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Pre and Post-Merger and Acquisition Performance of Companies in the Malaysian Energy Sector

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ABSTRACT

The Malaysian energy sector companies are experiencing a high competition market in a fast-changing global market. They require synergy, which aligns with one of the critical Mergers and acquisitions (M&A) motives to acquire market strength or penetrate the new market to bid for significant oil and gas (O&G) projects. This study aims to analyze the M&A performance of Malaysian energy sector companies. The study is important because it represents a critical shift in every business strategy. The consolidation needs to be well prepared and conducted systematically to achieve a good result. This study will shed light on the impact of mergers and acquisitions on financial performance for investors and firms in Bursa Malaysia. Company annual financial reports data were gathered for the periods of pre-and post-M&A. The ratio analysis was conducted using financial ratios related to liquidity, profitability, leverage, and efficiency to evaluate company performance. The finding shows insignificant improvement in liquidity, profitability, leverage, and efficiency after the M&A period. This research implication confirms the findings of previous studies that companies have not had a stronger financial performance after M&A and that M&A was unsuccessful in creating synergy with the effective use of resources on a long-term basis.

Keywords:
Merger and acquisition; M&A; company performance

1. Introduction

Companies need to have a business strategy plan for establishing a competitive edge in the market. The typical business objective or business target is growth, as growth indicates company accomplishment. It generates new business opportunities, attracts additional clients, increases revenue, and increases company market share. According to Kumar and Sharma [1], companies can opt for an internal growth strategy or organic growth. Companies are using their resources for growth, and it has been the primary strategy for many years, practiced mostly by corporates across the globe.

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On the other hand, inorganic growth is a common way of ascending the ladder using multi-foot, through tie-ups corporate strategy or Mergers and Acquisitions (M&A). A company aims to expand its market with the aid of others. M&A would be a great way to expand the business without waiting for years to pay off the sales and marketing strategy.

Companies in the Malaysian energy sector are experiencing high competition market of a fast-changing global market. They require synergy, which is in line with one of the critical M&A motives according to Kiymaz and Baker [2], to acquire market strength or penetrate the new market to bid for significant oil and gas (O&G) projects. By far, oil prices and O&G supply are the most critical factors that affect M&A in this sector [3].

1.1 Problem Statement

The O&G industry is crucial to the Malaysian energy sector and the overall economy because it added around 20 percent to the nation's Gross Domestic Product (GDP) in the last few years [4]. A study by Solaymani [5] showed a correlation between global oil prices and Malaysia's real GDP, where lower global oil prices would decrease Malaysia's real GDP. Therefore, companies in the Malaysian energy sector are expected to successfully deliver major O&G projects that will positively impact the national GDP. Real GDP growth is perceived as an indication that the country's economy is doing well [6].

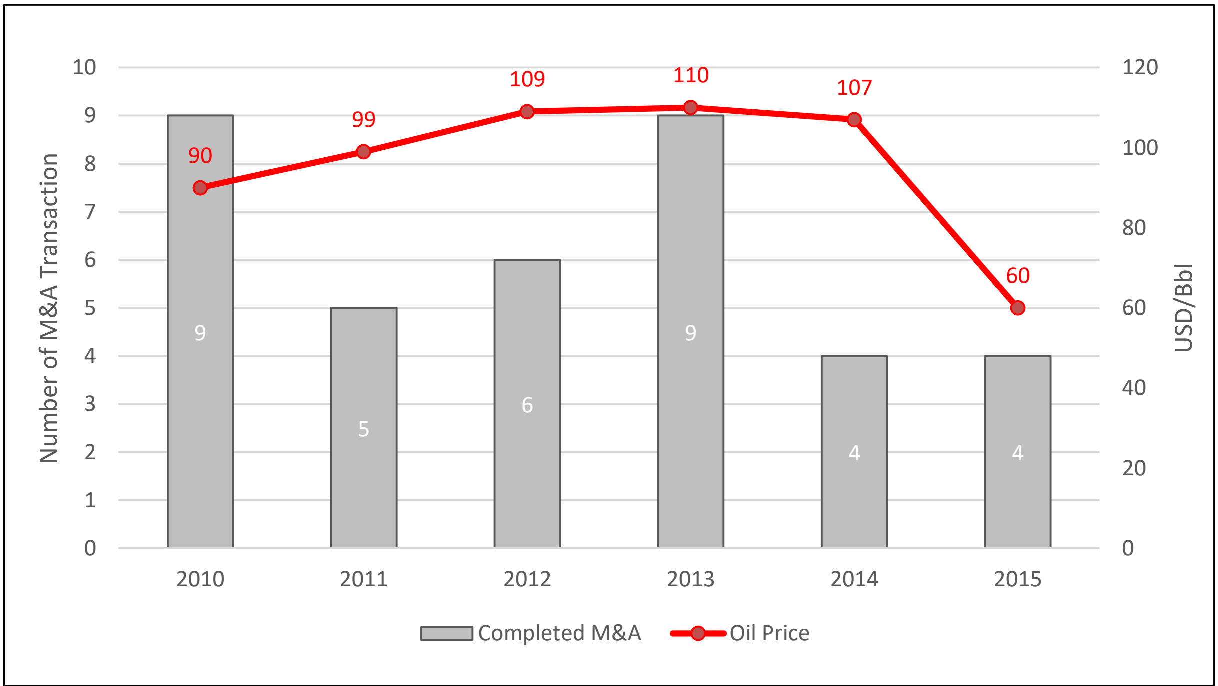

Fig. 1. Completed M&A of the Malaysian Energy Sector (Source: Bursa Malaysia)

The synergy between companies in the energy sector is needed to gain market power or enter a new market and compete for significant O&G projects. **Figure 1** above explains that the year 2013 would be the last vigorous year for the M&A episode in the Malaysia energy sector. The downturn of oil prices between mid-2014 to early 2015 was mainly guided by the surging of global oil production and weakening demand conditions, especially between mid-2015 to early 2016, impacting the decline of completed M&A in the Malaysia energy sector.

M&A in strategic management continues to gain prominence, and post-acquisition performance draws much attention in studies. Most of the research evaluating the impact of post-acquisition on performance identified such impact to be positive [7-13]. M&A leads to improved company performance. On the other hand, other research shows evidence that M&As do not contribute synergy in the long run, even leading to a detrimental effect [14-20].

The findings in the M&A report are indeed contradictory. The evidence is conflicting, and no consensus has been reached about whether M&As would add value. The Malaysian energy sector companies' performance, which exercised M&A to remain competitive in the oil and gas construction industry, needs to be investigated. This study analyzed whether M&A is improving company performance by doing a financial ratio analysis.

1.2 Aim and Objective of the Study

This study aims to analyze the effect of M&A on company performance in the Malaysian energy sector. The objectives of this study are listed below.

1. To study the effect of M&A on company Liquidity Ratio
2. To examine the effect of M&A on company Profitability Ratio
3. To investigate the effect of M&A on company Leverage Ratio
4. To examine the effect of M&A on company Efficiency Ratio

1.3 Hypotheses of Study

The null hypotheses tested in this study are arranged for each ratio and summarized below.

H_{01} There is no significant difference in the Liquidity ratios pre and post-M&A
H_{02} There is no significant difference in the Profitability ratios pre and post-M&A
H_{03} There is no significant difference in the Leverage ratio pre and post-M&A
H_{04} There is no significant difference in the Efficiency ratios pre and post-M&A

1.4 Scope of the Study

This study's scope is limited to the public companies in the energy sector listed on Bursa Malaysia, which initiated and concluded the M&A between 2010 and 2015. The total number of companies that were analyzed in this study is 23. The timeframe is specified considering the availability of company financial data for four (4) years pre and four (4) years post-M&A. The company's financial data were retrieved from Bursa Malaysia.

1.5 Importance of the Study

The study is important because M&A represents a critical shift in every business strategy. The consolidation needs to be well prepared and conducted systematically to achieve a good result. This study will shed light for investors and firms in Bursa Malaysia on the significance of M&A in studying firm performance and help researchers in the construction industry regarding the impact of mergers and acquisitions on financial performance.

2. Literature Review

The corporate restructuring could be in the form of internal growth or diversification using its capital or inorganic growth or expanding the business with others' help. This study will focus on corporate restructuring through M&A. Another purpose of mergers and acquisitions is to gain competitive advantage by restructuring and strategic alliances [1]. **Figure 2** explains the corporate growth restructuring strategy, such as a change in the management team, capital structure, or business model. According to Kumar and Sharma [1], M&A falls under the amalgamation strategy. It is a way of merging or joining two entities. In this strategy, a partnership of two entities exists to provide the means for any strategic or financial objectives. Following amalgamation, an organization may combine its assets and liabilities with other organizations, including mergers or acquisitions.

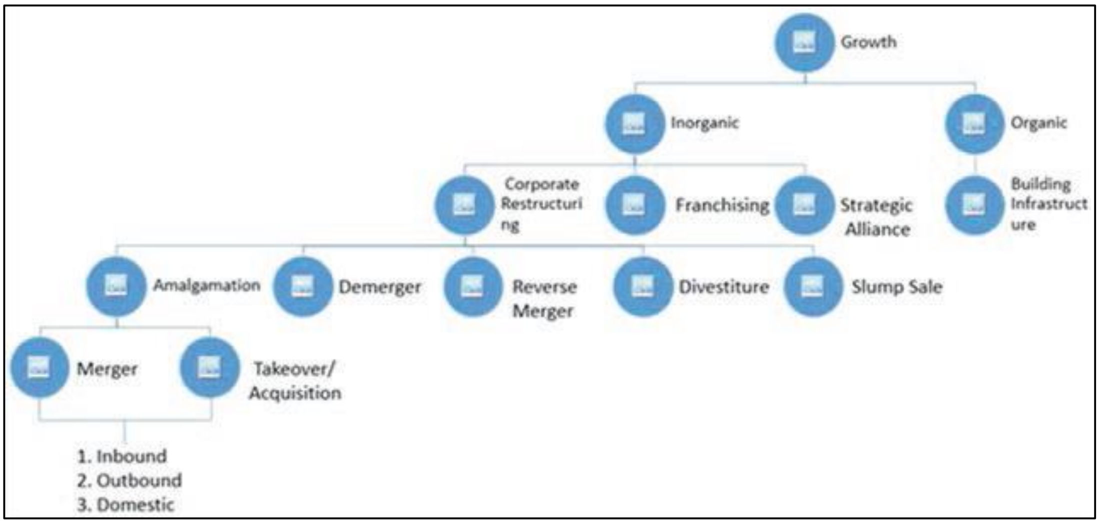

Fig. 2. Growth and corporate restructuring [1]

The effectiveness of M&A was an active discussion. Many researches appear to support a debate over whether M&A is improving company performance or detrimental to company performance.

2.1 Merger and Acquisition has an Impact on Company Performance

Several researchers who have studied the M&A and supporting its impact on improving company financial performance are discussed in this section. In the United Kingdom, Jallow *et al*., [11] examined the effect of M&A in UK companies. They made a financial ratio comparison between pre and post-M&A by analyzing the company's financial report. The variable they chose were Earning per Share (EPS), Net Profit Margin (NPM), Return on Equity (ROE), and Return on Assets (ROA). At the end of their research, they found a significant impact of M&A on ROA, ROE, and EPS. However, the NPM does not significantly affect the M&A. Jallow *et al*., [11] focus mainly on the profitability ratio to measure the impact of M & M&A in UK companies. The effect of M&A on company performance will need to be investigated from more comprehensive financial ratios.

Similar scope of the study was also carried out by Akben-Selcuk and Altiok-Yilmaz [9] when they investigated the impact of M&A on Turkish companies' performance. They used profitability ratios as an accounting approach in their study. Three ratios of ROS, ROE, and ROA were considered. The research model was developed using a sample of two years before and two years after the M&A. They concluded that, based on the t-test, the ROA and ROS values for post-acquisition are revealed slightly lower than those for pre-acquisition. Thus, it only concluded that the company is affected by the M&A process. However, the ROE value was not affected by the M&A process.

The ROE approach was chosen by Mall and Gupta [12] in their study. They set up a study to assess the impact of M&A on East African business performance. They did the cumulative abnormal measurement of returns and used the ROE accounting ratio to evaluate M&A's effect on company performance. They observed that M&A improved company performance and found that cross-border M&As were less successful in improving company performance than domestic M&As.

Lipson and Mortal [8] studied the company liquidity performance that is not discussed in the above literature. They tried to determine the relationship between firm characteristics and liquidity by examining M&A in the USA shipping company. They found that, on average, M&A improves liquidity. Their study also proved that the performance improvement is supported by changes in the firm characteristics toward the M&A.

Rani *et al*., [10] conducted an M&A study in the Asia region. They did a comprehensive study of M&A impact on corporate performance in India. They compared the acquiring firms’ performance before and after M&A and conducted a comprehensive financial ratio analysis related to liquidity, profitability, efficiency, and leverage. The findings show that the mean-profitability related to the financial ROCE and ROE shows improvement post-M&A time. They also found the same result with efficiency and liquidity ratios. However, the leverage ratio, on the other hand, has a different result. The paired t-test did not indicate significant improvement post-M&A. This study would like to have the same approach but focus on M&A in the Malaysian energy sector.

In the neighboring country, Beverly *et al*., [13] investigated the post-M&A company performance in Indonesia. They aimed to examine the company's long-term performance by studying the long-term pre and post-merger company financial reports. They did a detailed ratio study of significant profitability, performance, leverage, and liquidity ratios. The ratio analysis was carried out using financial reports three years before and three years after the M&A. They found that M&A improves profitability, namely ROCE and ROE. The result is consistent with Rani *et al*.,'s [10] research. The same improvement in performance also applies to the leverage ratio. However, after the M&A, the liquidity and efficiency ratios showed no noticeable change. At the end of their study, they concluded that overall company performance is improving after the M&A. In this study, the ratio analysis period was extended to four years pre-and-post M & M&A to cover a more extended period after the M&A.

In this study scope or Malaysia context, Rahman [7] studied and analyzed the impact of post-acquisition on 83 combined companies' operating performance in Malaysia. The period chosen in his research was from 1988 to 1992. He focused on the ratio of operating cash flow to operating assets to measure the company performance. The cash flow control-adjusted showed a positive 62.65% compared to a positive 51.98% in the previous year before the acquisition. A reasonable operating cash flow ratio is based on the industry sector and should be contrasted with competitors in the same market. Both a healthy upward trend ratio and above the market average indicate that the company has a competitive edge over the other. In this study, however, the M&A company performance was analyzed with more ratios, including liquidity, profitability, leverage, and efficiency ratios.

2.2 Merger and Acquisition Have no Impact on Company Performance

This section will discuss studies that support the view that M&A has no impact on company financial performance. In the USA, a meta-analysis was performed by King *et al*., [14] to study the impact on company performance post-M&A. Their results point to a firm conclusion that the correlation between the existence of an M&A operation and the acquiring firms' performance is very close to zero or negative after M&A. Very clearly, there is no proof that M&A transactions boost financial performance (e.g., accounting performance or abnormal returns).

Aureli, S. [17] carried out another study approach using financial ratios. He performed a study in Italy to analyze company performance post-M&A after acquiring by foreign emerging companies. Financial statements and management reports were reviewed over eight years to determine the financial results effects before and after the merger. He analyzed company performance changes in ROA, ROE, Sales, and Net Profit. He found out that international investors are primarily searching for know-how and technological skills and that their presence does not lead to improved financial results.

A similar approach was also used by Pervan, Višić, and Barnjak [19]. They conducted a study on Croatian companies involved in M&A activity in the period from 2008 to 2011. A paired t-test was used on total expenditure, ROA, ROE, and Profit Margin to compare the financial performance before and after M&A. The results show statistically insignificant differences in the performances of target companies before and after M&A. Even when the target companies after M&A were compared with peer companies, they found similar findings of statistically insignificant differences.

In contrast with the above studies, Kumar, R. [16] used only the ROCE profitability ratio in his study. He examined the post-merger companies' operating performance in India to determine whether M&A improves corporate performance. After conducting a paired t-test for the mean differences of ROCE averaged over three years post-merger and over three years pre-merger, there is no improvement post-merger period.

A broader regional study was performed by Rao *et al.*, [20] in the ASEAN countries. They studied the company's M&A in this region. They used two parameters to evaluate M&A financial performance: the combined ROA and the combined Sales Margin. These two ratios are to measure the company's profitability and effectiveness. M&A shows that it has a detrimental effect on companies' raw and adjusted performances in ASEAN countries. In the neighboring country of the Philippines, Cabanda & Pajara-Pascual [15] studied William, Gothong, And Aboitiz (WG&A) Shipping Companies M&A. They found out that M&A could not generate improvement in the financial performance of profitability, leverage, solvency, and operating efficiency.

In this study scope or Malaysia context, Aik *et al.*, [18] studied Malaysian horizontal M&A in the long run. The research primarily aimed to examine M&A productivity and its spillover effect and evaluate the performance changes. The measure they used was Economic Value Added (EVA). At the end of their study, they found out that horizontal M&A in Malaysia does not contribute to synergies in the merging companies' long-term operating results. EVA is quite good as a performance measure. The formula states where and how a firm generated wealth by adding things from the balance sheet. The manager shall be fully conscious of expenses and assets whenever making strategic decisions. However, the EVA equation mainly relies on the invested capital, so usually best calculated for stable companies with rich assets. Technology companies that are having intangible assets are not suitable for using the EVA performance assessment. Therefore, this study focused on the significant liquidity, profitability, leverage, and efficiency ratios.

The above studies show that there still seems to be no general agreement as to whether M&A is creating improvements in the company's post-M&A performance. Hence it is essential to investigate the impact of M&A on company performance in the Malaysia Energy sector.

3. Methodology

Malaysian public companies in the energy sector experienced a positive upward trend over the last two decades. Bursa Malaysia recorded an increase of 6% of the total listed company every year in this sector, as shown in **Figure 3** below. The number of public companies in this sector increased significantly from 2004. In the last five years, the total number of public companies in this sector has remained constant, between 29 and 32 listed companies. This study focused on the energy sector company that carried out M&A from 2010 to 2015.

The purpose of this study is to evaluate whether the public listed company's performance after M&A is consistently improving. Therefore, secondary source data were used for this study. The primary data source is the Bursa Malaysia, and the study was carried out on the company's eight-year financial report data.

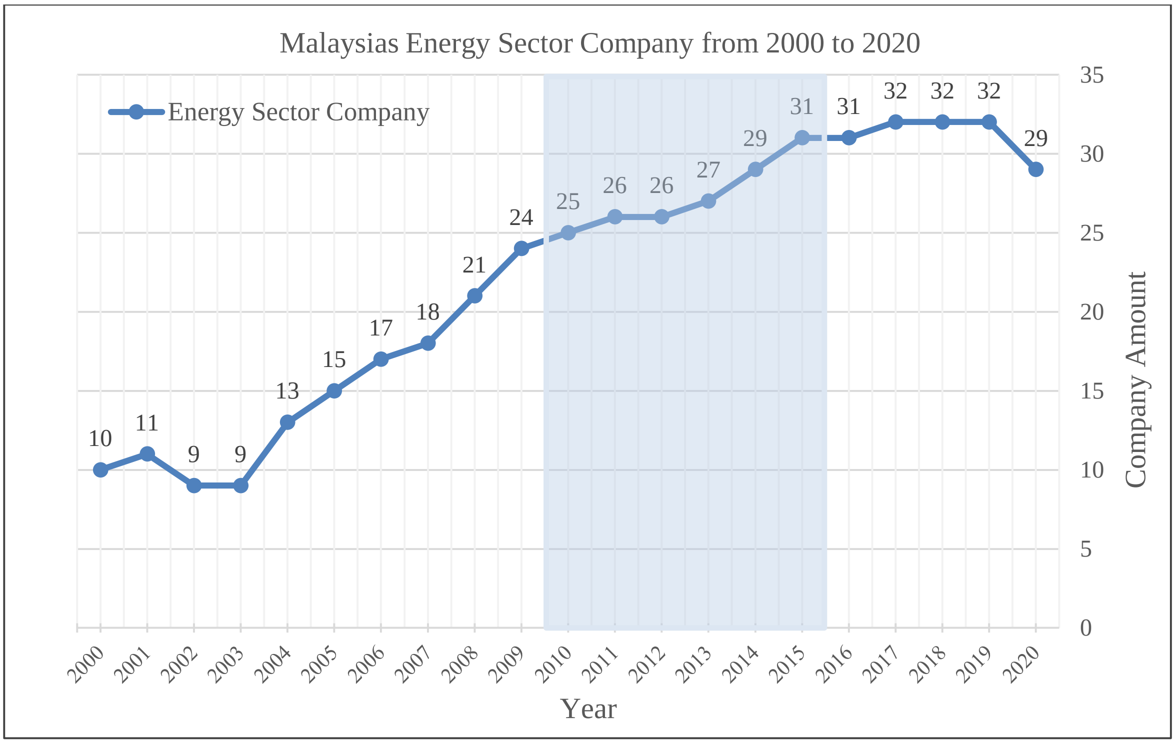

Fig.3. Malaysian Energy Sector Company History

Malaysia Energy sector public-listed companies' M&A announcements were retrieved from the Bursa Malaysia. A sample size of 37 M&A was obtained. **Table 1** outlines the sample distribution over the year. It can be observed from the table that the largest 25 percent of M&A was carried out in 2010 and 2013. Some companies have an incomplete annual financial report because the M&A concluded less than three years from the Company IPO date. Therefore, only 23 M&A have adequate financial data in pairs for pre-and post-M&A and are retained for analysis.

This study's financial data report was collected from the public company in the energy sector listed on Bursa Malaysia, which M&A was initiated and concluded between January 2010 to December 2015. The period of the sample was considered so that company performance after M&A can be evaluated. The timeframe was specified considering the availability of company data for four (4) years post-M&A.

Table 1: Sample Distribution through the years 2010-2015

Year	No. of M&A identified	No. of M&A analyzed
2010	9 (25%)	6 (26%)
2011	4 (11%)	1 (4%)
2012	6 (17%)	4 (17%)
2013	9 (25%)	7 (30%)
2014	4 (11%)	4 (17%)
2015	4 (11%)	1 (4%)
Total	37 (100%)	23 (100%)

The study time frame covers the four years before and four years after the M&A period from 1 January 2006 to 31 December 2019. The mean for the t-test that has been analyzed is for the following pairs.

1. Pair (-1, +1) for a year before and a year after the M&A.
2. Pair (-1, +2) for a year before and two years after the M&A.
3. Pair (-1, +3) for a year before and three years after the M&A.
4. Pair (-1, +4) for a year before and four years after the M&A.
5. Pair (-2, +2) for two years before and two years after the M&A.
6. Pair (-3, +3) for three years before and three years after the M&A.
7. Pair (-4, +4) for four years before and four years after the M&A.

This study assessed the acquiring company's long-term financial performance pre-and post-M&A. The year M&A event was concluded, or year 0 is omitted from the study because due to the M&A event this year, there might be irregularities in the reporting [10]. The financial data were obtained over four years before and four years after the M&A. These eight years was broken down to pre-M&A or period -4 to -1 and post-M&A or period +1 to +4. Several accounting measures were calculated in this study to have a comprehensive approach to the M&A's long-term performance and profitability.

The acquirer firm’s long-term financial performance was evaluated by using ratio analysis. The study calculated and compared seven (7) primary ratios of liquidity, profitability, leverage, and operating efficiency. The seven (7) ratios are current ratio (CR), return on capital employed (ROCE), net profit margin (NPM), returns on equity funds (ROE), total debt over total assets ratio (DA), current assets turnover ratio (CATR) and fixed assets turnover ratio (FATR).

For each accounting measure used in this study, a two-sample paired t-test was performed to assess significant differences over pre-and post-M&A. The null hypothesis for each test, as defined in section 1.3, would be that the post-M&A mean level does not differ significantly from the pre-M&A mean level.

Microsoft Excel was used to carry out the t-test. The t-test can be found in Excel Data Analysis after loading it in from the *Analysis ToolPak* add-in. The statistical method chosen for this study is the t-Test: Paired Two Sample for Means.

4. Result and Discussion

Financial ratio analysis has been carried out to analyze the long-term financial performance of the M&A company. This study analyzed and compared the companies' pre-and post-M&A financial performance regarding profitability, liquidity, leverage, and efficiency.

4.1 Liquidity Ratio

A ratio that has been assessed is the Current Ratio (CR) [10]. This ratio is to assess the company's ability to achieve its short-term obligation.

CR is calculated as the following.

$$\mathrm{CR} = \frac{\text{Current assets}}{\text{Current liability}} \tag{1}$$

Table 2
Liquidity Ratio Test Result

Paired sample (before, after)	Mean ratio before M&A	Mean ratio after M&A	Mean difference	t Stat		Significance
Current Ratio (CR)						
(-1,+1)	1.55	1.37	-0.18	1.525		insignificant
(-1,+2)	1.55	1.15	-0.39	2.806	**	significant
(-1,+3)	1.55	1.09	-0.45	2.989	***	significant
(-1,+4)	1.55	1.11	-0.43	3.108	***	significant
(-2,+2)	1.58	1.15	-0.42	1.643		insignificant
(-3,+3)	1.60	1.09	-0.51	2.435	**	significant
(-4,+4)	1.63	1.11	-0.52	2.691	**	significant

Note: *, **, and *** significance at 10%, 5%, and 1%, respectively

4.1.1 Result

The CR mean ratio before M&A is showing a negative trend of 1.63 down to 1.55 for pair (-4,+4) to pair (-1,+1). The CR mean ratio after M&A continues the negative trend of 1.34 down to 1.11 for pair (-1,+1) to pair (-4,+4). The significant test result are 5% significant at pairs (-1,+2), (-3,+3), (-4,+4) and 1% significant at pairs (-1,+3) and (-1,+4)

4.1.2 Discussion

The expected current ratio is above 1.0. The higher the ratio means the company is more liquid. A ratio of 1.0 indicates that the company can utilize its current assets to pay off all its current liabilities. Based on the result in **Table 2**, the before and after M&A results of the current ratio condition suggest that the acquiring companies appear to have an adequate liquidity position level. However, there is a continued negative trend from before the M&A period and after the M&A period. This result concludes that M&A did not improve the company's liquidity afterward. This study's results are in line with Lipson & Mortal [8]. According to them, the M&A is not improving the company liquidity if not followed by the accompanying transformation characteristics.

4.2 Profitability Ratios

Ratios that have been assessed are Return on Capital Employed (ROCE), Return on Equity (ROE), and Net Profit Margin (NPM) [10]. These ratios are to assess the company's overall profitability.

ROCE is calculated as the following.

$$\mathrm{ROCE} = \frac{\text{Operating Profit}}{\text{Capital Employed}} \tag{2}$$

ROE is calculated as the following.

$$\mathrm{ROE} = \frac{\text{Net Income}}{\text{Average Shareholders' Equity}} \tag{3}$$

NPM is calculated as the following.

$$\mathrm{NPM} = \frac{\text{Profit after taxes}}{\text{Net Sales}} \tag{4}$$

4.2.1 Result

The ROCE mean ratios before M&A show positive values and positive trends except for pair (-4,+4), and the ROCE mean ratios after M&A shows a decreased trend from 0.04 to -0.01, as reflected in **Table 3**. The ROCE significant test shows a 10%, 5%, and 1% significant for pairs (-1,+1), (-2,+2), and (-1,+2) respectively. The ROE mean ratios before M&A show a positive trend from -0.01 to 0.09 for pairs (-4,+4) to (-1,+1). A negative ROE mean ratio after M&A is observed for pairs (-1,+2) to (-4,+4), only one year after M&A or pair (-1,+1) ROE gave a positive 0.04 ratio. The ROE significant test has insignificant results except for pair (-1,+2), which is 10% significant. The NPM mean ratio four years before M&A was a positive 0.04 ratio and afterward followed by negative ratios. One year after M&A, the ROE mean ratio recorded a positive 0.07 ratio and a -1.35 ratio at pair (-1,+4). The t Stat is showing an insignificant difference for all pairs.

Table 3
Profitable ratios Test Result

Paired sample (before, after)	Mean ratio before M&A	Mean ratio after M&A	Mean difference	t Stat		Significance
Return on capital employed (ROCE)						
(-1,+1)	0.10	0.04	-0.06	1.910	*	significant
(-1,+2)	0.10	0.01	-0.09	2.898	***	significant
(-1,+3)	0.10	-0.01	-0.11	1.667		insignificant
(-1,+4)	0.10	0.01	-0.09	0.822		insignificant
(-2,+2)	0.11	0.01	-0.10	2.218	**	significant
(-3,+3)	0.09	-0.01	-0.10	1.506		insignificant
(-4,+4)	-0.02	0.01	0.03	-0.316		insignificant
Return on equity (ROE)						
(-1,+1)	0.09	0.04	-0.06	1.411		insignificant
(-1,+2)	0.09	-0.11	-0.20	1.828	*	significant
(-1,+3)	0.09	-0.10	-0.19	1.541		insignificant

Paired sample (before, after)	Mean ratio before M&A	Mean ratio after M&A	Mean difference	t Stat	Significance
(-1,+4)	0.09	-0.01	-0.10	0.670	insignificant
(-2,+2)	0.09	-0.11	-0.20	1.704	insignificant
(-3,+3)	0.05	-0.10	-0.15	1.218	insignificant
(-4,+4)	-0.01	-0.01	0.00	0.026	insignificant
Net profit margin (NPM)					
(-1,+1)	-0.15	0.07	0.23	-0.958	insignificant
(-1,+2)	-0.15	-0.09	0.07	-0.237	insignificant
(-1,+3)	-0.15	-0.02	0.14	-0.498	insignificant
(-1,+4)	-0.15	-1.35	-1.19	1.135	insignificant
(-2,+2)	0.20	-0.09	-0.29	1.282	insignificant
(-3,+3)	-0.20	-0.02	0.18	-0.700	insignificant
(-4,+4)	0.04	-1.35	-1.39	1.393	insignificant

Note: *, **, and *** significance at 10%, 5%, and 1%, respectively

4.2.2 Discussion

ROCE is a profitable performance indicator of companies in the capital-intensive sectors, such as the energy sector, because this sector requires large amounts of investment to produce a service or good. Therefore, they have a significant number of fixed assets (equipment, plant, and property). ROCE informs a company how much profit it is generating per RM 1 of its capital employed. A higher ROCE indicates a profitable business. Based on the result in **Table 3**, the mean ROCE ratios were not indicating a stable or rising trend either before or after the M&A. Therefore, it can be concluded that there is no performance improvement in the ROCE ratios pre and post-M&A.

ROE is another company's profitable performance indicator that is linked to stockholder's equity. A higher ROE return indicates that the company is efficiently utilizing its investment financing to promote business growth, ultimately providing better returns to the investors. A lower ROE returns may suggest a company mismanaged the reinvesting of earnings into unproductive assets. The study result shows mean ratios ROE before M&A has positive profits compare to after M&A that record a decremental ratio. Therefore, it can be concluded that there is no performance improvement in the ROE ratios pre and post-M&A.

The NPM indicates how much profit a company can generate from each ringgit in revenue. It is the most critical indicators to assess the financial health of a company. The company needs to trace the increase and decrease of the NPM to determine whether the current practices are functioning and estimate revenue-based profits. This study reveals that either before or after M&A, the NPM mean ratios are showing a negative trend. NPM ratio only gave positive value at pair (-4,+4) before M&A and pair (-1,+1) after M&A. Therefore, it can be concluded that there is no performance improvement in the NPM ratios pre and post-M&A.

Based on the above profitable ratios, the Malaysian energy sector companies did not make profits by effectively managing their capital. Paymata and Setiawan [21] discussed that the M&A is demanding a significantly more considerable amount of funds; therefore, the company had not optimized the profit by optimal capital use. Companies will use the maximum amount of capital to produce a profit in two or three years after the M&A. This study reported that the acquiring companies are frequently unable to generate profit or gain much significance out of their capital.

4.3 Leverage Ratio

The ratio that has been assessed is the Debt over Assets Ratio (DA) [10]. This ratio is to assess company indebtedness.

DA is calculated as the following.

$$DA = \frac{\text{Total Debt}}{\text{Total Assets}} \quad (5)$$

4.3.1 Result

The DA mean ratio before M&A shows a stable ratio ranging from 0.55 to 0.58. The DA mean ratios after M&A show a slight increase of 3.8% every year of the first four years or for pair (-1,+1) to (-1,+4). The significance test shows no significant difference before or after the M&A period; refer to Table 4.

Table 4
Leverage Ratio Test Result

Paired sample (before, after)	Mean ratio before M&A	Mean ratio after M&A	Mean difference	t Stat	Significance
Debt over Assets (DA)					
(-1,+1)	0.56	0.55	0.00	0.027	insignificant
(-1,+2)	0.56	0.56	0.00	-0.044	insignificant
(-1,+3)	0.56	0.57	0.01	-0.303	insignificant
(-1,+4)	0.56	0.62	0.06	-0.974	insignificant
(-2,+2)	0.58	0.56	-0.02	0.337	insignificant
(-3,+3)	0.58	0.57	-0.01	0.235	insignificant
(-4,+4)	0.55	0.62	0.07	-1.084	insignificant

4.3.2 Discussion

Analysts, creditors, and investors have widely used the DA ratio to assess a company's overall risk. Companies with higher DA ratios are more leveraged and therefore have more risks to provide loans or invest. If the DA ratio is gradually increasing, it will imply a default at any stage in the future. Based on the study result, as presented in **Table 4**, the acquirers' leverage does not shift with the post-M&A. The DA ratio after M&A is gradually increasing. The paired t-test has not detected a significant difference in leverage after the M&A. Based on these findings, M&A does not improve acquiring firms' leverage in the post-M&A phase.

4.4 Efficiency Ratios

Ratios that have been analyzed are Fixed Asset Turnover Ratio (FATR) and Current Asset Turnover Ratio (CATR) [10]. These ratios are to assess the company operating performance.

FATR is calculated as the following.

$$FATR = \frac{\text{Net Sales}}{\text{Average fixed assets}} \quad (6)$$

CATR is calculated as the following.

$$CATR = \frac{\text{Net Sales}}{\text{Average current assets}} \quad (7)$$

4.4.1 Result

The FATR mean ratio before M&A shows a decreasing trend from 1.25 at pair (-4,+4) down to 1.02 at pair (-1,+1). The FATR mean ratio after M&A is showing an increasing trend from 0.71 to 0.8. However, these ratios are at the lower end compared to before M&A. The significant test return a 10% significant at pairs (-1,+1), (-1,+3), (-2,+2) and a 5% significant at (-1,+2). Refer to **Table 5**.

The CATR mean ratio before M&A shows a decreased trend from 2.45 at pair (-4,+4) down to 1.77 at pair (-1,+1). The CATR mean ratio after M&A at pair (-1,+1) is 1.49 and increased to 1.6 at pairs (-1,+2) and (-1,+3) but again coming down to 1.47 at pair (-1,+4). The significant test returns a 10% significance at pairs (-1,+1) only. Refer to **Table 5**.

Table 5
Efficiency Ratios Test Results

Paired sample (before, after)	Mean ratio before M&A	Mean ratio after M&A	Mean difference	t Stat		Significance
Fixed assets turnover ratio (FATR)						
(-1,+1)	1.02	0.71	-0.32	1.885	*	significant
(-1,+2)	1.02	0.61	-0.42	2.423	**	significant
(-1,+3)	1.02	0.66	-0.37	1.834	*	significant
(-1,+4)	1.02	0.80	-0.22	0.595		insignificant
(-2,+2)	1.24	0.61	-0.63	2.033	*	significant
(-3,+3)	0.96	0.66	-0.30	1.346		insignificant
(-4,+4)	1.25	0.80	-0.44	0.988		insignificant
Current assets turnover ratio (CATR)						
(-1,+1)	1.77	1.49	-0.28	1.958	*	significant
(-1,+2)	1.77	1.62	-0.15	0.868		insignificant
(-1,+3)	1.77	1.61	-0.16	0.856		insignificant
(-1,+4)	1.77	1.47	-0.30	1.420		insignificant
(-2,+2)	1.65	1.62	-0.03	0.183		insignificant
(-3,+3)	1.71	1.61	-0.10	0.478		insignificant
(-4,+4)	2.45	1.47	-0.97	1.470		insignificant

Note: *, **, and *** significance at 10%, 5%, and 1%, respectively

4.4.2 Discussion

The FATR indicates how well a company is utilizing its fixed assets to generate sales. The fixed assets included in the equation are equipment, plant, and property minus the accumulated depreciation. Typically, a higher FATR means more efficient use of investment in fixed assets to produce revenue. The result of FATR in **Table 5** suggests that the company was more efficient in utilizing the fixed assets before the M&A; even though there is an increase of FATR after the M&A, the ratios are still lower compared to before M&A.

The CATR indicates how well a company is utilizing its current assets to generate sales. Higher CATR or increasing trend ratio suggests that a company uses its current assets in a higher intensity, which is a good sign because its current assets (inventory, cash, accounts receivable, and other current assets) management policy is consistently improving. Based on the CATR result in this study, after the M&A for the first three years, the ratio increased, but it went down in the fourth year. The CATR ratio before M&A, however, was higher than after M&A.

Both FATR and CATR were unsatisfactory and demonstrated that after M&A, the efficiency of acquiring company in using current and fixed assets to produce sales was no better than before M&A. According to Rani *et al*., [10], the company's low turnover ratio post-M&A period suggested unemployment and lack of use of available capital. Therefore, it can be concluded that there is no performance improvement in the efficiency ratios pre and post-M&A.

5. Conclusions

This paper aims to study the long-term financial performance of the Malaysian energy sector companies involved in M&A. The study result shows that the M&A did not show significant performance improvement in this sector. The study result validates that the acquirer companies after M&A did not have better financial performance relative to their pre-M&A performances. Furthermore, in the long run, based on this study, M&A for the acquiring companies appear not to be financially beneficial. The findings suggest that the acquirer company’s profitability did not improve post-M&A phase. The acquirer companies also did not generate higher operating profit in the utilization of current and fixed assets. The M&A synergy benefits also could not be realized by the acquiring company. These findings are consistent with the findings of King *et al*., [14], Kumar, R. [16], Aureli, S. [17], Aik *et al*., [18], Pervan, Višić, and Barnjak [19], Rao *et al*., [20].

Based on the study, it is fair to suggest that after an M&A, the energy sector company's performance does not improve compared to before. Some of the causes that contribute to the less optimal company financial performance after M&A are an inefficient use of resources, identifying the target company, and a shift in workforce culture. Several implications can be obtained from the study. First, the research reveals that acquiring firms in the Malaysian energy sector do not perform better in financial performance after the M&A phase. Second, the study adds to the current literature on corporate strategy and M&A. The acquisition helps companies economize on their capital by purchasing companies in financial distress. Further research is needed to continue testing M&A for the long-term at a 5-year time duration.

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