FIRM PERFORMANCE FACTORS AND EFFICIENCY OF INDONESIAN PALM OIL COMPANIES

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Abstract: The palm oil industry is one of the agricultural, industrial sectors with a strategic role in the national economy, especially in Indonesia. Although this industry has a high contribution in Indonesia, the oil palm plantation companies have not shown satisfactory performance. Internal firm conditions and macroeconomic variables may influence the performance of oil palm plantation companies. Therefore, this study aims to investigate the firm performance determinants and efficiency of oil palm companies in Indonesia. The samples in this research are 12 oil palm companies listed on the Indonesian Stock Exchange (BEI) for the 2014-2019 periods. The panel regression analysis and the Preference Ranking Organization Method for Enrichment Evaluation (PROMETHEE) are applied in this study. The first result in the panel regression shows that the firm size, exchange rate, and world CPO price affect ROA as the operational performance. Moreover, liquidity, leverage, and inflation do not affect ROA as operational performance. The second result in panel regression shows that inflation, exchange rate, and CPO World Price affect PER as the market performance. However, market performance is not affected by liquidity, leverage, and firm size. The efficiency analysis shows that the firm ranking tends to fluctuate in the observation period. This analysis defines that the oil palm plantation companies in Indonesia, on average, have a similar performance.

Keywords: palm oil, firm performance, efficiency, internal conditions, macroeconomics

Abstrak: Industri kelapa sawit merupakan salah satu sektor industri pertanian yang memiliki peran strategis dalam perekonomian nasional, khususnya di Indonesia. Meski industri ini memiliki kontribusi yang tinggi di Indonesia, namun secara keseluruhan perusahaan perkebunan kelapa sawit belum menunjukkan kinerja yang memuaskan. Kinerja perusahaan perkebunan kelapa sawit dapat dipengaruhi oleh kondisi internal perusahaan dan variabel makroekonomi. Oleh karena itu, penelitian ini bertujuan untuk menguji determinan kinerja perusahaan dan efisiensi dari perusahaan kelapa sawit di Indonesia. Sampel dalam penelitian ini adalah 12 perusahaan kelapa sawit yang terdaftar di Bursa Efek Indonesia (BEI) periode 2014-2019. Analisis regresi panel dan Metode Preference Ranking Organization Method for Enrichment Evaluation (PROMETHEE) diterapkan dalam penelitian ini. Hasil pertama regresi panel menunjukkan bahwa ukuran perusahaan, nilai tukar, dan harga CPO dunia mempengaruhi ROA sebagai kinerja operasional. Selain itu, likuiditas, leverage, dan inflasi tidak mempengaruhi ROA sebagai kinerja operasional. Hasil kedua regresi panel menunjukkan bahwa inflasi, nilai tukar dan harga CPO dunia berpengaruh terhadap PER sebagai kinerja pasar. Namun, kinerja pasar tidak dipengaruhi oleh likuiditas, leverage, dan ukuran perusahaan. Analisis efisiensi menunjukkan bahwa peringkat perusahaan cenderung berfluktuasi selama periode pengamatan. Analisis ini menunjukkan bahwa perusahaan perkebunan kelapa sawit di Indonesia rata-rata memiliki kinerja yang serupa.

Kata kunci: palm oil, firm performance, efficiency, internal conditions, macroeconomics

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INTRODUCTION

The palm oil industry is one of Indonesia's agricultural industries, which is experiencing rapid development in the global market (Pahan et al. 2011; Maesaroh et al. 2018; Purnomo et al. 2020; Rifin 2020). Oil palm contributes 17% of total income from the agricultural sector so that this commodity becomes one of the main agricultural products in Indonesia (Acosta & Curt 2019). Apart from the economy, the oil palm industry has other roles, such as helping smallholder household economies, so that small farmers' welfare could increase (Suroso & Ramadhan 2014).

The oil palm plantations are a source of large job creation in Indonesia with a workforce absorption of 4.25 million workers (Ditjenbun 2019). The form of oil palm plantation business in Indonesia consists of smallholder plantations, state plantations, and private plantations. Most of the palm oil industry is privately owned, with 55% of the total oil palm land in Indonesia (Ditjenbun 2019). Currently, most of the private palm oil companies in Indonesia originate from subsidiaries' formation by companies that have gone public on the Indonesian Stock Exchange (BEI). The performance of the oil palm companies that have gone public needs to be considered and analyzed further.

Although the industry has a significant contribution to the national economy, the performance of these public oil palm plantation companies as a whole tends to fluctuate. Based on data from BEI for 2014-2018, the performance of oil palm plantation companies measured by Return On Assets (ROA) and Price to Earnings Ratio (PER), which represented as operational and market indicators, has not had a stable performance

in each observation year (Figure 1). The advantages of ROA reflect the companies' effective use of their assets for their shareholders' economic interest (Ibrahim & Samad 2011; Wandroski et al. 2017). Moreover, PER was used as an indicator of market performance in palm oil companies because the ratio could simultaneously evaluate investors' interest and stock price (Valenti et al., 2011; Jitmaneeroj 2017).

The other performance indicators, such as Return on Equity (ROE) and Price Book Value (PBV), can indicate company profitability. Paminto et al. (2016) and Mubarok et al. (2019) have examined the profitability determinants. However, the operational and market performance in Indonesian palm oil companies has not been investigated. It is necessary to have research related to identifying further factors related to firm performance outside financial performance. Furthermore, several factors affect oil palm plantation companies' performance, such as corporate conditions and macroeconomic factors (Paminto et al. 2016; Putri et al. 2019).

Specifically, the firm performance could be divided into three main dimensions: financial performance, operational performance, and market performance (Al-Matari et al. 2014). Previous literature studied the determinants of the firm performance from the financial perspective (Hafizuddin-Syah et al. 2018; Shahida et al. 2018; Mubarok et al. 2019). On the other hand, the literature about operational and market performance still rare in palm oil companies. Therefore, this study involves performance appraisal apart from financial aspects with two perspectives: operational and market performance in Indonesia palm oil companies.
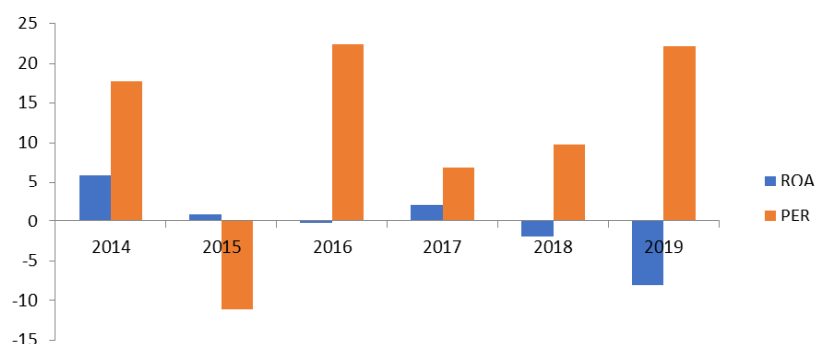

Figure 1. Average performance of oil palm plantation companies in Indonesia (Indonesian Stock Exchange (IDX), 2020)

Additionally, this study also looks at the efficiency of each oil palm companies' performance by considering several other criteria outside of the ROA and PER. Meanwhile, in measuring firm efficiency, several pieces of literature use various methods in them. The PROMETHEE approach's efficiency is carried out to determine the ranking of banking companies in Greece through the performance criteria (Schiniotakis 2012; Durkalić et al. 2019). The efficiency of oil palm companies in Indonesia using the DEA approach found that the provinces of Riau, North Sulawesi, and Papua are areas that have a high level of efficiency with indicators of technical efficiency (TE), allocative of efficiency (AE), cost of efficiency (CE), and scale of efficiency (SE) (Anam & Suhartini 2020). So, the purpose of this study is to examine the determinants of firm performance based on operational and market perspectives. Therefore, this study aims to investigate the efficiency of each oil palm company in Indonesia.

METHODS

This study uses a sample of oil palm plantation companies listed on the Indonesian Stock Exchange (BEI) from 2014-2019. The total population of this study was 19 companies. However, this study only includes 12 palm oil companies in Indonesia due to the research's data completeness. Based on the review of several previous pieces of literature, a number of variables are used in this study and are shown in Table 1.

The testing in this study was performed through 2 (two) analysis techniques based on the objective of knowing the influence of the factors suspected of having an effect on the firm performance and ranking it to see the efficiency of the firm performance. In the first phase, the analysis tool used is the panel regression. This analysis could show the effect of the independent variable on the dependent variable. The panel regression model consists of Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). The process of determining the panel regression model goes through several tests through the Chow Test, Hausmann Test, and Lagrange Multiplier Test. The mathematical regression formula proposed in this study is as follows:

$$ROA_{it} = \alpha_{it} + \beta_1 LIQ_{it} + \beta_2 LEV_{it} + \beta_3 FS_{it} + \beta_4 INF_{it} + \beta_5 EXR_{it} + \beta_6 CPO_{it}$$

$$PER_{it} = \alpha_{it} + \beta_1 LIQ_{it} + \beta_2 LEV_{it} + \beta_3 FS_{it} + \beta_4 INF_{it} + \beta_5 EXR_{it} + \beta_6 CPO_{it}$$

Where: ROA i, t (ROA in the firm i in the year t); PER i, t (PER in the firm i in the year t); $\alpha 0$ (Constant); LIQi, t (Liquidity in the firm i in the year t); LEV i, t (Leverage in the firm i in the year t); FS i, t (Firm Size in the firm i in the year t); INF i, t (Inflation in the firm i in the year t); mEXR i, t (Exchange Rate in the firm i in the year t); CPO i, t (World palm oil price in the firm i in the year t); e i, t (Residual);

Table 1. Research Variables

Variable	Measurements	Source
ROA	Net Income / Total Assets	(Al-Matari et al. 2014; Gallego-Álvarez et al. 2015; Taouab & Issor, 2019)
PER	Price / Earning per Share	(Al-Matari et al. 2014; Jitmaneeroj, 2017)
LIQ	Current Asset / Current Liabilities	(Hafizuddin-Syah et al. 2018; Shahida et al. 2018)
LEV	Total Debt / Total Equity	(Hafizuddin-Syah et al. 2018; Shahida et al. 2018)
FS	Log (Total Assets)	(Hafizuddin-Syah et al. 2018; Shahida et al. 2018)
INF	Inflation Rate in Indonesia	(Issah & Antwi, 2017; Pacini et al. 2017)
EXR	Exchange rate from US$ to Rupiah	(Pacini et al. 2017; Nanda & Panda, 2018)
CPO	World Crude Palm Oil (CPO) Price	(Hafizuddin-Syah et al. 2018; Shahida et al. 2018)

Where i represents the individual of the firm and t represents the year. ROA and PER are the dependent variables in this study. Meanwhile, liquidity, leverage, firm size, inflation, exchange rates, and world CPO prices are independent variables in this study.

The second stage's analysis tool is the Preference Ranking Organization Method for Enrichment Evaluation (PROMETHEE). PROMETHEE could perform various comparisons by determining each criterion's priority and preference based on the value of the criterion it has. This method was first proposed by Brans in 1982 and known as one of the most efficient and easy to use methods in many contexts of decision making in various fields of science (Brans & De Smet 2016).

In this study, this method is used to see each oil palm company's efficiency by combining several criteria from the firm's internal conditions such as ROA, ROE, firm size, PER, liquidity, and leverage. The preference used is the general preference criterion to state no difference between one alternative and another. Overall, the criteria and preferences involved in the study could be seen in Table 2. PROMETHEE type used in this research is PROMETHEE II as a continuation analysis from PROMETHEE I to produce an overall ranking. The ranking results are obtained from the measurement of the firm's net flow value with the following formula:

$$\varphi(a) = \varphi+(a) - \varphi-(a).$$

Where: $\varphi(a)$ (Net Flow); $\varphi+(a)$ (Positive Net Flow); $\varphi-(a)$ (Negative Net Flow).

Based on the introduction and method, the proxy on the firm performance in this study is ROA and PER. In ROA, this variable is used as an operational measurement for palm oil companies in this research (Al-Matari et al. 2014; Gallego-Álvarez et al. 2015; Taouab & Issor, 2019). Furthermore, PER be used as a market measurement (Al-Matari et al. 2014; Jitmaneeroj, 2017). Therefore, the hypotheses of this study were formulated as follow :

Liquidity is everything related to a firm's ability to meet its financial obligations that must be paid off immediately. The higher the firm's liquidity level, the more remarkable that firm ability to meet the short-term debt. So that the companies that are successful in overcoming short-term debt, then the companies are

indicated to have good performance. Specifically, It was found that liquidity variables could affect the firm performance based on ROA proxy (Hafizuddin-Syah et al. 2018; Matar & Eneizan, 2018). The liquidity is an important indicator in the firm performance so that this factor could have a positive effect on the market performance (Zheng & Hui, 2016). Therefore, liquidity has a positive effect on market performance (Vieira et al. 2019). Hence, the hypothesis is as follows :

H1a. Liquidity has a positive impact on firm performance based on ROA measurement.
H1b. Liquidity has a positive impact on the firm performance based on PER measurement.

The leverage is the use of assets and sources of funds by companies with fixed expenses to increase shareholders' potential profits. The highest the leverage value, the more risky a firm is because it still has debt for its funds. Several previous studies have found that leverage has a negative impact on ROA (Lazăr, 2016; Matar & Eneizan, 2018; Hafizuddin-Syah et al. 2018). The leverage is an important part of the fundamental analysis of stock so that the firm performance measured from a market perspective could be affected (Zhang & Zhou, 2020). Higher leverage could increase the cost of financial distress and implicate lower 0-0- PER value as a market performance (Ramcharran, 2002; Jitmaneeroj, 2017). Hence, the hypothesis is as follows :

H2a. Leverage has a positive impact on firm performance based on ROA measurement.
H2a. Leverage has a positive impact on firm performance based on PER measurement.

The firm size is a measure of a firm through total assets. Large companies tend to produce greater performance than small companies (Hafizuddin-Syah et al. 2018). This is in line with the risks taken by large companies because they tend to borrow from parties outside the firm (Ramasamy et al. 2005). In addition, small companies have limited funding sources and use internal financing because of the high costs and risks (Abor & Biekpe, 2009). According to Lazăr (2016) and Hafizuddin-Syah et al. (2018), firm size positively affects the ROA. However, Afza & Tahir, (2012) and Dutta et al. (2018) have a different result than the firm size was found to affect PER negatively. Hence, the hypothesis is as follows :

H3a. Firm size has a positive impact on firm performance based on ROA measurement.

H3b. Firm size has a negative impact on firm performance based on PER measurement.

The definition of inflation is the tendency of prices to rise generally and continuously (Mankiw, 2020). The higher rate of inflation will impact people's purchasing power and have implications for firm performance. So, the income earned by the firm will decrease and threaten the continuity of palm oil companies. Pacini et al. (2017) and Simon et al. (2019) investigated that inflation has a negative effect on ROA. From the market perspective, inflation is negatively significant to affecting market performance, especially measured by stock price (Innocent et al. 2018), and could affect PER value. Hence, the hypothesis is as follows :

H4a. Inflation has a negative impact on firm performance based on ROA measurement.

H4b. Inflation has a negative impact on firm performance based on PER measurement.

The exchange rate is the relative price a person trades in one country's currency against another country's currency (Mankiw, 2020). Changes in exchange rates can affect companies' performance, especially companies that depend on foreign markets, one of which is oil palm plantation companies in Indonesia. A higher exchange rate can have implications for company earnings and reduce company performance. Based on several previous studies, the exchange rate has a negative effect on ROA (Nanda & Panda, 2018). In fact, another study was found that showed

the positive impact of exchange rates on ROA (Issah and Antwi, 2017). Exchange rates can correlate and lead stock prices in Malaysian palm oil companies (Saiti et al. 2014). Besides, the exchange rate has a negative effect on stock prices as a proxy for market performance (Putri et al. 2019). Hence, the hypothesis is as follows :

H5a. The exchange rate has a negative impact on company performance based on ROA measurement.

H5b. The exchange rate has a negative impact on company performance based on PER measurement.

The price is a sign that directs the economic decisions in allocating scarce resources (Mankiw, 2020). The increase in Crude PO prices is associated with higher revenue, which implicates high performance (Ramasamy et al. 2005; Hafizuddin-Syah et al. 2018). Other studies indicate the world CPO prices have an effect on ROA as the firm performance of operational profitability (Shahida et al. 2018). The world CPO price could lead palm oil companies to perform better. Moreover, it could affect stock price (Ayudya et al. 2017) and increase a PER value. Hence, the hypothesis is as follows :

H6a. World CPO price has a positive impact on firm performance based on ROA measurement.

H6b. World CPO price has a positive impact on firm performance based on PER measurement.

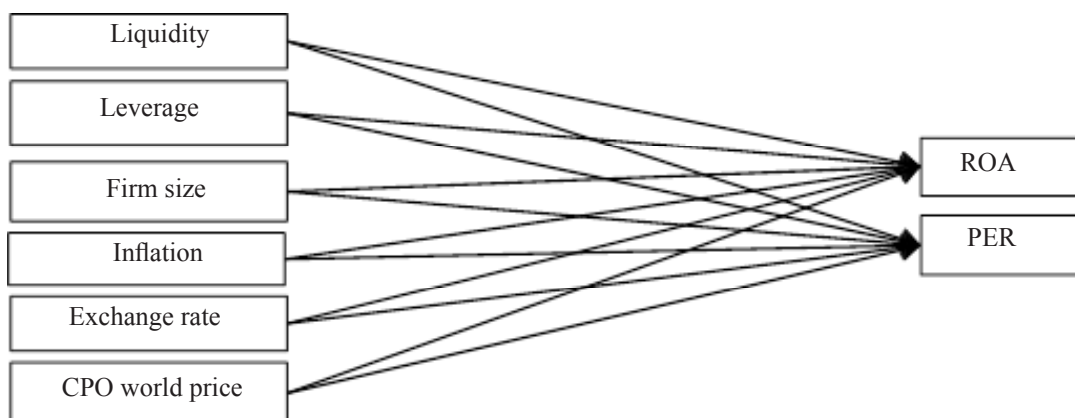Based on the hypothesis development, the research model can be formed and seen in Figure 2.

Figure 2. Research model

RESULTS

The results of the analysis presented in this study are broken down into two sub-sections, namely the test results of the determinants of oil palm companies' performance and the modeling of performance efficiency of oil palm companies. The descriptive statistics on the research variables are shown in Table 3. The descriptive table shows that each variable has a positive average value. The standard deviation value shows a relatively high difference in value in certain variables: ROA, PER, and LEV.

Determinants of Operational Performance

In testing the first-panel regression model, the dependent variable used is ROA. The panel regression analysis at this phase obtained through the Hausman Test estimation model of determination test is the Fixed Effect Model (FEM). The results of the determinants of oil palm firm performance through the panel regression are shown in Table 4. The model feasibility test meets the requirements of implementing the research model by testing the p-value of F Statistics (0.000 <0.05). The analysis result shows that the high R-Square value is 66.9%.

Meanwhile, on each variable's results, this study shows the firm size, exchange rate, and CPO world price have a significant effect on firm performance as proxied by ROA. So that H1 and H2 are rejected from the ROA proxy. The financial condition, such as liquidity and leverage, does not affect palm oil companies' operational performance.

Generally, the oil palm companies require large amounts of capital for operation in plantation areas (Sipayung, 2012). So, the capacity to pay back long-term debt must be a concern for palm oil compared to the short-term debt. In particular, the mean of liquidity is 1.39. The ideal value for liquidity between 1.2 and 2 (Sukiennik, 2012). Similar to liquidity, leverage does not be considered as operational performance determinants.

The palm oil companies must invest for the long-term to perform a higher profit. So, the low or high financial aspects do not affect the oil palm company's operational performance. In comparison, the firm size's positive effect is found, so that H3 is supported by the ROA proxy. These results support the findings of

previous research on firm size. The findings stated the palm oil companies have large total assets that could do expansion compared to the companies with a few assets.

Therefore, the larger firms have a higher potential to acquire more debts compared to small firms (Abor and Biekpe, 2009) and provide advantages to escalate their operational performance with the lower cost of production (Shahida et al. 2018). These results support previous research findings on the firm size (Lazăr, 2016; Matar & Eneizan, 2018; Hafizuddin-Syah et al. 2018). The finding also shows that macroeconomic factors such as exchange rate and CPO world price had a significant adverse effect on firm performance as proxied by ROA (H5 and H6 are supported). Otherwise, inflation does not influence it (H4 rejected).

The exchange rate has a negative effect on the company's operational performance. Every time there is a decrease in the nominal value of the rupiah exchange rate, Indonesian palm oil companies' potential sales can increase. This is because the palm oil market share comes from the global market, contributing from the industry of 30.3 million tonnes (BPS, 2020).

The result is following Nanda and Panda (2018) and Putri et al.'s (2019) findings that reported the negative impact of exchange rate on ROA. World CPO prices have a negative effect on operational performance. This is related to the high competition for vegetable oil commodities in the global market. Palm oil has the advantage of high productivity, and low selling prices compared to other vegetable oils. Whenever there is an increase in palm oil price, other vegetable oils can compete with palm oil at the same price (Fitriani et al. 2019). As a result, this can impact the operational performance of palm oil companies in Indonesia.

These findings differ from the previous literature related to the positive impact of the World CPO Price on ROA (Hafizuddin-Syah et al. 2018). Otherwise, inflation does not affect on palm oil operational performance. The operational activities in palm oil companies, especially sales, are mostly directed for export in Indonesia. Statistical data showed that palm oil export in Indonesia is higher than domestic consumption so that macroeconomic factors related to global issues are found to have more impact on the operational performance of palm oil companies in Indonesia, such as the exchange rate and world CPO prices.

Table 2. Criteria for efficiency analysis of palm oil companies

Criteria	Min/Max	Unit	Preference Function
Return On Assets	Max	Percent	Usual
Return on Equity	Max	Percent	Usual
Liquidity (Current Ratio)	Max	Number	Usual
Firm Size	Max	Number	Usual
Leverage (Debt to Equity Ratio)	Min	Percent	Usual
Price to Earning Ratio	Max	Number	Usual

Table 3. Descriptive statistics

	MEAN	MEDIAN	MAX	MIN	STD. DEV
ROA	0.288	2.080	13.490	-43.3	8.384
PER	5.504	8.320	81.080	-70.74	23.184
LIQ	1.115	1.012	5.523	0.106	0.972
LEV	0.807	1.265	11.270	-30.64	4.669
FS	15.858	15.988	17.193	13.926	0.898
INF	4.294	3.350	8.360	3.020	2.060
EXR	9.507	9.509	9.576	9.424	0.050
CPO	6.490	6.521	6.699	6.282	0.140

Table 4. The impact of liquidity, leverage, firm size, inflation, exchange rate and CPO world price on return on assets (ROA).

Variables	Coefficient	Standard Error	t-Statistic
Intercept	19.58	127.67	0.15
LIQ	0.72	1.28	0.58
LEV	0.05	0.16	0.30
FS	14.21	4.90	2.91***
INF	-2.00	1.58	-1.27
EXR	-0.01	0.01	-2.67**
CPO	-0.05	0.02	-2.62**

R-Square = 0,6697

Prob (F-Statistic) = 0.000

Hausmann Test = 1.000 (* Cross-section test variance is invalid. Hausman statistic set to zero)

(p- value > 5% meaning that the selected model is FEM); Notes : *, **, *** Significant at 10%, 5% and 1%.

Determinants of Market Performance

In testing the second-panel regression model, the dependent variable used is PER. At this phase, the panel regression analysis obtained through the test to determine the estimation model is the Common Effect Model (CEM). The results of the determinants of oil palm companies' performance through the panel regression are shown in Table 5. The model's feasibility test fulfills the requirements of the implementation of the research model through p-value testing (0.002 <0.050). The analysis results show that the R-Square value is classified as low, namely 46.51%.

Based on the panel regression results, this study shows that the firm internal condition variables such as liquidity impact firm performance as proxied by PER. The results showed H1, H2, and H3 are rejected. Liquidity is an indicator that looks at a company's short-term debt repayment capacity. Meanwhile, oil palm companies are an industrial sector that focuses on long-term investment and is a leading sector in Indonesia that continues to be monitored financially by the state every year (Kadarusman & Pramudya, 2019) so that the market performance of Indonesian palm oil companies cannot be assessed through the liquidity indicator.

Table 5. The impact of liquidity, leverage, firm size, inflation, exchange rate and CPO world price on Price to Earning Ratio (PER)

Variables	Coefficient	Standard Error	t-Statistic
Intercept	-975.62	487.83	-1.99
LIQ	1.14	4.88	0.23
LEV	-0.22	0.60	-0.37
FS	8.62	18.72	0.46
INF	13.81	6.02	2.29**
EXR	0.05	0.02	2.20***
CPO	0.23	0.07	3.11***

R-Square = 0,4651

Prob (F-Statistic) = 0.002

Hausmann Test = 1.000 (* Cross-section test variance is invalid. Hausman statistic set to zero)

(p- value > 5% meaning that the selected model is FEM); Notes : *, **, *** Significant at 10%, 5% and 1%.

The same result is found on the effect of leverage. The factor related to the source of funding is not a consideration for assessing oil palm companies in Indonesia. Overall, the composition of leverage in palm oil companies is still internally sourced with a low mean value (0.61). The source of funding for oil palm companies is still largely from their own capital (Solikahan et al. 2013). Infirm size, There is no effect on the firm performance from the PER proxy. This is because the companies' size between oil palm companies has similarities, as evidenced by the stable average value with a fairly low standard deviation (1.07) in Table 3. So, the overall oil palm companies have total assets that do not differ from other oil palm companies. The size of the company within the palm oil industry sector was not found to affect the company's market value. This result is in line with several related pieces of literature, especially on the assessment of company performance (Sri et al. 2013; Hafizuddin-Syah et al. 2018).

In this study, macroeconomic factors, such as inflation, exchange rates, and the world CPO prices, show an impact on the firm performance as proxied by PER only at the 5% and 1% levels (H4, H5, H6 are supported). Besides, inflation has a positive impact on firm performance proxies by PER. The increase in inflation causes the selling price of palm oil products such as CPO or derivative products for people consumption to increase. Therefore, the profit from the companies is increasing and implicate the firm performance based on market perspective. The palm oil industry in Indonesia is different from other industrial sectors. Since 2004, this industry reported grown rapidly and become the biggest producer in the world (Rifin, 2010).

Therefore, the activities in this industry are mostly based on the global market. So, the macroeconomic factor, especially in the global market (exchange rate and world CPO price), will affect palm oil companies' market performance. It could be through international trade because Indonesia can strengthen its position in the global vegetable oil market (Fitrianti et al. 2019). Overall, these results support the results of a number of previous studies in term of the effect of inflation (Issah and Antwi, 2017; Nanda and Panda, 2018), the exchange rates (Odusanya et al. 2018; Pacini et al. 2017), and the world CPO prices (Shahida et al. 2018) on the firm performance.

The efficiency of Performance of Oil Palm Companies in Indonesia

In the second phase of analysis, PROMETHEE is applied to test the efficiency between oil palm companies in various periods. The observation years are six years, spanning the period of 2014 to 2019. The results of the ranking could find out how the performance of oil palm companies compares each year and find out the efficiency level of each company. The results of the PROMETHEE are displayed in Table 6.

Based on the ranking results, the position of oil palm companies tends to fluctuate every year. SSMS in 2014 and 2015 was ranked the highest. However, it was decreased to rank 2 in 2016. It is known that SSMS has decreased on several criteria such as ROA, ROE, and total assets, which affect the ranking. SMAR is ranked the highest in 2016 from its original rank of 6.

Table 6. Oil palm companies efficiency

							PROMETHEE SCORE							
CODE	Rank	2014	Rank	2015	Rank	2016	Rank	2017	Rank	2018	Rank	2019		
AALI	4	0.1515	5	0.2727	5	0.1818	2	0.3939	3	0.4697	3	0.4848		
ANJT	9	-0.2121	12	-0.6061	8	-0.1212	6	0.1667	7	-0.1667	8	-0.303		
BWPT	7	-0.1818	7	-0.0606	10	-0.3333	9	-0.2121	8	-0.197	7	-0.1515		
GZCO	12	-0.4242	8	-0.1212	11	-0.4242	11	-0.4242	11	-0.4394	11	-0.4242		
JAWA	10	-0.2424	10	-0.3333	12	-0.5152	12	-0.4848	10	-0.4091	10	-0.3939		
LSIP	3	0.1818	2	0.3939	6	0.0909	5	0.1818	5	0.1515	4	0.3636		
PALM	6	0	11	-0.4545	6	0.0909	8	-0.197	12	-0.5152	12	-0.5455		
SGRO	7	-0.1818	3	0.303	2	0.2424	7	-0.0152	6	-0.0152	6	0		
SMAR	2	0.3333	6	0	1	0.5455	3	0.3333	4	0.3939	1	0.5152		
SSMS	1	0.697	1	0.5455	2	0.2424	1	0.4091	1	0.5455	5	0.303		
TBLA	5	0.1212	3	0.303	4	0.2121	4	0.2121	2	0.5303	1	0.5152		
UNSP	10	-0.2424	9	-0.2424	8	-0.2121	10	-0.3636	9	-0.3485	9	-0.3636		

This is due to an increase in all firm internal condition criteria. This change is also due to a decline from other oil palm companies such as BWPT, GZCO, JAWA, LSIP, SSMS, TBLA. On the other hand, many oil palm plantations have experienced an increase, such as ANJT, PALM, SGRO, and UNSP. Then in 2017, there was a change in rank again, with SSMS being the highest. SMAR experienced a decline in all of the criteria, resulting in its ranking for the year being ranked 3. The performance of AALI developed well in that year, so that the firm was ranked 2.

In 2018, there was another change in rank, with SSMS being ranked first again. However, there is a decline in other palm oil companies (AALI, ANJT, PALM, and SMAR). Accordingly, TBLA experience could increase in performance in 2018. Several companies experienced an improvement in that year, such as BWPT, JAWA, SGRO, and UNSP.

In 2019, TBLA and SMAR were finally in the highest rank by increasing the firm performance based on ROA and ROE. A total of 5 oil palm companies have stable performance (AALI, GZCO, JAWA, PALM, SGRO, and UNSP). Moreover, there are two oil palm companies shown improvement, namely ANJT and SSMS. There is a similarity between the companies in the highest rank each year, namely the increase in the number of assets always increasing every year.

Through increasing assets, the firm has the opportunity to obtain greater profits in the future. Meanwhile, in several rating downgrades, the firm tends to increase its capital by increasing the amount of debt. Therefore,

the leverage has increased, but there is no increase in profits in the following year. This matter needs to be reconsidered by oil palm companies in planning operational activities carefully. Overall, the oil palm companies tend to experience fluctuations in performance every year, even though they involve other criteria outside of ROA and PER. Besides, the results of the ranking find the dominance of several firms in the highest ranking. However, the oil palm companies in Indonesia, on average, have a similar performance.

Managerial Implications

The implication of this research could be the following. This research can be used to consider palm oil companies to have good operational and market performance. To improve operational performance, the companies must pay attention to total assets, exchange rates, and world CPO prices. Furthermore, companies need to consider macroeconomic factors such as inflation rates, exchange rates, and world CPO prices to improve market performance. As for the government, macroeconomic factors must be an important concern, especially in maintaining each palm oil company's sector performance in Indonesia.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Public oil palm companies' performance is a significant concern related to the extensive land tenure through the subsidiaries they have formed. The palm oil industry

in Indonesia is very dependent on the performance of public palm oil companies. The knowledge regarding the impact and how the efficiency of these companies is important to observe. This study concludes the panel regression analysis results that first, the firm performance from the operational dimension is influenced by firm size, exchange rates, and world CPO price. The second regression analysis reveals the market performance is influenced by inflation, exchange rate, and world CPO price. On the other hand, leverage and firm size do not have a significant effect. In contrast, the testing efficiency through PROMETHEE, the performance of each palm oil firm tends to fluctuate each year through changes in ranking. Other results show that there is no dominance of one oil palm firm over another.

Recommendations

Further research needs to formulate a strategy to carry out logistics activities for frozen meat, KPIs, and their targets in more detail. The detailed strategies would assist to achieve KPIs and targets. In addition, the result of research can be used by Perum to improve the logistics activities of imported frozen meat.

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