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IMPACT OF COMPANY FINANCIAL RATIO ON SHARE PRICE WITHIN THE PROPERTY AND REAL ESTATE INDUSTRY

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ABSTRACT
Movements in share prices are caused by several factors, both internal and external. The objective of this research is to observe the impact of company financial ratio on share prices within the property and real estate industry using GARCH model. The reason why we chose this industry is because this industry can still grow even when the economic condition is unstable. The research shows that current ratio, debt equity ratio inventory turnover, price earnings ratio and return on equality are jointly significant in predicting share prices. Partially, only price earnings ratio does not significantly impact the share price.

Keywords: Garch Model, Finacial Ratio, Share Price, Property

1. INTRODUCTION
Stock investment is a popular source of income. Companies tend to sell their share to the public to get the funds needed for their activities. This is done usually to avoid funding through debts. Investors need information to observe their investment performance by analyzing company financial reports. Investors can use financial ratios to analyze financial reports. Company financial report condition is an internal factor that can affect share price movements. These include current ratio, debt equity ratio, inventory turnover, price earnings ratio and return on equity.

This research is focused on share prices within the property and real estate industry from 2009 to 2012. In the previous research, Achmad (2009) stated that ROA, current ratio and debt equity ratio are jointly significant in predicting share prices. However, they are not individually significant in predicting share prices.

Atika and Bambang (2009) stated that Debt Equity Ratio and Net Profit Margin have negative impacts on share prices, while Price Earnings Ratio (PER) has a significant positive impact on share prices. Majed, Said and Firas (2012) stated that all three factors are jointly significant in predicting share prices, but not individually. Susanto (2009) stated that Current Ratio and Debt Equity Ratio have no significant impact on share prices. Hatta and Dwiyanto (2009) stated that Debt Equity Ratio has a negative impact on share prices, while Price Earnings Ratio (PER) has a positive impact on share prices. Mulyono and Khairurizka (2009) conclude that Return on Equity (ROE) has a positive impact on share prices. In contrast Debt Equity Ratio (DER) has no significant impact on share prices.

The objectives of this research are (1) to analyze the impact of current ratio on share prices within the property and real estate industry; (2) to analyze the impact of debt equity ratio on share prices within the property and real estate industry; (3) to analyze the impact of inventory turnover on share prices within the property and real estate industry; (4) to analyze the impact of return on equity (ROE) on share prices within the property and real estate industry; (5) to analyze the impact of price earnnings ratio on share prices within the property and real estate industry; (6) to analyze the joint significance of the previous variables on share prices within the property and real estate industry.

Another interesting fact about share prices is that it has high volatility. Thus, we decided to use (General Autoregressive Heteroscedasticity) Models. Previous researches have used panel data models, thus we decided to use GARCH to observe the relationship from a different point of view. Financial ratios that are used in this research are Current Ratio, Debt Equity Ratio, Inventory Turn Over, Return on Equity and Price Earnings Ratio.

2. LITERATURE REVIEW

According to Bararuallo (2011:91), a stock is a valued capital and is an element of a company. Stocks are used as a proof of ownership in a limited company and is a component of company capital. According to Tambunan (2007:2-12), there are two types of company stocks:

a. *Preferred Stock*

Preferred stock is a form of investment within a limited company. As a preferred stock holder, a holder has no voting rights in a shareholder meeting. However, they are promised dividends in a fixed amount. There are several types of preferred stocks, such as cumulative preferred stocks and convertible preferred stocks.

b. *Common Stock*

A common stock holder has rights to participate in shareholding meetings. Management must proportionally respond to shareholders.

According to Tandelilin (2010;53), there are three types of share valuations:

1. Book value, which is calculated based on financial reports of the company.
2. Market value, which is the share price valued by the market.
3. Intrinsic value, which is the theoretical value of the share.

According to Ross, Westernfield, and Jordan (2010;55), c*urrent ratio* is a type of liquidity ratios or *short-term solvency ratios*. This ratio is used to show how likely a company will pay their obligations in case of bankruptcy. Theoretically, the higher this ratio is, the better creditors are as it means they have a "cushion" in case of losses caused by business failures. However, a large current ratio does not necessarily indicate that the company is in a good condition, as this ratio can be large due high inventory, which shows that the company's product is not selling well. In addition, this ratio can increase due to debt mismanagement,

which causes delays in payments. The value of current ratio depends on cash inflow and outflow.

This ratio can also be used to determine how much of the company's activities are used to pay upcoming deby payments. In this research, liquidity ratio is represented by current ratio, which can be calculated by comparing company current assets and current liabilities during the period. According to Brigham dan Houston (2010:140) leverage ratio or solvability ratio is a ratio that determines how much funding comes from debts.

Thus, ratio shows the comparison between company obligations and capital. The lower the DER, the better solvability a company has. However, a high obligation value does not necessarily mean a bad thing, as if a company is doing well and profiting highly, its investment is higher than its debts. In this research, this ratio is used to represent solvability ratio.

According to Ross, Westernfield and Jordan (2010;59) *Inventory Turnover* is a ratio that is a part of ativity ratios or *asset management ratios*. A company's condition is considered well if ownership and its cycle is balanced. If inventory turnover is low, then there is too much inventory in the storage, but if the turnover is high, then there is chance of shortage caused by sudden demands or lack of resources. The best inventory turnover speed is hard to argue as it depends on the industry of the company, for example, the inventory turnover of a property company cannot be compared to a consumer goods company.

According to Ross, Westernfield, and Jordan, *Return on Equity* (ROE) is a profitability ratio, where this ratio is used to measure how efficient capital usage is. Management generally tries to increase ROE, however this must be done incrementally, such as by first increasing sales profit, then increasing efficiency etc. ROE can keep increasing as the company's obligations increase, which in turn will increase profits and inestments from bigger companies compared to its debts.

This ratio measures returns from capital. This ratio is used to represent profitability ratio. Return on equaity can be measured by comparing net income and total equality. According to Ross, Westerfield, and Jordan (2010;56), *current ratio* shows a company's capability in meeting its short term obligations, as theoretically this represents its share price. Higher current ratio is shows that company cash flow can be used to cover daily expenses. According to Dominic (2008;84-86), to understand a company's health in terms of capital, a ratio between debts and capital is introduced. Debt-equity ratio shows the amount of capital obtained from debts. The higher it is, the higher amount of debts used as funding. As this goes higher, default risk becomes higher, which shows that an increase in this ratio will decrease share price.

According to Karnadi (1993;12), high inventory turnover theoretically causes high share prices. High inventory turnover is correlated with high sales, as there is no inventory overload, which shows that the company is doing well sales-wise. Thus, generally higher inventory turnover leads to higher share prices. According to Ross, Westerfield, and Jordan (2010;62), Return on Equity (ROE) shows the return received by investors. The higher this ratio is, the higher return value received by owners. According to Dominic (2008:94-96), Return on Equity (ROE) compares net profit with equity. A high ROE shows that the company is capable of making profits. Theretically high ROE leads to high share prices.

According to Bararuallo (2011:102) *Price-Earnings Ratio* (PER) shows how large investors value the company compared to earnings. Generally, PER has a negative relationship with return, but a positive relationship with dividends. Susanto (2009) shows that *Current Ratio* and *Debt-Equity Ratio* do not have significant impact on share prices. Hatta and Dwiyanto (2009) shows that *Debt Equity Ratio* has a negative impact on share prices, while *Price Earnings-Ratio (PER)* has a positive impact on share prices. Mulyono and

Khairurizka (2009) concluded that *Return on Equity (ROE)* has a positive impact on share prices, while *Debt-Equity Ratio* (DER) has no significant impact on share prices.

3. METODE PENELITIAN

The dependent variable that is used in this research is share price, which is a variable that has a high level of volatility. The appropriate research method for this type of data is GARCH (Generalized Autoregressive Conditional Heteroskedasticity).

The GARCH model is an improvement on the ARCH (Autoregressive Conditional Heteroskedasticity) model that was invented by Robert Engle. Initially, ARCH is used to observe the volatility of inflation, but then it was used for financial time series data instead of just inflation. The ARCH model assumes that the variance of the residual in a certain period is a function of residual variance of another period. The ARCH model can be written as the following:

$$y_t = \beta_0 + \beta_1 x_1 + e_t \tag{1}$$

with residual variance

$$\sigma_t^2 = \alpha_0 + \alpha_1 e_{t-1}^2 + \alpha_2 e_{t-2}^2 + \cdots + \alpha_p e_{t-p}^2$$

(2)

The ARCH model is then improved by Tim Bollerslev who stated that residual variance is not only dependent on previous residual but also previous residual variance. This model is then known as the GARCH model. The GARCH model can be written as the following:

$$y_t = \beta_0 + \beta_1 x_1 + e_t \tag{3}$$

with residual variance;

$$\sigma_t^2 = \alpha_0 + \alpha_1 e_{t-1}^2 + \lambda_1 \sigma_{t-1}^2 \tag{4}$$

where σ_t^2 is residual variance in period *t* and e_t^2 shows the residual in period *t*. In ARCH model, the residual variance is dependent on a constant (α_0) and the previous residual (e_{t-1}^2). Meanwhile in GARCH, the residual variance does not only depend on previous residual but also previous residual variance (σ_{t-1}^2).

The dependent variable is the variable that is dependent on one or more independent variables. In this research, the variable that is used is stock price. The data that is used particularly is the closing price for each quarter from 2009 to 2012. The stock price is in Rpiah and the data is obtained from Bursa Efek Indonesia (ww.idx.co.id).

The independent variable is a variable that can affect the dependent variable. In this research, the data is obtained from Bursa Efek Indonesia. The independent variables that are used int his research are Current Ratio, Debt-Equity Ratio, Inventory Turnover, Price-Earnings Ratio, dan Return on Equity. The data that is used in this research is secondary data. Secondary data are data that are obtained from published sources, in this case the data was obtained from Bursa Efek Indonesia. The data obtained was fom 2009 to the second quarter of 2012.

This research includes companies in the property and real estate industry that are registered in BEI. Companies that are used in this research have been registered since 2009 to 2012, has financial reports every 3 months. Based on this criteria, we chose 5 companies with highest mean asseets value from 2009:1 to 2012:6, which are PT Lippo Karawaci Tbk, PT Bakrieland Development Tbk, PT Citraland Development Tbk, PT Summarecon Agung Tbk, and PT Jakarta International Hotel Development Tbk.

The analysis in this research goes through several steps starting with data interpolation. Interpolation is a method that changes data from low to high frequency. In This research, data interpolation is used to change 3-month data into monthly data. The interpolation technique that were used was the cubic splain technique using EViews 7.0. After

the data has been interpolated, the ratios that were needed were calculated. These ratios of each company were then averaged using weighted average. In addition, the dependent variable share price is also taken by its weighted average.

The next step is to test the ARCH effects. There are two ways to test ARCH effects. The first one is to observe the squared residual pattern from the correlogram. In this test, whether or not there is an ARCh effect depends on the squared residuals of the correlogram. If there is not ARCh effect then the Autocorrelation Function (ACF) or Partial Autocorrelation (PACF) are 0 for all lags or not statistically significant. In contrast, if ACF or PACF is not 0 then the model has an ARCH effect. The second test is the ARCH LM test. Lagrange Multiplier (LM) test is another test that can be used to check whether or not there is an ARCH effect. If the residual variance is constant that there is no ARCH effect. In contrast, if the residual variance is not constant then there is an ARCH effect in the model. In this research, we use the ARCH LM test to check whether or not there is an ARCH effect in the model.

After the ARCH test, the GARCH method is used to estimate the model. The GARCH model is estimated using the maximum likelihood method using EViews 7.0. The GARCH estimation is done multiple times to fund the best GARCH model for this research. The best model can be chsen by comparing the residual probability with α (0,05). If the probability value of previous residual is $> \alpha$ (0,05) than the model is not the best model for this research. In contrast if the probability of previous residual is $< \alpha$ (0,05) then the model is good for this research. After finding the best GARCH mode, the LM test must be executed again. The ARCH LM test is done again to make sure that there is no more ARCH effect in this model. The probability value for the ARCH LM test must be lower than α (0,05), which means there is no more ARCH effect in the regression.

4. RESULTS AND DISCUSSION

The GARCH model is used in this research because of high volality in the share price data. However, before we decided to use a GARCH model, we will do an Ordinary Least Squares (OLS) estimation first. Based on the OLS research, we do an ARCH LM test to test whether or not there is an ARCH effect in the model. After using the ARCH LM test, we then estimate the model using the best GARCH estimation. This GARCH model is then tested again using the ARCH LM test to make sure that there is no ARCH effect anymore, and the used model is the best model.

In this research it is expected that an ARCH effect exists because the dependent variable used in this research is stock price, a variable that always changes up and down. Stock price is a variable that has high volatility. This can be proven by testing an ARCh effect on the OLS model. Thus, the ARCH LM test is used to show whether or not there is an ARCH effect in this model. If ARCH effect is found in the OLS regression, then the OLS cannot be used for this research. The ARCH LM test is run using EViews 7.0 using a lag value of 1. The hypothesis for the ARCH LM test for the following:

$H_0 : \alpha = 0$ (There is no ARCH effect in the regression)
$H_1 : \alpha \neq 0$ (There is an ARCH effect in the regression)
The following is the result of the ARCH LM test:

Table 4.1 ARCH LM Test Results (OLS)

F-Statistic	6.803296	Probability	0.0130
Obs*R-squared	6.057274	Probability	0.0138

Based on this ARCH LM test, the p-value is 0. $< \alpha$ (0.05), so H_o is rejected. Thus, we can conclude that the model has an ARCH effect. The existence of the ARCH effect in the

model shows that the usage of the GARCH method is the correct decision. The next step is to determine the best GARCH method for this model.

Bases on tests that have been done, the best GARCH method for this model is the GARCH(1, 0) method. The p-value for the residual for this model is 0.0101 which shows significance at 5% level of significance. Meanwhile, the other GARCH methods do not show significance at 5% level of significance. The following is the output from the GARCH (1, 0) model:

Table 4.2 GARCH(1, 0) Output

Variable	Coefficient
C	840,6868
	(0,0000)
Current Ratio	134,3012
	(0,0000)
Debt Equity Ratio	-383,9152
	(0,0000)
Inventory Turnover	299,8683
	(0,0000)
Price Earnings Ratio	-0,141126
	(0,1217)
Return on Equity	-2441,781
	(0,0000)
Variance Equation	
C	103,0668
	0,4084
Resid(-1)^2	1,836814
	0,0101
R-squared	0,647957
Adjusted R-squared	0,596186
Log likelihood	-210,9152
Akaike info criterion	10,94576
Schwarz criterion	11,28353

Note: () shows p-value

After using the GARCH (1, 0) model, we need to confirm that there is no longer an ARCH effect in the model. So, we used the ARCH LM test again to test whether or not there is still an ARCH effect. The ARCH LM test that we use is the one that has the lag value of 1. The following is the output of the ARCH LM test on the GARCH (1, 0) model:

Table 4.2 ARCH LM Test (GARCH(1,0))

F-statistic	0.602522	Probability	0.4426
Obs*R-squared	0.624915	Probability	0.4292

Based on the ARCH LM test above, the p-value (0.4292) > α (005), soi H_0 is not rejected, which shows that there is no ARCH effect in the model.

Based on the results above we tested whether the independent variables (*current ratio, debt-equity ratio, inventory turnover, price earnings ratio, return on equity*) have a significant impact on the dependent variable (stock price). This is one by comparing the p-value of each variable with α (5%). If the p-value of the independent variable is lower than 5%, then H_0 is rejected, in contrast if it is higher than %, maka H_0 is not rejected.

The hypothesis for *current ratio*:

- $H_0 : \beta_1 = 0$ (*Current ratio* has no significant impact on stock price)
- $H_1 : \beta_1 \neq 0$ (*Current ratio* has a significant impact on stock price)

Based on the test statistics we found that the p-value for *current ratio* (0,0000) < α (0,05) so H_0 is rejected, which means current ratio has a significant impact on stock price.

The hypothesis for *debt-equity ratio*:

- $H_0 : \beta_2 = 0$ (*Debt-equity ratio* has no significant impact on stock price)
- $H_1 : \beta_2 \neq 0$ (*Debt-equity ratio* has a significant impact on stock price)

Based on the test statistics we found that the p-value for *debt-equity ratio* (0,0000) < α (0,05) so H_0 is rejected, which means debt-equity ratio has a significant impact on stock price.

The hypothesis for *inventory turnover*:

- $H_0 : \beta_3 = 0$ (*Inventory turnover* has no significant impact on stock price)
- $H_1 : \beta_3 \neq 0$ (*Inventory turnover* has a significant impact on stock price)

Based on the test statistics we found that the p-value for *inventory turnover* (0,0000) < α (0,05), so H_0 is rejected, which means inventory turnover has a significant impact on stock price.

The hypothesis for *price-earnings ratio*:

- $H_0 : \beta_4 = 0$ (*Price-earnings ratio* has no significant impact on stock price)
- $H_1 : \beta_4 \neq 0$ (*Price-earnings ratio* has a significant impact on stock price)

Based on the test statistics we found that the p-value for *price-earnings ratio* (0,1217) > α (0,05), so H_0 is rejected, which means price-earnings ratio has no significant impact on stock price.

The hypothesis for *return on equity*:

- $H_0 : \beta_5 = 0$ (*Return on equity* has no significant impact on stock price)
- $H_1 : \beta_5 \neq 0$ (R*eturn on equity* terhadap harga saham)

Based on the test statistics we found that the p-value for return on equity (0,0000) < α (0,05), so H_0 is rejected, which means return on equity has a significant impact on stock price.

Thus, based on the test statistics we found that *current ratio, debt-equity ratio, inventory turnover,* and *return on equity* has significant impact on stock price. However, *price-earnings ratio* has no significant impact on stock price.

Current ratio has a significant positive impact on stock price. This significant impact is caused by the fact that currentratio is one way to show a company's liquidity. The current ratio of 134.3012 shows that an increase in current ratio by i1 is expected to increase stock price by 134.3012. Current ratio shows a company's ability to meet its short- term obligations. Current ratio is calculated by comparing liquid asset and liquid ability, so the higher the current asset, the higher the current ratio. A company that has a high current ratio shows it ability to meet its liquid obligations. The ability to meet its current obligations can affect stock price demand which then increases the price of the company's stock.

Debt-equity ratio has a significant negative impact on stock price. The coefficient is -383.9152 shows that an increase in debt-equity ratio by 1 is expected to decrease stock price by 383.9152. The negative relationship is caused because debt-equity ratio measured how much of the company is funded by debts. The higher the debt, the higher the probability for that debt to remain unpaid. A company with a high debt-equity ratio shows that most of its funding comes from debts. The higher debt a company has, the less profit it has, because it is first used to pay those debts. This will be followed by lower demand from investers which then causes the stock price to fall.

Inventory turnover has a significant positive impact on stock price. This ratio shows how often inventory can be sold in a period. In this research, an increase in inventory turnover is expected to increase stock price by 299.8683. High inventory turnover shows that the company can sell its inventory quickly or in other words, it is selling well. This will in turn attract investors which will then increase stock price.

Price-earnings ratio has a significant negative impact on stock price. An increase in price-earnings ratio is expected to decrease stock price by 0.141126. This negative relationship is caused by the fact that the EPS value is not used as a reference by investors. If the increase in profit is not as high as the increase in stock supply or debts, the the profit shared will be smaller. This will lower investor's interest and then decrease stock price.

Return on equity has a significant negative impact on stock price. A increase in return on equity is expected to decrease stock price by 2441.781. Return on equity compares a company's net income andits equity. This negative relationship is caused by the fact that investors no longer use net income as a reference for investing decision. A company can have a high net income, but an investor may not be interested because in the future the industry can fall. In addition, another factor that can cause this negative relationship is that the company's stock price is overpriced, so investors mya not want to but the stock. If the stock price is already too high, then the probability that the stock will keep increasing is smaller, so the probability of the profit getting shared to the investors is also small.

Jointly, the variables *current ratio, debt-equity ratio, inventory turnover, price-earnings ratio,* and *return on equity* show that they have significant impact on stock price. In the GARCH(1,0) model, the p-value of previous residual is significant at α (0,05). This shows that the regression model is best for this research and it shows that all independent variabls have a significant impact on stock price.

5. CONCLUSION

Based on the research done on 5 companies in the property and real estate industry that were registered in BEI in 2009:1 to 2012:6, it can be concluded that:

1. *Current ratio* has a significant impact on stock price.
2. *Debt-equity ratio* has a significant impact on stock price.
3. *Inventory turnover* has a significant impact on stock price.
4. *Price-earnings ratio* has no significant impact on stock price.
5. *Return on equity* has a significant impact on stock price.
6. The independent variables (*current ratio, debt-equity ratio, inventory turnover, price-earnings ratio* and *return on equity*) jointly have a significant impact on stock price.

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