



## Determinant of Price Earning Ratio in the Property and Real Estate Company: Case Study Listed in Indonesian Stock Exchange 2011-2018

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### **Abstract**

**Purpose:** This research is aimed to find out the determinant of Price Earning Ratio (PER) in the property and real estate company listed in Indonesian Stock Exchange for the period 2011-2018.

**Design/methodology/approach:** Referring to the developed model by Afza & Tahrir and Amalia by using 6 independent variables including Dividend Payout Ratio, Tobin's Q, Leverage, Market Return, Earning Growth and Size, are expected to renewal in results in order to obtain variables that influencing the movement of Price Earning Ratio in property and Real Estate Company.

**Findings:** From panel data analysis method, it can be found that fixed effect model is the most suitable model for both the changes of Price Earning Ratio in the property and Real Estate Company. The results of each variable can be explained that Tobin's Q has positive impact, meanwhile Earning Growth and Size has negative impact. Afterwards, this research is also expected to provide framework of thinking for the policy maker to attract the attention of investor in the property and real estate company sector.

**Practical implications:** The article offers insights to Price Earning Ratio in property and Real Estate Company that listed in Indonesian stock exchange period 2011-2018 simultaneously, partially and identifies the regression model of panel data inside.

**Originality/value:** The article presents there are five significant free variables, including Tobin's Q, Leverage, Market Return, Earning Growth and Size that influence the Price Earning Ratio in property and Real Estate Company.

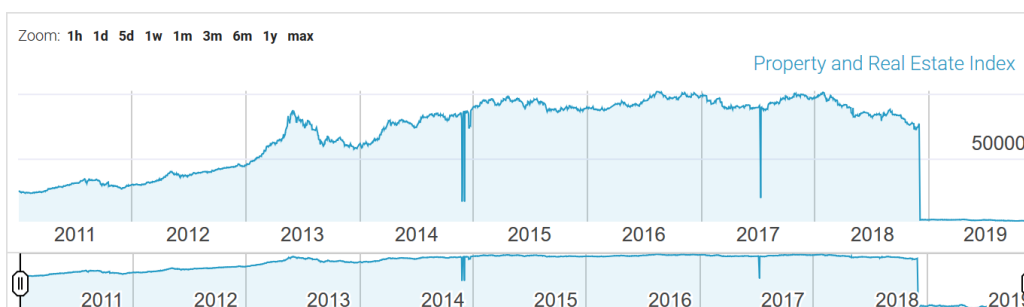
## 1. Introduction

Price Earning Ratio (PER) is an object of considerable research related with the relationship of stock returns. Basu (1977), Basu (1983), Cook & Rozeff (1984) are the pioneers in this fields. In addition, there are several researches dealing with Price Earning Ratio that become considerable research such as investigation about the factors that influence PER. Tenaya and Diantini (2016) found that return on assets (ROA), earning growth and earning variability are the factors that influence the movement of PER on emerging market. While in manufactured company, PER is influenced by debt to equity ratio (DER), return on equity (ROE) and interest rate factors (Adam, Djumahir, & Andarwati, 2015). As in Mulyani and Pitaloka (2017) that found ROE and DER have significance influence on PER toward manufactured company, especially in food and beverages sector.

Although, there are a lot of researches that discuss about determinant of PER, but the results obtained is considered inconclusive. The percentage of PER is crucial information since it is reflected the amount of parties that willing to invest a stock. Generally, it is considered that PER is the right indicator to describe the value of a company as well as the value of the company's stock.

The Indonesian Stock Exchange is a dynamic exchange for developing country level, especially after the implementation of deregulation in 1987. The movement of IDX Composite is currently in the range of 5.300 with the number of shares traded are reaching more than 500 companies. The stock taking on the fairness of stock prices becomes the most important thing for investors. The stock and sector selection that provide high return or gain has lead the researcher to find out the relation between stock prices with the generated earning per share. One of the sectors that are quite interesting in Indonesia is property and Real Estate Company. The data of the property's growth in 2011 has reached 7% and decreased into 6.54% in 2013. Unfortunately, it re-decreased in 2014 and 2015 (respectively 5% and 4.82%).

**Figure 1.** Stock Price Index: Property and Real Estate Stock in 2011 – 2018



**Source:** [www.indonesia-investments.com](http://www.indonesia-investments.com)

Therefore, this research is conducted in purposes to:

- (1) Identify fundamental factors including Dividend Payout Ratio, Tobin's Q, Leverage, Earning Growth, Market Return, and Size toward PER on the property and Real Estate Company listed in Indonesian Stock Exchange simultaneously.
- (2) Identify fundamental factors including Dividend Payout Ratio, Tobin's Q, Leverage, Earning Growth, Market Return, and Size toward PER on the property and Real Estate Company listed in Indonesian Stock Exchange partially.
- (3) Identify the suitability of panel data regression model in case whether or not common effect model, fixed effect model or random effect model exist in determinant Price Earning Ratio analysis on the property and Real Estate Company listed in Indonesian Stock Exchange.

## **2. Literature review**

### **2.1. Price Earning Ratio (PER)**

There are several methods in analyzing the fairness of stock exchange pricing to obtain whether or not the stock is overprice or under price. It can be conducted through PER model (Sharpe, et al., 1995). Here is the systematic formula:

$$PER_t = \frac{P_t}{EPS_t}$$

Where,

$PER_t$  : PER of company in year t.

$P_t$  : stock price in year-end closing t

$EPS_t$  : earning pershare in year t

PER is also indicates the future expectation of a company.

### **2.2. Dividend Payout Ratio (DPR)**

According to Umar (2002), Dividend Payout Ratio (DPR) is used to measure the amount of net profit used as dividend and how much the decision in determining dividend policy. The higher of DPR will provide high return for the investors, yet it will weaken the internal financial. If another factor become constant, thus the Dividend Payout Ratio will be higher and the PER will be higher as well. Dividend Payout Ratio can be described in the formula below:

$$DPR = \frac{\text{Dividend per shares}}{\text{Earning per shares}}$$

### **2.3. Tobin's Q**

Tobin's Q is the market value of a company obtained from comparing market value of company listed in financial markets with the asset replacement value of company. One of Tobin's Q version which being modified and simplified by Chung & Pruitt (1994) toward a formula formulated by Wolfe & Sauaia (2005) can be seen below:

$$Q = \frac{\text{Total Market Value of Firm}}{\text{Total Asset Value}}$$

If the market value is merely reflected the carrying amount of the company assets, so the value of Tobin's Q is 1. If Tobin's Q is higher than 1, so the market value is higher from the carrying amount of the company assets. Thus, it indicates that the stock is overvalued. But, if Tobin's Q is less than 1, the market value is lower than the carrying amount of the company assets. It indicates that the stock is undervalued.

#### 2.4. Leverage

The use of company financing sources, whether short term financing sources or long term financing sources will cause such effect namely leverage. Gibson & Curtis (1990) states that the use of debt, called leverage, can greatly affect the level and degree of change is the common earning. The aim of such company to apply leverage is to increase the return for the common shareholders (the owner of the company).

$$\text{Leverage} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

#### 2.5. Market Return

Return is the result taken from investment (Sujana & Jogiyanto, 2003). In performing investment, there are several measurement factors including total return. Total return is defined as the overall return value of an investment in a certain period. For the common stock that pay periodic dividend amounts  $D_t$  rupiah per share, then the formula for return can be seen below:

$$\text{Market Return} = \frac{P_t - P_{t-1}}{P_{t-1}} + \frac{D_t}{P_{t-1}}$$

#### 2.6. Earning Growth

The earning growth is directly influence the price earning ratio. If the stock price is reflected the capitalization from the expected net profit in the future, thus the increasing of net profit will increase the stock prices and total market capitalization. If the investor believe that the growth of net profit is well supported then it will support the increasing of price earning ratio. The growth of net profit can be described in the following formula (Tangkilisan, 2003):

$$g_t = \frac{\text{EPS}_t - \text{EPS}_{t-1}}{\text{EPS}_{t-1}}$$

#### 2.7. Size

Sartono & Munir (1997) mention that the advantage of S/P (other variables that relate with sale), will have well ability to explain compared to profit-based variables. Hence, the size of company is a way to determining the size of company seen from the value of equity, sales value and total active value. Thus, the higher a company will ease the stability of the company and will lower the

risks for the investor (Damasita & Widyarti, 2011).

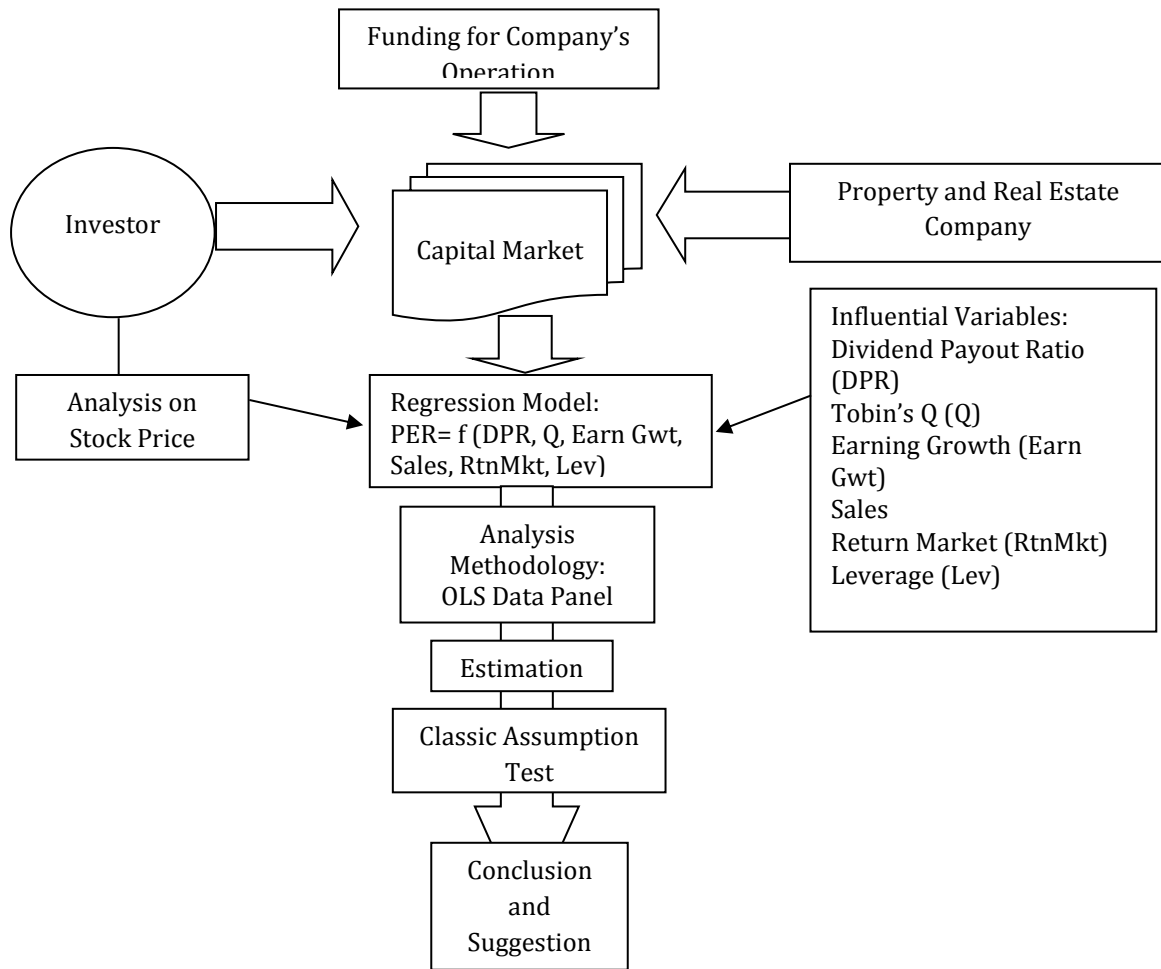
Size = the total of sal

### 3. Method

#### 3.1. Research's Framework

The conceptual framework from this research is described as follow:

Figure 2. Research's Flowchart and Framework



Source: Aribawa (2006) and re-developed by Amalia (2017)

#### 3.2. Data

The data used in this research is taken from financial ratio from companies listed in Indonesian Stock Exchange in 2011-2018, is obtained the total sample amounts 20 company sources from Indonesian Stock Exchange and Bloomberg with the variable used is:

- a. Exogenous Variables in this research are Sales, Dividend Payout Ratio, Market Return, Leverage, Tobin's Q and the growth of net profit per share.
- b. Endogeneous Variable in this research is Price Earning Ratio (PER).

The detail of companies/issuers that become sample in this research is explained below:

**Tabel 1.** The issuers/companies of property sector listed in Indonesian Stock Exchange as research sample

No	Code	Issuers/Companies Name
1	APLN	Agung Podomoro Land Tbk
2	ASRI	Alam Sutera Reality Tbk
3	BEST	Bekasi Fajar Industrial Estate Tbk
4	BSDE	Bumi Serpong Damai Tbk
5	CTRA	Ciputra Development Tbk
6	DART	Duta Anggada Realty Tbk
7	DILD	Intiland Development Tbk
8	DUTI	Duta Pertiwi Tbk
9	EMDE	Megapolitan Development Tbk
10	JRPT	Jaya Real Property Tbk
11	KIJA	Kawasan Industri Jababeka Tbk
12	MKPI	Metropolitan Kentjana Tbk
13	MTLA	Metropolitan Land Tbk
14	MDLN	Modernland Realty Tbk
15	PWON	Pakuwon Jati Tbk
16	GPRA	Perdana Gapura Prima Tbk
17	PLIN	Plaza Indonesua Realty Tbk
18	PUDP	Pudjiati Prestige Tbk
19	BKSL	Sentul City Tbk
20	SMRA	Summarecon Agung Tbk

Source: [www.sahamok.com](http://www.sahamok.com)

### 3.3. Method Analysis

The panel data regression model in this research is described as follow (Afza dan Tahir, 2012):

$$(PE)_{it} = \alpha + \beta_1 DP_{it} + \beta_2 Q_{it} + \beta_3 LEV_{it} + \beta_4 MktRtrn_{it} + \beta_5 EGrowth_{it} + \beta_6 SIZE_{it} + \varepsilon$$

Where,

PER : Ln ( Price Earning Ratio)

DP : Ln ( Dividend Payout)

Q : Tobin's Q

LEV : Ln ( Leverage)

MktRtn : Market Return

Egrowth : Earning Growth

Size : Ln (Sales)

$\varepsilon$  : disturbance error

The analysis method used in this research is pooled least square estimation. The steps in analyzing are including:

1. Determination in model estimation;
2. Assumption testing and model suitability;
3. Interpretation.

## 4. Result and Discussion

### 4.1. Descriptive Analysis

Tabel 2

Sample: 2011-2018							
	PER	DPR	Tobin's Q	Leverage	Mrkt.Return	Earn.Growth	Size
Mean	2.586241	1.877492	1.012660	2.707133	0.126171	0.482940	7.287367
Median	2.567941	2.316485	0.826888	3.097921	0.000619	0.191683	7.405044
Maximum	5.521461	5.919159	4.898183	4.045636	2.975641	10.83077	9.257024
Minimum	0.000000	0.000000	0.000000	-3.785390	-1.000000	-0.978333	4.437992
Std. Dev.	0.910096	1.513442	0.755446	1.147714	0.681722	1.584882	1.096848
Skewness	-0.137372	-0.046386	2.144722	-2.393049	1.232026	4.271354	-0.67856
Kurtosis	4.869468	1.859156	8.868921	10.43134	6.450479	24.32449	3.073855
Jarque-Bera	23.80263	8.734213	352.2905	520.8772	119.8490	3518.079	12.31486
Probability	0.000007	0.012688	0.000000	0.000000	0.000000	0.000000	0.002118
Sum	413.7986	300.3987	162.0257	433.1413	20.18739	77.27036	1165.979
Sum Sq. Dev.	131.6957	364.1908	90.74098	209.4425	73.89451	399.3842	191.2890
Observations	160	160	160	160	160	160	160

#### a. Price earning ratio (PER)

The Mean value for PER variable which transforms to the  $\ln(\text{PER})$  indicates that investor has willingness to pay in the level 2.58% for each change of 1 rupiah from company's net profit. The median value amounts 2.56% describe investors' belief to invest in the property and Real Estate sector.

#### b. Dividend Payout

Dividend Payout which is defined as ratio from dividend per share with earning per share (has mean value amounts 1.87 with the median value is 2.32).

#### c. Tobin's Q

Tobin's Q variable has mean value amounts 1.01 with median value is 0.82 in the property and Real Estate Company found in this research. The data shows that this variable has range value

in 0.00 up to 4.89.

**d. Leverage**

Leverage variable has mean value amounts 2.70 and the median value is 3.09 in the property and Real Estate Company found in this research.

**e. Market Return**

Market return variable has average value and median value based on research’s sample which are 0.12 and 0.0006 respectively.

**f. Earning Growth**

Earning growth variable has range value from 0.97 up to 0.97 and the highest value is 10.83. Meanwhile, the average value and the median value are 0.49 and 0.19, respectively.

**g. Size**

Size variable is in (sales) value which has range from 4.43 up to 9.25. Meanwhile, the average value and median value are 7.28 and 7.41 respectively.

**4.2. Estimation Result**

The results obtained from estimation method can be summarized in table 3 below. Based on Chow and Hausman test, it is found that data panel regression model which suitable in looking into Price Earning Ratio in the Property and Real Estate Company listed in Indonesian Exchange Stock is fixed effect model and also by taking account into classical assumption testing result in the common effect model step.

**Tabel 3.** Fixed Effect Model Estimation (Dependent Variable: PER)

Sample: 2011 2018

Periods included: 8

Cross-sections included: 20

Total panel (balanced) observations: 160

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.889081	1.094238	7.209658	0.0000*)
Ln DPR	-0.068877	0.042145	-1.634264	0.1046
Q	0.907427	0.098117	9.248458	0.0000*)
Ln <i>Leverage</i>	0.264789	0.099752	2.654476	0.0089*)
<i>Market Return</i>	-0.217134	0.083098	-2.612999	0.0100*)
<i>Earn.Growth</i>	-0.124042	0.034060	-3.641892	0.0004*)
Ln <i>Size</i>	-0.922412	0.156272	-5.902592	0.0000*)
R-squared	0.587707			
Adjusted R-squared	0.510787			



F-statistic	7.640478
Prob(F-statistic)	0.000000

\*) Significance in the level  $\alpha = 1\%$ ,  $5\%$ , and  $10\%$

**Source:** Processed data

The error level used in this research is  $5\%$  and  $10\%$ , thus the results' analysis in table 3 above can be explained as follow:

- a. Dividend Payout Variable is insignificance in the level of believe is  $95\%$  ( $\alpha = 5\%$ ) with the coefficient is  $0,017068$  and p-value is greater than  $5\%$ .
- b. For the variable Q which is a ratio from total market value of firm toward total asset, has provided positive significance with the coefficient is  $0,90$ . It can be said further that company's stock with the growth of Q value is  $1\%$  will provide great PER as well (the average is about  $0.907\%$ ). The value of Tobin's Q is less than 1 and its value market show that it is undervalued.
- c. Leverage variable has provided significance influences toward the movement of PER value in Property and Real Estate Company, in which the coefficient is  $0.265$  and the p-value is less than  $\alpha=5\%$ . It indicates that there is leverage increasing amounts  $1\%$ , that will lead into the growth of PER in issuers, Property and Real Estate Company amounts  $0.265\%$ .
- d. Market return variable has negative value and has provided significance influence toward PER value movement in Property and Real Estate sector, in which the coefficient is  $-0.217$  and has p-value less than  $\alpha=5\%$ .
- e. The earning growth has provided significance and negative influence with the coefficient  $-0.124$ . It means that company's stock of Property and Real Estate Company with the net profit growth value is greater than  $1\%$  and will be decreasing in the PER value change amounts less than  $0.12\%$ .
- f. Size variable has negative value and provide significance influence toward the movement of PER value in Property and Real Estate sector, in which the coefficient is  $-0.92$  and the p-value is less than  $\alpha= 5\%$  (the change of size amounts  $1\%$  will be impacted on the decreasing of PER value amounts  $0.92$ ).

#### 4.3. The Result of Best Model Testing

As stated in the estimation result, fixed effect model is chosen by taking account into p-value in Chow test and Haussman test, in which the  $H_0$  condition is rejected in Chow test, while Haussman test is  $\alpha= 5\%$ . Chow and Haussman Test can be seen below:

**a. Chow Test**

Effects Test	Statistic	d.f.	Prob.
Cross-section F	5846604	(19,134)	0.0000
Cross-section Chi-square	96.602761	19	0.0000

**b. Haussman Test**

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	42.687411	6	0.0000

Source: Processed data

**4.4. Determination Coefficient (R<sup>2</sup>)**

Determination coefficient can be defined as a measurement to see the ability of all independent variable in explaining variant from the dependent variable. Thus, based on the explanation above, it can be concluded that the importance of information which entering to the market will have an impact on the dynamical stock's market development of property and Real Estate Company. The change and movement from one or several company's performance variable will give impact on the PER value. The movement of company's performance variable listed such as company's financial report can provide advantageous for market participants, including:

1. The emergence of trust issue to the investors from company that will impact on the improvement of company's financial performance;
2. The investor then can consider the fundamental factor in composing the investment agenda with the learning ability about PER as basic stock's assessment.

**5. Conclusion**

The conclusions obtained in this research are described as follow:

- 1) All of independent variables in the model including Dividend Payout, Tobin's Q, Leverage, Market Return, Earning Growth, and Sales are simultaneously influencing the change of PER in Property and Real Estate Company.
- 2) Based on the result analysis obtained, there are 5 independent variables (Tobin's Q, Leverage, Market Return, Net Profit Growth, and Size) that are statistically significant impact on PER.
- 3) Panel data regression model that well-described the PER determinant behavior in the Property and Real Estate listed in Indonesian Stock Exchange in the range 2011-2018 is fixed effect model.

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