

# **How to Calculate the Expected Return on Real Estate Stocks**

**Dicky Hida Syahchari\***

Management Department, Binus Business School,  
Bina Nusantara University, Jakarta, Indonesia 11480

\*dicky.syahchari@binus.edu

## **Abstract**

This research aims to determine a property stock portfolio is expected return and standard deviation. The expected market return is a statistic often used to address a variety of investment and corporate finance problems. The study's result specifies the greatest possible loss for portfolio owners. PT Pollux Property Indonesia Tbk. (POLL), Metropolitan Kentjana Tbk. (MKPI), PT Bumi Serpong Damai Tbk (BSDE), PT Pakuwon Jati Tbk (PWON), and PT Ciputra Development Tbk (CTRA) comprise the Real Estate stock portfolio on the Indonesian Stock Exchange. The results of the expected Returns analysis show: PT Pollux Property Indonesia Tbk (POLL) at -3.05 percent, Metropolitan Kentjana Tbk (MKPI) is 1.87 percent, PT Bumi Serpong Damai Tbk (BSDE) at 1.55 percent, PT Pakuwon Jati Tbk (PWON) at 1.93 percent, and PT Ciputra Development Tbk (CTRA) at 3.20 percent. According to the findings of this analysis, PT Ciputra Development Tbk (CTRA) has the highest predicted return of the five hotel stocks, while PT Pollux Property Indonesia Tbk (POLL). has the lowest. Moreover, PT Pollux Property Indonesia Tbk shares. (POLL) has a standard deviation of 0.5035, PT Bumi Serpong Damai Tbk (BSDE) has a standard deviation of 0.0940, Metropolitan Kentjana Tbk. (MKPI) has standard deviation at 0,1232, PT Pakuwon Jati Tbk (PWON) has standard deviation at 0,1031, PT Ciputra Development Tbk (CTRA) has standard deviation at 0,1207. Furthermore, PT Ciputra Development Tbk (CTRA) has the highest standard deviation, at 0.5035, while PT Bumi Serpong Damai Tbk (BSDE) has the lowest, at 0.0940

## **Keywords**

Expected Return, Investment, Real Estate stocks, Standard Deviation

## **1. Introduction**

The capital market's investment operations are among the most in-demand economic activity among the general populace. Cash market investing is the allocation of sources of capital to generate future profits.(Aleskerova & Fedoryshyna, 2018). One of the several forms of securities offered on the capital market is shares. Due to their susceptibility to external and internal influences, stocks are categorized as high-risk investments. These adjustments may favor or negatively affect the capital market's share values. Two fundamental and technical methodologies may be used to analyze these changes: the basic and technical approaches.(Lui & Mole, 1998).

Real estate is one of the essential industries in Indonesia. The real estate market is a crucial indicator of a nation's economic health. The real estate business is the first indicator of a country's economic growth or decline. The Indonesian government's support for the real estate sector was beneficial in raising issuers' sales in the first quarter of 2021. During the first three months of 2021, the pre-sale revenue or marketing sales of numerous public corporations in the real estate industry increased by double digits. (Tari, 2021).

The weakening of the Covid-19 case boosted consumer confidence in the purchase of real estate products and complemented several government incentives, including the 0% LTV deduction for the down payment on the purchase of a property, which acted as a motivator for issuers in this sector. In the country's third quarter of 2021, many real estate developers have begun to exhibit good conduct. (Fernando, 2021).

### **1.1 Objectives**

This research evaluates the assets' expected return and standard deviation of five real estate companies: PT Pollux Property Indonesia Tbk. (POLL), Metropolitan Kentjana Tbk. (MKPI), PT Bumi Serpong Damai Tbk (BSDE), PT Pakuwon Jati Tbk (PWON), and PT Ciputra Development Tbk (CTRA)

## **2. Literature Review**

### **2.1 Stocks**

Due to their attractive rate of return, stocks are one of the most popular investments among investors. Stocks denote ownership in a corporation or limited liability company (Galema et al., 2008). Investors are referred to as shareholders (shareholders or stockholders). On the reverse page of the share sheet, where the corporation has recorded the shareholder's name, is further documentation (issuer). Investors should analyze their chosen stocks before buying to prevent making costly blunders. Due to the volatility of share values, which might increase and decrease. With sound judgment, shareholders may obtain expectedly beneficial returns.

### **2.2 Property Stock**

Homes, real estate, and apartments are examples of real estate investments. Property investment is also one of the most popular investments among investors since the real estate market in Indonesia is quite robust. The following property stocks are investigated in this study::

### **2.3 PT Pollux Owned Indonesian Tbk. (POLL)**

Pollux Property is a multinational developer of real estate based in Indonesia. According to the company's website, Pollux is devoted to constructing commercial, retail, and hotel units in many of Indonesia's main cities. Among the properties managed by Pollux are the Pollux Amarsvati in Lombok and the Pollux Skysuites in Mega Kuningan, South Jakarta. In 2021, the market capitalization of POLL will reach 32.86 trillion IDR. (Nugroho, 2022)

### **2.4 Metropolitan Kentjana Tbk. (MKPI)**

PT Metropolitan Kentjana Tbk is the owner and developer of both Pondok Indah and the same-named shopping complex. The company, founded in 1972, continues to manage the two properties mentioned above. MKPI attained a market value of up to IDR 27.3 billion this year. (Nugroho, 2022).

### **2.5 Bumi Serpong Damai Tbk. (BSDE)**

The residential and office complex Bumi Serpong Damai (BSD) is owned by PT Bumi Serpong Damai Tbk. This corporation has a market valuation of 23,8 trillion rupees and is rising rapidly. (Nugroho, 2022).

### **2.6 Pakuwon Jati Tbk. (PWON)**

Pakuwon Jati is a Surabaya-based real estate development firm. This organization is known as Raja Mall for creating several huge retail malls. (Nugroho, 2022).

### **2.7 Ciputra Development Tbk. (CTRA)**

Ciputra Development Tbk is a 1981-established real estate corporation. CTRA reported a market capitalization of IDR 19.5 billion as of November 2021. (Nugroho, 2022).

### **2.8 Expected returns**

When making investments, investors will encounter both rewards and danger. The return is the rise or decrease in the value of an investment over a specific period (Olsen, 1997). The investment return may be earned via dividends and capital gains. Generally, there are two types of stock returns: a) Realized returns estimated using the company's historical data. This performance may be used to predict the company's future performance; b) Expected return, the return investors anticipate receiving in the future. Various prospects for the firm may impact predicted returns. In addition to profits, it is evident that investors may be exposed to specific hazards. Investing risk is the chance of experiencing a loss due to investment activity. Two forms of investment risk exist: systematic and unsystematic (Olsen, 1997). Systematic risk is an external and uncontrolled form of risk, while the unsystematic risk is a type of risk that can be managed. (Vongphachanh & Ibrahim, 2020) .

### **2.9 Standard Deviation**

SD, or the standard deviation, is a measure of variance. When computing a sample's standard deviation, we assess the population variability. About 95% of people with normally distributed data will have values within two standard deviations of the mean, with the other 5% equally scattered above and below these limits. The standard deviation is a valid measure of variability regardless of the distribution, contrary to widespread assumption. Approximately ninety-

five percent of data from any distribution fall within the standard deviation limits, while the remainder may be clustered at one extreme (Altman & Bland, 2005).

The data has a normal distribution if its values are equally spread around the mean. The normal distribution is necessary for doing parametric statistical analysis. If the data values have a normal distribution, then the mean of the data will indicate their central tendency. However, the mean alone is inadequate when comprehending the distribution's form; hence, the standard deviation is necessary (Lee et al., 2015).

The standard deviation is a statistical test for determining the deviation or distribution of values in a given data set. In other words, the standard deviation is used to assess the closeness of the data distribution to the mean or mean. The standard deviation is a statistical measurement tool used in finance to compute the annual rate of return on investment when assessing volatility risk. In other words, volatility increases as the standard deviation increases. The goal of the standard deviation is to measure an investment portfolio's systematic and portfolio-specific risk (Cremers et al., 2015).

The functions below pertain to standard deviation. A standard deviation is both a tool and a measure of investment risk. As a result, while making investment choices, the standard deviation may assist in monitoring and controlling risk. b) Mutual fund performance monitoring instrument. Deviation from a mutual fund's average performance. The higher the standard deviation, the higher the risk, the profit potential, and the return variance. c) stock analysis tool typically generates the stock price. The share price may be viewed as unusual or infrequent if the distribution is not normal and considerably deviates from the standard deviation.

### **3. Methods**

#### **Types of research**

This kind of research includes descriptive studies. This study explains the results of estimating real estate stocks' anticipated return and standard deviation.

### **4. Data Collection**

#### **4.1 Data source**

In this study, we employ secondary data, namely the daily closing prices of PT Pollux Property Indonesia Tbk (POLL), Metropolitan Kentjana Tbk (MKPI), PT Bumi Serpong Damai Tbk (BSDE), PT Pakuwon Jati Tbk (PWON), and PT Ciputra Development Tbk (CTRA) shares, as published on the website of the Indonesian Stock Exchange. This investigation was conducted by obtaining Internet data rather than physically visiting the place. The accessed site is [www.idx.co.id](http://www.idx.co.id). The examination spans two years and five quarters, from the first quarter of 2020 through the third quarter of 2022.

#### **4.2 Data analysis procedure**

1. Describe the development of the share prices of PT Pollux Property Indonesia Tbk (POLL), Metropolitan Kentjana Tbk. (MKPI), PT Bumi Serpong Damai Tbk (BSDE), PT Pakuwon Jati (PWON), and PT Ciputra Development Tbk (CTRA) from March 1, 2020 to July 1, 2022, inclusive.

Determine the achieved return and predicted return for each security. The formula used to calculate the yield is:

$$R_i = \frac{P_t - P(t-1)}{P(t-1)} + \frac{D_t}{P(t-1)}$$

Information :

R<sub>i</sub> = Realized profit (yield)

P<sub>t</sub> = Current investment price

P<sub>t-1</sub> = Past investment price

D<sub>t</sub> = Dividend of the current period

The expected profit level or expected return of each stock is the average percentage of the realized return of stock i divided by the number of realized returns of stock i. It is calculated using the Excel program using the Average formula or the formula.

$$E(R_i) = \frac{\sum_{j=1}^n R_{ij}}{n}$$

Information:

E(R<sub>i</sub>) = Expected return in period i

R<sub>ij</sub> = Return on investment i

n = Observation period

#### 4.3. Calculation of market return and expected market return

$$R_m = \frac{IHSG_t - IHSG_{t-1}}{IHSG_{t-1}} E(R_m) = \frac{\sum_{i=1}^n R_m}{n}$$

Information:

R<sub>m</sub> = Market return

IHSG<sub>t</sub> = Composite Stock Price Index for the current period

IHSG<sub>t-1</sub> = Previous Period Composite Stock Price Index

E(R<sub>m</sub>) = Expected market return

n = Observation period

#### 4.4 Calculate the standard deviation using the following formula.

Standard deviation formula

$$S = \sqrt{\frac{\sum y^2 - \frac{(\sum y)^2}{n}}{n-1}}$$

Information:

S = Standard deviation

y<sup>2</sup> = the value of the square of the data number

y = total data value

n = total number of data

In addition to calculating it manually, it through the help of Excel software with the following formula: STDEV, a way to calculate standard deviation but ignores logical values and text.

### 5. Results

Microsoft Excel was used to calculate the stock returns of PT Pollux Property Indonesia Tbk (POLL), Metropolitan Kentjana Tbk (MKPI), PT Bumi Serpong Damai Tbk (BSDE), PT Pakuwon Jati Tbk (PWON), and PT Ciputra Development Tbk (CTRA). The following are the stock returns calculated using Microsoft Excel: (Tables 1 -5)

Table 1 Expected Return PT Pollux Property Indonesia Tbk. (POLL)

Year	Month	Stock Price	Stock Return	
2020	March	10900		
	April	4740	-0.5651	
	May	7825	0.6508	
	June	5900	-0.2460	
	July	4190	-0.2898	
	August	3630	-0.1337	
	September	10150	1.7961	
	October	6025	-0.4064	
	November	4510	-0.2515	
	December	4490	-0.0044	
	2021	January	3950	-0.1203
		February	3820	-0.0329
March		3820	0.0000	
April		2620	-0.3141	
May		1755	-0.3302	
June		1540	-0.1225	
July		3520	1.2857	
August		3790	0.0767	
September		3220	-0.1504	
October		3300	0.0248	
November		2000	-0.3939	
December		1235	-0.3825	
2022	January	865	-0.2996	
	February	680	-0.2139	
	March	580	-0.1471	
	April	460	-0.2069	
	May	540	0.1739	
	June	410	-0.2407	
	July	406	-0.0098	

Table 2 Expected Return Metropolitan Kentjana Tbk. (MKPI)

Year	Month	Stock Price	Stock Return	
2020	March	15850		
	April	15850	0.0000	
	May	15850	0.0000	
	June	15800	-0.0032	
	July	14700	-0.0696	
	August	12700	-0.1361	
	September	20000	0.5748	
	October	24050	0.2025	
	November	25100	0.0437	
	December	28000	0.1155	
	2021	January	28800	0.0286
		February	27475	-0.0460
March		27025	-0.0164	
April		26500	-0.0194	
May		25800	-0.0264	
June		25100	-0.0271	
July		25100	0.0000	
August		25000	-0.0040	
September		25000	0.0000	
October		24925	-0.0030	
November		24925	0.0000	
December		24925	0.0000	
2022	January	24925	0.0000	
	February	24925	0.0000	
	March	24200	-0.0291	
	April	22700	-0.0620	
	May	22600	-0.0044	
	June	22600	0.0000	
	July	22700	0.0044	

Table 3 Expected Return Bumi Serpong Damai Tbk. (BSDE)

Year	Month	Stock Price	Stock Return	
2020	March	670		
	April	705	0.0522	
	May	635	-0.0993	
	June	740	0.1634	
	July	690	-0.0676	
	August	775	0.1232	
	September	740	-0.0452	
	October	890	0.2027	
	November	1050	0.1798	
	December	1225	0.1667	
	2021	January	1125	-0.0816
		February	1160	0.0311
March		1120	-0.0345	
April		1175	0.0491	
May		1120	-0.0468	
June		965	-0.1384	
July		935	-0.0311	
August		960	0.0267	
September		1000	0.0417	
October		1110	0.1100	
November		1085	-0.0225	
December		1010	-0.0691	
2022	January	905	-0.1040	
	February	915	0.0110	
	March	1020	0.1148	
	April	965	-0.0539	
	May	945	-0.0207	
	June	910	-0.0370	
	July	920	0.0110	

Table 4 Expected Return Pakuwon Jati Tbk. (PWON)

Year	Month	Stock Price	Stock Return	
2020	March	308		
	April	378	0.2273	
	May	362	-0.0423	
	June	416	0.1492	
	July	424	0.0192	
	August	408	-0.0377	
	September	354	-0.1324	
	October	414	0.1695	
	November	500	0.2077	
	December	510	0.0200	
	2021	January	482	-0.0549
		February	550	0.1411
March		540	-0.0182	
April		530	-0.0185	
May		500	-0.0566	
June		440	-0.1200	
July		400	-0.0909	
August		458	0.1450	
September		484	0.0568	
October		500	0.0331	
November		492	-0.0160	
December		464	-0.0569	
2022	January	430	-0.0733	
	February	458	0.0651	
	March	484	0.0568	
	April	560	0.1570	
	May	510	-0.0893	
	June	472	-0.0745	
	July	460	-0.0254	

Year	Month	Stock Price	Stock Return	
2020	March	444		
	April	545	0.2275	
	May	575	0.0550	
	June	610	0.0609	
	July	655	0.0738	
	August	770	0.1756	
	September	645	-0.1623	
	October	825	0.2791	
	November	925	0.1212	
	December	985	0.0649	
	2021	January	900	-0.0863
		February	1155	0.2833
March		1095	-0.0519	
April		1140	0.0411	
May		1075	-0.0570	
June		930	-0.1349	
July		865	-0.0699	
August		875	0.0116	
September		935	0.0686	
October		1075	0.1497	
November		1050	-0.0233	
December		970	-0.0762	
2022	January	875	-0.0979	
	February	925	0.0571	
	March	1040	0.1243	
	April	1065	0.0240	
	May	985	-0.0751	
	June	860	-0.1269	
	July	895	0.0407	

## 5.1 Numerical Results

Microsoft Excel may calculate the stock market's Expected Return and Standard Deviation. The following are the findings of the Microsoft Excel simulation. (Table 6)

Table 6 Expected Return and Standard Deviation of stocks

	POOL	MKPI	BSDE	PWON	CTRA
<b>Expected Return</b>	-3.05%	1.87%	1.55%	1.93%	3.20%
<b>Std. Deviation</b>	0.5035	0.1232	0.0940	0.1031	0.1207

PT Pollux Property Indonesia Tbk shares. (POLL) has an expected return of -3,05 percent, Metropolitan Kentjana Tbk. (MKPI) at 1,87 percent, PT Bumi Serpong Damai Tbk (BSDE) at 1,55%, PT Pakuwon Jati Tbk (PWON) at 1,93%, and PT Ciputra Development Tbk (CTRA). In addition, PT Pollux Property Indonesia Tbk (POLL) shares have a standard deviation of 0.5035, and PT Bumi Serpong Damai Tbk (BSDE) shares have a standard deviation of 0.0940, Metropolitan Kentjana Tbk. (MKPI) shares have a standard deviation of 0.1232, PT Pakuwon Jati Tbk (PWON) shares have a standard deviation of 0.1031, and PT Ciputra Development Tb.

## 5.2 Proposed Improvements

The following are possible recommendations: Although a significant standard deviation indicates volatility, not all investors choose a low standard deviation. The investor's willingness to take on much risk with his investment depends on the investor. There are discrepancies in the portfolio of investments. An investor must be able to assess his or her volatility tolerance and overall investing goals. Contrary to aggressive investors, who are more comfortable with high volatility value investments owing to the possibility for more significant profits, conservative investors seek a minimal standard deviation.

## 6. Conclusion

Examining PT Pollux Property Indonesia Tbk shares allows us to draw the following conclusions. (POLL), Metropolitan Kentjana Tbk. (MKPI), PT Bumi Serpong Damai Tbk (BSDE), PT Pakuwon Jati Tbk (PWON), and PT Ciputra Development Tbk (CTRA): a) PT Ciputra Development Tbk (CTRA) has the most significant standard deviation at 0.5035, while PT Bumi Serpong Damai Tbk (BSDE) has the lowest standard deviation at 0.0940. The larger the standard deviation, the higher the risk, profit potential, and return volatility. b) Of these five real estate stocks, PT Eastparc Hotel Tbk (EAST) has the highest expected return at 3.2%, while PT Pollux Property Indonesia Tbk shares have the lowest expected return at 1.6%. (POLL's lowest score is -3.05 percent.

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## Biography

**Dicky Hida Syahchari** is an Assistant Professor and a faculty member of the Management department's Bina Nusantara Business School undergraduate program. He is also an SCC in Business Development Management and E-Business Management. He received his master's degree in the Magister Management Program from Prasetiya Mulya Business School, Prasetiya Mulya University in Jakarta, Indonesia. He earned his Doctor of Philosophy from Universiti Utara Malaysia's Othman Yeop Abdullah Graduate School of Business. He has been a lecturer for almost 15 years and has published over 31 Scopus publications. Interest in research and areas of expertise are digital business, innovation management, project management, and business development