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AN EMPIRICAL EXAMINATION OF THE FACTORS THAT IMPACT ACQUIRER’S STOCK PERFORMANCE IN CHINA

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Dean, Graduate School
TABLE OF CONTENTS

ABSTRACT........................................................................................................................................... iii
LIST OF TABLES..................................................................................................................................... iv
1. INTRODUCTION ................................................................................................................................... 1
   1.1 Background................................................................................................................................. 1
   1.2 M&A MARKET............................................................................................................................ 2
2. LITERATURE REVIEW .................................................................................................................. 4
   2.1 ABNORMAL RETURN (AR)....................................................................................................... 6
   2.2 RELATIVE SIZE ......................................................................................................................... 7
   2.3 CONGLOMERATE ....................................................................................................................... 7
   2.4 RELATED ACQUISITION .......................................................................................................... 8
   2.5 METHOD OF PAYMENT ............................................................................................................ 9
   2.6 ACQUISITION EXPERIENCE ................................................................................................... 9
   2.7 ACQUIRER’S PROFIT BEFORE M&A ..................................................................................... 9
   2.8 PERCENTAGE ACQUIRED ........................................................................................................ 10
3. HYPOTHESES ...................................................................................................................................... 11
4. DATA AND METHODOLOGY ...................................................................................................... 13
   4.1 SAMPLE ...................................................................................................................................... 13
   4.2 METHODOLOGY ......................................................................................................................... 16
      4.2.1 Time-series Regression.................................................................................................... 18
      4.2.2 Cross-sectional Analyses............................................................................................... 19
5. RESULTS ............................................................................................................................................. 20
   5.1 ACQUIRER’S STOCK PERFORMANCE .................................................................................. 20
   5.2 THE FACTORS DRIVING ACQUIRER’S STOCK PERFORMANCE ........................................... 22
6. CONCLUSION ...................................................................................................................................... 30
REFERENCES ......................................................................................................................................... 31
Appendix 1 ............................................................................................................................................... 33
Appendix 2 ............................................................................................................................................... 35
Appendix 3 ............................................................................................................................................... 37
ABSTRACT

In this study, 104 merger and acquisitions (M&A) in China from January 1, 2004, to December 31, 2012 are examined. It is calculated that the acquirer’s stock reaction to the M&A announcement and examine the factors that impact the stock performance. The results show that the acquirer’s shareholders enjoy a positive gain before the M&A announcement, but they also suffer a loss after the announcement. It is found that the stock performance of the acquirer is lower for large acquisitions. It is also found that when the target and acquirer are in the same industry, that the acquirer’s stock performance is higher. Overall, the results regarding acquirer’s stock performance are consistent with previous studies on Chinese mergers and acquisitions. However a different set of factors that drive the acquirer’s stock performance are discovered.
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>China’s M&amp;A Deals Announced from 2004 to 2012 ........................................... 14</td>
</tr>
<tr>
<td>2</td>
<td>The Selected Samples Announced from 2004 to 2012 ........................................... 15</td>
</tr>
<tr>
<td>3</td>
<td>Means of Acquirer’s Abnormal Return .................................................................... 20</td>
</tr>
<tr>
<td>4</td>
<td>Cumulative Abnormal Return .............................................................................. 22</td>
</tr>
<tr>
<td>5</td>
<td>Description of the Variables ............................................................................. 23</td>
</tr>
<tr>
<td>6</td>
<td>The Means of Variables .................................................................................... 23</td>
</tr>
<tr>
<td>7</td>
<td>The Pearson Correlation Coefficients ................................................................. 25</td>
</tr>
<tr>
<td>8</td>
<td>The CAR Predicted Models .................................................................................. 27</td>
</tr>
</tbody>
</table>
1. INTRODUCTION

1.1 Background

In the past thirty years, China has experienced tremendous economic changes. The country has emerged from economic ruins to the second largest economy in the world nowadays. China’s GDP has been growing at a rate of above 10%, from $43.66 billion in 1978 to $8.23 trillion in 2012 (The World Bank). This economic growth corresponded with institutional reforms, organizational innovations, stock market developments, and foreign investments.

Until the end of the 1970s, China’s government played a major role in the economy. State-owned Enterprise (SOE) was the only legal business entity. However the SOE was like a big broken-down vehicle blocking the road to development in China. In 1978, China started economic reforms and encouraged the development of private enterprises. During the reforms, the Chinese government gradually reduced its ownership in SOE and, as a result, has much lower shares today.

The Chinese stock exchange was created in 1991. In the late 1980s, many Chinese local governments sold shares of SOEs directly to domestic individual investors. At the beginning of the economic reforms, Over-the-counter (OTC) was almost the only trading way to raise equity capital (Wang, 2006). The trend of government ownership going private drove the creation of the two stock exchange markets: Shanghai Stock Exchange and Shenzhen Stock Exchange. Wang (2006), a scholar in the field of study, maintains that there are several characteristics in the Chinese stock market that make the market unique:

1. The government relies heavily on the stock market to raise funds for SOEs.
II. China’s stock market was developed under a repressed financial regime implemented by the Chinese central government. To ensure less potential completion among different financial assets within the domestic financial sectors, the government supervised and controlled the international capital flows.

III. In the beginning, the regulation and legislation of China’s stock markets was not developed and shareholders’ rights were not protected.

The mergers and acquisitions (M&A) market languished in a difficult economic and stock market environment. Although there were some M&A activities, it was very rare and difficult to implement.

1.2 M&A Market

M&A activities started in 1993 in China. However, the late development of the capital market and corporate law limited the number of deals in the 1990s. After 2000, China experienced a dramatic increase in M&A activity. In the year of 2011, there were two thousand and eight domestic M&A deals in China in 2012, and the total value reached $117.7 billion, which is a 25% increase from 2011 (Bloomberg). This growth has been fuelled by Chinese economic reforms and stock market development.

The performance of M&A in China is important for investors and the success of the Chinese economy. However, studying the Chinese M&A market is difficult due to its complexity. The market is complicated for several reasons such as the extensive rules and regulations, insider trading, political issues, and data issues.

The rules and regulations governing merger and acquisition activities in China are complex. Most of the M&A activities in China were friendly acquisitions. The acquirer took over
the shares of the target firm by negotiating OTC with the major shareholders of the non-circulating shares. More than 99% of the deals in China are friendly acquisitions (Bloomberg). There are also some tender offer deals, which are fueled by the administrative measures on the acquisition of listed companies. The measures were issued by the China Security Regulatory Commission (CSRC) in 2003.

Many researchers and investors believe that insider trading exists along with the merger and acquisition deals in China (Chi, Sun, and Young 2011; Tuan and Zhang, 2007), even though it is illegal to trade based on the non-public information before the merger announcement.

Many of the listed companies in China are SOEs, and the government is one of the largest share owners; the shares held by the government are non-circulating. In M&A deals, acquirers normally pay a lower price to the non-circulating shares than to the circulating shares (Tuan and Zhang, 2007).

One of the most difficult parts of doing research in China is obtaining the data. The Chinese market is not transparent. Many M&A activities are processed through a series of private negotiations. Some involved parties benefit by using inside information. This is an example of an asymmetric information problem. Moreover, some companies have several legal names, which can make some data confusing.

The study for this project focuses on 104 large M&A deals announced from 2004 to 2012. The goal is to calculate the acquirer’s stock performance, and identify the factors that impact the abnormal returns. Our methodology is similar to Chi, Sun and Young (2011), who examine a sample of Chinese market M&A deals from 1998 to 2003. We apply this method to test large M&A deals from 2004 to 2012, and to examine factors that affect the cumulative abnormal returns (CARs).
2. LITERATURE REVIEW

There is extensive research available on the stock market performance concerning M&A events in many countries throughout the world. The first question about M&A is the motive of the M&A activities; what is the theory behind them? Many researchers have examined these theories.

Berkovitch and Narayanan (1993) report that the motive of the M&A is divided into three types: synergy, agency, and hubris. Synergy is the theoretical motive for M&A activities, which means that the managers of the acquirer believe the sum of two firms is greater than their individual parts. If the market believes that the M&A creates synergy, then there will be a positive gain in the acquirer’s stock. If the market believes that the M&A benefits the manager and not the shareholders (agency problem), then the acquirer’s stock will decrease. If there are other potential acquirers competing for the deal, then the acquirer’s managers may pay a higher price to the target company, rather than the reasonable price they originally wanted to pay, this is hubris problem; if the hubris problem exists, the acquirer may gain negative or zero return. In most cases, it is difficult to distinguish which theory applies, because they may all occur simultaneously and the stock reaction is the same for different theories. Kiymaz and Baker (2008) examine large M&A deals in the US from 1989 to 2003. They find empirical samples supporting all the three motives: synergy, agency, and hubris in various mergers and acquisitions.

The results of the market performance research of involved parties are inconclusive. Most research finds that the target firm’s shareholders generally enjoy a positive gain. For example, Schwert (1996) tests 1,814 takeovers from 1975 to 1991 in America. In his sample, the target firms were listed in the New York Stock Exchange (NYSE) and the American Stock Exchange (Amex). He finds that the shareholders of these target firms earn positive abnormal returns regardless of the motivations of M&A.
The research results of the acquirer’s stock performance are also inconclusive. Servaes (1991) tests a sample of 704 M&A activities over the period between 1972 and 1987. He finds that there are positive returns to the acquirer only when the acquirer has a high Tobin’s Q Ratio (ratio of market value to book value) and the target has a low Tobin’s Q ratio. This result confirms the result of Lang, Stulz, and Walking (1989). However, Datta and Pinches (1992) find that the acquirer’s shareholders normally suffer from negative return during an M&A event. Agrawal, Jaffe, and Mandelker (1992) use a large sample of M&A deals taking place in the US market. They find that the shareholders of the acquiring firms suffered a significant loss after the M&A event; the loss is about 10% within five years after acquisition. In 2004, King and Dalton conduct a meta-analysis of 93 prior empirical studies on post-acquisition performance. The result conducts that the M&A activity does not bring gain to the shareholders of the acquirer. Instead the company experiences a long term negative financial performance. Alexandridis, Petmezas, and Travlos (2010) test 13,226 worldwide M&A deals from 1990 to 2007. They focus on acquirers from America, the United Kingdom, and Canada. They find around zero and negative abnormal return for acquiring firms.

Alexandridis, Petmezas, and Travlos (2010) find that public acquisitions generate gains, but the distribution of gains between acquirers and target firms is determined by the degree of competition in the takeover market. The acquirer pays a higher price to the target company in a competitive takeover market. There is a lower gain for the acquirer and higher gain for the target company. In a noncompetitive market, the result is reverse; there is a higher gain for the acquirer and a lower gain for the target company. The level of competition is negatively related to the acquirer’s returns and positively related to target company’s returns.
The research regarding M&A in China is relatively new mainly because M&A development has a short history, and the stock market development and corporate law in China is still not as mature as those in developed countries. Zhang (2003) investigates 1,216 M&A cases related to listed companies from 1993 to 2002 in China. He finds the stock prices of targeted companies generally increased 20.09%, while the shareholders of acquirer suffered a loss of 16.76% through the whole M&A procedure. He doubts if M&A creates net value for the society as a whole.

Tuan and Zhang (2007) test 22 tender offer deals in China from 2002 to 2006. They find that the target firm’s CAR increase 17.7% before acquisition announcement, but decrease 4.14% after the announcement. They conclude that illegal insider trading exists in the Chinese stock market. Years later, Chi, Sun, and Young (2011) also find a positive pre-acquisition gain of the acquirer’s shareholders and a negative post-acquisition gain. Tuan and Zhang (2007) maintain that the China market is not strong form efficient. This means that all information is not instantly reflected in stock prices. In fact, individuals with inside information can purchase the stock before the merger is announced and sell it after that; this trading strategy generates a 17.7% return. However, trading on inside information is illegal and the risk of being sent to jail is not quantified in this model.

2.1 Abnormal Return (AR)

An abnormal return can be calculated to measure the impact that an event has on stock price performance. It is the difference between the actual stock return and expected return. Wansley, Lane, and Yang (1983) use abnormal return to test a target company’s post-acquisition stock performance. Tuan and Zhang (2007), as well as Chi, Sun, and Young (2011), also employ
abnormal return and cumulative abnormal return in order to examine acquirer and target firm’s gain. Numerous research studies (Kiymaz and Baker, 2008; Tuan and Zhang, 2007) find positive ARs for acquired firms, but negative ARs for acquiring firms, Kiymaz and Baker (2008) conclude this phenomenon as the wealth moves from shareholders of acquiring firms to the shareholders of the target firms.

Many researchers have examined the factors that impact the short event window Cumulative Abnormal Return (CAR) concerning the M&A announcement. The following provides a summary of the variables that have been examined in the existing literature.

2.2 Relative Size

Relative size of the target firm is the ratio of target firm’s size divided by the acquirer’s size. Some researchers (Chi, Sun, and Young, 2011) use the firm’s total asset as its size. Fowler and Schmidt (1989) and Kiymaz and Baker (2008) find that there is a strong positive relationship between the target firm’s relative size and the acquirer’s performance. This result is consistent with that of McDougall, Robinson, and DeNisi (1992), who find that large-scale entries into new ventures result in better performance than small-scale entries. Larger relative size of target company to acquiring company means that the acquiring company is a larger scale entry into a new business.

2.3 Conglomerate

Conglomerate firms are defined by Rumelt (1974) as “the firms exhibiting significant unrelated product-market diversification”. A conglomerate merger can lower the risk of the acquirer. However, from the standpoint of the acquirer’s shareholders, the motive of reduced risk
through a conglomerate should be rejected on priority grounds. If the company falls into a distressed situation, then the shareholders have only the remnants of the company property after the company has paid all the bills. The shareholders will prefer reduce risk through other ways, such as holding stocks from different companies. In this way, the conglomerate merger can be viewed as an agency problem that the managers pursue reducing their own employment risk. The literature provides support for both motives. Research by Campa and Kedia (2002) indicates that firms that pursue diversification will conduct a value-enhancing strategy. Not like simply acquire value of acquired companies through M&A activities, acquirers who pursue conglomerate are more likely to integrate the business of them and the acquired firms. This research is consistent with the risk reduction motive. However the empirical research (Loughran and Vijh 1997) finds that many firms do not benefit from the merger diversification. This is consistent with the agency problem theory.

2.4 Related Acquisition

Miller (2006) finds that firms that acquire related diversified businesses perform better than those that acquire the same business or totally different business. King, Dalton, Daily, and Covin (2004) think that the key issue for diversifying firms is to select alternative strategies available, such as acquisition for entering new businesses. Theoretically, related acquisitions will enable the acquirer’s resources to be productively leveraged in new businesses, because the resources will be valued higher and relevant.
2.5 Method of Payment

There are two fundamental methods by which an acquiring firm can pay for an acquisition: cash and stock shares. From a financial point of view, an acquiring firm’s managers will seek to finance an acquisition in the most profitable way. They will finance with cash if they believe their firm’s stock is undervalued and will pay stocks if they think it is overvalued. Some investors view the payment method as a signal of the acquirer manager’s expectations of the new integrated company. Wansley, Lane, and Yang (1983) report that the acquiring firms that paid cash for purchasing target firms experienced significant positive stock abnormal returns while the acquiring firms which paid securities had much less abnormal returns. Kiymaz and Baker (2008) report that the payment method is statistically significant with acquirer stock abnormal returns.

2.6 Acquisition Experience

Fowler (1989) reports the positive relationship between the acquirer’s prior acquisition experience and the AR of the acquirer’s shareholders. The report indicates that the company exhibits a better performance when the number of prior acquisition activities increases. Haleblian and Finkelstein (1999) examine 449 acquisitions and find that the acquisition performance generally increases with the acquirer’s prior acquisition experience. They explain that the experienced acquirer can better integrate the two firms after a takeover.

2.7 Acquirer’s Profit Before M&A

Free cash flow theory predicts that many acquirers will tend to have very good performance before M&A (Jensen, 1986), because the managers try to improve their post-merger employment position in the new company by improving their performance. If the market is
efficient, then the good financial position of the acquirer will be reflected in stock price, and a positive stock return before M&A would be expected. However, Chi, Sun, and Young (2011) find the significant negative return of the stock and acquirer profit before M&A. They explain that M&A in China is viewed by investors as a method to improve or even save the performance of the acquiring companies.

2.8 Percentage Acquired

Considering the efficiency of the business consolidation after M&A, those firms that acquired a significant portion of a target firm may be able to exert more influence than the firms that acquired a smaller percentage. Fowler and Schmidt (1989) examined 42 industrial manufacturing firms in America. The results indicate that the percentage acquired explained a significant portion of the change in abnormal return on the acquirer’s securities. They explain that as the percentage of the acquiring firm increases, more control is exerted over the target firms.

The study for this project calculates the stock performance (CAR) of the acquiring firms using an event study methodology. The variables that impact the CAR are estimated, and all of the relevant variables in existed literature are examined.
3. HYPOTHESES

Our study examines mergers and acquisitions in China. We measure the acquirer’s stock performance and examine the factors that impact this figure. The stock performance we examined in this study is the acquirer’s stock market reaction in the presence of M&A announcement news. If there are benefits from the merger, then we would observe a positive relationship between M&A announcement and acquirer’s stock performance. In this study, we use a short-term event window Cumulative Abnormal Returns (CAR) to measure the stock performance.

There are many factors that could influence the acquirer’s CAR. The most common and tested ones by previous studies are:

Conglomerate merger
Deal payment method
Related acquisition
Percentage of target acquired
The target and acquirer’s relative size
Acquirer’s previous acquire experience
Acquirer’s profitability before M&A

Conglomerate and related acquisition should positively influence the acquirer’s stock, because the more diversified business the firm has, the better it will perform (Campa and Kedia, 2002). Many researchers (Kiymaz and Baker, 2008) believe payment method is one of the main factors that influence acquirer’s performance. The hypothesis is that the acquirer’s managers normally have more inside information than other involved parties. They will choose the best way to pay the target’s owners. The payment method is an important signal that reflects the manager’s expectation of the company’s future performance. It is obvious that the higher the percentage of the target take
over, the more influence the deal will bring to the acquirer. Some studies (Fowler and Schmidt, 1989; Kiymaz and Baker, 2008) report that the target’s relative size to the acquirer has a positive influence on the acquirer’s performance. The rationale is that a larger firm will have more impact on the acquirer’s stock.

We also test the acquirer’s previous acquisition experience. If the acquirer has experience, then they will probably know how to better integrate the two companies after a merger. Furthermore, if the investors pay attention to it, then the acquirer will probably have a better stock performance. The acquirer’s profit before M&A also matters. Theoretically, the acquirers need enough free cash flow to pay the deals, so they tend to earn a higher profit before the deals. Some researchers (Chi, Sun, and Young, 2011), however, believe that a low profit will lead to a higher CAR, since there is more upside for these companies.
4. DATA AND METHODOLOGY

4.1 Sample

Our sample consists of 104 of the largest M&A deals announced from 2004 to 2012 in China. The acquirers are listed companies in the three Chinese stock markets. Any companies that have missing data or multiple M&A announcements in a three months period were excluded from the sample. Another event announcement within three months will cause a confounding effect and contaminate the estimates of the price reactions to the event. To examine from 2004 to 2012 is because during this period strategic M&A were prevalent in China. Strategic acquisitions represent horizontal mergers that involve firms in closely related industries. Normally, the strategic acquisitions are friendly takeovers, and both acquiring and acquired companies have operating synergy advantages (Tuan and Zhang, 2007).

Table 1 presents the total M&A deals and values from 2004 through 2012, which are partitioned into domestic acquisitions, China’s acquisitions abroad, and foreign acquisitions in China. The table indicates that the M&A market generally trends upward from 2004 to 2011, but it experienced a slight decrease in 2012. If only 2012 data is taken into account, then domestic M&A dominated the whole market, which accounts for 77% of the whole market.
Table 1. China’s M&A Deals Announced from 2004 to 2012

<table>
<thead>
<tr>
<th>Year</th>
<th>Domestic Acquisitions</th>
<th>China Acquisitions Abroad</th>
<th>Foreign Acquisitions in China</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Deals</td>
<td>Value Billion CNY</td>
<td>Number of Deals</td>
<td>Value Billion CNY</td>
</tr>
<tr>
<td>2004</td>
<td>802</td>
<td>316.51</td>
<td>63</td>
<td>25.15</td>
</tr>
<tr>
<td>2005</td>
<td>1218</td>
<td>156.35</td>
<td>58</td>
<td>87.9</td>
</tr>
<tr>
<td>2006</td>
<td>1273</td>
<td>410.14</td>
<td>102</td>
<td>131.53</td>
</tr>
<tr>
<td>2007</td>
<td>1649</td>
<td>601.23</td>
<td>226</td>
<td>194.23</td>
</tr>
<tr>
<td>2008</td>
<td>1610</td>
<td>826.43</td>
<td>218</td>
<td>293.57</td>
</tr>
<tr>
<td>2009</td>
<td>1398</td>
<td>522.61</td>
<td>246</td>
<td>337.95</td>
</tr>
<tr>
<td>2010</td>
<td>2168</td>
<td>641.24</td>
<td>253</td>
<td>388.76</td>
</tr>
<tr>
<td>2011</td>
<td>1818</td>
<td>412.73</td>
<td>278</td>
<td>336.25</td>
</tr>
<tr>
<td>2012</td>
<td>1316</td>
<td>376.33</td>
<td>192</td>
<td>262.83</td>
</tr>
</tbody>
</table>

Source: Bloomberg

Table 2 provides data involving our final sample. Panel A presents the frequency of M&A deals by year and provides the evidence of event clustering. Panel B shows the breakdown of deals by the method of payment, which shows that in China, 91.35% deals were paid by cash. Panel C lists the number of the sample companies in the Shanghai, Shenzhen, and Hongkong stock exchange markets. Panel D shows the percentage of the ownership of the target firms acquired by acquiring firms. Panel E and Panel F list if the acquiring firms and acquired firms are related mergers and if they are conglomerate mergers. It is particularly interesting to note that 73.08% of the deals in our sample are conglomerate acquisitions. This is consistent with the notion that most M&A are strategic mergers in China, meaning that the managers focus on synergy.
Table 2. The Selected Samples Announced from 2004 to 2012

Panel A: Frequency of Sample by Year

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Deals</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>7</td>
<td>6.73</td>
</tr>
<tr>
<td>2005</td>
<td>10</td>
<td>9.62</td>
</tr>
<tr>
<td>2006</td>
<td>10</td>
<td>9.62</td>
</tr>
<tr>
<td>2007</td>
<td>20</td>
<td>19.23</td>
</tr>
<tr>
<td>2008</td>
<td>12</td>
<td>11.54</td>
</tr>
<tr>
<td>2009</td>
<td>15</td>
<td>14.42</td>
</tr>
<tr>
<td>2010</td>
<td>19</td>
<td>18.27</td>
</tr>
<tr>
<td>2011</td>
<td>6</td>
<td>5.77</td>
</tr>
<tr>
<td>2012</td>
<td>5</td>
<td>4.81</td>
</tr>
<tr>
<td>Total</td>
<td>104</td>
<td>100</td>
</tr>
</tbody>
</table>

Panel B: Frequency by payment method

<table>
<thead>
<tr>
<th>Payment Method</th>
<th>Number of Deals</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>95</td>
<td>91.35</td>
</tr>
<tr>
<td>Stock</td>
<td>3</td>
<td>2.88</td>
</tr>
<tr>
<td>Unclear</td>
<td>6</td>
<td>5.77</td>
</tr>
<tr>
<td>Total</td>
<td>104</td>
<td>100</td>
</tr>
</tbody>
</table>

Panel C: Stock Exchange Market

<table>
<thead>
<tr>
<th>Market</th>
<th>Number of Deals</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shanghai</td>
<td>38</td>
<td>36.54</td>
</tr>
<tr>
<td>Shenzhen</td>
<td>25</td>
<td>24.04</td>
</tr>
<tr>
<td>Hongkong</td>
<td>41</td>
<td>39.42</td>
</tr>
<tr>
<td>Total</td>
<td>104</td>
<td>100</td>
</tr>
</tbody>
</table>

Panel D: Ownership

<table>
<thead>
<tr>
<th>Ownership Acquired</th>
<th>Number of Deals</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;5%</td>
<td>37</td>
<td>35.58</td>
</tr>
<tr>
<td>&lt;5%</td>
<td>67</td>
<td>64.42</td>
</tr>
<tr>
<td>Total</td>
<td>104</td>
<td>100</td>
</tr>
</tbody>
</table>
Table 2 cont’d

Panel E: Related M&A

<table>
<thead>
<tr>
<th></th>
<th>Number of Deals</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same industry</td>
<td>54</td>
<td>51.92</td>
</tr>
<tr>
<td>Different industry</td>
<td>50</td>
<td>48.08</td>
</tr>
<tr>
<td>Total</td>
<td>104</td>
<td>100</td>
</tr>
</tbody>
</table>

Panel F: Conglomerate M&As

<table>
<thead>
<tr>
<th></th>
<th>Numbers of Deals</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conglomerate</td>
<td>76</td>
<td>73.08</td>
</tr>
<tr>
<td>Non-conglomerate</td>
<td>28</td>
<td>26.92</td>
</tr>
<tr>
<td>Total</td>
<td>104</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Bloomberg

4.2 Methodology

We design this M&A event study in the way of Boehmer (2002). First, we select the samples according to the following criteria:

2. Acquiring and acquired firms are both Chinese firms.
3. Acquiring firms are public firms listed in Shanghai, Shenzhen, or Hong Kong Stock Market.
4. Acquirers do not have another M&A announcement within the 3 month period.
5. The observation does not contain missing data or incomplete data.

After a clean sample is obtained, we collect daily returns for the sample firms and the corresponding stock market index. Boehmer (2002) suggests that a reasonable length for the period would be 200 days before to 5 days after the event. We choose 145 trading days before to 21 trading days after the event as our study period because all of the 104 observations have clean and complete stock price records within this period. 145 days to 22 days prior to the event is defined as
The predicted period; 21 days prior to 21 days after the event as the research event period. We believe that this predicted period is sufficiently long to allow efficient estimates, and ends at a reasonable time before the announcement. Reasonable time means the estimate period does not mistakenly include the possible event reaction days. Normally, the acquiring companies experience price increases during the 20 trading days preceding the actual announcement (Boehmer 2002).

The next step is to employ a risk-adjusted market model for each firm during the estimate period. We record the estimated intercepts and slope coefficients of each firm after regressing their daily returns on contemporaneous market returns.

Then, we use the estimated coefficients and intercepts to compute expected returns of each firm during the event window. We expect the stock price will react to the event. Theoretically, if Chinese markets are efficient with respect to the announcement, the stock price will quickly reflect the news. However, empirically it’s impossible to pinpoint precisely the time when the announcement reaches investors. Tuan and Zhang (2007) report that the Chinese acquirers experience substantial stock-price “run-ups” prior to the announcement; they conclude that this is caused by the leakage of the inside information, which triggered the insider trading about the upcoming acquisition. Therefore, the event window should be at a reasonable period. If it is too short, then it may not include the time when investors truly learn about the event. If it is too long, then other information will make the test harder and the result will be less reliable. Since it is suspected that there exists the pre-event information leakage (Tuan and Zhang, 2007), we analyze the event reaction in the period of 21 days before to 21 days after the event day.
4.2.1 Time-series Regression

There are many factors that could cause the stock returns to increase or decrease on a given day. Therefore, in this study we employ the concept of abnormal return (AR). AR is the difference between actual return and the estimated return; the estimated return is the expected price movement without the event announcement. The AR is only the portion of the price movement actually caused by the M&A event. In this way, we extract the impact of the M&A announcement on the acquirer’s stock returns from the total returns. This is a standard event study methodology that is used extensively in the finance literature. (See Brown and Warner (1985))

To compute the daily AR of each firm, we use the most frequently used approach: the risk-adjusted market model.

\[ R_{jt} = \alpha_j + \beta_j R_{mt} + \epsilon_{jt} \]

Where

\( \alpha_j, \beta_j \) = the intercept and coefficient, respectively, of the linear relationship between the return of stock \( j \) and the returns of the stock market where it traded;

\( R_{jt} \) = the return on stock \( j \) at time \( t \);

\( R_{mt} \) = the return on the corresponding stock market composite index at time \( t \);

\( \epsilon_{jt} \) = the unsystematic component of firm \( j \)’s return.

Abnormal returns, \( AR_T \), are calculated for firm \( j \) on event window time \( T \) and the return predicted from the market model:

\[ AR_T = R_{jt} - (\alpha_j + \beta_j R_{mt}) \]

We estimate the parameters of the model through using the time-series data from the estimation period. In this way, we calculate the daily AR of each individual acquirer from actual returns during the event window and the corresponding estimated returns.
4.2.2 Cross-sectional Analyses

In the spirit of previous research, the acquirer’s stock performance during the event period is determined by many factors. To find the determinant factors in China’s market, we include the 7 most common factors in the basic regression model, which are:

Relative size
Conglomerate
Related acquisition
Method of payment
Acquisition experience
Acquirer profit before M&A
The percentage acquired

We include year dummy variables in the basic model as well, because the Chinese takeover market is still in its early stage, and the regulation is not as mature as that in developed countries. The big events happening in some years may make the macro market environment different in that year. For example, the Olympics were held in Beijing in year 2008, and the World Expo was held in Shanghai in year 2010.

Based on above theories, the basic regression model is specified as follows:

\[
CAR = a + \beta_1 \times \text{Relative Size} + \beta_2 \times \text{Conglomerate} + \beta_3 \times \text{Related Acquisition} \\
+\beta_4 \times \text{Method of Payment} + \beta_5 \times \text{Acquisition Experience} + \beta_6 \times \text{Acquirer’s Profit before MA} \\
+\beta_7 \times \text{Acquired Percentage} + \beta_8 \times Yr2004 + \beta_9 \times Yr2005 + \beta_{10} \times Yr2006 \\
+\beta_{11} \times Yr2007 + \beta_{12} \times Yr2008 + \beta_{13} \times Yr2009 + \beta_{14} \times Yr2010 + \beta_{15} \times Yr2011
\]
5. RESULTS

5.1 Acquirer’s Stock Performance

Table 3 shows the t-test result of acquirer’s abnormal return (AR) from 21 days before the event to 21 days after the event. From the t-value, the significant ARs are randomly distributed throughout the event window. Whether the value of the Mean is positive or negative, it is distributed randomly. If we take a closer look at the several days around the event day, the values of Mean from 5 days before to 1 day after the event are always positive, and they are always negative from 2 days after to 4 days after the event day. The values of the Mean on 2 days prior and 2 days after the event day are significant at the 10% and 5% level. This is consistent with most of the previous research (Chi, Sun, and Young, 2011). We conclude that this phenomenon is caused by the investors trying to arbitrage profit based on insider information, then reap profit and get out of the market after the information gets published.

Table 3. Means of Acquirer’s Abnormal Return

<table>
<thead>
<tr>
<th>Variable</th>
<th>t-value</th>
<th>N</th>
<th>Mean</th>
<th>Std Dev</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>before21</td>
<td>-0.62</td>
<td>104</td>
<td>-0.00146</td>
<td>0.02411</td>
<td>-0.07623</td>
<td>0.08178</td>
</tr>
<tr>
<td>before20</td>
<td>1.01</td>
<td>104</td>
<td>0.00251</td>
<td>0.02534</td>
<td>-0.08487</td>
<td>0.07025</td>
</tr>
<tr>
<td>before19</td>
<td>0.38</td>
<td>104</td>
<td>0.00116</td>
<td>0.03125</td>
<td>-0.09951</td>
<td>0.16214</td>
</tr>
<tr>
<td>before18</td>
<td>0.5</td>
<td>104</td>
<td>0.00142</td>
<td>0.02897</td>
<td>-0.08498</td>
<td>0.14563</td>
</tr>
<tr>
<td>before17</td>
<td>-0.43</td>
<td>104</td>
<td>-0.00109</td>
<td>0.02603</td>
<td>-0.10317</td>
<td>0.07533</td>
</tr>
<tr>
<td>before16</td>
<td>1.89**</td>
<td>104</td>
<td>0.00553</td>
<td>0.02978</td>
<td>-0.06291</td>
<td>0.11463</td>
</tr>
<tr>
<td>before15</td>
<td>0.34</td>
<td>104</td>
<td>0.00093</td>
<td>0.02793</td>
<td>-0.09097</td>
<td>0.12134</td>
</tr>
<tr>
<td>before14</td>
<td>1.84**</td>
<td>104</td>
<td>0.00433</td>
<td>0.02398</td>
<td>-0.04345</td>
<td>0.10507</td>
</tr>
<tr>
<td>before13</td>
<td>-0.18</td>
<td>104</td>
<td>-0.00048</td>
<td>0.02723</td>
<td>-0.07843</td>
<td>0.11550</td>
</tr>
<tr>
<td>before12</td>
<td>-1.31*</td>
<td>104</td>
<td>-0.00348</td>
<td>0.02710</td>
<td>-0.10216</td>
<td>0.07488</td>
</tr>
<tr>
<td>before11</td>
<td>0.02</td>
<td>104</td>
<td>0.00005</td>
<td>0.02764</td>
<td>-0.05216</td>
<td>0.10125</td>
</tr>
<tr>
<td>before10</td>
<td>1.66*</td>
<td>104</td>
<td>0.00582</td>
<td>0.03587</td>
<td>-0.06541</td>
<td>0.19813</td>
</tr>
<tr>
<td>before9</td>
<td>-1</td>
<td>104</td>
<td>-0.00284</td>
<td>0.02884</td>
<td>-0.10159</td>
<td>0.09021</td>
</tr>
</tbody>
</table>
### Table 3 cont’d

<table>
<thead>
<tr>
<th>Event Window</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-statistic</th>
<th>p-value</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>before8</td>
<td>0.92</td>
<td>0.00311</td>
<td>0.03426</td>
<td>-0.05530</td>
<td>0.17347</td>
</tr>
<tr>
<td>before7</td>
<td>0.56</td>
<td>0.00167</td>
<td>0.03059</td>
<td>-0.07665</td>
<td>0.10192</td>
</tr>
<tr>
<td>before6</td>
<td>-0.7</td>
<td>-0.00155</td>
<td>0.02242</td>
<td>-0.04680</td>
<td>0.09548</td>
</tr>
<tr>
<td>before5</td>
<td>0.97</td>
<td>0.00259</td>
<td>0.02717</td>
<td>-0.05536</td>
<td>0.13303</td>
</tr>
<tr>
<td>before4</td>
<td>0.29</td>
<td>0.00081</td>
<td>0.02889</td>
<td>-0.07474</td>
<td>0.13394</td>
</tr>
<tr>
<td>before3</td>
<td>0.41</td>
<td>0.00123</td>
<td>0.03068</td>
<td>-0.06336</td>
<td>0.10065</td>
</tr>
<tr>
<td>before2</td>
<td>1.32*</td>
<td>0.00352</td>
<td>0.02717</td>
<td>-0.05621</td>
<td>0.10793</td>
</tr>
<tr>
<td>before1</td>
<td>1.1</td>
<td>0.00329</td>
<td>0.03051</td>
<td>-0.10073</td>
<td>0.12094</td>
</tr>
<tr>
<td>Event Day</td>
<td>0.7</td>
<td>0.00233</td>
<td>0.03369</td>
<td>-0.07848</td>
<td>0.13678</td>
</tr>
<tr>
<td>after1</td>
<td>0.81</td>
<td>0.00330</td>
<td>0.04150</td>
<td>-0.13164</td>
<td>0.23056</td>
</tr>
<tr>
<td>after2</td>
<td>-1.78**</td>
<td>-0.00538</td>
<td>0.03089</td>
<td>-0.07664</td>
<td>0.11119</td>
</tr>
<tr>
<td>after3</td>
<td>-0.23</td>
<td>-0.00052</td>
<td>0.02330</td>
<td>-0.06153</td>
<td>0.08779</td>
</tr>
<tr>
<td>after4</td>
<td>-1.08</td>
<td>-0.00263</td>
<td>0.02480</td>
<td>-0.05424</td>
<td>0.07830</td>
</tr>
<tr>
<td>after5</td>
<td>1.75**</td>
<td>0.00423</td>
<td>0.02458</td>
<td>-0.03709</td>
<td>0.08195</td>
</tr>
<tr>
<td>after6</td>
<td>0.69</td>
<td>0.00174</td>
<td>0.02579</td>
<td>-0.11347</td>
<td>0.06712</td>
</tr>
<tr>
<td>after7</td>
<td>-0.38</td>
<td>-0.00094</td>
<td>0.02499</td>
<td>-0.05726</td>
<td>0.08312</td>
</tr>
<tr>
<td>after8</td>
<td>-0.74</td>
<td>-0.00170</td>
<td>0.02335</td>
<td>-0.08191</td>
<td>0.06671</td>
</tr>
<tr>
<td>after9</td>
<td>0.53</td>
<td>0.00168</td>
<td>0.03229</td>
<td>-0.07786</td>
<td>0.21111</td>
</tr>
<tr>
<td>after10</td>
<td>-0.36</td>
<td>-0.00088</td>
<td>0.02476</td>
<td>-0.11748</td>
<td>0.07659</td>
</tr>
<tr>
<td>after11</td>
<td>-0.38</td>
<td>-0.00096</td>
<td>0.02604</td>
<td>-0.09104</td>
<td>0.06592</td>
</tr>
<tr>
<td>after12</td>
<td>-0.62</td>
<td>-0.00224</td>
<td>0.03690</td>
<td>-0.22099</td>
<td>0.15296</td>
</tr>
<tr>
<td>after13</td>
<td>-0.77</td>
<td>-0.00179</td>
<td>0.02365</td>
<td>-0.08408</td>
<td>0.07028</td>
</tr>
<tr>
<td>after14</td>
<td>-0.78</td>
<td>-0.00212</td>
<td>0.02784</td>
<td>-0.08113</td>
<td>0.06233</td>
</tr>
<tr>
<td>after15</td>
<td>-1.16</td>
<td>-0.00299</td>
<td>0.02620</td>
<td>-0.06783</td>
<td>0.14413</td>
</tr>
<tr>
<td>after16</td>
<td>1.61*</td>
<td>0.00472</td>
<td>0.02888</td>
<td>-0.10466</td>
<td>0.09270</td>
</tr>
<tr>
<td>after17</td>
<td>-1.04</td>
<td>-0.00278</td>
<td>0.02725</td>
<td>-0.07694</td>
<td>0.08443</td>
</tr>
<tr>
<td>after18</td>
<td>0.7</td>
<td>0.00177</td>
<td>0.02566</td>
<td>-0.11618</td>
<td>0.06648</td>
</tr>
<tr>
<td>after19</td>
<td>0.28</td>
<td>0.00076</td>
<td>0.02790</td>
<td>-0.09331</td>
<td>0.09737</td>
</tr>
<tr>
<td>after20</td>
<td>1.54*</td>
<td>0.00428</td>
<td>0.02834</td>
<td>-0.05548</td>
<td>0.10770</td>
</tr>
<tr>
<td>after21</td>
<td>-0.87</td>
<td>-0.00261</td>
<td>0.03046</td>
<td>-0.07721</td>
<td>0.09434</td>
</tr>
</tbody>
</table>

Notes:
*Estimate significant at the 10% level.
**Estimate significant at the 5% level.

Table 4 presents the t-test result of acquirers’ short-run Cumulative Abnormal Return.

Based on table 3, we chose 2 days prior to 2 days after the event day as our observation short-run event window. The period of observe window is consistent with the study of Chi, Sun, and Young (2011). We also test CARs from 21 days prior to 21 days after the event day and find significant
CARs around the event. The CAR of 21 days prior to 1 day after the event day (CAR(21b_1)) is positive and significant at the 1% level. Initially, we used the CAR (21b_1) as a dependent variable for our cross sectional regression models. There are no significant independent variables in this model and the adjusted $R^2$ is negative. It is concluded that CAR (21b_1) is not suitable as a dependent variable. The reason may be that the effect of other announcements contaminated the estimate of the price reactions to our observed event.

Table 4. Cumulative Abnormal Return

<table>
<thead>
<tr>
<th>Variable</th>
<th>t-value</th>
<th>N</th>
<th>Mean</th>
<th>Std Dev</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>car2b</td>
<td>1.32*</td>
<td>104</td>
<td>0.00352</td>
<td>0.02717</td>
<td>-0.05621</td>
<td>0.10793</td>
</tr>
<tr>
<td>car2b_1b</td>
<td>1.51*</td>
<td>104</td>
<td>0.00681</td>
<td>0.04614</td>
<td>-0.13651</td>
<td>0.14916</td>
</tr>
<tr>
<td>car2b_0</td>
<td>1.69*</td>
<td>104</td>
<td>0.00914</td>
<td>0.05527</td>
<td>-0.14928</td>
<td>0.24208</td>
</tr>
<tr>
<td>car2b_1a</td>
<td>1.91**</td>
<td>104</td>
<td>0.01243</td>
<td>0.06656</td>
<td>-0.13741</td>
<td>0.32058</td>
</tr>
<tr>
<td>car2b_2a</td>
<td>0.95</td>
<td>104</td>
<td>0.00705</td>
<td>0.07551</td>
<td>-0.16720</td>
<td>0.43177</td>
</tr>
</tbody>
</table>

Notes:
CAR2b means AR of 2 days prior the event.
CAR2b_1b means CAR from 2 days prior to 1 day prior the event.
CAR2b_0 means CAR from 2 days prior the event day to the event day.
CAR2b_1a means CAR from 2 days prior to 1 day after the event.
*Estimate significant at the 10% level.
**Estimate significant at the 5% level.

5.2 The Factors Driving Acquirer’s Stock Performance

Similar to Chi, Sun, and Young (2011), we chose the CAR with the highest t-value as our dependent variable. According to table 4, CAR (2b_1) is most suitable as the dependent variable. Table 5 shows the description of the dependent variable and the independent variables, which we use in the cross-sectional analysis. The regression model is as follow:

\[
CAR = a + \beta_1 \times \text{Relative Size} + \beta_2 \times \text{Conglomerate} + \beta_3 \times \text{Related Acquisition} \\
+ \beta_4 \times \text{Method of Payment} + \beta_5 \times \text{Acquisition Experience} + \beta_6 \times \text{Acquirer’s Profit before MA} \\
+ \beta_7 \times \text{Acquired Percentage} + \beta_8 \times \text{Yr2004} + \beta_9 \times \text{Yr2005} + \beta_{10} \times \text{Yr2006} \\
+ \beta_{11} \times \text{Yr2007} + \beta_{12} \times \text{Yr2008} + \beta_{13} \times \text{Yr2009} + \beta_{14} \times \text{Yr2010} + \beta_{15} \times \text{Yr2011}
\]
Table 5. Description of the Variables

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAR</td>
<td>Cumulative daily abnormal returns around M&amp;A announcement date, this study used CAR from 2 days prior to 1 day after M&amp;A announcement</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cashpmt</td>
<td>Payment method dummy variable - it’s value is 1 when it is cash payment, or else the value is 0</td>
</tr>
<tr>
<td>MAexperience</td>
<td>The number of M&amp;A cases of the acquirer prior to the observed sample</td>
</tr>
<tr>
<td>Relativesize</td>
<td>The percentage of target’s total assets divided by acquirer’s total assets</td>
</tr>
<tr>
<td>RltdMA</td>
<td>The dummy variable - the value is 1 when acquirer and target belong to the same industry, or else the value is 0</td>
</tr>
<tr>
<td>Conglomerate</td>
<td>The dummy variable - the value is 1 when acquirer and target belong to the different industry or the same industry but different sub industry sector, or else the value is 0</td>
</tr>
<tr>
<td>PercentOwned</td>
<td>The percentage of target acquired</td>
</tr>
<tr>
<td>EBITDAMargin</td>
<td>The average EBITDA margin of three years prior acquisition year</td>
</tr>
<tr>
<td>yr2004 to yr2012</td>
<td>Dummy variables showing which year the M&amp;A is announced</td>
</tr>
</tbody>
</table>

Table 6 shows the descriptive data of our variables. There are 104 observations in our test.

The variables Cashpmt and Conglomerate are the highly skewed ones; they are not normally distributed.

Table 6. The Means of Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Std Dev</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAR</td>
<td>104</td>
<td>0.01243</td>
<td>0.06656</td>
<td>-0.13741</td>
<td>0.32058</td>
</tr>
<tr>
<td>Cashpmt</td>
<td>104</td>
<td>0.91346</td>
<td>0.28252</td>
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<td>1</td>
</tr>
<tr>
<td>MAexperience</td>
<td>104</td>
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</tr>
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<td>Relativesize</td>
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</tr>
<tr>
<td>RltdMA</td>
<td>104</td>
<td>0.51923</td>
<td>0.50205</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Conglomerate</td>
<td>104</td>
<td>0.73077</td>
<td>0.44571</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>PercentOwned</td>
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<td>23.08470</td>
<td>0</td>
<td>90.5705</td>
</tr>
<tr>
<td>EBITDAMargin</td>
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<td>20.07005</td>
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<td>89.24617</td>
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<td>yr2004</td>
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<td>0.29623</td>
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</tbody>
</table>
From table 7 we can see that there are significant coefficients between two pairs of variables: RltdMA and Conglomerate, PercentOwned and MAexperience. The P-value of the coefficient between RltdMA and Conglomerate is less than 0.0001; the P-value of the coefficient between PercentOwned and MAexperience is 0.0081. Both P-values show that the coefficients between the two pairs of variables are highly significant. The highly significant coefficient will affect the test result if it is not adjusted to the cross section models. So, when we run cross section regressions, we correct the potential mistakes by running different models, excluding one of the two related variables.
Table 7. The Pearson Correlation Coefficients

<table>
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<tr>
<th></th>
<th>CAR</th>
<th>Cashpmt</th>
<th>MAexperience</th>
<th>Relativesize</th>
<th>RltdMA</th>
<th>Conglomerate</th>
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<td>(0.9856)</td>
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<td>(0.7179)</td>
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<td>-0.08714</td>
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<td>RltdMA</td>
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<td>(0.3592)</td>
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<td>Conglomerate</td>
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<td>PercentOwned</td>
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<td>(0.0081)</td>
<td>(0.2833)</td>
<td>(0.7197)</td>
<td>(0.7587)</td>
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<td>EBITDAMargin</td>
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<td>-0.19898</td>
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<td>(0.653)</td>
<td>(0.5824)</td>
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<td>(0.3973)</td>
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<td>(0.8851)</td>
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<td>(0.4428)</td>
<td>(0.4415)</td>
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<td>(0.9199)</td>
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<td></td>
<td>(0.7941)</td>
<td>(0.3106)</td>
<td>(0.6385)</td>
<td>(0.9269)</td>
<td>(0.4322)</td>
<td>(0.8197)</td>
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<td>yr2006</td>
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<td>0.19824</td>
<td>0.25412</td>
<td>-0.01255</td>
<td>0.05091</td>
</tr>
<tr>
<td></td>
<td>(0.0894)</td>
<td>(0.875)</td>
<td>(0.0437)</td>
<td>(0.0092)</td>
<td>(0.8993)</td>
<td>(0.6078)</td>
</tr>
<tr>
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<td>0.00721</td>
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<td>(0.8139)</td>
<td>(0.9421)</td>
<td>(0.5355)</td>
<td>(0.8499)</td>
<td>(0.733)</td>
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<td>(0.2893)</td>
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<td>(0.2816)</td>
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### Table 7 cont’d

<table>
<thead>
<tr>
<th>PercentOwned</th>
<th>EBITDAMargin</th>
<th>yr2004</th>
<th>yr2005</th>
<th>yr2006</th>
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<tbody>
<tr>
<td>EBITDAMargin</td>
<td>-0.08819</td>
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<tr>
<td>yr2004</td>
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<td></td>
<td>(0.8215)</td>
<td>(0.4288)</td>
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<td></td>
<td>(0.3805)</td>
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<td>(0.6154)</td>
<td>(0.4736)</td>
<td>(0.1847)</td>
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<td>(0.8418)</td>
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<table>
<thead>
<tr>
<th>yr2007</th>
<th>yr2008</th>
<th>yr2009</th>
<th>yr2010</th>
<th>yr2011</th>
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</tr>
<tr>
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</tr>
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<td>yr2008</td>
<td>-0.17623</td>
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<tr>
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<td>-0.1941</td>
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<td></td>
<td>(0.0185)</td>
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<td>(0.0483)</td>
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<td>(0.2221)</td>
<td>(0.367)</td>
<td>(0.3049)</td>
<td>(0.2369)</td>
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</table>

Notes:
The test hypothesis is Prob>IrI under H): Rho=0.
Numbers in brackets are P-value.

Table 8 shows the 6 cross section models in this study. Because there are two pairs of highly related independent variables, RltDMA and Conglomerate, PercentOwned and
MAexperience, we run Model 2 with Conglomerate but without RltdMA, and Model 3 with RltdMA but without Conglomerate. We also run Model 4 with variable PercentOwned but without variable MAexperience, and Model 5 with variable MAexperience and without variable PercentOwned. Model 1 includes all 15 variables. Model 6 is the selected model with best adjusted $R^2$ after running all possible models. Model 7 is the model which we added back all the year dummy variables based Model 6.

Table 8. The CAR predicted Models

<table>
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<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
<th>Model 7</th>
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<td>Intercept</td>
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<td>0.00071</td>
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<td>Cashpmt</td>
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<td>0.00793</td>
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<td>0.00927</td>
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<tr>
<td>MAexperience</td>
<td>-0.00029</td>
<td>-0.00034</td>
<td>-0.00030</td>
<td></td>
<td>-0.00031</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relativesize</td>
<td>-0.00038*</td>
<td>-0.00040*</td>
<td>-0.00037*</td>
<td>-0.00036*</td>
<td>-0.00037*</td>
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<tr>
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<td>0.02227*</td>
<td>0.02177</td>
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<td>0.03435</td>
<td>0.02218*</td>
<td>0.03473</td>
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<td>0.1656</td>
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<td>Adjstd $R^2$</td>
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<td>0.0494</td>
<td>0.0514</td>
<td>0.1140</td>
<td>0.0823</td>
</tr>
</tbody>
</table>

Notes:
*Estimate significant at the 10% level.
**Estimate significant at the 5% level.
***Estimate significant at the 1% level.

The results in table 8 suggest that many of our hypotheses are supported. First, the coefficient of relative size is negative and significant at the 10% level in all 7 of our models, which means the bigger the target company relative to the acquiring company, the worse the acquirer’s stock will perform. This result does not support the study of Fowler and Schmidt (1989) that there
exists a positive relationship between the size of a target firm relative to an acquiring firm. The main reason could be that in China it is less efficient to integrate the bigger acquired company into the acquirer’s existing management or business system. Second, the coefficient of related M&A is significantly positive in model 1, model 4, model 6, and model 7. We conclude that if the acquirer and target belong to the same industry, then the acquirer will perform better. The result is consistent with the research of Miller (2006).

The cash payment dummy is insignificantly positive in all models. It is consistent with the previous research; the acquirer performs better if it pays cash to the acquired company. The insignificant relationship is not surprising because our sample is highly skewed sample (over 90% of the sample uses cash as the only payment). Additionally, the high proportion of cash payments in our sample is certainly consistent with the positive CAR around event.

Acquirer’s profit before M&A is insignificant and negative in all 6 models. It suggests that investors react positively to the announcement when acquirer’s pre-merger profitability is worse; this is consistent with the research of Chi, Sun, and Young (2011). We believe the main reason is that the investors hope that M&A is an efficient strategy to improve the company’s performance.

The coefficients of Conglomerate and percentage being taken over are insignificant, and they are positive in some models and negative in the other models. So, we reject the hypothesis that the conglomerate merger and the percentage taken over influence the acquirer’s stock performance in the Chinese market.

Take a closer look at model 6. The coefficients of dummy years are significant at the beginning of our study period. However, the later dummy years are excluded from this model because of their insignificance. This suggests that at the beginning of our study period the stock markets were young, regulation was immature, the macro investment environment was sensitive to
the big events in that year, which is costly for investors. In the late years of our observation period, the market had become much more mature, and therefore exhibits the dummy years as insignificant.

In conclusion, most of our results are consistent with the previous research, and our hypotheses are therefore supported. However, there are some hypotheses that are not supported by our test, such as the important factors conglomerate merger and percentage acquired. We attributed it to that the investors did not pay attention to these economic advantages, perhaps because they paid more attention to the political advantages such as government ownership, as Chi, Sun, and Young (2011) and Tuan and Zhang (2007) reported.
6. CONCLUSION

This study examines the factors influencing the stock reaction of acquiring companies around acquisition announcement. We investigate 104 large Chinese M&A deals from 2004 to 2012 and employ a risk-adjusted market model for the event study. The empirical results show that the shareholders of acquirers generally enjoy positive abnormal returns during the short event window, and suffer a slightly loss after the acquisition news published. It could be because of the existence of information leakage.

Additional results from the cross section regression models suggest that there are a different series of factors influencing the acquirer’s stock performance. We find that an acquirer performs worse for the larger acquisition. We also find that if the acquirer and the target company belong to the same industry, then the acquirer also performs better. However, we also find that some hypotheses such as M&A experience and pre-event profit of acquiring companies are not supported in this study. It could be because the Chinese investors don’t pay a lot of attention on these economic advantages.

In general, we conclude that the acquirer gains profit in the presence of the M&A announcement, and experiences a loss shortly after the announcement. Furthermore, a new series of determinants of the acquirer’s stock performance are discovered in this study.
REFERENCES


32
Appendix 1

SAS program: AR

```sas
data newdata; set readdata;
proc means;
ods graphics on;
proc ttest data=newdata h0=0 sides=2 alpha=0.10;
  var before21 before20 before19 before18 before17 before16 before15
  before14 before13 before12 before11 before10 before9
  before8 before7 before6 before5 before4 before3
  before2 before1 eventday after1 after2 after3 after4 after5 after6
  after7 after8 after9 after10 after11 after12 after13 after14 after15 after16 after17 after18
  after19 after20 after21;
run;
ods graphics off;
proc univariate data=newdata;
  var before21 before20 before19 before18 before17 before16 before15
  before14 before13 before12 before11 before10 before9
  before8 before7 before6 before5 before4 before3
  before2 before1 eventday after1 after2 after3 after4 after5 after6
  after7 after8 after9 after10 after11 after12 after13 after14 after15 after16 after17 after18
  after19 after20 after21;
  histogram/normal;
run;
```

SAS program: CAR

```sas
data newdata; set readdata;
proc means;
ods graphics on;
proc ttest data=newdata h0=0 plots(showh0) sides=2 alpha=0.10;
  var car2b car2b_1b car2b_0 car2b_1a car2b_2a;
run;
ods graphics off;
proc univariate data=newdata;
  var car2b car2b_1b car2b_0 car2b_1a car2b_2a;
  histogram/normal;
run;
```

SAS program: Cross-Section

```sas
data newdata; set readdata;
*proc print data=newdata;
proc means;
```

**proc corr;**

**proc univariate;**

```plaintext
var CAR    Cashpmt    MAexperience    Relativesize    RltdMA    Conglomerate
```

**proc reg;**

```plaintext
model CAR=Cashpmt    MAexperience    Relativesize    RltdMA    Conglomerate    PercentOwned
```

**proc reg;**

```plaintext
model CAR=Cashpmt    MAexperience    Relativesize    Conglomerate    PercentOwned    EBITDAMargin
```

**proc reg;**

```plaintext
model CAR=Cashpmt    MAexperience    Relativesize    RltdMA    Conglomerate    PercentOwned    EBITDAMargin
```

**proc reg;**

```plaintext
model CAR=Cashpmt    MAexperience    Relativesize    RltdMA    Conglomerate    PercentOwned    EBITDAMargin
```

**proc reg;**

```plaintext
model CAR=Cashpmt    MAexperience    Relativesize    RltdMA    Conglomerate
```

**proc reg;**

```plaintext
model CAR=Cashpmt    MAexperience    Relativesize    RltdMA    Conglomerate
```

**proc reg;**

```plaintext
model CAR=Cashpmt    MAexperience    Relativesize    RltdMA    Conglomerate
```

**proc reg;**

```plaintext
model CAR=Relativesize    RltdMA    yr2004    yr2006    yr2007    yr2008;
```

**run;**
Appendix 2

Figure 1. CAR Histogram and Q-Q plot

Figure 1 shows the test if the CAR data normal distribution, bell figure distribution is the premise that we can use ttest. The figure shows that the data we are testing are normal distribution.
The SAS System       09:47 Wednesday, July 3, 2013
Appendix 3

Q-Q plot
AN EMPIRICAL EXAMINATION OF THE FACTORS THAT IMPACT ACQUIRER’S STOCK PERFORMANCE IN CHINA

Hongmei Zhang

A Thesis Submitted to the University of North Carolina Wilmington in Partial Fulfillment of the Requirements for the Degree of Master of Business Administration

Cameron School of Business
University of North Carolina Wilmington
2013

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Advisory Committee

Peter Schuhmann

Cetin Ciner

Joseph Farinella
Chair

Accepted by

Dean, Graduate School
TABLE OF CONTENTS

ABSTRACT .................................................................................................................................iii
LIST OF TABLES ...........................................................................................................................iv

1. INTRODUCTION .....................................................................................................................1
   1.1 Background ..........................................................................................................................1
   1.2 M&A MARKET ...................................................................................................................2

2. LITERATURE REVIEW ..........................................................................................................4
   2.1 ABNORMAL RETURN (AR) .................................................................................................6
   2.2 RELATIVE SIZE ..................................................................................................................7
   2.3 CONGLOMERATE ..............................................................................................................7
   2.4 RELATED ACQUISITION .................................................................................................8
   2.5 METHOD OF PAYMENT ....................................................................................................9
   2.6 ACQUISITION EXPERIENCE ............................................................................................9
   2.7 ACQUIRER’S PROFIT BEFORE M&A .............................................................................9
   2.8 PERCENTAGE ACQUIRED ..............................................................................................10

3. HYPOTHESES ......................................................................................................................11

4. DATA AND METHODOLOGY ............................................................................................13
   4.1 SAMPLE ............................................................................................................................13
   4.2 METHODOLOGY ..............................................................................................................16
       4.2.1 Time-series Regression .............................................................................................18
       4.2.2 Cross-sectional Analyses ........................................................................................19

5. RESULTS ..............................................................................................................................20
   5.1 ACQUIRER’S STOCK PERFORMANCE ..........................................................................20
   5.2 THE FACTORS DRIVING ACQUIRER’S STOCK PERFORMANCE ...............................22

6. CONCLUSION .......................................................................................................................30

REFERENCES ............................................................................................................................31
Appendix 1 ..................................................................................................................................33
Appendix 2 ..................................................................................................................................35
Appendix 3 ..................................................................................................................................37
ABSTRACT

In this study, 104 merger and acquisitions (M&A) in China from January 1, 2004, to December 31, 2012 are examined. It is calculated that the acquirer’s stock reaction to the M&A announcement and examine the factors that impact the stock performance. The results show that the acquirer’s shareholders enjoy a positive gain before the M&A announcement, but they also suffer a loss after the announcement. It is found that the stock performance of the acquirer is lower for large acquisitions. It is also found that when the target and acquirer are in the same industry, that the acquirer’s stock performance is higher. Overall, the results regarding acquirer’s stock performance are consistent with previous studies on Chinese mergers and acquisitions. However a different set of factors that drive the acquirer’s stock performance are discovered.
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>China’s M&amp;A Deals Announced from 2004 to 2012</td>
<td>14</td>
</tr>
<tr>
<td>2</td>
<td>The Selected Samples Announced from 2004 to 2012</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>Means of Acquirer’s Abnormal Return</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>Cumulative Abnormal Return</td>
<td>22</td>
</tr>
<tr>
<td>5</td>
<td>Description of the Variables</td>
<td>23</td>
</tr>
<tr>
<td>6</td>
<td>The Means of Variables</td>
<td>23</td>
</tr>
<tr>
<td>7</td>
<td>The Pearson Correlation Coefficients</td>
<td>25</td>
</tr>
<tr>
<td>8</td>
<td>The CAR Predicted Models</td>
<td>27</td>
</tr>
</tbody>
</table>
1. INTRODUCTION

1.1 Background

In the past thirty years, China has experienced tremendous economic changes. The country has emerged from economic ruins to the second largest economy in the world nowadays. China’s GDP has been growing at a rate of above 10%, from $43.66 billion in 1978 to $8.23 trillion in 2012 (The World Bank). This economic growth corresponded with institutional reforms, organizational innovations, stock market developments, and foreign investments.

Until the end of the 1970s, China’s government played a major role in the economy. State-owned Enterprise (SOE) was the only legal business entity. However the SOE was like a big broken-down vehicle blocking the road to development in China. In 1978, China started economic reforms and encouraged the development of private enterprises. During the reforms, the Chinese government gradually reduced its ownership in SOE and, as a result, has much lower shares today.

The Chinese stock exchange was created in 1991. In the late 1980s, many Chinese local governments sold shares of SOEs directly to domestic individual investors. At the beginning of the economic reforms, Over-the-counter (OTC) was almost the only trading way to raise equity capital (Wang, 2006). The trend of government ownership going private drove the creation of the two stock exchange markets: Shanghai Stock Exchange and Shenzhen Stock Exchange. Wang (2006), a scholar in the field of study, maintains that there are several characteristics in the Chinese stock market that make the market unique:

1. The government relies heavily on the stock market to raise funds for SOEs.
II. China’s stock market was developed under a repressed financial regime implemented by the Chinese central government. To ensure less potential completion among different financial assets within the domestic financial sectors, the government supervised and controlled the international capital flows.

III. In the beginning, the regulation and legislation of China’s stock markets was not developed and shareholders’ rights were not protected.

The mergers and acquisitions (M&A) market languished in a difficult economic and stock market environment. Although there were some M&A activities, it was very rare and difficult to implement.

1.2 M&A Market

M&A activities started in 1993 in China. However, the late development of the capital market and corporate law limited the number of deals in the 1990s. After 2000, China experienced a dramatic increase in M&A activity. In the year of 2011, there were two thousand and eight domestic M&A deals in China in 2012, and the total value reached $117.7 billion, which is a 25% increase from 2011 (Bloomberg). This growth has been fuelled by Chinese economic reforms and stock market development.

The performance of M&A in China is important for investors and the success of the Chinese economy. However, studying the Chinese M&A market is difficult due to its complexity. The market is complicated for several reasons such as the extensive rules and regulations, insider trading, political issues, and data issues.

The rules and regulations governing merger and acquisition activities in China are complex. Most of the M&A activities in China were friendly acquisitions. The acquirer took over
the shares of the target firm by negotiating OTC with the major shareholders of the non-circulating shares. More than 99% of the deals in China are friendly acquisitions (Bloomberg). There are also some tender offer deals, which are fueled by the administrative measures on the acquisition of listed companies. The measures were issued by the China Security Regulatory Commission (CSRC) in 2003.

Many researchers and investors believe that insider trading exists along with the merger and acquisition deals in China (Chi, Sun, and Young 2011; Tuan and Zhang, 2007), even though it is illegal to trade based on the non-public information before the merger announcement.

Many of the listed companies in China are SOEs, and the government is one of the largest share owners; the shares held by the government are non-circulating. In M&A deals, acquirers normally pay a lower price to the non-circulating shares than to the circulating shares (Tuan and Zhang, 2007).

One of the most difficult parts of doing research in China is obtaining the data. The Chinese market is not transparent. Many M&A activities are processed through a series of private negotiations. Some involved parties benefit by using inside information. This is an example of an asymmetric information problem. Moreover, some companies have several legal names, which can make some data confusing.

The study for this project focuses on 104 large M&A deals announced from 2004 to 2012. The goal is to calculate the acquirer’s stock performance, and identify the factors that impact the abnormal returns. Our methodology is similar to Chi, Sun and Young (2011), who examine a sample of Chinese market M&A deals from 1998 to 2003. We apply this method to test large M&A deals from 2004 to 2012, and to examine factors that affect the cumulative abnormal returns (CARs).
2. LITERATURE REVIEW

There is extensive research available on the stock market performance concerning M&A events in many countries throughout the world. The first question about M&A is the motive of the M&A activities; what is the theory behind them? Many researchers have examined these theories.

Berkovitch and Narayanan (1993) report that the motive of the M&A is divided into three types: synergy, agency, and hubris. Synergy is the theoretical motive for M&A activities, which means that the managers of the acquirer believe the sum of two firms is greater than their individual parts. If the market believes that the M&A creates synergy, then there will be a positive gain in the acquirer’s stock. If the market believes that the M&A benefits the manager and not the shareholders (agency problem), then the acquirer’s stock will decrease. If there are other potential acquirers competing for the deal, then the acquirer’s managers may pay a higher price to the target company, rather than the reasonable price they originally wanted to pay, this is hubris problem; if the hubris problem exists, the acquirer may gain negative or zero return. In most cases, it is difficult to distinguish which theory applies, because they may all occur simultaneously and the stock reaction is the same for different theories. Kiymaz and Baker (2008) examine large M&A deals in the US from 1989 to 2003. They find empirical samples supporting all the three motives: synergy, agency, and hubris in various mergers and acquisitions.

The results of the market performance research of involved parties are inconclusive. Most research finds that the target firm’s shareholders generally enjoy a positive gain. For example, Schwert (1996) tests 1,814 takeovers from 1975 to 1991 in America. In his sample, the target firms were listed in the New York Stock Exchange (NYSE) and the American Stock Exchange (Amex). He finds that the shareholders of these target firms earn positive abnormal returns regardless of the motivations of M&A.
The research results of the acquirer’s stock performance are also inconclusive. Servaes (1991) tests a sample of 704 M&A activities over the period between 1972 and 1987. He finds that there are positive returns to the acquirer only when the acquirer has a high Tobin’s Q Ratio (ratio of market value to book value) and the target has a low Tobin’s Q ratio. This result confirms the result of Lang, Stulz, and Walking (1989). However, Datta and Pinches (1992) find that the acquirer’s shareholders normally suffer from negative return during an M&A event. Agrawal, Jaffe, and Mandelker (1992) use a large sample of M&A deals taking place in the US market. They find that the shareholders of the acquiring firms suffered a significant loss after the M&A event; the loss is about 10% within five years after acquisition. In 2004, King and Dalton conduct a meta-analysis of 93 prior empirical studies on post-acquisition performance. The result conducts that the M&A activity does not bring gain to the shareholders of the acquirer. Instead the company experiences a long term negative financial performance. Alexandridis, Petmezas, and Travlos (2010) test 13,226 worldwide M&A deals from 1990 to 2007. They focus on acquirers from America, the United Kingdom, and Canada. They find around zero and negative abnormal return for acquiring firms.

Alexandridis, Petmezas, and Travlos (2010) find that public acquisitions generate gains, but the distribution of gains between acquirers and target firms is determined by the degree of competition in the takeover market. The acquirer pays a higher price to the target company in a competitive takeover market. There is a lower gain for the acquirer and higher gain for the target company. In a noncompetitive market, the result is reverse; there is a higher gain for the acquirer and a lower gain for the target company. The level of competition is negatively related to the acquirer’s returns and positively related to target company’s returns.
The research regarding M&A in China is relatively new mainly because M&A development has a short history, and the stock market development and corporate law in China is still not as mature as those in developed countries. Zhang (2003) investigates 1,216 M&A cases related to listed companies from 1993 to 2002 in China. He finds the stock prices of targeted companies generally increased 20.09%, while the shareholders of acquirer suffered a loss of 16.76% through the whole M&A procedure. He doubts if M&A creates net value for the society as a whole.

Tuan and Zhang (2007) test 22 tender offer deals in China from 2002 to 2006. They find that the target firm’s CAR increase 17.7% before acquisition announcement, but decrease 4.14% after the announcement. They conclude that illegal insider trading exists in the Chinese stock market. Years later, Chi, Sun, and Young (2011) also find a positive pre-acquisition gain of the acquirer’s shareholders and a negative post-acquisition gain. Tuan and Zhang (2007) maintain that the China market is not strong form efficient. This means that all information is not instantly reflected in stock prices. In fact, individuals with inside information can purchase the stock before the merger is announced and sell it after that; this trading strategy generates a 17.7% return. However, trading on inside information is illegal and the risk of being sent to jail is not quantified in this model.

2.1 Abnormal Return (AR)

An abnormal return can be calculated to measure the impact that an event has on stock price performance. It is the difference between the actual stock return and expected return. Wansley, Lane, and Yang (1983) use abnormal return to test a target company’s post-acquisition stock performance. Tuan and Zhang (2007), as well as Chi, Sun, and Young (2011), also employ
abnormal return and cumulative abnormal return in order to examine acquirer and target firm’s gain. Numerous research studies (Kiymaz and Baker, 2008; Tuan and Zhang, 2007) find positive ARs for acquired firms, but negative ARs for acquiring firms, Kiymaz and Baker (2008) conclude this phenomenon as the wealth moves from shareholders of acquiring firms to the shareholders of the target firms.

Many researchers have examined the factors that impact the short event window Cumulative Abnormal Return (CAR) concerning the M&A announcement. The following provides a summary of the variables that have been examined in the existing literature.

2.2 Relative Size

Relative size of the target firm is the ratio of target firm’s size divided by the acquirer’s size. Some researchers (Chi, Sun, and Young, 2011) use the firm’s total asset as its size. Fowler and Schmidt (1989) and Kiymaz and Baker (2008) find that there is a strong positive relationship between the target firm’s relative size and the acquirer’s performance. This result is consistent with that of McDougall, Robinson, and DeNisi (1992), who find that large-scale entries into new ventures result in better performance than small-scale entries. Larger relative size of target company to acquiring company means that the acquiring company is a larger scale entry into a new business.

2.3 Conglomerate

Conglomerate firms are defined by Rumelt (1974) as “the firms exhibiting significant unrelated product-market diversification”. A conglomerate merger can lower the risk of the acquirer. However, from the standpoint of the acquirer’s shareholders, the motive of reduced risk
through a conglomerate should be rejected on priority grounds. If the company falls into a
distressed situation, then the shareholders have only the remnants of the company property after
the company has paid all the bills. The shareholders will prefer reduce risk through other ways,
such as holding stocks from different companies. In this way, the conglomerate merger can be viewed as an agency problem that the managers pursue reducing their own employment risk. The literature provides support for both motives. Research by Campa and Kedia (2002) indicates that firms that pursue diversification will conduct a value-enhancing strategy. Not like simply acquire value of acquired companies through M&A activities, acquirers who pursue conglomerate are more likely to integrate the business of them and the acquired firms. This research is consistent with the risk reduction motive. However the empirical research (Loughran and Vijh 1997) finds that many firms do not benefit from the merger diversification. This is consistent with the agency problem theory.

2.4 Related Acquisition

Miller (2006) finds that firms that acquire related diversified businesses perform better than those that acquire the same business or totally different business. King, Dalton, Daily, and Covin (2004) think that the key issue for diversifying firms is to select alternative strategies available, such as acquisition for entering new businesses. Theoretically, related acquisitions will enable the acquirer’s resources to be productively leveraged in new businesses, because the resources will be valued higher and relevant.
2.5 Method of Payment

There are two fundamental methods by which an acquiring firm can pay for an acquisition: cash and stock shares. From a financial point of view, an acquiring firm’s managers will seek to finance an acquisition in the most profitable way. They will finance with cash if they believe their firm’s stock is undervalued and will pay stocks if they think it is overvalued. Some investors view the payment method as a signal of the acquirer manager’s expectations of the new integrated company. Wansley, Lane, and Yang (1983) report that the acquiring firms that paid cash for purchasing target firms experienced significant positive stock abnormal returns while the acquiring firms which paid securities had much less abnormal returns. Kiymaz and Baker (2008) report that the payment method is statistically significant with acquirer stock abnormal returns.

2.6 Acquisition Experience

Fowler (1989) reports the positive relationship between the acquirer’s prior acquisition experience and the AR of the acquirer’s shareholders. The report indicates that the company exhibits a better performance when the number of prior acquisition activities increases. Haleblian and Finkelstein (1999) examine 449 acquisitions and find that the acquisition performance generally increases with the acquirer’s prior acquisition experience. They explain that the experienced acquirer can better integrate the two firms after a takeover.

2.7 Acquirer’s Profit Before M&A

Free cash flow theory predicts that many acquirers will tend to have very good performance before M&A (Jensen, 1986), because the managers try to improve their post-merger employment position in the new company by improving their performance. If the market is
efficient, then the good financial position of the acquirer will be reflected in stock price, and a positive stock return before M&A would be expected. However, Chi, Sun, and Young (2011) find the significant negative return of the stock and acquirer profit before M&A. They explain that M&A in China is viewed by investors as a method to improve or even save the performance of the acquiring companies.

2.8 Percentage Acquired

Considering the efficiency of the business consolidation after M&A, those firms that acquired a significant portion of a target firm may be able to exert more influence than the firms that acquired a smaller percentage. Fowler and Schmidt (1989) examined 42 industrial manufacturing firms in America. The results indicate that the percentage acquired explained a significant portion of the change in abnormal return on the acquirer’s securities. They explain that as the percentage of the acquiring firm increases, more control is exerted over the target firms.

The study for this project calculates the stock performance (CAR) of the acquiring firms using an event study methodology. The variables that impact the CAR are estimated, and all of the relevant variables in existed literature are examined.
3. HYPOTHESES

Our study examines mergers and acquisitions in China. We measure the acquirer’s stock performance and examine the factors that impact this figure. The stock performance we examined in this study is the acquirer’s stock market reaction in the presence of M&A announcement news. If there are benefits from the merger, then we would observe a positive relationship between M&A announcement and acquirer’s stock performance. In this study, we use a short-term event window Cumulative Abnormal Returns (CAR) to measure the stock performance.

There are many factors that could influence the acquirer’s CAR. The most common and tested ones by previous studies are:

- Conglomerate merger
- Deal payment method
- Related acquisition
- Percentage of target acquired
- The target and acquirer’s relative size
- Acquirer’s previous acquire experience
- Acquirer’s profitability before M&A

Conglomerate and related acquisition should positively influence the acquirer’s stock, because the more diversified business the firm has, the better it will perform (Campa and Kedia, 2002). Many researchers (Kiymaz and Baker, 2008) believe payment method is one of the main factors that influence acquirer’s performance. The hypothesis is that the acquirer’s managers normally have more inside information than other involved parties. They will choose the best way to pay the target’s owners. The payment method is an important signal that reflects the manager’s expectation of the company’s future performance. It is obvious that the higher the percentage of the target take
over, the more influence the deal will bring to the acquirer. Some studies (Fowler and Schmidt, 1989; Kiymaz and Baker, 2008) report that the target’s relative size to the acquirer has a positive influence on the acquirer’s performance. The rationale is that a larger firm will have more impact on the acquirer’s stock.

We also test the acquirer’s previous acquisition experience. If the acquirer has experience, then they will probably know how to better integrate the two companies after a merger. Furthermore, if the investors pay attention to it, then the acquirer will probably have a better stock performance. The acquirer’s profit before M&A also matters. Theoretically, the acquirers need enough free cash flow to pay the deals, so they tend to earn a higher profit before the deals. Some researchers (Chi, Sun, and Young, 2011), however, believe that a low profit will lead to a higher CAR, since there is more upside for these companies.
4. DATA AND METHODOLOGY

4.1 Sample

Our sample consists of 104 of the largest M&A deals announced from 2004 to 2012 in China. The acquirers are listed companies in the three Chinese stock markets. Any companies that have missing data or multiple M&A announcements in a three months period were excluded from the sample. Another event announcement within three months will cause a confounding effect and contaminate the estimates of the price reactions to the event. To examine from 2004 to 2012 is because during this period strategic M&A were prevalent in China. Strategic acquisitions represent horizontal mergers that involve firms in closely related industries. Normally, the strategic acquisitions are friendly takeovers, and both acquiring and acquired companies have operating synergy advantages (Tuan and Zhang, 2007).

Table 1 presents the total M&A deals and values from 2004 through 2012, which are partitioned into domestic acquisitions, China’s acquisitions abroad, and foreign acquisitions in China. The table indicates that the M&A market generally trends upward from 2004 to 2011, but it experienced a slight decrease in 2012. If only 2012 data is taken into account, then domestic M&A dominated the whole market, which accounts for 77% of the whole market.
Table 1. China’s M&A Deals Announced from 2004 to 2012

<table>
<thead>
<tr>
<th>Year</th>
<th>Domestic Acquisitions</th>
<th>China Acquisitions Abroad</th>
<th>Foreign Acquisitions in China</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Deals</td>
<td>Value Billion CNY</td>
<td>Number of Deals</td>
<td>Value Billion CNY</td>
</tr>
<tr>
<td>2004</td>
<td>802</td>
<td>316.51</td>
<td>63</td>
<td>25.15</td>
</tr>
<tr>
<td>2005</td>
<td>1218</td>
<td>156.35</td>
<td>58</td>
<td>87.9</td>
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<tr>
<td>2006</td>
<td>1273</td>
<td>410.14</td>
<td>102</td>
<td>131.53</td>
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<tr>
<td>2007</td>
<td>1649</td>
<td>601.23</td>
<td>226</td>
<td>194.23</td>
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<tr>
<td>2008</td>
<td>1610</td>
<td>826.43</td>
<td>218</td>
<td>293.57</td>
</tr>
<tr>
<td>2009</td>
<td>1398</td>
<td>522.61</td>
<td>246</td>
<td>337.95</td>
</tr>
<tr>
<td>2010</td>
<td>2168</td>
<td>641.24</td>
<td>253</td>
<td>388.76</td>
</tr>
<tr>
<td>2011</td>
<td>1818</td>
<td>412.73</td>
<td>278</td>
<td>336.25</td>
</tr>
<tr>
<td>2012</td>
<td>1316</td>
<td>376.33</td>
<td>192</td>
<td>262.83</td>
</tr>
</tbody>
</table>

Source: Bloomberg

Table 2 provides data involving our final sample. Panel A presents the frequency of M&A deals by year and provides the evidence of event clustering. Panel B shows the breakdown of deals by the method of payment, which shows that in China, 91.35% deals were paid by cash. Panel C lists the number of the sample companies in the Shanghai, Shenzhen, and Hongkong stock exchange markets. Panel D shows the percentage of the ownership of the target firms acquired by acquiring firms. Panel E and Panel F list if the acquiring firms and acquired firms are related mergers and if they are conglomerate mergers. It is particularly interesting to note that 73.08% of the deals in our sample are conglomerate acquisitions. This is consistent with the notion that most M&A are strategic mergers in China, meaning that the managers focus on synergy.
Table 2. The Selected Samples Announced from 2004 to 2012

Panel A: Frequency of Sample by Year

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Deals</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>7</td>
<td>6.73</td>
</tr>
<tr>
<td>2005</td>
<td>10</td>
<td>9.62</td>
</tr>
<tr>
<td>2006</td>
<td>10</td>
<td>9.62</td>
</tr>
<tr>
<td>2007</td>
<td>20</td>
<td>19.23</td>
</tr>
<tr>
<td>2008</td>
<td>12</td>
<td>11.54</td>
</tr>
<tr>
<td>2009</td>
<td>15</td>
<td>14.42</td>
</tr>
<tr>
<td>2010</td>
<td>19</td>
<td>18.27</td>
</tr>
<tr>
<td>2011</td>
<td>6</td>
<td>5.77</td>
</tr>
<tr>
<td>2012</td>
<td>5</td>
<td>4.81</td>
</tr>
<tr>
<td>Total</td>
<td>104</td>
<td>100</td>
</tr>
</tbody>
</table>

Panel B: Frequency by payment method

<table>
<thead>
<tr>
<th>Payment Method</th>
<th>Number of Deals</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>95</td>
<td>91.35</td>
</tr>
<tr>
<td>Stock</td>
<td>3</td>
<td>2.88</td>
</tr>
<tr>
<td>Unclear</td>
<td>6</td>
<td>5.77</td>
</tr>
<tr>
<td>Total</td>
<td>104</td>
<td>100</td>
</tr>
</tbody>
</table>

Panel C: Stock Exchange Market

<table>
<thead>
<tr>
<th>Market</th>
<th>Number of Deals</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shanghai</td>
<td>38</td>
<td>36.54</td>
</tr>
<tr>
<td>Shenzhen</td>
<td>25</td>
<td>24.04</td>
</tr>
<tr>
<td>Hongkong</td>
<td>41</td>
<td>39.42</td>
</tr>
<tr>
<td>Total</td>
<td>104</td>
<td>100</td>
</tr>
</tbody>
</table>

Panel D: Ownership

<table>
<thead>
<tr>
<th>Ownership Acquired</th>
<th>Number of Deals</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;5%</td>
<td>37</td>
<td>35.58</td>
</tr>
<tr>
<td>&lt;5%</td>
<td>67</td>
<td>64.42</td>
</tr>
<tr>
<td>Total</td>
<td>104</td>
<td>100</td>
</tr>
</tbody>
</table>
Table 2 cont’d

Panel E: Related M&A

<table>
<thead>
<tr>
<th></th>
<th>Number of Deals</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same industry</td>
<td>54</td>
<td>51.92</td>
</tr>
<tr>
<td>Different industry</td>
<td>50</td>
<td>48.08</td>
</tr>
<tr>
<td>Total</td>
<td>104</td>
<td>100</td>
</tr>
</tbody>
</table>

Panel F: Conglomerate M&As

<table>
<thead>
<tr>
<th></th>
<th>Numbers of Deals</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conglomerate</td>
<td>76</td>
<td>73.08</td>
</tr>
<tr>
<td>Non-conglomerate</td>
<td>28</td>
<td>26.92</td>
</tr>
<tr>
<td>Total</td>
<td>104</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Bloomberg

4.2 Methodology

We design this M&A event study in the way of Boehmer (2002). First, we select the samples according to the following criteria:

2. Acquiring and acquired firms are both Chinese firms.
3. Acquiring firms are public firms listed in Shanghai, Shenzhen, or Hong Kong Stock Market.
4. Acquirers do not have another M&A announcement within the 3 month period.
5. The observation does not contain missing data or incomplete data.

After a clean sample is obtained, we collect daily returns for the sample firms and the corresponding stock market index. Boehmer (2002) suggests that a reasonable length for the period would be 200 days before to 5 days after the event. We choose 145 trading days before to 21 trading days after the event as our study period because all of the 104 observations have clean and complete stock price records within this period. 145 days to 22 days prior to the event is defined as
the predicted period; 21 days prior to 21 days after the event as the research event period. We believe that this predicted period is sufficiently long to allow efficient estimates, and ends at a reasonable time before the announcement. Reasonable time means the estimate period does not mistakenly include the possible event reaction days. Normally, the acquiring companies experience price increases during the 20 trading days preceding the actual announcement (Boehmer 2002).

The next step is to employ a risk-adjusted market model for each firm during the estimate period. We record the estimated intercepts and slope coefficients of each firm after regressing their daily returns on contemporaneous market returns.

Then, we use the estimated coefficients and intercepts to compute expected returns of each firm during the event window. We expect the stock price will react to the event. Theoretically, if Chinese markets are efficient with respect to the announcement, the stock price will quickly reflect the news. However, empirically it’s impossible to pinpoint precisely the time when the announcement reaches investors. Tuan and Zhang (2007) report that the Chinese acquirers experience substantial stock-price “run-ups” prior to the announcement; they conclude that this is caused by the leakage of the inside information, which triggered the insider trading about the upcoming acquisition. Therefore, the event window should be at a reasonable period. If it is too short, then it may not include the time when investors truly learn about the event. If it is too long, then other information will make the test harder and the result will be less reliable. Since it is suspected that there exists the pre-event information leakage (Tuan and Zhang, 2007), we analyze the event reaction in the period of 21 days before to 21 days after the event day.
4.2.1 Time-series Regression

There are many factors that could cause the stock returns to increase or decrease on a given day. Therefore, in this study we employ the concept of abnormal return (AR). AR is the difference between actual return and the estimated return; the estimated return is the expected price movement without the event announcement. The AR is only the portion of the price movement actually caused by the M&A event. In this way, we extract the impact of the M&A announcement on the acquirer’s stock returns from the total returns. This is a standard event study methodology that is used extensively in the finance literature. (See Brown and Warner (1985))

To compute the daily AR of each firm, we use the most frequently used approach: the risk-adjusted market model.

\[ R_{jt} = \alpha_j + \beta_j R_{mt} + \varepsilon_{jt} \]

Where

\( \alpha_j, \beta_j \) = the intercept and coefficient, respectively, of the linear relationship between the return of stock j and the returns of the stock market where it traded;

\( R_{jt} \) = the return on stock j at time t;

\( R_{mt} \) = the return on the corresponding stock market composite index at time t;

\( \varepsilon_{jt} \) = the unsystematic component of firm j’s return.

Abnormal returns, \( AR_T \), are calculated for firm j on event window time T and the return predicted from the market model:

\[ AR_T = R_{jt} - (\alpha_j + \beta_j R_{mt}) \]

We estimate the parameters of the model through using the time-series data from the estimation period. In this way, we calculate the daily AR of each individual acquirer from actual returns during the event window and the corresponding estimated returns.
4.2.2 Cross-sectional Analyses

In the spirit of previous research, the acquirer’s stock performance during the event period is determined by many factors. To find the determinant factors in China’s market, we include the 7 most common factors in the basic regression model, which are:

Relative size
Conglomerate
Related acquisition
Method of payment
Acquisition experience
Acquirer profit before M&A
The percentage acquired

We include year dummy variables in the basic model as well, because the Chinese takeover market is still in its early stage, and the regulation is not as mature as that in developed countries. The big events happening in some years may make the macro market environment different in that year. For example, the Olympics were held in Beijing in year 2008, and the World Expo was held in Shanghai in year 2010.

Based on above theories, the basic regression model is specified as follows:

\[
CAR = a + \beta_1 \times \text{Relative Size} + \beta_2 \times \text{Conglomerate} + \beta_3 \times \text{Related Acquisition} \\
+\beta_4 \times \text{Method of Payment} + \beta_5 \times \text{Acquisition Experience} + \beta_6 \times \text{Acquirer’s Profit before M&A} \\
+\beta_7 \times \text{Acquired Percentage} + \beta_8 \times Yr2004 + \beta_9 \times Yr2005 + \beta_{10} \times Yr2006 \\
+\beta_{11} \times Yr2007 + \beta_{12} \times Yr2008 + \beta_{13} \times Yr2009 + \beta_{14} \times Yr2010 + \beta_{15} \times Yr2011
\]
5. RESULTS

5.1 Acquirer’s Stock Performance

Table 3 shows the t-test result of acquirer’s abnormal return (AR) from 21 days before the event to 21 days after the event. From the t-value, the significant ARs are randomly distributed throughout the event window. Whether the value of the Mean is positive or negative, it is distributed randomly. If we take a closer look at the several days around the event day, the values of Mean from 5 days before to 1 day after the event are always positive, and they are always negative from 2 days after to 4 days after the event day. The values of the Mean on 2 days prior and 2 days after the event day are significant at the 10% and 5% level. This is consistent with most of the previous research (Chi, Sun, and Young, 2011). We conclude that this phenomenon is caused by the investors trying to arbitrage profit based on insider information, then reap profit and get out of the market after the information gets published.

<table>
<thead>
<tr>
<th>Variable</th>
<th>t-value</th>
<th>N</th>
<th>Mean</th>
<th>Std Dev</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>before21</td>
<td>-0.62</td>
<td>104</td>
<td>-0.00146</td>
<td>0.02411</td>
<td>-0.07623</td>
<td>0.08178</td>
</tr>
<tr>
<td>before20</td>
<td>1.01</td>
<td>104</td>
<td>0.00251</td>
<td>0.02534</td>
<td>-0.08487</td>
<td>0.07025</td>
</tr>
<tr>
<td>before19</td>
<td>0.38</td>
<td>104</td>
<td>0.00116</td>
<td>0.03125</td>
<td>-0.09951</td>
<td>0.16214</td>
</tr>
<tr>
<td>before18</td>
<td>0.5</td>
<td>104</td>
<td>0.00142</td>
<td>0.02897</td>
<td>-0.08498</td>
<td>0.14563</td>
</tr>
<tr>
<td>before17</td>
<td>-0.43</td>
<td>104</td>
<td>-0.00109</td>
<td>0.02603</td>
<td>-0.10317</td>
<td>0.07533</td>
</tr>
<tr>
<td>before16</td>
<td>1.89**</td>
<td>104</td>
<td>0.00553</td>
<td>0.02978</td>
<td>-0.06291</td>
<td>0.11463</td>
</tr>
<tr>
<td>before15</td>
<td>0.34</td>
<td>104</td>
<td>0.00093</td>
<td>0.02793</td>
<td>-0.09097</td>
<td>0.12134</td>
</tr>
<tr>
<td>before14</td>
<td>1.84**</td>
<td>104</td>
<td>0.00433</td>
<td>0.02398</td>
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<td>0.10507</td>
</tr>
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<td>-0.18</td>
<td>104</td>
<td>-0.00048</td>
<td>0.02723</td>
<td>-0.07843</td>
<td>0.11550</td>
</tr>
<tr>
<td>before12</td>
<td>-1.31*</td>
<td>104</td>
<td>-0.00348</td>
<td>0.02710</td>
<td>-0.10216</td>
<td>0.07488</td>
</tr>
<tr>
<td>before11</td>
<td>0.02</td>
<td>104</td>
<td>0.00005</td>
<td>0.02764</td>
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<td>0.10125</td>
</tr>
<tr>
<td>before10</td>
<td>1.66*</td>
<td>104</td>
<td>0.00582</td>
<td>0.03587</td>
<td>-0.06541</td>
<td>0.19813</td>
</tr>
<tr>
<td>before9</td>
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<td>104</td>
<td>-0.00284</td>
<td>0.02884</td>
<td>-0.10159</td>
<td>0.09021</td>
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</table>
Table 3 cont’d

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>before8</td>
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<td>0.00311</td>
<td>0.03426</td>
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<tr>
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<td>0.03068</td>
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</tr>
<tr>
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<td>104</td>
<td>0.00352</td>
<td>0.02717</td>
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</tr>
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<td>104</td>
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<td>0.03051</td>
<td>-0.10073</td>
</tr>
<tr>
<td>eventday</td>
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<td>104</td>
<td>0.00233</td>
<td>0.03369</td>
<td>-0.07848</td>
</tr>
<tr>
<td>after1</td>
<td>0.81</td>
<td>104</td>
<td>0.00330</td>
<td>0.04150</td>
<td>-0.13164</td>
</tr>
<tr>
<td>after2</td>
<td>-1.78**</td>
<td>104</td>
<td>-0.00538</td>
<td>0.03089</td>
<td>-0.07664</td>
</tr>
<tr>
<td>after3</td>
<td>-0.23</td>
<td>104</td>
<td>-0.00052</td>
<td>0.02330</td>
<td>-0.06153</td>
</tr>
<tr>
<td>after4</td>
<td>-1.08</td>
<td>104</td>
<td>-0.00263</td>
<td>0.02480</td>
<td>-0.05424</td>
</tr>
<tr>
<td>after5</td>
<td>1.75**</td>
<td>104</td>
<td>0.00423</td>
<td>0.02458</td>
<td>-0.03709</td>
</tr>
<tr>
<td>after6</td>
<td>0.69</td>
<td>104</td>
<td>0.00174</td>
<td>0.02579</td>
<td>-0.11347</td>
</tr>
<tr>
<td>after7</td>
<td>-0.38</td>
<td>104</td>
<td>-0.00094</td>
<td>0.02499</td>
<td>-0.05726</td>
</tr>
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<td>after8</td>
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<td>104</td>
<td>-0.00170</td>
<td>0.02335</td>
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</tr>
<tr>
<td>after9</td>
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<td>104</td>
<td>0.00168</td>
<td>0.03229</td>
<td>-0.07786</td>
</tr>
<tr>
<td>after10</td>
<td>-0.36</td>
<td>104</td>
<td>-0.00088</td>
<td>0.02476</td>
<td>-0.11748</td>
</tr>
<tr>
<td>after11</td>
<td>-0.38</td>
<td>104</td>
<td>-0.00096</td>
<td>0.02604</td>
<td>-0.09104</td>
</tr>
<tr>
<td>after12</td>
<td>-0.62</td>
<td>104</td>
<td>-0.00224</td>
<td>0.03690</td>
<td>-0.22099</td>
</tr>
<tr>
<td>after13</td>
<td>-0.77</td>
<td>104</td>
<td>-0.00179</td>
<td>0.02365</td>
<td>-0.08408</td>
</tr>
<tr>
<td>after14</td>
<td>-0.78</td>
<td>104</td>
<td>-0.00212</td>
<td>0.02784</td>
<td>-0.08113</td>
</tr>
<tr>
<td>after15</td>
<td>-1.16</td>
<td>104</td>
<td>-0.00299</td>
<td>0.02620</td>
<td>-0.06783</td>
</tr>
<tr>
<td>after16</td>
<td>1.61*</td>
<td>104</td>
<td>0.00472</td>
<td>0.02988</td>
<td>-0.10466</td>
</tr>
<tr>
<td>after17</td>
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<td>104</td>
<td>-0.00278</td>
<td>0.02725</td>
<td>-0.07694</td>
</tr>
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<td>after18</td>
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<td>104</td>
<td>0.00177</td>
<td>0.02566</td>
<td>-0.11618</td>
</tr>
<tr>
<td>after19</td>
<td>0.28</td>
<td>104</td>
<td>0.00076</td>
<td>0.02790</td>
<td>-0.09331</td>
</tr>
<tr>
<td>after20</td>
<td>1.54*</td>
<td>104</td>
<td>0.00428</td>
<td>0.02834</td>
<td>-0.05548</td>
</tr>
<tr>
<td>after21</td>
<td>-0.87</td>
<td>104</td>
<td>-0.00261</td>
<td>0.03046</td>
<td>-0.07721</td>
</tr>
</tbody>
</table>

Notes:
*Estimate significant at the 10% level.
**Estimate significant at the 5% level.

Table 4 presents the t-test result of acquirers’ short-run Cumulative Abnormal Return.

Based on table 3, we chose 2 days prior to 2 days after the event day as our observation short-run event window. The period of observe window is consistent with the study of Chi, Sun, and Young (2011). We also test CARs from 21 days prior to 21 days after the event day and find significant
CARs around the event. The CAR of 21 days prior to 1 day after the event day (CAR(21b_1)) is positive and significant at the 1% level. Initially, we used the CAR (21b_1) as a dependent variable for our cross sectional regression models. There are no significant independent variables in this model and the adjusted R^2 is negative. It is concluded that CAR (21b_1) is not suitable as a dependent variable. The reason may be that the effect of other announcements contaminated the estimate of the price reactions to our observed event.

Table 4. Cumulative Abnormal Return

<table>
<thead>
<tr>
<th>Variable</th>
<th>t-value</th>
<th>N</th>
<th>Mean</th>
<th>Std Dev</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>car2b</td>
<td>1.32*</td>
<td>104</td>
<td>0.00352</td>
<td>0.02717</td>
<td>-0.05621</td>
<td>0.10793</td>
</tr>
<tr>
<td>car2b_1b</td>
<td>1.51*</td>
<td>104</td>
<td>0.00681</td>
<td>0.04614</td>
<td>-0.13651</td>
<td>0.14916</td>
</tr>
<tr>
<td>car2b_0</td>
<td>1.69*</td>
<td>104</td>
<td>0.00914</td>
<td>0.05527</td>
<td>-0.14928</td>
<td>0.24208</td>
</tr>
<tr>
<td>car2b_1a</td>
<td>1.91**</td>
<td>104</td>
<td>0.01243</td>
<td>0.06656</td>
<td>-0.13741</td>
<td>0.32058</td>
</tr>
<tr>
<td>car2b_2a</td>
<td>0.95</td>
<td>104</td>
<td>0.00705</td>
<td>0.07551</td>
<td>-0.16720</td>
<td>0.43177</td>
</tr>
</tbody>
</table>

Notes:
CAR2b means AR of 2 days prior the event.
CAR2b_1b means CAR from 2 days prior to 1 day prior the event.
CAR2b_0 means CAR from 2 days prior the event day to the event day.
CAR2b_1a means CAR from 2 days prior to 1 day after the event.
*Estimate significant at the 10% level.
**Estimate significant at the 5% level.

5.2 The Factors Driving Acquirer’s Stock Performance

Similar to Chi, Sun, and Young (2011), we chose the CAR with the highest t-value as our dependent variable. According to table 4, CAR (2b_1) is most suitable as the dependent variable.

Table 5 shows the description of the dependent variable and the independent variables, which we use in the cross-sectional analysis. The regression model is as follow:

\[ CAR = \alpha + \beta_1 \times \text{Relative Size} + \beta_2 \times \text{Conglomerate} + \beta_3 \times \text{Related Acquisition} + \beta_4 \times \text{Method of Payment} + \beta_5 \times \text{Acquisition Experience} + \beta_6 \times \text{Acquirer’s Profit before MA} + \beta_7 \times \text{Acquired Percentage} + \beta_8 \times Yr2004 + \beta_9 \times Yr2005 + \beta_{10} \times Yr2006 + \beta_{11} \times Yr2007 + \beta_{12} \times Yr2008 + \beta_{13} \times Yr2009 + \beta_{14} \times Yr2010 + \beta_{15} \times Yr2011 \]
Table 5. Description of the Variables

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAR</td>
<td>Cumulative daily abnormal returns around M&amp;A announcement date, this study used CAR from 2 days prior to 1 day after M&amp;A announcement</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cashpmt</td>
<td>Payment method dummy variable - it’s value is 1 when it is cash payment, or else the value is 0</td>
</tr>
<tr>
<td>MAexperience</td>
<td>The number of M&amp;A cases of the acquirer prior to the observed sample</td>
</tr>
<tr>
<td>Relativesize</td>
<td>The percentage of target’s total assets divided by acquirer’s total assets</td>
</tr>
<tr>
<td>RltdMA</td>
<td>The dummy variable - the value is 1 when acquirer and target belong to the same industry, or else the value is 0</td>
</tr>
<tr>
<td>Conglomerate</td>
<td>The dummy variable - the value is 1 when acquirer and target belong to the different industry or the same industry but different sub industry sector, or else the value is 0</td>
</tr>
<tr>
<td>PercentOwned</td>
<td>The percentage of target acquired</td>
</tr>
<tr>
<td>EBITDAMargin</td>
<td>The average EBITDA margin of three years prior acquisition year</td>
</tr>
<tr>
<td>yr2004 to yr2012</td>
<td>Dummy variables showing which year the M&amp;A is announced</td>
</tr>
</tbody>
</table>

Table 6 shows the descriptive data of our variables. There are 104 observations in our test.

The variables Cashpmt and Conglomerate are the highly skewed ones; they are not normally distributed.

Table 6. The Means of Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Std Dev</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAR</td>
<td>104</td>
<td>0.01243</td>
<td>0.06656</td>
<td>-0.13741</td>
<td>0.32058</td>
</tr>
<tr>
<td>Cashpmt</td>
<td>104</td>
<td>0.91346</td>
<td>0.28252</td>
<td>0</td>
<td>1</td>
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<tr>
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</tr>
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<td>0.00375</td>
<td>260.4806</td>
</tr>
<tr>
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<td>0.50205</td>
<td>0</td>
<td>1</td>
</tr>
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Table 6 cont’d

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From table 7 we can see that there are significant coefficients between two pairs of variables: RltdMA and Conglomerate, PercentOwned and MAexperience. The P-value of the coefficient between RltdMA and Conglomerate is less than 0.0001; the P-value of the coefficient between PercentOwned and MAexperience is 0.0081. Both P-values show that the coefficients between the two pairs of variables are highly significant. The highly significant coefficient will affect the test result if it is not adjusted to the cross section models. So, when we run cross section regressions, we correct the potential mistakes by running different models, excluding one of the two related variables.
Table 7. The Pearson Correlation Coefficients

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Notes:
The test hypothesis is Prob>IrI under H): Rho=0.
Numbers in brackets are P-value.

Table 8 shows the 6 cross section models in this study. Because there are two pairs of
highly related independent variables, RltDMA and Conglomerate, PercentOwned and
MAexperience, we run Model 2 with Conglomerate but without RltdMA, and Model 3 with RltdMA but without Conglomerate. We also run Model 4 with variable PercentOwned but without variable MAexperience, and Model 5 with variable MAexperience and without variable PercentOwned. Model 1 includes all 15 variables. Model 6 is the selected model with best adjusted R² after running all possible models. Model 7 is the model which we added back all the year dummy variables based Model 6.

Table 8. The CAR predicted Models

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<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
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Notes:
*Estimate significant at the 10% level.
**Estimate significant at the 5% level.
***Estimate significant at the 1% level.

The results in table 8 suggest that many of our hypotheses are supported. First, the coefficient of relative size is negative and significant at the 10% level in all 7 of our models, which means the bigger the target company relative to the acquiring company, the worse the acquirer’s stock will perform. This result does not support the study of Fowler and Schmidt (1989) that there
exists a positive relationship between the size of a target firm relative to an acquiring firm. The main reason could be that in China it is less efficient to integrate the bigger acquired company into the acquirer’s existing management or business system. Second, the coefficient of related M&A is significantly positive in model 1, model 4, model 6, and model 7. We conclude that if the acquirer and target belong to the same industry, then the acquirer will perform better. The result is consistent with the research of Miller (2006).

The cash payment dummy is insignificantly positive in all models. It is consistent with the previous research; the acquirer performs better if it pays cash to the acquired company. The insignificant relationship is not surprising because our sample is highly skewed sample (over 90% of the sample uses cash as the only payment). Additionally, the high proportion of cash payments in our sample is certainly consistent with the positive CAR around event.

Acquirer’s profit before M&A is insignificant and negative in all 6 models. It suggests that investors react positively to the announcement when acquirer’s pre-merger profitability is worse; this is consistent with the research of Chi, Sun, and Young (2011). We believe the main reason is that the investors hope that M&A is an efficient strategy to improve the company’s performance.

The coefficients of Conglomerate and percentage being taken over are insignificant, and they are positive in some models and negative in the other models. So, we reject the hypothesis that the conglomerate merger and the percentage taken over influence the acquirer’s stock performance in the Chinese market.

Take a closer look at model 6. The coefficients of dummy years are significant at the beginning of our study period. However, the later dummy years are excluded from this model because of their insignificance. This suggests that at the beginning of our study period the stock markets were young, regulation was immature, the macro investment environment was sensitive to
the big events in that year, which is costly for investors. In the late years of our observation period, the market had become much more mature, and therefore exhibits the dummy years as insignificant.

In conclusion, most of our results are consistent with the previous research, and our hypotheses are therefore supported. However, there are some hypotheses that are not supported by our test, such as the important factors conglomerate merger and percentage acquired. We attributed it to that the investors did not pay attention to these economic advantages, perhaps because they paid more attention to the political advantages such as government ownership, as Chi, Sun, and Young (2011) and Tuan and Zhang (2007) reported.
6. CONCLUSION

This study examines the factors influencing the stock reaction of acquiring companies around acquisition announcement. We investigate 104 large Chinese M&A deals from 2004 to 2012 and employ a risk-adjusted market model for the event study. The empirical results show that the shareholders of acquirers generally enjoy positive abnormal returns during the short event window, and suffer a slightly loss after the acquisition news published. It could be because of the existence of information leakage.

Additional results from the cross section regression models suggest that there are a different series of factors influencing the acquirer’s stock performance. We find that an acquirer performs worse for the larger acquisition. We also find that if the acquirer and the target company belong to the same industry, then the acquirer also performs better. However, we also find that some hypotheses such as M&A experience and pre-event profit of acquiring companies are not supported in this study. It could be because the Chinese investors don’t pay a lot of attention on these economic advantages.

In general, we conclude that the acquirer gains profit in the presence of the M&A announcement, and experiences a loss shortly after the announcement. Furthermore, a new series of determinants of the acquirer’s stock performance are discovered in this study.
REFERENCES


Appendix 1

SAS program: AR
\texttt{data} newdata; \texttt{set} readdata;
\texttt{proc means;}
ods graphics on;
\texttt{proc ttest data=newdata h0=0 sides=2 alpha=0.10;}
var before21 before20 before19 before18 before17 before16 before15 before14 before13 before12 before11 before10 before9 before8 before7 before6 before5 before4 before3 before2 before1 eventday after1 after2 after3 after4 after5 after6 after7 after8 after9 after10 after11 after12 after13 after14 after15 after16 after17 after18 after19 after20 after21;
run;
ods graphics off;
\texttt{proc univariate data=newdata;}
var before21 before20 before19 before18 before17 before16 before15 before14 before13 before12 before11 before10 before9 before8 before7 before6 before5 before4 before3 before2 before1 eventday after1 after2 after3 after4 after5 after6 after7 after8 after9 after10 after11 after12 after13 after14 after15 after16 after17 after18 after19 after20 after21;
histogram/normal;
run;

SAS program: CAR
\texttt{data} newdata; \texttt{set} readdata;
\texttt{proc means;}
ods graphics on;
\texttt{proc ttest data=newdata h0=0 sides=2 alpha=0.10;}
var car2b car2b_1b car2b_0 car2b_1a car2b_2a;
run;
ods graphics off;
\texttt{proc univariate data=newdata;}
var car2b car2b_1b car2b_0 car2b_1a car2b_2a;
histogram/normal;
run;

SAS program: Cross-Section
\texttt{data} newdata; \texttt{set} readdata;
*\texttt{proc print data=newdata;}
\texttt{proc means;}

proc corr;
proc univariate;
proc reg;
proc reg;
proc reg;
proc reg;
proc reg;
proc reg;
  model CAR=Relativesize   RltdMA   yr2004 yr2006 yr2007 yr2008;
run;
Figure 1 shows the test if the CAR data normal distribution, bell figure distribution is the premise that we can use ttest. The figure shows that the data we are testing are normal distribution.
Appendix 3

Q-Q plot