Analysis of Stock Based Investment Decisions Stock Price Assessment in Property and Companies Real Estate Listed on The Indonesian Stock Exchange

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ABSTRAK

Tujuan dari penelitian ini adalah untuk menentukan apakah berinvestasi di real estat dan sekuritas real estat bermanfaat. Teknik purposive sampling digunakan untuk memilih 32 perusahaan untuk penelitian ini. Analisis dilakukan dengan menggunakan pendekatan Capital Asset Pricing Model (CAPM). Saham dianggap bernilai jika return individualnya melebihi return ekspektasi ($R_i > ER_i$). Temuan penelitian menunjukkan hal-hal sebagai berikut: (1) Di antara saham-saham perusahaan real estate dan properti, ASRI, BEST, BKSL, BSDE, CTRA, OMRE, dan SMRA merupakan saham-saham yang layak untuk dijadikan sebagai investasi. Komponen-komponen tersebut memiliki nilai R_i yang lebih besar dari $E(R_i)$ atau [$R_i > E(R_i)$]. Seorang investor harus merumuskan keputusan investasi untuk membeli sekuritas tersebut. (2) Dua puluh lima saham organisasi kita tidak dapat direalisasikan. Nilai R_i untuk saham-saham yang tidak terealisasi tersebut lebih kecil dari $E(R_i)$ atau [R_i].

ABSTRACT

The objective of this study is to assess the investment viability of real estate and real estate securities. A purpose sampling technique was employed to select 32 companies for the research study. The methodology utilized for the analysis is the Capital Asset Pricing Model (CAPM). Shares are considered valuable if their individual return exceeds their expected return ($R_i > ER_i$). The findings of this study indicate that the following seven real estate and real estate company stocks are viable investments: ASRI, BEST, BKSL, BSDE, CTRA, OMRE, and SMRA. These components have R_i values greater than $E(R_i)$ or [$R_i > E(R_i)$]. An investor is obligated to make the investment decision of purchasing a share. (2) There are 25 shares of our company that cannot be realized.

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1. INTRODUCTION

An analysis of share price data from 2016 to 2018 on the property and real estate subsector stocks

listed on the Stock Exchange Indonesian Securities revealed a substantial decline in the value of shares in this industry. This price reduction presents an excellent opportunity to invest in the property and real estate subsector on the stock exchange.

This research considers the phenomenon of fluctuating stock prices in the property and real estate subsector to be a particularly intriguing issue. The Capital Asset Pricing Model (CAPM), the Discounted Cash Flow (DCF) method, and relative valuation are common approaches utilized to evaluate stocks. One model that can ascertain the relationship between return and risk that investors will encounter is the Capital Asset Pricing Model (CAPM). Arifin (2005) posits that the CAPM elucidates the correlation between systematic risk and the anticipated return on an asset. The linear description of the relationship pattern between the two variables is referred to as the Security Market Line (SML). The CAPM equation is useful for determining whether a stock is valued too high or too low compared to its proper value. The valuation of a stock can be said to be expensive (overvalued) if the expected return is more smaller than the implied return so investors decide to sell shares the

CAPM is well suited for individual stock valuation. The advantages of this model are very simple and easy to understand. The CAPM model is also suitable for inclined investors avoid risks (risk averse). In addition, CAPM uses systematic risk risk) which means risks that cannot be eliminated with a diversification strategy. Research conducted by Nasuha, et al (2013) with a sample of shares property and real estate sector companies, using the CAPM analysis method The results obtained from the estimation show that there are 14 shares out of 19 samples that are classified as shares undervalued and worth investing in.

Hadiati et al (2016) classify efficient and inefficient stocks by using the CAPM method which consists of 15 companies listed on the IDX30 index 2012-2015. The research results show that there are nine efficient stocks and six stock is inefficient. The same case study was also carried out by Septia (2018) where out of 30 IDX30 companies contain 15 efficient companies and 15 inefficient companies

Diasworo (2015) examined stock valuations in pharmaceutical sector companies on the IDX 2009-2013 period using CAPM, the results show 1. All the pharmaceutical companies used as research samples are in a price condition that is not reasonable. The five companies, namely KLBF, TSPC, KAEF, INAF, PYFA, are shares undervalued. This research is in line with that carried out by Aprilia, et al (2016) company mining sector from the 4 stocks used as samples, namely ELSA, PTBA, RUIS, TINS, in an undervalued state. That is, the intrinsic value of shares is greater than the market price until the end of December 2015. Manik (2017) also conducted an Investment Decision Analysis shares based on the Share Price Assessment of Car Companies listed on the IDX For the 2011-2015 period, the research results show that using the CAPM method The results obtained were that in 2011 there were four efficient shares, in 2012 there were three inefficient shares and one efficient share and in 2013 there were three inefficient shares efficient and one efficient share, in 2014 there were 4 inefficient shares and in 2015 there are 4 inefficient shares.

Choosing whether shares are suitable or not is an important reference in investing shares in the property and real estate subsector so that large losses do not occur selecting the stock investment. In connection with this, the aim of this research is to find out if property and real estate shares are suitable or not purchased as an investment vehicle using the Capital Asset Pricing Model method (CAPM).

2. REVIEW OF LITERATURE

2.1 Analysis and Valuation of Shares

2.1.1 Understanding Investment

According to (Susilo, 2005) "Investment is an activity to postpone current consumption to be included in productive assets for a certain period of time". This is no different from Arifin (2005) who states that investment is the activity of postponing consumption to obtain greater consumption (value) in the future. An investment decision is said to be optimal if it can maximize expected utility. Types of investment can be divided into three groups (Sharpe et.al, 1997), including:

1) Investment in financial assets and real assets. 2) Direct and indirect investment. 3) Long-term and short-term investments.

2.1.2 Capital Market

According to Tandelilin (2010) the capital market is a meeting between parties who need funds and parties who need funds by buying and selling securities. A more specific definition of the capital market is activities related to public offerings and securities trading, public companies related to the securities they issue, as well as institutions and professions related to securities.

Some of the benefits of the capital market stated by Darmadji, et al (2011) include:

1. Providing a source of financing (long term) for the business world while enabling optimal allocation of funds.
2. Providing an investment vehicle for investors while enabling diversification efforts.
3. Providing a leading indicator for the country's economic trends.
4. Spread of company ownership to the middle class.

2.1.3 Capital Market

In simple terms, shares are defined as proof of ownership of the company that issued them. According to Darmaji, et al (2011) shares are a sign of participation or ownership of a person or legal entity in a company or limited liability company.

The share price is the price that occurs on the stock market at a certain time determined by market players (Hartono 2003). This market value is determined by the demand and supply of the shares in question on the stock exchange market. So, share prices are price formation that occurs in the capital market which is determined by the perpetrators. There are several factors that influence share prices as stated by Brigham, et al (2001), namely:

1) Interest rate or interest rate. 2) Risk and Return. If the risk level of the company's expected profit increases, it will affect the company's share price.

2.1.4 Risk and Return

Risk is the chance that some unfavorable event will occur (Brigham, et al. 2001). When investing, investors must consider return and risk because investment decisions are a trade-off between these two factors. Return and risk have a positive relationship, where the greater the risk, the higher the return.

According to Halim (2005), several types of risk are: 1) Systematic Risk, which is influenced by macro factors that can influence the market as a whole. 2) Unsystematic Risk, is a risk that can be eliminated or reduced by diversifying because this risk only exists in one particular company or industry.

Before carrying out transactions in the capital market, an investor needs to assess shares in addition to the economic conditions and the issuer. Stock assessment aims to avoid the risk of loss that investors will experience when investing in shares. There are three types of stock valuation, including (Walsh, 2003) nominal value, book value and market value.

2.1.5 Capital Asset Pricing Model (CAPM)

The Capital Asset Pricing Model (CAPM) is a widely accepted general equilibrium relationship for asset returns that was independently developed by Sharpe (1964), Lintner (1965), and Mossin (1969). As a result, this model is frequently referred to as the Sharpe-Lintner-Mossin form of CAPM (Jogiyanto 2010). The CAPM forecasts the relationship between the expected rate of return and the risk associated with an asset.

The benefits of CAPM capital (Weston and Copeland, 2004) include:

1. Generally used by investors to support the choice of an optimal investment on the capital exchange;
2. Provides an intuitive approach to thinking about the level of return an investor should expect on an investment, given a given systematic risk or market risk;
3. Helps calculate the undiversified from a single well-diversified portfolio.

CAPM calculates the fair return of a stock or portfolio (required return) according to its risk. The CAPM model is divided into two in its operation, namely market balance in the form of a relationship

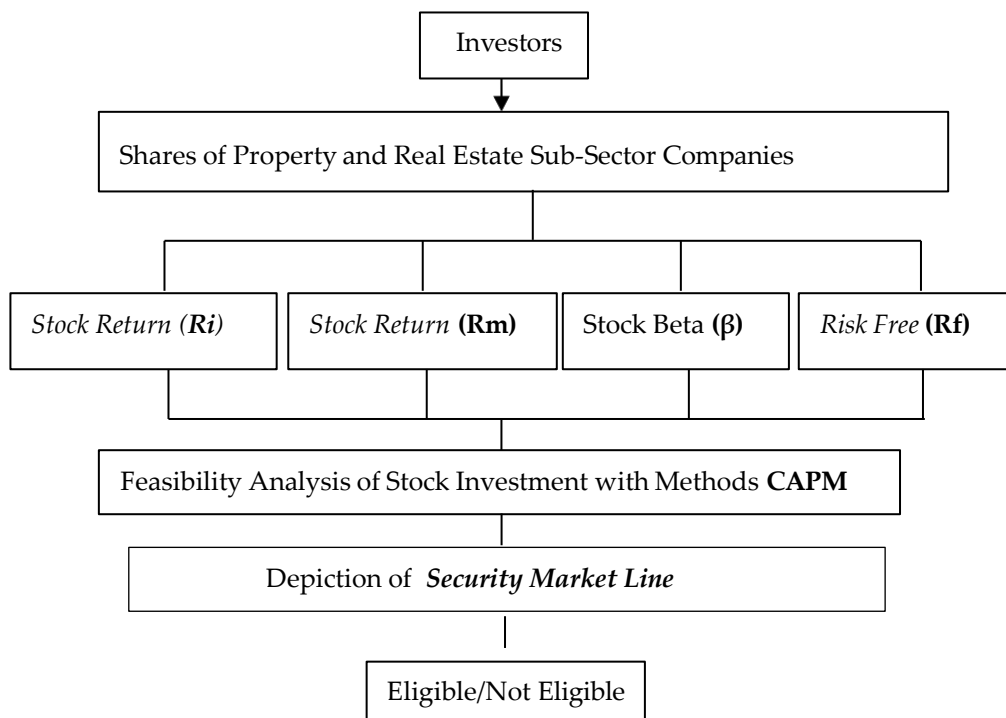between expected return and beta, namely (Weston and Copeland, 2004):

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                        ┌─────────────┐
                        │  Investors  │
                        └──────┬──────┘
                               ▼
        ┌──────────────────────────────────────────────────┐
        │ Shares of Property and Real Estate Sub-Sector     │
        │ Companies                                         │
        └──────────────────────────────────────────────────┘
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Figure 1. Conceptual Framework for Thought

with boxes: *Stock Return (Ri)*, Stock Return **(Rm)**, Stock Beta **(β)**, *Risk Free* **(Rf)**, leading to: Feasibility Analysis of Stock Investment with Methods **CAPM** → Depiction of *Security Market Line* → Eligible/Not Eligible

3. RESEARCH METHODS

The data used in this research is a type of secondary data originating from the Indonesian Stock Exchange. The population used in the object of this research is 58 industrial sector companies in the property and real estate sub-sector, which have gone public or are listed on the Indonesian Stock Exchange (BEI). during the observation year from January 1 2020 to December 31 2022. Determining stock returns in this study uses monthly share prices (end of month closing prices) of property and real estate shares on the Indonesia Stock Exchange for the period January 2020 - December 2022. Data closing price obtained from https://most.co.id, and https://idnfinancials.com. In this research, the researcher determined the object deliberately (purposive sampling). The research sample selection criteria are as follows:

Table 1. Research Sample Selection Criteria

No.	Sample Criteria
1	Property and real estate subsector company that is listed and actively carries out transactions on the Indonesian Stock Exchange
2	Property and real estate subsector companies that are not subject to suspension on the Indonesian Stock Exchange
3	Property and real estate companies listed on the Indonesian Stock Exchange have built their business for more than 5 years since the IPO (Initial Public Offering) date.
4	Property and real estate companies listed on the Indonesian Stock Exchange have market capitalization above Rp. 500 Billion.

Based on these selection criteria, there were 32 companies used as research samples listed in Table 2

Table 2. List of Names of Property and Real Estate Companies Used as Research Samples

No.	Company Name	Stock code

1	PT. Agung Podomoro Land Tbk.	APLN
2	PT. Alam Sutera Realty Tbk.	ASRI
3	PT. Bekasi Fajar Industrial Tbk.	BEST
4	PT. Sentul City Tbk.	BKSL
5	PT. Bumi Serpong Damai Tbk.	BSDE
6	PT. Cowell Development Tbk.	COWL
7	PT. Ciputra Development Tbk.	CTRA
8	PT. Duta Anggada Realty Tbk.	DART
9	PT. Intiland Development Tbk.	DILD
10	PT. Duta Pertiwi Tbk.	DUTI
11	PT. Bakrieland Development Tbk.	ELTY
12	PT. Megapolitan Development	EMDE
13	PT. Fortune Mate Indonesia Tbk.	FMII
14	PT. Gading Development Tbk.	GAMA
15	PT. Gowa Makassar Dev. Tbk	GMTD
16	PT. Greenwood Sejahtera Tbk.	GWSA
17	PT. Jaya Real Property Tbk.	JRPT
18	PT. Kawasan Industri Jababeka	KIJA
19	PT. Eureka Prima Jakarta Tbk	LCGP
20	PT. Lippo Cikarang Tbk.	LPKC
21	PT. Lippo Karawaci Tbk.	LPKR
22	PT. Modernland Realty Tbk	MDLN
23	PT. Metropolitan Kentjana Tbk	MKPI
24	PT. Metropolitan Land Tbk	MTLA
25	PT. Hanson International Tbk	MYRX
26	PT. City Retail Development	NIRO
27	PT. Indonesia Prima Property	OMRE
28	PT. Plaza Indonesia Realty Tbk	PLIN
29	PT. Roda Vivatex Tbk	RDTX
30	PT. Pikko Land Development Tbk	RODA
31	PT. Suryamas Dutamakmur Tbk	SMDM
32	PT. Summarecon Agung Tbk	SMRA

Source: https/idnfinancials.com (data is processed)

The data analysis technique uses the Capital Asset Pricing Model method. The calculations were carried out using the Microsoft Excel program. Analysis of the application of the CAPM method in determining investment is carried out by:

1. Collect data on shares included in the Property Index in the period January 2020 – December 2022, namely closing price data at the end of the month.
2. Calculate Market Return using an equation based on Hartono, 2003:

$$Rm = \frac{IHSGt - IHSGt-1}{IHSGt-1}$$

Rm   : Market returns or market returns IHSGt
    : Composite stock price index in period t
IHSGt-1   : Composite stock price index before period t-1 (Beginning)

3. Calculate the Risk Free Rate of Return using an equation based on Hartono (2003):

$$Rf = \frac{\sum SBI}{\sum Periode}$$

Rf   : Risk-free investment returns

ΣSBI	: Total SBI Interest Rate for period
tΣ Periode	: Number of observation periods

4. Calculating Stock Returns using an equation based on Husnan, (2009):

$$R i = \frac{Pit\text{-}Pit\text{-}1}{Pit\text{-}1}$$

R*i*	: Expected Rate of Stock Profit
Pit	: Share Prices in a certain period
Pit-1	: Share Prices for the previous period

5. Find the Beta value of the stock using an equation based on Husnan (2009):

$$\beta = \frac{Cov\ (Ri,Rm)}{Var\ (Rm)}$$

Cov (Ri,Rm)	:	Expected Rate of Stock Profit
Var (Rm)	:	Share Prices in a certain period
β	:	Share Prices for the previous period
Rm	:	Market risk
Ri	:	Stock risk

6. Calculate CAPM based on Husnan (2009)

$$E(Ri) = Rf + \beta i\ (E\ Rm - Rf)$$

E(Ri)	:	Expected rate of return
Rf	:	Risk free interest rate (Risk Free)
β i	:	Stock Beta
E Rm	:	The expected rate of return of a market index

7. Depiction of the Security Market Line

Security Market Line (SML) is a graphical depiction of the CAPM model. SML is a line that connects the expected rate of return [E(Ri)] of a security with systematic risk (β). (Weston and Copeland, 2004).

8. Eligibility Criteria

The eligibility criteria for investing in company shares are as follows:

If Ri > E(Ri) then the decision is to buy securities or investments that are worth buying because the stock return is higher than the expected return. Decent stocks will appear to be above the SML line. Weston and Copeland, (2004).

If Ri < E(Ri) then the decision is to sell the security or the investment is not worth buying because the stock return is lower than the expected return. the inappropriate shares are below the SML line. Weston and Copeland, (2004).

4. RESULTS AND DISCUSSION

The rate of return on individual shares is the real amount of profit received by investors when investing in shares. The results of calculating individual stock returns from the 32 property and real estate stocks used as research samples are as follows:

Table 3. List of Stock Returns (R*i*)

No.	Company Name	Stock code	R*i*
1	PT. Agung Podomoro Land Tbk.	APLN	-0,017252358
2	PT. Alam Sutera Realty Tbk.	ASRI	0,00108453
3	PT. Bekasi Fajar Industrial Tbk.	BEST	-0,002358718
4	PT. Sentul City Tbk.	BKSL	0,029485556
5	PT. Bumi Serpong Damai Tbk.	BSDE	-0,007052821
6	PT. Cowell Development Tbk.	COWL	0,000702343

7	PT. Ciputra Development Tbk.	CTRA	-0,006352682
8	PT. Duta Anggada Realty Tbk.	DART	-0,009377302
9	PT. Intiland Development Tbk.	DILD	-0,010458235
10	PT. Duta Pertiwi Tbk.	DUTI	-0,002401693
11	PT. Bakrieland Development Tbk.	ELTY	0,002906602
12	PT. Megapolitan Development	EMDE	0,020161754
13	PT. Fortune Mate Indonesia Tbk.	FMII	0,006704258
14	PT. Gading Development Tbk.	GAMA	0,005691125
15	PT. Gowa Makassar Dev. Tbk	GMTD	0,02235625
16	PT. Greenwood Sejahtera Tbk.	GWSA	0,009737724
17	PT. Jaya Real Property Tbk.	JRPT	0,002840252
18	PT. Kawasan Industri Jababeka	KIJA	0,004777065
19	PT. Eureka Prima Jakarta Tbk	LCGP	-0,028602512
20	PT. Lippo Cikarang Tbk.	LPCK	-0,038623493
21	PT. Lippo Karawaci Tbk	LPKR	-0,034573232
22	PT. Modernland Realty Tbk	MDLN	-0,016193169
23	PT. Metropolitan Kentjana Tbk	MKPI	0,010877709
24	PT. Metropolitan Land Tbk	MTLA	0,026139384
25	PT. Hanson International Tbk	MYRX	-0,019265871
26	PT. City Retail Development	NIRO	-0,001126486
27	PT. Indonesia Prima Property	OMRE	0,07096371
28	PT. Plaza Indonesia Realty Tbk	PLIN	-0,004557206
29	PT. Roda Vivatex Tbk	RDTX	0,016076287
30	PT. Pikko Land Development Tbk	RODA	0,009410082
31	PT. Suryamas Dutamakmur Tbk	SMDM	0,017237915
32	PT. Summarecon Agung Tbk	SMRA	-0,013723835

Source : 2023 data processing

4.1 Market Return Rate Results

Market return is calculated by measuring the difference between the Property market index in the current month (Property t) and the previous month (Property t-1) then dividing it by the IHSG of the previous month (Property t-1). The results of calculating the Market Rate of Return/E(Rm) during the 2020-2022 period can be seen in table 4.

Table 4. Market Rate of Return (Market Return)

No	Years	Month	IHSG Property	Change	Rm	Percentage (%)
1		January	471,849	-19,084	-0,0388729	-3,887
2		February	473,478	1,629	0,00345237	0,345
3		March	491,169	17,691	0,03736393	3,736
4		April	499,238	8,069	0,01642815	1,642
5	2020	May	505,124	5,886	0,01178996	1,117
6		June	544,426	39,302	0,07780663	7,780
7		July	560,507	16,081	0,02953753	2,953
8		August	567,021	6,514	0,01162162	1,162
9		September	565,086	-1,935	-0,0034125	-0,341
10		October	565,326	0,240	0,00042471	0,042
11		November	522,727	**-42,599**	-0,0753529	**-7,535**

12		December	517,810	-4,917	-0,0094064	-0,940
13		January	521,547	3,737	0,00721693	0,721
14		February	517,289	-4,258	-0,0081641	-0,816
15		March	510,358	-6,931	-0,0133986	-1,339
16		April	505,553	-4,805	-0,0094149	-0,941
17	2021	May	491,968	-13,585	-0,0268715	-2,687
18		June	493,718	1,75	0,00355714	0,355
19		July	495,360	1,642	0,00332578	0,332
20		August	511,388	16,028	0,03235626	3,235
21		September	500,157	-11,231	-0,0219617	-2,196
22		October	509,452	9,295	0,01858416	1,858
23		November	489,848	-19,604	-0,0384805	-3,848
24		December	495,510	5,662	0,01155868	1,155
25		January	537,986	**42,476**	0,08572178	**8,572**
26		February	545,404	7,418	0,01378846	1,378
27		March	503,850	-41,554	-0,0761893	-7,618
28		April	477,257	-26,593	-0,0527795	-5,277
29	2022	May	468,437	-8,82	-0,0184806	-1,848
30		June	434,970	-33,467	-0,0714439	-7,144
31		July	444,725	9,755	0,02242683	2,242
32		August	448,745	4,02	0,00903929	0,903
33		September	422,791	-25,954	-0,0578368	-5,783
34		October	403,578	-19,213	-0,0454432	-4,544
35		November	440,471	36,893	0,09141479	9,141
36		December	447,752	7,281	0,01653003	1,653
		AMOUNT			**-0,0635642**	
		E Rm			**-0,0017655**	

Source: https://most.co.id (2023 data is processed)

Table 4 above shows that the average Rm has a negative value, namely - 0.0017655, which comes from the total amount of Rm of -0.0635642 divided by the total number of months in the research period, namely 36 months. The lowest market rate of return occurred in November 2020 at -42,599 points, namely -0.0753529 or -7.535%, which shows that share trading in the Property Index experienced a sluggishness that month. The highest market rate of return occurred in January 2022 at 42,476 points, namely 0.08572178 or 8.572%, which illustrates that the stock trading conditions in the Porperty Index in that month were active.

4.2 Hasil Analisis Risk Free Rate

The Bank Indonesia interest rate is used to calculate the Risk Free Rate of return. This data was taken from the Bank Indonesia website which can be accessed via www.bi.go.id. Table 5 below is BI Rate data for January 2020 - December 2022.

Table 5. BI Rate Data for 2020-2022

No.	Year	Date	BI *Rate*
1		January 14, 2020	7,25%
2		February 18, 2020	7,00%
3		March 17, 2020	6,75%
4		April 21, 2020	5,50%
5	2020	May 19, 2020	5,50%
6		June 16, 2020	5,25%
7		July 21, 2020	5,25%
8		August 19, 2020	5,25%
9		September 22, 2020	5,00%

10		October 20, 2020	4,75%
11		November 17, 2020	4,75%
12		December 15, 2020	4,75%
13		January 19, 2021	4,75%
14		February 16, 2021	4,75%
15		March 16, 2021	4,75%
16		April 20, 2021	4,75%
17	**2021**	May 18, 2021	4,75%
18		June 15, 2021	4,75%
19		July 20, 2021	4,75%
20		August 22, 2021	4,50%
21		September 22, 2021	4,25%
22		October 19, 2021	4,25%
23		November 16, 2021	4,25%
24		December 14, 2021	4,25%
25		January 18, 2022	4,25%
26		February 15, 2022	4,25%
27		March 22, 2022	4,25%
28		April 19, 2022	4,25%
29		May 17, 2022	4,50%
30		May 30, 2022	4,75%
31	**2022**	June 29, 2022	5,25%
32		July 19, 2022	5,25%
33		August 15, 2022	5,50%
34		September 27, 2022	5,75%
35		October 23, 2022	5,75%
36		November 15, 2022	6,00%
37		December 20, 2022	6,00%
Average BI Rate 2020-2022			5,07%

Source: www.bi.go.id

This data can be interpreted as meaning that if investors invest their funds in the money market in January 2020, the profit obtained by investors will be 7.25% per year with 0% risk. The profits obtained are definitely received by investors because saving money in SBI or deposits does not contain risk.

4.3 Results of Systematic Risk Analysis of Each Individual Stock Stock Beta (βi)

Beta (β) is the systematic risk inherent in a stock. Beta shows the relationship between the rate of return of a stock and the rate of return of the market because it is the quotient between the stock covariance and the market variance.

Table 6. Systematic Risk List (Stock Beta)

No.	Company Name	Kode Saham	Bi
1	PT. Agung Podomoro Land Tbk.	APLN	1,329327813
2	PT. Alam Sutera Realty Tbk.	ASRI	1,704411801
3	PT. Bekasi Fajar Industrial Tbk.	BEST	1,76998202
4	PT. Sentul City Tbk.**	BKSL	**1,8246761**
5	PT. Bumi Serpong Damai Tbk.	BSDE	1,381109638
6	PT. Cowell Development Tbk.	COWL	1,003891929
7	PT. Ciputra Development Tbk.	CTRA	1,340922031
8	PT. Duta Anggada Realty Tbk.	DART	0,511033682
9	PT. Intiland Development Tbk.	DILD	0,129950363
10	PT. Duta Pertiwi Tbk.	DUTI	-0,127096358

11	PT. Bakrieland Development Tbk.	ELTY	0,077387808
12	PT. Megapolitan Development	EMDE	0,217689077
13	PT. Fortune Mate Indonesia Tbk	FMII	0,677163872
14	PT. Gading Development Tbk.	GAMA	-0,284388919
15	PT. Gowa Makassar Development Tbk.	GMTD	-0,585881012
16	PT. Greenwood Sejahtera Tbk.	GWSA	0,457844211
17	PT. Jaya Real Property Tbk.	JRPT	0,51201415
18	PT. Kawasan Industri Jababeka Tbk.	KIJA	0,749069184
19	PT. Eureka Prima Jakarta Tbk.*	LCGP	**-1,02706066**
20	PT. Lippo Cikarang Tbk.	LPCK	1,566700875
21	PT. Lippo Karawaci Tbk	LPKR	1,389443919
22	PT. Modernland Realty Tbk.	MDLN	0,842930252
23	PT. Metropolitan Kentjana Tbk.	MKPI	0,487111955
24	PT. Metropolitan Land Tbk.	MTLA	0,258770634
25	PT. Hanson International Tbk.	MYRX	0,138630192
26	PT. City Retail Development Tbk.	NIRO	0,464065762
27	PT. Indonesia Prima Property Tbk.	OMRE	1,627059338
28	PT. Plaza Indonesia Realty Tbk.	PLIN	-0,363919446
29	PT. Roda Vivatex Tbk.	RDTX	0,252758047
30	PT. Pikko Land Development Tbk.	RODA	-0,98372639
31	PT. Suryamas Dutamakmur Tbk.	SMDM	0,509191879
32	PT. Summarecon Agung Tbk.	SMRA	1,794054273
	Amount		**19,64511802**
	Average		**0,613909938**

Source: 2023 data is processed

Information   (*) : **Lowest Systematic Risk**

(**) : **Highest Systematic Risk**

Based on table 6, the calculation results show that the average βi is less than 1 (0.6139 < 1) so that in general the 32 company shares used as research samples have a rather low systematic risk and tend to be less active in responding to changes in market prices. The average high and low βi is inversely proportional to the level of stock returns. The higher the value of βi, the smaller the expected level of stock return and vice versa, the lower βi, the greater the expected level of stock return.

4.4 Expected Rate of Return Analysis Results [ERi]

The expected rate of return [E(Ri)] is the amount of profit expected by investors from their stock investments. The CAPM method itself is used to calculate the expected rate of return using the variables risk-free rate of return (Rf), average market rate of return [E(Rm)], and also the systematic risk of each stock. The results of calculating the expected rate of return for 32 company shares can be seen in table 7.

Table 7. List of Expected Rates of Return

No.	Stock Code	Rf	Bi	E(Rm)	E(Rm) – Rf	βi*[E(Rm)-Rf]	E(Ri)
1	APLN	0,0507	1,3293278	-0,0017655	0,0489345	0,06505	-0,01435
2	ASRI	0,0507	1,7044118	-0,0017655	0,0489345	0,0834045	-0,0327045
3	BEST	0,0507	1,769982	-0,0017655	0,0489345	0,0866132	-0,0359132
4	BKSL*	0,0507	1,8246761	-0,0017655	0,0489345	0,0892896	**-0,0385896**
5	BSDE	0,0507	1,3811096	-0,0017655	0,0489345	0,0675839	-0,0168839
6	COWL	0,0507	1,0038919	-0,0017655	0,0489345	0,0491249	0,0015751
7	CTRA	0,0507	1,340922	-0,0017655	0,0489345	0,0656173	-0,0149173
8	DART	0,0507	0,5110337	-0,0017655	0,0489345	0,0250072	0,0256928

9	DILD	0,0507	0,1299504	-0,0017655	0,0489345	0,0063591	0,0443409
10	DUTI	0,0507	-0,1270964	-0,0017655	0,0489345	-0,0062194	0,0569194
11	ELTY	0,0507	0,0773878	-0,0017655	0,0489345	0,0037869	0,0469131
12	EMDE	0,0507	0,2176891	-0,0017655	0,0489345	0,0106525	0,0400475
13	FMII	0,0507	0,6771639	-0,0017655	0,0489345	0,0331367	0,0175633
14	GAMA	0,0507	-0,2843889	-0,0017655	0,0489345	-0,0139164	0,0646164
15	GMTD	0,0507	-0,585881	-0,0017655	0,0489345	-0,0286698	0,0793698
16	GWSA	0,0507	0,4578442	-0,0017655	0,0489345	0,0224044	0,0282956
17	JRPT	0,0507	0,5120142	-0,0017655	0,0489345	0,0250552	0,0256448
18	KIJA	0,0507	0,7490692	-0,0017655	0,0489345	0,0366553	0,0140447
19	LCGP**	0,0507	-1,0270607	-0,0017655	0,0489345	-0,0502587	**0,1009587**
20	LPCK	0,0507	1,5667009	-0,0017655	0,0489345	0,0766657	-0,0259657
21	LPKR	0,0507	1,3894439	-0,0017655	0,0489345	0,0679917	0,0172917
22	MDLN	0,0507	0,8429303	-0,0017655	0,0489345	0,0412484	0,0094516
23	MKPI	0,0507	0,487112	-0,0017655	0,0489345	0,0238366	0,0268634
24	MTLA	0,0507	0,2587706	-0,0017655	0,0489345	0,0126628	0,0380372
25	MYRX	0,0507	0,1386302	-0,0017655	0,0489345	0,0067838	0,0439162
26	NIRO	0,0507	0,4640658	-0,0017655	0,0489345	0,0227088	0,0279912
27	OMRE	0,0507	1,6270593	-0,0017655	0,0489345	0,0796193	-0,0289193
28	PLIN	0,0507	-0,3639194	-0,0017655	0,0489345	-0,0178082	0,0685082
29	RDTX	0,0507	0,252758	-0,0017655	0,0489345	0,0123686	0,0383314
30	RODA	0,0507	-0,9837264	-0,0017655	0,0489345	-0,0481382	0,0988382
31	SMDM	0,0507	0,5091919	-0,0017655	0,0489345	0,0249171	0,0257829
32	SMRA	0,0507	1,7940543	-0,0017655	0,0489345	0,0877911	-0,0370911
Amount							**0,661076**
Average							**0,0206586**

Source : 2023 data is processed

Information	(*)	:	Lowest Expected Return
	(**)	:	Highest Expected Return

Based on Table 7, the average expected stock return is 0.661076. The figure 0.661076 was obtained by dividing the total expected rate of return of 0.0206586 by the number of shares in the property and real estate subsector companies used as the research sample, namely 32 shares.

4.5 Graphic Depiction of Security Market Line (SML)

Security Market Line (SML) or securities market line (GPS) is a graphic depiction of the CAPM model. SML shows the relationship between the amount of systematic risk (Stock Beta) and the expected rate of return/E (Ri). Below is a graphic image of the SML of the 32 company shares used as research samples.
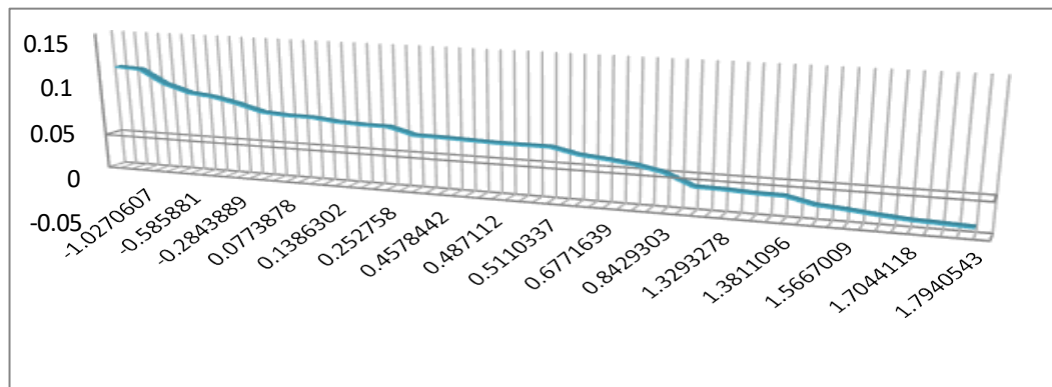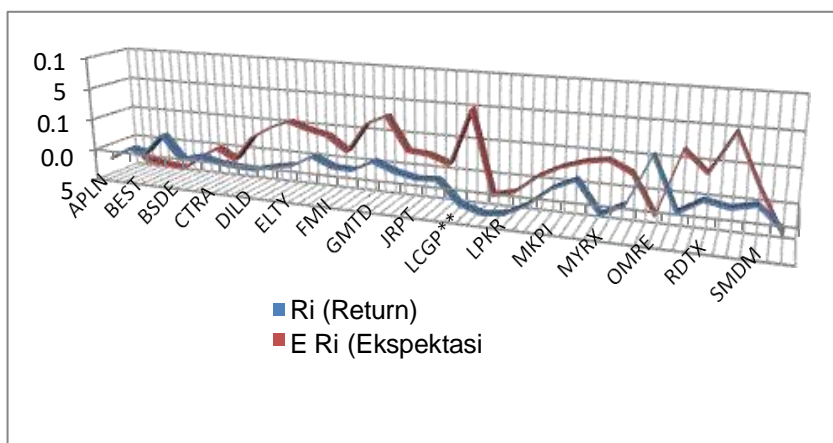

Source : 2023 data is processed

Figure 2. Chart *Security Market Line (SML)*

Based on Figure 2, it can be seen that the greater the systematic risk/beta (β), the smaller the expected return [E(Ri)]. This shows that there is a unidirectional relationship between beta and [E(Ri)]. Figure 4 also shows that when the beta value is 1, [E(Ri)] shows 0.00500, exceeding the average expected market return ERm of -0.0017655. It is hoped that the individual securities of the Property Index will get a greater expected return compared to the expected return of the market portfolio.

4.6 Efficient Stock Grouping and Investment Decisions

Efficient stocks are stocks with an individual rate of return greater than the expected rate of return [(Ri) > E(Ri)]. Inefficient stocks are stocks with an individual rate of return smaller than the expected rate of return [(Ri) < E(Ri)]. Efficient stocks when viewed on the SML chart are located above the SML line. To make it clearer, below is a picture of efficient stocks and inefficient stocks seen from the SML graph:

Source : 2023 data is processed

Figure 3. Investment Eligibility Criteria (Eligible and Not Eligible)

Table 8. List of Stock Investment Eligibility (Eligible and Not Eligible)

No	Stock Code	R*i*	E (R*i*)	Difference between Ri and E (Ri)	Eligibility Criteria
1	APLN	-0,017252358	-0,01435	0,0029024	Not feasible
2	ASRI	0,00108453	-0,0327045	-0,033789	Worthy
3	BEST	-0,002358718	-0,0359132	-0,0335545	Worthy
4	BKSL	0,029485556	**-0,0385896**	-0,0680752	Worthy
5	BSDE	-0,007052821	-0,0168839	-0,0098311	Worthy
6	COWL	0,000702343	0,0015751	0,0008728	Not feasible
7	CTRA	-0,006352682	-0,0149173	-0,0085646	Worthy
8	DART	-0,009377302	0,0256928	0,0350701	Not feasible
9	DILD	-0,010458235	0,0443409	0,0547991	Not feasible
10	DUTI	-0,002401693	0,0569194	0,0593211	Not feasible
11	ELTY	0,002906602	0,0469131	0,0440065	Not feasible
12	EMDE	0,020161754	0,0400475	0,0198857	Not feasible
13	FMII	0,006704258	0,0175633	0,010859	Not feasible
14	GAMA	0,005691125	0,0646164	0,0589253	Not feasible
15	GMTD	0,02235625	0,0793698	0,0570136	Not feasible
16	GWSA	0,009737724	0,0282956	0,0185579	Not feasible
17	JRPT	0,002840252	0,0256448	0,0228045	Not feasible
18	KIJA	0,004777065	0,0140447	0,0092676	Not feasible

19	LCGP	-0,028602512	**0,1009587**	0,1295612	Not feasible
20	LPCK	-0,038623493	-0,0259657	0,0126578	Not feasible
21	LPKR	-0,034573232	-0,0172917	0,0172815	Not feasible
22	MDLN	-0,016193169	0,0094516	0,0256448	Not feasible
23	MKPI	0,010877709	0,0268634	0,0159857	Not feasible
24	MTLA	0,026139384	0,0380372	0,0118978	Not feasible
25	MYRX	-0,019265871	0,0439162	0,0631821	Not feasible
26	NIRO	-0,001126486	0,0279912	0,0291177	Not feasible
27	OMRE	0,07096371	-0,0289193	-0,099883	Worthy
28	PLIN	-0,004557206	0,0685082	0,0730654	Not feasible
29	RDTX	0,016076287	0,0383314	0,0222551	Not feasible
30	RODA	0,009410082	0,0988382	0,0894281	Not feasible
31	SMDM	0,017237915	0,0257829	0,008545	Not feasible
32	SMRA	-0,013723835	-0,0370911	-0,0233673	Worthy

Source : 2023 data is processed

Based on Table 8 above, there are 7 shares of property and real estate companies that are eligible and 25 shares of companies that are not eligible. Investment decisions made on decent/good shares are considering buying these shares, and investment decisions made on unfit/not good shares are considering selling these shares.

Based on data analysis, there is a non-linear relationship between systematic risk and the expected level of stock returns. For example, PT shares. Eureka Prima Jakarta Tbk. (LCGP) has the lowest Stock Beta (β_i), namely -1.02706066 and the highest expected return E (R_i) of 0.1009587, which indicates that this stock has little risk, tends to be passive and is less sensitive to changes in market prices. Meanwhile, shares of PT. Sentul City Tbk. (BKSL) has the highest β_i, namely 1.8246761 and shows the lowest E(R_i) of -0.038589613, which shows that this stock has a large risk, is very active and is very sensitive to changes in market prices.

5. CONCLUSION

Based on the findings of the research and data analysis, it can be concluded that out of the 32 samples examined, eight shares of property and real estate companies are viable options, while twenty-four shares of other companies are not. The Ri value of these eligible shares is greater than E(Ri) or [Ri > E(Ri)]. Investors are required to make the investment decision of purchasing these securities. The Ri value of these unsuitable shares is less than E(Ri) or [Ri < E(Ri)]. Prior to a decline in price, investors are obligated to sell their shares as an investment decision.

Based on the research that has been carried out, the suggestions that can be given by researchers are: This research is expected to be used as a reference and additional information for investors and potential investors who will invest in shares. It is very important for investors to invest excess funds in efficient shares so that the risks they face can be minimized properly, so that the investor's goal of getting the expected return can be achieved.

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