Evaluation of Company Performance Post Acquisition or Merger in the United States

Harry Waterton

Abstract:

This paper answers the question surrounding whether or not company performance for the acquiring company improves or worsens post-merger or acquisition. This will be calculated using two separate but related financial performance tools, return on equity and return on assets. The investigation will span over a 5 year period starting the year of 2010 and end at the closing of the fourth quarter of 2014, and will contain all mergers and acquisitions between $300 million and $2 billion that took place across all sectors in America. The results conclude that acquisitions do not financially benefit the acquirer in the short run.

JEL Classification: M41, G34

Keywords: Acquisition, Merger, Company Performance

[a] Department of Economics, Bryant University, 1150 Douglas Pike, Smithfield, RI02917. Phone: (401) 965-8676. Email: hwaterton@bryant.edu

1.0 INTRODUCTION

Mergers and acquisitions are frequent in any business environment all over the world, but with there being so much activity in the United States, it seemed best to base my investigation here. Not only that but due to the financial crisis of 2008 a lot of companies were being bought out due to their lack of capital thus unable to maintain a strong bottom line. The most widely used method of evaluating the company performance post acquisition or merger was the use of Return of Investment (ROI), Return on Assets (ROA) and Return on Equity (ROE) as the dependent variable, but due to a lack of data for ROI, that will be excluded from this investigation.

This study aims to evaluate variables, and information about a company's experience and financials in order to conclude as to whether the merger or acquisition that occurred made financial sense and if that company should have completed the transaction. The study will be looking for an increase both the dependent variables thus proving that the M&A was a smart choice for the acquirer.

The variables used in this study are directly linked to the financial performance before and after the transaction, and the transaction value and how much they impact the dependent variables, ROA and ROE. I will also be looking at the size of the company and whether or not the market capitalization bears any effect to the overall success of the acquirer post transaction. Due to a lack of available data, certain variables that I wanted to use in this study that had been used in other papers had to be omitted. Those include the Return on Investments as a dependent variable as well as acquisition history of each company used in the data set.

Other papers observing company performance look at specific sectors or in some cases industries, but I wanted to take a larger scope and look at all sectors but limit it by country instead of industry, and due to background knowledge and ease of access to information, I chose the United States. Most papers use a multiple regression approach that showed a progression where as my model will be run twice with differing dependent variables, just to assess whether the independent variables act the same with each of the dependent variables.

The rest of the paper is organized as follows: Section 2 looks at the current trends in the mergers and acquisitions. Section 3 is a brief literature review, and section 4 outlines the empirical model and data. Empirical results are discussed in section 5. Finally, section 6 presents the conclusion.

2.0 TREND OF MERGERS AND ACQUISITION

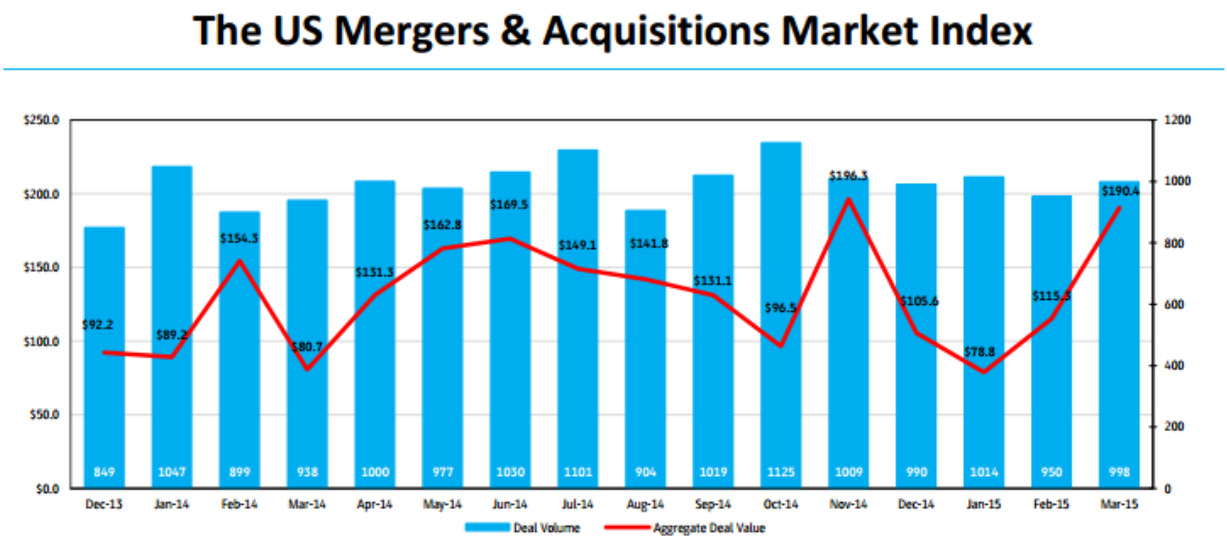
Mergers and acquisitions are not limited to certain companies, individual sectors or their industries. Neither is the number of M&As a cyclical event, it just tends to be an all-year-round occurrence. It's safe to say that although M&As occur in all sectors, some sectors see greater frequency than others due to the nature of the business that is carried out. For example, the healthcare sector is more likely to buy out other companies. Developing a new area of research in a company carries high costs, where as if the acquirer was to just buy a target company, then the cost should be lower. Moreover, if a company wants to expand into a new drug, then the best way for them to do this is buy out a company that has already gained market share in this industry and therefore can transfer all tangible and nontangible assets to the acquiring company. Another sector that is known for the high frequency of M&A activity is the technology sector. This comes down to the high quantity of companies operating in similar, if not the same, industry or product. The larger companies see small areas that they can improve and these result in purchases of smaller companies, but also

buying out another companies eliminate competition, thus propelling it into further growth and market power.

Due to the ever changing and unstable economic environment, “globalization, the lack of liquidities, the rapid technological advances, and the competition becoming more and more aggressive, create among managers the need of continuous adaption, by identifying the most appropriate strategies for saving the business or to strengthen its position on the market” (Hromel, 2013).

Over the last four or five years the conditions for mergers and acquisitions has been almost perfect. With low interest rates, large cash balances on corporate balance sheets, an abundance of capital available, and relatively low organic growth opportunities, the M&A recovery is finally upon us. Not only are the conditions in check for a lot of transactions, but the confidence of board members and CEOs is back and therefore stimulating M&A deals. Although conditions have been opportune over the last four or five years, there have been hesitations and rightfully so. The delay has been down to looming crises, the fiscal cliff, the Eurozone debt crisis, and whether a hard or soft landing in China. An interesting finding by Goldman Sachs is that upon the announcement of specific transaction, they have found that stock price rises, especially on large deals. There are also sectors and industries that, due to large M&A deals, are witnessing changes in their landscapes; technology, media and telecom, and healthcare. Returning to the CEO and board confidence matter, in combination of that and the environment improving, this is the time for the large transactions to take place, the deals that are the companies’ dream deals. The access to capital is there as well as the ease to be financed.

Below shows the how the number of M&A deals is fluctuating in volume while moving in a consistently positive trend.



Source: http://www.factset.com/websitefiles/PDFs/flashwire/flashwire_4.15

According to this graph the amount in US$ spent on M&A is rising in 2015 which is a good sign for the rest of the year. The number of transactions is too at a good amount stimulating the quantity of deals in the future. Compared to the same time last year there have been increases in the number of deals, another positive to consider.

When considering the data on a sector basis over the last three months and then comparing that data to the same months as last year, the sectors that have witnessed the most growth are; technology services, finance, consumer services, consumer non-durables, and distribution services. Figure 2 and 3 shows the breakdown of the sectors by activity and value respectively.

SECTOR BY ACTIVITY

Target Sector	L3M 3/31/15 Deal Count	L3M 3/31/14 Deal Count	Difference
Technology Services	524	409	115
Finance	379	361	18
Consumer Services	241	228	13
Consumer Non-Durables	90	78	12
Distribution Services	153	142	11
Communications	35	28	7
Retail Trade	93	87	6
Government	6	1	5
Non-Energy Minerals	47	44	3
Energy Minerals	30	28	2
Miscellaneous	6	5	1
Health Technology	100	99	1
Utilities	49	51	(2)
Process Industries	93	95	(2)
Transportation	58	65	(7)
Health Services	137	148	(11)
Electronic Technology	120	131	(11)
Consumer Durables	36	48	(12)
Producer Manufacturing	172	186	(14)
Commercial Services	493	513	(20)
Industrial Services	100	137	(37)
Total	**2,962**	**2,884**	**78**

There lies considerable momentum into 2015 for mergers and acquisitions because of their success in 2014. With so many so called megadeals in

Figure 3: Sector Breakdown of M&A Value

SECTOR BY VALUE

Target Sector	L3M 3/31/15 Value	L3M 3/31/14 Value	Difference
Consumer Non-Durables	$55,360.4	$22,535.6	$32,824.8
Health Technology	70,143.9	41,368.8	28,775.1
Process Industries	26,257.5	8,342.8	17,914.6
Health Services	15,676.5	4,571.1	11,105.4
Electronic Technology	28,027.2	20,462.9	7,564.4
Industrial Services	12,776.4	7,235.6	5,540.9
Transportation	9,311.9	4,655.9	4,656.0
Utilities	8,360.9	3,773.6	4,587.3
Producer Manufacturing	13,268.4	9,546.5	3,721.9
Non-Energy Minerals	9,178.4	5,707.7	3,470.7
Finance	36,920.8	33,495.5	3,425.3
Energy Minerals	14,856.6	11,454.0	3,402.6
Communications	12,206.2	11,402.4	803.8
Miscellaneous	265.5	158.2	107.3
Government	21.5	0.0	21.5
Distribution Services	8,675.4	11,868.2	(3,192.8)
Commercial Services	10,474.6	15,797.2	(5,322.6)
Consumer Durables	272.5	5,776.7	(5,504.2)
Retail Trade	7,903.1	14,620.1	(6,717.0)
Technology Services	20,172.2	36,067.1	(15,894.9)
Consumer Services	24,378.2	55,404.8	(31,026.6)
Total	**$384,508.1**	**$324,244.6**	**$60,263.5**

2014, there will be a continuing trend leading into this year also. Taking a global perspective, there

has been an increase in value of M&A of 30% in 2014, the fourth highest in history, however the numbers for the US were more promising, making 2014 the second best year in terms of value in history, according to Ernst Young's news release.

With the trend of M&A deals increasing in value, there needs to be ways to lift the volume, and one method relies on the focus on mid-sized deals. The value is hitting near all-time highs in 2014 so to push the growth in volume, companies will, and recently this has been seen to be happening, need to look towards mid-sized deals. These transactions usually consist of companies focusing on "acquiring in or adjacent to their core sectors" (EY, 2015).

On a global scale, there are certainly countries with strong M&A potential and stability and the United States falls under that bracket. There is continued uncertainly in the Eurozone with Greece threatening to leave the EU as well as a few other countries. This uncertainty is seen as an opportunity in some eyes but most are steering clear at the moment. China's growth is moderating and further west in India and Japan, they seem to be at a time that requires revaluation.

3.0 LITERATURE REVIEW

Growth of a company in terms of profit maximisation is essential and a historically proven method of this is to grow in size and branch into a broader market or have firmer roots in a current market, in other words an increase in market share. Miller (1960) argues that companies strive to maximise the quantity of profits in the long run which is a result from investing in all positive net present value projects. The constraint concerning this assumption is that with the growth of the acquiring company, the managerial side of the company witnesses such vast growth that they don't

have the capacity to efficiently manage this new growth. Growth and profits can be somewhat interchangeable but according to Marris (1964) the management are looking more towards the growth of the company and this can often mean that profit maximisation is lost.

Dickerson et al.(1997) discusses three valid points for acquisitions and the advantages that they bring, the first pays attention to a lag in the effects of said acquisition. They point out that the delay from purchase and commencement of activities is so short that the benefits can be wreaked almost immediately, this is due to the acquirer purchasing essentially a 'ready-made' investment that already has the personnel to manage and operate it effectively. The second advantage of acquisition looks at the internal benefits and how the investment will lead to access into new areas of the market, or a new market altogether. Finally, the alternative of buying a company out is building a similar company from scratch. So the advantage to acquiring the original company would be the elimination of a competitor, which would be most beneficial in an oligopolistic environment.

Dickerson et al. (1997) then goes on to counter the advantages by looking at some of the downfalls associated with acquisitions. The first is closely linked with an advantage, they talk about how if the investment was made from scratch they would be able to mould the new company into exactly what they want, but because they are buying an already established company it may not be precisely what the acquirer wants. Secondly, the target company may have their own set of problems which the acquirer will have to take on, thus potentially delaying the return on investment. Third and finally, integration between the two companies may be tough if they do not have exactly the same working dynamic or organisational structure, this may too lead to a hold on ROI.

Singh and Montgomery (1987) take a slightly different approach when assessing a company's performance. They took a key variable and explored the success of companies post-acquisition. The variable was the related or unrelatedness of the two companies merging. This basically looks at how transferable the skills used in one company are to the other company involved in the transaction. So whether or not the companies are part of the same sector or more specifically the same industry. The paper discusses three areas in which related acquisitions benefit greatly; economies of scale, economics of scope and market power.

Singh and Montgomery first investigate the related acquisition and the three areas of value creation there; economies of scope, economics of scale and market power. Economies of scale will come from the expanded production of a specific product and will surface new efficiencies. "Economies of scope arise when a given bundle of resources are used in the *joint production of two or more products"* (Singh and Montgomery, 1987). Market power sways towards the ability of the company to affect and change the price of the good in the market, quantity and the product itself, which may lead to excess returns. These three mechanisms have the potential to increase the value of the sum of the two companies before the acquisition took place.

After considering the related acquisitions, the paper then continues to investigate the unrelated acquisition and the potential that these transaction hold for company growth. There are three areas that unrelated acquisitions can witness gains, reduced financing costs, increased administrative efficiencies or superior human capital. Similar to the related acquisitions though, a potential increase in market power may occur just because of the size and breadth of the firm increasing. This assumption may allow for opportunities in predatory pricing and reciprocal buying, and a reduction in intra-industry rivalry due to the large firms competing in a multitude of markets.

4.0 DATA AND EMPIRICAL METHODOLOGY

4.1 Data

This investigation uses annual data over the time of 2009 to 2013, while looking at 2010 as the specific year of the merger or acquisition. The choice to use such a short data range was so that I could see precisely as to whether or not there was an immediate change due to the acquisition. Not only that but after researching the trends, acquisitions have been abundant over the last 5 years and so there would be enough data for me to use and regress. The data was obtained from the financial program FactSet using their mergers and acquisition tool to specify the parameters for my data. The justification of the parameters will be addressed later when describing each variable.

4.2 Empirical Model

The model used in this study was adapted from the model presented in the Dickerson et al. (1997). This was chosen because of the variables used in the model would be easy to access from a public prospective, and the model was simplistic enough so to add the appropriate modifications.

Considering other papers and their models there were a number of proxies that I used including a change to the dependant variable. The choice to add the dependant variables ROA, ROE and ROI were because they are all used as tool to determine the returns post-acquisition as they show immediate returns on additions to a company. ROE in this case is used to see how well the company is at generating profits from invested capital. ROA will be assessing whether or not a company is profitable relative to the assets it as on its books.

The model for ROA could be written like this:

$$ROA = \beta_0 LOGCF + \beta_1 LEV + \beta_2 EPSG + \beta_3 MERGE + \xi$$

The model for ROE could be written like this:

$$ROE = \beta_0 LOGCF + \beta_1 LEV + \beta_2 EPSG + \beta_3 MERGE + \xi$$

The reasoning behind using ROA addresses the efficiencies of the management. How well they use they capitalise on their assets to make the highest returns. The same goes for ROE which shows the returns obtained from the money invested by shareholders. Often a key way to fund or partially fund an operation like a merger. The cash flow indicates the amount of money flowing in and out of a company. This was used in the Healy et al. (1990) paper as a dependant variable for profitability but I chose to put it as an independent variable, just because the flow of capital does have a lot of external factors to include as a dependant variable that I may not have access to. Leverage was used to highlight the amount of debt used to finance a firm's assets. A firm with significantly more debt than equity is considered to be highly leveraged. Earnings per share growth was a variable used to show the current profits of the company and as to the amount that they are increasing. Most companies have shown growth post-merger as they report higher profits because they have another company to generate new profits. To avoid bias though, the use of cash flow also highlights the amount of capital outgoings from the company's books. Finally, the variable merger was used as a dummy variable. It was used to show if there was a small lag in the two years after the merger or acquisition. A zero or one was used, one being the merger had taken place, so to look at the data from the year of and after, and the zero was used to indicate no M&A so to ignore that data.

5.0 EMPIRICAL RESULTS

The empirical results are presented in Table 1 and 2 on the following pages. After running the regression for both ROA and ROE there were some surprising results. First I will look at the results presented by the regression of ROA as the dependent variable. The empirical result shows that, to the contrary of earlier predictions, cash flow has a negative effect on ROA. For every 1 unit increase in cash flow there was a decrease of a little over 0.6% of ROA. This could be explained as a result of poor allocation of incoming capital. That management did not use the capital to wreak the best return from their assets. But due to its insignificance we omit this from our results. When considering all three years results that were run, 2010 had only one significant variable, EPSG which was at the 1% level, whereas 2011 and 2012 both had two significant variables, EPSG and MERGE. EPSG maintained a significance at the 1% level, however, MERGE was just at the 5% level. MERGE showed a negative correlation, which shows that in the few years post-merger, the data shows that a merger was not advantageous towards profitability. Reasoning for the positive correlation comes down to the use of the profits that they did have. The company was able to generate higher returns for the shareholders. The leverage variable showed a negative correlation which is inconsistent with previous predictions and results from academic papers.

Now shifting our attention towards the empirical results for the return on equity table, table 2. There was greater significance for these variables because they have a greater relationship with equity, as opposed to assets. This is shown also in the R-squared values of 0.5173, (2010) 0.5519, (2011) 0.5367, (2012). These show a strong correlation between the data used for the independent and dependent variable. On a per variable basis, leverage and earnings per share growth are both highly significant to a 1% level. Leverage's empirical data shows a positive correlation to ROE, which is what this study predicted. This result is more consistent with the theory of how the correlation will be better as the dependent variable has greater correlation with the independent

variables, by not only quantitatively but also qualitatively. Leveraging using debt instead of selling shares increases ROE, whereas raising capital through selling share will decrease ROE or keep it the same. With EPSG, it was unsurprising that it would be significant, and keeping consistency with ROA, it also shows a positive correlation. The empirical data shows that the effect that EPSG has on ROE is quite substantial. For every unit increase of EPSG, ROE increase by almost 4. The MERGE variable has a 5% significance in 2010, then further in 2011 and 2012, it is significant to a 1% level. The biggest surprise with this regression is the MERGE variable because of how much it effects the dependent variable. Showing that using ROE as the dependent variable, that merger were highly not profitable. Investors may not see the full extent of their investment in the first few years so a lag effect may be the issue. That the data obtained is not coving a long enough span post M&A.

Variable	**2010**	**2011**	**2012**
LOGCASHFLOW	-0.608 (-1.04)	-0.236 (-0.40)	-0.516 (-0.92)
LEV	-.00106 (-0.49)	-0.00135 (-0.64)	-0.00108 (-0.51)
EPSG	1.216 *** (12.33)	1.238 *** (12.74)	1.249 *** (12.84)

MERGE	-0.448 (-.0.74)	-1.406 ** (-2.85)	-1.431 ** (-3.02)
_cons	7.380 (1.94)	5.296 (1.38)	6.871 (1.84)
N	300	300	300
R-Squared	0.3415	0.3846	0.3644

Table 1: Regression table for ROA

Table 2: Regression results for ROE

	2010	**2011**	**2012**
LOGCASHFLOW	-0.565 (-0.35)	1.046 (0.67)	-0.546 (-0.36)
LEV	0.039*** (6.50)	0.037*** (6.62)	0.039*** (6.78)

EPSG	3.381*** (13.98)	3.93*** (15.16)	3.958*** (14.99)
MERGE	-3.651** (-2.18)	-7.162*** (-5.45)	-6.017*** (-4.67)
_CONS	10.103 (0.96)	0.264 (0.03)	8.967 (0.88)
N	300	300	300
R-Squared	0.5173	0.5519	0.5367

6.0 CONCLUSION

In summary, using return on assets and return on equity as proxies for profitability showed the overall result that was predicted by the previous studies. The independent variables were what went against the previous studies. But from the data that I obtained through running the six separate regressions were that in the short term, mergers do not benefit the profitability of a company. That by using ROA and ROE, they both accurately indicate the ability of management to generate returns from assets but also the money entering the company from investors. When a company expands the return on this purchase, negative or positive, is quantitatively evaluated.

If I was to conduct this study again then there would be some changes. I would first change the time period studied so I can assess the results over a greater period of time after the transaction. However, something to note would be that if I used a date like 2005 then I would have to take into account the issues in 2008 and 2009. The way to eradicate most of the economic fluctuations would

be to look at one specific industry or a number and conduct separate regression for a number of industries.

The paper answers the original question posted at the front of this paper. With the agreement of other studies, for the short run, the takeover of another company does not benefit profitability. Three may be other factors involved like increasing market share, or eliminating a competitor, but for pure balance sheet bottom lines, it is not a beneficial operation.

Appendix A: Variable Description and Data Source

Acronym	**Description**	**Data Source**
ROA	Return on Assets – profitability of a company relative to its assets	FactSet

ROE	Return on Equity = Net income / shares outstanding	FactSet
LOGCF	Cash Flow – amount of money transferred in and out of a company	FactSet
LEV	Leverage - Total Debt/ Total Equity – how much capital comes in the form of debt	FactSet
EPSG	Earnings Per Share Growth	FactSet
MERGE	Dummy variable of the merger	

Appendix B: Variables and Expected Signs

Acronym	**What it captures**	**Expected Sign**	
		ROA	ROE

LOGCF	Logged amount of money that the company outflows compared to its inflows post-merger	+/-	+/-
LEV	Shows how a company raises money for new M&A activity, whether it is raised through debt	+/-	+/-
EPSG	The return that people get on a share that they hold. This represents an important metric to measure value of the company from an investors point of view	+	+
Merge	Dummy variable to allow certain years of data to be regressed	-	-

BIBLIOGRAPHY:

Dickerson, A. P., H. D. Gibson, and E. Tsakalotos. "The Impact Of Acquisitions On Company Performance: Evidence From A Large Panel Of Uk Firms." Oxford Economic Papers 49.3 (1997): 344-61. Web.

Fowler, Karen L., and Dennis R. Schmidt. "Determinants of Tender Offer Post-acquisition Financial Performance." Strategic Management Journal 10.4 (1989): 339-50. Web.

Healy, Paul M., Krishna G. Palepu, and Richard S. Ruback. "Does Corporate Performance Improve after Mergers?" Journal of Financial Economics 31.2 (1992): 135-75. Web.

Hromel, Anca-Simona. "Reasons for Mergers and Their Impact on Companies." Practical Application of Science 1.1 (2013): n. pag. Web.

Marris, R. "The Economic Theory of Managerial Capitalism." Macmillan (1964): n. pag. Web.

Miller, William, and Edith Tilton Penrose. "The Theory of the Growth of the Firm." The Business History Review 34.4 (1960): 508. Web.

Singh, Harbir, and Cynthia A. Montgomery. "Corporate Acquisition Strategies and Economic Performance." Strategic Management Journal 8.4 (1987): 377-86. Web.