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The CPO's returns and multi-events in Indonesia

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ABSTRACT

During the period from January 2022 to June 2022, several events in Indonesia tend to have an impact on the palm oil business. This study aims to examine the relationship between CPO's return and market return with 24 firms as the sample. The findings show that the relationship between the returns of CPO's stocks and market returns is weak and unidirectional. It is also found that the systematic risk and return of CPO's stocks tend to be similar between event periods The findings also imply that the events do not result in a significant difference in returns and systematic risk.

Keywords: returns; palm oil; geopolitics; IHSG
JEL Classification: G12; G15; G18

1. Introduction

Indonesia is the largest palm oil (CPO) producing country in the world. Firdaus et al. (2022) find that Indonesia has good competitiveness to outperform the world palm oil market. This condition causes palm oil to become one of the commodities in the agricultural sector which makes a very significant contribution to economic growth including employment (Mara & Fitri, 2013; Christiani et al., 2013; Dewi et al., 2021; Jamilah et al., 2022; Lomban et al., 2022). In the context of the capital market, the shares of issuers engaged in the palm oil business contribute quite a bit to the market index in Indonesia.

In early 2022, the conditions of the world capital markets are hit by world geopolitical issues as the COVID-19 pandemic continued. Figure 1 shows that the movements of stock prices of the CPO's firms for the period January 2022 to June 2022 tend to have the same pattern as the movements of stock market indices.

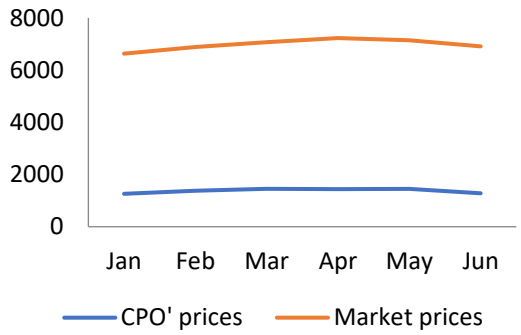

Figure 1. CPO and market prices

The reports of Afdhal et al. (2022), Ari et al. (2023), and Priyambodo and Yunita (2023) indicate that the issues result in fluctuating stock conditions in Indonesian market. Internally, the condition of palm oil also faces obstacles such as an export

ban which became effective on 28 April 2022 and then revoked on 23 May 2022. Another fact, Figure 2 confirms that the patterns of CPO's returns decreased in January 2022 and then move in-line with the market returns for the next months. This study suspects that the stocks in the palm oil business (CFO's stocks) are also likely to be affected by those issues. On facts, this study aims to examine the relationship between CPO's return and market return and how returns differ based on events.

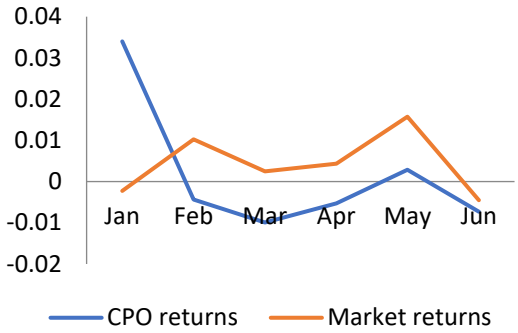

Figure 2. CPO and market returns

2. Literature review

As a basis for developing hypotheses, this study takes some previous empirical evidence as references. Budiarso and Pontoh (2019) find that mature firms normally not only have higher risks and also high returns. Suwito (2020) examines the effect of market returns on the banking sector returns from 2007 until 2011 and finds that it plays significant roles. Azhari et al. (2020) also report that the relationship between market returns and stock returns can be reflected by the positive and significant impact of each beta security. Rahmi (2022) finds that in the period 2015 to 2019, systematic risk has a significant positive impact on returns of the most firms. Consistently, Modeong et al. (2022) find that there is positive relationship for risk-return especially for owned-state bank during COVID-19 pandemic. Mallisa et al. (2022) also find similar result especially in case of non-government-owned banks in Indonesia.

Ha: CPO's returns correlate to market returns

3. Research method

The data is 24 firms that included CPO's stocks or firms in the palm oil business. The 24 firms are AALI, ANDI, ANJT, BWPT, CSRA, DSNG, FAPA, GOLL, GZCO, JAWA, LSIP, MAGP, MGRO, PALM, PGUN, PNGO, PSGO, SGRO, SIMP, SMAR, SSMS, TAPG, TBLA, and UNSP. This study sorts the time series data from January 2022 to June 2022 with a total of 116 market days and applies the capital asset pricing model (CAPM) to take the stock returns, systematic risk, and market returns. The formula for CAPM is noted as follows.

$$R_{it} - RF_t = \alpha_{it} + \beta_{MR_t - RF_t} + \varepsilon_{it}$$

The stock returns of firm i at day t (R_{it}) and market returns at day t (MR_t) are calculated as the difference between current and previous prices divided by previous prices. The risk-free rate (RF_t) is the daily interest rates from Central Bank of Indonesia. This study takes the beta coefficient as the systematic risk (β) of each firm. Following Ari et al. (2023), this study also determines that risky stocks have beta more than 1 and less risky is otherwise. Furthermore, this study splits the daily data based on several new events during the COVID-19 pandemic, which are: before the peak of global geopolitical issues (event 1), when global geopolitical issues peaked (event 2), the emergence of a palm oil export ban (event 3), and the period after the lifting of the palm oil export ban (event 4). In terms of hypothesis testing, this study conducts correlation test and compare means analysis of variance (ANOVA).

4. Result and discussion

Table 1 shows that the mean of return (or R) of CPO from January 2022 to June 2022 is 0.0006 while the mean of market return (MR) is 0.0004. The mean of β has a value of 0.4839 which means during the observation period CPO's stocks are on average less risky. In more detail, this study describes the results of the analysis for R and β based on the events that occurred. In event 2, R decreased from event 1 with a mean of 0.0006 which indicates the impact of global geopolitical issues. The standard deviation (SD) of R of 0.013 also shows an increase in the volatility of CPO's returns from event 1 with the escalation of global geopolitical issues. The β value confirms these results where there is an increase in the systematic risk of CPO's stock from event 1. Even though, the skewness (skew) of R in event 2 is -0.49 or left skewed which indicates that there are several returns still have good performance. The kurtosis (kurt) of R is 1.11 in event 2 to support the skew which indicate the peak of the curve is above the normal or leptokurtic.

In event 3, the R increased from event 2 to 0.0023 which indicates the relative impact of the continuation of the COVID-19 pandemic, world geopolitical issues, and export bans. The SD of R of 0.017 also indicates that CPO's return is more volatile compared to the event period 2. The β value confirms this result which indicates an increase in systematic risk from event 2. The skewness and kurtosis of 0.67 and 0.24 respectively indicate that the R curve is right skewed with a leptokurtic peak. These results indicate that R in this period tends mostly have low positive returns.

In event 4, the mean of R falls to -0.0037 which indicates the accumulative impact of the continuation of the pandemic, world geopolitical issues, and the end of the export ban. The SD of R also shows a decrease from event 3 to 0.009 which indicate returns are becoming less volatile even though systematic risk (β) of this period is the highest among the other events. The skewness and kurtosis of R show that the curve is left skewed with a low peak or platykurtic which indicate that several returns still perform relatively well.

Table 1. Descriptive statistics

	N	Mean	SD	Skew	Kurt
		All sample			
R	116	0.0006	0.012	0.11	0.84
MR	116	0.0004	0.009	-1.22	4.67
β	96	0.4839	0.568	0.64	0.75
		Event 1			
R	37	0.0032	0.011	0.54	0.07
MR	37	0.0013	0.007	-0.09	-0.64
β	24	0.3975	0.463	0.69	0.29
		Event 2			
R	42	0.0006	0.013	-0.49	1.11
MR	42	0.0009	0.007	-0.38	-0.67
β	24	0.4530	0.608	0.13	-0.68
		Event 3			
R	10	0.0023	0.017	0.67	0.24
MR	10	-0.0038	0.021	-1.02	0.48
β	24	0.5186	0.717	1.04	1.42
		Event 4			
R	27	-0.0037	0.009	-0.59	-0.89
MR	27	-0.0001	0.009	0.18	-0.53
β	24	0.5664	0.468	0.17	-0.88

Further procedure, Table 2 presents the results of the Kolmogorov-Smirnov test for R, MR, and β to determine whether the data has a normal distribution. The normality test shows that the Z values of R, MR, and β are insignificant at the 1%, 5%, and 10% levels. These results show that the data from R, MR, and β are normally distributed.

Table 2. Normality test

	R	MR	β
Z	0.609	0.889	0.849
Asymp. Sig. (2-tailed)	0.852	0.409	0.467

Table 3 shows that the Pearson correlation is 0.372 and significant at the 1%, 5%, and 10% levels. These results indicate that R has a weak and significant

positive relationship with MR so Ha is accepted. On those findings, this study is consistent with the findings of Budiarso and Pontoh (2019), Suwito (2020), Azhari et al. (2020), Rahmi (2022), Modeong et al. (2022), and Mallisa et al. (2022).

Table 3. Correlation matrix

		R	MR
R	Pearson correlation	1	0.372
	Sig. (2-tailed)		0.000
MR	Pearson correlation	0.372	1
	Sig. (2-tailed)	0.000	

The final procedure is to check whether there is a difference between the event periods of R and β. Table 4 presents the results of the ANOVA test of R and β between event periods. The Levene test on R and β shows statistical values of 1,71 and 1.78 respectively which are insignificant at the 1%, 5%, and 10% levels. Based on results, the different test for R and β uses the Bonferroni test. The Bonferroni test shows that the mean differences between event periods for R and β are insignificant.

Table 4. ANOVA

Events		R		β	
		MD	**Sig.***	**MD**	**Sig.***
1	2	0.003	1.00	-0.056	1.00
	3	0.001	1.00	-0.121	1.00
	4	0.007	0.16	-0.169	1.00
2	1	-0.003	1.00	0.056	1.00
	3	-0.002	1.00	-0.066	1.00
	4	0.004	0.91	-0.113	1.00
3	1	-0.001	1.00	0.121	1.00
	2	0.002	1.00	0.066	1.00
	4	0.006	1.00	-0.048	1.00
4	1	-0.007	0.16	0.169	1.00
	2	-0.004	0.91	0.113	1.00
	3	-0.006	1.00	0.048	1.00
		Stat	**Sig.**	**Stat**	**Sig.**
Levene		1.71	0.17	1.78	0.16
F		1.77	0.16	0.39	0.75

*Based on Bonferroni test. MD is mean difference.

5. Conclusion

There are several events in the first 6 months of 2022 in Indonesia that tend to have an impact on the palm oil business. During this period, stocks related to the palm oil business fluctuated following the events that occurred. This study categorizes the events as follows: (1) before the peak of global geopolitical issues; (2) global geopolitical issues peaked; (3) the emergence of a palm oil export ban; and (4) the lifting of the palm oil export ban.

During the period from January 2022 to June 2022, this study finds that returns of CPO's stocks and market returns have weak and unidirectional relationship. In addition, it is also found that the systematic risk and return of CPO's stocks tend not to be different or similar between event periods. These results imply that the events that occurred during the first 6 months of 2022 do not result in a significant difference in returns and systematic risk.

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