Analysis The Effect of Fundamental Financial Ratio of ROA, DER, CR, TATO And PBV on Stock Return of Plantation Sub Sector Industry at IDX 2014 – 2017

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Abstract:- The stock return of plantation sub sector at IDX during 2014 – 2017 has fluctuative and downward trends with lower stock return and often give negative stock return. This study objective was to analyze the influences of fundamental ratio of ROA, DER, CR, TATO and PBV on stock return of plantation companies that listed at Indonesian Stock Exchange in the period of 2014 – 2017. The sampling method used was purposive sampling. From of 16 Population of plantation firm, 13 firm met the criteria to be the sample. The method of analysis used in this study is regression with panel data using Fixed Effect Model. The result show that Debt to Equity Ratio ( DER ) has a negative effect on the stock return while Price Book to Value (PBV) has positive effect on stock return. Return on Asset ( ROA ), Current Ratio ( CR ) and Total Asset Turn Over (TATO ) do not have any effect on stock return of plantation companies in agricultural sector listed at IDX in the period of 2014 – 2017.

Keywords:- Fundamental Ratio, Stock return, Return on Asset, ROA, Debt Equity to Ratio, DER, Current Ratio, CR, Total asset Turn Over, TATO, Price book to valued, PBV.

I. INTRODUCTION

Agriculture sector is the important sector of the economic development in Indonesia. It listed in strategic planning og agriculture ministry.

The agriculture industry give contribution 10.33 % Gross Domestic Bruto (GDP) to total Indonesian Gross Domestic Bruto. (http://epublikasi.pertanian.go.id/arsip-perstatistikan/161-statistik/statistik-makro/581-buku-statistik-makro-2018). Mean while the composite price index (CSPI) or IHSG on the period of 2014 – 2017 has fluctuative and downward trends. At the end of 2014 CSPI was closing at the level of 2.351 and at the level of 1.661 at the end of 2017, as seen on the following figure 1:

Figure 1: CSPI (IHSG) of Agriculture Industry 2014 – 2017
Source : Yahoo finance (2018)
The decreasing of CSPI might be caused by the domination of the price of plantation sub sector which are from 21 company listed at Agriculture Sector at IDX on the period of 2014 - 2017, 16 company are plantation sub sector while 5 company are 1 company from crop subsector, 3 company from fishery sub sector and 1 company from other sub sector. The stock price is also affect on stock return at Agriculture Sector. It can be seen on the following figure 2:

The movement of stock return at agriculture industry has fluctuative and downward trend and the plantation sub sector which dominates the Agriculture Industry has very small stock return. The average stock return of plantation sub sector in the period of 2014 – 2017 is 0.075 %.

During 2014 – 2017 The highest stock return of plantation sub sector is 2.5 % at 2016 and the lowest is – 2.5% at 2015. The fluctuation of plantation sub sector can be seen on the following figure 3:

According to Weston and Copeland (1997) at least there are 3 or 4 factor that affect on securities. Those factors are affected by the Fundamental performance of the company. Base on the previous research some factors that affect on return stock is Fundamental Performance of the company which can be measured by the financial ratios.

Profitability ratio can be measured by return on asset (ROA). ROA give measurement of profitability in effectiveness.
of management in using total asset to get income. Base on the research of Retno and Robiatul Awal (2015) ROA has positive effect on stock return. While the research of Arista and Astohar (2012) ROA has negative effect on stock return and The research of Kurnia, Ade et al. (2015) does not affect on stock return.

Leverage / Solvability Ratio can be measured by debt equity to ratio (DER). According to Pudjiastutis (2012), the higher debt equity ratio give negative signal to the investor because it add the risk and cost to the company and the investor too. Base on the research of fifi and Afriyani (2016) DER has negative effect on stock return while the research of Afriyani (2018) DER has positive effect on stock return and the research of Gilang and I Ketut (2015) DER does not affect on stock return.

Liquidity ratio can be measured by Current ratio. According to signaling theory Current ratio and stock return has positive relation, which the increasing of CR causes the increasing of stock return. Base on the research of Sekar and Prasetiono (2016) CR does not affect on stock return while the research of Borhan and Zulkifli (2017) CR has positive effect on stock return and the research of Nayeem and Abdullah (2015) CR has negative effect on stock return.

Effectivity ratio can be measured by total asset turn over (TATO). Base on the research of Fifi and Afriyani, TATO has positive effect on stock return while the research of Sumanto (2016) TATO has negative effect on stock return and the research of Vinola and Kiki (2016), TATO does not affect on stock return.

Market Ratio can be measured by price boo to value (PBV). PBV is one of the ratio that is concerned by the investor in doing investment. The higher the ratio, the higher the market is willing to pay and it indicates market trust the company prospect. Base on the research of Safdar et al. (2013), PBV has positive effect on stock return while the research of Sekar and Prasetiono (2016) has negative effect on stock return and the research of Rosemery and Farida (2015) does not affect on stock return.

Base on those facts above, the author is interested to analysis of the affect of Fundamental Financial Ratio of ROA, DER, CR, TATO and PBV of Plantation sub sector at IDX 2014 – 2017.

II. LITERATURE REVIEW

A. Signaling Theory

Signaling is a behaviour of corporate management in giving direction to investor related to strategies and views of management on future prospects (Brigham and Houston 2011). Signaling theory explain why the corporate management should give the right information to stake holder, investor and people outside of the company. By giving the accountable and transparent information will avoid and reduce asymmetry information. Lack of information from company to outsider can cause them to protect theirselves by giving lower price for the stock. A good signal can be captured by the market and will increase the stock price.

B. Fundamental Analysis

According to Investopedia Fundamental Analyst is a method of measuring a stock intrinsic value by examining related economic and financial factors. Fundamental analyses study anything than can affect the securities value, from macro economic such as the state of economic and Industry condition to micro economic factors such as the effectiveness of the company’s management. This type of analysis examine the financial ratio of a business to determine its health.

C. Return Stock

Return stock is a measurement of financial performance of investment (Brigham et al., 2011). Return stock is one of a factors that motivates to invest and it is also a reward for the investor to invest their money and will get the return as the result for their courage to bear the risk of their investment (Tandeillin 2010).

D. Return on Asset (ROA)

Return on asset (ROA) is one of the profitability ratio that measured capacity of the company to produce profitability. ROA measured the effectiveness of a company in using the firm asset to generate operating profit.

E. Debt Equity to Ratio (DER)

Debt Equity to Ratio (DER) is financial leverage ratio. DER show the extend to which the firm is financing by debt. DER is computed by simply dividing the total debt of the firm by share holder equity (Horne and Maskowich, 2008).

F. Current Ratio (CR)

Current Asset is one of the most general and frequently used of liquidity ratio. It shows a firm ability to cover its current liabilities with its current asset (Horne and Maskowich, 2008). The higher the current ratio, the greater the ability of the firm to pay their bills. Current Ratio should more than 1, it means current asset must be higher than current liabilities (Harahap, 2002). The Lower of CR show that there is a problem in liquidity but the higher CR show there are un use firm asset that reduce firm operating.

G. Total Asset Turn Over

Total Asset Turn Over is a financial ratio that indicates the effectiveness with wich a firm management uses its asset to generate sales (David, 2003). A relatively high ratio tends to reflect intensive use of asset, while a low ratio indicates the opposites.

H. Price book to value (PBV)

Price Book to Value (PBV) is one of market ratio that show the relationship between the stock price and the book value of each share. PBV is one of the ratio that is concerned by the investor in doing investment. The higher the ratio, the higher the market is willing to pay and it indicates market trust the company prospect.
I. Framework and Hypothesis

Based on the theory and the previous research, the author developed the following framework (Figure 1):

- Return on Asset (ROA)
- Debt to Equity Ratio (DER)
- Current Ratio (CR)
- Total Asset Turn Over (TATO)
- Price Book to Value (PBV)

**Fig 3:- Frame Work**

Base on the framework above, the hypothesis on this study were as follow:

H1. Return On Asset (ROA) affect on stock return
H2. Debt Equity Ratio (DER) affect on Stock Return
H3. Current Ratio (CR) affect on Stock Return
H4. Total Asset Turn Over (TATO) affect on Stock Return
H5. Price Book to Value (PBV) affect on Stock Return

III. RESEARCH METHODOLOGY

This study is quantitative research using stock return as the dependent variable and ROA, DER, CR, TATO, and PBV as independent variable.

**A. Population And Sample**

This study uses sample companies from the plantation subsector at the Indonesian Stock Exchange period 2014 – 2017. This study uses purposive sampling based on several criteria and requirements. From 16 companies listed in the plantation subsector at Indonesia Exchange 2014 – 2017, 13 meet the selected criteria and requirements.

<table>
<thead>
<tr>
<th>No</th>
<th>Company</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PT. Astra Agro Lestari</td>
<td>AALI</td>
</tr>
<tr>
<td>2</td>
<td>PT Austindo Nusantara Jaya</td>
<td>ANJT</td>
</tr>
<tr>
<td>3</td>
<td>PT Eagle High Plantation Tbk (dh BW plantation Tbk)</td>
<td>BWPT</td>
</tr>
<tr>
<td>4</td>
<td>PT Golden Plantation Tbk</td>
<td>GOLL</td>
</tr>
<tr>
<td>5</td>
<td>PT Gozko Plantation</td>
<td>GZCO</td>
</tr>
<tr>
<td>6</td>
<td>PT Jaya Agro Wattie Tbk</td>
<td>JAWA</td>
</tr>
<tr>
<td>7</td>
<td>PT PP London Sumatra Tbk</td>
<td>LSIP</td>
</tr>
<tr>
<td>8</td>
<td>PT Providebt Agro Tbk</td>
<td>PALM</td>
</tr>
<tr>
<td>9</td>
<td>PT Sampoerna Agro Tbk</td>
<td>SGRO</td>
</tr>
<tr>
<td>10</td>
<td>PT Salim Ivomas pratama Tbk</td>
<td>SIMP</td>
</tr>
<tr>
<td>11</td>
<td>PT Sinar Mas Agro Resources and Technology</td>
<td>SMAR</td>
</tr>
<tr>
<td>12</td>
<td>PT sawit Sumber Mas Sarana Tbk</td>
<td>SSMS</td>
</tr>
<tr>
<td>13</td>
<td>PT Tunas Baru Lampung Tbk</td>
<td>TBLA</td>
</tr>
</tbody>
</table>

Table 1: - Research Sample

**B. Collecting Data Method**
This study is using secondary data that listed at Indonesia Stock Exchange, Yahoo Finance and Annual Financial report.

C. Analysis Data Method

This study examines 5 hypothesis using regression analyst Panel Data with E views 9. From 3 model regression panel data: Common Effect Model, Fixed Effect Model and Random Effect model, to estimate right regression panel data model is using 2 test: Chow test and Hausman test while Multi Lagrange test do not need to conduct because with this 2 test above has already estimated the right model for this study.

IV. RESULT AND DISCUSSION

A. Classical Assumption Test

A good Regression Panel data model has to fulfill Best Linier Unbiased Estimator (BLUE) criteria by conducting Classical assumption test. The Classical assumption test for this study are below:

1. Heteroscedasticity

The result of the heteroscedasticity can be seen on the following table:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient Variance</th>
<th>Uncentered VIF</th>
<th>Centered VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>5.060164</td>
<td>7.226595</td>
<td>NA</td>
</tr>
<tr>
<td>ROA</td>
<td>1.344532</td>
<td>1.104574</td>
<td>1.015422</td>
</tr>
<tr>
<td>DER</td>
<td>5.157106</td>
<td>4.274771</td>
<td>1.030296</td>
</tr>
<tr>
<td>Log CR</td>
<td>0.497628</td>
<td>1.433678</td>
<td>1.370731</td>
</tr>
<tr>
<td>TATO</td>
<td>0.000219</td>
<td>2.882367</td>
<td>1.078503</td>
</tr>
<tr>
<td>PBV</td>
<td>1.853415</td>
<td>3.346770</td>
<td>1.449676</td>
</tr>
</tbody>
</table>

Table 2: - Heteroscedasticity Result
Source : Analyzed Data Eviews 9 (2018)

From the table 2 above, the value of Obs*R-squared > α (0.3758 > 0.5). If Obs*R-squared > α it means that there is no heteroscedasticity.

2. Multicollinearity

The result of the multicollinearity can be seen on the following table:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient Variance</th>
<th>Uncentered VIF</th>
<th>Centered VIF</th>
</tr>
</thead>
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<td>5.060164</td>
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<td>DER</td>
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<td>4.274771</td>
<td>1.030296</td>
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<tr>
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</tr>
<tr>
<td>PBV</td>
<td>1.853415</td>
<td>3.346770</td>
<td>1.449676</td>
</tr>
</tbody>
</table>

Table 3: - Multicollinearity Result
Source : Analyzed Data Eviews 9 (2018)

From the table 3, all the value of variance inflating factor (VIF) are less than 10, IF VIF < 10 indicate that there is no multicollinearity in these data.

A. Regression Panel Data Model

To get the best model for this analysis regression panel data has to conduct 3 model regression panel data, those are: Common Effect, Fixed Effect and Random Effect model. The result of Panel Data Model test can be seen on the following table:
Variable | Common Effect | Fixed Effect | Random Effect
--- | --- | --- | ---
C | 15.990455 | 5.0608086 | 17.70001
 | 0.5269 | 0.0326 | 0.4517
ROA | 0.048208 | 0.399592 | 0.031569
 | 0.9218 | 0.5020 | 0.9453
DER | 3.535509 | -2.398762 | 3.101597
 | 0.1174 | 0.0131 | 0.1649
log CR | 0.006256 | 0.011842 | 0.005055
 | 0.8058 | 0.6734 | 0.8316
TATO | 3.924889 | 1.248496 | 5.103534
 | 0.1867 | 0.3339 | 0.1094
PBV | 7.735780 | 1.348496 | 8.375400
 | 0.0063 | 0.0018 | 0.0024
R – Square | 0.203552 | 0.538683 | 0.221996
 | 0.110942 | 0.505702 | 0.219252

Table 4: - Regression Panel Data Model test
Source: Analyzed Data Eviews 9 (2018)

To estimate the appropriate model is tested by Chow test and Hausman test. Based on those 2 tests it was determined to use Fixed Effect Model as the appropriated model in this study so it does not need to conduct Lagrange Multiplier test any more.

1. **Chow Test**

<table>
<thead>
<tr>
<th>Redundant Fixed Effects Tests</th>
<th>Equation: Untitled</th>
<th>Test cross-section fixed effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effects Test</td>
<td>Statistic</td>
<td>d.f.</td>
</tr>
<tr>
<td>Cross-section F</td>
<td>7.853116</td>
<td>12.28</td>
</tr>
<tr>
<td>Cross-section Chi-square</td>
<td>36.742567</td>
<td>12</td>
</tr>
</tbody>
</table>

Table 5: - Chow Test Result
Source: Analyzed Data Eviews 9 (2018)

If the probability < α (with the probability 95% α = 0.05 ) indicated Fixed Effect Model is the appropriated model and If the probability > α (with the probability 95% α = 0.05 ) indicated Common Effect Model is the appropriated model. Based on table 5, the probability is 0.0009 < 0.05 indicate Fixed Effect Model is the appropriate model.

2. **Hausman Test**

<table>
<thead>
<tr>
<th>Correlated Random Effects - Hausman Test</th>
<th>Equation: Untitled</th>
<th>Test cross-section random effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Summary</td>
<td>Chi-Sq. Statistic</td>
<td>Chi-Sq. d.f.</td>
</tr>
<tr>
<td>Cross-section random</td>
<td>19.309229</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 6: - Hausman test Result
Source: Analyzed Data Eviews 9
If the probability < α (with the probability 95% α = 0.05 ) indicated Fixed Effect Model is the appropriated model for this study and If the probability > α (with the probability 95% α = 0.05 ) indicated Random Effect Model is the appropriated model. Base on table 6, the probability is 0.0017 < 0.05 indicate Fixed Effect Model is the appropriated model.

### B. Regression Panel Data Result

The best model for this study is Fixed Effect Model. The result is shown on the Following table 5:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>5.608086</td>
<td>2.506632</td>
<td>-2.237299</td>
<td>0.0326</td>
</tr>
<tr>
<td>ROA</td>
<td>0.399592</td>
<td>0.588192</td>
<td>0.679356</td>
<td>0.5020</td>
</tr>
<tr>
<td>DER</td>
<td>-2.398762</td>
<td>1.185159</td>
<td>3.539908</td>
<td>0.0131</td>
</tr>
<tr>
<td>Log CR</td>
<td>0.011842</td>
<td>0.027827</td>
<td>0.425549</td>
<td>0.6734</td>
</tr>
<tr>
<td>TATO</td>
<td>1.248496</td>
<td>3.715355</td>
<td>0.920110</td>
<td>0.3339</td>
</tr>
<tr>
<td>PBV</td>
<td>1.348496</td>
<td>3.924275</td>
<td>5.425102</td>
<td>0.0018</td>
</tr>
</tbody>
</table>

### Coefisien Determination ( $R^2$ )

Base on table 7, with the probability 95% ( α = 0.05 ) p – value = 0.03959 less than 0.05 and F – counting ( 7.129346 ) > F – table ( 3.93 ) means that independent variable ROA, DER, CR, TATO and PBV affect on dependent variable stock return simultaneously. The value of R – Square ( $R^2$ ) = 0.538683 show that 53.87% from stock return variable can be explained by the variable ROA, DER, CR, TATO and PBV and 46.13% can be explained by the other factor outside this study.

### F test

Base on table 8 with the probability 95% ( α = 0.05 ) p – value = 0.03959 less than 0.05 and F – counting ( 7.129346 ) > F – table ( 3.93 ) means independent variable ROA, DER, CR, TATO and PBV affect on stock return simultaneously.

### t test

The t test is conduct to determine the effect of independent variable partially ( individually ) on the dependent variable assuming the other independent variable are fixed value. If p – value < α (with the probability 95% α = 0.05 ) with t – counting > t table means the independent variable affect on dependant variable. If p – value > α (with the probability 95% α = 0.05 ) with t – counting < t – table means the independent variable does not affect on dependent variable. The t test result for this study can be seen on the following table 8.

<table>
<thead>
<tr>
<th>Var</th>
<th>t- counting</th>
<th>t table</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>0.39959</td>
<td>0.679356</td>
<td>2.26216</td>
</tr>
<tr>
<td>DER</td>
<td>-2.39876</td>
<td>3.539908</td>
<td>2.26216</td>
</tr>
<tr>
<td>Log CR</td>
<td>0.01184</td>
<td>0.425549</td>
<td>2.26216</td>
</tr>
<tr>
<td>TATO</td>
<td>1.24849</td>
<td>0.920110</td>
<td>2.26216</td>
</tr>
<tr>
<td>PBV</td>
<td>1.34849</td>
<td>5.425102</td>
<td>2.26216</td>
</tr>
</tbody>
</table>

### The Effect of ROA on stock return

Variable ROA show coeiffion regression ( C ) = 0.39959 with positive value. it indicate positive relationship between ROA and stock return where if the increasing of a unit ROA will increase value of stock return 0.39959 unit and if the decreasing of a unit ROA will decrease stock return 0.39959 unit too. From t test show the result that t
The Effect of DER on Stock return

Variable DER show coeffisien regression = - 2.39876 with negative value. It indicate negative relationship or opposite direction between DER and stock return. If the increasing of a unit value of DER will decrease the value stock return 2.39876 unit and if the decrease a unit value of DER will increase a value of stock return 2.398762 unit too. T test show the result that t – counting = 3.539908 > t – table (2.26216) with the probability = 0.01184 < 0.05. It means DER affect on stock return with negative direction. The debt equity ratio on the plantation sub sector 2014 – 2017 tends to increase. The higher debt equity ratio indicate the higher level of debt’s company owe. According to signaling theory, it give negative signal to the investor. The investor tends to avoid the company with the higher debt equity ratio because it will give the more higher risk and cost to the investor (Kasmir 2012). The higher composition of debt from the own firm capital can increase the risk for investor as a result of interest cost that have to be paid. This study is inline with the research of Fifi and Afriyani (2016) and the research of Puspitadewi, cokorda and Henny (2016) which is DER has negative effect on stock return.

The Effect of Current ratio on stock return

Variable Current Ratio show coeffisien regression = 0.01184 with positive value. It indicate positive relationship between CR and stock return where if the increasing of a unit log CR will increase the value of stock return 0.01184 and if the decreasing of unit log CR will decrease stock return 0.01184 unit too. From t test show the result that t – counting = 0.425549 < t – table (2.26216) with the probability = 0.6734 > 0.05. It means CR does not affect on stock return. The higher current ratio, the greater the ability of the firm to pay their bills. Current Ratio should more than 1, it means current asset must be higher than current liabilities (Harahap, 2002). Actually The Current Ratio of the plantation sub sector 2014 – 2017 tends to decrease but the value is more than 1. This study is in line the research of Sekar and Prasetino (2016) and the research of Vinola and Kiki (2016) that CR does not have any effect on stock return.

The Effect of Total Asset Turn Over on stock return

Variable TATO coeffisien regression = 1.48496 with positive value. It indicate positive relationship between TATO and stock return. If the increasing of a unit value of TATO will increase the value stock return 1.48496 unit and if the decreasing a unit value of TATO will decrease a value of stock return 1.48496 unit too. T test show the result that t – counting = 0.920110 < t – table (2.26216) with the probability = 0.339 > 0.05. It means TATO does not have any effect on stock return. The largest composition of plantation sub sector asset is fixed asset where not all those fix asset generate income in the current year for example The immature and old plant which is not profitable for the company. so the investor might not consider TATO to invest at plantation company. This study is in line with the research of Vinola and Kiki (2016) and the research of Meseeuw (2015) that TATO does not affect on stock return.

The effect of Price book to value on stock return

Variable PBV show coeffisien regression = 1.348496 with positive value. It indicate positive relationship or in line direction between PBV and stock return. If the increasing of a unit value of PBV will increase the value stock return 1.348496 unit and if the decreasing a unit value of PBV will decrease a value of stock return 1.348496 unit too. T test show the result that t – counting = 3.924275 > t – table (2.26216) with the probability = 0.0018 < 0.05. It means PBV affect on stock return in positive direction. The higher the price book to value indicate the more expensive of the stock value, the lowest the price book to value indicate the cheap of the stock prices. The PBV of plantation sub sector 2014 – 2017 tend decrease and it affect on the lower stock return of plantation sub sector. This study is in line with the research of Saffdar et all (2013) and the research of Sanjay (2012) that PBV has positive effect on stock return.

V. CONCLUSION

Base on the result and discussion above, the conclusion from this study are:
1. Return on Asset does not have effect on stock return at plantation sub sector 2014 – 2017
2. Current Ratio Debit does not have effect on stock return at plantation sub sector 2014 – 2017
3. Debt Equity to Ratio has negative effect on stock return at plantation sub sector 2014 – 2017
4. Total Asset Turn Over does not have any effect on A stock return at plantation sub sector 2014 – 2017
5. Price Book To value has positive effect on stock return at plantation sub sector 2014 – 2017

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