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## The long-term performance of post-merger and acquisition: evidence from Indonesia's stock market

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**Abstract:** This study evaluates the long-term share performance of firms over three years after they underwent merger and acquisition (M&A). This is happening since researchers failed to find answers in the short-term analysis and began looking for answers through long-term analysis. Most previous studies have been done either in big capital markets (US and the UK) or smaller capital markets such as Greek and Malaysia but not Indonesia. The share performance was measured through cumulative market adjusted abnormal return (CMAR) and buy and hold abnormal return (BHAR). The result of this study provides evidence of the presence of negative abnormal returns of the merged and acquiring firms. Moreover, the results show that cash payments are preferable in comparison to the share settlement. The results also reveal that the firms which are owned by families tend to outperform the firms which are not owned by families.

**Keywords:** merger and acquisition; share performance; Indonesia; cumulative market adjusted abnormal return; CMAR; buy and hold abnormal return; BHAR.

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## 1 Introduction

It has become increasingly obvious that in this era of globalisation, mergers and acquisitions (M&A) is an essential mean to facilitate company development (Yaghoubi et al., 2016; Tarigan, 2018). Companies have commonly used M&A globally as an essential strategic tool to expand their business. M&A facilitates the growth of companies through business expansion to larger geographic areas such as other country or nation (Yaghoubi et al., 2016). The aims of M&A for a firm are mainly to gain beneficial results through working with other companies as compared to working alone and also to maximise the shareholders' wealth (Malik, 2014; Joshipura and Panda, 2019; Tarigan, 2018). Nowadays, M&A are not only used to compete in the intense competition but also to increase margins, market share, and also dominance in the international market (Hitt and Pisano, 2003). Furthermore, M&A gives important benefits such as improving profits and shareholder value (Yaghoubi et al., 2016; Tarigan, 2018).

Looking at the benefits that M&A can offer, there is one crucial question that has made researchers continue to look for answers: Does merger and acquisition really create profit? Although M&A may be perceived as a promising growth device for companies, numbers of researches (Dutta and Dutta, 2015) proved that acquiring firms yield negative abnormal returns. Numerous research evidences resulting in investigation of the shares' ability to fully reflect the impact of an extended corporate event like a M&A (Boateng and Bi, 2013). This is contrary to the notion of an efficient market (Dutta and Dutta, 2015), as if the market is efficient in semi-strong form, the stock value would eventually incorporate all information during the firm event announcement period such as an M&A. The inconsistency of market efficiency raises a big query, could acquiring firms lead to rational decisions making regarding M&A? Researchers have failed to find answers in their short-term analysis and have begun to look for answers through long-term analysis (Peng and Isa, 2012). M&A research was initially used and popular in developed countries such as the UK and the US but there have not been many M&A research studies conducted in the developing countries. However, companies in developing countries have begun to use M&A as restructuring tool (Malik, 2014). The gap analysis of this research study is that Indonesia as a developing country has a relatively smaller stock market than the UK and US as developed countries where most previous studies were conducted. Moreover, the previous research studies were only conducted in several small stock markets such as the Greek and Malaysian stock market, which makes this research study unique since this current study allows the research model to be applied in Indonesia. This study contributes to future studies by providing evidence of the post-merger and acquisition long-term share performance of the acquirers in a developing country. Moreover, the author also examines whether the performance and the size of the acquiring companies is related, payment method (cash or share offers) and ownership concentration. This study used two methods – the cumulative market adjusted abnormal return (CMAR) and the buy and hold matched sample abnormal return (BHAR) – to

determine the long-term share performance of the merged and acquiring firms in Indonesia. CMAR and BHAR are chosen as the methods in this study to measure the firms' performance since both of the methods are usually used for long-term analysis of event studies.

## **2 Review of literature and hypotheses**

### *2.1 Measuring the performance of M&A*

The success of mergers and acquisitions can be achieved in many different ways. The long-term success can be measured through the sustainable performance of the acquiring firms in the rising of average share value up to ten years after M&A (Roberts et al., 2016). Event studies, accounting studies, surveys of executives, and clinical studies are the four basic methods for measuring the performance of mergers and acquisitions.

In this research, event studies method is applied to evaluate the long-term stock performance of the acquirers. This method is used because this research study aims to evaluate the post-M&A long-term share performance after certain amount of time. In addition, this study is also intended to analyse the association between the long-term share performance and their determinants of the merged and acquiring firms in Indonesia. Event studies is the appropriate approach for this study as it usually measures the impact of an event after certain amount of time. The period or window of time is usually classified as either short term or long term. The long-term analysis is used as the main understanding that the share value does not always portray the company's abnormal return immediately (Reddy et al., 2013). Both cumulative abnormal returns (CMAR) and the buy and hold abnormal return (BHAR) used to investigate the long-term analysis. On the other hand, accounting-based measures analyse the financial performance of companies before and after the M&A. The studies should be conducted using matched sample comparisons. This means that the acquirers should match with the non-acquirers in terms of the size and industry. Accounting studies usually use accounting measures such as net income (NI), return on equity (ROE), return on asset (ROA), EPS, leverage and also liquidity of the firm (Bruner, 2004). Unlike event studies, accounting studies actually measure the actual and real returns of the acquirer (Reddy et al., 2013).

Survey of executives focuses on the executive's assessment and evaluation of the company's performance after M&A. The idea is to simply ask the managers if the M&A really created value for the company (Bruner, 2004). The executives will be asked to rate to what extent the company has succeeded in completing the preliminary objectives after M&A. The ratings are given towards both financial and non-financial objectives (Reddy et al., 2013). Clinical study can be considered identical to the surveys of executives. However, instead of the managers, the respondents are shifted to the experts (Reddy et al., 2013). This is done by gaining insights from interviews with knowledgeable sources. Focusing/concerning only on one or a specific scale of samples in profoundness (Bruner, 2004).

### *2.2 Determinants of acquirer's long-term share performance*

The determining factors of acquirer's long-term stock performance are applied to examine the effect of the acquirer size, payment method used in M&A transactions and

ownership concentration of the company towards the long-term share performance of the merged and acquiring firms.

- *Size of the acquirer.* Many have questioned whether there is a relationship between the post-merger and acquisition's long-term performance on how big is the acquiring firm. Several previous studies conducted by Kyriazis (2010) and Peng and Isa (2012) examined the relationship between the size of the acquirer to its long-term performance after the process of merger and acquisition (M&A) and found that the acquirer's long-term performance is related to the size of the acquirer. This study can find an analysis of whether there is a correlation between the long-term performance of the acquirer to the acquiring firm size. By using the end-of-year market value before the M&A event, this study can calculate the firm size itself. Therefore, the hypothesis is formulated as the following:
- *Method of payment.* The payment process which is applicable in an M&A deal is either cash or stock offer. The method of payment used by a company to finance its M&A, is actually really important since the different methods of payment used in M&A transactions may lead to different returns in the future. This theory is also proven by the short-term study of the abnormal returns, which found that various means of payment used in an M&A deal actually yielded different outcomes (Peng and Isa, 2012). Since this study observes the long-term performance of the acquirer, the relationship between the methods of payment to the acquirer's long-term performance are analysed. Therefore, the hypothesis is formulated as the following:
- *Ownership concentration.* Ownership concentration can be defined as the majority and minority shareholders of a company. The majority shareholders are the ones who hold bigger shares of the company and therefore have bigger portion of decision-making that may lead the company into a designated direction that will benefit them. In other words, an ownership concentration plays a huge role in the company's management. If the majority shareholders succeed in directing the company's direction, the company may become more profitable and vice versa (Conn et al., 2005; Kyriazis, 2010). In order to gain more comprehensive effect of the occupancy concern on the performance of the acquirer, in this study, the association between the ownership concentrations to the long-term performance of the acquirer is also being analysed. Therefore, the hypothesis is formulated as the following.

### 2.3 *Hypotheses development*

The findings from earlier researchers (Mitchell and Stafford, 2000; Conn et al., 2005; Antoniou et al., 2007; André et al., 2004; Kyriazis, 2010; Peng and Isa, 2012) were consistent in that they all discovered significant abnormal returns of the acquirers' long-term share performance post-merger and acquisitions regardless of the different methods they used in assessing the performance. More findings related to the determining factors of the stock performance of the acquirers diverse among different researches. Mitchell and Stafford (2000), Conn et al. (2005), André et al. (2004) and Kyriazis (2010) all found that the share performance of acquirers' M&A that were financed with share options performed worse than those financed with cash. However, Peng and Isa (2012) discovered that there was no relationship between the shares' performance to the method

of payment used. In addition Conn et al. (2005) and Kyriazis (2010) found that acquisitions of public targets resulted in negative long-term share performance whereas acquisitions of private targets resulted in better performance. This finding was inconsistent with Peng and Isa (2012) as they found that the obtainment on private company objective actually doing more than expected compared to the obtainment on public company objective. This can also be undersigned that the findings regarding the long-term share performance of the acquirers are consistent whereas the findings regarding the determinants of the performance varied among researchers. Therefore, the hypothesis of this study is:

- H1A There is significant result subsequent to merger and acquisition long-term stock performance of merged and obtaining corporation in Indonesia using CMAR.
- H1B There is significant result subsequent to merger and acquisition long-term stock performance of merged and obtaining corporation in Indonesia using BHAR.
- H2A There is significant impact on the size of the acquirers to the post-merger and acquisition long-term share performance of the merged and acquiring firms in Indonesia using CMAR.
- H2B There is significant impact on the means of payment to the post-merger and acquisition long-term share performance of the merged and acquiring firms in Indonesia using CMAR.
- H2C There is significant impact on the ownership concentration to the post-merger and acquisition long-term share performance of the merged and acquiring firms in Indonesia using CMAR.
- H2D There is significant impact on the size of the acquirers to the post-merger and acquisition long-term share performance of the merged and acquiring firms in Indonesia using BHAR.
- H2E There is significant impact on the method of payment to the post-merger and acquisition long-term share performance of the merged and acquiring firms in Indonesia using BHAR.
- H2F There is significant impact on the ownership concentration to the post-merger and acquisition long-term share performance of the merged and acquiring firms in Indonesia using BHAR.

#### *2.4 Methods to determine the share performance*

Both CMAR method and BHAR method are used to measure the share performance. The collection of the average monthly gains from the first month after M&A declaration until month T is calculated using CMAR method, as shown below (Peng and Isa, 2012):

$$CMAR = \sum_{t=1}^T \frac{1}{N} \sum_i^N AR_{i,t}$$

It can be explained that this study use the BHAR method as the gain on obtain and keep investment of the sample firm reduced by the gain on an obtain and keep investment in the portfolio with expected gain (Dutta and Dutta, 2015). BHAR will calculates all the

whole gain of stock revenue and benchmark revenue individually, and then it calculates the difference between them. BHAR is commonly used in the long-term analysis by compounding short-term abnormal returns over the holding time (Barber and Lyon, 1996; Papachristou et al., 2018). BHAR can be calculated using the following formula:

$$BHAR_{i,\tau} = \sum_{t=1}^T [1 + R_{i,t}] - \sum_{t=1}^T [1 + E(R_{i,t})]$$

where

$E(R_{i,t})$  expected return

$R_{i,t}$  actual rate of return of firm  $i$  in month  $t$

$T$  the time period for which the BHAR is calculated.

### 3 Research methodology

The influence of mergers and acquisitions on the long-term stock performance of the acquirers is the main concern on this research. Using both the CMAR method and the BHARs, this research measured the impact on the long-term share performance of the acquirers which is calculated after the M&A process is done for three years. Moreover, the study also investigates the impact between the determinants of the long-term stock performance to the long-term share performance of the merged and acquiring firms in Indonesia. The determinants that are investigated are how big is the acquirer, means of payment, and ownership concentration. This research uses secondary data collected from Komisi Pengawas Persaingan Usaha (KPPU) website, Bloomberg and Indonesia Stock Exchange (IDX). Firstly, the list of companies which underwent M&A are gathered through KPPU's website. Secondly, the announcement dates of M&A in KPPU's website are cross-checked with the publicly available news articles to ensure that the event date period is correct. Lastly, the share prices of each company are collected from Bloomberg and IDX to be used as samples. The period of 2010 to 2013 is chosen based on the consideration that the observation period on the long-term share performance is three years. Since this study is conducted in the middle of 2017, the correct assessment period is from 2010 to 2013.

The observations were divided into two methods, one is for CMAR and the other one is for BHAR. There are 21 companies that are used as the sample of CMAR and 24 companies that are used as the sample of BHAR. Companies with abnormal share returns, which were considered as outliers, are omitted from the sample. The outliers are the factors that make the number of companies between CMAR and BHAR is difference. CMAR, computed by collecting the average monthly abnormal gains beginning from month 1 after M&A publication was made until month  $T$ . The monthly abnormal return is calculated by deducting firm's monthly return to the monthly market return. The firm's monthly return is calculated by dividing stock value for firm  $i$  at the end of month  $t$  with stock value for firm  $i$  at the end of month  $t$  minus the share price for firm  $i$  at the end of month  $t - 1$ . As for the monthly market return, the Jakarta Composite Index stock value at the end of month  $t$  is divided by the Jakarta Composite Index share price at the end of month  $t$  minus the Jakarta Composite Index share price the end of month  $t - 1$ . Moreover,

the buy and hold matched sample abnormal returns, calculated by deducting average sum of actual rate of return on firm  $i$  in month  $t$  to the average sum of matched sample expected return on firm  $i$  in month  $t$ . The data are obtained through Bloomberg and Indonesia Stock Exchange (IDX).

Throughout the years of 2010 to 2013, 388 companies who applied merger and acquisition process (M&A) but only a limited number of companies were used as the sample of this study due to the following reasons:

- 1 Some of the M&A deals comprised of companies which are not listed in IDX, whether private or foreign companies. These companies were excluded since the private companies' stocks are not available on the market and because this study only focuses on companies in Indonesia.
- 2 Some of the companies that underwent M&A are listed in IDX now, but they were not listed in the whole period of study.
- 3 Companies that underwent overlapping M&A concern throughout the certain amount of time of study were omitted since this study covers the direct effect of one corporate event such as M&A on the acquirers' long-term share performance.
- 4 Companies that did not have data regarding the M&A deals were omitted

**Table 1** Sample selection using CMAR procedure

<i>Sample selection procedure</i>	<i>Observations</i>
Number of merger and acquisition (M&A) deals between 2010–2013	388
Number of companies that did not meet the criteria	(357)
Number of companies	21
Total period (in years)	3
Total observations in this study	63

**Table 2** Sample selection using BHAR procedure

<i>Sample selection procedure</i>	<i>Observations</i>
Number of merger and acquisition (M&A) deals during 2010–2013	388
Number of companies that did not meet the criteria	(354)
Number of companies	24
Total period (in years)	3
Total observations in this study	72

#### 4 Research result and analysis

Descriptive statistics test is used to understand the overall overview of the variables used in this research such as how big is the acquirer, what method of payment is used, and ownership concentration. We can see the usage of CMAR and buy and hold match sample abnormal return (BHAR) method for the percentage of sample in terms of determinants such as size of acquirer, method of payment, and ownership concentration in Table 3. An example can be seen in Table 3 that cash offer is usually preferable in

M&A transactions in Indonesia, which is 90% for sample CMAR method while 87% for BHAR method.

**Table 3** Determinants descriptive details

	<i>Size of the acquirer</i>			<i>Method of payment</i>		<i>Ownership concentration</i>	
	<i>Small</i>	<i>Medium</i>	<i>Big</i>	<i>Cash</i>	<i>Share</i>	<i>Family</i>	<i>Others</i>
CMAR	14%	57%	29%	90%	10%	71%	29%
BHAR	21%	58%	21%	87%	13%	63%	37%

The samples were tested and analysed using panel data analysis. There are three categories of regression model in respect to the panel data, which are the pooled ordinary least square (OLS) regression, random effect (RE), and fixed effect (FE) model. The data for this study was run with OLS regression model and panel diagnostics was done to determine what type of category the regression model belongs to.

**Table 4** Panel diagnostics of CMAR

<i>Fixed effects estimator</i>	<i>Coefficient</i>	<i>Std. error</i>	<i>t-ratio</i>	<i>p-value</i>
const	-0.00412666	0.00423633	-0.9741	0.3356
Residual variance: $0.0474863/(63 - 21) =$				0.00113063
Joint significance of differing group means: $F(17, 42) = 1.40931$				p-value 0.180679
Breusch-Pagan test statistic:				
LM = 0.12673 with p-value = $\text{prob}(\text{chi-square}(1) > 0.12673) =$				0.721847

Source: Author's compilation

Table 4 shows the result of panel diagnostics done for CMAR and its indicators. The result shows the FE estimator with p-value of 0.180679, meaning that the result is insignificant; therefore, the null hypothesis that the pooled OLS model is satisfactory is accepted. Furthermore, the p-value of 0.72184 from the Breusch-Pagan Test ultimately proves that the regression model of CMAR and its indicators is pooled OLS since the p-value of Breusch-Pagan test statistic is also not significant.

**Table 5** Panel diagnostics of BHAR

<i>Fixed effects estimator</i>	<i>Coefficient</i>	<i>Std. error</i>	<i>t-ratio</i>	<i>p-value</i>
Const	-0.0694888	0.0164396	-4.227	0.0001***
Residual variance: $0.934022/(72 - 24) =$				0.0194588
Joint significance of differing group means: $F(20, 48) = 1.65536$				p-value 0.0776238
Breusch-Pagan test statistic:				
LM = 0.907796 with p-value = $\text{prob}(\text{chi-square}(1) > 0.907796) =$				0.3407

Table 5 shows the result of panel diagnostics of BHAR and its indicators. The result indicates that the p-value of FE estimator is not significant, and the p-value of Breusch-Pagan Test is also not significant. Thus, we can also assumed that the regression model of BHAR and its indicators is pooled OLS. Both CMAR and BHAR have been



proven to adapt pooled OLS regression model. Each data has also been assessed and passed the normality, heteroskedasticity, and collinearity tests in order for the model to be used in this study. We can also see the CMAR result of heteroscedasticity test done for its indicators in Table 6. Meanwhile, we can see the heteroscedasticity test result done for the buy and hold match sample abnormal return (BHAR) and its indicators on Table 7.

**Table 6** Heteroscedasticity test of CMAR

	<i>Coefficient</i>	<i>Std. error</i>	<i>T-ratio</i>	<i>P-value</i>
const	-0.0177141	0.0282598	-0.6268	0.5333
ACQUIRERSIZE	0.00336369	0.00534759	0.6290	0.5319
PAYMENTMETHOD	-0.00363125	0.0243869	-0.1489	0.8822
OWNERSHIP	-0.00174806	0.00594673	-0.2940	0.7699
sq_ACQUIRERSIZE	-0.00014903	0.000251513	0.5925	0.5559
X2_X3	0.000284806	0.00235267	0.1211	0.9041
X2_X4	0.000216889	0.000549198	0.3949	0.6944
X3_X4	0.0122798	0.0924626	0.1328	0.8948
Overall	P(chi-square(6) > 4.192864) = 0.650595			

Table 6 shows that overall, the regression model has passed the heteroscedasticity test with p-value of 0.650595. Since the overall p-value exceeded the significance level of 5%, this model is proven to be homoscedasticity. Moreover, the predictor variables such as acquirer size, method of payment, and ownership concentration have all passed the heteroscedasticity test since they all exceeded the significance level of 5%. Thus, the regression model for CMAR has passed the heteroscedasticity test.

**Table 7** Heteroscedasticity test of BHAR

	<i>Coefficient</i>	<i>Std. error</i>	<i>T-ratio</i>	<i>P-value</i>
const	0.342007	0.970353	0.3525	0.7257
ACQUIRERSIZE	-0.0555603	0.186863	-0.2973	0.7672
PAYMENTMETHOD	-0.0892115	0.801008	-0.1114	0.9117
OWNERSHIP	-0.0573695	0.224762	-0.2552	0.7994
sq_ACQUIRERSIZE	0.00231972	0.00893189	0.2597	0.7959
X2_X3	0.00712757	0.0772722	0.09224	0.9268
X2_X4	0.00735502	0.0206221	0.3567	0.7225
X3_X4	0.0122798	0.0924626	0.1328	0.8948
Overall	P(chi-square(6) > 4.192864) = 0.876304			

Table 7 shows that the regression model has passed the heteroscedasticity test since the overall p-value of 0.876304 is more than 5% significance level. In addition, all the predictor variables have passed the heteroscedasticity test since all of them have a p-value of more than 5%. Therefore, this regression model has been proven to pass the heteroscedasticity test.

The t-test is used to determine the long-term stock performance after the M&A of the merged and acquiring firms ( $H1_{A\&B}$ ). Moreover, the regression value for OLS normally used to analyse and evaluate the linear relationship between the acquirer size, method of payment, ownership concentration, and long-term share performance ( $H1_{C-F}$ ).

**Table 8** Hypotheses test result summary

<i>Hypothesis</i>	<i>p-value</i>	<i>Result</i>	<i>Conclusion</i>
$H1_A$	0.093714*	Accepted	Negative performance
$H1_B$	0.043683**	Accepted	Negative performance
$H2_A$	0.6756	Rejected	-
$H2_B$	0.0110**	Accepted	Positive impact
$H2_C$	0.0699*	Accepted	Negative impact
$H2_D$	0.6703	Rejected	-
$H2_E$	0.0435**	Accepted	Negative impact
$H2_F$	0.2700	Rejected	-

Note: Coefficients with (\*\*) shows significance at 5% level while (\*) shows significance at 10% level.

Since the mean of CMAR ( $H1_A$ ) is  $-0.004127$  and BHAR ( $H1_B$ ) is  $-0.069489$ , with p-value of less than 10% and 5%, this explains that there is on average negative post-merger and acquisition long-term stock performance of the incorporated and acquired firms in Indonesia using the CMAR & BHAR method. It can be said that their shares perform better before the M&A transactions occur. This is contrary to the market efficiency notion which states that in the period of corporate event announcement such as M&A, the share prices should have incorporated all information. And after the corporate event happens, the share prices are expected to become normal and not show significant difference from the expected returns (Peng and Isa, 2012). In addition, it can also be explained that the significant negative performance suggests that there was a market overreaction during the period of the announcement of M&A. The long-term drawbacks of the merged and acquiring firms in Indonesia is therefore seen as the market's effort to correct the error it made for overestimating the short run profit (Peng and Isa, 2012). There seems to be consistency between the result found in CMAR and the previous studies of Antoniou et al. (2007) and Kyriazis (2010), which found negative post M&A long-term share performance of the acquirers. Even though some of the previous studies such as Mitchell and Stafford (2000) and Dutta and Jog (2009) also found mixed results of post M&A performance, most of the previous studies found negative post M&A long-term returns that are consistent with the results found in CMAR.

There are two things that may become the reasons for the significant unfavourable long-term stock performance of the M&A firms in Indonesia. Firstly, it is not the right timing for some of the companies to undergo M&A. The wrong timing of merger and acquisition may lead to financial issues and also managerial problems. This is because more than 10% of the companies did merger and acquisition using bank loans, which suggests that some of the companies were actually taking big risks with their M&A investment. Some of them may also be unprepared with the M&A decision causing the M&A failure. Furthermore, the planning and the preparation of M&A may not be done thoroughly, causing difficulties in the integration process. Consequently, synergy inside the companies cannot be built accordingly, which results in decreased productivity.

Decreased productivity leads to the poor performance of the company. Thus, with the company's debt and decreased productivity, the M&A may worsen the long-term performance of the merged and obtaining firms in Indonesia.

There is no effect of the acquirer size on the post M&A long-term stock performance of the merged and acquiring firms in Indonesia found using CMAR method ( $H_{2A}$ ), since the p-value (0.6756) is more than 10%. This result can be steadily seen from several previous studies. The previous studies also found no impact between the size of the acquirer to the post M&A long-term share performance (Franks et al., 1991). No correlation between how big is the acquirer to the post M&A long-term share performance can be caused by the fact that 29% of the samples of CMAR are big size acquirers that are already well established and have the appropriate knowledge and resources to engage in takeovers. Additionally, the other 57% of the samples are comprised of medium sized companies which also have sufficient knowledge and experience in terms of M&A. Therefore, the sufficient knowledge and resources that the big and medium acquirers have allows the takeover process to be well managed, leaving the post M&A long-term share performance unrelated to the size of the acquirer.

Based on the result found, the proportion of the acquirer can give positive/good influence (0.0516302) on the post M&A long-term share performance of the merged and acquiring firms in Indonesia using BHAR method ( $H_{2B}$ ), since the p-value is less than 5%. This showed distinctive result from the previous result found in CMAR whereas there is no impact found between the proportion of the acquirer to the post M&A long-term share performance. This may be caused by the fact that 21% of the samples are small acquirers, which do not have sufficient resources and knowledge to handle M&A accordingly, causing a difficult adjustment inside the company. The difficult adjustment may cause the company to perform lower than it should have performed. Furthermore, all of the small size acquirers are engaged in acquisitions of private companies, which usually result in negative performance of the small acquirers. This can occur since private companies are usually harder to maintain due to their private company nature, which leads to a poorly optimised use of resources acquired (Peng and Isa, 2012).

Moreover, the result shows that there is a negative impact ( $-0.0289708$ ) of the means of payment choosed in M&A transactions to the post M&A long-term share performance of the merged and acquiring firms in Indonesia using CMAR method ( $H_{2C}$ ). The negative impact suggests that the post M&A long-term share achievement is poor when share payment is used in M&A transactions. The reason behind this is that the market reacted negatively towards the M&A announcement of companies, which use shares as their means of payment in M&A. In the case of CMAR, the market actually reacts negatively towards the 10% of the sample companies which use shares as M&A settlement. The outcome is actually consistent with the signalling theory that states that in M&A deals, share payment is seen as less favourable than cash payment since share payment gives an unfavourable gesture to the market. This is because share payment is usually used whenever the company believes that their shares are overvalued. As a result, the market reacts negatively towards the companies which underwent M&A and used shares as the method of payment. Companies which use share settlement for M&A deals are expected to underperform the companies that use cash as their M&A settlement (Peng and Isa, 2012). Latest studies performed by André et al. (2004), Antoniou et al. (2007) and Dutta and Jog (2009) also found that means of payment has an impact after long-term stock performance.

However, there is no influence on the BHAR method result for the correlation of the means of payment used in M&A settlement to the post M&A long-term share performance of the incorporated and acquiring firms in Indonesia ( $H_{2D}$ ), since the p-value is more than 10%. This result is different from the evidence found in CMAR in which negative impact is found between the means of payment to the post M&A long-term share performance. The reason behind this is that the market did not react negatively towards the M&A announcement of companies in the sample of BHAR, which use shares as their method of payment in M&A. Therefore, although there are more companies in the sample of CMAR that use cash payment, the result in BHAR shows that the post M&A long-term share performance is unrelated to the method of payment used in M&A. This result actually shares the same finding with the previous study done by Franks et al. (1991) who found no impact in the correlation of the means of payment and the post M&A long-term share performance.

Negative impact ( $-0.0209100$ ) of ownership concentration towards the post-merger and acquisition long-term share performance of the merged and acquiring firms in Indonesia is found in the result of CMAR ( $H_{2E}$ ) where the p-value is less than 5%. The negative impact of ownership concentration towards the post M&A long-term share performance suggests that the post M&A long-term share performance is lower when the majority of the companies that are not owned by family while the post M&A long-term share performance is higher when the majority of the company is owned by family. Since 29% of the sample companies of CMAR are not owned by family, this means that 29% of the sample companies in CMAR actually experience greater loss than the 71% of the sample companies in CMAR. This result proves that companies which are family owned tend to outperform companies that are not owned by families. Resulting identical outcome to the previous study conducted by Ali et al. (2018) which found the influence between the ownership structure to the performance of the company. Last but not least, no impact was found in the result of BHAR between the ownership concentration of the company and the post-merger and acquisition long-term stock achievement of the merged and acquiring firms in Indonesia where the p-value is more than 10%. This result is actually consistent with earlier studies conducted by Aluchna and Kaminski (2017) and Zouari and Taktak (2014). Aluchna and Kaminski (2017) and Zouari and Taktak (2014) found no impact between the ownership concentration and the company's performance. Thus, it can be concluded that there is no relationship between the significant negative post-merger and acquisition long-term share achievement of the merged and acquiring firms in Indonesia using BHAR with the ownership concentration of the company.

## 5 Discussion and conclusions

The main goal of this research is to evaluate the long-term stock performance of the merged and acquiring firms in Indonesia after implementing merger and acquisition (M&A) and analyse whether the post M&A long-term stock performance is related to the acquirer size, method of payment and ownership concentration of the company. The length of the observations towards the share performance is three years post M&A. The research is able to find mixed results from CMAR and BHAR. It can be concluded from the result of this research that the merged and acquiring firms in Indonesia experience significant negative post M&A long-term share performance using both CMAR and BHAR method. Moreover, there is no impact between the size of the acquirer and the

post M&A long-term share performance of the merged and acquiring firms in Indonesia using CMAR method. On the other hand, significant impact is found between the size of the acquirer and the post M&A long-term share performance using BHAR method. Last but not least for method of payment and ownership concentration has significant impact on the post M&A long-term share performance of the merged and acquiring firms in Indonesia using CMAR method. However, there is no impact using BHAR method.

The empirical findings in this study establish a thorough conceptual model for all researchers and professionals who are motivated to investigate the M&A long-term stock performance. Firstly, the companies should have a sufficient and thoughtful plan regarding its decision to engage in M&A. A detailed and careful plan of M&A will adequately prepare the company to follow appropriate steps to ensure that the M&A process goes smoothly. Once the synergy is achieved, M&A will be able to increase the company's productivity, improve the company's financial performance and thereby create value for the shareholders. As a result, companies which undergo an M&A will experience positive long-term share performance. Secondly, since in BHAR the size of acquirer is proven to have substantial positive influence after M&A long-term share performance, the big acquirers are the ones that will actually experience lower loss of returns. Therefore, it is better for small companies to think carefully before making a decision to undergo M&A. This is because sometimes the smaller companies are too confident in taking M&A deal and end up being worse off. Companies should carefully consider whether M&A will make the company better off. Third, companies should think carefully regarding the method of payment used in M&A, since the results in CMAR show that it has a substantial influence on the long-term stock performance. The companies should consider traditional way in payment using cash as the means of payment since it will benefit them now and in the future. Lastly, although there are mixed results found in CMAR and BHAR, all the determinants, including the acquirer size, payment method, and ownership concentration, demonstrate to have significant effect on the post long-term stock performance of the merged and acquiring firms in Indonesia. Therefore, before making a decision on where to invest, it is important for the investors to understand the nature and culture of the company, acquirer size, payment method used, and also the ownership concentration of the company in order to make a good judgment of their possible investment.

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