

Do Mergers and Acquisitions Increase Market Share and Financial Performance: Evidence from Two Deals in the US Banking Industry

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Abstract

How does the difference in financing influence the M&As' effects on businesses in the banking industry? Case study method is applied to evaluate two deals, which are BB&T & SunTrust and KeyCorp & First Niagara Financial Group (one all-equity financed and one cash & equity financed). It is concluded that 1) the activity does increase market share, financial performance, and shareholders' abnormal return; 2) financing does affect the impacts of M&As, as deals paid by cash & equity have a more remarkable improvement in financial performance and shareholders' return after M&A.

Keywords

Mergers and Acquisitions, Financing, Market Share, Financial Performance, Abnormal Return

1. Introduction

Merger and Acquisition (M&A) is a strategy adopted by businesses internationally to achieve their aims in a competitive market. The strategy is also significant in the banking industry, but its applications were limited after the financial crisis. Although there are several papers analyzing M&A efficiency and M&A in the banking industry, most papers used criteria other than financing methods to organize data. Therefore, this paper will assess two questions (1) whether there is an improvement in market share, financial performance, and shareholders' earnings after M&A; (2) whether the improvement is similar for different financing types in M&A.

Two M&As are investigated, KeyCorp's Acquisition of First Niagara Financial Group Inc. in 2016 and BB&T's merger with SunTrust in 2019, as a representa-

tion of all equity and cash & equity deals in the banking industry. These M&A deals data are valuable to evaluating M&A in the banking industry, and these M&As are considered to represent the whole targeted population for the following reasons. First, previous papers, such as [Owen and Pereira \(2018\)](#) and [Fohlin and Jaremski \(2020\)](#) pointed out that banking is a concentrated industry, and the largest banks have a strong influence on the market. Additionally, the two chosen deals are among the 10 largest deals after the 2007-2008 financial crisis, as measured by asset size and deal value ([Wack, 2022](#)). This paper shows that M&As improve market share, financial performance, and shareholders' earnings, regardless of the financing methods. Furthermore, M&A deals paid by cash & equity generate more abnormal returns and improve financial performance significantly in the same time frame.

The following of this paper proceeds as follows. Section 2 gives the background of the research topic and summarizes the previous paper's conclusions. Section 3 analyzes the market share performance pre and post-M&A, Section 4 analyzes the financial performance and Section 5 analyzes the stock performance and shareholders' abnormal return. Specific methodology and measurements are discussed in respective sections. Section 6 concludes with recommendations and a discussion of limitations.

2. Literature Review

The market is nowadays becoming increasingly competitive because of dynamic changes. Therefore, to compete in this market, some firms choose to do M&As to reallocate resources within the economy. There exists a large literature studying the market power in different industries. For example, the market power theory, presented by [Depamphilis \(2019\)](#) in his book, states that uniting two companies in the same industry, it would cause production costs to be low so that the firm is more competitive in the market. In an attempt to examine the relationship between mergers and market power in the steel industry in the USA. In an attempt to examine the relationship between M&A and market power of the airline industry, [Kim and Singal \(1993\)](#) concluded that M&A leads to significant increase in market power, resulting in higher prices and lower quality for consumers. [Aloke Ghosh \(2004\)](#) showed a significant market share increase for the merged firm, with a mean increase of 24.09% over seven years. This result is confirmed in different periods of his research.

It is highly debatable whether M&As improve firms' financial performance. [Heron and Lie \(2002\)](#) showed that acquiring firms outperform their industry counterparts in terms of profits (measured by operating income by sales). Similarly, [Mantravadi and Reddy \(2008\)](#) concluded that M&As do improve financial performance, and their actual effects are based on deal size. However, [Gugler et al. \(2003\)](#), [Kumar \(2009\)](#), and [Ismail et al. \(2011\)](#) concluded that M&As failed to increase the merged firm's financial performance after a period. Therefore, there is no consensus on whether financial performance is enhanced or reduced after

M&As.

Using various methodologies, the literature has come to the consensus that the M&As announcements are followed by positive cumulative abnormal, and the benefits accrues mostly to the target's shareholders. For the analysis made on 4300 M&A deals from 1973-1998, the Abnormal return in $[-1, +1]$ period varied from 1.4% - 2.6%, and $[-20, \text{Close}]$ period varied from 0.1% to 3.2% (Ghosh, 2004). Kling and Antal (2006), by using the total stock return, has shown that mergers and acquisitions affect the stock return positively in all industries in Germany.

Merger and Acquisition in the banking industry: For the past 13 years, M&A activity in the US banking industry has been minimal, whereas the M&A deal value has increased by six times from 2017 to 2021 (Figure 1). This uptick in deal activity occurred for several reasons: a partial relaxation of regulatory constraints for banking M&A, lower interest rates, strong balance sheets, income statements, and plenty of liquidity among potential acquirers after years of conservative lending and purposeful capital building (De Gomez et al., 2022). Bardredin and Kalhoefer (2009) witnessed an increase in the performance of firms in the banking sector when these firms were compared to pre-merge performance. Abbas, Hunjra et al. (2014) researched financial performance pre and post-M&A of banks in Pakistan and showed a reduction in profitability, efficiency, liquidity, and financial leverage after M&A.

Deal value and number of deals in the US banking sector surged between 2017 and 2021.

Value of M&A deals in Us banking,¹ \$ billion

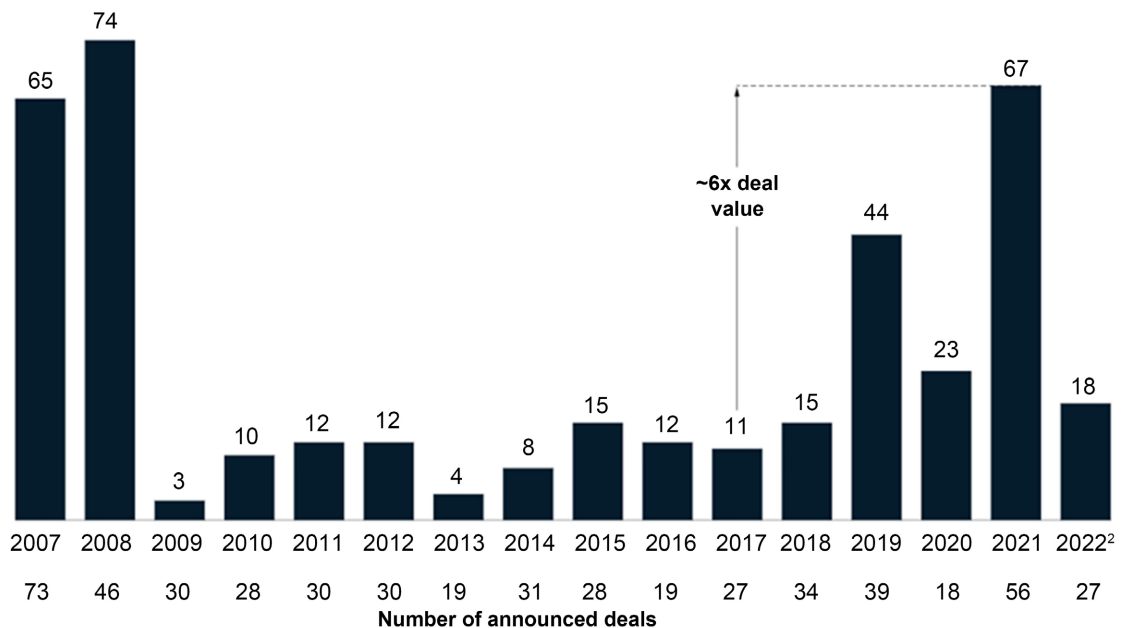


Figure 1. Deal value and the number of deals in the US banking industry between 2007 and 2021 (Source: S&P Capital, McKinsey analysis).

As shown, there are several papers analyzing the market share effect and the abnormal return of firms before and after M&A based on criteria like deal value, deal timing, etc. Similarly, the research on M&A in the banking industry is also significant. However, there are relatively few studies analyzing the effects of M&As sorted/grouped by financing methods, and this paper is expected to fill the gap by analyzing the two financing methods that are used in the banking industry and figuring out how it affects the firm's performance. The limitation of this paper is that the dataset could only represent deals that were done in the United States during 2010-2021. Even though the result of this paper can be used as references for M&As in the banking industry at different periods and places, there might be a difference from actual result arising from different macroeconomy policy.

3. Market share Performance Pre & Post M&A

3.1. Methodology

In economics, *market share* is defined as the ratio of a firm's sales (Revenue) to the industry's total sales. However, calculating the market share change after the M&A of horizontal firms is difficult as there are two firms before the Acquisition but only one firm after the Acquisition. Therefore, to evaluate whether market share increases after M&A, the post-M&A market share will be compared with the separate market share combined (mentioned below as the MS of pro-forma). A new formula for horizontal Acquisition is created to compare the market share change arising from M&A. In this formula, a pro-forma merged firm before M&A is created, and the market share (MS) of this pro-forma firm is calculated as below.

$$\text{MS (pro-forma)} = \text{MS (acquirer)} + \text{MS (Target)}$$

$$\Delta\text{MS (\%)} = \text{MS (Year 1)}/\text{MS (Year 0)} - 1$$

(Year 0 is defined as the M&A year, and year 1 is one year after M&A)

To compare the post-merge MS with the addition-pre-merged MS, the ΔMS of year 1 after M&A is compared with that of two years before a one year after the M&A. If there is a significant increase in ΔMS of year 1 (Tested at a 5% significant level), it can be concluded that M&A has caused an abnormal increase in market share.

3.2. Data and Measurement (Tables 1-6)

Table 1. SunTrust and BB&T market share pre-M&A (Source: IBIS World, SunTrust & BB&T form 10K).

	2017	2018
US Market Size (Millions)	\$932,322	\$1,035,057
SunTrust	0.96%	0.89%
BB&T	1.21%	1.12%

Table 2. Truist market share post-M&A (Source: IBIS World, Truist form 10K).

	2019	2020	2021
US Market Size (Millions)	\$1,065,629	\$959,213	\$897,305
Truist	1.99%	2.37%	2.48%

Table 3. SunTrust and BB&T pro-forma firm MS (2017-2021) (Summarized from **Table 1** and **Table 2**).

	2017	2018	2019	2020	2021
Assuming merged MS	2.17%	2.01%	1.99%	2.37%	2.48%
Δ MS (%)		(7.37%)	1.01%	19.10%	4.64%

Table 4. KeyCorp and first Niagara financial group market share Pre-M&A (Source: IBIS World, KeyCorp & First Niagara Financial group form 10-K).

	2014	2015
US Market Size (Millions)	\$836,672	\$847,098
SunTrust	0.56%	0.58%
BB&T	0.17%	0.17%

Table 5. KeyCorp market share post-M&A (Source: IBIS World, KeyCorp form 10K).

	2016	2017	2018
US Market Size (Millions)	\$880,421	\$932,322	\$1,035,037
KeyCorp	0.70%	0.80%	0.77%

Table 6. KeyCorp and first Niagara financial group pro-forma firm MS (2017-2021) (Summarized from **Table 4** and **Table 5**).

	2014	2015	2016	2017	2018
Assuming merged MS	0.73%	0.75%	0.70%	0.80%	0.77%
Δ MS (%)		1.92%	(5.51%)	13.37%	5.01%

3.3. Discussion

From the data in **Table 3** and **Table 6**, it is possible to see a sharp increase in Δ MS in year +1 after M&A for both case studies. The M&A between BB&T and SunTrust led to a 19.10% increase in market share in year +1 (**Table 3**, 2020), while M&A between KeyCorp and First Niagara Financial Group showed a 13.37% rise in Δ MS (**Table 4**, 2017). Therefore, it is possible to conclude that both all-equity and cash & equity improved market share. However, from previous literature result, the difference between the rate of change in Δ MS is expected not to come from the payment method but rather from deal size. In a paper in September 2011, Jeon and Ligon showed that a higher termination fee is positively correlated with deal completion and merged firms' operation efficien-

cy. In their research about acquisition efficiency, [Martin and Shalev \(2017\)](#) showed that the availability of firms' information to the public (usually higher for large firms) improves merger and acquisition efficiency.

4. Financial Performance Pre & Post M&A

4.1. Methodology

Previous researchers have used several approaches and techniques to evaluate the impact of M&A on merged firms' operation performance. [Ravenscraft and Scherer \(1989\)](#) examined targets' profitability using lines of data from FTC. [Gregor Andrade et al. \(2001\)](#) used abnormal operating performance to compare firms' efficiency after M&A in different time frames. [Ravichandran et al. \(2010\)](#) used ratio analysis and t-tests to assess the performance of banks that face mergers. [Qamar Abbas et al. \(2014\)](#) compared several pre- and post-M&A ratios to evaluate M&A effects in the banking industry in Pakistan.

A new method is proposed in this paper to answer whether M&A improved a firm's operating efficiency. Before the M&A deal occurred, a pro-forma firm is created, which acts as the combination between the target and the acquirer. This pro-forma firm's financial indicators will be calculated using the financial statement of the two firms, assuming there is no synergy, it acts as an example of how this method is applied. After the financial indicators are calculated, they will be compared with post-M&A same statistics in two windows $[-1, +1]$ and $[-2, +2]$ years.

Assuming there are two firms, A and B, with the following data:

	Firm A	Firm B
X	1.2	0.8
Y	1000	600

Therefore, an indicator that can be calculated for a single firm as Indicator $M = X/Y$ will be calculated for the presumed firm (of Firm A and B) as follow:

$$M = \frac{X_A + X_B}{Y_A + Y_B} = \frac{1.2 + 0.8}{1000 + 600} = 0.00125$$

4.2. Data & Measurement

BB&T and SunTrust (Table 7 & Table 8)

Table 7. BB&T and SunTrust pre-forma firm indices (Before M&A) (Source: BB&T and SunTrust form 10-K).

	Indicators	2016	2017	2018
Profitability & Efficiency	ROE	8.07%	8.55%	11.08%
	ROA	1.02%	1.10%	1.37%
	EPS (Basic)	3.16	3.53	4.74

Continued

	Interest expense/Interest income	0.101	0.116	0.173
	Non-interest expense/Total income	0.589	0.603	0.631
Liquidity	Cash & Cash equivalent/Total asset	0.5026	0.023	0.027
	Total liabilities/Total assets	0.874	0.872	0.877
Leverage	Debt to equity ratio	0.661	0.760	0.800
	Capital ratio	0.126	0.128	0.123

Table 8. BB&T and SunTrust (Truist) indices (After M&A) (Source: Truist form 10-K).

	Indicators	2019	2020	2021
Profitability & Efficiency	ROE		7.15%	10.28%
	ROA		0.88%	1.19%
	EPS (Basic)		3.11	4.51
	Interest expense/Interest income		0.067	0.056
	Non-interest expense/Total income	Year of M&A	0.584	0.608
Liquidity	Cash & Cash equivalent/Total asset		0.037	0.037
	Total liabilities/Total assets		0.862	0.862
Leverage	Debt to equity ratio		0.626	0.56
	Capital ratio		0.139	0.128

KeyCorp and First Niagara Financial Group (Table 9 & Table 10)**Table 9.** KeyCorp and first Niagara financial group pre-forma firm indices (Before M&A) (Source KeyCorp and First Niagara Financial Group form 10-K).

	Indicators	2013	2014	2015
Profitability & Efficiency	ROE	7.88%	1.27%	7.67%
	ROA	0.92%	0.14%	0.84%
	EPS (Basic)	0.923	0.225	0.933
	Interest expense/Interest income	0.108	0.102	0.109
	Non-interest expense/Total income	0.628	0.638	0.633
Liquidity	Cash & Cash equivalent/Total asset	0.056	0.046	0.037
	Total liabilities/Total assets	0.879	0.881	0.883
Leverage	Debt to equity ratio	0.871	0.901	0.905
	Capital ratio	0.117	0.110	0.110

Table 10. KeyCorp and first Niagara financial group (KeyCorp) indices (After M&A) (Source: KeyCorp form 10-K).

	Indicators	2019	2020	2021
Profitability & Efficiency	ROE	Year of M&A	9.22%	13.14%
	ROA		0.94%	1.33%

Continued

	EPS (Basic)	1.140	1.730
	Interest expense/Interest income	0.140	0.199
	Non-interest expense/Total income	0.597	0.538
Liquidity	Cash & Cash equivalent/Total asset	0.043	0.029
	Total liabilities/Total assets	0.891	0.888
Leverage	Debt to equity ratio	0.963	0.957
	Capital ratio	0.109	0.112

4.3. Discussion

The % change of financial indicators before and after M&A for both deals is summarized in the two tables below.

BB&T and SunTrust (Table 11)

Table 11. BB&T and SunTrust indices change (%) Pre and Post M&A (Summarized from Table 7 and Table 8).

Indicators	[-1, +1] period	[-2, +2] period
ROE	(35.51%)	20.27%
ROA	(35.62%)	8.18%
EPS (Basic)	(34.39%)	27.76%
Interest expense/Interest income	(61.27%)	(51.72%)
Non-interest expense/Total income	(7.45%)	0.83%
Cash & Cash equivalent/Total asset	37.04%	60.87%
Total liabilities/Total assets	(1.71%)	(1.15%)
Debt to equity ratio	(21.75%)	(26.32%)
Capital ratio	13.01%	0.00%

In the [-1, +1] period, there is a decrease in profitability and efficiency (with 3/5 indicators witnessing a decrease). The ROE and ROA indicators have a -35.51% and -35.62% change, respectively. However, improvements are witnessed for the Interest expense/Interest income (-61.27% change) and the Non-interest expense/Total income (change -7.45%). The liquidity and leverage witnessed an immediate improvement after the M&A deal, with a significant increase in cash and equivalents over total assets.

The positive effects of this deal on financial efficiency are more significant in the [-2, +2] period, as seven indicators witness a positive change, and one indicator remains stable. ROE came from a -35.51% reduction (in [-1, +1] window) to a 20.27% improvement, ROA from -35.62% to an 8.18% increase, and EPS came from -34.49% to 27.76%. The only indicator that witnesses a reduction is the Non-interest expense/Total income.

KeyCorp and First Niagara Financial Group (Table 12)

Table 12. KeyCorp and First Niagara Financial Group indices change (%) Pre and Post M&A (Summarized from Table 9 and Table 10).

Indicators	[-1, +1] period	[-2, +2] period
ROE	20.22%	934.80%
ROA	11.67%	851.43%
EPS (Basic)	22.19%	668.89%
Interest expense/Interest income	28.44%	95.10%
Non-interest expense/Total income	(5.69%)	(15.67%)
Cash & Cash equivalent/Total asset	16.22%	(36.96%)
Total liabilities/Total assets	0.91%	0.79%
Debt to equity ratio	6.41%	6.22%
Capital ratio	(0.91%)	1.82%

In the M&A deal between KeyCorp and First Niagara Financial Group, the same trend occurred as performance improvement in the [-2, +2] period was more significant than in the [-1, +1]. Only one indicator witnesses a reduction in the [-2, +2] period compared to the [-1, +1] period. In this case (M&A paid by a combination of cash and stock), the positive improvements in profitability and efficiency rose immediately after the M&A, but the leverage was slightly worse after M&A.

From the data observed in Table 11 and Table 12, it is possible to conclude that M&A deals (with any payment method) generate financial efficiency improvement. However, cash & equity M&A deals generate efficiency more immediately, as it has already occurred one year after M&A. In the [-2, +2] window, cash & equity deals' financial efficiency is better off than all-equity deals (with reference to the two M&A deals above).

Compared to 10 previous papers (Appendix 1) researching the efficiency of M&As in the banking industry globally, 70% showed improvement in overall financial performance, 10% showed a decrease, and 20% witnessed that the result was insignificant. This paper becomes evidence to conclude that M&A deals do improve financial performance for firms in the banking industry, and the improvement is more significant when a deal payment is made of cash and equity.

5. Stock Performance Pre & Post M&A

5.1. Methodology

Brown and Warner (1985) utilize the event study method, which is a statistical method to evaluate the effects of an event on an outcome. The same method will be applied to determine the effect of M&A deals on shareholder wealth and compare it concerning payment methods. The estimation window covers two

time periods, $[-1, +1]$ extends from the announcement, and $[-20, \text{Acquisition close}]$ extends from the close date. *Abnormal return* is defined as the difference between the observed return (actual return) and the expected return using the valuation model in the estimation windows.

As documented in previous literature, M&As create value in most cases, and most of the value accrues to shareholders of the target. However, the magnitude of abnormal returns in my sample is different from those previously reported, arising from our research method, using only two case studies in the US banking industry.

In this part, the actual return is observed in the measured period, and the expected return is measured using the market-discounted model in the same frame. The result and discussion for the two M&A deals used in this sample are presented in Sections 5.2 and 5.3 below.

5.2. Data & Measurement (Table 13)

Table 13. Abnormal return for two M&A deals (Source: Tradingview and author's calculation).

<u>BB&T and SunTrust</u>		<u>KeyCorp and First Niagara Financial Group</u>	
[-1, +1] (6/2/2019-8/2/2019)		[-1, +1] (28/10/2015-30/10/2015)	
Expected return	(0.187%)	Expected return	0.704%
Actual return (Acquirer)	3.246%	Actual return (Acquirer)	(10.683%)
Actual return (Target)	4.020%	Actual return (Target)	1.624%
Abnormal return (Acquirer)	3.433%	Abnormal return (Acquirer)	(11.387%)
Abnormal return (Target)	4.207%	Abnormal return (Target)	0.920%
[-20, Close] (19/11/2021-9/12/2021)		[-20, Close] (8/7/2016-29/7/2016)	
Expected return	0.474%	Expected return	0.474%
Actual return (Acquirer)	(0.924%)	Actual return (Acquirer)	3.553%
Actual return (Target)	(0.473%)	Actual return (Target)	1.559%
Abnormal return (Acquirer)	(1.398%)	Abnormal return (Acquirer)	3.079%
Abnormal return (Target)	(0.947%)	Abnormal return (Target)	1.085%

5.3. Discussion

Previous literature has different thoughts about profit distribution in M&A regarding payment methods. [Wulandari and Ji \(2015\)](#), in their bachelor thesis (12/2015) about bidders' performance in cash and stock payment, pointed out that the average CAR for acquirers in all-cash deals is generally higher than for acquirer in deals with equity in all periods measured ($[-1, +1]$, $[-2, +2]$, $[0, +2]$). Other literature showed that overvalued acquirers are less likely to pay solely with stocks. Therefore, all-stock deals created higher abnormal returns for shareholders of both firms e.g. [De Bodt et al. \(2019\)](#). In contrast, several older papers

witnessed a lower abnormal return for all-equity deals, including Rhodes-Kropf et al. (2005).

Based on my sample, the difference in abnormal earnings for shareholders regarding the payment method depends on the measured time frame. However, the target firm's shareholders are the absolute winners in most cases. Regarding the payment method, the all-equity M&A deal (between BB&T and SunTrust) provided higher abnormal earnings in $[-1, +1]$ time frame, with the abnormal return for the acquirer being 3.433% and the target being 4.207% (compared to $-11.387%$ and $0.920%$, respectively, for the cash & equity deal). In the $[-20, \text{close}]$ period, the abnormal return for firms in cash & equity deals is higher than for all-equity deals. Statistics in $[-20, \text{close}]$ time frame shows that the abnormal return for KeyCorp (acquiree) was 3.079% (compared to $-1.398%$ for BB&T), and the abnormal return for First Niagara Financial Group was 1.085% (compared to $-0.947%$ for SunTrust).

6. Conclusion

This paper has shown that regardless of payment method, M&A deals improve businesses' market share and financial performance and increase shareholders' wealth of acquirers and target firms. The payment method does affect the magnitude of impacts varied from M&As between two firms. The M&As, which were paid by cash & equity, witnessed greater and faster improvements after M&As completed.

The market share increased sharply after the M&A deal, as BB&T & SunTrust led to a 19.10% increase, and M&A between KeyCorp & First Niagara Financial Group showed a 13.37% increase in ΔMS one year after the M&A was completed. However, the difference in the ΔMS growth does not come from payment method but rather from information availability and the merged firm's size.

Financial efficiency improvement is also witnessed in M&As paid by any method. However, M&As paid by cash and equity witnessed the improvement earlier, and the magnitude of financial indicators growth is also more outstanding compared to that of all-equity M&As. This conclusion is consistent with earlier papers as other researchers conclude that M&A deals with cash generate more value than M&A deals with equity.

The abnormal return of targets is also found to be higher than that of acquirers. As for the payment method, abnormal earning in $[-1, +1]$ time frame is higher for the all-equity deal, while the cash & equity deal has a higher abnormal return in the $[-20, \text{Close}]$ window.

From the conclusion drawn above, it is provable that M&A deals that are financed by a combination of cash and equity would generate abnormal performance on a larger scale and more immediately. This trend is consistent in both financial performance and stock performance, while the market share is not affected by the payment method. This paper's conclusion acts as a recommendation for firms to finance their M&As using a combination of cash and equity ra-

ther than all-equity. Further research is required to conclude this trend firmly. Further papers need to investigate this trend in other time frames, conduct a comparison between all-cash and all-equity, all-cash and cash & equity, as well as assess whether this trend is applied in other industries to draw a firm conclusion.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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Appendix 1. List of 10 Studies Used in Section 4.3

Author	Year	Title of study	Conclusion (Financial performance)
Houston et al.	2001	Where do mergers gain come from? Bank mergers from the perspective of Insiders and Outsiders	Increase
Cornett et al.	2006	Performance changes around bank mergers: Revenue enhancements versus cost reductions	Increase
Humphrey et al.	2006	Benefits from a changing payment technology in European banking over M&A	Increase
Ayadi	2008	Banking mergers and acquisitions' performance in Europe	Insignificant
Badreldin & Kalhoefer	2009	The effects of mergers and acquisitions on bank performance in Egypt	Increase
Sinha et al.	2010	Measuring Post Merger and Acquisition Performance: An Investigation of Select Financial Sector Organizations in India	Increase
Braggion et al.	2010	Mergers and Acquisitions in British banking: Forty years of evidence from 1885 until 1925	Insignificant
Kemal	2011	Post-Merger profitability: A case of Royal Bank of Scotland RBS	Decrease
Sinha & Gupta	2011	Mergers and Acquisitions: A pre-post analysis for the Indian Financial services sector	Increase
Ong et al.	2011	Analytics on Financial performance and Efficiency changes of Malaysian commercial banks after mergers and acquisitions	Increase