The Impact of M&As on Chinese Acquirers' Shareholders Wealth and Method of Payment in the Stock Market Turbulence

Ke Yang

Business School, Xi'an International University, 18 Yudou Road, Yanta District, Xi'an, Shaanxi, 710077, P.R. China

Abstract: The paper analyzes the impact of M&As on Chinese acquirers' shareholders wealth after stock market crash, using the event method, collecting 508 companies' data which have experienced Mergers and acquisitions between August 2015 and May 2016. The findings suggest that M&A creates significant wealth effects on announcement date, M&As create significant wealth effects in the short-term, cash payment M&As cannot generate more wealth effects than stock payment M&A as expected, but only cash payment M&As create significant abnormal returns at announcement date of M&A. And all results suggest that information leakage of M&A in China stock market.

1. Introduction

Mergers and acquisitions (M&A) are increasingly popular strategies for the firms want to generate more profits and anticipate in an uptrend. According to Bloomberg's [1] 2012 Global M&A Outlook, there were more than $2.11 trillion transactions about M&A by the end of November 2011. Nowadays, merger and acquisition (M&A) is the main way to fulfill companies' expansion target and some companies use M&A to diversify risk, comparing with internal expansion, merger and acquisition is the faster method to fulfill the targets, though M&A produces uncertainties of firms' value.

Chinese stock market met its Waterloo from the Early June and July of 2015, stock market in Shenzhen and Shanghai fell into a tailspin in a short term, which has an enormous influence on the future economic development of China. In the next two weeks, the range of a price drop is over than 28 percent, the value of all of the public companies reduced by 3 trillion dollars. At that time, Chinese government had a quick response for this stock market crash, for instance, The State Council of China suspended the issuing of IPO for the present, People's Bank of China announced to decrease Reserve Requirement Ratio (RRR) by twenty-five basic points. As a series of policies and measures issued by Chinese government, there is an overall improvement in the stock market. However, it cannot stop the spreading of the tragedy, in August 2015, January and the end of February 2016, the stock price had a sudden drop again. As a development country, the character of the stock market crash is different from the developed countries, both of Chinese stock market and

stock holder diathesis have the juvenility, it is also the critical period of China to deepen the reform. It is also a great test of M&A companies, the result of M&A is unpredictable in such a difficult background [2].

In addition, In M&A theory, one of the most-discussed topics and the most bitterly issue is the wealth effect. Researchers started research the wealth effects for shareholders through M&As from 1980's, represented by Jensen and Ruback [3]. The Wealth Effect of financial market is defined as, on the financial market, the wealth of the financial asset holder synchronous increase or decrease as asset prices rise or fall, thus has a stimulate or inhibit effect on consumption. On a micro level, the Wealth Effect of M&A should focus on the effect to the shareholder's wealth of bidders and the target firms. Furthermore, there is no agreed conclusion about who is the winner in M&As.

2. Literature Review

The acquirer is the firm which buys another firm or a part of another firm, and the target is the firm which was bought by the acquirer. When an acquirer buys the whole target firm, the transaction can be seen as merger. The common motivation of M&A is that it brings synergy effects on firms' value, which means that the combined firm will worth more than the sum of value of individual firms [4]. Synergy can reduce costs by combining two companies resource and make the combined firm reach the economies of scale. Synergy could be classified as operating synergy and financial synergy. Operating synergy is combinations of two firms to achieve economies of scale,, economies of scale is the important motivation of operating synergy and economies of scale is the cost saving effects, which means fixed costs and variable costs will be averaged per goods with the increasing quantities produced. Other motivation is about fulfil the goal of entering new markets without decreasing operational capacity, the high development and research costs encourage firms to acquire other firms instead of investing internally. The financial and accounting advantage could be bring to the combined firms, which is motivation of financial synergy. M&A is a useful method to achieve diversification during a depression. And another motivation is that firms with low level of taxable incomes could reduce the tax needed to pay by buying firms with tax losses, in other words, acquirers could have tax shields by the transactions.

There are 3 types of mergers according to SchweserNotes 2009 CFA (2008).

In a horizontal merger, the acquiring firm and the target firm are in a similar or the same industry, after the merger, it is likely to generate considerable synergic value. For example, the Vodafone Air Touch acquired telecommunications competitor Mannesmann AG in 2000. One motivation behind horizontal merger is economies of scales, acquired could achieve goals of saving costs by increasing quantities produced, and another motivation is increasing market power, for merger could decrease competitors in the market.

In a vertical merger, the acquiring firm tries to move up to buy supplier firms, or move down to buy a retail firms. If a firm bought suppliers, it called backward integration, and when a firm bought distributors, it called forward integration. For example, a car manufacturer is moving up to buy a tire firm or buy a car retailer firm if they want to move down the supply chain. It cuts costs of materials used in the production.

In a conglomerate merger, the acquiring firm and the target firm are in different industries, because the weak correlation between two firms' operations, there is few expected synergic value. Conglomerate mergers were particularly popular from the 1960s through the 1980s. By conglomerate mergers, firms diversified themselves from holding firms in unrelated industry. M&A can create considerable immediate benefits of shareholders, when the information about decisions of M&A released publicly, and shareholders could get 16% to 30% abnormal return by

M&A when the announcement date of M&A. While the shareholders of target firms could earn considerable amount (20%) of abnormal returns in those successful takeovers.

Comparing with successful takeovers, both shareholders of acquirer and target received negative abnormal return, but the losses of target's shareholders were less than shareholders of acquirers. However, the abnormal returns of acquirer could be observed, on condition that the event window is enlarged. Andrade, Mitchell and Stafford estimated that the average abnormal return of shareholders of acquirers are 0.7%, however the results of null hypothesis test are not significant, no conclusions about the wealth effects of shareholders of acquirers can be made, shareholders of target companies could earn considerate amount of abnormal return from M&A. From 1962 to the end of 1985, there were 663 successful mergers paid premiums for the target firms' shareholders. They found that premiums were about 19% in the 1960s, 35% in the 1970s, and during 1980 to 1985 the average premium was 30 percent. Those results were in accord with Jensen and Ruback (1983)'s research. Moeller (2005) states that the average abnormal return of acquirers is 1.1% over 1991-2001, however, because some mergers incurred huge losses during the period, so the accuracy of results are affected.

3. Methodology and Data

508 Chinese M&As companies' data between August 2015 and May 2016 from CSMAR database would be collected in this paper at the background of stock market crash.

3.1. Methodology

The methods available for analyze the impacts of cash purchase or stock purchase on M&A, and the M&A in different industries, include case study, survey, accounting based method and event study. The event study methodology is more suitable for M&A researches. Firstly, the data needed is often publicly available; secondly, it dependents on efficient market hypothesis, which means the new information will be reflected in the market rapidly; finally, comparing with account based method, event study do not rely on the quality of financial reports. According to Brown and Warner [5], event study can calculate abnormal return produced due to the events, and event study is a good method to evaluate the effects of economic wide events on the value of firms. And event study assumes that stock return can be predicted when there are no events, the return is called normal return, while abnormal return (the difference between real return and predicted return) could be observed when events happened. And if abnormal return is significant different from zero, the event has impacts on firms' value.

3.2. Assumption about events study

Market efficiency: Events study was based on market efficiency, theory of market efficient [6] states that efficient market can reflect all available information to traders on the prices. Researchers think that the event impacts could not be incorporated by the stock market, particularly the valuation of target is not a short process, that's why they use quite long event windows. And the above is the reason why the paper will use +/- 5 event widows.

Unexpected events: Based on McWilliams [7], M&A cannot be expected by the market, if they happened when the companies have some financial problems, and the abnormal return is the reaction of the stock market to the M&A, if the information was revealed before the first official announcement, the abnormal return will not be observed.

3.3. Issues about event study

Central limit theorem: Johannes declares that a large set of independent random variables will follow normal distributed (Central limit theorem). And an important variant of Central limit theorem is weak-convergence, it says that a large set of independent random variables will approach one single value with the sample size enlarges. The phenomenon will appear in the event study, because event study generally employs large set of daily return. When estimating abnormal returns, large set of daily return will make all abnormal returns converge to narrow set, in other words, abnormal returns will near zero with large enough data set by considering this situation, thus, leading to the errors in results. [8]

Biases from Beta estimation: Lim and Brooks state that market model would produce biases for beta estimation when using daily data. The biases differ from the different beta, the upward biases exist when beta is larger than 1(risky security), and the biases will be larger when estimation periods are longer. And the appearance of downward biases when security beta is smaller than 1(riskless security), and the biases also will be larger when estimation periods are longer.

4. Results and Analysis

4.1. Average abnormal returns for all, group 1 and group 2 in event window (-5, +5)

		All	group 1	group 2
AR -5	Mean	-0.792244	-0.740634	-0.921448
	t	[-3.68756***]	[-2.88073***]	[-2.35421**]
AR -4	Mean	-0.735315	-0.883416	-0.364552
	t	[-3.11704***]	[-3.23082***]	[-0.786994]
AR -3	Mean	-1.02963	-1.07617	-0.913103
	t	[-4.6931***]	[-4.08242***]	[-2.30996**]
AR -2	Mean	-0.244902	-0.403333	0.151724
	t	[-1.09404]	[-1.53706]	[0.354456]
AR -1	Mean	0.156634	0.064573	0.387103
	t	[0.715934]	[0.249752]	[0.94104]
AR0	Mean	0.302697	0.391405	0.080621
	t	[1.411276]	[1.53764]	[0.20206]
AR 1	Mean	-0.381535	-0.227025	-0.768345
	t	[-1.54246]	[-0.791088]	[-1.58511]
AR 2	Mean	-0.811457	-0.670799	-1.16359
	t	[-3.40213***]	[-2.51883**]	[-2.30796**]
AR 3	Mean	-0.450295	-0.480744	-0.374069
	t	[-1.98457**]	[-1.77832*]	[-0.894057]
AR 4	Mean	-0.203209	-0.12595	-0.396621
	t	[-0.945254]	[-0.496738]	[-0.976105]
AR 5	Mean	0.10498	0.005455	0.354138
	t	[0.492623]	[0.022247]	[0.831777]

*, **, *** denotes the significance of t-stats at the 10%, 5% and 1 %, respectively.

Figure 1: Average abnormal return for all, group 1 and group 2

Daily Abnormal Return for (-5,+5)
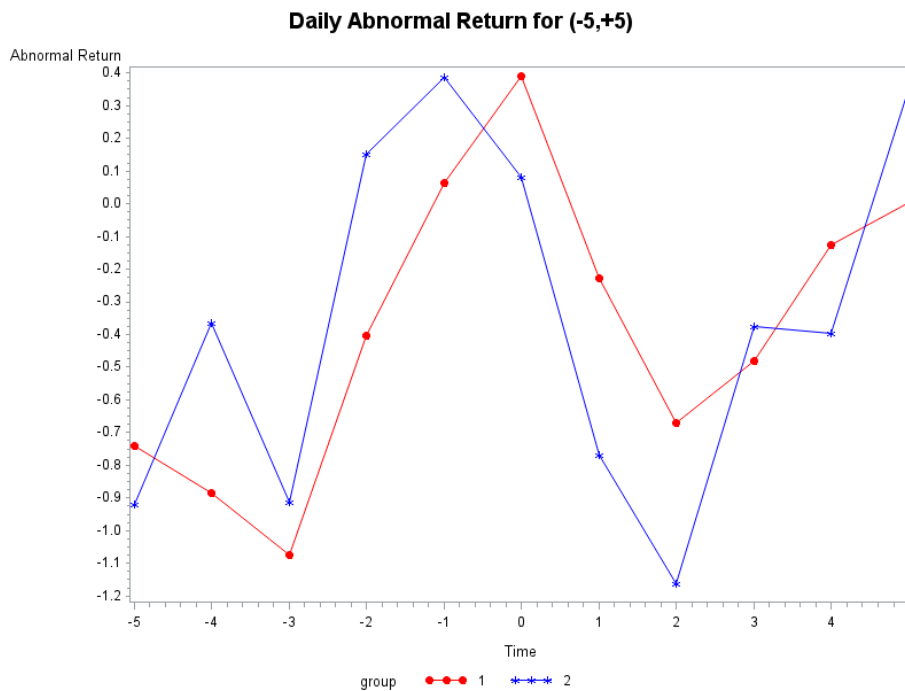
Group 1 is the second industry; Group 2 is the third industry

Figure 2: Average abnormal return for group 1 and group 2 in (-5, +5) event window

　　Figure 2 shows that M&A creates very similar wealth effects in the second industry and the third industry. Both of them increase from -3, and reach to peaks at -1 and 0 respectively, and then abnormal returns keep decreasing to the lowest value at 2, and then they increase in similar trend. From figure 1, M&A in the second industry (group 1) generate three decreasing negative statistically significant abnormal returns at -5, -4, and -3, the significance levels are 1%. It means that information about M&A in the second industry may be leaked before the official announcement. Comparing with M&A in the second industry, there are two significant abnormal returns on -5 at 5% significance level, and on -3 at 5% significance level, which means information leakage also exist in the third industry before announcement date. Both t-statistics of group 1 and group 2 indicate that no significant abnormal returns at announcement date even at 10% significance level, due to the information leakage, the market has adjusted to the M&A information before announcement date, leading to no significant abnormal returns can be observed at announcement date. After announcement date, abnormal returns at 1, 4 and 5 in group 1 are not significant even at 10% significance level, and abnormal return at 2 are significant at 5% significance level, and abnormal return at 3 are significant at 10% significance level, which implies that the M&A in group 1 will lead to another increase after announcement date, and it implies that the reflection of market stock for M&A is inadequate, so another increase appears after announcement. While M&A in group 2 only create one significant abnormal return at 5% significance level on two days (time 2) after announcement date, due to only one significant abnormal return is observed after announcement ate, we can make conclusion there is high possibility that M&A in group 2 has no effects on stock market after announcement date. The resultis M&A creates significant wealth effects on announcement date.
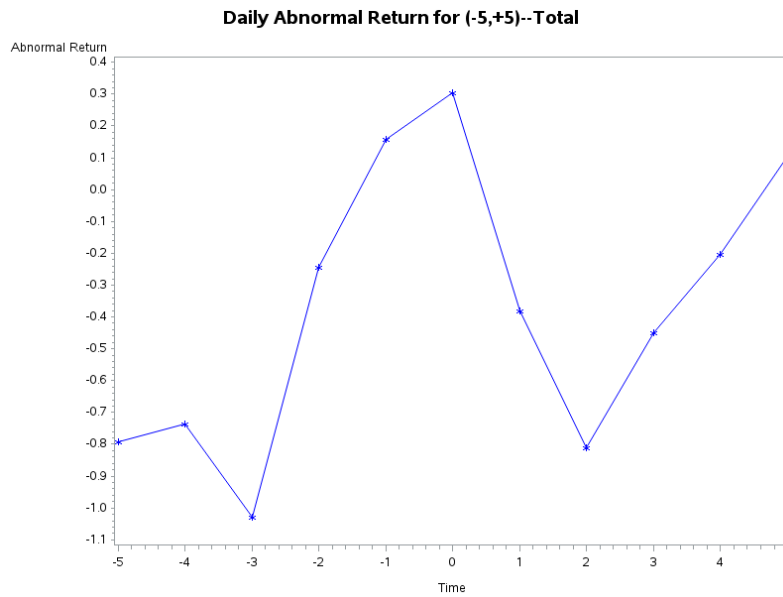
Figure 3: Average abnormal return for all

From figure 3, daily abnormal returns for all sample data has similar trend as daily abnormal returns for group 1 and group 2. The peak appears at announcement date, which caused by information leakage. Before announcement date, abnormal returns at -5, -4 and -4 are significant at 1% significance level, and abnormal returns at -2 and -1 are not significant even at 10% significance level, the results means the effects of M&A became effective at -5 from -3 within event window. At announcement date, the abnormal return is not significant event at 10% significance level, similarly, the explanation is focus on information leakage. There are two significant abnormal returns at 2 and 3 at 5% significance level, and it indicates that M&A has significant effects on firms' value after announcement date, and it also is a signal that stock market failed to reflect all newly released information rapidly. The result is M&A creates significant wealth effects on announcement date.

4.2. Average abnormal return for all, group 1 and group 2 in (-1, +1) event window

		All	group	
			1	2
AR -1	Mean	0.218031	0.128127	0.443103
	t	[1.00196]	[0.499215]	[1.077748]
AR 0	Mean	0.286417	0.372176	0.071724
	t	[1.347005]	[1.474887]	[0.181298]
AR 1	Mean	-0.415374	-0.264242	-0.793724
	t	[-1.6742*]	[-0.918298]	[-1.63112]

Figure 4: Average abnormal return for all, group 1 and group 2in (-1, +1) event window
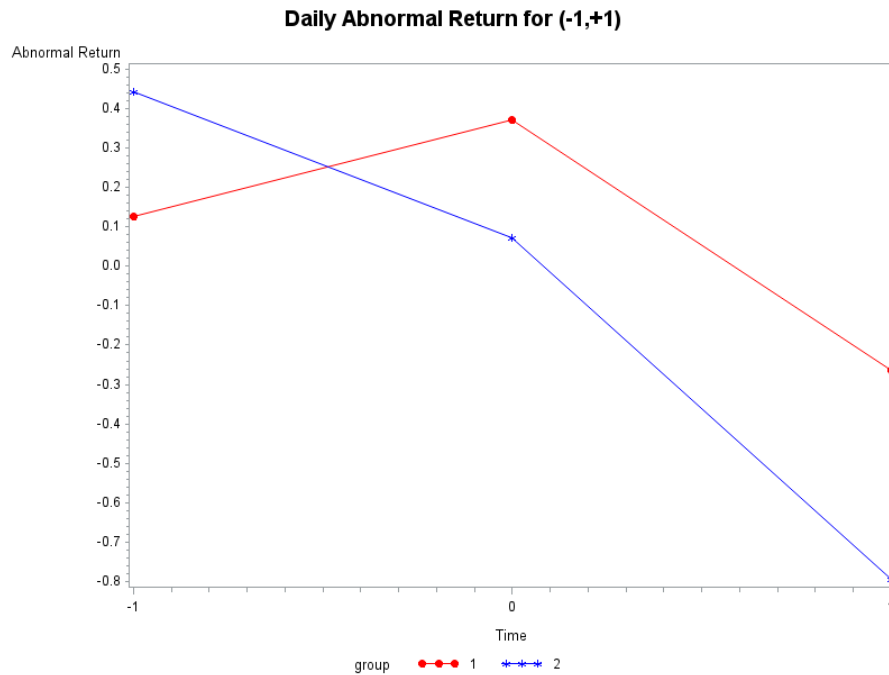
Daily Abnormal Return for (-1,+1)

Figure 5: The graph shows average abnormal return for group 1 and group 2 within (-1, +1) event window, and t = 0 is announcement date

From figure 4 and figure 5, abnormal returns of group 2 decrease from 0.44% to -0.79%, during t = -1 to t =1. While abnormal returns of group 1 increase from 0.13% to 0.37% during t =-1 to t=0, and then decrease to -0.41% at t= 1. However, all abnormal returns of group 1 and group 2 in (-1, +1) event window are not significant even at 10% significance level, which means no significant effects created by M&A for group 1 and group 2 within short term (-1, +1) event window.
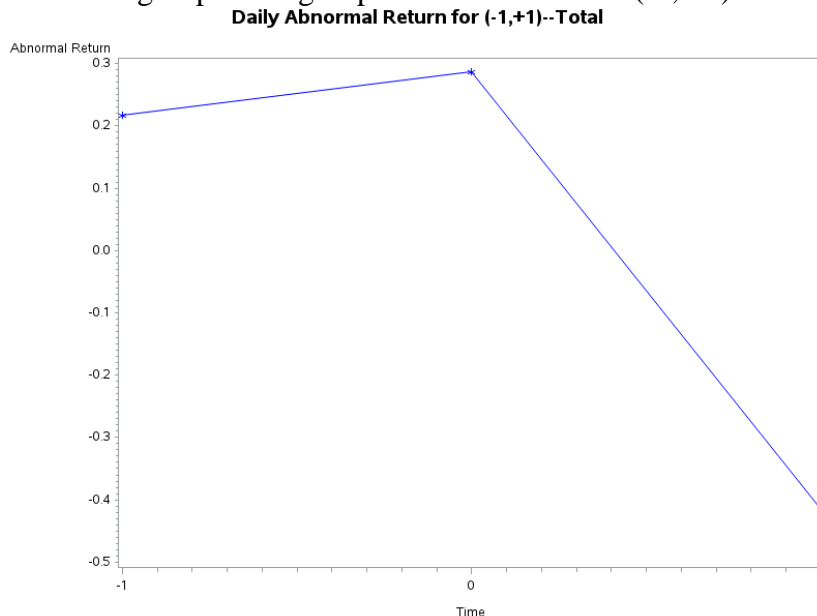
Daily Abnormal Return for (-1,+1)--Total

Figure 6: The graph shows average abnormal return for all within (-1, +1) event window, and t = 0 is announcement date

Figure 6 indicates that abnormal returns of all data are increase from t = -1 to t = 0, and decrease from t = 0 to t = 1. And the maximum value is 0.286%. Comparing with abnormal returns of group

1 and group 2, abnormal return at t = 1 are significant at 10 % significance level, while abnormal returns of group 1 and group 2 at time t =1 are not significant even at 10% level, this difference may be resulted by t-statistic will increase as the sample size increases. According to Wooldridge (2003), t-test follows these procedures:

Providing null hypothesis, normally, $H_0: \beta j = \alpha j$

Where αj is the predetermined estimated βj we want to test.

Calculate t-statistic

$$t = (\beta j - \alpha j)/ se(\beta j) \tag{1}$$

Where se (βj) is standard error for estimated βj, and it equals to $S/\sqrt{n}$,

Where n is sample size.

From the formula of t – statistic, we can explain why there is significant abnormal return for all at t =1, but neither group 1 nor group 2 cannot create significant abnormal returns at t =1.

As the sample size increases, n will increase, and thus, standard error will decrease, for t-statistic, denominator will decrease, leading to increase in t –statistic, which cannot be seen as signal for abnormal return at t=1 is significant at 10% significance level for all data, as there are no abnormal returns for group 1 and group 2 at t =1. The result is M&A creates significant wealth effects on announcement date.

4.3. Summary

In 2015-16 Chinese stock market turbulence, merger and acquisition is not an effective method to make companies survive from the depression situation. And M&A cannot create enough wealth effects to against the stock market turbulence both in the long-term and in the short-term. Due to information leakage, there are no wealth effects on announcement date of M&A. In accord with Scemalensee (1987), M&A happened in the third industry produced more benefits for shareholders. But M&A in cash payment create less wealth effects than M&A in stock payment contrary to the hypothesis, even though, cash payments transactions generate more wealth effects on announcement date in the turbulence.

5. Conclusion

As mentioned before, past studies implied that cash payment will lead to more wealth effects of M&A than stock payment. M&A creates significant wealth effects on announcement date, M&A creates significant wealth effects in the short-term, M&A with cash payment will create more wealth effects than those with stock payment.

However, our findings reject this theory in the stock market turbulence. From the findings, both cash payment, stock payment, and hybrid payment create losses for shareholders, and the losses came from cash payment M&A are larger than stock payment losses, and hybrid payment M&A create CARs near zero over all event window. Although there are no wealth effects of M&A over all event window, cash payment M&A still create statistically significant positive abnormal returns as expected.

Research limitations and proposal for further research:

There is no idea about whether the Chinese stock market crash has been finished until now, it will be known after a few years, then we can see how the effect of stock market crash to M&A companies, thus further study about M&A in China stock market turbulence in the future.

From the results, there is significant information leakage about M&A, which means the information disclosure about M&A may have limitations. However, it cannot be avoided because it is one of characters of Chinese stock market.

Friendly takeover or hostile takeover is another vital area in study about M&A's wealth effects, the author have not consider about this factor in the study, further study need to be conducted in this area.

References

[1] Bloomberg. (2012) 2012 Global M&A Outlook, available at: http://media.bloomberg.com/bb/ avfile/ru20IiusvjMM (accessed 3 July).

[2] Tavassoli, S. (2015) Innovation determinants over industry life cycle. Technological Forecasting and Social Change vol. 91, pp.18-32.

[3] Jensen, M. and Ruback, R. (1983) The Market for Corporate Control: The Scientific Evidence. SSRN Electronic Journal.

[4] Jarrell, G., Brickley, J. and Netter, J. (1988) The Market for Corporate Control: The Empirical Evidence Since 1980. Journal of Economic Perspectives, vol. 2, no. 1, pp.49-68.

[5] Brown, S.J., & Warner, J.B. (1980) Measuring security price performance. Journal of Financial Economics, vol. 8, pp. 205-258.

[6] Hayek, F. (1944) The Use of Knowledge in Society. The American Economic Review, vol. 35, no.4, pp. 519-530.

[7] McWilliams, A., & Siegel, D. (1999) Issues in the use of the event study methodology: A critical analysis of corporate social responsibility studies. Organizational Research Methods, vol. 2, pp. 340-365.

[8] Andrade, G., Mitchell, M. and Stafford, E. (2001) New Evidence and Perspectives on Mergers. Journal of Economic Perspectives, vol. 15, no. 2, pp.103-120.