Stocks Investment Decision Making Capital Asset Pricing Model (CAPM)

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Abstract: Investment in the capital market generally has a higher rate of return compared to investing in the financial market. Investors sometimes get difficulty in determining which stocks will produce a large return with a small risk. The method used to describe the application of CAPM in this research is done by grouping the efficient, yet inefficient stocks of the banking sector based on the CAPM method. The method in the sample selection was a purposive sample method and obtained 40 banking sector companies listed on the Indonesia Stock Exchange (IDX) during the period of August 2016 - July 2018. The results of this study indicate that there are 31 efficient stocks out of 40 stocks in banking sector. It can be seen that there are 31 banking stocks with a positive average rate of returns and 9 banking stocks with a negative average rate of returns. Meanwhile, the implication of this study is that banking sector shares have efficient shares, since the average rate of return is higher than the expected returns.

Keywords: CAPM, Beta, Return.

Abstrak: Investasi di pasar modal umumnya memiliki tingkat pengembalian yang lebih tinggi dibandingkan dengan investasi di pasar uang. Investor terkadang kesulitan menentukan saham mana yang akan menghasilkan *return* yang besar dengan risiko yang kecil. Mendeskripsikan penerapan CAPM dengan cara mengelompokan saham-saham sektor perbankan yang efisien dan tidak efisien berdasarkan metode CAPM. Metode dalam pemilihan sample adalah *purposive sample method* dan menghasilkan 40 perusahaan sektor perbankan terdaftar di Bursa Efek Indonesia. Populasi dari penelitian ini adalah saham sektor perbankan periode Agustus 2016 - Juli 2018. Hasil penelitian ini menunjukkan bahwa terdapat 31 saham efisien dari 40 saham sektor perbankan. Dapat diketahui bahwa terdapat 31 saham perbankan dengan tingkat pengembalian rata-rata positif dan 9 saham perbankan dengan tingkat pengembalian rata-rata negatif. Implikasi penelitian ini bahwa saham sektor perbankan memiliki saham yang efisien, karena rata-rata tingkat pengembalian lebih tinggi dibandingkan dengan pengembalian yang diharapkan.

Kata Kunci: CAPM, Beta, Return.

INTRODUCTION

Investment is one of the places that many people are interested in getting fund in the future. Moreover, investment is a commitment of funds or other resources made at the

moment, aiming of obtaining a number of benefits in the future (Tandelilin, 2010). An investor's accuracy in finding information and processing information is very necessary because it will be used as a decision-making tool for investing that will determine how much profit will be gained in the future (Putra, 2013). Rapidly growing investment is not released from the risk, therefore potential investor should be capable of their insight, explore information or see investments that will be profitable in the future. Investment activity can be differentiated into two forms, that is investment in real asset and investment in financial asset. Real asset investment is investment in the form of physical tangible asset, while financial investments are investments in the form of securities/ securities which is conducted in money market and capital market. The form of financial investments in the money market can be described as certificates of deposit and money market securities, meanwhile financial investments in the capital market can be in the form of bonds, warrants, mutual funds, options, futures, and stocks (Yulianti, 2014).

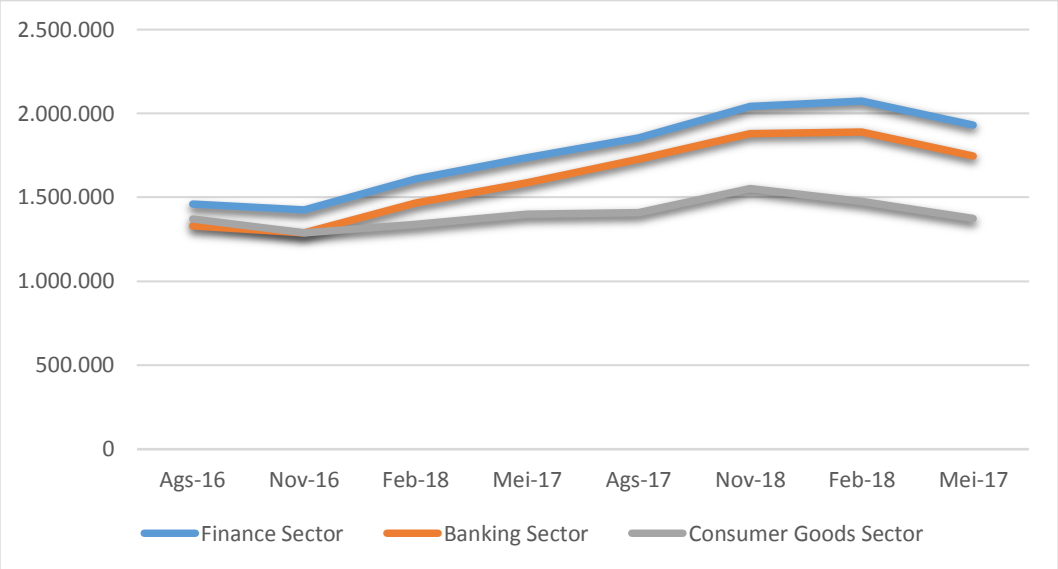
Capital market is the market for long-term securities such as bonds and stocks (Jones, 2013). Capital market is one of investments which is interested by investors and have a big role for Indonesian economy (Yadnya, 2016). With the existence of capital market, companies who need funds to operate and develop their business could get their funds from the securities trade, while for investors have excess of funds could investments in that companies to get profit (Qamar et al., 2014). Capital markets can provide a positive role for companies, investors and the government. For investors, the capital market can help determine the best investment choices that will benefit investors. For the government, aside from being an alternative source of financing, the capital market can also function as a mechanism for capital allocation and corporate monitoring, as well as a means to carry out a market economy in addition to utilizing both fiscal and monetary policies (Seftyanda et al., 2014).

One of the most popular securities instruments in capital market is stocks. Sometimes investors get difficulty to determine which stocks is worthy to buy. The method being used in this research is Capital Asset Pricing Model (CAPM) which is to see the relevant returns and risks, and to find an expected return on the asset if the capital market is equal (Tandelilin, 2010). CAPM relates the required rate of return for any security with the risk for that securities as measured by beta. CAPM can calculate risk in a portfolio (Sekarwati, 2016). CAPM has 2 main advantages to calculate the capital costs of companies related to stocks (Keown et al., 2017): (1) The model is simple and easy to understand and implement. The variables model is available from public sources. (2) Because the model does not depend on dividends or any assumptions about growth in dividends. An efficient market is a market where all prices of traded securities reflect all available information. The information can be in the form of a company's earnings report, dividend distribution, stock split, as well as reports from capital market analysts (Nasution, 2015).

Information on stock market performance can be seen on the Indonesia Stock Exchange. Stocks Listed on Indonesia Stock Exchange are differentiated into nine sectors. This research was conducted in one of the financial sectors, which is banking sector. This research was conducted from August 2016 - July 2018. This research began in August 2016 because there was a change in the BI Rate to the BI 7 Day Repo Rate during the process of period. Various circles assess the prospect of 2018 banking sector stocks will be better than the previous year. Since July 2016 to July 2018, the banking sector is the sector

that has the biggest market capitalization in Indonesia.

Figure 1. Market Capitalization August 2016 – July 2018



Source: (IDX, processed by the author, 2018)

Based on the graph above, it can be seen that the market capitalization of the banking sector is the biggest market capitalization in the financial sector. The financial sector is also the biggest market capitalization because the banking sector is the primary mover in Jakarta Composite Index. The banking sector is one of sector that is vital for a state. There are many sources of bank funds collected from wide community. The source of the funds used for business development through credit or loans.

Research Problems: (1) What is the return and risk of each banking sector stocks? (2) What is the expected rate of return of each stock in the banking sector ? (3) How is the grouping and valuation of efficient and inefficient banking sector stocks based on the Capital Asset Pricing Model (CAPM) method?

THEORETICAL REVIEW

Efficient Market Hypotesis. This hypothesis states that securities prices accurately reflect the future expected cash flows and are based on all information available to investors (Keown et al., 2017). While, Efficient Market state that all important information stocks is reflected in the stock price (Eugene F, 2017).

Weak Form Efficient Market Hypothesis. Suggests that all past information is priced into securities. Fundamental analysis of securities can provide an investor with information to produce returns above market averages in the short term but there are no "patterns" that exist. Therefore, fundamental analysis does not provide long-term advantage and technical analysis will not work (Bodie and Marcus, 2018).

Semi-Strong Form Efficient Market Hypothesis. Implies that neither fundamental analysis nor technical analysis can provide an advantage for an investor and that new information is instantly priced in to securities (Bodie and Marcus, 2018).

Strong Form Efficient Market Hypothesis. Says that all information, both public and private, is priced into stocks and that no investor can gain advantage over the market as a whole. Strong Form EMH does not say some investors or money managers are incapable of capturing abnormally high returns but that there are always outliers included in the averages (Bodie and Marcus, 2018). Capital Asset Pricing Model (CAPM) which is to see the relevant returns and risks, and to find an expected return on the asset if the capital market is equal (Tandelilin, 2010). CAPM an equation stating that the expected rate of return on an investment is a function of the expected risk premium for the market portfolio of all risky securities. The Capital Asset Pricing Model (CAPM) is one of the asset pricing models that was first applied in securities valuation. CAPM has a lot of criticism, both empirically and theoretically. However, with its intuitive appeal and simplicity, it has made CAPM a useful tool used in practice (Shaikh, 2013). In addition, CAPM has been criticized for assuming investors only care about market risk and return on portfolio assets, meanwhile beta can still explain expected results, with market portfolios being a proxy of all risk assets. Therefore, CAPM remains in use and many industries rely on this model to determine their market prices (Elbannan, 2015)

CAPM formula:

$$E(Ri) = R_f + \beta i\,[\,E(R_m) - R_f\,] \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Source: (Tandelilin, 2010)

E (Ri) = The expected rate of return on securities i.
E (Rm) = The rate of return on the average market.
Rf = Average risk-free return on investment.
βi = The measure of the risk of stock i.

BETA. Beta is the relationship between an investment's returns and the market's returns. This is a measure of the investment's non-diversiable risk. The meaning of the systematic risk of a particular stock (Jones, 2013): **(1)** Beta <0, is negative, that means stocks behave specifically and contradictory with the capital market. When the market goes up, these types of stocks actually move down, and when the market moves down, these stocks actually move up. **(2)** Beta = 1, that means every one percent change in market return, the stock return or portfolio will also change as large as the market return. **(3)** Beta > 1, that means the risk is over than the level of the average market risk. **(4)** Beta < 1, that means the stocks have a below risk than the level of the average market risk. In addition, beta can also be called a systematic risk gauge of a security or portfolio relative to market risk (Akram, 2017).

$$\beta i = \frac{cov(r_i, r_m)}{var(r_m)} \quad \ldots\ldots\ldots\ldots\ldots (2)$$

Source: (Bodie and Marcus, 2018)

Stock Returns. The rate of return is one of the factors that motivates investors to interact and is also a reward for the investor's courage to bear the risks to the investment he made (Tandelilin, 2010).

$$\text{Stock Return} = \frac{P_t - P_{t-1}}{P_{t-1}} \quad \ldots\ldots\ldots\ldots\ldots\ldots (3)$$

Market Returns. Market returns are the returns that the investors generate out of the stock market (Jogiyanto, 2013).

$$\text{Market Return} = \frac{\text{Indeks pasar t} - \text{Indeks Pasar}_{t-1}}{\text{Indeks Pasar}_{t-1}} \quad \ldots\ldots\ldots\ldots.. (4)$$

Risk Free Rate. According to (Husnan, 2015) who explains that the risk-free rate of return is a measure of the minimum rate of return when the risk of beta (βi) is zero. Risk free rate is the theoretical rate of return of an investment with zero risk. The risk-free rate of return is represented by the BI 7 Days Repo Rate set by Bank Indonesia.

$$Rf = \frac{\sum \text{Rf}}{N} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (5)$$

Source: (Jogiyanto, 2013).

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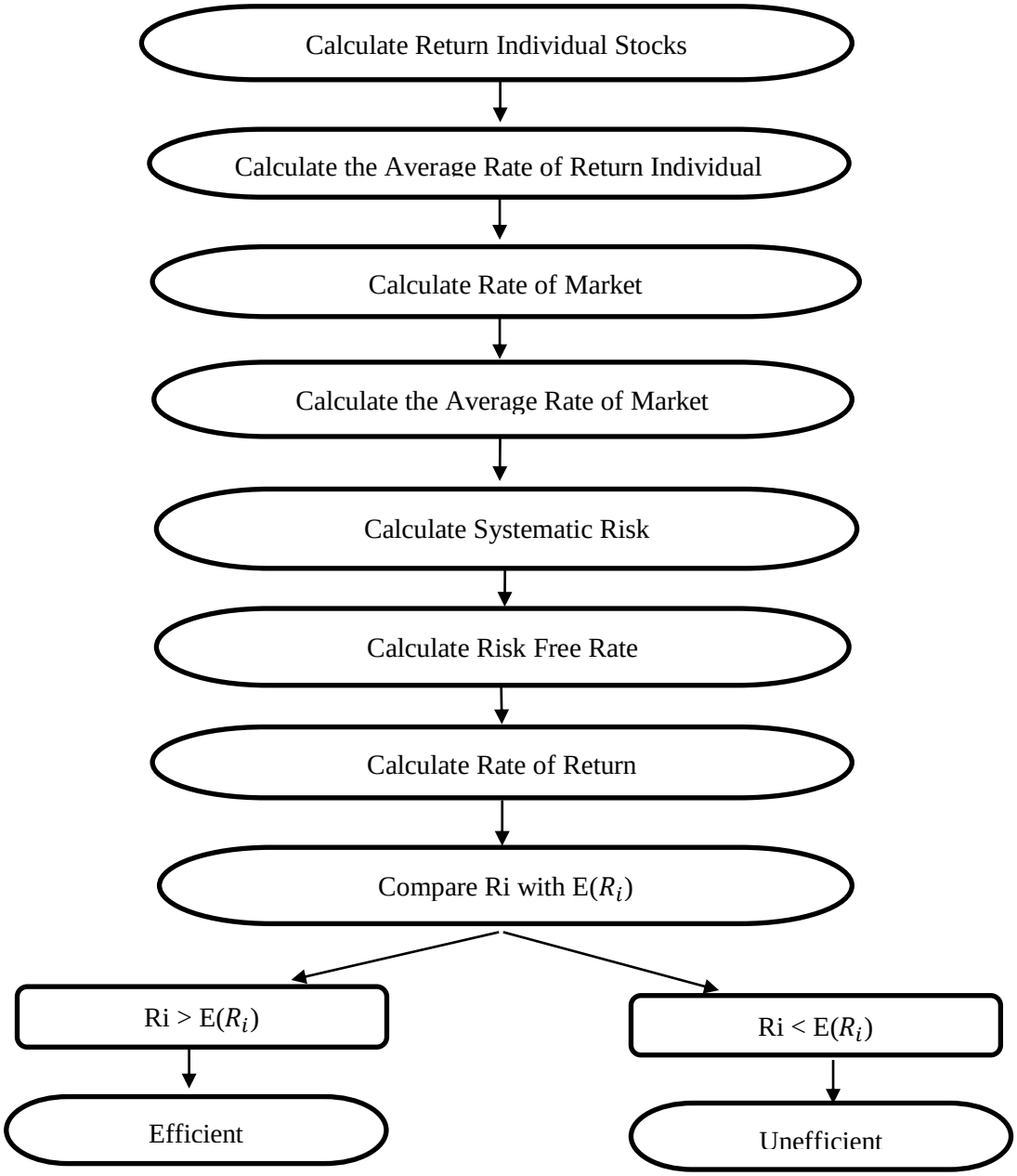
Framework

Figure 2. Conceptual framework



Source: (Processed by the author, 2018)

METHODOLOGY

Population and Sample. The population used as the object in this research is the Banking Sector company for the period of August 2016-July 2018. Banking sector is a sector that collects funds (funding) and channel funds (lending) (Kasmir, 2014). The sampling phase used in this research uses purposive sampling, sampling based on certain criteria. The

criteria are as follows: **(1)** Banking sector companies listed on the Indonesia Stock Exchange during the period August 2016 - July 2018. **(2)** Banking sector companies that have never been delisted on the Indonesia Stock Exchange during the period of August 2016 - July 2018. **(3)** Banking sector companies that have active trading on the Indonesia Stock Exchange during the period of August 2016 - July 2018. Based on the sample criteria, the number of samples in this research were 40 companies out of 42 companies in the banking sector on the IDX.

Data Source. The data used in this research is secondary data in the form of monthly data from banking sector companies issued by the Indonesia Stock Exchange. The research period starts from August 2016 - July 2018. Data sources can be obtained through the website www.idx.co.id.

Research Method. The method being used in this research is Capital Asset Pricing Model (CAPM) which is to see the relevant returns and risks, and to find an expected return on the asset if the capital market is equal. This research is a type of quantitative data, data can be measured using a numerical scale. The source of data used in this research is use secondary data banking stock prices closing price per month during the period August 2016 - July 2018, Jakarta Composite Index, and BI Rate. Other supporting sources in the form of journals are needed, and other sources that can be used in this research. The formula of the CAPM is as follows:

Operational Variable. Operational variable is a way to describe the research variables of a concept and to facilitate understanding and avoid discrepancy in perception of research.

Table 1. Operational Variable

No	Variable	Operational Definition	Equation	Scale of Statistic
1	Return Market (Rm)	Returns that investors get from investing in shares that are reflected in changes in price index for a certain period.	$Rmt = \frac{\text{Market Index}_t}{\text{Market Index}_{t-1}}$ Source: (Jogiyanto, 2013)	Ratio
2	Expected Market Return	The average rate of return of the capital market within a certain time period obtained from certain model, namely the Composite Stock Price Index (CSPI)	$E(Rm) = \frac{\sum_{i=1}^{N} Rmt}{N}$ Source: (Tandelilin, 2010)	Ratio
3	Risk Free Rate (Rf)	The risk-free rate of return in this study is the average BI 7	$Rf = \frac{\sum Rf}{N}$ Source:	Ratio

No	Variable	Operational Definition	Equation	Scale of Statistic
		Days Repo Rate set by Bank Indonesia.	(Jogiyanto, 2013)	
4	Beta (β)	Beta is a measure of volatility return of a security or portfolio return to market returns.	$\beta i = \frac{cov(r_i, r_m)}{var(r_m)}$ Source: (Bodie and Marcus, 2018)	Ratio
5	Stock Return (Ri)	The rate of return obtained from the investment of a number of funds in a stock investment.	$Rt = \frac{P_t - P_{t-1}}{P_{t-1}}$ Source: (Tandelilin, 2010)	Ratio
6	Stock Expected Return $E(R_i)$	The average rate of return of individual shares in the selected period.	E (Ri) = R f + [E (R_m) - R_f] B_i Source: (Tandelilin, 2010)	Ratio

Source: (Processed by the author, 2018)

CAPM Formulation:

$$E(Ri) = R_f + \beta i [E (R_m) - R_f] \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots (6)$$

Source: (Tandelilin, 2010)

E (Ri) = The expected rate of return on securities i.
E (Rm) = The rate of return on the average market.
Rf = Average risk-free return on investment.
βi = The measure of the risk of stock i.

Stock classifications as investment decisions:
Ri> E (Ri) then the shares are efficient shares.
Ri <E (Ri) then the stock is an inefficient stock.

ANALYSIS AND DISCUSSION

DESCRIPTIVE ANALYSIS

Table 2. Descriptive Analysis

	BI 7 Days Repo Rate	IHSG	RI	Beta	CAPM
Mean	0,0465	5774,49	0,02126	0,8030	0,0056
Median	0,0475	5829,71	0,01475	0,8584	0,00485
Maximum	0,0525	6605,63	0,1286	3.9804	0,0115
Minimum	0,0425	5148,91	-0,0231	-2,0213	0,0001
Std Deviation	0,003372	395,3531	0,029755	1,199805	0,002288

Source: (Output Data EViews, 2018)

In the following explanation is based on the data of each variable based on a model that has been processed. Descriptive statistics provide a description by displaying a histogram (describing the frequency distribution of data) and some basic statistical calculations, such as average, maximum, minimum, etc. (Winarno, 2017). Based on the information described in the table, can be described on the explanation of each variable descriptive statistics research, namely:

BI 7-Day (Reverse) Repo Rate. Based on data processing performed using EViews 10 software, the BI 7-Day (Reverse) Repo Rate has an average of 0.0465 or 4.65%. While the lowest value is 0.0425 or 4.25% it occurs in September 2017 to April 2018 due to low inflation in the month (marketbisnis.com). The highest value is 0.0525 or 5.25% because BI maintains the competitiveness of the domestic financial market against changes in monetary policy of a number of countries and the uncertainty of the global financial market is still high. (BI.go.id).

Jakarta Composite Index. The JCI has an average of 5774.49. The lowest value was 5148.91 occurred in October 2016, this was due to profit taking while waiting for China's economic growth figures. While the highest value of 6605.63 occurred in January 2018 due to the economic conditions in Indonesia tend to be stable and stagnant throughout 2017 (marketbisnis.com).

Average Stock Returns. The average rate of return of stocks has an average of 0.02126 or 2.13%. This shows that the average rate of return of stocks provides an average profit of 2.13% during the period. The lowest value of the individual stock returns is -0.0231 or -2.31% in the Bank Maybank Indonesia Tbk company. While the highest value of individual stock returns is 0.1286 or 12.86% is found in the Bank Ina Perdana Tbk company. This shows that the individual rate of return of Bank Ina Perdana Tbk provides an average profit of 12.86% during the period of August 2016 - July 2018.

Beta. Beta has an average of 0.8030. The highest value of beta is 3.9804 at Bank Mitra Niaga (NAGA). Beta of 3.9804 can be interpreted if the market is experiencing an

increase or decrease of 4%, then NAGA shares will experience an increase of 3.9804 times from 4%, and will decrease by 3.9804 times from 4%. The lowest value of beta is -2.0213 for the Bank Yudha Bhakti Tbk (BBYB) company.

CAPM. CAPM has an average of 0.0056. The lowest value of the lowest expected Return Rate is 0.0001 or 0.001% is found in the Bank Yudha Bhakti Tbk (BBYB) company, and the highest value of expected return is 0.0115 or 1.15% in the Bank Mitra Niaga company (NAGA). This can mean that investors expect a profit rate of 1.15% for the Bank Mitra Niaga company (NAGA) and expect a profit rate of 0.001% at the Bank Yudha Bhakti (BBYB) company.

Results of Individual Stock Return Analysis. Individual stock returns is one of the investors in making investment considerations. The calculation of the rate of return of individual stocks in this study using the monthly closing price. The result of the calculation of individual stock returns of 40 banks that the research sample are:

Table 3. Individual Stock Returns

No	Company List	Ri	No	Company List	Ri
1	Bank Ina Perdana	0.1286	21	Bank China Construction.	0.0141
2	Bank Agris	0.1086	22	Bank Rakyat Indonesia (Persero)	0.0139
3	Bank Harda Internasional	0.059	23	Bank Mandiri (Persero)	0.013
4	Bank Yudha Bhakti	0.0492	24	Bank Ganesha	0.0125
5	Bank Mayapada International	0.0464	25	Bank Tabungan Negara (Persero)	0.0121
6	Bank Mitraniaga	0.046	26	Bank Arto Indonesia	0.0113
7	Bank Victoria International	0.0439	27	Bank Nusantara Parahyangan	0.0102
8	BPD Banten	0.0399	28	Bank Maspion Indonesia	0.0089
9	Bank Jabar Banten	0.0393	29	Bank CIMB Niaga	0.0087
10	Bank Nationalnobu	0.034	30	BPD Jawa Timur	0.0076
11	Bank Danamon Indonesia	0.0325	31	Bank Pan Indonesia	0.0059
12	Bank Dinar Indonesia	0.0313	32	Bank Artha Graha International	-0.0009
13	BTPN	0.0265	33	Bank Mestika Dharma	-0.0021
14	Bank Central Asia Tbk	0.022	34	Bank Woori Saudara Indonesia 1906	-0.0057
15	Bank Mega	0.0206	35	Bank Permata	-0.006
16	Bank Rakyat Indonesia Agro Niaga	0.0205	36	Bank Sinar Mas	-0.0096
17	Bank OCBC NISP	0.0191	37	Bank Bukopin	-0.0103
18	Bank Capital Indonesia	0.019	38	Bank QNB Indonesia	-0.0136
19	Bank Negara Indonesia (Persero)	0.0168	39	Bank MNC Internasional	-0.0153
20	Bank Bumi Arta	0.0156	40	Bank Maybank Indonesia	-0.0231

Source: (Processed by author, 2018)

From Table 4 there were 31 banks with an average rate of return is positive. Stock which have an average rate of return positive indicates that the stock is profit for investors during the period of this research. The highest average rate of return of individual stocks is the Bank Ina Perdana Tbk 0.1286 or 12.86%. The average rate of return of 12.86% stated that, totalling 12.86% rate of return obtained for investors to invest in the period. There are 9 stocks with negative average returns. The average rate of return on the lowest individual stocks is Bank Maybank Indonesia Tbk -0.0231. or -2.31%. Stocks with a negative rate of return on stocks that do not get profit or benefit to the investor during the study period.

Results of Individual Systematic Risk Analysis. Beta is a measure of the relevant risk can not be diversified in the portfolio. Beta becomes a measure that investors must consider in the portfolio management decision process. Below is a systematic risk table for each stock:

Table 4. Systematic Risk

No	Company List	β	No	Company List	β
1	Bank Mitraniaga	3.9804	21	Bank Sinar Mas	0.7620
2	Bank Ganesha	2.5627	22	Bank Nationalnobu	0.7323
3	Bank Harda Internasional	2.3017	23	Bank Woori Saudara Indonesia 1906	0.6056
4	Bank Bukopin	2.2204	24	Bank Bumi Arta	0.5570
5	Bank CIMB Niaga	2.0366	25	Bank Arto Indonesia	0.5412
6	Bank Danamon Indonesia	2.0278	26	Bank Mestika Dharma	0.4038
7	Bank Negara Indonesia	2.0093	27	Bank Maspion Indonesia	0.3424
8	Bank Agris	1.9615	28	Bank Maybank Indonesia	0.3254
9	Bank Jabar Banten	1.8236	29	Bank Nusantara Parahyangan	0.3095
10	Bank Rakyat Indonesia	1.6564	30	Bank Victoria International	0.2833
11	Bank Tabungan Negara	1.5532	31	Bank Permata	0.2759
12	Bank Mandiri	1.3732	32	Bank Ina Perdana	0.1789
13	Bank Pan Indonesia	1.2961	33	Bank Capital Indonesia	-0.0175
14	Bank Mega	1.2273	34	Bank MNC Internasional	-0.0546
15	Bank Central Asia	1.1858	35	Bank Pembangunan Daerah Banten	-0.1237
16	Bank Tabungan Pensiunan Nasional	1.1316	36	Bank Mayapada International	-0.2513
17	BPD Jawa Timur	0.8396	37	Bank Rakyat Indonesia Agro Niaga	-0.5778
18	Bank China Construction Bank Ind	0.8299	38	Bank Artha Graha International	-1.8266
19	Bank QNB Indonesia	0.7878	39	Bank Dinar Indonesia	-1.9275
20	Bank OCBC NISP	0.7875	40	Bank Yudha Bhakti	-2.0123

Source: (Processed by author, 2018)

Based on table 5, there are 16 stocks that have β > 1. The highest beta is in the is Bank Mitra Niaga (NAGA), which is 3.9804. Stocks with beta more than 1, it indicates that this stock is aggressive. Based on Table 5, there are 16 stocks that have β < 1. Beta are positive and less than 1 means that the market Jakarta Composite Index increase, then the stock will go up, but the increase is always lower than the increase in the market. There are 8 stocks that have β <0. The lowest beta is -2,0123, that is the Bank Yudha Bhakti Tbk company. Beta stocks that have a negative and a value of less than 1, that means stocks behave specifically and contrary with the capital market. When the market goes up, these types of stocks actually move down, and when the market moves down, these stocks actually move up.

Results of the Expected Returns Rate Analysis. The expected rate of return is how much profit investors expect from the stock investment. Below are the expected rate tables:

Table 5. Expected Rate of Return

No	Company List	E (R_i)	No	Company List	E (R_i)
1	Bank Mitraniaga	0.0115	21	Bank Sinar Mas	0.0053
2	Bank Ganesha	0.0088	22	Bank Nationalnobu	0.0053
3	Bank Harda Internasional	0.0083	23	Bank Woori Saudara Indonesia 1906	0.0051
4	Bank Bukopin	0.0081	24	Bank Bumi Arta	0.0050
5	Bank CIMB Niaga	0.0078	25	Bank Arto Indonesia	0.0049
6	Bank Danamon Indonesia	0.0078	26	Bank Mestika Dharma	0.0047
7	Bank Artha Graha International	0.0004	27	Bank Maspion Indonesia	0.0046
8	Bank Agris	0.0076	28	Bank Maybank Indonesia	0.0045
9	Bank Jabar Banten	0.0074	29	Bank Nusantara Parahyangan	0.0045
10	Bank Rakyat Indonesia	0.0070	30	Bank Victoria International	0.0044
11	Bank Tabungan Negara	0.0069	31	Bank Permata	0.0044
12	Bank Mandiri	0.0065	32	Bank Ina Perdana	0.0042
13	Bank Pan Indonesia	0.0064	33	Bank Capital Indonesia	0.0039
14	Bank Mega	0.0062	34	Bank MNC Internasional	0.0038
15	Bank Central Asia	0.0062	35	Bank Pembangunan Daerah Banten	0.0037
16	Bank Tabungan Pensiunan Nasional	0.0061	36	Bank Mayapada International	0.0034
17	Bank Pembangunan Daerah Jawa Timur	0.0055	37	Bank Rakyat Indonesia Agro Niaga	0.0028
18	Bank China Construction Bank Ind	0.0055	38	Bank Negara Indonesia	0.0002
19	Bank QNB Indonesia	0.0054	39	Bank Dinar Indonesia	0.0002
20	Bank OCBC NISP	0.0054	40	Bank Yudha Bhakti	0.0001

Source: (Processed by author, 2018)

There are 40 stocks with positive expected returns. With the highest rate of return is 0.0115 or 1.15%, Bank Mitraniaga Tbk (NAGA). The stock of Bank Mitra Niaga Tbk (NAGA) have a positive expected rate of return because NAGA stock has the highest beta. While the lowest rate of return is 0.0001 or equal to 0.01%, of Bank Yudha Bhakti (BBYB). This is in consistent with the CAPM method, because in the CAPM method the relationship between expected returns and the risks of investment has a positive relationship and is directly proportional. It can be concluded that the banking sector shares have a positive expected rate of return in that period.

Efficient Stock Groupings and Investment Decisions. Efficient stocks are stocks with individual returns greater than the expected rate of return [(Ri)> E (Ri)]. While inefficient stock conditions indicate that the individual rate of return (Ri) is smaller than the expected rate of return [(E (Ri)].

Table 6. Efficient Stocks

No	Company List	Code	Ri	E (R_i)
1	Bank Ina Perdana Tbk	BINA	0.1286	0.0042
2	Bank Agris Tbk	AGRS	0.1086	0.0076
3	Bank Harda Internasional Tbk	BBHI	0.059	0.0083
4	Bank Yudha Bhakti Tbk	BBYB	0.0492	0.0001
5	Bank Mayapada International Tbk	MAYA	0.0464	0.0034
6	Bank Mitraniaga Tbk	NAGA	0.046	0.0115
7	Bank Victoria International Tbk	BVIC	0.0439	0.0044
8	Bank Pembangunan Daerah Banten Tbk	BEKS	0.0399	0.0037
9	Bank Jabar Banten Tbk	BJBR	0.0393	0.0074
10	Bank Nationalnobu Tbk	NOBU	0.034	0.0053
11	Bank Danamon Indonesia Tbk	BDMN	0.0325	0.0078
12	Bank Dinar Indonesia Tbk	DNAR	0.0313	0.0002
13	Bank Tabungan Pensiunan Nasional Tbk	BTPN	0.0265	0.0061
14	Bank Central Asia Tbk	BBCA	0.022	0.0062
15	Bank Mega Tbk	MEGA	0.0206	0.0062
16	Bank Rakyat Indonesia Agro Niaga Tbk	AGRO	0.0205	0.0028
17	Bank OCBC NISP Tbk	NISP	0.0191	0.0054
18	Bank Capital Indonesia Tbk	BACA	0.019	0.0039
19	Bank Negara Indonesia (Persero) Tbk	BBNI	0.0168	0.0077
20	Bank Bumi Arta Tbk	BNBA	0.0156	0.005
21	Bank China Construction Bank Ind. Tbk	MCOR	0.0141	0.0055
22	Bank Rakyat Indonesia (Persero) Tbk	BBRI	0.0139	0.007
23	Bank Mandiri (Persero) Tbk	BMRI	0.013	0.0065
24	Bank Ganesha Tbk	BGTG	0.0125	0.0088

25	Bank Tabungan Negara (Persero) Tbk	BBTN	0.0121	0.0069
26	Bank Arto Indonesia Tbk	ARTO	0.0113	0.0049
27	Bank Nusantara Parahyangan Tbk	BBNP	0.0102	0.0045
28	Bank Maspion Indonesia Tbk	BMAS	0.0089	0.0046
29	Bank CIMB Niaga Tbk	BNGA	0.0087	0.0078
30	Bank Pembangunan Daerah Jawa Timur Tbk	BJTM	0.0076	0.0055
31	Bank Pan Indonesia Tbk	PNBN	0.0059	0.0064

Source: (Processed by author, 2018)

Based on table 7 there are 31 efficient shares of 40 banking sector stock research samples. First place stocks, Bank Ina Perdana (BINA) stocks have the biggest difference between Ri and E (Ri) that is equal to 0.1244 or 12.44%. Stocks of Bank Ina Perdana capable of providing real profit worth 12.44% of the returns expected by investors. The criteria in determining investment decisions is choosing efficient stocks, stocks that have the individual return is greater than the expected rate (Ri > E (Ri). The investment decision for efficient stock / good that is considering buying the stocks.

Table 7. Inefficient Stocks

No	Company List	Code	Ri	E (R_i)
1	Bank Artha Graha International Tbk	INPC	-0.0009	0.0004
2	Bank Mestika Dharma Tbk	BBMD	-0.0021	0.0047
3	Bank Permata Tbk	BNLI	-0.006	0.0044
4	Bank Woori Saudara Indonesia 1906 Tbk	SDRA	-0.0057	0.0051
5	Bank Sinar Mas Tbk	BSIM	-0.0096	0.0053
6	Bank Bukopin Tbk	BBKP	-0.0103	0.0081
7	Bank QNB Indonesia Tbk	BKSW	-0.0136	0.0054
8	Bank MNC Internasional Tbk	BABP	-0.0153	0.0038
9	Bank Maybank Indonesia Tbk	BNII	-0.0231	0.0045

Source: (Processed by author, 2018)

Based on the table, there are nine stocks that are not efficient, the investment decisions made on inefficient stocks / not good are to consider selling those Stocks.

Managerial Implications. In the CAPM method the relationship between expected returns and the risks of investment has a positive direction and is directly proportional. Investors will get risk asset if the expected rate of return is proportional to the risk (Ross, 2009) It is intended that the more expected rate of return, the greater the risk it will bear. The same with this research, the highest beta was found in Bank Mitra Niaga (NAGA) stocks, which amounted to 3,9804, had a positive relationship with the expected rate of return on the stocks of Bank Mitra Niaga (NAGA) which amounted to 0.0115 or 1.15%. That company is the highest stock returns. The lowest beta is found in the stocks of Bank Yudha Bhakti Tbk company that is equal to -2.0213, and the expected rate of return of the

company is the lowest expected rate of return of 0.0001. The results of this study indicate that the banking sector shares have an efficient stock, because the average rate of return (actual return) is higher than the expected return (expected return). This is shown from the results of the study, namely there are 31 efficient shares of 40 shares in the banking sector.

CONCLUSIONS

Based on the analysis and discussion above that has been done in the previous chapter, the results of the research that has been done can be summarized as follows: **(1)** The results of the study show that there are 31 banking stocks with positive average return rates and 9 banking stocks with negative average returns. **(2)** Based on the results of the study there are 16 stocks that have $\beta > 1$, 16 shares that have $\beta < 1$, and there are 8 stocks that have $\beta < 0$. The average systematic risk of banking shares is 0.8030, so that in general 40 shares of the company are made Research samples have a systematic risk that is not too high. **(3)** Based on the research there are 40 stocks with expected positive returns. With the highest rate of return is 0.0115 or 1.15%, namely the shares of Bank Mitraniaga Tbk (NAGA). While the lowest rate of return is 0.0001 or equal to 0.01%, namely the shares of Bank Yudha Bhakti (BBYB). **(4)** There are 31 stocks that are categorized as efficient shares and 9 shares of companies that are included in the category of inefficient shares of 40 shares of the company that were used as research samples. Efficient Stock is where the stock return rate (Ri) is greater than the expected rate of return E (Ri).

Limitations. Based on research conducted by researchers, the limitations in this study are: (1) Research only uses banking companies listed on the Indonesia Stock Exchange (IDX). In order to study the Capital Asset Pricing Model well, the object of research can be added to other sectors, such as other financial sectors other than banking. (2) Research only uses the CAPM method in calculating risk and stock returns. Therefore, for the next researchers to be able to use the CAPM expansion method.

Suggestions. Based on the conclusions and limitations above, there are some suggestions that can be submitted are as follows:

For Investors. (1) If investors are interested in investing their capital in banking shares, investors should choose stocks that have an average rate of return on positive individual shares and include efficient stocks. (2) Investors should not invest in stocks that have an average rate of return on negative individual shares and inefficient stocks because the rate of return is smaller than the expected rate of return. (3) For investors who have risk likes (risk takers), it is better to choose stocks that have more than one beta. (4) Investors who tend to avoid risk should choose stocks that have less than one beta.

For Further Researchers. For further researchers, it is expected to conduct research on the development of the CAPM, such as the CCAPM (Consumption Capital Asset Pricing Model), LCAPM (Liquidity Adjusted Capital Asset Pricing Model), etc. The CAPM is the conceptual basis for the development of the CAPM.

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