

# THE COMPANY'S PERFORMANCE WITH THE DU PONT SYSTEM APPROACH OF STOCKS RETURN AND ITS IMPLICATIONS ON COMPANY VALUE OF REAL ESTATE AND PROPERTY SECTOR LISTED IN IDX

Erika Augusta<sup>1</sup>, Nardi Sunardi<sup>2</sup>, Leonardus Saiman<sup>3</sup> and Abdul Kadim<sup>4</sup>

<sup>1</sup> Curtin University, Perth, Australia

<sup>2</sup> Lecturer of Universitas Pamulang, Indonesia

<sup>3</sup> Lecturer of The Kwik Kian Gie School of Business, Indonesia

<sup>4</sup> Lecturer of Universitas Persada Indonesia Y.A.I Jakarta, Indonesia

Correspondent Author: [e.augusta26@gmail.com](mailto:e.augusta26@gmail.com)

**Abstract:** The purpose of this study is to examine partial and simultaneous effect. Company Value consists of the internal factors of the company associated with the Total Asset Turnover (TATO), Net Profit Margin (NPM), Equity Multiplier Ratio (EMR), Return on Equity DuPond (RoE-DP) on Stocks Returns. The populations in this study are all companies incorporated in Real Estate and Property Companies listed in Indonesian Stock Exchange (IDX) in the period of 2011-2015. The sample in this study are 23 Real Estate and Property companies in Indonesia in accordance with the criteria specified in Regression Analysis, which was done based on panel data analysis results. This research concludes several things as follows: (1) Variables of Total Turnover Assets (TATO) has a positive and significant effect on Stock Returns, (2) Net Profit Margin (NPM) has positive and insignificant effect on Stock Returns, (3) Equity Multiplier Ratio (EMR) has positive and significant effect on Stock Returns, (4) Return On Equity DuPond (ROE-DP) has negative and significant effect on Stock Returns, (5) TATO, NPM, EMR, and ROE-DP simultaneously have a positive and significant effect on Stock Returns and able to explain Stock Returns of 0.520159 or 52.02 percent, (6) Total Turnover Assets (TATO) has negative and significant effect to Company's Value, (7) Net Profit Margin (NPM) has a positive effect and insignificant effect partially to Company Value, (8) Equity Multiplier Ratio (EMR) has negative and insignificant effect to Company Value, (9) Return On Equity DuPond (ROE-DP) has a positive and significant effect on Company Value, (10) Stock Returns (SR) has a positive and insignificant effect on Company Value, (11) TATO, NPM, EMR, ROE-DP and SR simultaneously have a positive and significant effect on Value of Real Estate and Property Company registered in IDX in 2011- 2015, and able to explain the variable of 0.882079 or 88.20.

**Keywords:** Financial Performance Level, Du Pond, RS, Tobin's Q

## A. INTRODUCTION

In the current era of globalization, the growing business sector has an impact on the improvement of new companies. This resulted in each company in the face of intense competition. An intense competition will encourage every company's management to maintain a healthier financial situation and improve its performance.

Every management of a company has an obligation to maintain its financial condition in the world of competition and encourage companies to be more effective in operation so that goals can be realized. An attempt to achieve the goals of a company required a strategy in managing its management and conduct performance appraisal through a series of company's

financial analysis. Some measurement techniques than can analyze the performance of a company's financial performance, one of them by using Du Pont System analysis. Du Pont System is a comprehensive measuring tool that includes the company's operations through its resources to generate net profit that combines the profitability ratios of Net Profit Margin (NPM) and the activity ratio of Total Assets Turnover (TATO).

Dupont system analysis provides an advantage to the company's financial performance assessment, particularly those that are directly related to operations and sales. Through Dupont System analysis, it can be known how far the effectiveness and efficiency of the company in using the assets and in creating the operational activities of the company. The higher the percentage of Return on Investment (ROI), the better the development of the company in utilizing its assets in generating profits.

ROI and ROE contained in profitability ratios can also be used to measure financial performance by using Du Pont System method. Du Pont System is an ROI generated through multiplication of profits and components of sales (profitability ratios) as well as the efficiency of total assets (ratios of activity) in generating such profits. Du Pont System can provide benefits to the company's financial performance assessment, because Du pont system can reflect the results of financial performance in the company as a whole.

## B. LITERATURE REVIEW

### 1. Company Value

The value of a firm is an investor's perception of the company is often associated with stock prices. High stock prices make the value of the company increased. The main purpose of the company according to the theory of the firm is to maximize the wealth or value of the firm. Maximizing the value of a firm is very important for a company, because by maximizing the value of the company it also means to maximize shareholder wealth that is the main goal of the company.

### 2. Stock Return

Return is the result obtained from investment. Return can be either the realized return that has occurred or the

expectation return that has not happened but is expected to occur in the future. Realized return represents the return that has occurred. It is calculated using historical data. Realized return is important because it is used as one of the performance gauges of the company. Realized return or historical return is also useful as a basis for determining the expected return and future risks.

## 3. Financial Performance

### (a) Definition of Financial Performance

- 1) Definition of "Performance can be interpreted as accomplishments achieved by the company in a certain period that reflects the level of the company soundness" (Winarni and Sugiyarso, 2005:111).
- 2) Financial Performance Objectives According to Munawir (2014: 31) is "the measurement of financial performance has several objectives, that are:
  - Knowing the level of liquidity
  - Knowing the level of profitability
  - Knowing the level of stability
  - Knowing the level of solvency

### (b) Assessment of Financial Performance

- Definition of "The assessment of financial performance is defined as a measure of the ability to control costs and achieve income targets undertaken by individuals or groups of people within the organization" (Hariadi, 2002:265).
- The Purpose of Financial Performance Assessment "is designed to provide a measure of the extent to which activities and outcomes are obtained by centering on three key dimensions, namely efficiency, quality and time" (Hansen and Mowen, 2006: 493).

### (c) Du Pont System

In a competitive business environment, organizations need a strong financial base to compete. Therefore, to be able to survive and grow in a competitive business environment, organizations need to use planning tools specifically designed to multiply the

financial performance of competitive business environments demanding organizations to innovate sustainable competitive (Mulyadi, 2009). Companies that want to stay in a competitive business environment are companies that are able to continue to innovate in all aspects of the company. There are several measuring or analysis tools that can be used in the assessment of the company's financial performance, including: (1) Market Value Added (MVA); (2) Economic Value Added (EVA); (3) Common Size Analysis; (4) Index Analysis; (5) Financial Ratio Analysis; (6) Financial Analysis of Dupont Systems; and (7) Basic Earnings Power Analysis (Husnan and Pudjiastuti, 2012).

The Approach to Financial Analysis of Dupont System is one of the most relevant financial performance measures that is used to look at the extent to which a company's effectiveness is in returning the investment made by a company or ROI (Return on Investment). Yanuarintyas in Lianto (2013), said that the calculation of Return on Investment (ROI) and Return Of Equity (ROE) can be done through Dupont System analysis, which is an analysis that combines the ratio of activity and profitability.

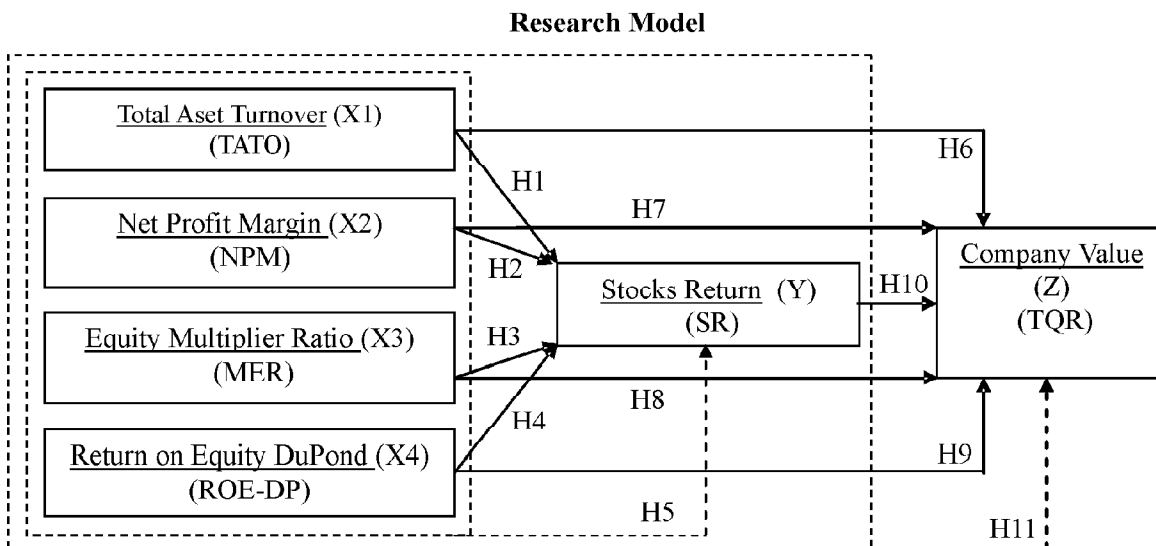
(d) Du Pont System Formula

Du Pont System Formula can be observed. Analysts can identify strengths and weaknesses as well as trace the causes of the problem of financial condition and overall company performance. If profit margin multiplied by total asset turnover, it will generate ROI (Return on Investment). If ROI is multiplied by Equity Multiplier, it will generate ROE (Return on Equity). The first three ratios reveal that the ROI (the profit generated from the overall investment in assets) is a product of net profit margins (profit generated from sales) and total asset turnover (the ability of firms to generate sales from their assets).

The remaining three ratios analysis shows how the ROE (returns / the overall rewards to shareholders, owners of the company) comes from ROI products and financial *leverage* (the proportion of debt in the capital structure). The use of this system will be able to evaluate changes in company performance, whether it can be an indicator of improvement or deterioration or a combination of both. Furthermore, evaluation can be focused on specific areas that contribute to changes "(Fraser and Ormiston, 2008:253).

$$\text{ROE Du Pont} = (\text{Net Profit Margin}) \times (\text{Total Asset Turnover}) \times (\text{Multiplier Equity})$$

$$= \frac{\text{Earning After Tax}}{\text{Total Sales}} \times \frac{\text{Total Sales}}{\text{Total Asset}} \times \frac{\text{Total Asset}}{\text{Total Equity}}$$



### Research Hypothesis

Hypothesis (H<sub>1</sub>) : The effect of Total Aset Turnover (TATO) on Stocks Returns.

Hypothesis (H<sub>2</sub>) : The effect of Net Profit Margin (NPM) on Stocks Returns.

Hypothesis (H<sub>3</sub>) : The effect of Equity Multiplier Ratio (EMR) on Stocks Returns.

Hypothesis (H<sub>4</sub>) : The effect of Return On Equity DuPond (ROE-DP) on Stocks Returns.

Hypothesis (H<sub>5</sub>) : The effect of TATO, NPM, EMR, and ROE-DP on Stocks Returns.

Hypothesis (H<sub>6</sub>) : The effect of Total Aset Turnover (TATO) on Company Value.

Hypothesis (H<sub>7</sub>) : The effect of Net Profit Margin (NPM) on Company Value.

Hypothesis (H<sub>8</sub>) : The effect of Equity Multiplier Ratio (EMR) on Company Value

Hypothesis (H<sub>9</sub>) : The effect of Return On Equity DuPond (ROE-DP) on Company Value.

Hypothesis (H<sub>10</sub>) : The effect of Stocks Returns on Company Value.

Hypothesis (H<sub>11</sub>) : The effect of TATO, NPM, EMR, and ROE-DP on Company Value.

### C. METHODOLOGY

This type of research uses a quantitative approach with each variable or between variables are based on quantitative measurement scale.

The population in this study is Real Estate Company and Property registered in Indonesian Stock Exchange (IDX) in the period of 2011-2015.

### Research Sample

<i>No.</i>	<i>Code</i>	<i>Real Estate &amp; Property Company</i>
1	APLN	PT. Agung Podomoro Land Tbk.
2	ASRI	PT. Alam Sutra Realty Tbk.
3	BAPA	PT. Bekasi Asri Pemula Tbk.
4	BSDE	PT Bumi Serpong Damai Tbk.
5	CTRA	PT. Ciputra Development Tbk.
6	CTRP	PT. Ciputra Property Tbk.
7	CTRS	PT. Ciputra Surya Tbk.
8	DART	PT. Duta Anggada Realty Tbk.
9	DILD	PT. Intiland Development Tbk.
10	DUTI	PT. Duta Pertiwi Tbk.
11	GMTD	PT. Gowa Makassar Tourism Dev. Tbk.
12	GPRA	PT. Perdana Gapura Prima Tbk.
13	JRPT	PT. Jaya Real Property Tbk.
14	KIJA	PT. Kawasan Ind. Jababeka Tbk.
15	LAMI	PT. Lamicitra Nusantara Tbk.
16	LPCK	PT. Lippo Cikarang Tbk.
17	LPKR	PT. Lippo Karawaci Tbk.
18	MDLN	PT. Modernland Realty Ltd. Tbk.
19	MKPI	PT. Metropolitan Kentjana Tbk.
20	MTLA	PT. Metropolitan Land Tbk.
21	PUDP	PT. Pudjadi Prestige Tbk.
22	PWON	PT. Pakuwon Jati Tbk.
23	SMRA	PT. Sumarecon Agung Tbk.

### Operationalization of Variable

Variable	Proxy	Measurement
Total Aset Turnover (X1)	TATO	$TATO = \frac{Sales}{Total\ Asset}$
Net Profit Margin (X2)	NPM	$NPM = \frac{EAT}{Total\ Sales}$
Equity Multiplier Ratio (X3)	EMR	$MER = \frac{Total\ Asset}{Total\ Equity}$
Return On Equity DuPond (X4)	ROE-DP	ROE Du Pond = TATO x NPM x EMR
Stocks Returns (Y)	SR	$SR = \frac{Stock\ Price - Stock\ Price^1}{Stock\ Price^1}$
Company's Value (Z)	TQR	$TQR = \frac{(CP \times TS) + TL}{TA}$

## D. RESULT AND DISCUSSION

### 1. Descriptive

#### Results

Factors that affect Company Value consist of internal factors of the company associated with the Total Aset Turnover (TATO), Net Profit Margin (NPM), Equity Multiplier Ratio (EMR) and Return on Equity DuPond (ROE-DP) on Stocks Returns.

A description of statistics factors that influence Company's Value considering internal factors, and external company and test implications on Company's Value of Real Estate Property In Indonesia at the period of 2011 – 2015 of each variable used in the table, shown below:

	TQR	TATO	NPM	EMR	ROE-DP	SR
Mean	0.705729	0.255383	7.607589	1.952000	0.492183	0.336609
Median	0.564944	0.247700	6.800722	1.900000	0.470000	0.170000
Maximum	2.828687	0.442000	25.64510	3.850000	1.099000	7.560000
Minimum	0.140749	0.101900	0.685455	1.160000	0.122000	-0.670000
Std. Dev.	0.442175	0.067958	4.220403	0.478063	0.195598	0.784493
Skewness	1.951726	0.412034	1.581639	1.001686	0.835072	6.954137
Kurtosis	8.032842	2.863513	6.679001	4.547241	3.722791	63.86946
Jarque-Bera	194.3808	3.343223	112.8024	30.70239	15.86907	18680.46
Probability	0.000000	0.187944	0.000000	0.000000	0.000358	0.000000
Sum	81.15886	29.36910	874.8727	224.4800	56.60100	38.71000
Sum Sq. Dev.	22.28916	0.526477	2030.545	26.05404	4.361459	70.15898
Observations	115	115	115	115	115	115
Cross sections	23	23	23	23	23	23

## 2. Determinant of Stocks Return

Based on testing of paired data regression model against the third panel, the conclusions are as follows:

No	Methods	Testing	Result
1.	Chow-Test	common effect vs fixed effect	fixed effect
2.	Lanfrage Multiplier (LM-test)	common effect vs random effect	random effect
3.	Haustman Test	fixed effect vs random effect	fixed effect

Estimation of Partial Panel Data Regression Model (*T Test*) and Simultaneous (*Test F*) Fixed Effects Model with White-Test.) As follows:

Dependent Variable: SR?

Method: Pooled EGLS (Cross-section weights)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.907595	0.506618	-3.765350	0.0003
TATO?	5.641410	2.208011	2.554974	0.0123
NPM?	0.024236	0.013376	1.811892	0.0734
EMR?	1.191388	0.236057	5.047046	0.0000
ROE-DP?	-3.467179	1.105062	-3.137544	0.0023
Fixed Effects (Cross)				
_APLN—C	-0.132702			
_ASRI—C	-0.555314			
_BAPA—C	0.120656			
_BSDE—C	-0.073234			
_CTRA—C	-0.765078			
_CTRP—C	0.051214			
_CTRS—C	0.136722			
_DART—C	0.072840			
_DILD—C	-0.056559			
_DUTI—C	0.227910			
_GMTD—C	1.048199			
_GPRA—C	0.101229			
_JRPT—C	-0.181128			
_KJA—C	-0.027587			
_LAMI—C	-0.276940			
_LPCK—C	0.200485			
_LPKR—C	-0.115098			
_MDLN—C	0.080958			
_MKPI—C	0.158276			
_MTLA—C	0.137498			
_PUDP—C	-0.054826			
_PWON—C	-0.123912			
_SMRA—C	0.026391			

<i>Weighted Statistics</i>			
R-squared	0.520159	Mean dependent var	0.740055
Adjusted R-squared	0.378388	S.D. dependent var	1.120900
S.E. of regression	0.752106	Sum squared resid	49.77842
F-statistic	3.669001	Durbin-Watson stat	3.003058
Prob(F-statistic)	0.000003		

Estimation Regression Data Panel Result for Fixed Effect as follow:

<i>Model</i>	<i>Adjusted R<sup>2</sup></i>	<i>Prob. (F<sup>2</sup>-stat.) <math>\alpha - 0,05</math></i>	<i>Probability <math>\alpha - 0,05</math></i>	
Fixed Effect	0.378388	0.0000	TATO	Significant
			NPM	Not Significant
			EMR	Significant
			ROE-DP	Significant

### 3. Implication on Company's Value

Based on testing of paired data regression model against the third panel, the conclusions are as follows:

<i>No</i>	<i>Methods</i>	<i>Testing</i>	<i>Result</i>
1.	Chow-Test	common effect vs fixed effect	fixed effect
2.	Langrage Multiplier (LM-test)	common effect vs random effect	random effect
3.	Haustman Test	fixed effect vs random effect	fixed effect

Estimation of Partial Panel Data Regression Model (*T Test*) and Simultaneous (*Test F*) *Fixed Effects Model* with *White-Test*. As follows:

Dependent Variable: TQR?

Method: Pooled EGLS (Cross-section weights)

<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-Statistic</i>	<i>Prob.</i>
C	0.841397	0.235123	3.578540	0.0006
TATO?	-2.717494	0.953330	-2.850529	0.0054
NPM?	0.005104	0.005826	0.876098	0.3834
EMR?	-0.131702	0.129850	-1.014265	0.3133
ROE-DP?	1.556659	0.506566	3.072964	0.0028
SR?	0.030981	0.021840	1.418518	0.1596
Fixed Effects (Cross)				
_APLN—C	-0.135849			
_ASRI—C	0.775995			
_BAPA—C	-0.200638			
_BSDE—C	0.142281			
_CTRA—C	0.324636			
_CTRP—C	-0.276307			
_CTRS—C	-0.230565			

_DART—C	-0.138081
_DILD—C	0.086379
_DUTI—C	-0.343694
_GMTD—C	-0.399270
_GPRA—C	-0.219933
_JRPT—C	-0.195748
_KIJA—C	0.244979
_LAMI—C	-0.229029
_LPCK—C	0.776538
_LPKR—C	0.382005
_MDLN—C	0.205373
_MKPI—C	-0.271214
_MTLA—C	-0.050955
_PUDP—C	-0.263449
_PWON—C	0.123690
_SMRA—C	-0.107144

*Weighted Statistics*

R-squared	0.882079	Mean dependent var	1.187969
Adjusted R-squared	0.845483	S.D. dependent var	0.687131
S.E. of regression	0.216513	Sum squared resid	4.078372
F-statistic	24.10314	Durbin-Watson stat	1.800745
Prob(F-statistic)	0.000000		

Estimation Regression Data Panel Result for Fixed Effect as follow:

<i>Model</i>	<i>Adjusted R<sup>2</sup></i>	<i>Prob. (F-stat.) <math>\alpha = 0,05</math></i>	<i>Probability <math>\alpha = 0,05</math></i>
		TATO	Significant
		NPM	Not Significant
		EMR	Not Significant
		ROE-DP	Significant
		SR	Not Significant

**4. Determinant of Stocks Returns and Its Implications On Company’s Value: Hybrid Analysis**

The table below describes the combined two models of regression data panel. The first model explains determinants Stock Returns, Total Aset Turnover (TATO), Net Profit Margin (NPM), Equity Multiplier Ratio (EMR), Return On Equity DuPond (ROE-DP)

simultaneously has significant effect to Stock Returns. The second model describes the Implications on Company’s Value of Real Estate and Property Company in Indonesia with the result of TATO, NPM, EMR, ROE-DP, and SR simultaneously affect significantly to the on Company’s Value of Real Estate and Property Company in Indonesia at the period of 2011 – 2015 as follows:



**Determinant of Stock Returns and Its Implications for Company's Value**

Independent Variable	Model 1 Determinant of Stock Returns			Model 2 Implications on Company's Value		
	Regression Coefficient	Prob.	Sign./Not Sign.	Regression Coefficient	Prob.	Sign./Not Sign.
TATO	5.641410	0.0123	Significant	-2.717494	0.0054	Significant.
NPM	0.024236	0.0734	Not Sign.	0.005104	0.3834	Not Sign
EMR	1.191388	0.0000	Significant	-0.131702	0.3133	Not Sign
ROE-DP	-3.467179	0.0023	Significant	1.556659	0.0028	Significant.
SR	-	-	-	0.030981	0.1596	Not Sign

**E. CONCLUSION**

- Total Turnover Assets* (TATO) has a **positive and significant** effect partially on Stock Returns. Thus, TATO variables affect Stock Returns of Real Estate and Property Companies registered in IDX in 2011-2015 periods.
- Net Profit Margin* (NPM) has a **positive and insignificant** effect partially on Stock Returns. Thus, NPM variables affect Stock Returns of Real Estate and Property Companies registered in IDX in 2011-2015 periods.
- Equity Multiplier Ratio* (EMR) is partially has **positive and significant** effect on Stock Returns. Thus, EMR variable affect Stock Returns of Real Estate and Property Companies registered in IDX in the period of 2011-2015.
- Return on Equity DuPont* (ROE-DP) partially has a **negative and significant** effect on *Stock Returns*. Thus, ROE-DP variable does not affect Stock Returns of Real Estate and Property Companies registered in IDX in 2011-2015 period.
- TATO, NPM, EMR, and ROE-DP simultaneously have a **positive and significant** effect on *Stock Returns* of Real Estate and Property Companies registered in IDX in 2012-2016 periods, and able to explain *Stock Returns* variable of 0.520159 or 52.02 percent while the remaining 47.98% (100% - 52.02%) is influenced by other variables that are not covered in this research. The dominant variable or the highest dominance of the *Stock Returns* variable is TATO of 5.641410. The non dominant variable or the lowest dominance of the *Stock Returns* variable is NPM of 0.024236. Companies that have the highest rate of change of sensitivity simultaneously or partially to the Stock Returns are PT. Gowa Makassar Tourism Dev. Tbk. (GMTD) with a constant value of 1.048199. The Company that has the smallest change rate for Stock Returns is PT. Ciputra Development Tbk. (CTRA) with a constant value of -0.765078.
- Total Turnover Assets* (TATO) has a **negative and significant** effect partially on Corporate Value. Thus, TATO variable affect the Real Estate and Property Companies' Value registered in IDX in the period of 2011-2015.
- Net Profit Margin* (NPM) has a **positive and insignificant** partial effect on Corporate Value. Thus, NPM variables affect the Value of Real Estate and Property Companies registered in IDX in the period of 2011-2015.
- Equity Multiplier Ratio* (EMR) has a **negative and insignificant** effect partially on Company Value. Thus, the EMR variable affects the Value of Real Estate and Property Companies registered in IDX in the period of 2011-2015.
- Return on Equity DuPont* (ROE-DP) has a **positive and significant** effect partially on Company Value. Thus, the ROE-DP variable affect the Real Estate and Property Companies' Value registered in IDX in the period of 2011-2015.
- Stock Returns* (SR) has a **positive and insignificant** effect partially on Corporate Value, thus SR variable does not affect the Value of Real Estate and Property Companies registered in IDX in 2011-2015 period.

11. *TATO, NPM, EMR, ROE-DP and SR* simultaneously have a **positive and significant** effect on Value of Real Estate and Property Companies registered in IDX in the period of 2011-2015, and able to explain variable of 0.882079 or 88.20 percent while the remaining 11.80% (100% - 88.20%) is influenced by other variables that are not covered in this research. The dominant variable or the highest dominance of the company value variable is *TATO* of 2.717494. The non dominant variable or the lowest dominance of the firm value variable is *NPM* of 0.005104. Companies that have the largest average sensitivity change simultaneously or partially to the value of the company is PT. Alam Sutra Realty Tbk. (ASRI) of 0.775995, and the Company which has the smallest change of sensitivity to the value of the company is PT. Metropolitan Kentjana Tbk. (MKPI) with a constant value of -0.271214.

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