Indonesia Stock Exchange in 2015-2018. E-Proceeding of Management. Vol 7. Page: 37 - 44

Rudianto. 2012. Introduction to Accounting. Erlangga. Jakarta.

Saputro, S, H. 2014. The Effect of Growth, Size, Company Performance and Macroeconomic Indicators on Stock Returns in Manufacturing Companies. Journal of Accounting and Management STIE YKPN. Vol.25. No.3. Pages: 179-185.

Saputro, Seno Hadi and Kartika Yuliantari. 2020. Stock Investment Decisions Using Price Earning Ratio Approaches in Cigarette Companies Listed on the Indonesia Stock Exchange. Journal of Accounting and Finance. Vol.7. Number 1. Pages: 32-36.

Sihombing, E.H., and Nasib. (2020). The Decision of Choosing Course in the Era of Covid 19 through the Telemarketing Program, Personal Selling and College Image. Budapest International Research and Critics Institute-Journal (BIRCI-Journal) Vol 3 (4): 2843-2850.

Susanti, Elly., Astuti & Supitriyani. 2021. Investing Decisions Using the Capital Asset Pricing Model (CAPM) Method in LQ45 Index Companies for the 2015-2019 Period. Journal of Accounting and Taxes. Vol.21. No.2. Page: 283-289

Susanti, Elly, Ernest Grace and Nelly Ervina. 2020. The Investing Decision during the Covid-19 Pandemic by Using the Capital Asset Pricing Model (CAPM) Method in LQ45 Index Companies. International Journal of Science, Technology & Management. Vol.1. No.4. Pages: 409 - 420.

Tandelilin, Edward. 2010. Portfolios and Investments: Theory and Applications. Issue 1. Canisius. Yogyakarta.

www.bi.go.id

www.idx.co.id