

# The Effect of Corporate Action on Investor Reaction in Transportation Sector

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## ABSTRACT

There is many previous research that analyzed market responses towards mergers & acquisitions. However, there are limited research has been conducted in the transportation sector in ASEAN. This research investigates the effect of corporate action on investor response to transportation sector companies in ASEAN. Investor response was measured by cumulative abnormal returns (CAR), while corporate action we use a dummy variable to separate companies that perform M&A corporate action and those that did not perform M&A corporate action. Control variables used in this study including firm size, firm age, and firm leverage. The number of samples in this study was 192 companies in the transportation sector in ASEAN during the 2015-2020 period. The results showed that the independent variable corporate action had a negative effect on investor response. While the control variables firm size, firm age, and firm leverage had no significant effect on investor response.

**Keywords:** *Corporate action, Cumulative abnormal return, Investor's response.*

## 1. INTRODUCTION

Many people concern about the impact of the COVID-19 pandemic because the potential changes from a health crisis to an economic crisis. Initially, this impact had an influence on stock market returns in China, then later spread throughout the world [1]. This causes many people to speculate that there might be an economic decline due to this incident, therefore in this new environment the company tried to survive by taking corporate actions in order to increase company growth, restructure capital, and increase liquidity by utilizing resources or innovations owned by the company. M&A also become one of the popular corporate actions and is often carried out by many companies over the last few decades [2],[3]. Besides M&A, there are several types of corporate actions such as dividend distribution, stock split, reverse split, bonus issue, rights issue, share buyback, and others.

M&A activities are considered a steppingstone to acquire strategic resources and capabilities as well as gain opportunities to increase competitive advantage in the global market [4]. Mergers and acquisitions are carried out by companies to gain a competitive advantage in business, strengthen business with other different industries, gain efficiency and positive growth [5],[6]. Corporate action has a significant impact on

shareholders since this action affects the number of shareholdings, the number of shares owned by shareholders, the number of shares outstanding, and their effect on stock price movements [7]. Corporate action is one of the main factors that influence stock price movements, the impact of corporate action can cause positive or negative abnormal returns [8]. A study shows that investor attention increases as the M&A announcement approaches and continues to increase several days after the announcement day [9]. In several studies, the acquiring company and the acquisition target company obtained positive abnormal returns and the cumulative abnormal return (CAR) showed an increasing trend after the announcement [10],[11],[12],[13],[14],[15]. However, there are other studies that show a negative response from investors to corporate action. Research by Morck et al. [16] found a negative return during the M&A announcement period [17]. Campbell et al. [18] stated that the reason why investors did not respond positively to M&A was because the acquiring company had low leverage, low premiums, and used non-cash financing.

This study observed the effect of information related to corporate action M&A of transportation sector companies in ASEAN on investor responses. Based on previous research, signalling theory was used to observe the market response to the information submitted by the

company [19]. The purpose of this study is to prove whether the corporate action taken by the company has an effect on abnormal returns. Most of the countries that are members of ASEAN are developing countries. There are limited references studies that focus on discussing research on the transportation sector in ASEAN. The limited research that discussed the impact of corporate action on abnormal returns in ASEAN cause lack of literacy about it [20]. This study used a research sample of companies that carried out M&A in the transportation sector. The researcher chose this sector because it has an important role for developing countries. Besides that, transportation also supports the improvement of the social economy and plays an important role in running an adequate supply chain considering the logistics services were quite limited [21].

## **2. LITERATURE REVIEW & HYPOTHESIS DEVELOPMENT**

### ***2.1. Corporate Action***

Corporate actions consist of various actions ranging from dividend distribution, bonus issues, mergers, acquisitions, stock splits and so on. Corporate action is one of the main factors that can affect stock price fluctuations, this is highly anticipated by investors to take advantage of the corporate action against stock prices [8]. One type of corporate action that can attract the attention of investors is M&A activities [2]. Mergers and Acquisitions have gained global recognition as a strategic move over the past few decades [15]. The analysis shows an increasing trend of M&A which has brought developments in various industrial sectors [20]. Mergers and acquisitions are expected to develop larger and highly competitive companies to gain responses from the market [15]. Mergers and acquisitions are a step for companies to expand geographically for the transportation sector in developing countries because many logistics companies have a desire to increase their service provision to become multinational logistics. Corporate action M&A can affect the local and global economy [22],[23]. M&A activities in publicly listed companies have important implications for future activities and valuations, especially companies that tend to engage in growth through acquisitions [[24]].

### ***2.2. Signalling Theory***

According to Brigham and Houston [25] signalling theory is an action taken by the company in providing information to investors or outsiders about the way of management evaluate the company's prospects. If the information cannot be conveyed to outsiders, there will be information asymmetry that hinders investors from making investment decisions [26],[27]. If investors get inadequate information about a company, they tend not

to be interested in investing. Therefore, the company must be able to give a positive signal to outsiders [28],[29],[30]. Signalling theory describes two parties who take a role in this information, the sender must choose what and how to communicate or signal the information, while the receiver must be able to receive and interpret the information or signal [28],[31],[32]. Signalling theory proves important to provide information by considering the contribution of various parties when generating company acquisitions, this theory explains how companies effectively provide signal prospects to acquire resources in the future [19],[33].

Information about corporate actions that taken by the company can provide a signal to investors in showing future business prospects in order to provide benefits for investors in making investment decisions [19],[34],[35]. In several studies, this signalling theory was used to measure how investors react to M&A announcements. Announcements related to corporate action M&A can be considered as a positive signal if the company has growth potential for the future, has good financial performance, and is able to obtain new resources for industry [3],[4],[34],[36]. This M&A announcement is a signal sent by companies conducting M&A that can affect the expectations of investors. If the information regarding the explicit M&A announcement is interpreted by investors will give a better prospect, then the share price will also increase [4].

### ***2.3. Investor's Response***

According to Scott [37] investor response is a decision taken by investors based on market information or company performance that has been obtained and analyzed by the investor. Rational investors certainly pay attention to the company's performance and stock returns because it is one of the indicators to determine the success of an investment [38],[39]. When there is an announcement related to new incidents within the company, it will quickly change the company's stock price because investors re-evaluate the company's shares based on the information obtained by calculating the abnormal return of the company's shares around the announcement date [36]. Abnormal return is the difference between actual return and expected return [40]. In this study, the investor response was measured by using cumulative abnormal return (CAR). CAR is the accumulated percentage change in stock prices after adjusting for the overall market movement [41]. The cumulative abnormal return calculation illustrates the M&A effect in a longer period of time than the D Day of the M&A announcement from the company [13].

There are several studies that discussed that shareholders of target firms received abnormal returns of 20% to 30% around the time of announcement [42],[43],[44]. In the period before the announcement of

merger and acquisition takes place at least H-3 from the announcement, the average abnormal return might be positive, but after the M&A announcement there would be a slight change which is not too significant [45]. The calculation of abnormal returns can obtain positive and negative abnormal returns. This positive abnormality indicates that the actual return is greater than the expected return and vice versa [40]. Research by Moeller [46] documents evidence of abnormal returns around the announcement date. For the three-day event window, the cumulative abnormal return for shareholders is slightly positive for each year. In contrast to Moeller [46], Morck et al. [16] found that the shareholders of the acquiring company experienced negative returns during the announcement period

## 2.4. Hypothesis Development

In signalling theory, it has been explained how information from management can be conveyed to the market or outside parties, when the information cannot be conveyed properly it will hinder investors in making investment decisions [[26]]. Information regarding corporate action activities will be responded positively by investors when corporate action activities provide added value for the sustainability of the company. On the other hand, investors who consider that corporate action activities are detrimental and a waste of company resources, so it will give a negative response [[34]]. This negative response from investors is due to the information asymmetry between management and investors [47]. In using the signalling theory approach, several studies have received positive responses from investors when companies carry out corporate action M&A [3],[4],[36],[48]. The existence of this response indicates that there is an effect of M&A that can affect investor response.

This study observed and evaluated investor reactions towards companies that took corporate action and those that did not. Companies that took corporate action gave a signal in the form of an M&A announcement, while companies that did not take corporate action could be observed from the date of publication of the financial statements. Previous research has shown that there was an increase in investor attention as the M&A announcement approaches and continues to increase several days after the announcement day [9]. In order to find out the differences, the researcher used companies that did not take corporate action in the form of M&A as a comparison. Several studies have shown that both acquiring companies and acquisition target companies obtain positive abnormal returns and the cumulative abnormal return (CAR) shows an increasing trend after the announcement [10],[11],[12],[13],[14],[15],[48]. However, there are also several studies that show a negative response from investors to corporate action. Research by Morck et al. [16] found a negative return

during the M&A announcement period. Campbell et al. [18] stated that the reason investors who did not respond positively to M&A was due to the low leverage, low premiums, and used non-cash financing of the acquiring company. Research by Guidry & Patten [49] actually shows that there was no significant market reaction to the announcement of financial statements. There are many studies that have shown the positive influence of investors on corporate action.

The hypothesis used is as follows:

H<sub>1</sub>: Investors respond positively to companies with M&A corporate action

## 3. METHOD

### 3.1. Model Analysis

Corporate action activities will affect investor response if there is an announcement related to corporate actions. The investor's response can be measured using cumulative abnormal return (CAR) by looking at the difference between the actual return and the expected stock return [40]. In addition, this study used control variables that can affect cumulative abnormal return (CAR) such as firm size (FSIZE), firm age (AGE), and firm leverage (LEV) [36]. Wilcox, Chang, & Grover [50] argued that firm size could affect market value after the M&A announcement, which is due to different information content and market competition between large and small companies. Investors tend to be interested in investing in companies that have a larger firm size considering the greater probability to obtain the desired return [51]. Firm age can be evaluated from the founded year of the company, companies that have been established for a long time certainly have a lot of experience [48],[52]. Higher firm leverage indicates the company is unable to invest in the future, therefore it has higher risk and volatility. Based on this, leverage is an important variable in determining investment decisions for investors [18],[53].

The regression model used to analyze the effect of corporate action on investor response (cumulative abnormal return) is as follows:

$$CAR_{it} = \beta_0 + \beta_1 MA_{i,t} + \beta_2 FSIZE_{i,t-1} + \beta_3 AGE_{i,t-1} + \beta_4 LEV_{i,t-1} + \varepsilon_{i,t} \quad (1)$$

### 3.2. Variable Operationalization

#### 3.2.1. Dependent Variable

This study evaluated the effect of M&A corporate action announcements on investor response by observing the CAR value around the M&A announcement date. Corporate action is one of the main

factors that can affect stock price fluctuations, therefore a CAR calculation was carried out to evaluate if there was a market response around the announcement period [8],[13]. CAR is the accumulation of abnormal returns value after adjusting for the overall market movement [41]. Abnormal return is the difference between actual return and expected return [40]. Before knowing the CAR value, the researcher calculated the actual return and expected return from the stock market price. Event studies have been used to conduct the analysis. The models used to estimate the normal return are market-adjusted model. The estimation period used in this study is 120 days with event periods (-1,0,+1) and (-5,0,+5) to evaluate differences in investor responses on the day before and after M&A announcements [54]. The formula is as follows:

$$R_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}} \quad (2)$$

Rit is the return of daily stock price company. Pit is the closing price of share i in period t, while Pit-1 is the closing price of share i in the previous period. Then, calculated the daily expected return with the following formula:

$$E(R_{it}) = \alpha_i + \beta_i \times E(R_{mt}) \quad (3)$$

Where E(Rit) is the return of security i in period t. Rmt is the daily return for the market index in period t.  $\alpha_i$  and  $\beta_i$  are the regression coefficients for firm i. From the actual and expected return values that have been obtained, the researcher uses the market model to calculate abnormal returns. The abnormal return of security i for period t is:

$$AR_{it} = R_{it} - E(R_{it}) \quad (4)$$

After that, the cumulative abnormal return (CAR) is calculated by accumulating abnormal returns in the event window used in this study, which is (-1,0,+1) and (-5,0,+5). The event window is accumulated based on the day before, D Day, and the day after the announcement of the M&A corporate action using the following formula:

$$CAR_i = \sum_{t_1}^{t_2} AR_{it} \quad (5)$$

### 3.2.2. Independent Variable

In this study, Mergers and Acquisitions are one of the corporate action activities. This study used a dummy

variable, companies that did not carry out M&A got a number of 0, while companies that carried out M&A got a number of 1. Companies that took corporate action could be evaluated through the corporate action announcement date, while companies that did not perform corporate action were evaluated through the publication date of financial statements.

### 3.2.3. Control Variable

- 1) Firm Size (FSIZE): the size of a company can be determined from the total assets of the company's financial statements [52],[55],[56]. Firm size is measured using the logarithm of total assets. The total assets of each company are converted into US Dollars to be compared and provide valid results.
- 2) Firm Age (AGE): evaluated from the year of company's establishment [48].
- 3) Firm Leverage (LEV): measured by the ratio of total debt to total company assets [57].

## 3.3. Research Sample

This study used data from the transportation & logistics companies that carried out corporate actions in the form of mergers and acquisitions in ASEAN. The research sample was selected based on the following criteria: (1) Public companies listed on the stock exchanges of each ASEAN country; (2) Possess a complete annual financial report with M&A announcement date during the research period; (3) Possess daily stock price data of companies and JCI for 120 days.

## 4. RESULTS & DISCUSSION

There were 84 companies in the transportation sector in ASEAN that carried out corporate action M&A. Companies that did not meet the criteria were eliminated, so that the total sample obtained for companies that carried out corporate action was 54 companies. Meanwhile, there were 144 companies that did not perform corporate action M&A. After eliminating companies that did not meet the criteria, the total sample used is 138 companies. Thus, the total sample used in this study was 192 companies show in Table 1.

### 4.1. Hypothesis Testing

This study aims to empirically prove that investors respond more positively to corporate action announcements than companies that did not take corporate action. This study conducted a linear regression test using two event windows on the dependent variable (cumulative abnormal return) as a comparison. Descriptive statistical testing in this study

was carried out as an overview or description of the variables from the data show in Table 2.

**Table 1.** Research Sample

No.	Category	Total
1.	Merger & Acquisition	84
	Not a listed public company	(19)
	Do not have a complete financial report	(11)
	Number of samples	54
2.	Non-Merger & Acquisition	144
	Do not have a complete financial report	(6)
	Number of samples	138
	Total Samples	192

**Table 2.** Descriptive Statistics

No	Variable	Mean	Max	Min	SD
1	CAR (-1,0,+1)	0.0052	0.7878	-0.2183	0.0870
2	CAR (-5,0,+5)	-0.0035	0.4044	-0.4101	0.0960
3	Firm Size	8.1506	10.46	4,72	0.9413
4	Firm Age	35.7604	202.00	5.00	25.699
5	Firm Leverage	0.2947	1.51	0.00	0.2279
6	CA		1	0	

**Table 3.** Regression of CAR (-1, 0, +1)

Variable	Standardized Coefficients	t-stat	Sig.
(Constant)		2.124	0.037*
CA	-0,270	-2.523	0.013*
FSIZE	-0,118	-1.081	0.283
AGE	0,032	0.307	0.760
LEV	0,174	1.608	0.112
R <sup>2</sup>	0,121		
Adjusted R <sup>2</sup>	0,077		
F	2,751		

\*Significance level < 0.05

#### 4.1.1. Regression of CAR (-1, 0, +1)

Before performing the regression test, four classical assumption tests will be carried out to ensure that the data is feasible to use. Classical assumption test includes normality test, autocorrelation test, heteroscedasticity test, and multicollinearity test. First, we test the

normality of data using the Kolmogorov-Smirnov normality test. In the first test, a significant value was found of 0.021, where the data was declared to be normally distributed if the significant value was > 0.05. Because the data is not normally distributed, the researcher removes some outliers in the data. After that, the researcher retested with 94 observations and got a significance value of 0.200, so it can be concluded that there is no normality problem because it has a significance value of > 0.05. After the normality test, we did the multicollinearity test and obtained VIF <10.00 and Tolerance > 0.10 so that it is concluded that there is no multicollinearity. The heteroscedasticity testing was carried out with the Glejser test, and the test results showed that all variables had a significance value > 0.05. The scatter plots in the linear regression test also shows the distribution of the data without forming a pattern, so it can be concluded that there is no heteroscedasticity in the regression model. Finally, the researcher conducted an autocorrelation test with Durbin-Watson and obtained a value of 1.983 where the data stated that there was no autocorrelation if the value of  $dU < dw < 4-dU$ . The value of dU in the Durbin-Watson table was 1.8064, so the value of dw (1.983) was greater than dU (1.8064) and smaller than 4-dU (2.1936), so it can be concluded that there is no autocorrelation.

A linear regression test was carried out using a data sample of 94 companies. In Table 3, it is shown that the CA variable obtained a value of 0.013 (<0.05), which means that there was a significant effect between CA on CAR. It is concluded that there is a significant difference between companies that took corporate action and those that did not. However, CA has a negative effect on CAR because it shows a value of -0,270 on the standardized coefficient value where the relationship between variables is not unidirectional. A negative coefficient suggests that as the independent variable (CA) increases, the dependent variable (CAR) tends to decrease. Meanwhile, the control variable FSIZE also shows a negative effect on CAR, while AGE and LEV have a positive effect on CAR. However, the three control variables have no significant effect because the Sig value is > 0.05. The value of R<sup>2</sup> was 0.121, which means that the dependent variable can be explained by all independent variables of 12.1%, while 87.9% is explained by other factors that were not included in this study (Table 3).

#### 4.1.2. Regression of CAR (-5, 0, +5)

Before conducting regression for the dependent variable CAR (-5,0+5), four classical assumption tests were performed to ensure that the data were feasible to use. First, the normality test was tested using the same number of observations as the CAR (-1,0,+1). The Kolmogorov-Smirnov normality test showed a

significance value  $> 0.05$ , so it was concluded that the data were normally distributed. Second, the multicollinearity test results obtained  $VIF < 10.00$  and  $Tolerance > 0.10$ , which means that there is no multicollinearity in the data. The heteroscedasticity test also shows a significance value of  $> 0.05$  and the distribution of the data without a pattern on scatter plots, which means that the data did not occur heteroscedasticity. Finally, the autocorrelation test also showed that there was no autocorrelation because the Durbin-Watson results were  $1.8064 < 1.851 < 2.1936$ .

Table 4 shows that the CA variable obtained a value of 0.013 (Sig  $< 0.05$ ), so it can be concluded that there is a significant effect between CA on CAR (-5,0,+5). It can be concluded that there is a significant effect on the different types of corporate action (M&A and non-M&A) which can explain the market response. However, similar to the regression in CAR (-1,0,+1), CA has a negative effect on CAR because it shows a value of -0,293 on the standardized coefficient value. The regression of CAR (-5.0,+5) shows the three control variables that have no significant effect because the value of Sig  $> 0.05$ . In contrast to the regression in CAR (-1,0,+1), the control variable FSIZE in the CAR regression table (-5.0,+5) has a positive effect, while the control variables AGE and LEV show a negative coefficient value. The value of R<sup>2</sup> was 0.101, which means that the dependent variable can be explained by all independent variables of 10.1%, while 89.9% is explained by other factors that were not included in this study.

#### 4.2. Discussion

Corporate action is one of the activities that brings material change to a company or organization and has an impact on stakeholders [58]. Mergers and acquisitions are one of the corporate actions that are mostly carried out in developing countries. This action is carried out by companies in order to increase competitiveness and growth in today's global economy

**Table 4.** Regression of CAR (-5, 0, +5)

Variable	Standardized Coefficients	t-stat	Sig.
(Constant)		1.597	0.114
CA	-0,293	-2.530	0.013*
FSIZE	0.012	0.092	0.927
AGE	-0.079	-0.721	0.473
LEV	-0.068	-0.575	0.567
R <sup>2</sup>	0,101		
Adjusted R <sup>2</sup>	0,056		
F	2,244		

\*Significance level  $< 0.05$

[23]. In addition, companies that conduct M&A in order to increase growth quickly, namely by looking at market opportunities that have high resources [17]. Announcements related to corporate action are made by the company to provide a signal to the market as well as to reduce information asymmetry [27]. The impact of the announcement of the corporate action can affect the investor's response as seen from the abnormal returns around the announcement date [36].

The results of this study found that corporate action had a significant negative effect on investor response where the company's corporate action was not responded positively by investors in the event window (-1,0,+1) and (-5,0,+5). Similar to the research of Aybar & Ficici [59] and Moeller et al. [46] which obtained negative abnormal returns on merger & acquisition announcements. This negative response is due to the company sent a negative signal about the company's growth prospects in the industry [17],[46]. Another study stated that acquiring companies that used shares as M&A transactions have a negative stock performance during the announcement period compared to companies that use cash as a payment method [60],[61]. Meanwhile, the three control variables, namely firm size, firm age, and firm leverage had no significant effect on investor response in both event windows.

## 5. CONCLUSION

This study evaluates the response from investors towards companies that took M&A corporate action. In order to evaluate the investors' response, the researcher calculated the CAR (cumulative abnormal return) to the announcement of corporate action. The results of this study show that there were differences in investor responses to companies that took corporate action and those that did not take corporate action through the announcement date. Investors response had a significant negative effect on the announcement of corporate action in the event window (-1,0,+1) and (-5,0,+5). Therefore, companies that carry out corporate actions must be able to send positive signals regarding M&A activities. Companies must pay attention to the information to be conveyed in order to make it useful, which in the end could reduce information asymmetry to the market. Meanwhile, in this study, it was found that there was no significant effect between the control variables and investor responses.

This study provides information about the influence of M&A and Non-M&A corporate action in the transportation sector that had not been discussed in previous research. Several limitations to this study need to be acknowledged. First, the researcher only took a limited sample in the 2015-2020 period in the transportation sector in ASEAN. Further researchers can extend the research period and using different sectors; Second, this researcher only analyzed the effect of

corporate action in the form of M&A. It would be interesting to replace or add other types of corporate action in the next research; Third, there were three control variables (firm size, firm age, and leverage) used in this study which had less significant effect on investor response. It is suggested that further researchers can use or add other control variables that can affect investor response. This research contributes to companies that conduct corporate action to see investor responses, also become additional references and literature for other researchers related to the effects of corporate actions.

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