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Merger and Acquisition Analysis in Creating Value for Shareholders in The Infrastructure and Utility Sector

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ABSTRACT

Trough 20 – years period their merger and acquisition (M&A) in sector infrastructure and utilities are the pledge of the most country in the world, especially in Asia with most emerging countries. This study aims to know the relation about M&A activities to value shareholders in infrastructure and utilities sector in during last 20 years and year of crisis in 2020. Observe for acquire and target companies using event study approach to find Cumulative Average Abnormal Return (CAAR) on M&A activities that represent the value for the shareholders. Set event window for 31 days, consist of 15 days before the announcement and 15 days after announcement. Using sample of listed companies who making acquisition activities in Asia which size of the deal above USD 30 million. The result shows that the acquirers give positive CAAR that statistically significant 10% and the targets give positive CAAR statistically significant 5 %. The target company has higher cumulative abnormal average return than the acquirer company. Then M&A activity during crisis shows that for acquirer give positive not significant CAAR with 4,6% abnormal return and target give positive CAAR 3.4% but not significant. The target gives higher CAAR positive for t-15 to t+7 than the acquirer.

Keywords: Abnormal return, CAARs, Infrastructure, Merger and Acquisition

JEL Classification Codes: G30, G34, H54

INTRODUCTION

Company takeover activities through mergers and acquisitions (M&A) have been carried out by companies in the world, according to data from Thomson Reuters showing that there were 741.071 M&A announcements during 2000 - 2020. In that period the number of M&A each year experienced fluctuating changes with a tendency to increase. The growth of technology innovation that caused a pledge of new market and dissolution of companies doing M&A (Alsbaity,2018). Then if we look at a smaller area, especially in Asia, changes in M&A activities from year to year also have an increasing trend. This trend attracts the researchers to see the relationship between M&A activities for special shareholders in Asian countries. Where based on data from Thomson Reuters there were 2,066 M&A deals for infrastructure and utility companies in Asia during the period 2000 -2020. Another specific reason why this research focuses on the Asian area, is because the economy of the Asian region is predicted to contribute 50% of world GDP in 2040 (McKinsey & Company, 2019). This growth rate will occur due to the increase in the level of public consumption and literacy from internet use which has grown significantly.

One of the ways companies in Asia can achieve the expected growth is through mergers or acquisitions. The M&A carried out in addition to helping the company's growth also has an influence on the share price of both the acquirer and the target. The effects are varied and have different magnitudes depending on the perceived value generated between shareholders (Priyanka & Arora, 2014). The indicator used

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to measure the market reaction to M&A activities is to use abnormal returns, namely returns that actually occur against the returns expected by shareholders (Teti, 2020). One who saw stock returns from M&A activities in the banking sector listed on the Indonesian stock exchange in the 2006-2011 period showed that there was no reaction from these activities, which was indicated by insignificant abnormal returns (Normalita, 2013). Meanwhile, other studies show different things where M&A activities in Turkey during the years 2000-2014 gave a market reaction that was seen from a significant positive abnormal return on the target company (Akben-Selcuk, 2015).

The existence of indicators of the influence of M&A activities for shareholders as well as an increase in M&A agreements in Asia during the period 2000 - 2020 prompted this research to be carried out. For this purpose, this research uses an event study approach, which is to see the market reaction to an event whose information is published as a new announcement (Brown, 1980). A good M&A announcement can give a good market reaction, as indicated by an increase in the share price of the acquirer (acquirer) and the acquired company (target). The increased share price is profitable or provides value for shareholders, seen from the presence of positive abnormal returns.

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Several studies have tried to find the relationship between the impact of mergers and acquisitions on shareholders. Ahmed (2020) showed that acquisition activities with the company's target in Hong Kong and Mainland China provide value for shareholders in the form of positive abnormal returns for acquirer companies. Another study conducted by Akben-Selcuk (2005) shows that shareholders in Turkey get value from target companies in the form of an abnormal return of 5.25% to 8.53% depending on the time interval from the announcement date. In Indonesia, Gunawan (2005) observed that acquirer and non-acquirer companies in the same industry on the Jakarta Stock Exchange (BEJ) experienced a significant positive abnormal return when the announcement of M&A activities. Meanwhile, Lin (2008) in his research stated that the Japanese M&A indicate high hubris bidders frequently have negative event period abnormal return.

Merger and acquisition activities are not only used as tools for companies to grow, but are also used as solutions in facing crises (Okojie, 2015). Future growth of a company is an information to provide the prospect of the company’s financial condition (Abas, 2017). At a time when the economic crisis in Indonesia was due to the depreciation of the rupiah value in the second semester of 1997, there was a systemic weakness in the banking and corporate sector. The Indonesian government took strategic steps in the form of bank restructuring and merged five state - owned banks into one under Bank Mandiri. Until finally the crisis was controlled and the economy got better (Okojie, 2015). The Swedish government also did the same thing when the country experienced a financial crisis in 1993. While research (Pinglin, 2020), the COVID-19 pandemic in 2020 had a detrimental impact on the transportation, mining, utilities and industrial environment sectors in the Chinese market. Therefore, apart from looking at the impact of announcements on shareholders from an abnormal return, this study also tries to find the relationship between crisis conditions and M&A activities in Asia.

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Previous studies have examined various sectors with different results, in this research focuses only on the infrastructure and utility sectors. This is because the infrastructure sector is the basic of economic development begin with the distribution of road infrastructure, clean water, electricity and telecommunication network (Soamole & Runtunuwu, 2020). Supported by research by Sari (2020) that indicated a positive influence between the development of pysical infrastructure such as roads,electricity, dan airports on the economic growth of North Sumatra. The infrastructure sector also has long-lived assets, provides important services for the people and economy of a country, is difficult for competitors to enter, and generates stable cash flow (Bahçeci & Leh, 2017). This makes this industry included in low-risk investments (Geddes, 2017). However, the infrastructure sector has idiosyncratic risks in the form of construction risks, operational risks, regulatory changes, and the absence of product diversification (Rothballer, 2012). The limited number of new competitors to enter makes this sector monopolistic which is used by investors and asset managers to maximize asset value by placing on long-term strategies such as optimization of operations, capital expenditures, and debt.

Therefore, this study was carried out in a long period of time to address regulatory evolution. In previous research, Emanuele and Stefano (2020) stated that global acquisition activities in the infrastructure sector show that target and acquirer companies provide value to investors as seen from positive abnormal returns. In previous study consist of both developed and developing countries. While the risk of infrastructure and utility sector are also influenced by the political and regulatory risk, which between developed and developing countries have different conditions. Therefore, this research only focused in Asia, that composed by mostly developing countries. Based on researcher search, the study about infrastructure and utilities sector for M&A activities not much has been done. Then because many papers give different result about the shareholders' value on M&A activities so here is the hypotheses we pursue in this study:
H1: The announcement of M&A activity in the infrastructure sector is significant to the abnormal return for both acquirer and target.
H2: The announcement of M&A activities in the infrastructure sector has a significant positive value effect on the return of corporate shareholders in the year of the crisis.
With our research question is: whether the hypothesis is supported by evidence?

RESEARCH METHOD

This study aims to find out how the effect of the announcement of M&A events on the value for shareholder which is reflected in the company's stock price around the announcement date. The existence of this influence is seen through abnormal returns and how much cumulative abnormal return is obtained by shareholders around the announcement date of merger activity. In this study we use event study method to estimate the value of abnormal return. This method is based on the fundamental idea that stock prices represent the discounted value of a company's future earnings. When observing the market reaction to the announcement of an event, changes in the equity value of the affected companies are used as additional profits expected by shareholders (Duso, Gugler & Yurtoglu, 2010). Given the market reaction to an event, the event study method is used as the main approach for researchers to examine the relationship between the profitability of M&A activities and shareholders (Bruner, 2002). Empirical evidence from the research of Tomaso Duso, et al (2010) shows that the ability of the event study method can capture profitability after a merger as measured by accounting data. Meanwhile, Campbell et al (2000) stated that there are seven stages of event study, namely determining the event, selecting criteria, calculating expected (normal) and abnormal returns, selecting expected return estimation procedures, testing procedures, empirical results, and finally interpreting the results.

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This study focuses on the announcement event of stock acquisition activities. The acquisition activity becomes an event because this study aims to obtain empirical evidence of the effect of the announcement date of the takeover which requires the decision of the board of directors and produces synergies on wealth for shareholders. Therefore, an asset acquisition activity event is needed above 50% (Teti, 2020). The estimation of the research period and the event window were determined as the determinants of the research period. Expected return in the study is obtained by performing calculations based on the estimation period.

Abnormal returns and actual returns in this study are calculated based on the event window. The estimation period in this study is 195 working days before the event. Determination of the estimation period refers to research by Armitage (1995) which states that the average range of the estimation period for daily research data is 100 days to 300 days before the event. Determination of the event window is based on the research objectives, where the pre-event window is to estimate leakage and the determination of the post-event window is to see how fast the reaction to the information provided (Peterson, 1989). The event window observed in this study is 31 days [-15,+15], to see how the market reacts to the announcement. Following Brown and Warner (1985), this study defines t=0 as the announcement date of M&A activities, t= -15 days to t= +15 as the event period.

The data sample (Table 1.) is companies that have completed acquisition activities in the period 2000 – 2020 in Asia, in infrastructure and utility sector there are 2.066 samples. The acquisition is a major acquisition with a share purchase of >50%, we found 394 sample, and an agreement size of over USD 35 million there are 88 samples.

Table 1. Sample Filtering

No	Unit	Total Sample
1.	Completed M&A activities in infrastructure sector of Asian countries in 2000-2020	2.066
2.	-/- Stock acquisition transactions <50%	(1.672)
3.	Stock acquisition transactions > 50%	394
4.	-/- Deal size < USD 35 Juta	(306)
5.	Deal size > USD 35 Juta	88
6.	-/- Announcement day is not effective day	(23)
7.	Effective day of announcement	65
8.	-/- Delisting acquirer and target	(33)
9.	Listing acquirer and target	32

To get a more accurate sample, the announcement date of M&A activities is an effective day and not a holiday, 65 samples. Regarding the availability of stock data, both the acquirer and the target companies are still listed on the stock exchange, not delisting or privatizing, 32 samples. The source of daily stock and market index data for each sample company is obtained from the Yahoo Finance website, which can be accessed by the public free of charge. Data on Yahoo Finance is sourced from Morning Star, which is the official redistributor of the IDX and stock exchanges

of other countries. Researchers took stock price data in the range of 195 days before and 15 days after the announcement. After filtering process, we find 32 companies to become samples for this study.

Next stage is the day in the event window, which is the day around the date of the M&A announcement. In this study, we will examine several event windows and see how the returns occur in each event window. The event window that will be used is as follows, [-15,+15] [-5,+5] [-2,+2] [-1,0] [0,+1] [0] (Teti, 2020). Where the longest event window period is 15 days before and 15 days after the M&A announcement [-15,+15] with a total of 30 days observed.

To find the abnormal return represent value for the shareholders, we first calculate the actual return and market return. Actual return is obtained from the closing stock price of each sample company and then a comparison is made with the closing price of the previous day, using the equation

$$R_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}}.$$

Next, we calculate the market return from the market index where the sample companies are registered by downloading the market price from Yahoo. Finance. Then compare the closing price of day (t) with the closing stock price of the index at t-1 using the following equations:

$$R_{mt} = \frac{Market_i - Market_{i-t}}{Market_{i-t}}$$

Actual and market returns that have been calculated previously are used as variables in estimating expected returns. The main models used to estimate the expected return are the constant return model and the market model. The main assumption in the use of these two models is that the return is a combination of normal, independent, and identically distributed multivariate in time series (Mackinlay, 1997). In this study using a market model where the focus is on the relationship between the return of a security or company to the market return is described as follows (Boehmer, Masumeci & Poulsen, 1991)

$$Rmt = \alpha_i + \beta_i R_{mi} + \varepsilon_{it}$$

Where E (ε_it) = 0, then Rit is the return of a company i at time t, Rm is the market return, which is estimated from the composite index of each country. In this research, the composite index and company index are taken daily. According to Brown and Warner (1985), Barber and Lyon (1996), and Bartholdy et al (2007) the use of the market model produces more efficient results than the constant return model. In estimating the parameters in the market model, this research uses ordinary least squares (OLS), because OLS produces consistent and efficient parameters. The parameters that need to be calculated are alpha (α_i) and beta (β_i), obtained from the OLS of eight market indexes in this study, namely the market indexes of the five countries in ASIA where the companies that carry out M&A are registered in this research sample. The list of market indexes is JCI, SSEC, SZSC, TOPX, KOSPI, NSEI, MSCI, and HIS.

After getting the next expected return, determine the abnormal return, which can be calculated using the equation

$$AR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{m,t}).$$

Abnormal return means the difference in return between the actual return (R_{it})and the expected return $E(R_{it})$. Abnormal returns that have been obtained from previous calculations need to be tested for significance. It needs to aggregate over

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time and across the company. In company *i*, the cumulative abnormal return (CAR) from t_1 to t_2 is calculated using the following equation:

$$CAR_i = \sum_{t1}^{t2} AR_{i,t}$$

Where is the sum of the abnormal returns generated from t_1 to t_2. Because the sample in this study consisted of several companies, it is necessary to aggregate the cumulative abnormal return (CAAR) (Corrado, 2011) using the equation.

$$CAAR = \frac{1}{N}\sum_{1}^{n} AAR_{n,t}$$

In measuring the significance of abnormal returns, the t-test parameter is used. To avoid clustering, there is no overlap between the event windows in the sample (Corrado, 2011). In testing hypothesis 1, accepting H0 means that the M&A test has no effect on companies in the infrastructure sector. While rejecting H0 means that there is an abnormal return as a result of the agreement.

H0 : CAAR= 0
and
H1 : CAAR ≠ 0

Testing the significance for H2, rejecting H0 means that M&A activities during the crisis period (2020) have a significant positive effect on shareholders.

H0 : CAAR= 0
and
H2 : CAAR ≠ 0

RESULTS AND DISCUSSION

In estimating the value of the expected return, the author uses the market model according to Bohemer (1991). The actual data and market return used are 195 days before and 15 days after the M&A announcement event for each sample company stock. The market model approach used in this research is the single index model. The use of this model is simple and makes researchers more flexible in its use. In his research, Cahyono (2006) stated that there is an alternative model to get the expected return, namely the multifactor market model. This alternative model is used if the results of individual stock returns from the single index model are not significant. By entering each parameter of the results of the OLS, the expected return estimation model for each company is obtained as shown in Table 2 for the target. With market return as input to the model equation, the expected return value will be obtained which is then used to calculate abnormal returns. Equation (5) is used by subtracting the actual return from the expected return.

Table 1. Equation of Target Market Model Expected Return

Market Model Target		
Country	Code	Model
China Mainland	601518.SS	*E (Rit)* = -0.00049 + 1.17333*Rm
	601872.SS	*E (Rit)* = -0.00073 - 0.01394*Rm
	600039.SS	*E (Rit)* = -0.00015 + 0.73585*Rm
	600039.SS	*E (Rit)* = 0.00027 + 1.00163*Rm
Singapore	C13.SI	*E (Rit)* = 0.00074 + 0.05477*Rm
South Korea	298690.KS	*E (Rit)* = -0.00237 + 1.20505*Rm

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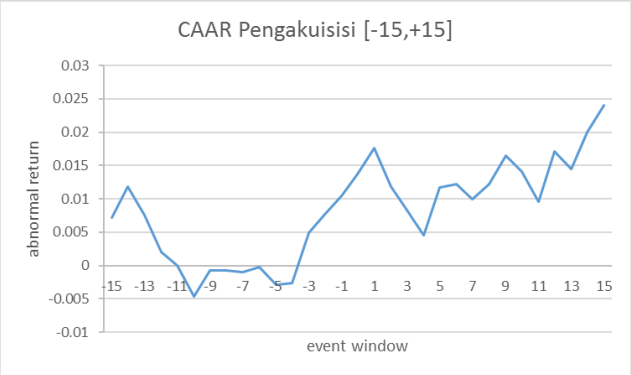
If the actual return is greater than the expected return, it will produce a positive abnormal return. On the other hand, if the actual return is less than the expected return of shareholders, the resulting abnormal return is negative. When the abnormal return is positive, the shareholders get a positive value, namely the additional return value than expected. Meanwhile, if the abnormal return generated is negative, then the shareholders get a negative value or a loss from the expected return.

After calculating the abnormal return from the reduction of the actual return to the expected return, the next step is to calculate the cumulative abnormal return. However, because the sample in the study consisted of many companies, a cumulative abnormal return calculation was carried out (Corrado, 2011) with the following results. This study aims to analyze the effect of the announcement of M&A events on the value for shareholders, which is reflected in the company's stock price around the announcement date.

Observations were made on changes in CAAR for 31 days (Figure 1) consisting of t-15 and t+15 merger announcement events. It can be seen in Figure 4.1 that there is a decrease in abnormal returns on t-14 until it touches negative on t-10, increases to near zero on t-9, and is quite stable until t-5. On t-4 to t+1 the announcement of M&A abnormal return increased to a maximum then decreased on t+2 to t+4, then t+5 fluctuated again up to t+15. The sharp increase in abnormal returns on t-4 to Day-0 indicates that there is information leakage that results in a positive perception. The fluctuating and optimal increase in t+15 indicates that the market needs time to absorb information on M&A activities in the infrastructure and utility sectors. Furthermore, the CAAR of the acquiring company is tested to see the significance as well as to test the existing hypotheses.

Figure 1. Trend CAAR Acquirer Company 2000-2020



From the calculation of abnormal returns (Figure 2), a cumulative calculation of the average AR is carried out to get the CAAR on one day, this is because there are sample of 6 target companies. Observations were made on changes in CAAR for 31 days, consisting of t-15 and t+15 merger announcement events. It can be seen in Figure 4.2 that there was a change in abnormal returns which was quite volatile during the 31 days of observation. However, the graph of changes in abnormal returns tends to increase. This shows that there has been a leak of information before the announcement day with perceptions that are still fluctuating. Furthermore, the CAAR of the acquiring company is tested to see the significance as well as to test the existing hypotheses.

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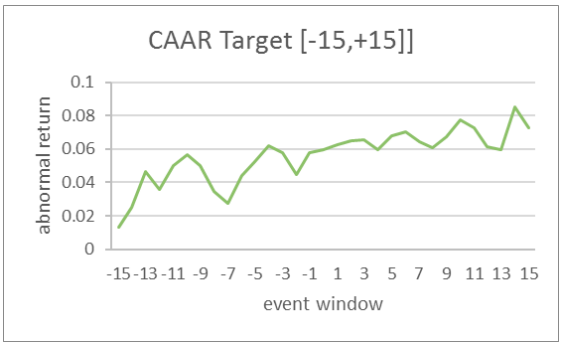
Figure 1. Trend CAAR Target Company 2000-2020



Testing of hypothesis 1 for the acquirer is carried out statistically to prove the presence of CAAR throughout the event window. The test was carried out by t-test to get the significance of the CAAR, as shown in Table 2. H0 is rejected, for the event window [-15,+15], because it has a positive and significant CAAR of 10%. Testing of hypothesis 1 for the target was carried out statistically to prove the presence of CAAR throughout the event window. The test was carried out by t-test to get the significance of the CAAR, as shown in Table 2. H0 is rejected for the event window [-15,+15], because it has a positive and significant abnormal return of 5%. The M&A activities which create abnormal return significantly give wealth to the shareholders. It will be important because shareholders have right to decide on how a company investment should be divided and distributed (Alsbaity,2018).

As presented in Table 2 where a significant positive abnormal return of 10%, it shows that the acquirer in the event window (-15, +15) provides a more significant value for shareholders than the target, which is 5%. The abnormal return value in the target company is greater than the acquirer, this is because the size of the acquirer is larger.

Table 2. T-statistic CAARs for 2000 - 2020

Interval	CAARs	T-Stat
Pengakuisisi		
(-15,+15)	0.024628561	1.394536404 *
(-5,+5)	0.00955435	0.905243081
(-2,+2)	0.009401943	0.896193429
(-1,0)	0.009236629	1.028116559
(0,+1)	0.006690663	0.66413389
0	0.005080694	0.602513399
Target		
(-15,+15)	0.072678336	1.779637993 **
(-5,+5)	0.023835475	0.986872134
(-2,+2)	0.007232286	0.237125739
(-1,0)	0.014835642	0.782579225
(0,+1)	0.004300976	0.226372314
0	0.001326184	0.073134727

Based on calculations using the event study model, it can be seen that M&A activities in the infrastructure sector at the acquiring company provide a positive value for shareholders in M&A announcements that occurred in 2000, 2001, 2005, 2009, 2015, 2016, 2018, 2019, 2020. The significance of M&A activity (Table 3) has a significant value effect in 2009 by 1% in the event window (-15, +15), in 2016 it was significant 1% for 31 days around the announcement of M&A activity, in 2018 it was significant 10% for 5 days around announcement, and in 2019 a significant 1% for the 31 days surrounding the announcement. This study shows that M&A activities in the acquiring company's infrastructure sector actually damage the value for its

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shareholders, this can be seen from the negative CAAR in 2012, 2013, 2014, and 2017.

Table 3. CAAR Acquirer Year by Year

Interval	2000	2001	2005	2009	2012	2013	2014	2015	2016	2017	2018	2019	2020
	CAAR												
(-15,+15)	0.0281	0.1152	0.1356	0.0592	-0.0145	-0.0285	-0.0149	0.0254 **	0.1209 ***	-0.1056	0.0520	0.0152 ***	0.0469
(-5,+5)	0.0132	0.0072	0.0134	0.0626 ***	0.0637	-0.0250	0.0367	-0.0767	0.0845 ***	-0.0015	0.0078	0.0308 *	0.0626
(-2,+2)	0.0094	0.0306	0.0400	-0.0069	-0.0652	-0.0095	-0.0258	-0.0560	0.0762 ***	-0.0086	0.0607 *	-0.0147	0.0418
(-1,0)	-0.0026	0.0412	0.0238	-0.0064	-0.0824	0.0029	0.0143	-0.0163	0.0112 ***	-0.0114	0.0599 *	-0.0080	0.0101
(0,+1)	0.0042	0.0265	0.0268	-0.0302	0.0127	-0.0150	-0.0018	-0.0267	-0.0061	-0.0063	0.0782 **	0.0073 **	-0.0121
0	-0.0089	0.0375	0.0034	-0.0137	-0.0473	-0.0008	0.0055	-0.0187	-0.0023	-0.0110	0.0609 *	-0.0067	-0.0045

Meanwhile, Table 4 shows the infrastructure sector companies that were the targets of M&A activities showed a positive influence on company shareholders for activities in 2014, 2018, and 2020 which were not significant. And damage shareholder value for M&A activities in 2017 and 2019.

Table 4. CAAR Target Year by Year

Interval	2014	2017	2018	2020
	CAAR			
(-15,+15)	0.1025	-0.0287	0.0932	0.0340
(-5,+5)	0.0700	-0.0146	0.0115	0.0030
(-2,+2)	0.0744	-0.0335	-0.0208	0.0011
(-1,0)	0.0354	-0.0325	0.0130	0.0191
(0,+1)	0.0285	-0.0406	0.0005	0.0164
0	-0.0025	-0.0380	0.0172	0.0182

A crisis is defined as an unforeseen event that threatens important stakeholder expectations regarding health, safety, environmental and economic issues, which can have a serious impact on organizational performance and result in negative comments (Coombs, 2019). In this research period, there were years in which the financial crisis occurred globally and had an impact on world financial markets, especially Asia, namely in 2008 and 2020. For 2008 there was no M&A agreement that was sampled in this study.

Meanwhile, the ongoing health crisis in 2020, the COVID-19 pandemic, has received intense media coverage with economists warning it would result in a major economic crisis. This health crisis caused financial markets around the world to experience a large decline in value during the early phase of the crisis (Zhang, Hu & Ji, 2020). This health crisis event by Zhang, Hu and Ji (2020) was labeled as a Black Swan event, an unpredictable event and caused shock, fear, and panic among investors.

The calculation of abnormal returns for year of crisis can be seen in Figure 3, a cumulative calculation of the average return is carried out to get the CAAR on one day, this is because there are sample of 6 target companies. Observations were made on changes in CAAR for 31 days, consisting of t-15 and t+15 merger announcement events. It can be seen in Figure 4.2 that there was a change in abnormal returns which was quite volatile during the 31 days of observation. However, the graph of changes in abnormal returns tends to increase. This shows that there has been a leak of information before the announcement day with perceptions that are still fluctuating. Furthermore, the CAAR of the acquiring company is tested to see the significance as well as to test the existing hypotheses.

The calculation of abnormal returns in the crisis year can be seen in Figure 3, it can be seen that there is a difference between the trend of the acquirer and the target. The trend of the target has a higher CAAR value than the acquirer from t-15 to t+7. This shows that from M&A activities in the infrastructure and utility sectors in the

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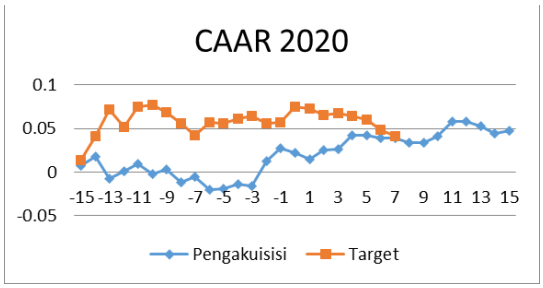
2020 crisis, the target is to provide more added value for shareholders. In addition, the trend in the target is always at a positive CAAR value throughout the event window, while the acquirer has given a negative value at t-8 to t-3, because after that the CAAR value increases and is positive.

Testing of hypothesis 2 for the acquirer is carried out statistically to prove the existence of CAAR in the period of the research year when the crisis occurred, namely 2020. In 2020 there was a COVID-19 pandemic which had an impact on the occurrence of economic crises in several countries in the world.

Table 5. T-statistic CAARs for 2000 - 2020

	2020	
Interval	CAAR	t-stat
Pengakuisisi		
(-15,+15)	0.0469449	-
(-5,+5)	0.0625827	-
(-2,+2)	0.0418065	-
(-1,0)	0.0101166	-
(0,+1)	-0.012092	-
0	-0.004472	-
Target		
(-15,+15)	0.0340196	0.92354
(-5,+5)	0.0030401	0.1276
(-2,+2)	0.0011216	0.03721
(-1,0)	0.0190775	0.82073
(0,+1)	0.0163584	0.80979
0	0.0181657	0.71659

Figure 2. CAAR Trend Acquirer and Target year 2020



Testing of hypothesis 2 (Table 5) for the acquirer is carried out statistically to prove the existence of CAAR in the period of the research year when the crisis occurred, namely 2020. In 2020 there was a COVID-19 pandemic which had an impact on the occurrence of economic crises in several countries in the world. Testing is done by t-test to get the significance of CAAR.

In 2020, (Table 5) it does not reject H0 which means that the announcement of M&A activities in the 2020 crisis year does not provide value to the acquirer's shareholders. The absence of value for shareholders in the 2020 crisis can be seen by the negative abnormal return on the D-day and one day before the M&A announcement. The existence of this negative abnormal return is coherent with the increased risk caused by the external environment such as pressure from regulators (Vallascas & Hegendorff, 2011). This is supported by external conditions where the COVID-19 pandemic in 2020 had a detrimental impact on the transportation, mining, utilities, and industrial environments in the Chinese market (Pinglin, 2020).

Testing on hypothesis 2 (Table 5) for the target company is carried out statistically to prove the existence of CAAR in the year the crisis occurred, namely 2008, and 2020. The test was carried out using t-test to get the significance of CAAR. For 2008

there was no M&A agreement that was sampled in this study. In 2020, H0 is rejected, which means that the announcement of M&A activities in the 2020 crisis year does not provide value to the target shareholders.

CONCLUSIONS

This study aimed to looking at the impact of M&A announcements on shareholders in the infrastructure sector, this study also tries to find the relationship between crisis conditions and M&A activities in Asia and its effects on shareholders. Our analysis supported that for both acquirer and target shareholders gain positive significant, 10% for the acquirer and 5% for the target during 2000 – 2020. Result of this study does not support that M&A for infrastructure and utility companies in year of crisis in 2020 give positive significant abnormal return.

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