Impact of diversification of CPO to biodiesel on financial performance and stock price of palm oil plantation company

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Abstract. Biodiesel is a renewable energy source that has the potential to be developed in Indonesia. The purpose of this study was to analyse whether there were differences in financial performance and stock prices of oil palm plantation companies before and after the policy mandatory of CPO diversification into biodiesel. The financial ratios analysed consist of: Current Ratio, Debt to Asset Ratio, Debt Equity Ratio, Net Profit Margin, Return On Equity, and Return On Asset. To answer these objectives, the were conducted Paired Sample t-Test and the Wilcoxon Signed Rank Test. This research resulted that Current Ratio negative shows significant differences at PT Bakrie Sumatera Plantations Tbk. and positively significant at PT London Sumatra Indonesia Tbk. Debt to Asset Ratio and Debt to Equity Ratio show significant negative differences in PT London Sumatra Indonesia Tbk. and positively significant at PT Tunas Baru Lampung Tbk. Net Profit Margin shows a significant positive difference at PT Tunas Baru Lampung Tbk. Return on Equity Ratio and Return on Asset Ratio show significant negative differences in PT Bakrie Sumatera Plantations Tbk. The policy mandatory of CPO diversification into Biodiesel doesn’t show a significant difference to the share price for the period 2004-2013.

1. Introduction
Business diversification is one of the strategies to gain greater market power and a company to be able to develop its business better. Diversification can be in the form of business development by expanding the number of business segments or geographically, or developing a variety of diverse products [1].

Regulation of the Minister of Energy and Mineral Resources (ESDM) No. 32 of 2008 concerning the Provision, Utilization and Trading System of Biofuels as Other Fuels is one of the policies formulated by the government to provide certainty in the purchase of biodiesel. The most important thing from the issuance of this Ministerial Regulation is the use of Biofuels from voluntary to mandatory [2]. This is confirmed in Article 3 paragraph 1 of the regulation which reads "Business Entities Holders of Trading Business Permits for Oil Fuels and Direct Users of Oil Fuels are obliged to use Biofuels Oil Fuel in stages" [3].

Porter (1985) explains that there are differences of opinion regarding diversification strategies [4]. Through a diversification strategy, the value of the firm can increase and open up new investment [5]. Firm value will be low if the company is diversified [6].

The higher the company verification, the higher the company's stock price [7]. Investors invest in companies that diversify and have high profitability. This is because companies that diversify can
increase the company's profitability. It is important for companies to increase their profitability by using a diversification strategy [4].

*Signalling theory* states that companies with good quality will deliberately give signals to the market in the form of information, thus the market is expected to differentiate between good and bad quality companies. In order for the signal to be effective, it must be able to be captured by the market and perceived as good, and not easily imitated by bad quality companies [8].

Market forces see a diversification strategy as a way to foster an anti-competitive effect that comes from the strength of conglomerates. When the company grows bigger, the company's market share will get bigger. This causes industrial concentration levels to get higher and ultimately results in reduced market competition due to business domination. In this market power approach, diversification strategy will have a positive influence on company performance [9].

The movement of stock prices is influenced by two factors, namely internal factors and external factors. External factors are factors that affect the price of shares that the company cannot control directly. These external factors can take the form of a country's economic conditions, domestic political turmoil, changes in interest rates, inflation, foreign exchange rates and various economic regulations and deregulations issued by the government. Internal factors are factors that affect the movement of stock prices that come from within the company and can be directly controlled by the company in overcoming it. Such as price changes, new product withdrawals, funding, change of managers, mergers, factory expansion, labour strikes and the announcement of company financial reports that provide information related to company performance [10].

2. Materials and methods

2.1 Location and sample
This research was conducted on two dependent variables, namely financial performance and stock prices of oil palm plantation companies listed on the Indonesia Stock Exchange. The independent variable of this study is the existence of a policy of mandatory diversification of CPO into Biodiesel which is predicted to cause differences in financial performance and price of oil palm plantations before and after the existence of this policy.

The financial performance of oil palm plantation companies is measured through financial ratios sourced from the analysis of the company's financial statements published on the Indonesia Stock Exchange website. The financial ratios analysed consist of: *Current Ratio*, *Debt to Asset Ratio* (DAR), *Debt Equity Ratio* (DER), *Net Profit Margin* (NPM), *Return On Equity* (ROE), and *Return On Asset* (ROA).

The population used in this study were all oil palm plantation companies listed on the Indonesia Stock Exchange in the period 2004-2013, namely 5 companies. The sample collection method used is the census method, which is a sampling technique by taking the entire population into a sample. The criteria used in this research are oil palm plantation companies that publish their financial reports on the Indonesia Stock Exchange from 2004 to 2013.

2.2 Data analysis
The method used is the analysis model *Wilcoxon Signed Rank* and the *Paired Sample t-Test*. The analysis was performed using the SPSS software program. This study uses a significance level or error probability to reject H0 for all tests of 0.05 or 5%.

3. Results and discussion
*Current Ratio* is a comparison between current assets and current liabilities. *Current Ratio* shows the company's ability to pay current liabilities. Based on the results of the *Wilcoxon Signed Rank Test* and the *Paired Sample t-Test* in table 1, there is no significant difference in the *Current Ratio* of PT Astra Agro Lestari Tbk. before and after the policy of mandatory diversifying CPO into Biodiesel. *Current Ratio* of PT Astra Agro Lestari Tbk. in 2012 amounted to 68.46% (decreased 53.8% from 2011), and
in 2013 amounted to 45.00% (decreased 34% from 2012). This is because current liabilities increased 77% in 2012 and 44% in 2013, while current assets decreased by 4.1% in 2012 and 5% in 2013. Current Ratio of PT Astra Agro Lestari Tbk. before and after the Mandatory diversification of CPO into biodiesel. This is due to an increase in current assets in 2009, 2010, 2011 and 2013.

| Table 1. Test results Current Ratio for oil palm plantation companies 2004-2013 period |
|---------------------------------|--------|--------|--------|--------|--------|
|                                | AALI   | UNSP   | LSIP   | SMAR   | TBLA   |
| Wilcoxon Signed Rank Test (Z)  | -0.405 | -2.023*| -2.023*| -0.674 | -1.214 |
| Paired Sample t-Test Sig. (2-tailed) | 0.605  | 0.043* | 0.030* | 0.833  | 0.200  |

*: there is a significant difference

There is a significant positive difference in the Current Ratio at PT PP London Sumatra Indonesia Tbk. before and after the mandatory diversification of CPO into biodiesel. This is due to an increase in current assets by 72.8% while current liabilities decreased by 14.5%. There is no significant difference in Current Ratio at PT SMART Tbk. before and after the existence of a policy of mandatory diversifying CPO into biodiesel. This is because the Current Ratio of each company was relatively stable in the 2004-2013 period.

| Table 2. Test results for Debt to Asset Ratio (DAR) palm oil plantation companies 2004-2013 period |
|---------------------------------|--------|--------|--------|--------|--------|
|                                | AALI   | UNSP   | LSIP   | SMAR   | TBLA   |
| Wilcoxon Signed Rank Test (Z)  | -0.135 | -0.135 | -2.023*| -0.944 | -2.023*|
| Paired Sample t-Test Sig. (2-tailed) | 0.830  | 0.857  | 0.003* | 0.336  | 0.006* |

*: there is a significant difference

Debt to Asset Ratio (DAR) is a comparison between total liabilities and total assets. Debt to Asset Ratio (DAR) shows a company's ability to cover its liabilities with its assets. Based on the results of the Wilcoxon Signed Rank Test and Paired Sample t-Test in Table 2, there is no significant difference in the Debt to Asset Ratio (DAR) at PT Astra Agro Lestari Tbk. and PT Bakrie Sumatera Plantations Tbk. before and after the Mandatory diversification of CPO into biodiesel.

There is a significant negative difference in the Debt to Asset Ratio (DAR) at PT PP London Sumatera Indonesia Tbk. before and after the Mandatory diversification of CPO into biodiesel. This is due to the increase in assets higher than liabilities, especially in 2010 and 2011. In 2010, assets increased by 14.8% due to an increase in profit of 46.1%, while liabilities decreased by 2.4% compared to 2009. In 2011, assets increased 14.8% and liabilities decreased 2.4%. That is, the ability of PT PP London Sumatera Indonesia Tbk. in covering liabilities with assets getting better in the period 2004-2013.

There is no significant difference in Debt to Asset Ratio (DAR) at PT SMART Tbk. before and after the Mandatory diversification of CPO into biodiesel. This is because the increase in liabilities is accompanied by an increase in assets due to additional facilities. There is a significant positive difference in the Debt to Asset Ratio (DAR) at PT Tunas Baru Lampung Tbk. before and after the Mandatory diversification of CPO into biodiesel. This is due to an increase in liabilities that was higher than the increase in assets. In 2012, liabilities increased by 30% while assets increased 23% from the previous year. In 2013, liabilities increased 28%, while assets increased 19% from the previous year. This means, the ability of PT Tunas Baru Lampung Tbk. in
covering liabilities with assets decreased in the 2004-2013 period.

**Table 3.** Test results for Debt to Equity Ratio (DER) palm oil plantation companies 2004-2013 period

| Uji                      | AALI   | UNSP  | LSIP  | SMAR  | TBLA  |
|--------------------------|--------|-------|-------|-------|-------|
| Wilcoxon Signed Rank Test (Z) | -0.135 | -0.135 | -2.023* | -0.405 | -2.023* |
| Paired Sample t-Test Sig. (2-tailed) | 0.814  | 0.907 | 0.021* | 0.379  | 0.005* |

*: there is a significant difference

Debt to Equity Ratio (DER) is a comparison between total liabilities and total equity. Debt to Equity Ratio (DER) shows the balance between liabilities and company equity. Based on the results of the Wilcoxon Signed Rank Test and Paired Sample t-Test in table 3, there is no significant difference in the Debt to Equity Ratio (DER) of PT Astra Agro Lestari Tbk. and PT Bakrie Sumatera Plantations Tbk. in the period 2004-2013. This was due to the increase and decrease in Debt to Asset Ratio (DAR) before and after the policy of mandatory diversifying CPO into Biodiesel on the same average.

There is a significant negative difference in the Debt to Equity Ratio (DER) at PTPP London Sumatra Indonesia Tbk. before and after the mandatory diversification of CPO into biodiesel. This is due to an increase in equity during 2009-2013. In 2009, there was a decrease in liabilities by 40% and an increase in equity by 19% from the previous year. Meanwhile, in 2010 there was also an increase in equity by 19.4% and a decrease in liabilities of 2.4% compared to 2009. In 2011-2013 there was an increase in equity accompanied by an increase in liabilities. That is, the ability of PT PP London Sumatra Indonesia Tbk. in balancing liabilities with equity decreased in the 2004-2013 period.

There is no significant difference in Debt to Equity Ratio (DER) in PTSMART Tbk. This is due to an increase and decrease in equity and liabilities during 2004-2013, so that there is no significant difference before and after the Mandatory diversification policy of CPO into biodiesel. There is a significant positive difference in the Debt to Equity Ratio (DER) at PT Tunas Baru Lampung Tbk. before and after the mandatory diversification of CPO into biodiesel. This is because in 2012 and 2013 there was an increase in liabilities that was higher than the increase in equity. In 2012, liabilities increased by 30% while assets increased by 9% from the previous year. In 2013, liabilities increased 28%, while assets increased 2% from the previous year. This means, the ability of PT Tunas Baru Lampung Tbk. in balancing liabilities with equity decreased in the 2004-2013 period.

**Table 4.** Test results Net Profit Margin (NPM) on oil palm plantation companies 2004-2013 period

| Uji                      | AALI   | UNSP  | LSIP  | SMAR  | TBLA  |
|--------------------------|--------|-------|-------|-------|-------|
| Wilcoxon Signed Rank Test (Z) | -0.944 | -0.674 | -1.753 | -0.674 | -2.023* |
| Paired Sample t-Test Sig. (2-tailed) | 0.234  | 0.287 | 0.125 | 0.601  | 0.040* |

*: there is a significant difference

Net Profit Margin (NPM) is the comparison between net income and net sales. Net Profit Margin (NPM) shows the company's ability to generate profits at a certain sales level. Based on the results of the Wilcoxon Signed Rank Test and Paired Sample t-Test in Table 4, there is no significant difference in Net Profit Margin (NPM) at PT Astra Agro Lestari Tbk., PT PP London Sumatra Indonesia Tbk., and PTSMART Tbk. before and after the mandatory diversification of CPO into biodiesel. This is because the Net Profit Margin (NPM) of each company was relatively stable in the 2004-2013 period.

There is no significant difference in Net Profit Margin (NPM) at PT Bakrie Sumatera Plantations Tbk. before and after the mandatory diversification of CPO into biodiesel. Net Profit Margin (NPM) has increased in 2009 and 2010, and has decreased in 2011-2013. Based on the 2012 financial statements, PT Bakrie Sumatera Plantations Tbk. suffered losses due to the European economic crisis which caused demand and prices to fall.

There is a significant positive difference in Net Profit Margin (NPM) at PT Tunas Baru Lampung Tbk. before and after the mandatory diversification of CPO into biodiesel. This is due to the increase...
in net income in 2009 by 296% due to obtaining financial benefits even though sales decreased by 29% compared to 2008. In 2011, there was an increase in sales of 25% and an increase in net profit of 69% compared to 2010.

**Table 5.** Results of the Return on Equity Ratio (ROE) palm oil plantation companies for the 2004-2013 period

| Uji                        | AALI | UNSP | LSIP | SMAR | TBLA |
|----------------------------|------|------|------|------|------|
| Wilcoxon Signed Rank Test (Z) | -1.753 | -2.023* | -0.135 | -1.214 | -1.753 |
| Paired Sample t-Test Sig. (2-tailed) | 0.097 | 0.046* | 0.657 | 0.287 | 0.069 |

*: there is a significant difference

Return on Equity Ratio (ROE) is a comparison between net income after tax and equity. Return on Equity Ratio (ROE) shows the ability of a company to get a return on every rupiah of equity. Based on the results of the Wilcoxon Signed Rank Test and Paired Sample t-Test in Table 5, there is no significant difference in the Return to Equity Ratio (ROE) of PT Astra Agro Lestari Tbk., PT PP London Sumatra Indonesia Tbk., PT.SMART Tbk., and PT Tunas Baru Lampung Tbk., in the period 2004-2013. This is because the Return on Equity Ratio (ROE) is stable both before and after the policy of mandatory diversifying CPO into Biodiesel.

There is a significant negative difference in Return on Equity Ratio (ROE) at PT Bakrie Sumatera Plantations Tbk. before and after the mandatory diversification of CPO into biodiesel. This is because PT Bakrie Sumatera Plantations Tbk. suffered losses in 2012 and 2013 due to the European economic crisis which caused demand and prices to fall. Return on Equity Ratio (ROE) has decreased during the period 2004-2013.

**Table 6.** Results of the Return on Asset Ratio (ROA) palm oil plantation companies for the 2004-2013 period

| Uji                        | AALI | UNSP | LSIP | SMAR | TBLA |
|----------------------------|------|------|------|------|------|
| Wilcoxon Signed Rank Test (Z) | -1.214 | -2.023* | -1.214 | -0.944 | -1.483 |
| Paired Sample t-Test Sig. (2-tailed) | 0.177 | 0.037* | 0.257 | 0.505 | 0.077 |

*: there is a significant difference

Return on Asset Ratio (ROA) is the comparison between net income after tax and total assets. Return on Asset Ratio (ROA) shows the ability of company management to earn overall profit. Based on the results of the Wilcoxon Signed Rank Test and Paired Sample t-Test in Table 6, there is no significant difference in the Return on Asset Ratio (ROA) of PT Astra Agro Lestari Tbk., PT PP London Sumatra Indonesia Tbk., PT.SMART Tbk., and PT Tunas Baru Lampung Tbk. in the period 2004-2013. This is because the Return on Asset Ratio (ROA) is stable for each company, either before or after the policy of mandatory diversifying CPO into Biodiesel.

**Table 7.** Test results of oil palm plantation companies stock price 2004-2013

| Uji                        | AALI | UNSP | LSIP | SMAR | TBLA |
|----------------------------|------|------|------|------|------|
| Wilcoxon Signed Rank Test (Z) | -1.753 | -1.214 | -0.135 | -1.625 | -1.483 |
| Paired Sample t-Test Sig. (2-tailed) | 0.100 | 0.261 | 0.864 | 0.097 | 0.130 |

*: there is a significant difference

There is a significant negative difference in Return on Asset Ratio (ROA) at PT Bakrie Sumatera Plantations Tbk. before and after the mandatory diversification of CPO into biodiesel. This occurred due to the European economic crisis which caused demand and prices to fall so that PT Bakrie Sumatera Plantations Tbk. experienced losses in 2012 and 2013. Return on Asset Ratio (ROA)
decreased throughout the period 2004-2013.

Shares are evidence of capital ownership in the company. Share price is the price of each share, which shows the value of the company. The company value can be calculated from the multiplication of the share price and the number of shares outstanding. Based on the results of the Wilcoxon Signed Rank Test and Paired Sample t-Test in Table 7, there is no significant difference in the stock prices of oil palm plantation companies in the 2004-2013 period. Signal theory states that companies will provide signals to the market in the form of information.

These cues or signals provide clues to investors about the prospects for a company. The diversification of CPO into Biodiesel did not show the ability of company management to manage assets and capital as well as the ability to generate profits. This resulted in the stock price not showing a significant difference because the company's performance did not show favourable prospects after the diversification of CPO into Biodiesel was implemented. Based on the financial statements, the company states that global economic conditions have an impact on decreasing demand for various types of commodities, so that investors react negatively to stocks in the commodity sector, including plantation issuers.

4. Conclusions

Current Ratio shows significant negative differences in PT Bakrie Sumatran Plantations Tbk. and positive significant at PT London Sumatera Indonesia Tbk. Debt to Asset Ratio (DAR) and Debt to Equity Ratio (DER) show significant negative differences in PT London Sumatera Indonesia Tbk. and positively significant at PT Tunas Baru Lampung Tbk. Net Profit Margin (NPM) shows a significant positive difference in PT Tunas Baru Lampung Tbk. Return on Equity Ratio (ROE) and Return on Asset Ratio (ROA) show significant negative differences in PT Bakrie Sumatran Plantations Tbk. The policy of mandatory diversifying CPO into Biodiesel did not show a significant difference to the share prices of oil palm plantation companies in the 2004-2013 period.

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