Performance and Characteristics of Acquiring Firms in the Chinese Stock Markets

Jing Chi*

Department of Economics and Finance, Massey University

Qian Sun

Xiamen University

Martin Young

Department of Economics and Finance, Massey University

Abstract

We investigate the performance and characteristics of acquiring firms on 1148 M&A on the two Chinese stock markets from 1998 to 2003. Using the market model, the CAPM model and the buy-and-hold methods, we find significantly positive abnormal returns before (6 months) and upon M&A announcements, while the long-run abnormal returns (6 months) after M&A are insignificant. Within our sample, cash is the dominant payment method and the competition during M&A is low. The cross-sectional analysis on acquirers' market performance upon announcements shows that the political advantages of acquiring firms have a significantly positive impact on the acquirers' performance, while the economic advantages do not. Cross-provincial M&A and better corporate governance create value to acquiring firms. Finally, cash payment impacts positively and regulation development impacts negatively the performance of acquiring firms during M&A.

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Keywords: M&A; acquiring firms; China

*Corresponding author, Address: Department of Economics and Finance, Massey University, Private Bag 11-222, Palmerston North, New Zealand, Phone: +64-6-3505799-7369, Fax: +64-6-3505651, Email: j.chi@massey.ac.nz

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1. Introduction

Examining the wealth effects of mergers and acquisitions (M&A) is a popular area for research in finance. To date, however, little research has been done on the M&A in China, despite the rapid development of the Chinese stock markets. M&A in China are different from those in mature markets and have their own characteristics. To our knowledge, this is the first comprehensive study on the M&A in China.

Although M&A started in China in 1993, they did not become popular until the late 1990s due to the late development of the capital market and corporate law. Also, the share segmentation system[1] in China makes tender offers extremely hard. For the Chinese stock markets, in only a few M&A cases, both acquiring firms and target firms are publicly listed companies. Among the majority of the listed-company-related M&A transactions, there are two major kinds. The first kind happens when a listed company acquires shares or assets of another company, the vast majority of which are unlisted companies. The second type takes place when a listed company changes shareholders, and in most cases, the buyers and sellers of the assets or stocks

[1] Since the vast majority of Chinese listed companies are converted from the state-owned enterprises (SOEs) and the Chinese government does not want to give up controls of these big SOEs completely, there are several categories of shares in Chinese listed companies, hence share segmentation system. The main categories of shares are the state-owned shares, the legal person shares, A-shares and B-shares. The state-owned shares and the legal person shares are non-tradable. They cannot be traded on the stock exchanges, but can only be exchanged between the government and corporations upon negotiation. Therefore, these shares are very hard to value. The A-shares and B-shares are tradable shares that are listed on the Shanghai and Shenzhen Stock Exchanges, and they can be traded by all investors.

of the listed target firms are both unlisted companies. Between 1998 and 2003, two third of the total M&A transactions belong to the first group and one third belong to the second.

The two types of M&A are very different in many aspects. For the first group, the listed companies are acquirers, which acquire either shares or assets of another company. For the second group, the listed companies are the target companies. However, in most cases, the buyers and sellers are government related unlisted companies and the acquisition of the shares or assets of the listed company is through the over-the-counter (OTC) market, rather than through the stock exchange. The reason for this is that there are different types of ownership within a listed company in China, and the prices for obtaining different types of shares can be very different. It is always much more expensive to buy listed shares through the stock market than negotiating with the government or a holding company to obtain non-tradable shares through the OTC market. To keep the cost low, buyers would naturally try to acquire non-tradable shares or assets of listed companies at lower prices, rather than the tradable shares at much higher prices.

As the second type of M&A is not strictly M&A transactions in the stock market, in this paper, we focus only on the transactions of the first group, studying the market performance and characteristics of the listed acquirers. As the government plays an important role in the Chinese stock markets and most of the Chinese listed companies were state-owned enterprises, interesting questions to ask are whether M&A in China create value for listed acquirers in general; what the characteristics of these M&A are; and whether the government is trying to assist the stated-owned listed companies by

engaging in M&A.

The remainder of the paper is organized as follows. Section 2 summarizes the relevant literature; Section 3 introduces the data and methodology in this study; Section 4 presents and explains the acquiring firms' performance, Section 5 reports the results on the cross sectional analysis, and Section 6 concludes.

2. Literature Review

Merger and acquisition activity has generated a voluminous of research over the past 30 years. The pre- and post-acquisition behaviours of both acquirers and target firms are examined, and efforts have been made to isolate and measure the impact of the M&A from other events that affect the firm. In general, evidences show that shareholders of target firms earn abnormal returns regardless of the motivations of M&A and types of deals (Franks, et al., 1991; and Schwert, 1996), while the results on acquiring firms are more ambiguous. Some researchers report negative returns to acquirers (Servaes, 1991; and Franks, et al., 1991), and others find zero or positive returns to acquirers (Lang et al., 1989; and Schwert, 1996).

The two basic theories related to M&A are non-value or value maximizing behaviours (Halpern, 1983). Under non-value maximizing behaviour, acquisitions are aimed to maximize growth in sales or assets or to control a company. Shareholders of target firms would gain, while those of bidding firms would lose. With the value maximization motivation there should be a positive expected economic gain from the acquisitions. Therefore, shareholders of target firms would gain, while those of

bidding firms would at least earn a normal rate of return.

Common hypotheses on motives of M&A include synergy, agency motive and hubris, as summarized by Kiymaz and Baker (2008). Synergy hypothesis documents that mergers create value to the shareholders of the combined firms. Examples of studies that support this hypothesis are Maquieira et al. (1998) and Andrade et al. (2001). The agency motive suggests that M&A occur to increase the welfare of the management in the acquiring firms at the cost of acquirers' shareholders, while the hubris hypothesis posits that managers over-estimate the value of target companies and high payment of the premiums can damage acquiring firms' shareholder interests. Mueller and Sirower (2003) study 168 mergers from 1978 to 1990 and find considerable support for the agency and hubris hypotheses, but little support for the synergy hypothesis.

So far, studies on M&A in China are very few and the sample sizes are very small also. Agyenim et al. (2008) considers the strategic motivation and performance of Chinese cross-border M&A activities of 27 deals that took place on the Shanghai and Shenzhen stock markets between 2000 and 2004. The study finds that cross-border M&A formation by Chinese firms are primarily motivated by market development (that is, increasing market share) to enable faster entry into new markets, promote diversification and obtain foreign advanced technology and other resources. In terms of wealth creation, this study finds that cross-border M&A create value for Chinese acquiring firms. Tuan et al. (2007) examine the profitability of merger arbitrage strategies in China by using a sample of 22 tender offer bids from 2002 to 2006. They find that the average cumulative abnormal return (CAR) of target firms for voluntary tender offers is significantly positive from day -30 to the announcement day 0, while

significantly negative from day 0 to the resolution day. The mandatory tender offer events, however, have no impact on the share price of target firms.

3. Data and methodology

In this study, we include the M&A when a listed company acquires shares or assets of another company from 1998-2003 in China. The data is provided by China Shenzhen GTA (Guo Tai An) Information Technology Co., Ltd. After we clean the sample for missing data, small size[2] and multiple transactions[3], there are 1148 transactions remaining[4], which belong to two major categories of type one M&A: listed companies acquiring assets of target firms (412 cases) and acquiring stocks of target firms (736 cases). In this study, we group these two alternatives.

We first provide some statistical summaries to give an understanding of the characteristics of the M&A transactions and the acquiring firms in China. Table 1 shows the number of M&A in each year during the sample period. It can be seen that the number of M&A was comparatively low in 1998 and 1999 with 129 transactions in each year. Since late 2000, M&A increased significantly to over 200 transactions in each year, and it reached to highest of 253 in 2003.

Table 2 provides details on the types of transactions in our study. Out of the 736 stock-acquiring M&A transactions, in 87.36% of cases, acquiring firms buy legal

[2] We exclude small transaction where either the transaction value is less than RMB 1,000,000 or the acquiring firm is bidding for less than 5% of the target firm.

[3] In this study, we examine only one transaction of one acquiring company within any 12-month period.

[4] There are 19 target firms that are listed companies in this study.

person shares and only 10% buy state-owned or stated-owned legal person shares. Almost none of the acquiring companies acquire tradable shares via the stock exchange. This is consistent with the practical situation in the Chinese stock market. Out of the three major categories of share ownership in a Chinese company, legal person shares are easiest and cheapest to obtain. To acquire state-owned shares, the process and the paper work involved are complicated, while to buy tradable shares in the stock exchanges requires higher prices to be paid. Therefore, the legal person shares become the natural choice when acquiring shares from the target firms. In terms of the acquiring size, over 50% of M&A transactions acquire more than half of the shares in the target firms. Lastly, for the 412 assets-acquiring M&A, 58.01% acquire fixed assets and 23.06% acquire current assets.

The question may be asked as to why companies would acquire assets rather than equity. In China, before the economic reform started in 1978, the shareholding corporation did not exist and all Chinese companies were solely state-owned. In the last 30 years, the government has introduced different forms of corporations and has also transformed some SOEs to shareholding companies. However, there are still many Chinese companies that do not have shares. To acquire parts of this kind of company, obtaining assets is the only option.

Table 3 summaries the characteristics of the M&A transactions for our sample. The characteristics of M&A in China we focus on include the political and economic connections between acquiring and target firms, the payment method for the transactions and the competition during the M&A. Table 3.1 shows that in 71.43% of M&A, acquiring firm and target firm belong to the same province and are supervised

by the same provincial government. Table 3.2 indicates that 51.92% of M&A transactions are connected to the related party transactions. In Table 3.3, a surprisingly high proportion of M&A in China (87.28%) uses cash as the only payment method. If we add any other transactions that use cash as one of the payment methods, the proportion increases to 94.59%. Out of the total sample of 1148 M&A in our study, only one transaction uses stock-for-stock as the payment method. Given the difficulty in valuing non-tradable shares under the share segmentation system and the strict regulation of the China Securities Regulatory Commission (CSRC) on the tradable share issuance, the popularity of cash payment for M&A transactions is easily understood. Table 3.4 shows that 88.85% of M&A in China have only one acquiring firm involved and 10.71% has multiple acquiring firms, indicating the competition during M&A is weak. Finally, Table 3.5 indicates that, from the available data, just in over half of the M&A the acquiring firm and target firm belong to the same industry before the transaction. The result shows that the business focus of the M&A transactions in China is not very strong.

Table 4 shows the characteristics of acquiring firms in our study. We only focus on acquiring firms since the majority of target firms are unlisted firms, and the information on target firms are very hard to obtain. First, we investigate the ownership of the acquiring firms. Table 4.1 shows the ownership structure of acquiring firms before the M&A. Previous research, such as Sun et al. (2002), shows that the average proportions of the state-owned shares, the legal person shares and tradable shares in Chinese listed companies are 1/3, 1/3 and 1/3. From table 4.1, we can see that M&A happens often when acquiring firms have either very high (higher than 50% -- 29.97% of cases) or very low (lower than 10% -- 38.5% of cases) state-

owned shares. The situation is very similar for the legal person shares as well. The acquiring firms with either a very low proportion of legal person shares (34.76% chance) or very high (31.27% chance) tend to initiate M&A. Since the state-owned and legal person shares have different characters and implications, it will be interesting to see how acquirers' ownership structure before M&A affects their performance. We will discuss this further in Section 4. Table 4.2 provides the shareholder information of acquiring firms. For the top shareholder's holding, 33.01% of acquiring firms has the top shareholder owning more than 50% of the firm, while in 34.32% of acquiring firms, the sum of the second to tenth shareholding is below 10%. Table 4.3 shows that nearly 50% of M&A happen when the sum of the second to tenth shareholding is less than half of the top one shareholder and 64.28% of M&A happen when the sum of the second to tenth shareholding is not more than that of the top one shareholder. The results in Tables 4.1-4.3 indicate that listed companies with concentrated ownership tend to initiate M&A.

After exploring the characteristics of M&A and acquirers, we then investigate both the short-run and long-run market performance of acquiring firms around the M&A announcements. In this study, we use the Shanghai All A-Share Index and Shenzhen All A-Share Index as the proxies for the market portfolio as with most Chinese research (Liu and Li, 2000; Chi and Padgett, 2005).

When studying the stock performance in the short event window (from day -2 to day 2), we employee the standard market model. When studying the long-run stock performance, we use three methods to ensure the consistency of our results, including

the market model, the Capital Asset Pricing Model (CAPM)[5] and the buy-and-hold-abnormal return approach. Since the M&A transactions take place often for Chinese listed companies, we have to balance between multiple transactions and the total number of sample size. We keep one M&A transaction for one company within any 12 months period. Therefore, our long-run study period is 13 months (from -6 months to +6 month related to the transaction). We use this 13-month period to investigate how acquiring firms perform around the M&A announcements and whether there is any information leakage or inside trading in the Chinese stock market.

The descriptions of our study methods on the long-run performance are as follows. First, when employing the market model, we use the regression model as follows to estimate the alpha and beta of the sample firm:

$$\tilde{R}_{it} = \alpha_i + \beta_i \tilde{R}_{Mt} + \tilde{\varepsilon}_{it}$$

Where $\tilde{R}_{it}$ is the monthly return for firm *i* in month t, and $\tilde{R}_{mt}$ is the monthly return for the market index in month t. $\tilde{e}_{it}$ is the error term. Alpha_i and beta_i are the regression coefficients for firm *i*. The estimation period is defined from 42 months to 7 months (totally 36 months) prior to the event.

Using the market model, the abnormal return of security *i* for period *t* is:

$$AR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{Mt})$$

Where $\hat{\alpha}_i$ and $\hat{\beta}_i$ are estimated market model coefficients.

[5] Although using the CAPM model in the Chinese markets needs caution, as the risk free rate in China is not determined by the market, we employ this methodology for the robustness of the results on the long-run performance of acquirers.

As an alternative to the market model, some researchers use the CAPM model in either the Sharpe-Lintner or the zero-Beta versions. Here we use the Sharpe-Lintner version of the CAPM and the abnormal returns over the sample periods under consideration are defined as follows:

$$AR_{it} = R_{it} - [R_{ft} + \hat{\beta}_i (R_{Mt} - R_{ft})]$$

Where $\hat{\beta}_i$ is estimated market model coefficient and R_{ft} is the monthly risk free rate in China.

The average risk-adjusted return on a sample of n stocks for each event window is the equally weighted arithmetic average of the risk-adjusted returns:

$$AR_t = \frac{1}{n} \sum_{i=1}^{n} AR_{it}$$

The cumulative abnormal return, CAR_i, for firm *i* over any event period is:

$$CAR_i = \sum_{t=t1}^{t2} AR_{it}$$

Thirdly, the buy-and-hold market adjusted return is defined as:

$$BHAR_i = \left[\prod_{t=-6}^{6} (1 + r_{it}) - 1\right] - \left[\prod_{t=-6}^{6} (1 + r_{mt}) - 1\right]$$

We calculate the buy-and-hold market adjusted return for our sample between six months before to six months after the announcement month and for several shorter time intervals.

The mean market-adjusted buy-and-hold return is defined as:

$$\overline{BHAR} = \frac{1}{n}\sum_{i=1}^{n} BHAR_i$$

We assume that the returns follow the normal distribution, and we use the *t*-test to test the significance of the abnormal returns, cumulative abnormal returns and buy-and-hold abnormal returns. A significantly positive/negative abnormal return would suggest that there is profit/loss beyond the compensation justified by the underlying risk.

4. Discussion of the acquiring firms' performance

We investigate both the short-run (from day -2 to day 2) and long-run (from month -6 to month 6) market performance (abnormal returns, cumulative abnormal returns and buy-and-hold abnormal returns) of acquiring firms around M&A. For daily abnormal returns, from Table 5.1 we can see that the average returns in day -1 and day 0 are both significantly positive at the 1% level. The average daily abnormal returns after the announcements are negative and only significant on day 2. The average cumulative abnormal returns for four short-term event windows (-2/2, -1/1, -2/0 and -1/0) are all positively significant at the 10% or 1% levels. The result shows a strong positive market effect of the M&A announcements on the acquiring firms. In order to ensure the positive abnormal returns around M&A announcements are not caused by other positive announcements such as earnings or dividends announcements, we re-run the test on the sample (576 observations out of the total 931) with M&A announcements outside the annual report disclosure period. The results, reported in Table 5.2, are the same if not stronger than the results on the whole sample, which

confirms that the positive abnormal returns of acquiring firms around the M&A announcements are not driven by other effects.

For monthly abnormal returns, Table 6 reports the results using all three methods (the market model, the CAPM model and the buy-and-hold abnormal returns). When using the market model, we find in Table 6.1 that the average abnormal return in Month 0 is significantly positive at the 5% level, and the average cumulative abnormal returns from month -6 to 6 and from month -3 to 3 are both insignificant. The average cumulative abnormal return before the announcement (month -6/-1) is much better than after the announcement (month 1/6). Using the Sharpe version CAPM model, the results are much stronger. From Table 6.2, we can see that the average monthly abnormal returns in Month -5, Month -3, Month -2, Month -1, Month 0 and Month 4 are all positively significant at the 5% or 1% levels. During the 13-month event window, only the average monthly abnormal return in Month 1 is negatively significant at the 10% level. The average cumulative abnormal returns for event windows (month -6/6, -3/3 and -6/-1) are all significantly positive at the 1% level. The same is seen in Table 6.1 where the average cumulative abnormal return before the announcement (month -6/-1) is much better than the one after the announcement (month 1/6), and the average CAR after the announcement (month 1/6) is insignificantly different from zero. The results using the buy-and-hold method in Table 6.3 is the same as the results using the CAPM model and CAR calculation in Table 6.2. In summary, in the long-run, the acquiring firms perform either better or at least the same as the market portfolio and the performance is much better in the six months before the announcement than in the six months after the announcement. The results indicate a leakage of information and the sign of insider trading.

The results on short-run and long-run performance show significant positive market reaction to acquiring companies before and upon M&A, and non-negative market performance after the transaction. Next we examine the characteristics of acquiring firms' performance and value change.

There is a considerable literature explaining the drivers of the value change of M&A. The variables found to be related to the acquiring firms' returns include managerial share ownership, company holdings of cash, firm leverage, Tobin's Q, management overconfidence, industry relatedness between acquiring and target firms, competition during acquisitions, payment methods and relative size of the target to the bidder. However, due to the special characteristics of the Chinese stock markets and the M&A transactions, as well as the difficulties of obtaining data on target firms[6], in this study we only focus on some available variables which would possibly influence the value change for acquiring firms around M&A in the cross-sectional regression analysis.

First, the share segmentation system is a special feature in the Chinese stock markets. In general, a listed company has three main categories of shares: the state-owned shares, the legal person shares and tradable A- and/or B-shares. The state-owned shares are held by the government or the government controlled companies, while the legal person shares are held by a corporation. Research has shown that the state-owned and the legal person shares influence the firm performance of Chinese listed companies differently, even though there is no consensus on the results. Sun and Tong

[6] Since majority of the target firms are unlisted, the information on target firms is impossible to collect.

(2003) evaluate the performance changes of 634 SOEs listed on the Chinese stock markets upon share issuing privatization (SIP) from 1994 to 1998 and find that the state ownership has negative impacts on firm performance after SIP while the legal-person ownership has positive impacts. Studying the partial privatization of 53 Chinese SOEs that were listed on the Hong Kong Stock Exchange during July 1993 to December 2002, Jia et al. (2005) find that firm performance after SIPs on Hong Kong is negatively related to the state ownership, but positively related to the legal-person ownership. However, recently study by Cheung et al. (2008) suggests that the effects of local government ownership may be different from those of the central government ownership, and the local government ownership reduces the firm value of Chinese listed companies, while the central government ownership does increase the firm value. In addition, when Chen et al. (2009) focus on who actually owns the shares in the Chinese listed companies, they find that the operating efficiency varies across the type of controlling shareholders. Their empirical evidence suggests that SOEs controlled by the central government perform the best; SOEs controlled by the State Asset Management Bureaus and private controlled firms perform the worst; while the performance of SOEs controlled by the local government is in the middle.

In our study, we are also interested in the impact of different ownership on the M&A performance. Compared to the studies on the Chinese SIPs, we believe that the ownership structure could influence the market performance of listed acquirers upon announcements very differently. In the Chinese stock markets, the listing status is a very valuable resource to a company and the performance of the listed companies and the stock markets in general is crucial to the success of the Chinese economic reform. M&A may well be a way for listed companies to acquire good assets or companies to

improve their own performance. While previous literature finds that state ownership are inefficient and could not maximize the firm value, in the case of M&A, listed companies with more state ownership could presumably be more powerful and have better connections to organize a better deal for themselves. While, due to the lack of M&A experience and management skill, other Chinese listed companies with less state ownership (more legal person ownership) could have less desirable market performance upon announcements. We use the percentage of the state-owned and legal person shares of acquirers before M&A as proxies, and expect that the state ownership of acquirers before M&A will be positively related to the acquirers' announcement market performance, while the legal person ownership will be negatively related to acquirers' performance.

Following the arguments in Cheung et al. (2008) and Chen et al. (2009), we also believe that M&A take place within a region (a province) could have lower market returns than the ones cross regions. The reasons we put forward are 1) cross province M&A might have political support beyond just the local government; 2) the choice of resources (target firms) for M&A is much larger for cross province transactions; and 3) the diversification effect is stronger in cross province M&A. We use a dummy variable to measure whether the acquirers and targets are in the same province and under the same provincial government's supervision. We expect that when M&A happens across provinces, acquirers will have better performance upon announcements.

According to Jensen (1986), free cash flow theory predicts that many acquirers will tend to have very good performance before M&A. We believe that if investors are

confident about the management of listed acquirers, the financial position of acquirers before M&A should be positively related to the acquirers' market performance at announcements. However, if our assumptions for our ownership hypothesis holds, and M&A in China is viewed by investors as a method to improve the performance of the listed companies, then there will be a negative relationship between the financial performance of acquirers before M&A and acquirers' announcement returns. We use the average three-year profitability of acquirers before M&A as a proxy for the financial performance, since profitability is the major criteria for delisting, and we expect a significantly negative coefficient on this variable.

Besides the special features of the Chinese stock markets which could possibly impact the acquirers' market performance upon announcements, we also examine some standard hypotheses and variables found to be significant in the M&A studies.

The first common finding is that the M&A transaction payment matters. Huang and Walkling (1989), among others, find that cash payment leads to zero or slightly positive returns at M&A announcement, while stock-related deals lead to significant negative returns. This is consistent with the theory that managers time the issuance of stocks and announce the issuance of seasoned stocks when they believe their shares are over-valued. The interesting characteristic of M&A in China is that the majority of the transactions (87.28%) are solely paid by cash and the stock-for-stock transaction only occurs once in our whole sample. The probable reason for this phenomenon is that within any shareholding company, there are different kinds of stocks — the stated owned shares, the legal person shares, employee shares, and possibly tradable shares. The valuation of tradable and non-tradable shares is not the same. While tradable

shares have trading prices in the market, non-tradable shares do not. Therefore, it is much easier to value a transaction using cash rather than shares, especially non-tradable shares. In addition, due to the strict regulation of the CSRC, issuing stocks is an extremely complicated process. However, if the conventional theory holds, in comparison with other payment methods in our sample, cash payment will be positively related to the returns of acquiring firms. Nevertheless, with majority of the sample using cash, we question whether or not we are able to see the difference in the cross-sectional regression results.

Second, the M&A regulation can be costly to investors. Studies in the US (Weir, 1983; Asquith et al., 1983), document that antitrust actions benefit acquiring and target firms' competitive rivals and increased regulation is related to the wealth decreasing of M&A. As we discussed earlier, the M&A in the Chinese stock markets only started in 1993. However, the development of the Chinese stock market and regulation has been fast-growing. On 26 June 2000 and 29 September 2002, the CSRC announced two major regulations in order to monitor and regulate the M&A transactions taking place in the Chinese stock markets. If the development of regulation does decrease the wealth of M&A, then we should see that the acquiring firms' returns reduce over time within our sample period.

Third, due to the strong influence of the government and the government related shareholders, it is interesting to see whether the level of corporate governance has any effect on the M&A value change. The variable we use here is called "dilution of shareholding", which is the shareholding of the second to tenth shareholders divided by the shareholding of the first shareholder. If the dilution is strong, which means that

the company is not purely controlled by the first shareholder, the power balance among big shareholders will increase the rationalization of the M&A decisions and hopefully the value of acquiring firms.

Finally, literature has shown that focus creates value, while diversification destroys value. Researchers, such as Macquieria et al. (1998), Morgan et al. (2000) and Walker (2000), find a positive relationship between the returns around M&A and the business relatedness between the acquiring and target firms. This finding makes sense if synergies arise from the merger of the two firms that are closely related. In our study, the variable that measures the closeness of the acquiring and target firms are whether acquiring and target firms belong to the same industry (same industry dummy). If focus does create value, industry dummy will be positively related to the acquiring firms' returns.

In summary, we have the following hypotheses in our cross-sectional analysis.

H_1: There is a positive relationship between the state ownership of acquirers before M&A and the acquiring firms' returns upon announcements.

H_2: There is a negative relationship between the legal person ownership of acquirers before M&A and the acquiring firms' returns upon announcements.

H_3: There is a negative relationship between the same government dummy and the acquiring firms' returns upon announcements.

H_4: There is a negative relationship between the acquirers' profitability before M&A and the acquiring firms' returns upon announcements.

H_5: There is a positive relationship between the cash payment dummy and the acquiring firms' returns upon announcements.

H_6: There is a positive relationship between the dilution of shareholding and the acquiring firms' returns upon announcements.

H_7: There is a negative relationship between the year dummy and the acquiring firms' returns upon announcements. (Acquiring firms' excess returns decrease as time passes.)

H_8: There is a positive relationship between the same industry dummy and the acquiring firms' returns upon announcements.

The empirical model is estimated using Ordinary Least Squares (OLS) and is given as follows:

$$\text{CAR}_i = \beta_1 \text{state-shares}_i + \beta_2 \text{same-government}_i + \beta_3 \text{profit-before}_i + \beta_4 \text{cash-payment}_i + \beta_5 \text{dilution-of-shareholding}_i + \beta_6 \text{Year1998}_i + \beta_7 \text{Year1999}_i + \beta_8 \text{Year2000}_i + \beta_9 \text{Year2001}_i + \beta_{10} \text{Year2002}_i + \beta_{11} \text{Year2003}_i + \beta_{12} \text{same-industry}_i + u_i$$

$$\text{CAR}_i = \beta_1 \text{legal-shares}_i + \beta_2 \text{same-government}_i + \beta_3 \text{profit-before}_i + \beta_4 \text{cash-payment}_i + \beta_5 \text{dilution-of-shareholding}_i + \beta_6 \text{Year1998}_i + \beta_7 \text{Year1999}_i + \beta_8 \text{Year2000}_i + \beta_9 \text{Year2001}_i + \beta_{10} \text{Year2002}_i + \beta_{11} \text{Year2003}_i + \beta_{12} \text{same-industry}_i + u_i$$

We use the market model cumulative abnormal returns over two days before M&A to the announcement day (CAR_i) as the dependent variable in the regression analysis. The independent variables include the percentage of the state ownership of acquirers before the merger (state-shares), the percentage of the legal person ownership of acquirers before the merger (legal-shares), the same government dummy, the average

three-year profitability of acquirers before M&A (profit-before), cash payment dummy, dilution of shareholding, the year dummies and the same industry dummy. Since the two independent variables (state-shares and legal-shares) are highly correlated, we separate them into two regression equations. Table 7 gives a description of the variables used in the study. The characteristic values of the variables are reported in Tables 3 and 4.

5. Estimation results

The results of the regressions on the acquiring firms' performance and value change, which has been corrected for heteroskedasticity whenever necessary, are presented in Table 8. We have estimated the correlations between independent variables and these estimates do not reveal any correlations that are sufficiently high to warrant concern. Since the data on the same industry dummy is very limited, we first run the regressions by leaving this variable out.

In Table 8, the results show that most of our hypotheses can be rejected. First, the different ownership does impact the acquirers' performance differently. Unlike the findings in the study of Chinese SIPs, we find that the state ownership has significantly positive influence on the acquirers' performance, while the legal person ownership has significantly negative impact. Both coefficients are statistically significant at the 1% level. The acquirers that have more state ownership may have more connections through the government, and therefore are able to organize themselves better deals during M&A. While other companies with less government influence (with more legal person ownership) might not be able to perform in the

same way during M&A due to the poor management skill and lack of experience that are common among Chinese listed companies. Second, we find that in both regressions, M&A cross provinces performs better than the ones taking place within one province, even though the coefficients are significant just over the 10% level. Interestingly, the acquirers' profitability before the merger is negatively related to the acquiring firms' returns upon announcements at the 1% significance level in both regressions.

The results indicate that M&A by listed acquirers in the Chinese stock markets can well be a way for the government to bail out the poorly performed listed companies in order to ensure the good performance of the Chinese stock markets and the reputation of the Chinese economic reform; or a way for the poorly performed listed companies to save themselves. Investors react more positively on the announcements when acquirers' pre-merger profitability is worse, since they do hope or believe M&A can be an efficient method to save a company or improve a company's performance. In addition, since the Chinese stock markets are young and M&A are very new to most of Chinese companies, common acquirers (with more legal person ownership) cannot do as well as the ones that have strong government connections (with more state ownership). Moreover, M&A cross provinces implies more choices on target firms and stronger government connections (the central maybe, rather than the local government connections) than transactions within one province, and therefore M&A cross provinces performs generally better.

Moving to other standard variables, we find that cash payment dummy is significantly positive at the 5% level in one regression but insignificant in another. It is not

surprising given the high proportion of the skewed sample (over 87% of the sample uses cash as the only payment). However, the high proportion of cash payment in our sample is certainly consistent with the abnormal positive returns of acquiring firms around M&A.

Another variable that has some level of explanatory power for the acquiring firms' excess returns is the dilution of shareholders. The coefficients of this variable are significantly positive at the 10% level in both regressions. The results indicate that when the power of the 2^{nd} – 10^{th} shareholders and the top shareholder is more balanced, investors will be more confident and optimistic about the rationality of the M&A decisions.

Finally, we find that in both regressions, the positive significance of year dummies is reducing from the beginning of the study period to the end, showing that as the regulation has been developed over time, the acquiring firms' returns decrease. This result is consistent with the previous literature that the regulation is costly for investors.

We then rerun both regressions by adding the same industry dummy. We did not find any significant results on this new variable, but other results remain the same (the results are not reported in the paper). This further indicates that during M&A in China, investors pay more attention to the political advantages of acquirers (such as government ownership and connections) than the economic advantages (like pre-merger profitability and industry relatedness).

Finally we compare the profitability of acquiring firms before and after M&A to see whether M&A is actually a useful tool to improve the financial performance for acquirers. The results are reported in Table 9. For the total sample, the mean and median profitability for the three-year average before M&A are 3.942% and 4.53% and for the M&A year are 3.394% and 3.86%. Since the *t*-test of the mean difference is strongly affected by the outliners, here we only use the Wilcoxon/Mann-Whitney test of the median difference, and we find that the median profitability does decrease significantly at the 1% level. This result shows that from the fundamental viewpoint, M&A does not necessarily lead to added value to Chinese listed acquirers, although it might be the intention to achieve this at the first place[7]. Besides the test on the total sample, we also explore the profitability change for a special sample that has the negative three-year average profitability before M&A, since according to the CSRC's regulation, if a listed company has negative profitability for three years continuously, then the shares of this company will be suspended for trading and the company could be delisted. Interestingly we find that, for this sub-sample, the median profitability does increase significantly at the 1% level after M&A. This is very different from the result for the total sample. From Table 9, we can conclude that M&A cannot necessarily improve the financial performance of listed acquirers in China, at least not in a short-run, but M&A does appear to help retain the listing status of the acquiring firms.

6. Conclusions

[7] We did not use the longer time period financial data after M&A to study the fundamental change of listed acquirers, as the multiple M&A transactions for one acquirer are very common.

To our knowledge, this study is the first comprehensive study on M&A in the Chinese stock markets. Due to the specialties on the Chinese M&A transactions, we focus on 1148 M&A from 1998-2003 where a listed company acquires stocks or assets from another target firm which most often is not listed. We find the number of M&A has increased over time and the majority of shares acquired during M&A are the legal person shares. As for the transactions, majority of them use cash as the only payment method and have no competition during the M&A. It is very common for acquiring and target firms to belong to the same provincial government supervision and to have related party transactions during the M&A. However, with available data, in only half of the sample, acquiring and target firms belong to the same industry before the M&A. In terms of the characteristics of acquiring firms, we find that concentrated ownership and strong control by the top shareholder before the transaction is predominant.

When we study the market performance of acquiring firms, using the market model, the CAPM model and the buy-and-hold method, we find significantly positive abnormal returns before (6 months) and at the M&A announcements, while the long-run abnormal returns (6 months) after the announcements are insignificant. The cross-sectional analysis shows that 1) the political advantages of acquiring firms (the higher state ownership and stronger government connections) have a significantly positive impact on the acquiring firm's performance, while the economic advantages (acquirers' pre-merger profitability or industry relatedness between acquirers and target firms) do not; 2) cross-province M&A implies more choices on the resource of the merger and possibly stronger government connections (the central government rather than the local government), and therefore creates more value to acquiring firms; 3) the power balance between the second to tenth shareholders and the top

shareholder has a significantly positive impact to acquirers' returns, due to the possible better corporate governance; and 4) cash payment impacts positively and regulation development impacts negatively on the value of acquiring firms during M&A, respectively.

Lastly, we find that the profitability of acquiring firms decrease significantly from the three-year average before the M&A to the transaction year, while the results are interestingly opposite for a special sample with the negative profitability before the merger. Even though the positive announcement returns show that it is the investors' belief that mergers in China can improve the listed acquirers' performance, it does not in fact work well on the fundamental side, at least in the short-term. This might also explain the decreasing abnormal returns of acquirers year by year during the sample period. However, M&A seems certainly be able to save the extremely poorly performed acquirers to help keeping their listing status.

However, we leave some questions unanswered in this paper. Since most of the M&A transactions are paid by cash, this puts pressure on acquirers' liquidity and borrowing capacity. It may be interesting to examine the financial reports of these firms around the M&A years to see how they finance these M&A and whether different financing methods generate different results.

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Table 1: The Number of M&A in Each Year during the Sample Period
This table shows the number of M&A in each year during our sample period. A strong trend of M&A increase year by year is indicated in the table.

Year	Number of M&A
1998	129
1999	129
2000	193
2001	236
2002	208
2003	253
Total	**1148**

Table 2: Types of Stocks and Assets Acquired during M&A

Out of 1148 M&A, 736 acquire stocks of target firms and 412 acquire assets of target firms. Among the stock acquiring, the legal person shares are the most popular choice (87.36%), while for asset acquiring, fixed assets and current assets are. In over half of the sample which acquires stocks, acquiring firms control the target firms and obtain over 50% of the shareholding of the target firms.

Types of Stocks	**Number of Cases**	**Percentage (%)**
State-owned	34	4.62
State-owned legal person	40	5.43
Legal person	643	87.36
Foreign	15	2.04
Others	4	0.54
Total	**736**	**100**

Percentage of Stocks Acquired from target firm	**Number of Cases**	**Percentage (%)**
5% - 10%	41	5.57
10.1% - 20%	84	11.41
20.1% - 30%	98	13.32
30.1% - 40%	72	9.78
40.1% - 50%	67	9.1
50.1% - 100%	374	50.81
Total	**736**	**100**

Types of Assets	**Number of Cases**	**Percentage (%)**
Current Assets	95	23.06
Fixed Assets	239	58.01
Land	16	3.88
Intangible	32	7.77
Others	30	7.28
Total	**412**	**100**

Table 3: Characteristics of M&A in our Study

The following five tables show characteristics of M&A transactions in our study. In the majority of M&A, acquiring and target firms are under the same provincial government's supervision and related party transactions are rife. During M&A, cash is the dominant payment method and the competition for merger is weak. However, the business connection between acquirers and target firms is less obvious (with available information, in only half of the sample, acquiring and target firms belong to the same industry before M&A).

3.1: Whether the acquiring firm and the target firm belongs to the same province

	Number of Cases	Percentage (%)
Yes	820	71.43
No	275	23.95
Miss data	53	4.62
Total	**1148**	**100**

3.2: Whether the M&A has a related party transaction

	Number of Cases	Percentage (%)
Yes	596	51.92
No	339	29.53
Miss data	213	18.55
Total	**1148**	**100**

3.3: Payment methods of M&A

	Number of Cases	Percentage (%)
Cash Only	1002	87.28
Cash & debt re-arrangement	77	6.7
Cash & exchanging goods	5	0.44
Cash & stock-for-stock	2	0.17
Exchanging goods	3	0.26
Debt re-arrangement	34	2.96
Stock-for-stock	1	0.09
Miss data	24	2.09
Total	**1148**	**100**

3.4: Single or multiple acquiring firms in the M&A

	Number of Cases	Percentage (%)
Single	1020	88.85
Multiple	123	10.71
Miss data	5	0.44
Total	**1148**	**100**

3.5: Whether acquiring firm and target firm belong to the same industry

	Number of Cases	Percentage (%)
Yes	320	27.87
No	246	21.43
Miss data	582	50.70
Total	**1148**	**100**

Table 4: Characteristics of acquiring firms in our Study

Tables 4.1 – 4.3 indicate that ownership concentration of acquiring firms is strong before the M&A and in most cases, the top one shareholder controls the acquiring company.

4.1: The ownership structure of acquiring firms

	State-owned		Legal Person		Tradable	
	No.	**Percentage**	**No.**	**Percentage**	**No.**	**Percentage**
0-10%	442	38.50	399	34.76	8	0.70
10.1% - 20%	57	4.97	108	9.41	54	4.70
20.1% - 30%	87	7.58	78	6.79	290	25.26
30.1% - 40%	97	8.45	84	7.32	400	34.84
40.1% - 50%	94	8.19	93	8.10	200	17.42
50.1% - 100%	344	29.97	359	31.27	169	14.72
Missing data	27	2.35	27	2.35	27	2.35
Total	**1148**	**100.00**	**1148**	**100.00**	**1148**	**100.00**

4.2: The Shareholder information of acquiring firms

	Top 1 shareholder's holding (a)		Sum of top 2-10 shareholders' holding (b)	
	No.	**Percentage**	**No.**	**Percentage**
0-10%	6	0.52	394	34.32
10.1% - 20%	65	5.66	181	15.77
20.1% - 30%	256	22.30	188	16.38
30.1% - 40%	147	12.80	150	13.07
40.1% - 50%	145	12.63	74	6.45
50.1% - 100%	379	33.01	11	0.96
Missing data	150	13.07	150	13.07
Total	**1148**	**100.00**	**1148**	**100.00**

4.3: The Shareholder's concentration of acquiring firms

	Shareholder's concentration (b/a) (%)	
	No.	**Percentage**
0-50%	549	47.82
50.1% - 100%	189	16.46
100.1% - 200%	212	18.47
200.1% - 300%	40	3.48
>= 300.1%	8	0.70
Missing data	150	13.07
Total	**1148**	**100.00**

Table 5: The short-run performance of acquiring firms around the M&A announcements using the market model

Tables 5.1 and 5.2 present the acquiring firms' short-run market performance upon M&A announcements using the standard market model. The results show strong positive market reaction of the announcements on acquiring firms. Table 5.1 includes the whole sample with available data. Table 5.2 only focuses on M&A announcements outside the annual report disclosure period to exclude any other announcement impact on our study.

5.1: Full data set (931 observations)

Day	-2	-1	0	1	2	CAR (-2/2)	CAR (-1/1)	CAR (-2/0)	CAR (-1/0)
Mean	0.0003	0.0021	0.0028	-0.0010	-0.0015	0.0027	0.0039	0.0052	0.0049
S.D.	0.0208	0.0193	0.0229	0.0221	0.0195	0.0485	0.0369	0.0364	0.0292
***t*-test**	0.4731	3.2642***	3.7447***	-1.3208	-2.3994***	1.7017*	3.2430***	4.3656***	5.0980***

5.2: M&A announcements outside the annual report disclosure period (576 observations)

Day	-2	-1	0	1	2	CAR (-2/2)	CAR (-1/1)	CAR (-2/0)	CAR (-1/0)
Mean	0.0006	0.0019	0.0039	-0.0008	-0.0014	0.0042	0.0050	0.0064	0.0058
S.D.	0.0185	0.0181	0.0222	0.0215	0.0189	0.0465	0.0365	0.0345	0.0281
***t*-test**	0.7234	2.4859***	4.2360***	-0.9287	-1.7466**	2.1438**	3.2709***	4.4205***	4.9476***

Notes:
CAR (-2/2) means cumulative abnormal returns from Day -2 to Day 2.
CAR (-1/1) means cumulative abnormal returns from Day -1 to Day 1.
CAR (-2/0) means cumulative abnormal returns from Day -2 to Day 0.
CAR (-1/0) means cumulative abnormal returns from Day -1 to Day 0.

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

Table 6: The long-run performance of acquiring firms around the M&A announcements

Tables 6.1 – 6.3 show the long-run performance of acquiring firms (from six months before to six months after M&A) using the market model, the CAPM model and the buy-and-hold method. In general, we can see significantly positive long-run acquiring firms' returns before M&A and insignificant returns after M&A. The overall CAR or BHAR for the whole 13-month period is either significantly positive or insignificant.

6.1: Using the market model

Month	**-6**	**-5**	**-4**	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**	**5**	**6**
Mean	0.002	0.001	-0.001	0.004	0.006	0.006	0.011	-0.011	-0.005	-0.002	-0.001	-0.003	-0.006
S.D.	0.113	0.099	0.101	0.112	0.096	0.101	0.122	0.090	0.094	0.085	0.081	0.090	0.087
***t*-test**	0.359	0.273	-0.234	0.821	1.493	1.582	**2.256****	**-3.141*****	-1.275	-0.744	-0.406	-0.718	**-1.776***

Month	**CAR (-6/6)**	**CAR (-3/3)**	**CAR (-6/-1)**	**CAR (1/6)**
Mean	0.000	0.008	0.017	-0.028
S.D.	0.443	0.294	0.294	0.226
***t*-test**	-0.006	0.700	1.497	-3.171***

6.2: Using the CAPM model

Month	**-6**	**-5**	**-4**	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**	**5**	**6**
Mean	0.004	0.006	0.005	0.008	0.008	0.010	0.014	-0.005	0.002	0.002	0.007	0.002	-0.001
S.D.	0.104	0.090	0.093	0.102	0.089	0.091	0.110	0.084	0.086	0.080	0.081	0.085	0.080
***t*-test**	1.154	**2.114****	1.485	**2.461*****	**2.803*****	**3.302*****	**3.824*****	**-1.682***	0.734	0.821	**2.645*****	0.595	-0.476

Month	**CAR (-6/6)**	**CAR (-3/3)**	**CAR (-6/-1)**	**CAR (1/6)**
Mean	0.062	0.040	0.041	0.007
S.D.	0.341	0.246	0.247	0.191
***t*-test**	**5.533*****	**4.921*****	**5.062*****	1.128

6.3: Using the buy-and-hold abnormal returns

Month	BHAR (-6/6)	BHAR (-3/3)	BHAR (-6/-1)	BHAR (1/6)
Mean	0.0534	0.0290	0.0374	0.0003
S.D.	0.3781	0.2379	0.2510	0.1932
***t*-test**	**3.8326*** **	**3.3123*** **	**4.0456*** **	0.0478

Notes:
CAR (-6/6) means cumulative abnormal returns from Month -6 to Month 6. CAR (-3/3) means cumulative abnormal returns from Month -3 to Month 3.
CAR (-6/-1) means cumulative abnormal returns from Month -6 to Month -1. CAR (1/6) means cumulative abnormal returns from Month 1 to Month 6.

BHAR (-6/6) means buy-and-hold abnormal returns from Month -6 to Month 6. BHAR (-3/3) means buy-and-hold abnormal returns from Month -3 to Month 3.
BHAR (-6/-1) means buy-and-hold abnormal returns from Month -6 to Month -1. BHAR (1/6) means buy-and-hold abnormal returns from Month 1 to Month 6.

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

Table 7: Description of the variables used in the cross-sectional analysis

This table shows the description of the dependent and independent variables used in the cross-sectional analysis. The regression models are as follows:

$$CAR_i = \beta_1 \text{state-shares}_i + \beta_2 \text{same-government}_i + \beta_3 \text{profit-before}_i + \beta_4 \text{cash-payment}_i + \beta_5 \text{dilution-of-shareholding}_i + \beta_6 \text{Year1998}_i + \beta_7 \text{Year1999}_i + \beta_8 \text{Year2000}_i + \beta_9 \text{Year2001}_i + \beta_{10} \text{Year2002}_i + \beta_{11} \text{Year2003}_i + \beta_{12} \text{same-industry}_i + u_i$$

$$CAR_i = \beta_1 \text{legal-shares}_i + \beta_2 \text{same-government}_i + \beta_3 \text{profit-before}_i + \beta_4 \text{cash-payment}_i + \beta_5 \text{dilution-of-shareholding}_i + \beta_6 \text{Year1998}_i + \beta_7 \text{Year1999}_i + \beta_8 \text{Year2000}_i + \beta_9 \text{Year2001}_i + \beta_{10} \text{Year2002}_i + \beta_{11} \text{Year2003}_i + \beta_{12} \text{same-industry}_i + u_i$$

Dependent variable	
CAR	Cumulative abnormal daily returns around M&A (from day -2 to day 0)

Independent variables	
State-shares	The percentage of state-owned shares acquiring firms have before M&A
Legal-shares	The percentage of legal-person shares acquiring firms have before M&A
Profit-before	The average three-year profitability of acquirers before M&A
Same government	The dummy to show whether the acquiring firm and target firm belong to the same provincial government. 1-yes; 0-no.
Cash payment	The dummy to show whether the M&A is paid by cash only. 1-yes; 0-no.
Dilution of shareholding	The total shares held by the second to tenth shareholders divided by the shares held by the top shareholder
Year1998 – Year2003	Year dummy to show which year the M&A takes place
Same industry	The dummy to show whether the acquiring firm and target firm belong to the same industry before M&A. 1-yes; 0-no.

Table 8: Estimating the acquiring firms' short-run market performance

This table shows the regression results on the acquiring firms' short-run market performance, which has been corrected for heteroskedasticity, whenever necessary. The regression models are expressed as follows:

$$\text{CAR}_i = \beta_1 \text{state-shares}_i + \beta_2 \text{same-government}_i + \beta_3 \text{profit-before}_i + \beta_4 \text{cash-payment}_i + \beta_5 \text{dilution-of-shareholding}_i + \beta_6 \text{Year1998}_i + \beta_7 \text{Year1999}_i + \beta_8 \text{Year2000}_i + \beta_9 \text{Year2001}_i + \beta_{10} \text{Year2002}_i + \beta_{11} \text{Year2003}_i + \beta_{12} \text{same-industry}_i + u_i$$

$$\text{CAR}_i = \beta_1 \text{legal-shares}_i + \beta_2 \text{same-government}_i + \beta_3 \text{profit-before}_i + \beta_4 \text{cash-payment}_i + \beta_5 \text{dilution-of-shareholding}_i + \beta_6 \text{Year1998}_i + \beta_7 \text{Year1999}_i + \beta_8 \text{Year2000}_i + \beta_9 \text{Year2001}_i + \beta_{10} \text{Year2002}_i + \beta_{11} \text{Year2003}_i + \beta_{12} \text{same-industry}_i + u_i$$

We use the market model cumulative abnormal returns over two days before M&A to the announcement day (CAR_i) as the dependent variable. The independent variables include the percentage of the state ownership of acquirers before the merger (state-shares), the percentage of the legal person ownership of acquirers before the merger (legal-shares), the same government dummy, the average three-year profitability of acquirers before M&A (profit-before), cash payment dummy, dilution of shareholding, the year dummies and the same industry dummy.

Since the two independent variables (state-shares and legal-shares) are highly correlated, we separate them into two regression equations.

The data on the same industry dummy is very limited, so we first run the regressions by leaving this variable out. We then rerun both regressions by adding the same industry dummy. We did not find any significant result on this new variable, but the results on the other independent variables remain the same (these results are not reported in the paper).

		Regression 1.1		**Regression 1.2**	
Variable	**Expected Signs**	**Coefficient**	***t*-test**	**Coefficient**	***t*-test**
State-share	+	0.0002	3.069***		
Legal-share	-			-0.0002	-2.728***
Profit-before	-	-0.0009	-3.173***	-0.0009	-2.805***
Same-government	-	-0.0057	-1.607^	-0.0052	-1.622^
Cash-payment	+	0.0070	1.556	0.0078	1.972**
Dilution	+	0.0000	1.679*	0.0000	1.833*
Year1998	Reducing	0.0273	0.750	0.0393	6.129***
Year1999		0.0124	1.616^	0.0222	2.939***
Year2000		0.0113	1.592^	0.0209	2.972***
Year2001		-0.0057	-0.828	0.0040	0.694
Year2002		-0.0052	-0.861	0.0043	0.867
Year2003		-0.0110	-1.736*	-0.0012	-0.222
No. of observation		632		632	
R^2		0.0791		0.0824	
Adjusted R^2		0.0643		0.0676	

^ Estimate significant just above the 10% level. * Estimate significant at the 10% level.
** Estimate significant at the 5% level. *** Estimate significant at the 1% level.

Table 9: Changes of the profitability of acquiring firms before and after the M&A

Tables 9.1 and 9.2 show that the profitability of acquiring firms decrease significantly from the three-year average before the M&A to the transaction year, while the results are interestingly opposite for a special sample with negative profitability before the merger.

9.1: Total sample

	Three-year average profitability before M&A (%)	Profitability in M&A year (%)	Wilcoxon/Mann-Whitney Test of Median Difference
Mean	3.942	3.394	
Median	4.530	3.860	3.315***

9.2: Sample with negative average profitability in the three-year before M&A (125 cases)

	Three-year average profitability before M&A (%)	Profitability in M&A year (%)	Wilcoxon/Mann-Whitney Test of Median Difference
Mean	-7.670	-7.220	
Median	-3.86	0.44	5.983***

*** Estimate significant at the 1% level.