

**STUDY OF CORRELATION BETWEEN SELECTED FINANCIAL COMPONENTS
(EBIT, DIVIDENDS, RETAINED EARNINGS, AND DEBT TO EQUITY RATIO)
WITH STOCK PRICES OF COMPANIES IN INDONESIAN REAL ESTATE
INDUSTRY**

ABSTRACT: Indonesia, the real estate industry, is forecasted to keep growing in the future. There will be significant opportunities in the capital market for investment. It is essential for investors who will invest in this industry to understand what factors are essential to predict stocks price movement, especially for stock trading investors. For companies in the industry, knowing what they should do to attain growth more significant than the industry itself is essential to attract investors. The research purposes are to study the correlation between selected financial components and stock price. The analysis was done by calculating the correlation between financial components with stock price using 10-years period data. The results show there are six classes of companies according to correlation analysis: significant with EBIT, significant with dividend, significant with RE, significant with DER, multi significant, and insignificant. The most substantial component is the debt to equity ratio.

ABSTRAK: Indonesia, industri real estat, diperkirakan akan terus tumbuh di masa depan. Akan ada peluang signifikan di pasar modal untuk investasi. Sangat penting bagi investor yang akan berinvestasi di industri ini untuk memahami faktor-faktor apa yang penting untuk memprediksi pergerakan harga saham, terutama bagi investor perdagangan saham. Bagi perusahaan dalam industri, mengetahui apa yang harus mereka lakukan untuk mencapai pertumbuhan yang lebih signifikan daripada industri itu sendiri sangat penting untuk menarik investor. Tujuan penelitian adalah untuk mempelajari hubungan antara komponen keuangan yang dipilih dan harga saham. Analisis dilakukan dengan menghitung korelasi antara komponen keuangan dengan harga saham menggunakan data periode 10 tahun. Hasil penelitian menunjukkan ada enam kelas perusahaan menurut analisis korelasi: signifikan dengan EBIT, signifikan dengan dividen, signifikan dengan RE, signifikan dengan DER, multi signifikan, dan tidak signifikan. Komponen yang paling substansial adalah rasio hutang terhadap modal.

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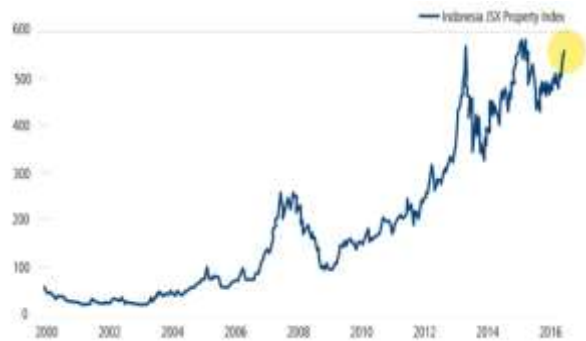
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*Kata Kunci: Korelasi,
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1.1 Introduction

As the fourth most significant population number in the world, Indonesia's needs of land for the house will always growing up. This condition affects the real estate industry since there will always be demand products. Indonesia property sector has shown robust growth, thanks to the country's expanding middle class supported by a low-interest rate regime and vigorous national economic growth. These years, there was a notable change in the real estate industry occurred in the larger cities of Indonesia such as Jakarta, Bandung and Surabaya. Vertical buildings and skyscrapers dominate these cities in the form of only apartments and offices space with central business districts. In Jakarta, the property market is so good that in 2013, many new real estate projects were sold before actual construction, exceeding demand to exceed supply.

In Indonesia real estate market, Jabodebek (Jakarta, Bogor, Depok, and Bekasi) has become the largest segment in terms of area contribution and revenue in the overall Indonesian real estate market. Jabodebek's housing sector is well-known as one of the most brilliant accommodation places in Indonesia, which has emerged as the top investment destination for domestic investors. The city is mainly dominated by luxury apartments, which allures the elite class population of the country. In 2013, the growth of the Jabodebek real estate market was led by strong economic growth and increased investor confidence, which further boosted the real estate market to grow by 29.8% in 2013. (Ken Research, 2018).



Source: CLSA, 2016

Figure 1: Indonesia Real Estate Market Growth, 2016

Industry tantalizing for investors. This research tries to understand the dynamics to understand what variable(s) that can affect companies' stock prices to help investors in their investment for real estate industry. In accounting terms, growth in the market is recorded in real estate companies' financial report. The annual report will show what happened in the industry, company, and it will affect how shareholders view the value of real estate business. Shareholders' perception and company performance will create the market value of the company, which associated with share/stock price. It is important to understand what will affect the share price based on the company's performance (financial report) because it is controllable, not like shareholders'/investors perception.

1.2. Business Issue

Because of the industry's condition that predicted to keep growing, there is a big opportunity for investing in the industry. To seize this opportunity, companies in real estate industry should be able to maximize the growth of their stock price, and for investors, they should understand what factors can help them

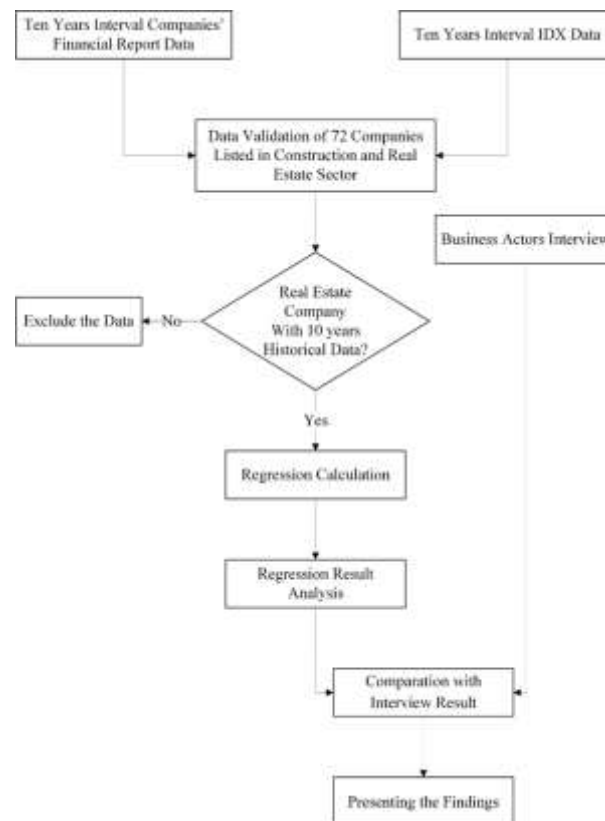
to decide how to invest their money in this industry.

METHODS, DATA, AND ANALYSIS

2.1. Conceptual Framework

To find out the correlation between selected financial components (EBIT, dividends, retained earnings, and debt to equity ratio) and stock price, the calculation executed using ten years period of data to make sure the regression method can be used. The data come

from companies that are operating in the real estate industry. From 72 companies operating in the construction and real estate listed in Indonesia Stock Exchange (IDX), there are 37 selected companies that specifically in real estate industries. Before the research, interviews with business actors were done as a finding if the result of the analysis can be supported by facts in the industry. At the end of the research, the findings will be presented as a recommendation for companies and investors to answer the business issue.



Source: Author's Analysis, 2018

Figure 2: Conceptual Framework

2.2 Method of Data Collection and Analysis

This research mainly used quantitative secondary data. Secondary data is the data that are referring to information collected from existing resources. The sources of data are notes or companies' documents, government's publication, industry analysis by media, websites, and internet. (Sekaran, 2011). The secondary data for the research comes from 35-selected real estate companies' financial report from 2013-2017 and its stock price from the Indonesia Stock Exchange. There are also qualitative data in this research, which is an interview with business actors. The purpose of the interview is to support the findings from the calculation.

Analysis in this research was done by using regression method. Regression is an analysis tool that commonly used to understand relation or association between two variables X (independent) and Y (dependent) (Mas'ud, 2004). In this research, the dividend, retained earnings, EBIT, and debt to equity ratio will be perceived as independent variables (X1, X2, X3, X4) and stock price as dependent variable (Y). According to Ghozali (2006), the correlation can be calculated using following formula:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e$$

Where:

- Y: Stock Price
- a: Constant value from regression calculation
- b1: Regression coefficient from variable X1
- b2: Regression coefficient from variable X2

- b3: Regression coefficient from variable X3
- b4: Regression coefficient from variable X4
- X1: EBIT
- X2: Retained earnings
- X3: Dividend
- X4: Debt to equity ratio
- e: error

The regression used for calculation is using Ordinary Least Square (OLS) method. OLS estimates regression line while minimize sum of squared error from every data with the regression line (Kuncoro, 2013). This method uses some assumption as follow:

1. The regression model is linear
2. The x value is non-stochastic
3. The average error is zero
4. Homoscedastic
5. No autocorrelation
6. No perfect multi-collinearity between the independent variable
7. Number of data is more significant than the number of variables
8. Variables' values are not identical

After the regression result was out, it was compared with the interview result. In this analysis, descriptive analysis was used. Descriptive analysis is an analysis method that observes the variable specifically to make sure the research is suitable enough to resolve the research problem by analysing the data using related theories until the conclusion can be concluded (Sugiyono, 2017).

2.3 Analysis of Business Situation

From 37 real estate companies listed in Indonesia Stock Exchange, only 35 companies were used for the calculation

because the companies meet the requirements (have ten years' historical data from December 2008 until December 2017 for the calculation). The two unselected companies

The selected companies are:

Code	Name	Code	Name
1. APLN	Agung Podomoro Land Tbk	19. GPRA	Perdana Gapura Prima Tbk
2. ASRI	Alam Sutera Realty Tbk	20. GWSA	Greenwood Sejahtera Tbk
3. BAPA	Bekasi Asri Pemula Tbk	21. JRPT	Jaya Real Property Tbk
4. BCIP	Bumi Citra Permai Tbk	22. KIJA	Kawasan Industri Jababeka Tbk
5. BEST	Bekasi Fajar Industrial Estate Tbk	23. LCGP	Eureka Prima Jakarta Tbk
6. BIPP	Bhuwanatala Indah Permai Tbk	24. LPCK	Lippo Cikarang Tbk
7. BKSL	Sentul City Tbk	25. LPKR	Lippo Karawaci Tbk
8. BKDP	Bukit Darmo Property Tbk	26. MDLN	Modernland Realty Tbk
9. BSDE	Bumi Serpong Damai Tbk	27. MKPI	Metropolitan Kentjana Tbk
10. COWL	Cowell Development Tbk	28. MTLA	Metropolitan Land Tbk
11. CTRA	Ciputra Development Tbk	29. MYRX	Hanson International Tbk.
12. DART	Duta Anggada Realty Tbk	30. PLIN	Plaza Indonesia Realty Tbk.
13. DILD	Intiland Development Tbk	31. PWON	Pakuwon Jati Tbk
14. DUTI	Duta Pertiwi Tbk	32. RODA	Pikko Land Development Tbk
15. ELTY	Bakrieland Development Tbk	33. SMDM	Suryamas Dutamakmur Tbk
16. EMDE	Megapolitan Developments Tbk	34. SMRA	Summarecon Agung Tbk
17. FMII	Fortune Mate Indonesia Tbk	35. SSIA	Surya Semesta Internusa Tbk
18. GAMA	Gading Development Tbk		

The unselected companies are:

1. DMAS Puradelta Lestari Tbk
2. TARA Sitara Propertindo Tbk

There are also interview with two business actors: Mr Ryan Brasali, General Manager of Kota Baru Parahyangan, and Mr Nathan Tanugraha, Vice President Capital and Investment of Intiland Foundation. From the interview, it is decided that the financial components used for calculation will be the same with the financial components mentioned in the title which are EBIT, dividend, retained

earnings, and debt to equity ratio as independent variables also stock price as the dependent variable.

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3. RESULT AND DISCUSSIONS

The data used for regression calculation are EBIT, dividend, retained earnings, debt to equity ratio, and stock price from every

company ten years' period. Results show there are 25 companies with a significant relationship between the independent variable(s) and dependent variable, and ten companies without the significant relationship between variables. The list of each company isare presented in the table below.

Table 1: Companies with Significant and Insignificant Correlation

Significant	Insignificant
1. Agung Podomoro Land Tbk	1. Bekasi Asri Pemula Tbk
2. Alam Sutera Realty Tbk	2. Bumi Citra Permai Tbk
3. Bekasi Fajar Industrial Estate Tbk	3. Bhuwanatala Indah Permai Tbk
4. Bumi Serpong Damai Tbk	4. Sentul City Tbk
5. Cowell Development Tbk	5. Bukit Darmo Property Tbk
6. Ciputra Development Tbk	6. Greenwood Sejahtera Tbk
7. Duta Anggada Realty Tbk	7. Eureka Prima Jakarta Tbk
8. Intiland Development Tbk	8. Metropolitan Land Tbk
9. Duta Pertiwi Tbk	9. Hanson International Tbk.
10. Bakrieland Development Tbk	10. Suryamas Dutamakmur Tbk
11. Megapolitan Developments Tbk	
12. Fortune Mate Indonesia Tbk	
13. Gading Development Tbk	
14. Perdana Gapura Prima Tbk	
15. Jaya Real Property Tbk	
16. Kawasan Industri Jababeka Tbk	
17. Lippo Cikarang Tbk	
18. Lippo Karawaci Tbk	
19. Modernland Realty Tbk	
20. Metropolitan Kentjana Tbk	
21. Plaza Indonesia Realty Tbk.	
22. Pakuwon Jati Tbk	
23. Pikko Land Development Tbk	
24. Summarecon Agung Tbk	
25. Surya Semesta Internusa Tbk	

Source: Author's Analysis, 2018

The main difference between those two companies' types is in the projects they have done. Most of the companies with significant result had done a grand development project with upper-class customers as their target for a long time, while companies with insignificant

result mostly have a project with low to middle-class customers as their target.

Significant Regression Result Analysis

Based on the 25 companies with significant variable(s) from the regression

calculation, it is confirmed that the four independent variables used in the research correlate with the stock price. The list of which financial component(s) are relevant to companies' stock price is presented on the table below:

Table 2: Companies and Significant Financial Components

Financial Component	Companies
EBIT	<ul style="list-style-type: none"> • Bekasi Fajar Industrial Estate Tbk • Intiland Development Tbk • Kawasan Industri Jababeka Tbk • Lippo Cikarang Tbk • Modernland Realty Tbk • Metropolitan Kentjana Tbk • Plaza Indonesia Realty Tbk. • Pakuwon Jati Tbk • Pikko Land Development Tbk • Summarecon Agung Tbk • Surya Semesta Internusa Tbk
Dividend	<ul style="list-style-type: none"> • Bekasi Fajar Industrial Estate Tbk • Megapolitan Developments Tbk • Lippo Karawaci Tbk
RE	<ul style="list-style-type: none"> • Alam Sutera Realty Tbk • Bekasi Fajar Industrial Estate Tbk • Jaya Real Property Tbk
Financial Component	Companies
DER	<p>The companies that should lower their DER:</p> <ul style="list-style-type: none"> • Agung Podomoro Land Tbk • Duta Anggada Realty Tbk • Duta Pertiwi Tbk <p>The companies that should raise their DER are:</p> <ul style="list-style-type: none"> • Bumi Serpong Damai Tbk

	<ul style="list-style-type: none"> • Bekasi Fajar Industrial Estate Tbk • Cowell Development Tbk • Ciputra Development Tbk • Bakrieland Development Tbk • Gading Development Tbk
Multi Components	<ul style="list-style-type: none"> • Fortune Mate Indonesia Tbk (EBIT and DER) • Perdana Gapura Prima Tbk (Dividend and DER) • Plaza Indonesia Realty Tbk. (Dividend, RE, and DER)

Source: Author's Analysis, 2018

On the other hand, the financial component with the strongest correlation with stock price is the debt to equity ratio has the most appearance with 12 counts, followed by EBIT with 11 counts, dividend with five counts, and retained earnings on the last place with four counts.

Table 3: Significant Financial Components Appearance Count

Financial Component	Counts
EBIT	11
Dividend	5
Retained Earnings	4
Debt to Equity Ratio	12

Source: Author's Analysis, 2018

This table shows that in those ten years' investors will see how debt percentage compared to its equity. In this variable, there is no saying that more significant or lower number means better; investors have their perspective about how significant the DER amount in a company that is can be considered healthy. Companies should have their optimum debt to equity ratio that can support their business but not threaten their liquidity. The optimum amount of DER is different between companies

since each company has their situations and conditions.

EBIT in the second place shows that investors care more about the company's operation performance instead of how much dividend will they get or how many times they will get their dividend (especially stock traders). It means investors think that a company has a reasonable prospect if the company can have sustainable growth in their operating income instead of the amount of dividend (third place) paid by the company to its investors.

Retained earnings get the lowest count number because investors do not care about how much the company can save their profit in a year to support the operation in next year or pay the dividend. With sustainable EBIT, investors believe that the company will always have enough capital to continue its operation next year and generate the profit.

In further analysis, there are similarities

in the companies with significant regression result. The companies are veteran in the real estate industry, have a good reputation, and a successful development project for the upper-class segment in the big city (Jakarta, Surabaya, or Bali). They can be called as sustainable companies. While the companies with an insignificant result, statistically, most of them have extreme movement on their stock price.

Insignificant Regression Result Analysis

Based on data, the stock price movements considered extreme if the change near 100% in a nearby period. Looking up to news and articles of each company, it is found that the causes of the extreme movement are companies' activity that changed market perception of their value can be positive such as new project and new CEO, or negative such as scandal or bankruptcy. The movement for each company and the cause based on news and articles are as follow.

Table 4: Insignificant Regression Result Cause

No	Company	Stock Price Movement	Activities or Occurrences
1	Bekasi Asri Pemula Tbk	Up	Product diversification in a strategic location (Hotel in Bali - 2013)
2	Bumi Citra Permai Tbk	Down	Bankruptcy of other subsidiary company leads to investors distrust
3	Bhuwanatala Indah Permai Tbk	Up	Part of an affordable housing project with Ciputra and Hanson New commercial building project in Manado
4	Sentul City Tbk	Up	Land price increased by 50% in 2011 Sentul City project considered at the same level as Puncak
5	Bukit Darmo Property Tbk	Up	Executing a successful project in 2009

6	Greenwood Sejahtera Tbk	Down	Investment rating downgrade Failed to fulfil the aftersales deal Profit decreased by 50% in 2015
7	Eureka Prima Jakarta Tbk	Down	Net Loss IDR 11.59 billion in 2017
8	Hanson International Tbk.	Up	Part of an affordable housing project with Ciputra and Bhuwanatala Exercising rights issue in 2013 Successfully sold 4,700 unit of the house at the end of 2014 (Citra Maja Raya project)

Source: Author's Analysis, 2019

In conclusion, the causes are as follow:

Table 5: Extreme Stock Price Cause Conclusion

Positive	Negative
<ul style="list-style-type: none"> • New prospective project for the first time • Accomplish an excellent achievement for the first time • Price dynamics 	<ul style="list-style-type: none"> • Bad performance in business • Bad reputation

Source: Author's Analysis, 2019

From the causes mentioned in the table, the company's activities can drive investor perception about the company's prospect, good or bad. It also shows that a company's stock price is not just affected by its business operation's performance and the company's action. In this case, reputation, achievement and external factor like price dynamics can also affect the investor perception. That is why real estate companies need to maintain excellent business performance in every situation by having the good historical performance to gain investor trust if they want to have a stable positive trend on their stock price. This claim is confirmed true with the interview result.

Business Actors Interview

In the analysis of regression presented before, it can be concluded that only sustainable companies' stock price affected by independent variables used in the research. Before executing this research, some interviews on this topic were done. Mr Ryan Brasali, General Manager of Kota Baru Parahyangan and Mr Nathan Tanugraha, Vice President Capital and Investment of Intiland Foundation participated in the interview.

On the interview, their claims portrayed the result of this research. They said that typically, financial aspect such as income, debt, and dividend would correlate with the stock price since it affects investors on how they see a company's prospect, sustainability, and what will they get from their investment. However, the change or movement in stock price can be significantly affected by company's activities which can have no direct relation with company's performance for now but will create great prospect (example: new project, new land acquisition) or profound downfall of the company (example: internal or external scandal).

CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

In conclusion, it is confirmed that

selected financial components can correlate with the stock price if the companies have a significant result in regression calculation. The essential component is the debt to equity ratio since it has the most appearance counts. DER has the most counts because investors believed debt percentage compared to its

equity will illustrate company's health, and they believe that number significantly affect the companies' liquidity rather than revenue, dividend, or retained earnings. Also, from the analysis of significant and insignificant results, the result's cause can be concluded as below:

Table 6: Significant and Insignificant Result Causes

Results		Causes
Significant		<ul style="list-style-type: none"> • Have success and sustain the project • Sustain income
	Positive	<ul style="list-style-type: none"> • New prospective project for the first time • Accomplish an excellent achievement for the first time • Price dynamics
	Negative	<ul style="list-style-type: none"> • Bad performance in business • Bad reputation

Source: Author's Analysis, 2019

4.2 Recommendations

From the research, some recommendation can be made to answer the business issue:

1. Companies with a significant result, in order to maximize the stock price, companies should give more effort to the financial component(s) that affect its stock price, for example:
 - a. EBIT: increase sales, lowering operating expenses.
 - b. Dividend and Retained Earnings: increase the free cash flow of the business cycle.
 - c. Debt to Equity Ratio: increase debt leverage or pay debts to lower the ratio.
2. Companies with insignificant result should prove their worth to potential investors:

- a. Companies with positive extreme stock price movement: executing the existing project successfully.
- b. Companies with negative extreme stock price movement: regain back the reputation by publishing new prospecting projects or have project collaboration with sustainable companies.
3. Investors are recommended to review the historical performance of the real estate company. Notice the projects, developments, and its sustainability. A company that worth investing will have a good record of accomplishment, sustainable projects, and healthy financial condition. It is also suggested to research about its investment grade or rank. If the investors are risk-taker, investing in companies that not sustainable yet is still advised if the

company has or still executing prospective projects.

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