

The Effect of Profitability, Leverage, and Macroeconomics on Stock Price Volatility in Construction, Property, and Real Estate Companies Listed on the Indonesia Stock Exchange

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ABSTRACT

This study aims to determine the effect of profitability, leverage, and macroeconomics on stock price volatility in construction, property, and real estate companies listed on the Indonesia Stock Exchange. The variables used in this study are stock price volatility as a dependent variable and dividend payout ratio, earning volatility, debt to equity ratio, exchange rates, and inflation as independent variables. Samples were taken from as many as twenty-eight construction, property, and real estate companies listed on the Indonesia Stock Exchange (IDX) from 2011-2020. The normality test produces abnormal data so that the researcher transforms data.

The data used in the financial statements of each sample company, published through www.IDX.co.id and www.financeyahoo.com. The analysis method used in this study is a quantitative method, with classic assumption testing and statistical analysis, namely multiple linear regression analysis using the random effect model. The sampling method used is purposive sampling.

The analysis showed that the dividend payout ratio partially had a negative and significant effect on the volatility of stock prices. Earning volatility and partial inflation have a positive and significant impact on stock price volatility. In contrast, the debt to equity ratio and exchange

rates have no significant effect on stock price volatility.

Keywords: Stock Prices Volatility, DPR, Earning Volatility, DER, Exchange Rate, and Inflation

INTRODUCTION

The capital market has a strategic role in strengthening a country's economic resilience. In the globalization era, there has been an increase in the opening of capital markets and the economy in almost all countries. It makes investors more interested in investing. To finance its operational activities, every company requires funds from its capital and loan capital from outside. A capital market is a place for capital funds such as equity and debt letter traded (Fahmi, 2012). The capital market functions as a source of fundraising or investment in stocks, bonds, mutual funds, derivative instruments, and other financial instruments. There are several forms of investment in the capital market, namely stocks. Stocks are paper or proof of capital/funds ownership in an institution or company that is listed in nominal value, the name of the institution, accompanied by the rights and obligations described to each holder (Selpiana & Badjra, 2018).

When investing in the stock market, investors have a motive to get a return in the form of dividends or capital gains and company ownership. Before investing, investors will consider the return of shares they will receive and company value. Some investors assess the company by looking at the company's stock prices. Companies with high stock prices will be considered reasonable to increase the firm value in the eyes of investors, but the stock price that is too low will reduce the desire of investors to invest. Low prices reflect a low company value, so it is less desirable even though some investors assume that low prices do not reflect the company's low value.

This stock price assessment is greatly influenced by the level of investor belief in the company. The buyer of shares requires an increase in stock prices after the purchase, and the seller of shares requires a decrease in stock prices after the sale. It results in fluctuations in stock prices that can be seen with volatility. Stock price volatility measures the uncertainty of the results obtained from shares (Judokusomo, 2017). Stocks with high volatility mean that the stock price rises quickly and immediately drops quickly, giving rise to a significant difference between the lowest and highest prices. High stock price volatility causes more significant uncertainty for returning investments. The existence of volatility will cause the risk and uncertainty faced by investors to become more influential and impact the instability of investors' desire to invest funds. However, some investors tend to like shares with a high level of volatility because the opportunity to get a capital gain will be even more significant even though, on the other hand, it will be an even greater risk that will be faced. The volatility of stock prices can be calculated using the formula as follows:

$$PVOL = \sqrt{\sum \frac{\left(\frac{Hi - Lt}{\frac{Ht + Li}{2}}\right)^2}{12}}$$

Description:

PVOL = Price Volatility

Hi = Intraday High Price

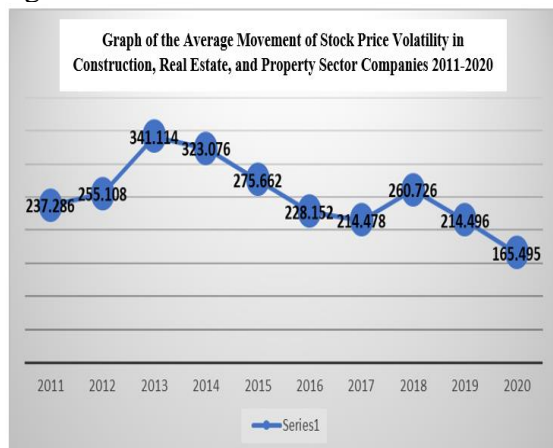
Li = Intraday Low Price

The movement of ups and downs or volatility of a Go Public company's stock price becomes a common phenomenon often seen on the stock exchange. Not many people understand why a company's stock prices can fluctuate drastically in a certain period. Stock prices are a piece of stock value issued by the publisher consisting of information investors need to assess one's company performance (publisher). The volatility of stock prices is influenced by the total demand and supply of shares in the capital market. The stock price will rise if the stock demand exceeds the stock offer. On the contrary, if the stock offer is higher than the stock demand, the stock price will fall (Subing and Gusni, 2016).

The investment must realize that they may suffer losses in addition to gaining profit. These profits or losses strongly influence investors' ability to analyze the stock prices, which are a momentary assessment influenced by many factors. The factors include the conditions (performance) of the company, external constraints, the strength of supply and demand for shares in the market, and investors' ability to analyze a stock investment.

There are many choices for investors to invest their capital. One of the business sectors listed on the IDX that attracts the attention of investors is the construction, property, and real estate sectors. This sector provides essential community needs such as residence, which is a fundamental need for everyone. Diverse factors certainly result in stock prices in the construction, property, and real estate sectors fluctuating and changing every time. It can be shown in the following

figure.



Source: Data processed by researchers using Ms Excel 2019, 2022

Figure 1. Graph of the Average Movement of Stock Price Volatility in Construction, Real Estate, and Property Sector Companies 2011-2020

According to www.cnbcindonesia.com, issued on Monday, May 10, 2021, regarding "the majority of property shares returned to the green zone at the beginning of trading," there was a strengthening of the stock prices of the construction, real estate, and property sectors. This strengthening occurs in one of the subsidiaries of PT PP, the PPRO company, due to the acquisition of affiliated loan facilities. Schwert (1989) explains that the high volatility of stock prices in a stock exchange, both the combined stock prices and individual stock prices such as CSPI and LQ45, can be influenced by micro and macro factors. Micro factors are factors that have a direct impact on the company itself, namely the financial ratio or financial performance originating from the company's financial statements. These micro factors include dividend payout ratio, earning volatility, debt to equity ratio, and other factors affecting company performance, including funding. Macro factors influence the economy as a whole, including the exchange rate of the rupiah, inflation, and other factors that substantially impact the company.

Profit in company operational activities is crucial to ensure the company's future survival. Every company indeed expects a maximum profit. According to Sutrisno (2009), "Profitability is the company's

ability to generate profits with all capital that works in it". If the financial performance of a good company seen at the level of a particular financial ratio has increased, it can be concluded that the company's financial performance is good. It can make an investor dare to take the risk of investing his funds. For example, if the profitability ratio increases, the company's performance can increase so that many investors intend to buy the company's shares. Makah Al makes stock prices experience an increase in trends. Information about profitability is a fundamental need for investors in decision-making needs. The development of stock prices is inseparable from company performance, as indicated by the company's profitability. Theoretically, if the company's performance has increased, stock prices will reflect it with an increase in stock prices and vice versa.

Company profitability can be seen from the dividend payout ratio and earnings volatility. The dividend Payout Ratio (DPR) is the percentage of net profit after the tax is distributed as dividends to shareholders (Sudana, 2011). The DPR gives a picture of how much the company's contribution to dividend payments. The greater the dividend ratio, the greater the company's profit allocation for shareholders. The dividend Payout Ratio is the annual cash dividend divided by the annual profit or dividend per share divided by profit per share. This ratio shows the percentage of company profits paid to shareholders. The higher the DPR level produced by the company, the less profit being held and the smaller the funds available to be instilled in the company.

When determining the dividend to be paid, the company needs to analyze well and consider it with investors in the General Meeting of Shareholders. With the profit generated, companies also need to re-invest the benefits gained for the company's growth in the future. However, on the other hand, the company also should prosper shareholders in return for their shares. DPR

can be formulated as follows (Sudana 2015):

$$DPR = \frac{\text{Dividend per Share}}{\text{Net Earnings per Share}}$$

The increasing DPR illustrates that the company signals good company profitability to investors, thereby reducing the risk of investing and affecting the stable volatility of stock prices. However, in the Ciputra Development Tbk company, this occurs otherwise. When the DPR increases, the volatility of stock prices also increases. In 2016 the DPR Ciputra Development Tbk company worth 7.20 % increased to 10.20 % in 2017. However, the volatility of stock prices increased from 27 % in 2016 to 110 % in 2017. Selpiana & Badjra's (2018) study showed that the DPR positively and significantly affects stock price volatility. However, on the contrary, Ferata (2020) indicates that the DPR does not affect the volatility of stock prices.

Earning volatility is an indicator that measures how stable the profit is obtained by the company every year (Jannah and Haridhi, 2016). The market response can be influenced by earning volatility. Intentions of investors to invest their capital can be reduced if the earning fluctuations of a company are high. Suppose the earning volatility of a company is low. In that case, it will make investors believe that the company can manage its profits well and develop the company. This profit uncertainty is a risk faced by the company. The increase in earnings volatility will increase the risk of loss of company profits. It will interfere with the company's operational activities if it occurs continuously. The higher the company's business risk, it can affect stock prices.

According to Weston and Copeland (1997), fluctuations in income (profit) influence the capital structure and the number of dividends distributed to their shareholders. As indicated by high earnings volatility, profit installation will cause the company to provide lower dividends to shareholders.

Up and down profit can make the company face difficulties getting funds from outside the company because the company is in an unstable condition. In this study, earnings volatility is calculated using the standard deviation of Earning Before Interest and Tax (EBIT) with each company's financial statement's total assets. This formula follows the research of Bradley et al. (1984), which has also been used by Jannah & Haridhi (2016). The formula is as follows:

$$E.Vol = \sqrt{\frac{\sum_{i=1}^n (X_i - \bar{X})^2}{n - 1}}$$

Description:

E.Vol = Earning Volatility

X_i = EBIT/Total Assets

\bar{X} = Rata-rata X_i

n = Jumlah tahun sampel data

Companies with high earning volatility will result in increased volatility of stock prices. It is contrary to earning Volatility and Volatility of stock prices owned by the Puradelta Lestari Tbk company. Where when earning volatility decreases, the volatility of stock prices increases. In 2016 the Earning Volatility of the Puradelta Lestari Tbk company decreased from 9% in 2016 to 8% in 2017. While the volatility of stock prices of 96% in 2016 increased to 121% in 2017. Badruzaman's research (2020) showed that earnings volatility affected volatility in stock price. Conversely, Zakaria et al. (2020) show that earning volatility does not significantly affect stock price volatility.

In addition to earning volatility, other factors such as leverage also affect the volatility of stock prices. Companies that have gone public will not be separated from debt that can be used to develop their business in an extensification or intellect. The debt used to increase company size can be obtained from creditors such as banks or other lending institutions. According to Noviantari & Ratnadi (2015), leverage is a ratio that shows how much debt or capital finances company assets. This ratio

measures the funds the owner offers compared to the creditor's finances.

Using too high debt will endanger the company because the company will be included in the category of extreme leverage (extreme debt). If a company is trapped in a high level of debt, then it is difficult to release the debt burden (Shalini, 2020). Therefore the company should have to balance how much debt is worth taking and where the sources can be used to pay debts. The risks faced by the company are directly proportional to the risks that investors will face.

In this study, leverage was calculated using the Debt to Equity Ratio (DER), which was also used in the research of Jannah & Haridhi (2016) and the study of Selpiana & Badjra (2018). DER formula is as follows:

$$DER = \frac{\text{Total Debt}}{\text{Equity}} \times 100\%$$

The higher the der means that describing the risks faced by the company is very large because in carrying out operating activities, the company depends on debt, and the company should pay the debt interest so that the profit generated by the company is reduced. It makes investors avoid stocks with high DER values because they are at risk and cause high levels of stock volatility. In 2016, Der Jaya Real Property Tbk, worth 72%, declined to 58% in 2017, but the volatility of stock prices did not decrease but increased from 27% in 2016 to 110% in 2017.

In addition to micro factors, some studies also mention that stock price volatility is influenced by macroeconomic factors such as exchange rates and inflation. The exchange rate, or an exchange rate, is the price of one foreign currency unit in the domestic currency, or it can also be said that the price of domestic currencies on foreign currencies (Suciwati & Machfoedz, 2015). The exchange rate represents the price level of the exchange of one currency to another and is used in various transactions. The intended transactions include international

trade, tourism, international investment, or short-term money flow between countries that exceed geographical or legal boundaries (Mardiyati & Rosalina, 2013). The exchange rate of a nation can experience devaluation and revaluation (Hady, 2010).

The risk of exchange rates is a risk that arises due to the influence of changes in the exchange rate of the domestic currency with the currency of other countries (foreign exchange). The exchange rate (exchange rate) will be faced by companies that use foreign currencies in carrying out operational and investment activities. In this study, the change in the rupiah exchange rate against the dollar in one year became the value the researcher used. Changes in exchange rates that the company does not anticipate will affect the firm value (Pasaribu et al., 2019). Companies that use foreign currencies for the company's performance, such as imports of raw materials, exports abroad, or those who use or seize foreign companies whose transactions use foreign money, depend on these foreign currencies. Then this will result in profit, capital, and other changes that affect company performance.

Changes in the exchange rate will change the balance of the company's operating needs and investors' desires to invest. When the domestic exchange rate is depreciated, the IDX's index value will decrease. It is because of the higher return on the money market, and investors continue to hold their shares, so there are few selling shares, which causes the volatility of stock prices to be low (Hugida & Sofian, 2011). It is contrary to the volatility of the stock prices owned by the Bekasi Asri Tbk company and secured when the exchange rate increases, the volatility of stock prices decreases. In 2017 the exchange rate increased from Rp. 13,548 to Rp. 14,481 in 2018, while the volatility of the share price of the Bekasi Asri Tbk was worth 131 % in 2017 and decreased to 20 % in 2018. The study of Nugraha et al. (2021) shows that the exchange rate significantly affects stock price volatility. Instead, Sutrisno (2020)

showed that the exchange rate had no significant effect on stock price volatility. Inflation is the process of rising goods in general and occurs continuously (Nopirin, 2009). The increase in the price of the goods occurs continuously during a specific period. Inflation is a tendency for general prices to rise continually. Still, the price increase of one or two items is not called inflation unless the rise extends to and increases most of the costs of other goods (Boediono, 2000).

Inflation is a continuous price increase that results in declining people's purchasing power because the amount of money in circulation in the community is not comparable to the price increase. The increase in prices occurs in general, meaning that it occurs in all types of goods and also occurs widespread, not only in an area but has an impact in all regions of the country. Inflation itself can result in a decrease in the value of currencies (devaluation), so it affects the declining consumption of the community caused by the decline of people's purchasing power. Classification of inflation is based on whether or not it can be helpful to see the impact of inflation. If inflation is classified as light, it can encourage the economy to increase national income and promote investment. Conversely, if hyperinflation occurs, the economy's condition will be stagnant. In this study, inflation can be calculated by the Consumer Price Index (CPI), namely:

$$I_n = \frac{IHK_n - IHK_{n-1}}{IHK_{n-1}} \times 100\%$$

Description:

IHK_N = Current Year Consumer Price Index

IHK_{N-1} = The previous year's consumer price index

Capital market participants dislike high inflation because it will increase production costs. The increase in production costs will encourage the company to increase the prices of production goods so that the price

of domestic goods will rise, impacting the company's performance, which can be seen from its share price. Investors who do not want to receive adverse effects on their stocks will tend to sell these shares so that the volatility of stock prices increases. In Sreenu (2020), research shows that inflation significantly affects stock price volatility. Instead, Sutrisno (2020) showed that inflation had no significant effect on stock price volatility. It is different from what was experienced by Pakuwon Jati Tbk. In 2017 inflation valued at 3.61 % decreased to 3.13 % in 2018, but the volatility of stock prices in Pakuwon Jati Tbk increased from 89 % - 213 % in 2017 - 2018.

Based on the phenomena above, the researcher wants to know the effect of dividend payout ratio, earning volatility, debt to equity ratio, exchange rates, and inflation on stock price volatility. If these variables have an influence, then they can be used as a tool for predictions in investing in stocks. Therefore researchers take the research title "The Effect of Profitability, Leverage, and Macroeconomics on Stock Price Volatility in Construction, Property, and Real Estate Sector Companies Listed on the Indonesia Stock Exchange".

Framework

Following the description of the background of the problem, literature review, and previous research, a conceptual research framework is prepared as follows:

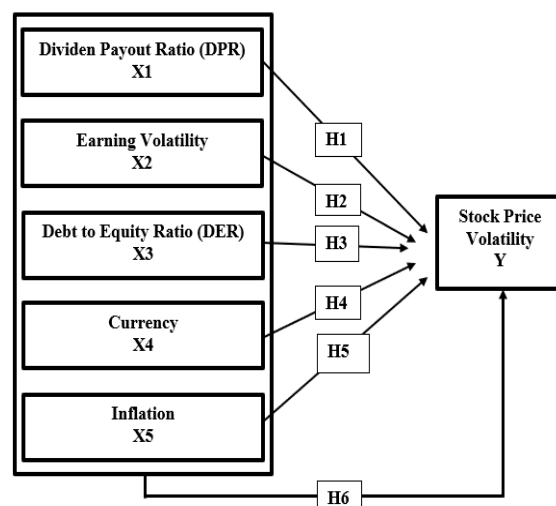


Figure 2. Conceptual Framework

- H1: Dividend Payout Ratio negatively and significantly affects stock price volatility.
 H2: Earning volatility positively and significantly affect stock price volatility.
 H3: Debt to equity ratio positively and significantly affects stock price volatility.
 H4: The exchange rate negatively and significantly affects stock price volatility.
 H5: Inflation negatively and significantly affects stock price volatility.
 H6: Dividend Payout Ratio, Earning Volatility, Debt to Equity Ratio, Exchange Rate, and Inflation affect the stock price volatility simultaneously.

RESEARCH METHODS

This research was designed by analysis using causal research. Causal Research is Research with Identifications Causal Relationships between Various Various Various (Sugiyono, 2011). This study uses causal research to see the effect of dividend payout ratio (DPR), earning volatility, debt to equity ratio, currency, and inflation as dependent variables of stock price volatility as an independent variable.

This study uses secondary data. Secondary data is data obtained indirectly through intermediary media. Secondary data in this study was obtained from the site www.IDX.co.id, www.bi.go.id, www.bps.go.id published, and the company's stock price volatility data was obtained from <https://finance.yahoo.com/>.

The population in this study was the construction, property, and real estate sector companies listed on the Indonesia Stock Exchange for the 2011-2020 period. The sample is part of the population to be examined or a portion of the number of the characteristics possessed by the population (Sugiyono, 2016). This study uses a purposive sampling technique which is a sample determination technique based on certain considerations. The criteria for sampling are as follows:

1. Construction, Property, and Real Estate Sector Companies that publish financial statements during 2011-2020.

2. The company trades its shares during the 2011-2020 period.

Based on these criteria, a research sample was obtained from as many as 28 companies from the total population in the construction, property, and real estate sector companies listed on the IDX in 2011-2020, so that the total observations for 10 years were 280 (28 x 10 years companies).

The data analysis technique used in this study uses panel data (pool data) so that the regression is called the panel data regression model. According to Gujarati (2003: 637), panel data is "a combination of time series data with data between individuals or space (cross-section)". Furthermore, the data is processed using a statistical data processing tool called EViews 10 and Microsoft Office Excel software.

RESULT AND DISCUSSION

1. Descriptive Statistical

Descriptive statistical analysis in this study is used to provide an overview or description of the research variables. The tools used to describe the variables in this study are the average (mean), minimum, maximum, and standard deviation values. The table below presents a descriptive analysis of the research variables:

Table 1. Descriptive statistics Result

	Y	X1	X2	X3	X4	X5
Mean	251.5593	0.461488	0.510737	0.914942	12600.10	4.233216
Median	141.9942	0.000000	0.500803	0.758564	13424.50	3.479801
Maximum	1760.896	22.51761	1.259766	12.47586	14409.00	8.377002
Minimum	14.14508	-0.033051	0.000632	0.026343	9023.000	1.680000
Std. Dev.	331.1027	2.243717	0.352778	0.992452	1775.627	2.173276
Skewness	2.575802	7.275599	0.151999	6.681505	-1.059562	1.147815
Kurtosis	9.455289	60.21943	1.861499	71.20401	2.657004	2.876200
Jarque-Bera	795.7806	40667.68	16.20033	56354.16	53.76392	61.66118
Probability	0.000000	0.000000	0.000303	0.000000	0.000000	0.000000
Sum	70436.61	129.2167	143.0063	256.1839	3528027.	1185.300
Sum Sq. Dev.	30586485	1404.561	34.72212	274.8044	8.80E+08	1317.753
Observations	280	280	280	280	280	280

Source: Research Results, Eviews 10 (2022)

From the test results of descriptive statistics above, it can be seen:

1. The highest stock price volatility is on the 2015 Vivatex Tbk wheel. Bakrieland Development Tbk had the lowest stock price volatility in 2020.

2. The highest DPR was at Jababeka Tbk 201. Gowa Makassar Tourism Development Tbk had the lowest DPR in 2018.
3. Summarecon Agung Tbk had the highest EV value in 2020. The lowest EV value was Suryamas Dutamakmur Tbk in 2011.
4. Ciputra Development Tbk had the largest DER value in 2020. The lowest DER value was Ristia Bintang Mahkotasejati Tbk in 2017.
5. The highest exchange rate (exchange rate) in 2018 was 14,409.00, and the lowest value was 9023.00 in 2011.
6. The highest inflation value of 8,377 occurred in 2013, while the value in 2020 was 1.68.

2. Analysis Model Selection

a. Chow Test

The Chow Test (Chow Test) was conducted to determine the Common Effect Model or Fixed Effect Model that was most appropriate for estimating panel data. The hypothesis for the chow test is as follows:

1. $H_0 =$ If the probability value of cross-section $F \geq \alpha$ (0.05), then H_0 is accepted, meaning the common effect is accepted.
2. $H_1 =$ If the probability value of cross-section $f < \alpha$ (0.05), then H_0 has been rejected means that the fixed effect is accepted.

Table 2. Chow Test Results

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	16.126971	(27,247)	0.0000
Cross-section Chi-square	284.555324	27	0.0000

Source: Research Results, Eviews 10 (2022)

The table above shows the probability value of cross-section F and chi-square is 0.00 so that H_0 is rejected and, H_1 is accepted, the Fixed Effect Model is accepted.

b. Hausman test

The Hausman test was conducted to choose whether the Fixed Effect or Random Effect model was the most appropriate. The hypothesis of the Hausman test is as follows:

1. $H_0 =$ Chi-Square probability value (0.05), then the RE model
2. $H_1 =$ if the probability value of Chi-Square $< (0.05)$, then the FE model.

Table 3. Hausman's Test Analysis Results

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	1.276540	5	0.9373

Source: Research Results, Eviews 10 (2022)

The table above shows that if the Chi-Square probability value is $0.9373 > 0.05$, then the Random Effect Model is accepted. So the research model used is the Random Effect Model. Then the Lagrange Multiplier Test was carried out to determine the research model used by the Common Effect Model or the Random Effect Model.

c. Lagrange Multiplier Test

The Lagrange Multiplier test was conducted to determine whether the Common Effect of Random Effect model was the most appropriate. The hypothesis of the Lagrange Multiplier test is as follows:

1. $H_0 =$ P-Value Breusch-Pagan probability value (0.05), then the CEM model is accepted.
2. $H_1 =$ if the probability value of P-Value Breusch-Pagan $< (0.05)$, then the REM model is accepted.

Table 4. Lagrange Multiplier Test Results

Lagrange Multiplier Tests for Random Effects
 Null hypotheses: No effects
 Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives

	Test Hypothesis Cross-section	Time	Both
Breusch-Pagan	714.1387 (0.0000)	1.898671 (0.1682)	716.0373 (0.0000)
Honda	26.72337 (0.0000)	-1.377923 --	17.92194 (0.0000)
King-Wu	26.72337 (0.0000)	-1.377923 --	12.16837 (0.0000)
Standardized Honda	27.77944 (0.0000)	-0.831312 --	15.97574 (0.0000)
Standardized King-Wu	27.77944 (0.0000)	-0.831312 --	10.43118 (0.0000)
Gourierioux, et al.*	--	--	714.1387 (< 0.01)

*Mixed chi-square asymptotic critical values:
 1% 7.289
 5% 4.321
 10% 2.952

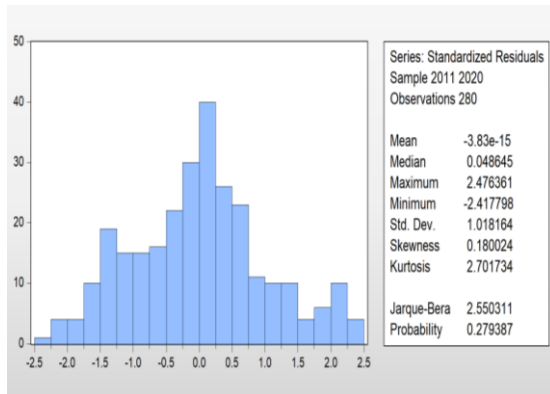
Source: Research Results, Eviews 10 (2022)

The table above shows that the probability value of P-Value Breusch-Pagan is 0.000 so < 0.05 , then what is accepted is the Random Effect Model, so the research model used is the Random Effect Model.

3. Classic Assumption Test

a) Normality Test

The normality test is to test whether the regression model, the independent variable, and the dependent variable have a normal data distribution or not. Normality testing using Eviews10 obtained the following results:



Source: Research Results, Eviews 10 (2022)

Figure 3. Normality Test Results with Data Transformation

The research results after the transformation using logarithms on the dependent and independent variables, namely data that are normally distributed, Jarque-Bera Probability is greater than 0.05, namely 0.0886.

b) Multicollinearity Test

Multicollinearity means that the independent variables contained in the regression model have a perfect relationship. One way to detect collinearity is by collaborating between variables. By using eviews10, a multicollinearity test was obtained, and the following results were obtained:

Table 5. Multicollinearity Test Result

	X1	X2	X3	LN_X4	LN_X5
X1	1.000000	0.046011	-0.000416	0.067110	-0.023095
X2	0.046011	1.000000	-0.164403	0.416091	-0.113969
X3	-0.000416	-0.164403	1.000000	-0.169354	0.036607
LN_X4	0.067110	0.416091	-0.169354	1.000000	-0.348875
LN_X5	-0.023095	-0.113969	0.036607	-0.348875	1.000000

Source: Research Results, Eviews 10 (2022)

The table above shows no multicollinearity in the research data because the correlation value of all research variables is less than 0.8.

c) Heteroscedasticity Test

The table below shows that the probability values of the six independent variables of DPR, *earning volatility*, DER, currency, dan inflation is greater than 0.05, namely 0,3879; 0,657; 0,5751; 0,5434; and 0,1094, so it can be concluded that there is no heteroscedasticity in the research data.

Table 6. Heteroscedasticity Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.643172	2.170847	-0.296277	0.7672
X1	0.010359	0.011979	0.864741	0.3879
X2	-0.070398	0.158360	-0.444541	0.6570
X3	0.016526	0.029450	0.561157	0.5751
LN_X4	0.141479	0.232554	0.608372	0.5434
LN_X5	0.092264	0.057451	1.605976	0.1094

Source: Research Results, Eviews 10 (2022)

d) Autocorrelation Test

According to Ghozali (2013), "the autocorrelation test aims to test whether in the linear regression model there is a correlation between the confounding error in the t-1 period (previous)".

Table 7. Autocorrelation Test Results
Weighted Statistics

R-squared	0.158638	Mean dependent var	0.815565
Adjusted R-squared	0.143285	S.D. dependent var	0.535510
S.E. of regression	0.495662	Sum squared resid	67.31667
F-statistic	10.33251	Durbin-Watson stat	1.039375
Prob(F-statistic)	0.000000		

Source: Research Results, Eviews 10 (2022)

The table above shows the Durbin Watson value of 1,0393. In the Durbin-Watson table with $\alpha = 5\%$, $k = 5$, and $n = 28$, the values for $dL = 1.0276$ and $dU = 1.8502$, so that the DW value is between dL and dU , it can be concluded that there is no autocorrelation in the research data.

4. Hypothesis Test

Hypothesis Results Before Moderation

a) Multiple Regression Analysis

The results of the analysis of the random effect model test with data transformation in the form of pooled regression from research on Dividend Payout Ratio (DPR), Earning Volatility, Debt to Equity Ratio, Currency, and Inflation on Volatility Stock Price in Construction, Property, and Real Estate Sector Companies listed on the Indonesia Stock Exchange in 2011-2020 are as follows:

Table 8. Multiple Regression Analysis Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.214956	2.674766	2.697416	0.0074
X1	-0.054646	0.014357	-3.806325	0.0002
X2	0.427198	0.202892	2.105544	0.0362
X3	0.012284	0.035417	0.346846	0.7290
LN_X4_	-0.313524	0.286888	-1.092843	0.2754
LN_X5_	0.357182	0.068854	5.202669	0.0000

Weighted Statistics

R-squared	0.158638	Mean dependent var	0.815565
Adjusted R-squared	0.143285	S.D. dependent var	0.535510
S.E. of regression	0.495662	Sum squared resid	67.31667
F-statistic	10.33251	Durbin-Watson stat	1.039375
Prob(F-statistic)	0.000000		

Source: Research Results, Eviews 10 (2022)

The table above shows the results of the analysis of the random effects model test with the data transformation in the form of

pooled regression as follows:

$$Y = 7,214 - 0,054X_1 + 0,4271X_2 + 0,0122X_3 - 0,3135X_4 + 0,3571X_5 + e$$

b) T-test (Partial Test)

The t-test aims to determine the effects of financial ratios consisting of Dividend Payout Ratio (DPR), Earning Volatility, Debt to Equity Ratio, Currency, and Inflation on Volatility Stock Price in Construction, Property, and Real Estate Sector Companies listed on the Indonesia Stock Exchange in 2011-2020 partially. The hypothesis testing procedure is as follows:

1. Determine the Level of Significance = 0.05. If the significance < 0.05 , then H_a is accepted and vice versa.
2. If $t\text{-count} < t\text{-table}$, accept H_a , which means that the independent variable can significantly influence the dependent variable. If $t\text{-count} > t\text{-table}$, then H_a cannot be accepted, which means that the independent variable does not affect the dependent variable.

Table 8 shows the results of the random effect model test analysis with data transformation, so the sig t-test is obtained as follows:

1. The probability of DPR is $0.0002 < 5\%$. It indicates that DPR has a significant effect on stock price volatility. Then H_1 is accepted.
2. The probability of Earning volatility is $0.0362 < 5\%$. It indicates that earning volatility has a significant effect on stock price volatility. Then H_2 is accepted.
3. The probability of DER is $0.7290 > 5\%$. It indicates that DER has no significant effect on stock price volatility. Then H_3 is rejected.
4. The probability of the exchange rate is $0.2754 > 5\%$. It indicates that the exchange rate has no significant effect on the volatility of stock prices. Then H_4 is rejected.
5. The probability of inflation is $0.000 < 0.05$. It indicates that inflation has a significant effect on stock price

volatility. Then H5 is accepted.

c) Test F (Test Simultaneously)

The F test aims to simultaneously determine the effects of independent variables consisting of DPR, earning Volatility, DER, exchange rate, and inflation on stock price volatility. Based on the results of table 8, it is obtained that the sig F test is smaller than 5%, which is 0.000. It means that H6 is accepted.

d) Coefficient of Determination

In table 8, the results of the analysis of the random effects model test with data transformation obtained that R2 is 15.86%, meaning that stock price volatility is influenced by DPR, earning Volatility, DER, exchange rates, and inflation of 15.86% in real estate, property and business companies. Construction is listed on the IDX. At the same time, the remaining 84.14% is influenced by other factors.

CONCLUSION

Based on the results of research and discussion, the following conclusions can be drawn:

1. Dividend Payout Ratio negatively and significantly affects Stock Price Volatility in Construction, Property, and Real Estate Sector Companies 2011-2020.
2. Earnings volatility positively and significantly affects Stock Price Volatility in Construction, Property, and Real Estate Sector Companies 2011-2020.
3. Debt to Equity Ratio positively and insignificant affects Stock Price Volatility in Construction, Property, and Real Estate Sector Companies 2011-2020.
4. Currency negatively affects Stock Price Volatility in Construction, Property, and Real Estate Sector Companies 2011-2020.
5. Inflation positively and significantly affects Stock Price Volatility in

Construction, Property, and Real Estate Sector Companies 2011-2020.

6. Dividend payout ratio, earning volatility, debt to equity ratio, exchange rate, and inflation affect stock price volatility simultaneously in construction, property, and real estate sector companies 2011-2020.

RESEARCH LIMITATIONS

Weaknesses or deficiencies that were found after analyzing and interpreting the data were as follows:

1. The object of this research is a Real Estate, Property, and Construction company listed on the Indonesia Stock Exchange with a population of 65 companies. The companies used as samples are limited to 28 companies that comply with predetermined criteria. It shows that the research sample used is less than half of the total population, so it does not fully describe the condition of the Real Estate, Property, and Construction sectors listed on the Indonesia Stock Exchange.
2. The observed research period is too short, only 10 years, from 2011 to 2020, so it is still not enough to describe the real situation.

SUGGESTION

Based on the results of the research, discussion and conclusions obtained, the following suggestions can be given:

1. Future research is expected to further develop the company value proxy with other methods. For further study, it is recommended not to use the current ratio because it only measures current assets with current liabilities and does not consider the company's overall total assets and liabilities.
2. For further expansion of the sample, the research period is longer to provide more complete results and use different observation variables on the object and period of research observation. Issuer

companies should increase the firm value by expanding the distribution of dividends from year to year. It can attract investors to invest in the company, and issuer companies should be able to maintain the company's profitability level so that financial performance is good in the eyes of investors.

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