BANKRUPTCY RISK AND MARKET REACTION TO CAPITAL EXPENDITURE

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ABSTRACT

This study aims to examine whether the condition of the bankruptcy risk of a company will influence the market response to capital expenditure. The main hypothesis of this research is the positive market reaction to the level of capital expenditure issued will be different in companies with a high level of bankruptcy risk and companies with low bankruptcy risk. The study was conducted on 56 companies with large capitalization on the Indonesia Stock Exchange for the period 2018-2021. The results of hypothesis testing indicate that the market responds positively to capital expenditures and the company's bankruptcy risk conditions. In addition, it is proven that in companies that are at risk of bankruptcy, the market reacts positively to capital expenditures made by companies, while in companies that are not in a state of bankruptcy, the market does not respond to capital expenditures made by companies. The results of this study are expected to be used by market participants when they analyze the information on capital expenditures made by the company.

Type of Paper: Empirical/ Review

Keywords: capital expenditure, bankruptcy risk, market response

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1. Introduction

Company managers are always faced with three policy decisions: capital expenditure, dividend, and funding. Several studies have proven the impact of announcing the decision on funding (M'ng et al., 2020) and dividend (Almanaseer, 2019) on the stock price. However, there is rarely any empirical evidence on the impact of a company's capital expenditure announcement. This research presents additional evidence on the impact of capital expenditure on the stock price.

(McConnell & Muscarella, 1985) researched market reaction to capital expenditure decisions of industrial and public utility companies. They found that the announcement of an increase (decrease) in capital expenditure had a positive (negative) effect on stock returns. However, some researchers found that the announcement of capital expenditure decisions does not have a material effect on stock returns. Other researchers found that investors positively respond to new investments (Burton, 2005), capital expenditure announcement has a relevant value in the capital market when the company is entering an expansion period (Kim & Lee, 2018) and an announcement of capital expenditure has a positive relationship to abnormal stock returns (Akbar et al., 2008).

Although previous studies have made an important contribution to obtaining an understanding of the influence of capital expenditure announcements, they have not clearly

described the reason why some companies' capital expenditure announcements are accepted well by the market, while others are accepted negatively. Previous research suggests that the market tends to have better reactions to the capital expenditure announcements made by high-tech companies (Chan et al., 1990). This grouping is good, but it does not have an acceptable economic reason.

In this research, the researcher argues that stock price reaction to capital expenditure announcements heavily relies on the market's assessment of a company's bankruptcy risk level. The researcher hypothesizes that a company's bankruptcy risk will also affect the relationship between capital expenditure announcement and abnormal stock returns.

The researcher uses the Altman Z score indicator to classify the sample of companies that have high or low bankruptcy risk.

2. Literature Review

Capital expenditure is an important financial decision made by a firm. This decision has an important role in increasing firm value. The stock market reacts to capital expenditure announcements. An announcement of an increase (decrease) in capital expenditures positively (negatively) influences stock returns (McConnell & Muscarella, 1985), and investors also respond positively to new investments (Burton, 2005). (Kim & Lee, 2018) found that capital expenditures have more relevant values in the capital market when the company is entering a period of expansion and announcing capital expenditures has a positive relationship with abnormal stock returns (Akbar et al., 2008). Changes in capital expenditures to be bigger or smaller than the industry average give a positive or negative signal to the market (Kerstein & Kim, 1995). Based on the explanation above, this research hypothesizes that:

H1: The market reacts positively to the level of capital expenditures issued by a company

Altman, (1968) has been used as a proxy for bankruptcy risk conditions in various studies because the Altman (1968) Z-score model is considered to be the most effective tool for predicting companies' financial health. The Altman Z-score model provides accurate and reliable results for estimating bankruptcy risk. Previous studies (Garcia Osma, Beatriz, 2011; Lugovskaya, 2010; Udin et al., 2017) used the Altman Z-score model to estimate bankruptcy risk. Many empirical studies of market reactions to bankruptcy announcements have been conducted (Beneish & Prees, 1995; Dawkins & Bamber, 1998; Lang & Stulz, 1992). This study shows that there is a negative abnormal return around the announcement day because a bankruptcy announcement is considered bad news. The decline in stock prices is related to the investors' assessment of the possibility of the company's bankruptcy. Dunham & Garcia, (2021) found that increasing investor sentiment through media coverage will be able to reduce the impact of investors' assessment of the level of risk of corporate bankruptcy. Based on this explanation, this study hypothesizes that:

H2: There are differences in market responses toward companies with high bankruptcy risk and ones with low bankruptcy risk.

As explained before, the stock market reacts to capital expenditure announcements (Burton, 2005; Kim & Lee, 2018; McConnell & Muscarella, 1985). This proves that the amount of a company's capital expenditure becomes information that is considered by investors when making decisions to buy or sell shares. On the other hand, investors also consider a company's bankruptcy condition when deciding to buy or sell shares. Empirical research proves that markets react to bankruptcy announcements (Beneish & Prees, 1995; Dawkins & Bamber, 1998; Lang & Stulz, 1992). The market's response is indicated by the presence of negative abnormal returns around the announcement day because the bankruptcy announcement is considered bad news. Based on this argument, it can be assumed that market response as a result of the effect of capital expenditure will be different for companies with different bankruptcy conditions, so it is hypothesized that:

H3: Market's positive reaction to the level of capital expenditure issued by a company will be different for companies with high bankruptcy risk and companies with low bankruptcy risk.

3. Research Methodology

3.1 Sample

This research was conducted on companies listed on the Indonesia Stock Exchange. The sample selection is based on companies that have large capitalization in the capital market. This criterion was chosen because companies with large capitalizations are more easily noticed by investors than companies with small capitalizations. Based on this criterion, 56 companies are selected for the 2018-2021 observation period, so 224 observations matched the sample criteria. Based on the type of business, the 56 companies are divided into 10 companies engaged in the banking industry and 46 companies engaged in the manufacturing industry.

3.2 Market Response Measurement

The market response is measured by using cumulative abnormal return (CAR) which is obtained by adding up the abnormal return (AR) with an observation period of 41 days (20,0,+20) around the publication date as follows:

$$CAR = \sum_{i=1}^{N} AR_{i,t}$$

AR is used to measure market response to certain published information that is measured with the following formula:

$$AR_{jt=} R_{i,j-} (\alpha_{j+} \beta_j R_{mt})$$

α j and βj are estimated with a market model that has been widely used (Parveen et al., 2020), using the following model:

$$R_{jt=} \alpha_{j+} \beta_j R_{mt+} \varepsilon_{jt}$$

The estimations are made -120 to -20 days before the publication date.

3.3 Bankruptcy Risk Measurement

Bankruptcy risk is measured using the Altman Z-score. The Altman Z-score provides a threshold level for predicting a company's financial health and its distance to bankruptcy risk. Companies with a score above 2.99 are less likely to go bankrupt and are considered to be in the "safe zone" and have no chance of immediate trouble. Z-score between 1.81 and 2.99 is categorized as a "grey zone" indicating that the company does not have financial problems right now, but may face difficulties soon. In contrast, a score below 1.8 (1.8 Z) indicates that firms are prone to bankruptcy and are treated as "trouble zones" (Altman, 1968). This study classifies the sample companies into two groups: financially healthy and financially distressed (Udin et al., 2017). Companies that score above 1.81 are treated as financially healthy companies. On the other hand, companies that score below 1.81 are in a state of "distress" and are treated as companies experiencing financial difficulties.

3.4. Analysis Model

This study examines the market response (CAR) to capital expenditures (CAPEX) moderated by the company's bankruptcy risk (FD) conditions. The market response is measured using the CAR indicator and the condition of bankruptcy risk is measured by a dummy, namely: a score of 1 for distressed companies, namely companies with Z-scores below 1.81, and 0 for companies not distressed, namely companies with Z-scores above 1.81. The regression equation model to test the hypothesis is as follows:

$$CAR_{i,t+1} = \beta_0 + \beta_1 CAPEX_{i,t} + \beta_2 FD_{i,t} + \beta_3 CAPEX * FD_{i,t} +$$
$$\beta_4 DER_{i,t} + \beta_5 FCF_{i,t} + \beta_6 MGT\_OWN_{i,t} + \varepsilon_{i,t}$$

The main independent variable in this study is capital expenditure (CAPEX) which is the amount of capital expenditure for the current year and bankruptcy risk (FD) as well as other control variables, namely leverage (DER), free cash flow (FCF), and management's share ownership (MGT_OWN).

3.4. Variable Definition

CAR	Cumulative abnormal return for a period of 20 days before and after the publication date of financial statements.
CAPEX	Capital expenditure is scaled with the total asset of the previous year.
FD	Dummy variable for bankruptcy risk condition. 1 for bankrupt and 0 for not bankrupt.
CAPEX*FD	Interaction between capital expenditure and bankruptcy risk
DER	Long-term liabilities divided by equity (Stulz, 1990)
FCF	Free cash flow is a manifestation of agency problems because excess cash is not distributed to shareholders (Brailsford & Yeoh, 2004). Free Cash flow is calculated using the following approach (Lang et al., 1991): FCF= EBIT+ DEPR-TAX-DIV-INT-INV EBIT is earnings before interest and taxes; DPR is depreciation expense'; TAX paid taxes; DIV is dividends paid to common stockholders; INT interest expense; INV investment for the year
MGT_OWN	Management's share ownership

4. Results

4.1 Descriptive Analysis

Table 1 describes the average value for each variable. Panel 1 describes the average value of each sample company that is grouped by bankruptcy risk conditions, namely experiencing bankruptcy risk and not experiencing bankruptcy risk. Meanwhile, in panel 2, the value of each variable is described based on all samples.

Table 1.

Descriptive Statistic

	N		CAR	CAPEX	DER	FCF	MGT_OWN
Panel 1							
Bankruptcy Risk							
Bankrupt	102	Mean	6,58	0,12	0,80	-10,01	0,68
		SD	50,27	0,24	0,79	46,53	0,16
Not Bankrupt	122	Mean	-6,50	0,10	0,18	-77,69	0,69
		SD	69,74	0,18	0,19	288,00	0,13
Total	224	Mean	-0,55	0,11	0,46	-46,87	0,69
		SD	61,85	0,21	0,63	217,10	0,14
Panel 2. Year 2018							
Bankruptcy Risk							
Bankrupt	25	Mean	17,16	0,11	0,77	-11,33	0,68
Not Bankrupt	31		-0,42	0,12	0,17	-98,01	0,68
Total	56		7,42	0,12	0,44	-59,31	0,68
Panel 3. Year 2019							
Bankruptcy Risk							
Bankrupt	26	Mean	8,48	0,07	0,79	-7,22	0,67
Not Bankrupt	30		-2,30	0,05	0,17	-49,48	0,69
Total	56		2,70	0,06	0,46	-29,86	0,68
Panel 4. Year 2020							
Bankruptcy Risk							
Bankrupt	28	Mean	2,96	0,15	0,75	-0,91	0,68
Not Bankrupt	28		-1,64	0,02	0,19	-68,40	0,68
Total	56		0,66	0,09	0,47	-34,66	0,69
Panel 5. Year 2021							
Bankruptcy Risk							
Bankrupt	23	Mean	-2,66	0,12	0,88	-22,78	0,69
Not Bankrupt	33		-20,15	0,17	0,16	-92,13	0,68
Total	56		-12,98	0,15	0,46	-63,65	0,69

Based on table 1 (panel 1) above, it can be seen that the number of sample data that are experiencing distress is 102 and the sample data that are not distressed is 122. The market seems to respond more positively to companies that are experiencing bankruptcy risk conditions. Meanwhile, the capital expenditures, leverage conditions, and free cash flow of companies that have a risk of bankruptcy are greater than companies that do not. Overall, the CAR of the sample companies is minus 0.55, which means that the accumulated difference between the actual return and the normal return received by investors in the 20 days before and after the announcement date of the financial statements is minus 0.55%. The average capital expenditure of the sample companies is 11% of their total assets, total liabilities are 46% of equity, and the average share owned by management is 69%.

Based on table 1 (panel 2 – panel 5) above, it can be seen that CAR is experiencing a downward trend from positive 7.42 in 2018 to minus 12.98 in 2021. The phenomenon of the decline in CAR is allegedly influenced by the weakening condition of the capital market in Indonesia due to pandemic covid 19. Even though CAR is experiencing a downward trend, the CAR for groups of companies with a risk of bankruptcy is consistently higher than the CAR for companies that do not have a risk of bankruptcy. Trends in capital expenditure (CAPEX),

leverage (DER), and share ownership by management (OWN_MGT) from 2018 to 2021 are relatively the same.

4.2 Equations

The data structure obtained in this study is panel data, namely 56 companies for a period of 4 years (2018-2021). The panel data regression test used in this study uses the weighted least square (WLS) method. Table 2 shows the results of hypothesis testing using the WLS method. Model 1 shows the results of the hypothesis testing the effect of variables; capital expenditure (CAPEX) on market response as measured by using CAR without looking at the moderating effect of the bankruptcy risk variable (FD). Meanwhile, model 2 shows the results of testing the hypothesis of the moderating effect of the bankruptcy risk variable (FD) on the relationship between capital expenditures (CAPEX) and market response (CAR).

Table 2.
Hypothesis Test Result

	Model 1			Model 2		
	Coefficient	t-stat		Coefficient	t-stat	
Const	-2,204	-0,345		-3,407	-0,540	
CAPEX	11,343	2,149	**	1,760	0,231	
FD	8,069	3,196	***	6,542	2,354	**
DER	-3,696	-3,033	***	-3,944	-3,213	***
FCF	0,002	0,379		0,002	0,358	
MGT_OWN	-1,554	-0,174		1,790	0,202	
CAPEX*FD				17,904	1,682	*
R Square		0,073				0,089
Adj.R Square		0,052				0,064
F-stat		3,449				3,553
Sig		0,005				0,002

*** significant at the 1% level; ** significant at the 5% level; * significant at the 10% level

5. Discussion

This study hypothesizes that the market reacts positively to the level of capital expenditure issued by the company. The announcement of an increase in capital expenditure has a positive effect on stock returns. The amount of capital expenditure made by the company is a positive signal for investors to decide to buy company shares so that it will increase share prices. The increase in stock prices will increase the returns received by investors. The results of the hypothesis test shown in model 1 in table 2 show that the capital expenditure variable (CAPEX) has a positive coefficient of 11.343 and a significance value below 0.05, which means that the CAPEX variable has a positive effect on the CAR variable. The greater the capital expenditure made by the company, the greater the accumulation of abnormal returns. These results prove that the market responds positively to capital expenditures issued by the company. The results

of this study are in line with research conducted by (McConnell & Muscarella, 1985), that the announcement of an increase (decrease) in capital expenditures has a positive (negative) effect on stock returns; (Burton, 2005), that investors respond positively to new investments; and (Akbar et al., 2008), that the announcement of capital expenditures has a positive relationship to abnormal stock returns.

This study hypothesizes that there are differences in market response in companies with a high level of bankruptcy risk and companies with a low level of bankruptcy risk. The results of the hypothesis test shown in table 2 show that the bankruptcy risk variable (FD) has a positive coefficient value of 8.069, a significance value below 0.01 (model 1), a positive coefficient of 6.542, and a significance value below 0.05, which means that the FD variable has a positive effect. to the CAR variable. The results of this hypothesis test indicate that the market responds positively (negatively) to companies experiencing bankruptcy (not bankrupt). This result is consistent with the data described in table 1, that the CAR of the group of companies with the risk of bankruptcy in the 2018-2021 observation period is always higher than the CAR of companies without the risk of going bankrupt. This result contradicts the previous research which showed negative abnormal returns around the announcement day because bankruptcy announcements are considered bad news (Beneish & Prees, 1995; Dawkins & Bamber, 1998; Lang & Stulz, 1992). The results of the analysis of the type of industry sample companies show that all sample companies in the banking industry are included in companies with a risk of bankruptcy. However, the market still responded positively to the banking company. Even Bank BRI and Bank Pan Indonesia during the 2018-2021 observation period were always responded positively by the market. The phenomenon of a positive response to banking stocks even though they are included in the bankrupt category might be due to the certainty of protection from the government against the risk of bankruptcy that will occur in the banking sector. In addition, some banks are state-owned. Several state-owned enterprises such as Perusahaan Gas Negara and Jasa Marga also received a positive response from the market despite being identified as experiencing bankruptcy risk.

This study hypothesizes that the market's positive reaction to the level of capital expenditure issued by the company will be different for companies with high bankruptcy risk and companies with low bankruptcy risk. The results of hypothesis testing in table 2 (model 2) show that the interaction coefficient of capital expenditure and bankruptcy risk (CAPEX*FD) has a positive and significant coefficient and the capital expenditure coefficient (CAPEX) has a positive but not significant coefficient. These results indicate a phenomenon that in the group of companies with the risk of not going bankrupt, the market does not respond to capital expenditures made by companies, but the market responds positively to capital expenditures made by companies in the bankrupt risk group. Capital expenditures in companies with bankruptcy risk are relatively the same. However, capital expenditures made by companies with bankruptcy risk are responded to positively by investors. These results prove that the market response as a result of the effect of capital expenditure will be different for companies with different bankruptcy conditions.Title of sub-heading must be in Times New Roman, font size 12, *Italic*, Line spacing must be1.5 pt. Spacing must be 12 pt. before and after.
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6. Conclusion

Based on the results of hypothesis testing, it can be concluded that the market responded positively to capital expenditures issued by the company, but failed to prove a negative market response to the company's bankruptcy risk conditions. This study finds the opposite phenomenon, that the market responds positively to companies experiencing bankruptcy risk. In addition, it is proven that in companies that are at risk of bankruptcy, the market reacts

positively to capital expenditures made by companies, while in companies that are not in a state of bankruptcy, the market does not respond to capital expenditures made by companies.

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