DO MERGERS AND ACQUISITIONS IN CHINA CREATE VALUE TO ACQUIRING FIRMS?

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Abstract

This paper investigates both short-term and long-term stock market reactions to the announcement of domestic and cross-border Mergers and Acquisitions (M&As) by Chinese acquiring companies. For short-term performance, this study uses market model methods to calculate daily abnormal return and measure how M&A deals announcement impact on stock returns. For the long-term performance, this study uses market model, capital asset pricing model and Fama-French three factor model to calculate monthly abnormal return and measure whether M&A deals create value to shareholders. This paper also examines differences in operating performance between pre-acquisition and post-acquisition, and finally investigates whether cash flow from operations, Tobin's Q and profit margin are significantly changed by M&A deals.

Keywords: Merger, Acquisition, Abnormal Return, Performance, Three Factors Model

JEL Classification: G15

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1 Introduction

This paper investigates both short-term and long-term market reactions to mergers and acquisitions (M&A deals) among Chinese companies. This study examines it the M&A deals has had any implications of stock market This study focuses on the effect of M&A deals around the announcement day first, and then assess the post-acquisition performance of acquiring firms. Next, this study tests the significance of the changes of operating performance between pre-acquisition period and post-acquisition period. Finally, this paper presents the relationship between post-acquisition abnormal returns and operating performance.

With the globalization, economic activities have increased in last two decades (Ranjan, 1997). China is no exception in following the global trend. The average growth of GDP in China is 7.4 percent annually from 1989 until 2010 (Hatakeyama, 2011).This result proved that the economic growth of China is higher than that of U.S., because the growth of GDP in U.S. presented 2 percent to 3 percent annually. In addition, higher growth of GDP indicates opportunities for development, and M&A deals are consequences of high growth trends.

There are many studies documenting M&As' performance for developed countries such as Canada, U.S. and U.K. However, there are two vital differences between M&A deals in China and M&A deals in the developed countries. One is the developed countries has well-developed legal system to protect the interest of shareholders, but poor legal system in China may damage the interest of shareholders (Ma & Pagán, 2009). The other is different culture and government between China and developed countries which lead to differences in the organizational structure of firms (Tadesse, 2006). Therefore, it is necessary to re-examine the M&A deals' performance in Chinese stock market.

While the majority of studies from China focused on examining the trends and patterns of M&A deals in China. The study of Ma & Pagán (2009) only supported the short-term announcement effect. The study of Huang & Bhabra (2013) only examined 136 M&A deals for both short-term and long-term performance. The study written by Simpson & Zou (2008) only considers the cross-border mergers and acquisitions.

The key issue to examine is whether the M&A deals made by Chinese firms are likely to create value for shareholders. This study extends the literature by empirically examining the short-term and long-term

performance for Chinese acquiring firms involving both cross-border and domestic M&A deals during 2000-2013. Therefore, there are four research questions being asked in this paper:

1) How the stock market reacts to the announcement of mergers and acquisitions?
   a) Cross-border M&A deals
   b) Domestic M&A deals
2) Is there any value created for shareholders in post-acquisition period?
   a) Cross-border M&A deals
   b) Domestic M&A deals
3) Is there any difference between cross-border and domestic in terms of value creation?
   a) Cross-border M&A deals
   b) Domestic M&A deals
4) Is operating performance changed by M&A deals?
   a) Cross-border M&A deals
   b) Domestic M&A deals

The remainder of the paper is organized as follow: Section 2 presents some prior studies about M&A deals. Section 3 presents the data, methodology, and hypotheses of the paper. Section 4 presents empirical results. Section 5 gives discussions on the empirical results, and finally summary and conclusion would be presented in Section 6.

2 Literature review

This section reviews the empirical studies which related to M&A deals, and the literature discussed below presents various studies. In detail, this study reviews prior studies which examined the effects of mergers and acquisitions from both short-term and long-term perspectives and also includes literatures on methodology. In addition, this study reviews studies which investigated the correlation between operating performance and M&A deals.

2.1 Short-term performances

A number of studies examined the short-term performance of developed countries' acquiring firms and reported significant positive abnormal return in the short-term for acquiring firms. For example, the study of Jog & Dutta (2009) investigated the short-term performance of Canadian acquiring firms and found stock return reacted positively to M&A deals in short-term period. However, the study of Conn and Connell (1990) examined acquiring firms' short-term performance around the announcement of cross-border M&A deals in U.S. and British and found acquiring firms did not earn positive abnormal return on cross-border M&A deals in short-term period.

The study of Hazelkorn, Zenner, & Shivdasani (2005) examined short-term M&A performance in U.S. and reported stock return had a negative relationship with announcement of M&A deals. Some other studies examined the short-term performance of a sample of developing countries. Their findings showed that developing countries' stock market reacted positively to the announcement of M&A deals, and the significant abnormal return was showed before the announcement day due to information leakage problem. The study of Ma & Pagán (2009) have examined short-term stock price performance of acquiring firms in the ten emerging Asian markets which were China, India, Indonesia, Malaysia, Hong Kong, Philippines, Singapore, South Korea, Taiwan and Thailand. They found that positive CARs was significantly related to M&A deals under three different event windows which are a two day window (0, 1), a three day window (-1, +1) and a five day window (-2, +2). This study supports that stock price was associated with M&A deals in short-term. In addition, the study of Duppati, Locke & Lawrence (2012) investigated that short-term stock market was affected by foreign investment in M&A deals by Indian companies. In detail, they supported that share price positively reacted to the announcement of outward foreign direct investment M&As deals. Huang & Bhabra (2013) investigated short-term stock price performance of 136 Chinese acquiring firms engaged in M&A deals between 1997 and 2007 and supported that significant positive abnormal return displayed around the announcement day.

A small set of studies compared announcement effects between bidder firms and target firms. Renneboog & Goergen (2004) investigated short-term stock price reaction to M&A announcement in European countries. They found target firms accrued more significant positive abnormal returns than the bidder firms. The study of Chatfield, Dalbor & Ramdeen (2011) investigated short-term performance of M&A deals in restaurant industry and proved that the target firms could earn significant positive returns because of M&A deals, but the M&A announcement effect on the bidders was not as significant as target firms since CARs of bidders was not as much as target firms.

Some other studies evaluated short-term M&A performance in some specific industries. The study of Halkos& Tzeremes (2013) examined the short-term announcement performance in bank industry and supported that M&A deals have positive relationship with stock returns in short-term period. In addition, the study of Louca & Andreou (2012) tested short-term M&A performance in freight transportation industry, and they mainly focus on the short-term market reaction to announcement of M&A deals. They found that significant positive stock returns were showed around the announcement day.

Some studies discussed short-term stock performance of the announcement under both cross-border M&A deals and domestic M&A deals. The study of Conn, Cosh, Guest & Hughes (2005) compared different types of M&A deals in UK. In detail, they divided M&A deals into four groups which are cross-border public M&A deals, domestic

public M&A deals, domestic private M&A deals and cross-border private M&A deals. They found firms which made both domestic public M&A deals and cross-border public M&A deals showed negative abnormal returns, but the other two kinds of M&A deals had positive impact on abnormal returns. Nagano & Yuan (2013) compared the cross-border and domestic M&A deals made by Chinese and Indian firms, and they indicated that cross-border acquisitions brought more significant positive abnormal return than the domestic acquisitions as regard to short-term performance. The study of Feito & Menéndez (2011) examined the stock return around the announcement day of M&A deals in Europe. They compared 221 cross-border M&A deals and 248 domestic M&A deals and found cross-border M&A deals had more significant announcement effects than domestic M&A deals.

2.2 Long-term performance

A great deal of empirical studies documented the long-term post-acquisition performance for M&A deals and reported that stock prices did not reacted to M&A deals in the long-term. For example, the study of Jog & Dutta (2009) investigated Canadian acquiring firms' long-term return performances by analyzing 1300 M&A deals during 1993-2002. Their result did not support that M&A deals could create value for shareholders in the long run. Some other studies supported that stock return reacted negatively to M&A deals for long-term period. The study of Conn, Cosh, Guest & Hughes (2005) examined 36 months abnormal returns for acquiring firms in UK and supported that stock price had a negative relationship with M&A deals in long-term performance. The study of Gregory (1997) applied six different methods to evaluate 60 months post-acquisition abnormal return in UK firms during 1984 to 1992 and found that M&A deals had a significant negative relationship with stock return.

Hazelkorn, Zenner, & Shivdasani (2005), Lu & Savor (2009) and Duppati, Locke & Lawrence (2013) suggested that acquiring firms could create value for shareholders in the long term. In detail, Hazelkorn, Zenner, & Shivdasani (2005) investigated long-term performance of M&A deals in U.S. and found that shareholder could benefit from the M&A deals if they hold shares for a long period. The study of Lu & Savor (2009) investigated acquiring firms listed on the NYSE between 1979 and 2003 in U.S. and indicated overvalued firms create value for long-term shareholders by using their equity as currency. The study of Duppati, Locke & Lawrence (2013) examined long-term stock performance for cross-border M&A deals in Indian companies and suggested that positive abnormal return could be generated by shareholders in the long term.

Empirical studies also focus on discussing the long-term performance of cross-border M&A deals and domestic M&A deals. The study of Conn, Cosh, Guest & Hughes (2005) compared long-term stock price performance of cross-border M&A deals and domestic M&A deals, and they indicated that stock price of acquiring firms were positively impacted by both cross-border M&A deals and domestic M&A deals in a long-term period. In addition, they suggested that acquiring firms which made cross-border M&A deals had lower long term abnormal return than that of domestic M&A deals. The study of Stiebale (2013) mainly investigated long-term stock performance for cross-border M&A deals and supported acquiring firms create value to shareholders in long-term period.

2.3 Operating performance and M&A deals

The study of Huang & Bhabra (2013) examined the post-acquisition operating performance of Chinese acquiring companies involved in M&A activities during period 1997-2007. The study compared the pre-acquisition and post-acquisition operating performance of acquiring companies. This study observed some post-acquisition variables such as return on asset, return on equity profit margin and sales growth of acquiring firms, and there was no significant improvement when compared to pre-acquisition period. Some empirical studies used operating cash flow as proxy for operating performance and investigated the relationship between M&A deals and operating cash flow. Kayani et al. (2013) used operating cash flow and working capital from operations as proxy for operating performance and supported that M&A deals did not lead to improvement of operating cash flow. The study of Choi & Harmatuck (2006) examined relationship between post-operation performance and stock returns and supported that operating cash flows was not significantly improved in the post-acquisition period. Moreover, they suggested that risk-adjusted firm size increased significantly after the M&A deals. However, Healy, Palepu & Ruback (1992) examined post-acquisition performance of firms after M&A deals in U.S, and suggested that operating cash flow was significant improved in post-acquisition period.

Alsharairi & Salama (2012) mainly investigated the relationship between leverage and M&A deals and found post-acquisition stock return was affected negatively by leverage. Li & Bouraoui (2014) investigated the relationship between abnormal return and leverage for U.S. acquiring firms and suggested leverage had a negative impact on post-acquisition stock return. In addition, this paper also supported that capital structure moved toward to optimal capital structure in post-acquisition period. Ong & Ng (2013) compared capital ratios and profitability ratios of 5 years before and after M&A deals in Malaysia. This paper supported M&A deals did not significantly affect capital structure. In detail, ROA and ROE

improved after M&A deals, but leverage ratio and size of firms did not significantly increase during the post-acquisition period.

The size of firms is also an important ratio which is used for measure the operating performance. Divya Priya (2012) tested whether M&A deals had positive impact in growth of total asset in India or not, and they supported significant growth in total assets and profitability are showed in post-acquisition period. The study of Cefis, Marsili & Schenk (2009) examined the correlation between firm size and stock price. Their analysis had not showed firm size have significantly changes due to M&A deals. Jang & Park (2011) examined the relationship between firm growth and M&A deals, and they support firm sizes had significant growths for post-acquisition period.

There are some studies investigates the relationship between profit margin and M&A deals. Erdogan (2012) find profit margin decreased for post-acquisition period. On the other hand, Ooghe et al. (2006) supported that the maximum profit margin showed in one year before the acquisition, but profit margin is sharp fall in post-acquisition period.

2.4 Research methodologies on performance

The standard event study methodology involves the use of market model which is presented in Sharpe (1964). In addition, the empirical studies were calculated abnormal return which was used for market model in different event windows. The event window could be the M&A announcement day plus or minus some number of days, and most of studies focus on observing anything unusual happened (Ma & Pagán, 2009). According to Ma & Pagán (2009), Mas-Ruiz, Nicolau-Gonzálbez & Ruiz-Moreno (2002) and Duppati et al. (2012), analyzing CARs in different event windows are the most commonly used event windows for M&A studies, and they found positive CARs in three different event windows: a two-day (0,+1) window, a three day(-1, +1) window and a five day (-2, +2) window. The study of Huang & Bhabra (2013) examined longer event window which was from 42 days prior to the announcement date to 127 days after the announcement day and report the most significant positive CAR was also displayed on a five day (-2, +2) window.

The empirical studies used different approaches and methods to assess the post-acquisition. The study of Jog & Dutta (2009) used both Cumulative Abnormal Return which is calculated by Fama-French three factor regressions methods and Buy and Hold abnormal return to assess acquisition effect in the post-acquisition performance and tested 36 month' abnormal returns for post-acquisition period. In addition, the study of Duppati, Locke & Lawrence (2013) also used both buy-and-hold abnormal return and cumulative abnormal return which calculated by Market Model method to investigate long term performance of cross-border mergers and acquisitions for Indian companies. The study of Renneboog & Goergen (2009) used cumulative abnormal return method and calculated post-acquisition abnormal return based on CAPM model.

The empirical studies used two different methods to assess the relationship between operating performance and M&A deals. The study of Bhabra &Huang (2013) Ooghe et al. (2006) compared improvement of operating performance in post-acquisition period with pre-acquisition value and support that operating performance no significant changed from pre-acquisition period to post-acquisition. The other study of Cefis, Marsili & Schenk (2009) and Alsharairi & Salama (2012) examined the relationship between abnormal return and operating variables and supported that the operating variables significantly affected to abnormal return.

In summary, some empirical studies supported M&A deals result in positive announcement returns while some other studies found M&A deals reacted negatively to stock returns for short-term period. For long-term performance, some studies support M&A deals lead to positive post-acquisition returns, but some other studies have not found any significant relationship between M&A deals and post-acquisition return. In addition, operating performance between pre-acquisition period and post-acquisition period are not significantly changed due to M&A deals. Moreover, operating variables shows significant relationship with stock price. For the methodology, examining abnormal return around the announcement date is the most commonly methodology which is used for measuring short-term M&A performance. In addition, cumulative abnormal return method also the most common methodology used for measuring long-term M&A performance. Moreover, comparing the operating performance in post-acquisition with that in pre-acquisition was the main methodology used for empirical studies. Some other empirical studies also made regression between post-acquisition abnormal return and operating variables.

3 Data and methodology

3.1 Data

This study considers all Shanghai Stock Exchange M&A deals that occurred between January 1, 2000 and December 31, 2013 and involved acquiring firms in Shanghai Stock Exchange. This paper's dataset is from CSMAR Solution Financial Database (CSMAR Solution). The data meet the following five criteria: (i) all the sample firms are acquiring firms in the M&A deals. (ii) all M&A deals were completed. (iii) all the M&A deals were happened during 2000-2013. (iv) only the firms which announced their M&A deals are included in this sample. (v) sample group does not include share repurchase, share transfer, asset transfer,

asset divestiture and other types of deals. Table 1 panel A describes the sample construction strategy.

In the first stage, this paper considers all M&A announcements by Chinese firms listed on both Shanghai and Shenzhen exchange market. This yields a total of 50760 firms announcing their deals during 2000-2013. Second this paper excludes all deals that are not completed. This yields a total of 2110. Next, this paper limits to acquiring firms in M&A deals, yielding a total of 1770 surviving deals. And then, this paper excludes acquiring firms which are belongs to Shenzhen Stock Exchange. This yields a total of 516. Finally, this paper drops those cases from which this paper could not find accounting information from the CSMAR Solution. The final sample is constructed by 325 acquiring firms which include 116 cross-border deals and 212 domestic deals. The table 1 panel B presents the distribution of M&A deals from 2000 to 2013, there are two main important observations as follows: 1) Number of domestic M&A deals is always more than that of cross-border M&A deals. 2) In line with overall Chinese M&A deals, table 1 panel B indicates a slight increase in M&A deals between 2000 and 2012 and declined in the post 2012 period.

Table 1. Summary of M&A deals

Panel A: Sample of construction					
	No. of transactions announced by Chinese listed firms	No. of completed deals with mergers and acquisition	No. of acquirer	No. of Shanghai Stock Exchange listed firms	No. of Shanghai Stock Exchange listed firms (exclude missing data)
Total	50760	2111	1770	516	325
Panel B: Distribution of M&A deals					
	Cross-border M&A deals			Domestic M&A deals	Total M&A deals
2000	2			14	16
2001	0			11	11
2002	3			15	18
2003	1			3	4
2004	4			10	14
2005	1			8	9
2006	6			5	11
2007	18			23	41
2008	9			23	32
2009	7			13	20
2010	11			16	27
2011	15			23	38
2012	28			29	57
2013	9			18	27
Total	114			214	325

From the sample of 50760 companies that are listed on Chinese stock market, the study chose those listed companies in which M&A deals were completed, acquiring firms and those which were listed on Shanghai stock market. The finalized sample size is 325. The details of the selection process of the sample are presented in panel A and the distribution of M&A deals for each year is presented on panel B.

Table 2 presents descriptive statistics of deal-specific variables for Chinese acquiring firm. For the assets of acquiring firms, the table 2 present more than half of acquiring firms have more than 20 billion firm assets. Moreover, 177 of 201 acquiring firms are growth acquirers. Furthermore, 69.31% of acquiring firms are belongs to domestic merger and acquisition. Therefore, table 2 indicates large size and growth firms have more possibility to make mergers and acquisition.

For the data collection, there are some items being collected in sample group which include in acquiring firms' code, acquiring firms' name, announcement date, and geographic information (cross-border M&As or domestic M&As). After collecting the sample, this paper collects the stock returns data from CSMAR Solution.

The sample for long-term performance consists of 201 acquiring firms which made M&A deals from 2000 to 2010. The full sample is divided into two groups based on the firm asset (Panel A), growth or value acquirers (Panel B) and cross-border or domestic (Panel C). Panel A presents firms assets over (less) than 20 billion Yuan, and it is used for SMB factors in FF model. Panel B indicates growth or value stock for acquiring firms. If the firms' book-to-market ratio is less than 1, the acquiring firm belongs to value acquirers. Otherwise, the acquiring firm is growth acquirers. This is used for HML factors for FF model. For the panel C, cross-border M&A deals present acquiring firms made M&A deals with companies from other countries, and domestic M&A deals indicate acquiring firms made M&A deals with Chinese firms.

Table 2. Descriptive statistics of deal-specific variables for acquiring firms

		Number	percentage
Panel A: Firm asset			
	less than ￥20 billion	96	47.52%
	more than ￥20 billion	106	52.48%
Panel B: Growth or value acquirers			
	growth	177	87.62%
	value	25	12.38%
Panel C: Cross-border or domestic			
	cross-border	61	30.69%
	domestic	140	69.31%
Total sample		201	100.00%

3.2 Methodology

3.2.1 Short-term performance

To assess the announcement effect in the short-term performance, this study follows the event time approach (similar to Ma & Pagán (2009) and uses five kinds of short event windows which are three days event window(-1, 0, +1), five days event window (-1, 0, 3), seven days event window(-3, 0, +3), twenty one days window (-10, 0, +10) and thirty one days window (-15, 0, +15). The event window for the study is around the announcement day of the M&A deals. In addition, this paper calculates the daily abnormal return by using market model as presented below:

$$AR_{it} = R_{it} - (\beta * R_{mt} + \alpha) \quad (1)$$

Based the formula, AR_{it} is the daily abnormal return which is calculated by difference between the actual return and the expected return. The actual returns are collected from CSMAR Solution, this paper uses stock returns which are considered cash dividend and reinvestment as proxy of actual returns. The expected return is calculated by $\beta * R_{mt} + \alpha$. In detail, R_{mt} is the daily market return in Shanghai exchange stock market and the code for market return is 000001. β and α is estimated by correlations between pre-acquisition market returns and pre-acquisition stock returns. The estimation period of market model is a 100-day period from day-121 to day -21, and the method of estimation period is similar to the method adopted by Ma & Pagán (2009).

3.2.2 Long-term performance

This study considers three different approaches to calculate the Cumulative Abnormal Return (CAR) and assess the post-acquisition performance. They are the market model (MM model), capital asset pricing model (CAPM model) and Fama-French 3-factor model (FF model).

The coefficients of the MM model and CAPM model are estimated using 36 months prior to the acquisition event month. The monthly stock return data for each stock in the sample of M&A deals and the pre-acquisition monthly market returns from CSMAR Solution are used to estimate the expected returns for MM model and CAPM model. The βi1, βi2, βi3 and α for the FF model are estimated by pre-acquisition monthly market returns, pre-acquisition monthly stock returns, book-to-market and size factor returns. The abnormal return for the stock is equal to actual return less expected return.

MM model as presented below:

$$AR_{it} = R_{it} - (\alpha + \beta * R_{mt}) \quad (2)$$

CAPM model as presented below:

$$AR_{it} = R_{it} - [\alpha + R_{ft} + \beta \times (R_{mt} - R_{ft})] \quad (3)$$

Based the formula, AR_{it} is the daily abnormal return which is calculated by difference between the actual return and the expected return. The actual return is collected from CSMAR Solution, this paper uses stock return which is considered cash dividend and reinvestment. The expected return is calculated by$R_{ft} + \beta \times (R_{mt} - R_{ft})$. In detail, R_{ft} is 91- day T-bill rate, and it is 0.0833% per day in China. R_{mt} is the daily market return in Shanghai exchange stock market, and the code for market return is 000001. B and α is estimated by the correlation between 36 months pre-acquisition stock return and 36 months pre-acquisition market return for MM model. For the CAPM model β and α are measured by correlation between 36 months pre-acquisition monthly stock return minus risk free rate and 36 months pre-acquisition monthly market return minus risk free rate.

Fama and French (1993) model as presented below:

$$AR_{it} = R_{it} - [\alpha + R_{ft} + \beta_{i1} \times (R_{mt} - R_{ft}) + \beta_{i2} \times HML_t + \beta_{i3} \times SMB_t] \quad (4)$$

AR_{it} presents the monthly abnormal returns of the calendar-time portfolio. $R_{mt} - R_{ft}$ indicates the difference between daily stock return portfolio and risk free rate (risk free rate equal to 91-day T-bill rate). Second is HML_t. It is present the difference returns of small size firm portfolio and large size firm portfolio. Last is SMB_t. It is shows the difference between the returns of value firm portfolios and growth firm portfolios which is firms with low book-to-market ratio and high book-to-market ratio respectively. Furthermore, theαvalue present the daily abnormal return of the M&A sample. Bi1,βi2, βi3 present the relationship between stock return and market return, firm size and firm type respectively. Dutta & Joy (2009) and Andre, Koofi & Her (2004) also used same methodology to present their report.

The Cumulative Abnormal Return is presented as follow:

$$CAR_{it} = \sum_{t=1}^{t} AR_{it} \quad (5)$$

3.2.3 Operating performance for acquisition firms

Operating performance of acquiring firms is analyzed from 3 years prior to 3 years after the acquisition. To assess the change of operating performance in the post-acquisition period, this study focuses on analyzing return on asset (ROA), return on equity (ROE), profit margin, return on sales (ROS), leverage, Tobin's Q, growth of total asset (asset), growth of operating profit (growth), sales/total asset (S/TA) and cash flow operation (CFO) in both pre- and post-acquisition period, and this paper also compares the changes in these ten ratios between pre- and post-acquisition period. To assess the acquisition effect in post-acquisition period, this paper makes regression between post-acquisition abnormal returns and five performance ratios which are growth of asset, CFO, profit margin, leverage and S/TA.

The formulas of ten ratios are defined as follow:

Table 3. Formulas

Ratios	Formulas
Return on asset (ROA)	Earnings before interest and tax / Total value of assets
Return on equity (ROE)	Net income / Shareholder's equity
Profit margin	Net income / Revenue
Return on sales (ROS)	Net income / Sales
Leverage	Total assets / Shareholders' equity
Tobin's Q	Total market value of firm / Total asset value
Growth of total asset (asset)	(Asset in year N – Asset in year (N-1))/ Asset in year N
Growth of operating profit (growth)	Operating profit in year N– Operating profit in year (N-1))/ Operating profit in year N
Sales/total asset (S/TA)	Sales / Total asset
Cash flow operation (CFO)	Amount of cash used for company's normal business operations

These ten ratios are considered in operating performance section. First, ROA measures how a company's profitability is related to its total asset and it could be used to measure how much net profit could be created by firm asset. In addition, firms with higher ROA means firms' assets can generate profit more efficiently. Second, ROE measure shareholders' profit, and it could reflect return for shareholders. Moreover, firms with higher ROE presents the investment project in these firms have higher return. Third, profit margin indicates how much net income could be created from revenue. Furthermore, firms with higher profit margin indicate the firm could make more profit from sales revenue. Fourth, ROS is used to measure the efficiency of operation. Fifth, leverage is used to access the risk of the firms. Sixth, Tobin's Q is used to measure whether the firms have enough assets to replace the value of its stock or not. Seventh, growth of total asset is calculated by this year total asset minus last year total asset divided by this year total asset. Eighth, growth of operating profit is used to measure for whether the firms operating profit could make extra profit for firms. Ninth is sales divided by total asset. Last, cash flow operation is used to measure the amount of cash used for operating business.

In summary, this paper mainly tests whether merger and acquisition deals could influence stock returns for both short term and long term performance. In addition, this paper also tests the changes of operation performances 3 years prior to and 3 years after the M&A deals. This paper mainly collects data from CSMAR Solution. For the methodology, this paper uses three methodologies to analyze the data. First, this paper uses abnormal returns which are calculated by market model to test the short-term

performance for M&A deals. Second, this paper also uses abnormal returns which are calculated by MM model, CAPM model and FF model to test long-term performance for M&A deals. Third, this paper uses the ten variables as proxy of operating performance which are return on asset (ROA), return on equity (ROE), profit margin, return on sales (ROS), leverage, Tobin's Q, growth of total asset (asset), growth of operating profit (growth), sales/total asset (S/TA) and cash flow operation (CFO). In addition, by comparing the changes of ten ratios between pre-acquisition and post-acquisition period, results about whether operating performance is improved will be given. Finally, this paper uses regression analysis to test whether the operating performance influence the abnormal returns or not.

Based on the review of studies and documented in the literature, this paper proposes four hypotheses. Ma & Pagán (2009) made a conclusion that the abnormal returns are positively and significantly reacted to M&A deals in Chinese acquiring firms. Huang & Bhabra (2013) also supported acquiring firms displayed significant positive abnormal returns around the announcement date. The study tests the following hypotheses:

H1: Positive abnormal returns around announcement date are associated with M&A announcement for acquiring firms.

The information leakage is a critical problem in developing countries, because the legal systems which are protecting information are not well-developed (Huang & Bhabra, 2013). Thus, the information leakage which leads to significantly abnormal return may be reflected before the M&A announcement date. Therefore, the following hypothesis is developed:

H2: There is information leakage before M&A announcement day and hence the study expects significant AR before announcement day. More existing studies investigate long term performance of M&A deals. The study of Jog & Dutta (2009) did not find any significant negative long-term abnormal returns in Canadian acquirers. The study of André, Kooli & L'Her (2004) supports cross-border M&A deals had poor performances in the long term. The study of Dube & Glascock (2006) indicated that M&A deals had no effect on stock returns for acquiring firms in post-acquisition period. Thus, this study examines whether the M&A deals influence stock returns in the long term. This paper hypothesizes that:

H3: There are significant positive abnormal returns being presented in long-run period.

How M&A deals affect operating performance is a hot topic in recent literatures. For example, Conn et.al (2005), Ghosh (2001) and Huang & Bhabra (2005) presented operating performance was changed due to M&A deals in the post-acquisition period. Therefore, this paper mainly focuses on analyzing the relationship between operating performance and M&A deals. The last hypothesis was made as follow:

H4: Operating performance is positive in post-acquisition period.

4 Empirical results

4.1 Short-term performance: market model methodology

This part describes the results of short-term mergers and acquisitions performance around the announcement day. At the beginning, this paper discusses short-term performance of all M&A deals. Then, this paper describes short-term announcement returns for both cross-border M&A deals and domestic M&A deals respectively. Finally, this paper compares the difference of short-term performance between cross-border M&A deals and domestic M&A deals.

4.1.1 Announcement returns for whole sample

Figure 1 shows the distribution of CARs from 20 days prior to and 20 days after the announcement day. From day -20 to day -4, CARs are less than zero and slightly fluctuate around -0.5% to 0. From day-4 to day +4, CARs surge from about -0.025% to over 3%. After day +4, CARs rapidly drop from over 3% on day+4 to about 2% on day +10. CARs decreased steadily from day +11 to day +19. Finally, CARs slightly decline to about 1% from day+19 to day +20. Therefore, CARs do not change significantly before day -4, but CARs go up sharply to about 3% after the day -4 and drop to around 1% after day +4.

Figure 2 indicates average abnormal returns for all Chinese acquiring firms which announced their M&A announcements during 2000-2013. It can be seen from figure 2 that the average abnormal returns fluctuate around 0 from day -20 to day-4. After that, average abnormal returns dramatically increase from less than 0% on day -4 to over 0.8% on day 0. The highest average abnormal return for whole short-term period is 0.90% on the announcement day. After the announcement day, the average abnormal returns drop sharply to around -0.4% on day +7. After day +7, abnormal returns are moving around zero again.

Table 4 Panel A reports five event windows which range from short-event window (3 days) to long event window (31 days). In detail, event windows are (-1, 0, 3), (-1, 0, +1), (-3, 0, +3), (-10, 0, +10) and (-15, 0, +15). In addition, there are 325 acquiring firms included in the full sample. As regard to the result, the highest cumulative abnormal return in (-1, 0, +1) window is equal to 0.66% (the significance level of this event window is less than 1%). In addition, (-1, 0, +3) and (-3, 0, +3) windows also show some significance, and CARs for these two windows is 0.45% and 0.47% respectively. For (-10, 0, +10) and (-15, 0, +15) windows, CARs are not significant.

Figure 1. Cumulative abnormal returns (CARs) for Chinese acquiring firms (whole sample)

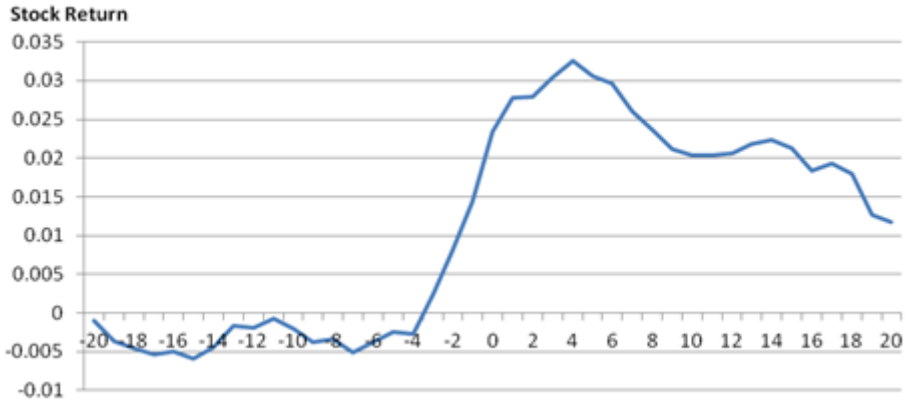


Figure 2. Average abnormal returns for all Chinese acquiring firms which made M&A deals from 2000-2013

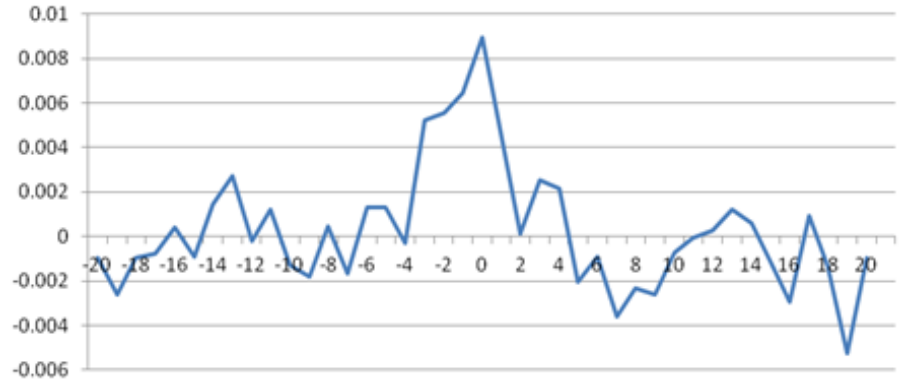


Table 4. Cumulative abnormal returns for different event windows

Panel A: Full sample			
event window	N	mean CAR	t-statistics
CAR(-1,0,+3)	325	0.45%	2.64*
CAR (-1,0,+1)	325	0.66%	4.56***
CAR(-3,0,+3)	325	0.47%	3.86**
CAR(-10,0,+10)	325	0.10%	0.83
CAR(-15,0,+15)	325	0.08%	0.83
Panel B: Cross-border			
event window	N	mean CAR	t-statistics
CAR(-1,0,+3)	116	0.53%	2.35**
CAR (-1,0,+1)	116	0.82%	8.04***
CAR(-3,0,+3)	116	0.56%	3.38**
CAR(-10,0,+10)	116	0.15%	0.78
CAR(-15,0,+15)	116	0.13%	0.73
Panel C: Domestic			
event window	N	mean CAR	t-statistics
CAR(-1,0,+3)	212	0.40%	2.24*
CAR (-1,0,+1)	212	0.57%	3.31**
CAR(-3,0,+3)	212	0.43%	2.33*
CAR(-10,0,+10)	212	0.08%	0.75
CAR(-15,0,+15)	212	0.06%	0.74

The size of full sample is constructed by 325 acquiring firms. In detail, 116 acquiring firms made cross-border M&A deals, and 212 acquiring firms made domestic M&A deals. This paper uses market model which is "abnormal return=actual return-(alpha+ market return*beta)" to determinate the abnormal return. This paper estimates αand βusing data from t_{-220} to t_{-20} . Moreover, CARs in different

event windows are average of abnormal returns for each stock for a specific period. Panel A for full sample, Panel B for cross-border portfolio and Panel C for domestic portfolio. Furthermore, *, **, and *** indicate significance level at 10%, 5% and 1% levels respectively.

4.1.2 Short-term performance on cross-border M&A deals

Table 4 Panel B presents cumulative abnormal returns for cross-border mergers and acquisitions under different event windows, and there are 116 acquiring firms made cross-border M&A deals from 2000 to 2013. According to table 4 Panel B, the significant positive CARs are at 0.53%, 0.82% and 0.56% for (-1, 0, 3), (-1, 0, +1) and (-3, 0, +3) windows respectively. In detail, the most significant CAR is showed in three days (-1, 0, +1) event window and it is statistically significant at 1 percent level. In addition, CARs for (-10, 0, +10) and (-15, 0, +15) windows are also not significant.

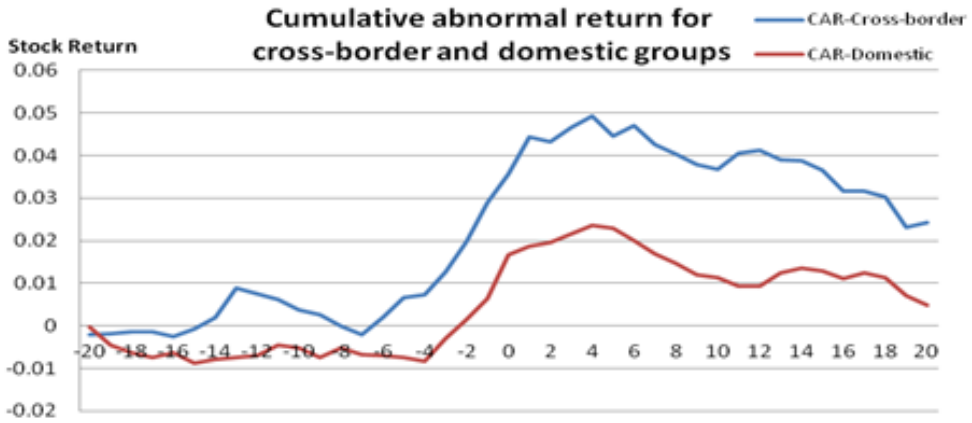
4.1.3 Short-term performance for domestic M&A deals

Table 4 Panel C shows cumulative abnormal returns in short-term for acquiring firms which made domestic mergers and acquisitions from 2000 to 2013. According to the table 4 panel C, (-1, 0, +1) window is the most significant event window in this portfolio and the average CAR is equal to 0.57%. In addition, CARs over the three days event window is statistically significant at 5 percent level. However, (-1, 0, 3) and (-3, 0, +3) windows are weakly significant which is 0.4% and 0.43% respectively. Moreover, (-10, 0, +10) and (-15, 0, +15) windows are not significant.

4.1.4 Comparing announcement returns between cross-border and domestic M&A deals

The figure 3 displays the distribution of CARs for cross-border and domestic M&As from 20 days prior to and 20 days after the announcement day. Based on figure 3, CARs in both cross-border M&A deals and domestic M&A deals are around zero at the beginning of event window. From day -20 to day -6, CARs for both cross-border M&As and domestic M&As slowly increase. From day -6 to day -4, CARs for cross-border M&As go up sharply, but CARs for domestic M&As still slightly go down. From day -4 to day +4, CARs for both cross-border M&As and domestic M&As rapidly increase. After day +4, CARs for both domestic M&As and cross-border M&As slightly go down. Through the forty-one (-20, 0, 20) event window, cross-border M&A deals show higher CARs than domestic M&As. On day +20, CARs for cross-border M&As and domestic M&As are around 2.5% and 0.5% respectively.

Figure 3. Cumulative abnormal returns (CARs) for Chinese acquiring firms (cross-border and domestic)



In summary, significant positive CARs are showed in three days (-1, 0, +1) event window, five days (-1, 0, 3) event window and seven days (-3, 0, +3) event windo. For twenty one days (-10, 0, +10) event window and thirty one days (-15, 0, +15) event window, CARs do not show significance for all portfolios. In addition, the most significant CAR is displayed on (-1, 0, +1) window for cross-border portfolio and it is equal to 0.82%. Moreover, CARs for all portfolios moves around zero before day -4. After that, CARs increase significantly from day -4 to day +4. After day +4, CARs for all portfolios go down. Comparing CARs for cross-border M&As and domestic M&As, cross-border mergers and acquisitions show higher returns for announcement than domestic mergers and acquisitions.

4.2 Performance of long-term return for an acquisition event analyzed by using Market Model, CAPM model and Fama-French (FF) 3-factor model

This part describes long term performance of acquiring firms which made M&A deals during 2000-

2010, and this paper measures the monthly post-acquisition abnormal returns from the announcement months to three years after announcement months. For the methodology, this paper uses market model (MM model), CAPM model and Fama-French 3 factor model (FF model) to calculate the monthly abnormal returns. In detail, this section displays long term performance for all Chinese M&A deals between 2000 and 2010 and discusses different long-term performance between cross-border M&As and domestic M&As.

4.2.1 Long-term performance of full sample

Table 5 Panel A and figure 4 show post-acquisition monthly abnormal return for Chinese acquiring firms. This paper uses three models which are market model, CAPM model and Fama-and-French three factor model to calculate long-term abnormal return. From table 5 panelA and figure 4, a large part of abnormal returns in post-acquisition period are positive. In detail, the result shows abnormal return in the announcement month is significantly positive by using all three models. However, the post-acquisition abnormal return around is around 0% in the second month. In addition, the post-acquisition abnormal returns from second month to twelfth month are positive which brings more benefit to shareholders.

According to table 5 panel A, the average monthly abnormal returns in the first year are 1.331%, 1.331% and 1.374% which are calculated by MM model, CAPM model and FF model respectively. From figure 4, the most significant positive abnormal return in the first year is around 3% and it is in the 7th post-acquisition month. However, abnormal returns from 12th months to 24th months fluctuate around 0, and abnormal return in 13th months is significantly negative. Moreover, the monthly abnormal returns in the third year after merger and acquisition are all positives except the last month. In detail, the most significant positive post-acquisition abnormal return is about 6%in the 27th month. Moreover, Table 5 panel A indicates that the average post-acquisition abnormal return in third year are 1.585%, 1.585% and 1.547%which are calculated by MM model, CAPM model and FF model respectively.

Table 5. Yearly abnormal returns by using Market model, CAPM model and Fama-French model for full sample

Panel A: Average monthly abnormal return for Full sample				
	AR for MM	AR for CAPM	AR for FF	T value
Year 1	0.0133	0.0133	0.0137	2.9379***
Year 2	0.0054	0.0054	0.0061	0.3851
Year 3	0.0159	0.0159	0.0155	3.3601***
Panel B :Average monthly abnormal return for Cross-border deals				
	AR for MM	AR for CAPM	AR for FF	T value
Year 1	0.0006	0.0006	-0.0002	0.0744
Year 2	-0.0093	-0.0093	-0.0085	-1.4603*
Year 3	-0.0034	-0.0034	-0.0031	-0.6449
Panel C: Average monthly abnormal return for Domestic deals				
	AR for MM	AR for CAPM	AR for FF	T value
Year 1	0.0156	0.0156	0.0172	3.5903 ***
Year 2	0.0120	0.0120	0.0153	3.3699 **
Year 3	0.0271	0.0271	0.0280	3.6702***

The full sample consists of 201 acquiring firms which made M&A deals from 2000 to 2010 (Panel A). In addition, 61 acquiring firms made cross-border M&A deals (Panel B), and 140 acquiring firms made domestic M&A deals (Panel C). Moreover, AR for MM indicates long-term abnormal returns which are calculated by market model, AR for CAPM presents long-term abnormal returns which are calculated by capital asset pricing model and AR for FF displays long-term abnormal returns which are calculated by Fama-French three factor model. Furthermore, *, **, and *** indicate significance level at 10%, 5% and 1% levels respectively.

Figure 5 present cumulative post-acquisition abnormal returns which are calculated by using MM model, CAPM model and FF model. According to Figure 5, CARs in post-acquisition period rise continuously in general. In detail, the CARs increase rapidly from the first month to the eighth month and slightly from ninth months to 24th months. After 24th months, CARs surged about 20% in just one year. However, the CAR decreases greatly in the 36th months. Moreover, CARs are around 2.5% in the first month while after three years, CARs are around 43%.

Figure 4. Abnormal returns for MM model, CAPM model and FF model

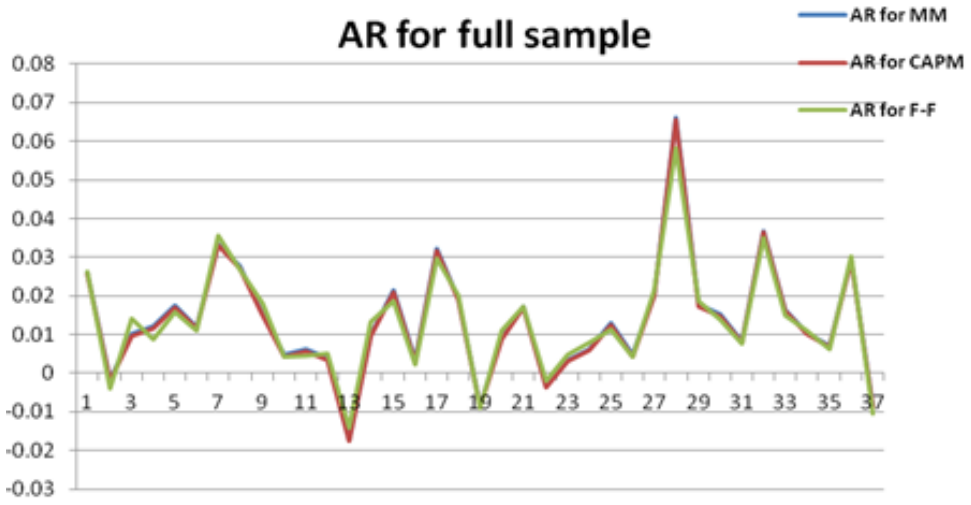
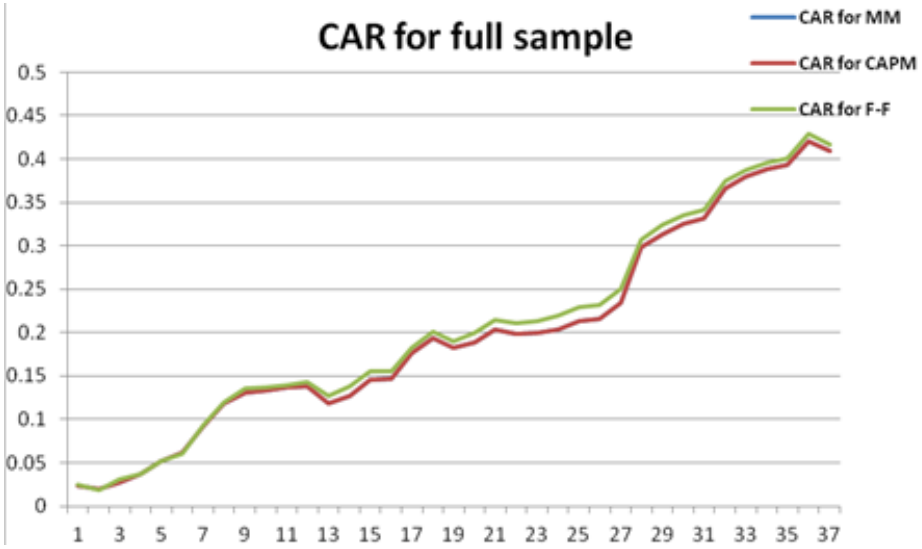


Figure 5. Cumulative abnormal return for MM model, CAPM model and FF model



In summary, there is not too much difference for post-acquisition abnormal returns calculated under three methodologies which are MM model, CAPM model and FF model. However, this paper uses MM model to calculate abnormal returns in next part and finds some unusual results for cross-border and domestic portfolio. Moreover, it is also suggested that mergers and acquisitions result in positive post-acquisition returns. In detail, the abnormal returns hike significantly in year 1 and year 3 but only increase slightly in year 2.

4.2.2 Long-term performance of cross-border sample

Table 5 Panel B presents monthly abnormal returns for acquiring firms with cross-border M&A deals from 2000 to 2010 and figure 6 presents long term abnormal returns which are calculated by MM model, CAPM model and FF model. In detail, Table 5 panel B shows post-acquisition abnormal return in year 1 is 0.057% and post-acquisition abnormal returns in year 2 and year 3 are -0.0927% and -0.0339% respectively. According to figure 6, the abnormal returns from second month to 36th month fluctuate between -4% and 2%. Moreover, a large portion of abnormal returns is less than zero. In detail, figure 6 depict that abnormal returns for post-acquisition are larger than 2% only in 7th month, 17th month and 25th month. However, post-acquisition abnormal returns are significantly negative in 9th month and 13th month which are less than -3.5%.

Figure 7 presents post-acquisition cumulative abnormal returns for acquiring firms which made cross-border M&A deals from 2000 to 2010. It shows that CARs significantly decrease in the whole post-acquisition period. From 1st month to 12th month, the post-acquisition CARs are positive and slightly decrease. After 13th post-acquisition month, CARs become negative. In addition, CARs decrease sharply from 13th month to 15th month and from 33th month to 36th month.

Figure 6. Long-term abnormal return for cross-border portfolio by using MM model, CAPM model, and FF model

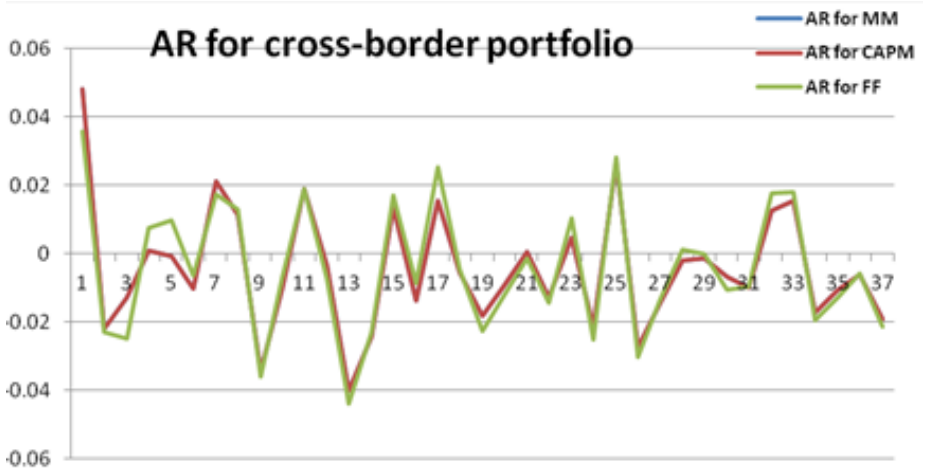
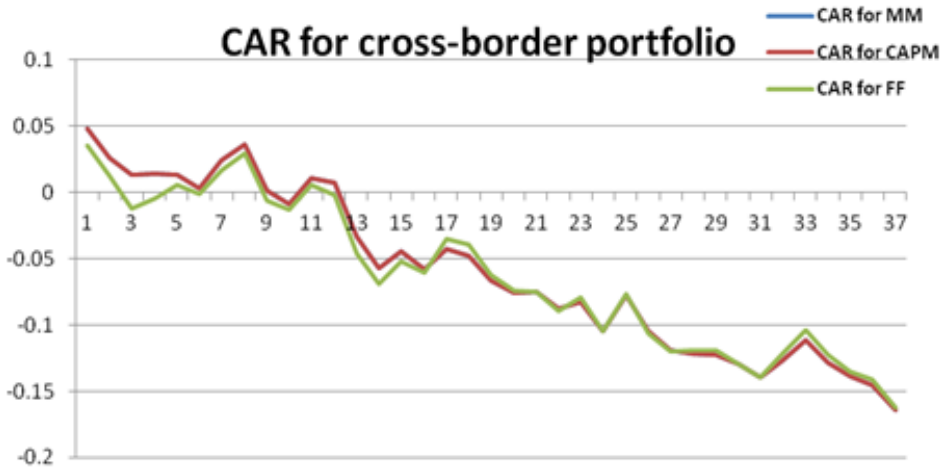


Figure 7. Long-term cumulative abnormal return for cross-border portfolio by using MM model, CAPM model, and FF model



In short, post-acquisition abnormal returns for acquiring firms which made cross-border deals move around zero. In addition, CARs of cross-border portfolio are positive in the first post-acquisition year, but abnormal returns are negative after year 1. The CARs significantly decrease in year 1 and year 3.

4.2.3 Long-term performance of domestic sample

Table 5 Panel C displays yearly post-acquisition abnormal returns which are calculated by using MM model, CAPM model and FF model. According to the Table 5 Panel C, the most significant abnormal return is displayed in year 3, and it is equal to 2.705% in year 3. However, average monthly abnormal return in year 2 is 1.195% which is not very significant. In addition, figure 8 presents post-acquisition abnormal returns for acquiring firms which made domestic M&A deals. It shows that post-acquisition abnormal return in the 1st month is about 1%. In addition, the post-acquisition abnormal returns significantly increase from about 1% in the 1st month to about 3.5% in 8th month. Moreover, the abnormal returns rapidly decrease in the 9th month and are around 0% to 12th month. From 13th month to 24th month, the post-acquisition abnormal returns moved around 2%. On the 27th month, the most significant abnormal return display at about 10%. After 27th month, the abnormal returns decrease from about 10% on 27th month to -0.5% on 36th month.

Figure 9 presents post-acquisition cumulative abnormal returns for domestic portfolio which are calculated by MM model, CAPM model and FF model from 2000 to 2010. The CARs increase from 1% on the 1st month to 70% on the 36th month. Comparing MM model, CAPM model and FF model, there is only slightly different results for CARs. In addition, CARs raise more in year 1 and year 3 than in year 2.

Figure 8. Abnormal returns for domestic portfolio by using MM model, CAPM model, and FF model

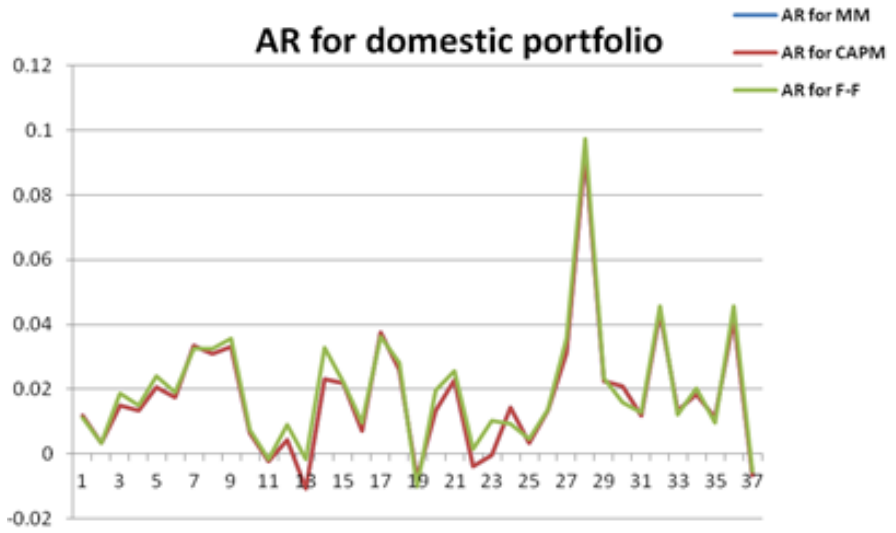
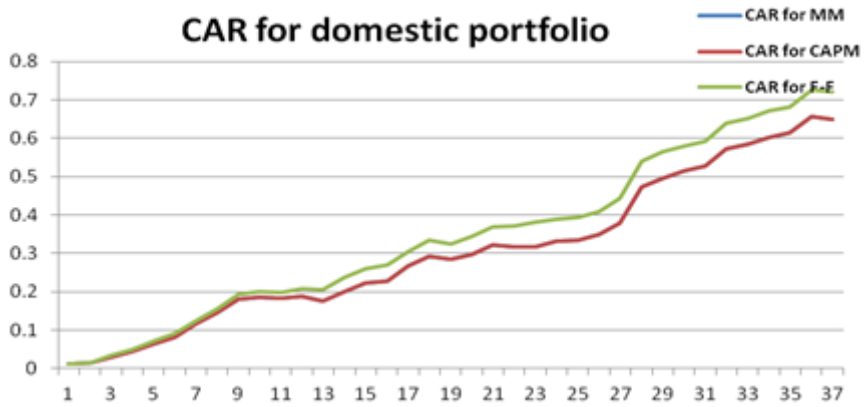


Figure 9. Long-term cumulative abnormal return for domestic portfolio by using MM model, CAPM model, and FF model



In short, CARs for domestic portfolio in post-acquisition period increase significantly. In detail, abnormal returns in year 1 and year 3 surge more greatly than abnormal returns in year 2. In addition, the most significant positive abnormal returns is about 10% on the 27th post-acquisition month.

In summary, this paper describes long-term performance of Chinese acquiring firms which made M&A deals between 2000 and 2010. For the methodology, this paper calculates post-acquisition abnormal returns by MM model, CAPM model and FF models. In addition, this paper finds abnormal returns which are calculated by these three models only get slight difference. Thus, this paper uses MM model to do main analysis, because it is sensitive to market. Moreover, this paper examines post-acquisition abnormal returns for acquiring firms which made domestic M&A deals or cross-border M&A deals. In detail, this paper supports that CARs for cross-border M&A deals are negative in the 36 months post-acquisition period. The most significant abnormal return of cross-border portfolio is about 5% in the 1st post-acquisition months. However, CARs for domestic M&A deals are significantly positive at the end of 36 months post-acquisition period. Moreover, the most significant abnormal return displays at 10% in the 27th post-acquisition month.

4.3 Operating performance between pre-acquisition and post-acquisition period

This section main describes change in operating performance of acquiring firms in the post-acquisition period. In detail, this paper compares operating performance in post-acquisition period with operating performance in pre-acquisition period. The time period is from three years before the M&A deals to three years after the M&A deals. Moreover, operating performance are included in return on asset (ROA), return on equity (ROE), profit margin, Tobin's Q, return on sales (ROS), leverage, total asset, operating growth, sales/total asset (S/TA) and cash flow operation (CFO).

4.3.1 Operating performances for full sample

Table 6 presents the change in the operating performance is obvious in post-acquisition period when compared to the pre-acquisition period. From table 6 panel A, ROA, profit margin and cash flow operation decrease significantly in the post-acquisition period and are significant at 5% level. In addition, ROE and Tobin's Q have positive effect in the post-acquisition period and is significant at 5% level. Especially, change of Tobin's Q is the most significance, and t-value for Tobin's Q is -2.2309, mean of Tobin's Q is 1.5044 in the pre-acquisition period and 1.5909 in the post-acquisition period. However, all the other variables do not change significantly in the post-acquisition.

4.3.2 Operating performance for cross-border portfolio

Table 6 panel B compares operating performance in the post-acquisition period with that in the pre-acquisition period for cross-border M&A deals. From 7 panel B, the change in cash flow operation is the most significance, and CFO presents from 0.0753 in pre-acquisition period to 0.0346 in post-acquisition period and is significant at 1% level. However, ROE, profit margin, Tobin's Q, ROS, growth of asset increase significantly in the post-acquisition period (the significant levels are less than 10%). In addition, all the other variables do not improve significantly due to M&A deals. Moreover, t-values for leverage, sales/total asset, operating growth and cash flow operation are positive, and t-values for other variables are negative.

4.3.3 Operating performance for domestic portfolio

Table 6 panel C presents the changes in the operating performance in the post-acquisition period for domestic M&A portfolio when compared to pre-acquisition period. In detail, profit margin has the most significant changes within all operating variables for domestic M&A deals, and profit margin decreases from 0.271 in pre-acquisition period to 0.2532 in post-acquisition period (the significant level is 1%).

Means of ROE and Tobin's Q increase significantly from the pre-acquisition period to the post-acquisition period. In detail, ROE increase from 0.0217 in pre-acquisition to 0.0417 in post-acquisition, and Tobin's Q increase from 1.517 in pre-acquisition period to 1.599 for post-acquisition period. Moreover, means of ROA decreases significantly from pre-acquisition period to post-acquisition period (significant levels for ROA are 5% level). Furthermore, all other variables do not changes significantly due to domestic M&A deals. For the t-value, t-values for ROE, Tobin's Q, ROS, leverage and sales/ total asset are negative and for all the other variables are positive.

Table 6 reports the pre- and post-acquisition operating performances for the full sample, cross-border portfolio and domestic portfolio. Pre- is the 3-year pre-acquisition period and post- is 3-year post-acquisition period. The size for full sample is 201 acquiring firms which are made M&A deals from 2000 to 2010 (Panel A). In addition, 61 acquiring firms are made cross-border M&A deals (Panel B), and 140 acquiring firms are made domestic M&A deals (Panel C). Moreover, ROA is operating income divided by total assets, ROE is net income divided by shareholder's equity, Profit Margin is net income scaled by revenue, Tobin's Q is value for stock market divided by corporate net worth, ROS is net income divided by sales, leverage is total assets divided by shareholders' equity, asset presents growth of sales, growth present growth of operation, sales/total asset is calculated by total sales divided by total asset and CFO is amount of cash used by business operations. Furthermore, *, **, and *** indicate significance level at 10%, 5% and 1% levels respectively.

In summary, post-acquisition operating performance is statistically different from pre-acquisition period performance for all portfolios. For the full sample, ROA, ROE, profit margin, ROS and CFO decrease significantly from pre-acquisition to post-acquisition, and Tobin's Q significantly increases in the post-acquisition period. For the cross-border portfolio, ROE, profit margin, Tobin's Q, ROS and growth of asset are significant increase in the post-acquisition when compared to the pre-acquisition period. However, cash flow operation decrease significantly from pre-acquisition period to post-acquisition period. For domestic portfolio, ROA, ROE, profit margin, ROS and CFO decrease significantly from pre-acquisition to post-acquisition. However, Tobin's Q increases significantly in the post-acquisition period.

4.4 Relationship between operating performance and long term abnormal returns

This section describes regression results between operating performance and yearly long term abnormal return. In addition, profit margin, leverage, growth of asset, sales/ total assets and cash flow operation as proxy for operating performance, and they are independent variables. Moreover, abnormal return which is calculated by MM model is dependent variable in this section. For the cross-sectional analysis, this paper separates full sample into cross-border portfolio and domestic portfolio.

4.4.1 Regression between operating performance and long-term abnormal return: evidence from full sample

Table 6 panel A presents regression results for operating performance and full sample abnormal

returns. From table 6 panel A, there are absolute positive relationship between abnormal return and leverage, and the t-value for leverage is 2.9590 (leverage is significant at 1% level). In addition, assets' growth has a significant positive relationship with long-term abnormal return. Moreover, all the other variables do not have significant relationship with abnormal returns.

Table 5. Comparison of operating performance in the pre-acquisition and post-acquisition

Panel A: Full sample			
	Pre-acquisition	Post-acquisition	(1) vs (2)
Ratio	Mean (1)	Mean (2)	t value
ROA	0.0250	0.0193	1.9925**
ROE	0.0265	0.0448	-1.8535**
profit margin	0.2570	0.2503	2.0559**
Tobin's Q	1.5044	1.5909	-2.2309**
ROS	0.0678	0.0791	-0.4922
Leverage	1.9851	1.9875	-0.0248
Asset	0.1429	0.0909	1.0687
Growth	0.4214	0.3310	0.1198
Sales/ total asset	0.1000	0.0697	0.6792
CFO	0.1209	0.0954	1.7948**
Panel B: Cross-border portfolio			
	Pre-acquisition	Post-acquisition	(1) vs (2)
Ratio	Mean (1)	Mean (2)	t value
ROA	0.0152	0.0192	-1.2187
ROE	0.0379	0.0520	-1.6304*
profit margin	0.2232	0.2434	-3.6279***
Tobin's Q	1.4762	1.5725	-2.0015**
ROS	0.0602	0.0887	-1.5018*
Leverage	1.9020	1.7945	0.4773
Asset	0.0954	0.1289	-1.4854*
Growth	0.6939	0.4761	0.6680
Sales/ total asset	0.3184	0.0226	1.2872
CFO	0.0753	0.0346	6.1626***
Panel C:Domestic portfolio			
	Pre-acquisition	Post-acquisition	(1) vs (2)
Ratio	Mean (1)	Mean (2)	t value
ROA	0.0293	0.0194	2.2043**
ROE	0.0217	0.0417	-1.4379*
profit margin	0.2710	0.2532	4.5513***
Tobin's Q	1.5170	1.5990	-2.1685**
ROS	0.0711	0.0749	-0.1406
Leverage	2.0164	2.0739	-1.0125
Asset	0.1670	0.0741	1.2327
Growth	0.2877	0.2591	0.0253
Sales/ total asset	0.0569	0.0890	-0.6985
CFO	0.1393	0.1198	1.0881

4.4.2 Regression between operating performance and long-term abnormal return: evidence from cross-border sample

Table 6 panel B displays regression result between operating performance and abnormal returns for cross-border portfolio. From table 6 panel B, profit margin influence negative to abnormal returns. In addition, growth of assets shows positive significance. In addition, all the other variables do not significant affect abnormal returns.

4.4.3 Regression between operating performance and long-term abnormal return: evidence from cross-border sample

Table 6 panel C indicates relationship between domestic portfolio's abnormal returns and operating performance for domestic portfolio. From table 6 panel C, growth of asset and leverage have significant positive relationship with abnormal returns. However, profit margin influences negatively and significantly to abnormal returns. In addition, all the other variables are not significance.

Table 6 reports the regression between abnormal returns and post-acquisition operating performances for the full sample, cross-border portfolio and domestic portfolio. The size for full sample is 201 acquiring firms which are made M&A deals from 2000 to 2010 (Panel A). In addition, 61 acquiring firms are made cross-border M&A deals (Panel B), and 140 acquiring firms are made domestic M&A deals (Panel C). Moreover, Profit Margin is net income scaled by revenue, leverage is total assets divided by shareholders' equity, asset presents growth of sales, growth present growth of operation, sales/total asset is calculated by total sales divided by total asset and CFO is amount of cash used by business operations. Furthermore, *, **, and *** indicate significance level at 10%, 5% and 1% levels respectively.

In summary, there are three variables shows significance in this section. First, growth of asset influences positively and significantly to abnormal returns for all portfolios. Second, leverage has positive and significant correlation with abnormal returns for domestic and full portfolios, but leverage do not shows significance in cross-border portfolio. Finally, profit margin in cross-border and domestic portfolios displays significance, but profit margin is not significant showed in full portfolio.

Table 6. Regression result between operating performance and abnormal returns

Panel A: Full sample		
Ratio	constant	t value
Asset	9.6859	1.9113*
CFO	1.8468	0.5327
Profit margin	-32.5259	-1.5812
Leverage	3.1872	2.9590**
Sales/ total asset	-0.8727	-0.6082
Panel B:Cross-border portfolio		
Ratio	constant	t value
Asset	5.8575	3.1196**
CFO	-0.1066	-1.6100
Profit margin	-21.6416	-2.5182**
Leverage	-2.8244	-1.2462
Sales/ total asset	0.1003	1.1623
Panel C: Domestic portfolio		
Ratio	constant	t value
Asset	12.4276	3.5730***
CFO	3.0859	0.9439
Profit margin	-45.0523	-2.8056**
Leverage	3.3486	3.4590***
Sales/ total asset	-1.3054	-1.1272

5 Empirical discussions

This section discusses some findings by examining short-term performance of Chinese acquiring firms. In addition, this section also investigates post-acquisition abnormal returns of mergers and acquisitions. Moreover, this section compares the cross-border acquisitions with domestic acquisitions for long-term period. Then, this section compares the difference of operating performance in pre-acquisition period and post-acquisition period. Finally, this paper discusses findings from regression between operating performance and post-acquisition abnormal returns.

5.1 Findings from short-term performance

This section discusses some findings based on short-term performance of mergers and acquisitions. In addition, this section compares short-term performance of cross-border M&As with that of domestic M&As.

5.1.1 Short-term performance of full sample

This paper proposes two results of short-term performance which are based on the table 3 panel A and figure 2. One is that mergers and acquisitions result in positive announcement effect and shows positive abnormal return. This could be because abnormal returns in (-1, 0, 3), (-1, 0, +1) and (-3, 0, +3) event windows are significantly positive. This result is also supported by Jog & Dutta (2009). Jog & Dutta (2009) used market model to test abnormal returns around announcement and suggested that M&A deals influence positively on stocks of Canadian acquiring firms in the short-term period. The other result is that information leakage problem is serious in

Chinese stock market, as significant positive abnormal returns shows before the announcement day. This result was also proved by Ma & Pagán (2009). In detail, Ma & Pagán (2009) explained that legal system in developing countries was not as perfect as that of developed countries, so the information was leaked before the announcement day. Therefore, M&A deals result in positive abnormal stock return in short-term period around announcement day.

5.1.2 Short-term performance of cross-border M&A deals and domestic M&A deals

Based on table 3 panel B, panel C and figure 3, stock returns for acquiring firms are significantly positive for both cross-border M&A deals and domestic M&A deals in the short-term period. When comparing cross-border M&As with domestic M&As, this paper proposes two results. First, there are significant abnormal return for three event windows which are (-1, 0, 3), (-1, 0, +1) and (-3, 0, +3) windows for both cross-border portfolio and domestic portfolio. This result indicates that both cross-border portfolio and domestic portfolio have information leakage problem. However, the distinct increase of abnormal returns for cross-border portfolio starts from day -6 while day -4 is the day that abnormal return for domestic portfolio surges. The difference could prove that information leakage problem for cross-border M&A deals is more intense than domestic M&A deals. Second, as figure 3 displays the different CARs between cross-border M&As and domestic M&As, it also indicates that cross-border acquisitions result in more announcement effect and bring more benefit to shareholders than domestic acquisitions which is also proved by Conn etc. (2005) .

In summary, three main results are discussed about announcement effect for short-term performances. First, this paper reproves that announcements of mergers and acquisitions have significant positive relationship with high stock returns as abnormal returns significantly increase around the announcements of M&A deals. Second, information leakage problem is severe in Chinese stock market. The main reason is that developing countries such as China do not have well developed legal system as developed countries such as U.S to control the information leakage problems and protect the interest of investor. Finally, stock price for the firms which made cross-border M&A deals rise more than firms which made domestic M&A deals. As a result, cross-border M&A deals create more value to investors.

5.2 Findings from long-term performance

This section proposes some findings about post-acquisition abnormal returns for all Chinese firms that made M&A deals during 2000-2010. In addition, this paper compares cross-border M&A deals with domestic M&A deals in this section. Moreover, this paper shows whether abnormal returns which are calculated by MM model, CAPM model and FF model are difference or not.

5.2.1 Long-term performance for full sample

According to the table 4, figure 4 and figure 5, M&A deals could create value for shareholders and two main findings are proposed in this part. First, abnormal return for first post-acquisition month is significantly positive. This result also supports the findings about short-term performance that the M&As' announcement had a positive effect on stock price of Chinese acquiring firms. Second, the increase of CAR in the post-acquisition period proves that Chinese M&A deals could create value for acquiring firms in the long-term period. In addition, this result is consistent with Huang & Bhabra (2013). Huang & Bhabra (2013) examined Chinese M&A firms during 1997 to 2007. They also supported acquiring firms earn significant positive abnormal return over three years after acquisitions. However, this result is not consistent with Jog & Dutta (2009) and Dube & Glascock (2006). They also used CAPM model and FF three factor model to examine long term M&As performance of Canadian acquiring firms and America firms respectively, but they did not find any evidence to support M&A deals result in positive post-acquisition returns.

5.2.2 Long term performance for cross border and domestic M&A deals

According to table 4 panel B, figure 6 and figure 7, abnormal returns for cross-border M&A are significantly positive in the first post-acquisition month. This finding also supports that CARs are positive in the short-term period as discussed before. However, CARs for cross-border M&A deals decrease significantly for whole 36 months period. In fact, this means cross-border M&A deals could not create value for acquiring firms. This result is supported by Conn et al. (2005). Conn et al. (2005) examined the post-acquisition share returns for UK acquiring firms which includes domestic, cross-border, public and private M&A deals. The study indicated that cross-border acquisitions for public acquiring firms resulted in negative post-acquisition returns. However, this result is not supported by Duppati, Locke & Lawrence (2013). Duppati, Locke & Lawrence (2013) used MM model to measure long-term abnormal return for Indian firms which made cross-border M&A deals. Moreover, they suggested that abnormal stock returns were significantly positive for post-acquisition period. However, market return performance of Chinese acquiring firms indicates cross-border M&A deals do not create value for shareholders in the post-acquisition period.

According to table 4 panel C, figure 8 and figure 9, domestic M&A deals result in positive abnormal returns in post-acquisition period. This would be because post-acquisition CARs increase significantly from 1st month to 36th months. This result is also supported by Huang & Bhabra (2013). In detail, Huang & Bhabra (2013) examined 136 M&A deals from 1997 to 2007 by Chinese listed firms, and they supported that investors could earn significant positive abnormal returns by holding stocks of those companies after M&A deals. However, Conn et al. (2005) did not support this finding. According to their paper, they used both buy and hold method and CAPM model to calculate post-acquisition abnormal returns and found domestic public acquisitions result in negative post-acquisition returns. In short, post-acquisition abnormal returns surge significantly in the first year (from 0 month to 12 month) and the third year (from 24 month to 36 month). As a result, investors may earn more profit in the first year and third year after M&A deals if they hold those stocks.

After comparing domestic portfolio with cross-border portfolio, there are two differences between these two portfolios. First, CARs for cross-border M&A deals decrease slightly in 36 post-acquisition months, but CARs for domestic M&A deals increase significantly in 36 post-acquisition months. This finding shows that domestic M&A deals create value for acquiring firms which made domestic M&A deals while cross-border M&A deals decrease value for acquiring firms in China. Thus, acquiring firms may prefer to make M&A deals with domestic firms instead of cross-border firms. According to the final sample, 141 firms make domestic M&A deals, but only 61 acquiring firms make cross-border M&A deals during 2000-2010. This result is also supported by Conn (2005). Conn (2005) suggested that cross-border acquisitions result in lower long-term returns than domestic acquisitions. In addition, they also explained that national culture differences impose significant negative impact on cross-border acquisitions performance.

Second, the most significant positive abnormal return for cross-border portfolio is 4.81% in the 1st month. However, 9.73% is the most significant positive abnormal returns for domestic M&A deals and turns up in the 27thmonth. This finding reproves that abnormal returns for cross-border M&A deals decrease after the first post-acquisition months. However, shareholders could make profit by hold stocks with domestic M&A deals as the CARs for those stocks rise continuously. Last, abnormal returns for cross-border portfolio fluctuate around zero, but abnormal returns for domestic abnormal returns wave around 2%. Therefore, these findings also could explain that the domestic M&A deals could create value for shareholders while cross-border M&A deals result in negative post-acquisition.

5.2.3 Comparing MM model, CAPM model and FF model

By comparing MM model, CAPM model and FF model from figure 3 to figure 8, there is no significant difference abnormal returns between these three models as presented from the figure 3. Especially, CARs which is calculated by using MM model and CAPM model almost get the same result for whole period. Therefore, the figure 3 and figure 4 prove that calculating expected return by using MM model, CAPM model and FF model could get similar abnormal returns. Therefore, future studies could select any type of models to calculate the expected return and measure the abnormal return for M&A deals.

In summary, this section discusses three findings about long-term performance. First, Chinese M&A deals result in positive post-acquisition returns, and this suggests that a number of Chinese M&A deals could create value for shareholders. Second, cross-border M&A deals have slightly negative impact on post-acquisition returns, but domestic M&A deals result in significantly positive post-acquisition returns. By comparing cross-border M&A deals with domestic M&A deals, this paper supports that cross-border M&As result in lower long-term returns than domestic M&As. Third, abnormal returns which is calculated by MM model, CAPM model and FF model result in similar results.

5.3 Findings for long term operating performance of M&A deals

This section discusses the findings about change of operating performance of all Chinese acquiring firms in the post-acquisition period when compared to the pre-acquisition period. In addition, this paper also discusses the changes of operating performance of acquiring firms which made cross-border M&A deals and domestic M&A deals respectively.

5.3.1 Operating performance for full sample

According to table 5 panel A, cash flow operation decreases significantly in the post-acquisition period. As this paper explained before, cash flow operation is used to measure the amount of cash which is used for companies' business operations. Thus, the decrease of cash flow operation suggests acquiring firms use cash for reinvestment instead of their business operations. This result is consistent with Rahman and Limmack (2004) and Healty et al. (1992). Rahman and Limmack (2004) and Healty et al. (1992) used operating cash flow to proxy as operating performance. They supported operating performances have significantly negative correlation with M&A deals in Malaysia and U.S. However, Ramakrishman (2008) support operating performance has a significantly positive correlation with M&A deals in

India. In addition, Ghosh (2001) examined the relationship between M&A deals and cash flow operation for hundred largest listed firms with M&A deals during 1981 to 1995, and there was no evidence to prove that operating cash flow was significantly changed after the M&A deals.

Decrease of ROA and profit margin presents that net income and firms' profitability decrease significantly in the post-acquisition period. This result suggests that acquiring firms lose extra profit in the post-acquisition period. However, Huang & Bhabra (2013) not supports this result. Huang & Bhabra (2013) investigated long term operating performance of acquiring firms in China and used ROA, ROE and profit margin to proxy for operating performance. In addition, although Huang & Bhabra (2013) found operating performance decreased slightly in the post-acquisition period, operating performance had no a significant relationship with M&A deal.

Mean of Tobin's Q and ROE increases significantly from pre-acquisition period to post-acquisition period. As this paper discussed before, ROE is equal to net income divides by equity, so the increase of ROE presents shareholders could make more profit from after the mergers and acquisition. This finding also support that M&A deals could create value to shareholders in the long-term period as this paper mentioned before. In addition, Chappell & Cheng (1984) supported this result. Chappell & Cheng (1984) tested the relationship between firms' acquisition decisions and Tobin's Q, and they found Tobin's Q has a positive impact on M&A deals. However, Huang & Bhabra (2013) examined the change of ROE in the post-acquisition period and supported that ROE had no significant change due to M&A deals.

In summary, ROA, profit margin and CFO decrease significantly in the post-acquisition period, but Tobin's Q and ROE increase significantly in the post-acquisition period. Thus, it is hard to support that operating performance has a positive or negative relationship with M&A deals. Therefore, this paper divides full sample into cross-border portfolio and domestic portfolio to analyze change of operating performance in the post-acquisition period.

5.3.2 Operating performance for cross-border portfolio

According to table 5 panel B, only cash flow operation decline significantly in the post-acquisition period. This result proposes acquiring firms use less cash by the companies' normal business operations in the post-acquisition period. This result does not support by Healy, Palepu & Ruback (1992). They investigated post-acquisition operating cash flow, and they supported that operating cash flow improved from pre-acquisition period to post-acquisition period. In addition, profit margin surge sharply from pre-acquisition period to post-acquisition period. As this paper mentioned before, profit margin is calculated by net income divide to total revenue. Thus, the increase of profit margin presents that acquiring firms make extra profit in the post-acquisition period. Moreover, ROE, Tobin's Q and growth of asset rise significantly in the post-acquisition period. This result supported that cross-border M&A deals could make extra profit to shareholders, enhance the market value and increase the size of acquiring firms. Severiens (1991) is consistent with this result. Severiens (1991) tested the motivation of cross-border M&A deals, and supported that saving tax, creating accounting and enhancing market value to acquiring firms are main motivation for cross-border M&A deals. Therefore, the operating performance improved for acquiring firms with cross-border M&A deals in the post-acquisition period.

5.3.3 Operating performance for domestic portfolio

According to table 5 panel C, profit margin decreases sharply from pre-acquisition period to post-acquisition period. Decrease of profit margin presents acquiring firms loss profit in the post-acquisition period. This result is consistent with Erdogan (2012). They supported that profit margin decreased in the post-acquisition period. In addition, this paper finds ROE and Tobin's Q increase significantly in the post-acquisition period when compared to pre-acquisition period. Thus, the increase of ROE and Tobin's Q presents shareholders could earn more money after domestic M&A deals. Moreover, ROA declines significantly in the post-acquisition period. ROA presents return on investment, so the decline of ROA support that acquiring firms earn less profit from investment in the post-acquisition period. Therefore, the operating performance changed for acquiring firms with domestic M&A deals in the post-acquisition period when compared to pre-acquisition period. Moreover, some variables improved due to domestic M&A deals, but some variables decreased due to domestic M&A deals.

5.3.4 Comparing operating performance for cross-border and domestic portfolio

Comparing cross-border portfolio and domestic portfolio, there are four different results between these two portfolios. First, profit margin in both cross-border and domestic portfolios are significant affected by M&A deals, and the significant levels are less than 0.05 in both portfolio. However, t-value for profit margin in cross-border portfolio is -3.6279, but t-value for profit margin in domestic portfolio is 4.5513. Thus, increasing profit margin for cross-border portfolio supports acquiring firms with cross-border M&A deals could make extra profit in the post-acquisition, but domestic M&A deals lead acquiring firms lose profit in the post-acquisition period when compared to the pre-acquisition period. Second,

operating cash flow for cross-border M&A deals significant decreased, but change of operating cash flow is not significance for domestic portfolio. This result means acquiring firms which are made cross-border M&A deals use more money on reinvestment in the post-acquisition, because they have fewer amounts of cash is made by business operations. However, acquiring firms which made domestic M&A deals are not changes the amounts of cash which is used for business operation. Third, ROA for cross-border M&A portfolio are not changed due to M&A deals, but domestic M&A portfolio's ROA significantly decreases due to M&A deals. This result proved that acquiring firms which made domestic M&A deals lose profit in the post-acquisition period. Finally, operating variables in cross-border portfolio improved in the post-acquisition period. For the domestic portfolio, some variables decreased and some variables increased in the post-acquisition period. Thus, operating performance of acquiring firms with cross-border M&A deals improved in the post-acquisition period when compared to pre-acquisition period. However, domestic M&A deals could affect the operating performance of acquiring firms, but there is no evidence to support that operating performance of acquiring firms with domestic M&A deals increased or decreased in the post-acquisition.

In summary, this paper discusses the change of operating performance between pre-acquisition period and post-acquisition period. For the full sample, decrease of ROA, profit margin, and CFO supported that acquiring firms may lose profit in the post-acquisition period. However, increase of ROE and Tobin's Q indicates M&A deals could create value to shareholders in the post-acquisition period. For cross-border portfolio, significantly decrease of cash flow operation proves that acquiring firms use more money to improve the firms instead of use money to make operation business. In addition, significant increase of other variables presents operating performance of acquiring firms improved in the post-acquisition period for cross-border portfolio. Finally, significant decrease of profit margin for domestic portfolio proved that acquiring firms may earn less profit in the post-acquisition period. In addition, increase of ROE and Tobin's Q supports that domestic M&A deals could make extra profit to shareholders in the post-acquisition period as this paper proved before.

5.4 Findings from regression between long-term abnormal returns and operating performance

This section explains results from regression tests between abnormal returns and operating performance. Growth of asset, CFO, profit margin, leverage and sales/total asset are proxy for operating performance in this section. The result shows three variables having relationship with abnormal returns which are leverage, profit margin and growth of asset. This paper explains the results in this section.

According to table 6, leverage significantly positive influences to long-term abnormal returns for full sample and domestic portfolio, but leverage slightly negative affect to long-term abnormal returns for cross-border portfolio. From the definition of leverage, leverage is used to measure the relationship between firms' assets and firm debt. Leverage is negative presents acquiring firms decrease the percentage of debt in order to reduce the risk of firms. The main reason for acquiring firms desire to reduce the risk of firms is financial crisis happened after 2007. Alsharairi & Salama (2012) and Li & Bouraoui (2014) support this result. Alsharairi & Salama (2012) and Li & Bouraoui (2014) also found leverage negative impact on abnormal returns in post-acquisition period. However, the financial crisis was not serious affecting Chinese economic (Richard et al., 2012), so the leverage for domestic portfolio positive affects to abnormal returns. Thus, acquiring firms made domestic M&A deals to reduce their leverage and reduce the risk of acquiring firms. In addition, Ong & Ng (2013) supported leverage positive influence to abnormal returns and capital structure became stronger in the post-acquisition period, because acquiring firms need to expansion after M&A deals. Therefore, leverage for cross-border portfolio was decreased due to financial crisis, but leverage for domestic portfolio was increased because acquiring firms need money to expansion.

Growth of assets affects positively to M&A deals for all portfolios. This result means sizes of firms surge significantly after acquiring firms made M&A deals. This result was also supported by DivyaPriya (2012) and Jang & Park (2011). DivyaPriya (2012) and Jang & Park (2011) support that firms' assets increase significantly due to M&A deals. The main reason for significant increase of firms' assets is that acquiring firms grow quickly after they achieved M&A deals. Therefore, growths of asset increase are positive reacting to abnormal returns because acquiring firms grow quickly for post-acquisition period.

Finally, profit margin affects significant and negative to abnormal returns. This result indicates acquiring firms may lose profit in the post-acquisition period. Erdogan (2012) and Ooghe et al. (2006) support this result. Erdogan (2012) and Ooghe et al. (2006) also supported that profit margin affects negatively to abnormal returns for acquiring firms in the long-term period. This would be because the acquiring firms' performance may be affected by profit of target companies.

In summary, leverage, growth of assets and profit margin are three main factors which affect to long-term abnormal returns. In addition, leverage for cross-border portfolio influence negatively to abnormal stock returns due to financial crisis broken out after 2007, but leverage for domestic portfolio

affect positively to abnormal stock returns because of firms' expansion. Moreover, assets growth affects positively to abnormal returns due to increasing of firm size. Finally, profit margin affects both significantly and negatively to abnormal returns because of poor performance for target firms.

6 Conclusions

In conclusion, this study examines both short-term and long-term performance of acquiring firms which made M&A deals during 2000 to 2013. In addition, this study examines changes of operating performance in the post-acquisition period compared to that of pre-acquisition period. Moreover, this paper investigates the relationship between long-term post-acquisition abnormal returns and operating performance. For the final short-term sample data, there are 116 cross-border M&A deals and 212 domestic M&A deals being tested during 2000-2013. For the long-term sample data, there are 62 cross-border M&A deals and 141 domestic M&A deals being considered during 2000 to 2010. For the methodology, this paper uses both event-time and calendar-time methodologies to find impact of M&A deals. After investigating, there are four main findings in this study presented as follow:

First, this study examines short-term performance of Chinese acquiring firms. In fact, the short-term period is from 20 days before the date of M&A announcement to 20 days after the M&As' announcement day. For the methodology, event-time methodology is the main method using in this section. As a result, this paper suggests that M&A deals announcement could impacted positively and significantly on stock price. However, the significant abnormal returns appeared before the M&A deals announcement day. In detail, serious leakage problem in Chinese stock market lead to this result. In order to deepen those findings, this paper also divide the full group into two groups which include either cross-border M&A deals or domestic M&A deals. After comparing the result of these two groups, the result supports serious leakage problem hypothesis in this paper. In addition, this paper also finds leakage problems for cross-border portfolio are more severe than the domestic portfolio.

Second, this study investigates long-term performance of Chinese acquiring firms. Time span in this paper is from the announcement month to 3 years after the announcement month. For the methodology, monthly calendar-time portfolio abnormal returns for acquiring firms are tested by market model, capital asset pricing model, and Fama -French three factor models. As a result, this paper support M&A deals could create value for acquiring firms in the long term, because long term abnormal returns increase significantly for Chinese acquiring firms. In order to deepen the result, this paper separates full sample into cross-border M&A deals group and domestic M&A deals group. This paper supports that domestic M&A deals could create value for acquiring firms, but cross-border M&A deals have slightly negative impact on long-term stock returns. In addition, this paper also supports that abnormal returns which are calculated by MM model, CAPM model and FF model are similar.

Third, this study tests whether the operating performance is affected by M&A deals. This paper compares the changes of operating performance between 3 years before the announcement day and 3 years after the announcement day. In addition, this paper uses ten ratios which are ROA, ROE, profit growth, TobinQ, ROS, leverage, growth of asset, growth of operation sales/total asset and cash from operations as proxy for operating performance. Moreover, operation cash flow, ROE, profit margin, Tobin's Q and return on sales have significant relationship with M&A deals for all portfolios, but other ratios do not have significant correlation with M&A deal. In detail, operating performance for cross-border portfolio improved in the post-acquisition period, and operating performance is affected by domestic M&A deals to some extent.

Last, this paper investigates the relationship between operation performance and abnormal returns. As a matter of fact, this paper supports that leverage and growth of asset significantly influence abnormal returns. In detail, leverage has positive relationship with abnormal returns for full sample and domestic portfolio, and leverage imposes negative effect on abnormal returns for cross-border portfolio. As a result, the capital structure could be changed due to M&A deals. In addition, assets growth has significantly positive relationship with abnormal returns for all portfolios. This finding proves that size of firms may increase for both cross-border portfolio and domestic portfolio because of firm expansion. Moreover, growth margin affect abnormal returns negatively and it indicates that acquiring firms lose profit in post-acquisition period.

In summary, this paper supports that M&A deals impose positive effect on stock returns in the short-term. In addition, different types of M&A deals have different relationships with stock return in the long-term. In detail, cross-border M&A deals have slightly negative relationship with stock returns for long-term performance, but domestic M&A deals affect the long term stock returns both significantly and positively. Moreover, the operating performance could be changed because of M&A deals. For the future research, authors could mainly focus on discussing M&A impact on target firms instead of acquiring firms. In addition, impact of M&A deals on private firms also could be tested in the future.

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