

The Effect of Excise Issues, Macroeconomic, and Financial Performance on Stock Returns in the Plastic and Packaging Sub Sectors

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Abstract: This study aims to analyze the effect of excise issues on stock returns in the plastic and packaging sub-sectors from 2012 to 2019. The method used in this research is descriptive analysis and panel data regression with one macroeconomic variable, nine financial performance variables, and one dummy variable. This research was conducted in 10 plastic and packaging sub sector companies listed on the Indonesia Stock Exchange (IDX). The joint test results shown that inflation, Cash Ratio, Current Ratio, DAR, DER, ROA, ROE, NPM, TATO, FATO, and excise issues affect the stock returns of the plastic and packaging sub-sector. Partially, the excise issue has a negative effect on stock returns. Stock returns in the plastic and packaging sub-sectors are also more influenced by inflation, DER, ROE, and NPM. The Cash Ratio, Current Ratio, DAR, ROA, TATO, and FATO variables have no effect on the plastic and packaging sub sector stock returns.

Keywords: stock return, excise issue, macroeconomic, financial performance

1. Introduction

Indonesia is the second largest plastic waste producer in the world. A number of cities implemented a policy of banning plastic bags in modern retail outlets to reduce plastic waste. At least, there are 5 cities that have implemented this policy, such as Banjarmasin, Balikpapan, Bogor, Denpasar, and Surabaya. At national level, the central government is formulating an application of plastic excise policy. The policy was previously proposed in 2016, but there was no significant progress due to rejection from a number of industries. This condition made an uncertainty in stock market. Investors hesitate to invest in the plastic and packaging sub-sector.

If plastic excise was applied, the plastic price would rise up because an excise component is charged to consumers. It is feared that rising prices can reduce sales. If sales decrease, other conditions considered constant (*ceteris paribus*), the revenue will also decrease.

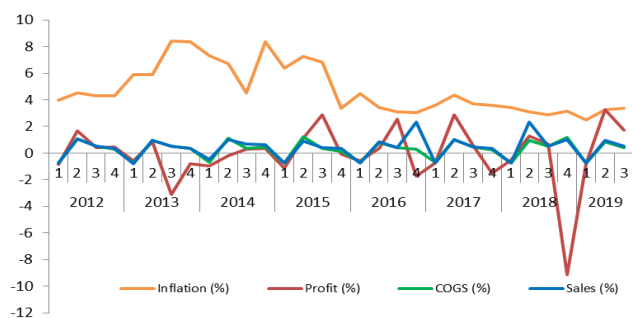


Figure 1: Inflation, the average percentage change in profit, sales, and COGS in the plastic and packaging sub-sector

Figure 1 shows the decreasing inflation trend from 2012 to 2019. Meanwhile, the average sales and cost of goods sold by companies in the plastic and packaging sub-sector tended

to fluctuate with a stable trend. Profit shows more volatile movements with a declining average.

Although the declining profits is not exactly caused by plastic excise issue, it is reasonable to be considered that the plastic excise issue has caused a number of local governments to implement a policy prohibiting the use of plastic bags as an early effort to protect the environment from plastic waste, while waiting for the certainty of the plastic excise tax policy. It is also worth to be considered that the implementation of the policy to ban plastic bags led declining profits. Then, the declining profits has an impact on the declining stock returns.

Based on this background, the objectives of this research are to analyze the effect of excise issues, macroeconomic, and financial performance on stock returns in the plastic and packaging sub-sector.

2. Literatur Review

Signaling Theory explains the reasons why companies must provide positive information, especially financial statements, to investors or potential investors. Through positive information, companies can increase the value of company shares. If there are outstanding issues such as excise issues, a good quality company will give a signal to the market, by showing high profitability, so that investors can distinguish which companies are performing well or even worse. This information can be a recommendation for stock investments.

According to Brilliant et al. (2016), investors need to conduct technical and fundamental analysis to get an estimate of stock value whether the value is below the market price (undervalued) or above (overvalued) market price. Generally, investors will search for shares whose value

is below the market price, so shares value will rise in the future. In conducting technical analysis, Bodie et al. (2014) explains that the indicators used include moving average, RSI, stochastic and other indicators. Meanwhile, fundamental analysis is carried out to determine the value of revenue prospects generated by the company. This is seen from the economic prospects of the country and the company's business environment to find a fair share price.

An efficient market is measured by the relationship between security price and available information, both fundamentally and from the company itself. Efficient market will occur when the market reacts quickly and accurately to reach a new equilibrium price that fully reflects available information. For example, if there is information about excise issue, a declining profit is considered as a bad news. Investors will react quickly after receiving this information, so the market reacts quickly and new prices will form that reflect that information. Haugen (2001) differentiates the Efficient Market Hypothesis (EMH) into three conditions, consist of information on past stock prices or also called weak form hypothesis, all public information is also called the semistrong form hypothesis, all existing information is included inside information or also called strong form hypothesis.

3. Method

This study uses secondary data. Data taken form financial statements, stock prices, and inflation from first quarter of 2012 to third quarter of 2019. The analytical method used is descriptive analysis to describe the data, and panel data regression to analyze the effect of each variable. The sample used in this study is ten plastic and packaging sub sector companies.

The sampling technique used in this study was purposive sampling. The considerations for sample selection are:

1. The shares of companies are still active which are presented on the Indonesia Stock Exchange.
2. The company did not leave the Indonesia Stock Exchange during the study period.
3. The company has issued its shares for more than seven years.
4. The company provides complete and detailed financial statements from 2012-2019.

On 31th December 2017, this sub-sector numbered 14 issuers (listed companies). Based on the sample selection criteria, only 10 companies to be further investigated.

This study uses macroeconomic variables, namely inflation, financial performance in this study, consist of Cash Ratio, Current Ratio, Debt to Asset Ratio (DAR), Debt to Equity Ratio (DER), Return On Assets (ROA), Return On Equity (ROE), Net Profit Margin (NPM), Total Asset Turnover (TATO), and Fixed Asset Turnover (FATO) as independent variables. This study also uses dummy variables that indicate plastic excise issue. Meanwhile, the dependent variable in this study uses stock returns represented by capital gains.

$$RS_{it} = \beta_0 + \beta_1 INF_t + \beta_2 CASHR_{it} + \beta_3 CR_{it} + \beta_4 DAR_{it} + \beta_5 DER_{it} + \beta_6 ROA_{it} + \beta_7 ROE_{it} + \beta_8 NPM_{it} + \beta_9 TATO_{it} + \beta_{10} FATO_{it} + \beta_{11} D + e_{it}$$

Hypothesis:

$$\beta_2; \beta_3; \beta_6; \beta_7; \beta_8; \beta_9; \beta_{10} > 0$$

$$\beta_1; \beta_4; \beta_5; \beta_{11} < 0$$

Information:

β_0 = a constant

β_i = regression coefficient of the independent variable (*slope*)

RS_{it} = stock return i on quarter t

INF_t = inflation on quarter t

$CASHR_{it}$ = cash ratio (CASH R) stock i on quarter t

CR_{it} = current ratio (CR) stock i on quarter t

DAR_{it} = debt to asset ratio (DAR) stock i on quarter t

DER_{it} = debt to equity ratio (DER) stock i on quarter t

ROA_{it} = return on asset (ROA) stock i on quarter t

ROE_{it} = return on equity (ROE) stock i on quarter t

NPM_{it} = net profit margin (NPM) stock i on quarter t

$TATO_{it}$ = total asset turnover (TATO) stock i on quarter t

$FATO_{it}$ = fixed asset turnover (FATO) stock i on quarter t

D = dummy (0: before excise issue occur 1: after excise issue occur)

e_{it} = error term

4. Results

4.1 Descriptive Analysis

Descriptive analysis in this study explains overall characteristics of the company and excise issue progress in plastics and packaging sub-sector during the study period 2012 to 2019. The number of observations used in this study were 310 from 10 companies.

Table 1: Descriptive Statistics

Variabel	Mean	Max	Min	Std. Deviasi
RETURN	0,022	3,690	-0,523	0,308
INFLASI	0,047	0,084	0,025	0,018
CASHR	0,209	2,661	0,000	0,412
CR	1,786	9,586	0,001	1,656
DAR	0,498	1,502	0,139	0,209
DER	0,217	8,180	-1,319	1,300
ROA	-0,001	0,158	-0,498	0,064
ROE	0,069	2,300	-8,084	1,604
NPM	-0,172	0,498	-5,248	0,713
TATO	0,566	2,427	0,000	0,480
FATO	3,252	1,532	0,000	1,182
DUMMY	0,484	1,000	0,000	0,501

4.2 Excise Issues in Plastics and Packaging Sub Sectors

Excise issues began to emerge in first quarter of 2016. Prior to this period, from first quarter of 2012 to fourth quarter of 2015, Table 2 shows that there were four companies that had a negative profit trend, including BRNA, IPOL, TRST, and YPAS. The number of companies that showed negative

profits increased after plastic excise issue entered the market. The plastic excise issue was a negative sentiment for companies in the plastic and packaging sub-sector. This issue raised market concerns about the effects of plastic excise if the government had implemented the policy. Investors believed that the plastic excise policy would be set even though the time was uncertain. It was investors consider to make decisions in the capital market or direct investment.

Table 2: Increase / decrease profit of plastic and packaging sub sector (in thousands of Rp)

	Q12012 - Q42015	2016Q1 - 2018Q4	2016Q1 - 2019Q3
AKKU	47.898	-1.302.277	-904.089
AKPI	79.621	-1.161.529	-1.599.610
APLI	135.223	-3.522.568	-1.547.575
BRNA	-2.487.119	-4.422.401	-2.608.375
FPNI	5.095.543	3.375.573	355.017
IGAR	672.549	-1.582.491	-1.557.320
IPOL	-1.336.839	-494.198	-910.437
SIMA	141.272	-505.864	-628.998
TRST	-2.163.554	2.271.707	1.232.703
YPAS	-2.079.959	29.221	499.792

Companies which was not capable to respond to this negative sentiment must suffer losses. Since the excise issue circulated in market which was first quarter of 2016 to fourth quarter of 2018, the number of companies showed negative profits increased by three companies to 7 companies. The seven companies include AKKU, AKPI, APLI, BRNA, IGAR, IPOL, and SIMA. The increasing number of companies that showed negative profit trends proved that excise issue had a negative effect on company performance.

In quarterly financial statements, companies continued to prepare a number of strategies to respond to negative sentiments on plastic excise issue. The strategy taken by the company requires a short amount of time. The strategy prepared by the company could also reduce profits due to increased company expenses. For example, the strategy of environmentally friendly plastic technology innovation and business expansion requires substantial funds.

The effect of the company's strategy began to appear in 2019. Although there were still 7 companies in 2016 to 2019 with an average downward trend in negative annual profits, 4 companies could improve their financial performance. The declining profit trend was less than the profit trend in 2016 to 2018. The companies are AKKU, APLI, BRNA, and IGAR. Declining profit average of AKKU from 2016 to 2018 was Rp -1.30 billion. It improved in 2016 to 2019, declining profit average of AKKU was Rp -904 billion. Declining profit average of APLI from 2016 to 2018 was Rp -3.52 billion. It improved in 2016 to 2019, declining profit average of APLI was Rp -1.54 billion. Declining profit average of BRNA from 2016 to 2018 was Rp -4,42 billion. From 2016 to 2019, declining profit average of BRNA became Rp -2,61 billion. Declining profit average of IGAR in 2016 to 2018 was Rp -1,58 billion, while the average declining profit in 2016 to 2019 improved to Rp -1.55 billion.

There is also one company that can improve its financial performance with an increasing trend. Average profit of YPAS during 2016 to 2018 was Rp 29 million. The average profit increased in 2016 to 2019, Rp 499 million.

The condition of companies that experienced profit declining trend in 2016 to 2019 gave a negative signal to investors. This condition can be caused by the strategy adopted by the company was not appropriate in responding to the issue of plastic excise duty.

4.3 The Effect of Excise Issues, Macroeconomic, and Financial Performance on Stock Returns in the Plastic and Packaging Sub Sectors

To describe the effect of excise issue, macroeconomic, and financial performance on stock returns, an analysis of panel data was used with EViews 10. The results of panel data analysis are presented in table 3.

Table 3: Panel Data Test Results

Variables	Coefficient	t-statistic	Probability
C	0,1416	3,0153	0,0028
INFLASI	-0,0118	-2,3055	0,0218
CASHR	0,0518	1,6345	0,1032
CR	-0,0099	-1,0057	0,3153
DAR	-0,0629	-1,4496	0,1482
DER	0,0020	2,4887	0,0134
ROA	-0,2147	-1,8258	0,0689
ROE	0,0382	6,9094	0,0000
NPM	0,0255	2,3668	0,0186
TATO	-0,2325	-1,3945	0,1642
FATO	-0,0008	-0,8422	0,4003
DUMMY	-0,0618	-2,6831	0,0077
<i>R-Squared</i>	0,1906		

The dummy variable referred to the model is excise issues on stock returns in the plastic and packaging sub sectors. The dummy variable has a probability value of 0.0077, so that it has a significant effect on stock returns in the plastic and packaging sub-sectors by using a significance level of 5 percent. Dummy variable coefficient value of -0.0618 shows that the excise issue has a negative relationship to stock returns in the plastic and packaging sub-sector. The result shows that stock returns had a higher value of 0.0618 times before the excise issue compared to after the excise issue in 2016. It means that the plastic excise issue gave a signal to the market about the condition of the plastic and packaging industry. Investors caught the signal, if the excise tax had been applied, there would be a decline in sales. This decrease could be caused by excise imposed on consumers, so the price of goods with plastic packaging became more expensive. More expensive price would make consumers limited their spending, and then resulted declining sales. If other conditions are considered the same, declining sales caused the company's profit to fall. This declining profit effected on declining stock returns.

Inflation variable has a probability value of 0.0218, so that it has a significant effect on stock returns in the plastic and packaging sub-sectors by using a significance level of 5 percent. This results shows that inflation was one of the factors that influenced investors to invest in plastic and

packaging sub sector companies. Inflation variable coefficient value of -0.0118 indicates that if the other variables were fixed and inflation had increased 1 percent, stock returns would decrease by 0.0118. The results of this study are in line with research by Mubarok (2014), Khan et al. (2017), Gunawan (2017) and Kharisma (2019) which had results of research that inflation had a negative effect on stock returns.

The Debt to Equity Ratio (DER) variable has a probability value of 0.0134, so that it has a significant effect on stock returns in the plastic and packaging sub-sectors by using a significance level of 5 percent. The coefficient value of the DER variable of 0.0020 shows that if the other variables were fixed and the DER had increased 1 time, the stock return would increase by 0.0020 times. The results of this study are in line with Nugroho's (2009) research that DER had a significant positive effect on stock returns. The results of this study are reinforced by Bustami and Heikal (2019) which showed that DER had a positive effect on stock returns.

The Return on Equity (ROE) variable has a probability value of 0.0000, so that it has a significant effect on the stock returns of the plastic and packaging sub-sectors by using a significance level of 5 percent. This result shows that ROE is a benchmark for investors to invest in the plastic and packaging sub-sector. The coefficient value of the variable ROE of 0.0382 indicates that if the other variables were fixed and ROE had increased 1 time, then the stock return would rise 0.0382 times. This study is in line with research by Ghi (2015), Adiyadnya et al. (2016), and Khan et al. (2013) which had the results of research that ROE had a positive effect on stock returns.

The variable Net profit Margin (NPM) has a probability value of 0.0186, so that it has a significant effect on stock returns in the plastic and packaging sub-sectors by using a significance level of 5 percent. The coefficient value of the variable NPM of 0.0255 indicates that if the other variables were fixed and the NPM had increased 1 time, the stock return would increase 0.0255 times. This study is in line with Anwaar's (2016) research which had the results of research that NPM had a positive effect on stock returns.

Cash Ratio, Current Ratio, DAR, ROA, TATO, and FATO variables have no effect on stock returns. This is indicated by the probability value greater than 5 percent. Cash Ratio research results are in line with research by Angellia et al. (2018) and DAR research are in line with the research of Vincent et al. (2018).

Current Ratio has a negative effect on stock returns. This shows that high Current Ratio might not necessarily be good. Too high current assets indicates that the company had not been efficient in managing its current assets. Current Ratio research is in line with Endri's research (2018).

ROA has a negative effect to stock returns which means that too high level of ROA might not necessarily attract investors to invest. The results of this ROA study are in line with Musallam's research (2018). TATO and FATO also have a

negative effect to stock returns. The high value of TATO and FATO could be caused by the low value of assets, as in AKKU companies which had low fixed asset values due to high depreciation. The high accumulation of depreciation could be due to fixed assets such as buildings, vehicles, machinery and office equipment at risk of damage. TATO research is in line with Stefano's research (2015), and FATO research is in line with the research of Setiyawan and Rusmana (2013).

The joint test result shows that inflation, cash ratio, current ratio, DAR, DER, ROA, ROE, NPM, TATO, FATO, and excise issues affect the stock returns of the plastic and packaging sub-sector. Stock returns in the plastic and packaging sub-sectors are more influenced by inflation, DER, ROE, NPM, and excise issues, while cash ratio, current ratio, DAR, ROA, TATO, and FATO variables have no effect on stock returns in the plastic sub-sector and the packaging.

5. Managerial Implications

- 5.1. Investors need to pay attention to outstanding issues or government plans in formulating policies, before starting to invest in the stock market. This research proves that the plastic excise issue affect industry. Investors also need to pay attention to how companies respond to the issue.
- 5.2. Companies need to spread positif signal to attract investors. The most ideal signal is complete and profitable financial report. If the company performance slide down, the company need to spread another signal by release the company strategies to cover financial matter.
- 5.3. The government must immediately take a decision, either canceled or approved. This certainty is what investors and issuers need in the stock market. Before decide to approved or canceled, the Government need to calculate the effect of plastic excise on the reduction of plastic waste in the environment and also how bad the impact on the financial performance of plastic and packaging sub-sector companies, especially the company's resilience in the stock market.

6. Conclusion

Based on the research that has been done, it can be concluded as follows:

- 6.1. Excise issue has a significant effect on stock returns in the plastic and packaging sub-sector with a negative relationship. Investors catch a signal if the excise tax had been applied, there would be a decreasing sales and then resulted decreasing profits.
- 6.2. Inflation has a significant effect on stock returns in the plastic and packaging sub-sectors with a negative relationship.
- 6.3. DER, ROE, and NPM significantly affect stock returns in the plastic and packaging sub-sectors with a positive relationship.

6.4. Cash Ratio, Current Ratio, DAR, ROA, TATO, and FATO have no effect on stock returns. Current Ratio, DAR, ROA, TATO and FATO have a negative relationship, only Cash Ratio has a positive relationship.

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