CROSS-BORDER MERGERS & ACQUISITIONS PERFORMANCE BY CHINESE FIRMS: INDUSTRY EFFECT ANALYSIS

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Author: Santeri Ryhänen
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Supervisor: Juha Junttila

ABSTRACT

Author	
Santeri Ryhänen	
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Abstract	
Chinese firms participate in cross-border mergers and acquisitions (CBMA) in a constantly increasing rate. As China, the leading developing economy of the world keeps developing, the dynamics of value creation through CBMA change. This study examines the short-term performance of 41 CBMA deals by Chinese firms from 2012 to 2015. Results from the event study analysis show that, on average, Chinese companies should participate in CBMA. The first result of this study indicates that Chinese acquirer companies gain significant cumulative average abnormal returns (CAARs) from CBMA. The second result of this study is that Chinese acquirer companies gain bigger CAARs from CBMA when the acquiring firm and the target firm operate in different industries. These findings, along with the existing literature about Chinese CBMA, indicate that examination of Chinese CBMA performance requires several factors to be taken into account in order to determine which firms and which industries are in the best position to create value.	
Keywords	
M&A, CBMA, Chinese economy, CAR, event study, industry-effect	
Site	
Jyväskylä University School of Business and Economics	
Supervisor	
Juha Junttila	

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1   INTRODUCTION

China has experienced an outstanding economic growth rate in the recent decades and has become the largest emerging economy (Du & Boateng 2015). As Chinese economy has grown, Chinese companies have become international in a rapid rate (Changqi & Ningling 2010). Cross Border Mergers & Acquisitions (CBMA) has become a significant phenomenon as Chinese companies seek opportunities and assets around global markets (Boateng et al. 2008). Chinese international merger deals are likely to increase both in size and frequency in the future and this will have an increasingly important impact on global economic and political relations. (Chen et al. 2011). Already in 2012, the value of CBMA acquired by Chinese firms reached a value of US$37111 million compared to US$185 million in 1991 (Du & Boateng 2015). According to data from Bloomberg (Qiu et al. 2016), a financial news agency, trade volume of Chinese overseas deals continues to grow to US$245.5 billion in 2016.

Focusing on Chinese market is relevant because Chinese economy is forecasted to become the leading economy of the world in the next few decades and unlike in any other market, in China the state-owned and state controlled enterprises form the major part of the enterprise sector (Bhabra & Huang 2013). Although being in many parts state owned, Chinese economy has seen development towards market oriented reforms to improve the competitiveness of international-oriented companies in the two recent decades (Boateng et al. 2008). Institutional pressure, such as home country regulations, plays a major part in Chinese economy (Cui 2009). China's industry has experienced robust growth under persistent structural reforms starting in 1978 (Chen et al. 2011). According to Du and Boateng (2015), the later reforms include:

1. The establishment of two stock exchanges, Shanghai and Shenzhen Stock Exchanges in 1989 and 1991, respectively.
2. Simplification and decentralization of foreign exchange administration and the establishment of a foreign exchange market to facilitate trading of the Chinese Renminbi with several currencies and changes in government policies towards outward foreign direct investment (OFDI); and
3. Enterprise reforms.

According to Luo et al. (2010) Chinese OFDI policies converge between institutional escapism and governmental promotion. The supportive government policies are important motivators for both strategic asset-seeking and market-seeking outward FDI thus improving the performance of Chinese CBMA (Li et al. 2016).

Although Chinese outward FDI is attracted to large markets, and to countries with a combination of large natural resources and poor institutions (Kolstad 2010), Chinese multinationals entering in increasingly developed industries are challenging Western multinationals as Chinese reforms and accumulated knowhow narrow the gap between the East and the West. One difference between China and developed markets is seen in completion of CBMA deals. About half

of China's overseas acquisition attempts have not been completed according to Zhang and Ebbers (2010), and the chance of success completion of Chinese CBMA is much lower than worldwide. The distinctive social and economic environment of acquirers' ownership and low competitiveness of these acquirers, lack of global experience and sensitiveness of the industries all damage the success Chinese acquisition deals (Zhang & Ebbers 2010) thus increasing the difficulty of valuation of Chinese CBMA deals. Yang and Hyland (2012) also point out that the Chinese CBMA deals are especially prone to similarity and imitation: The degree of similarity increases when the number of completed deals initiated by other Chinese firms at a prior time increases and when the firms can tell what the most popular decision choice was (Yang & Hyland 2012).

Purpose of this study is to establish a direct link between CBMA deals and the stock market reaction of the firms involved in the deals. Chinese CBMA performance, along with other CBMA activity on developing markets is a relevantly new research area: China used to be only a target for foreign investment and M&A until relatively recently. Thus, previous literature has had data from a short period of time to research the outflowing CBMA by Chinese companies. Earlier CBMA literature, such as Devos et al. (2009) among others has focused on developed markets. Still, recent years have seen a growing number of studies such as Edamura et al. (2014) and Tao et al (2017) among others focusing on CBMA performance of Chinese companies. In contrast to previous examination of Chinese CBMA performance, this study emphasizes the goal to focus on the deals by Chinese companies that target companies outside China in their CBMA activity and extends the examination to recent CBMA data not research by the previous literature.

The CBMA activity between industries, however, is a much less researched topic. Seth (1990) and Chon et al. (2003) found diversification and convergence to be important part of firms CBMA decisions. However, especially on developing markets, where the opportunities for firms in value creation might be very different compared to developed markets, CBMA effects on firm value have not been examined. The nature of Chinese economic development and the structure of Chinese economy could provide unique possibilities for firm level expansion: The CBMA possibilities could reflect the business environment and it is possible that the empirical evidence of previous literature from developed markets might not hold for cross-industry CBMA deals in China. It is possible that the previous critical evidence on diversification between industries, such as Berger and Ofek (1995), might not hold for China. Understanding the CBMA of Chinese companies is important in the process of estimating the effects that the future CBMA deals have on investors and on equity prices. This study tries to explain the theoretical background on why CBMA across industries would create abnormal returns for Chinese companies: goal is to evaluate which deals Chinese companies should participate and which not. Still, industry effect will not be a perfect tool for estimating individual company's CBMA possibilities as the CBMA performance is affected by so many firm and deal specific factors. Rather, the expected

relationship between cross-industry deals and value creation will provide an average effect model, an insight on the general CBMA theory on developing markets and especially in China.

The main contribution of this study is to scrutinize new, unexamined data set of the recent Chinese CBMA deals and to focus on the deals where the acquired or merged target lies outside China. Secondly, the categorization of the sample companies, both acquirer and target, provides an opportunity to analyze whether CBMA creates more value in within industry deals or on cross-industry deals when the acquiring company is Chinese and the target lies outside China.

Motivated by this background, this study focuses on two research questions trying to explain Chinese CBMA activity. The first research question is whether CBMA deals by Chinese acquirers, using the new data, create value for investors. Thus, the first hypothesis is:

Hypothesis 1. The announcement of CBMA by Chinese listed companies results in a positive market reaction of the acquiring firm.

The second research question of this study is to find out whether a Chinese firm that wants to engage in CBMA activity should do it within its own industry or seek assets outside of its own industry.

Hypothesis 2. The market reaction is different between cross-industry deals and same-industry deals.

Both of the research questions will be examined using event study methodology, such as in Du and Boateng (2015). Event study methodology (Brown & Warner 1980) is used to calculate the cumulative average abnormal returns in order to analyze the value created by Chinese CBMA deals.

The rest of the thesis is set out as follows: The next chapter consists of literature review related to CBMA motives, CBMA performance and value creation and previous empirical evidence on these topics. Following chapter includes the data and methodology of this study. Results and discussion are in the fourth chapter and the last chapter presents the conclusion of the thesis.

2 LITERATURE REVIEW

2.1 Motivation for cross-border mergers & acquisitions

Mergers and acquisitions (M&A) play a key role in the efficient allocation of resources in an economy. By any measure, M&A is among the most important investment decisions made by a firm (Bhabra & Huang 2013). Previous literature uses several theories and frameworks in order to explain motives and gains for M&A. This chapter will introduce different theories of previous M&A and cross-border mergers & acquisitions (CBMA) studies in order to conclude how CBMA effects of Chinese firms should be evaluated. Bhabra and Huang (2013) divide M&A theories into two categories: value-maximizing, where M&A deals are motivated by synergistic gains from the combination of the two firms and value destruction, where M&A deals are motivated by agency considerations nature and the long-term impact such decisions have on the operational and financial restructuring of the firm. According to Perry and Porter (1985), the motivation to merge depends on a complex relationship of two factors: Merger will result in a price increase of the product but the output of the merged firm declines relative to its partner's prior-merger output. The price increase must be large enough to compensate the output reduction and it must increase profits.

Does M&A pay? Bruner (2002) answers this question by summarizing evidence from 130 studies from 1971 to 2001. His results show that target firm shareholders earn positive market returns and acquirer firms, on average, receive zero adjusted returns. However, as acquirers and targets combined earn positive adjusted returns, M&A does pay. (Bruner 2002)

M&A is a strategic decision and management and shareholders should treat it as such. M&A with strategic rather than financial motives are more likely to succeed (Lim & Lee 2016). This view should be shared by the investors reacting to M&A announcements. Li et al. (2016) state that mergers and acquisitions are a vital entry strategy for foreign direct investment, and they are usually motivated by the same strategic decision making that drives other foreign direct investment decisions, for example to better exploit a firm's assets, to strategically improve its competitive advantages and to diversify risk. Firms should use their firm-specific superior assets to expand internationally. (Li et al. 2016)

Cross-border mergers and acquisitions (CBMAs) refer to mergers and acquisitions made between companies with headquarters in different countries (Hitt et al. 2006). This strategy is the fastest and the largest method of initial international expansion used by multinational firms.

Chen and Young (2010) state that engaging in CBMA is thought to be driven primarily by two motives: asset augmentation and asset exploitation/market seeking. If firms are driven primarily by the former motive, they undertake cross-border expansion for resource and knowledge acquisition to en-

hance their capabilities and competitiveness. If they are driven by the latter motive, they seek to leverage a firm's specific ownership advantages in a new setting, which in turn allows them to obtain a competitive advantage over indigenous firms in the host country (Chen & Young 2010). Firms can also perform M&A to reach both of these goals simultaneously (Dunning 2006)

Also, adding to the above concept, Deng (2010) classified there to be generally five motivations for multinationals to invest abroad: to gain resources, technology, markets, diversification, and strategic assets. From an in-depth analysis of investment data and cases from Chinese MNCs, they found motivations that are in line with this classification. According to Shleifer and Vishny (2003) misevaluation of the combining firms can be seen as the main driver of the CBMA activity. They combine neoclassical theory that sees mergers as an efficiency-improving response to various industry shocks, to new stock market valuation driven model in order to explain which companies will engage in merger activity and what will be the consequences of mergers.

In contrast to the general CBMA literature above, there is a huge difference between CBMA flows from developing countries to developed countries and those from developed countries to developing countries. CBMA activities involving firms from a developed country are likely to possess monopolistic and internalization advantages compared with the firms from a developing country (Boateng et al. 2008). CBMA activities provide emerging market firms with the fastest means to access new markets, expand their product and consumer markets internationally, overcome trade barriers and increase firm value (Du & Boateng 2015).

Developed countries and markets often have different cultural environment compared to developed markets. Aybar and Thanakijsombat (2015) found that, among firm size and higher operational risk, prior local experience and distant national culture are seen positively by investors in CBMA deals by emerging market acquirers (Aybar, Thanakijsombat 2015). Cultural environment between China and developing countries is in many ways different and potentially increases the deal valuation difficulties.

Cross-industry gains

Whether a firm should participate in M&A inside its own industry or expand to other industries is a complicated sum of variables and the M&A performance is largely affected by several factors. According to Kling and et al. (2014) CBMAs enhance the risk–return profile of home-region firms. This effect depends on the degree of product diversification. The most notable benefits include optimal economic scale, standardization of products across countries, amortization of investment such as brand image or other intangible assets, and resource sharing and synergies (Kling et al. 2014).

However, cross industry M&A is not completely divided by the outlining distinction between horizontal and vertical expansion and investment. Regarding horizontal investment, Caves (1971) argues that if the possession of any asset is to cause a firm to invest abroad, two conditions should be satisfied: asset, such

as knowledge, must be available to be used in other markets as saleable commodity, and the return of this asset must be at least somewhat dependent on local production in the target area. In addition, a native entrepreneur has advantage over foreign rival and thus the firm investing abroad should have enough information advantage in its special asset. Horizontal foreign investment can work by using this information advantage for product differentiation, but less in management related expansion as alien status means penalties in managerial effectiveness. On the contrary, vertical investment involves the integration of the production chain. Often no gains are available, as the different stages of production have no technology in common. Thus, the gains of vertical investment often turn heavily to risk avoidance, to avoid oligopolistic uncertainty and to create barriers for entry of new rivals. (Caves 1971)

Idea of diversification being an important part of firms CBMA decisions is supported by Seth (1990). Seth argues that diversification provides companies with an opportunity to reduce the costs and risks of entering into new foreign markets. Similarly, Chon et al. 2003) argue that convergence through cross-industry mergers and acquisitions leads to cooperation between companies of different sectors and to expansion to unrelated industries, rather than horizontal expansion of market share: Operational inefficiencies can be eliminated with alliances between different industry sectors. Chon et al. (2003) examined cross-industry M&A in the information industries from 1981 to 1999 and used network analysis to describe the structure of transaction among industries. Their results reveal that specific companies, sub-industries or sectors, can have a major role in restructuring process of an industry through cross-industry M&A. Also, regarding to the information industries, deregulation and digitalization affected significantly the industry structure. (Chon et al. 2003)

Diversification effect is examined also by Berger and Ofek (1995) who found diversification to cause 13 to 15 % loss in the average firm value during 1986-1991 as the degree of relatedness between the businesses of the acquirer and the target is positively related to returns. Especially conglomerate deals showed poor performance. This supports negatively the hypothesis of diversification between industries to create more value. Lim and Lee (2016) report similar results. CBMA deal is more likely to succeed when relatedness between the businesses of the acquirer and the target are high. Bruner (2002) summarizes 130 M&A studies from 1971 to 2001 and states that the expected synergies are important drivers of the wealth creation through merger and that diversification destroys value. However, in this area empirical evidence is not complete, and often mixing with other variables explaining the M&A performance.

Developing markets, including China, have not been studied regarding the diversification effects of M&A. In addition, cross-border evidence of diversification to different industries is also not complete. It is relevant to ask whether Chinese companies are different in this regard, are they able to acquire higher value than the companies in developed markets can? Even on developed markets, it might be possible that many industry structures have evolved in the over 20-year

period changing the value creation process of M&A between industries, opening new ways for a successful cross-industry diversification.

2.2   Cross-border mergers and acquisitions performance

As concluded in the previous chapter, the existing M&A theory describes several concepts explaining the motives and value effects of CBMA deals. These effects have been widely researched during the recent decades with various settings, time periods and markets, including increasing intensity in developing markets. Devos et al. (2009) use a sample of 264 completed domestic mergers from the US from 1980 to 2004 to examine the M&A synergy gains. They use value line forecasts to estimate the average synergy gains to be 10.03% of the combined equity value of the merging firms, synergies accounting for 8.38% after excluding the tax effect. Their findings support the idea of mergers generating gains by improving resource allocation.

In addition to the traditional CARs examination, Lim and Lee (2016) introduce a concept to study cross-border acquisition (CBA) completion with industry relatedness and takeover motives. They use data from 1985 to 2008, involving 16962 CBA deals and the results of their regression analysis show that CBA deal is more likely to succeed when the degree of relatedness between the businesses of acquirer and target is high. Lim and Lee (2016) show also that strategic motives lead to higher success rate than financial motives.

Chinese CBMA performance

Chinese companies did not participate in the international CBMA markets until the latest two decades: Chinese CBMA activity is still quite a new phenomenon, which the literature has only recently taken a serious interest. Still, Chinese CBMA has been researched relatively intensively during the past two decades with various methods and settings. Schuler et all. (2009) use a sample of Chinese CBMA from 1999 to 2007 to analyze the development trend, geographical destination, sectoral distribution, and equity participation of Chinese cross-border M&As. Schuller et al. (2009) found that Chinese CBMA development has been impressive and that Chinese companies try to find high-level equity participation concentrating on mining and manufacturing industries abroad.

Short-term performance of Chinese CBMA is researched by Boateng et al. (2008) using a sample of 27 Chinese CBMAs from 2000 to 2004 to examine the abnormal returns (AR) for the acquirer companies. Boateng et al. (2008) used event study methodology with market model settings for different time windows and found positive and statistically significant cumulative abnormal returns (CARs) for the overall sample of acquiring firms averaging 1.32% for event window (0, +1), supporting the hypothesis that CBMAs by Chinese companies create positive short-term market wealth effect for investors. In addition, Boateng et al.

(2008) find support for the efficient market hypothesis as information about Chinese CBMA is quickly incorporated into the stock prices. Short-term performance is also examined by Li et al. (2016) using 367 Chinese CBMA deals from 2000 to 2011. Acquiring firms received highly significant CAR of 2.7% (−1, +1) for a 3-day estimation window. They argue that information about the announcement might have leaked before the announcement dates and can be detected by market resulting in a smaller effect to shareholder value on the announcement date. To take this effect into account two longer time windows were analyzed resulting even higher CAR for longer windows. Even more support to the short-term performance comes from Tao et al. (2017) using standard market model with 165 Chinese CBMA deals from 2000 to 2012 to calculate CAR. The findings indicate positive stock market reaction for the acquirer. What is more, Tao and Liu (2017) compare CARs of different sub-samples to find the settings most affected by the CBMA deals, proving that event study methodology can be used to compare different groups to find, for example, area or industry specific effects.

However, Edamura et al. (2014) point out that the event study estimation examining only the direct link between CBMA deals and stock market reaction did not examine companies' performance outside stock markets and leaves room for endogeneity biases due to the sample selection. Edamura et al. (2014) using 2181 Chinese M&A deals from 2006 to 2011 expanded their research to regression analysis with the firm level accounting data. Regardless to their critique, they find that Chinese firms achieve their CBMA goals on average. Acquiring companies met substantial increase in their sales, productivity, and tangible as well as intangible assets after the transactions, although research and development intensity of the acquirer, often overlapping with the acquired target, did not increase. Edamura et al. (2014) results link the short-term market value effects to more long-term fundamental value of firms' functions. What is more, as event study methodology concentrates on the announcement event, firm specific accounting data enables the focus on the actual transaction and the value of merging firm functions and assets can provide. This view is also supported by Rahim and Ahmad (2013) arguing that internal factors of the acquiring firm have a significant effect to the shareholders value creation.

Bhabra and Huang (2013) combine both CAR analysis and cross-sectional test with sample of 136 Chinese M&A deals from 1997 to 2007. Chinese firms with acquiring deals mostly by state-owned firms and firms that acquire related targets experience significant positive abnormal stock returns around the announcement date as well as over the three years after the acquisition. Cross-sectional tests by Bhabra and Huang (2013) indicate that these returns are related to acquirers ownership status, capital structure and industry relatedness of the acquirer and target firm. Same-industry classification is used as a dummy variable in the regression analysis and, it being positive and significant, indicates that M&A within the same industry creates more value. This effect is explained by market power theory, as synergy effect for the merged firm should increase the shareholder value. (Bhabra, Huang 2013).

A substantial part of the biggest Chinese companies are state owned enterprises, which also makes the environment for CBMA somewhat unique and that should be taken into account when examining the Chinese CBMA gains. Chen and Young (2010) use similar approach to Bhabra and Huang (2013) using 39 Chinese CBMA deals from 2000 to 2008 to calculate CAR and explain CAR with regression analysis using share type, firm size, and industry sector, year of transaction, government ownership and environmental complexity as explanatory variables. The major finding in Chen and Young (2010) is that less government ownership is associated with higher abnormal returns, as investors are skeptical of CBMA deals when the government is the majority owner. Similar results affected by Chinese institutional environment are found by Du and Boateng (2015) using 468 Chinese M&A deals from 1998 to 2011. Chinese acquirers experience abnormal returns of 0.4771 % to 1.5210 % over a 10-day event window and state ownership and formal institutional distance have a significant impact on the shareholder value. Zhou et al. (2015) take the analysis of Chinese merger performance even further using multivariate regression on CARs and for buy-hold abnormal returns (BHARs) with sample of 825 Chinese merger deals from 1994 to 2008. Results show that in contrast to Du & Boateng (2015), SOE-related mergers receive more positive market reactions in the short run and generate higher long-run abnormal returns, although the sample used by Zhou et al. (2015) involves internal deals on Chinese market.

To broaden the examination of Chinese CBMA performance, Muralidharan et al. (2016) provide a view to the challenges of post-merger integration using the institutional theory. Expanding on the traditional methodology, the use of CARs, they introduce a framework to examine the Chinese CBMA performance with institutional distance and strategic relatedness using 24 corporate reports of Chinese companies.

The above evidence supports the idea of Chinese CBMA creating significant abnormal returns for the acquiring companies. Still, although conducted with various settings and methods, all of the empirical testing is concentrated on the similar time periods and thus overlapping samples: Chinese CBMA activity is concentrated on to very short period with reviewed samples starting from 1998 and ranging to 2011. Especially the CBMA deals in the recent years, after 2011, require more research as Chinese economy evolves and the motives for constantly advancing firms for CBMA might change. As Chinese "window of activity" for CBMA is short, adding the recent data might provide useful insight whether there has been changes in the shareholder wealth effects during the recent years. This supports the need for our hypothesis of announcement of CBMA by Chinese listed firms results in a positive market reaction to be researched with data of the recent CBMA deals. Also, as sub-group examination, such as Tao et al. (2017), is only included in small part of the existing literature of Chinese CBMA performance, adding the industry-effect examination provides additional value to the understanding of the CBMA dynamics. Thus, we find support for researching the second hypothesis of positive market reaction being stronger in cross-industry deals than in same-industry deals.

3   DATA AND METHODOLOGY

3.1   Data source

The data on completed CBMA deals by Chinese firms from February 2012 to April 2015 was obtained from Thomson SDC Platinum M&A database widely used for economic and finance research. SDC Platinum database provides information about acquirer and target names, dates for announcement and for effective completion, target countries, deal values and industry sectors of the acquirer and target. Stock market data for each acquiring company and for each stock index (Shanghai and Shenzhen) was obtained from Thomson Reuters DataStream.

3.2   Sample selection

Selection of the sample period is motivated by Du and Boateng (2015), among others. As concluded in the literature review of the existing research on Chinese CBMA performance, the performance effects of Chinese CBMA has been analyzed only on different time periods ranging from 1998 to 2011. To add relevant new data to the examination, this research will focus on the following years after existing research, to Chinese CBMA from 2012 to 2015. Chinese companies completed 180 CBMA deals with total value of 57370.825 $mil in the period of 2012-2015. Figures 1 and 2 illustrate the total value and the quantity of completed Chinese CBMA deals during the examination period. It should be noted, that data for the year 2015 is not complete as the April 2015 is the last month included in the CBMA data available at the start of this study. Thus, forming a trend line about the data illustrated below is impossible, although the older data from Chinese CBMA (Du & Boateng 2015) supports the upward trend. The data on companies include both privately-owned enterprises and state-owned enterprises. Although the differences in competitive advantages on outward internalization between state-owned and privately-owned enterprises has been examined by Liang et al. (2012) with results that show differences between the two groups in resource endowment advantages, the separate examination is not done in this study.
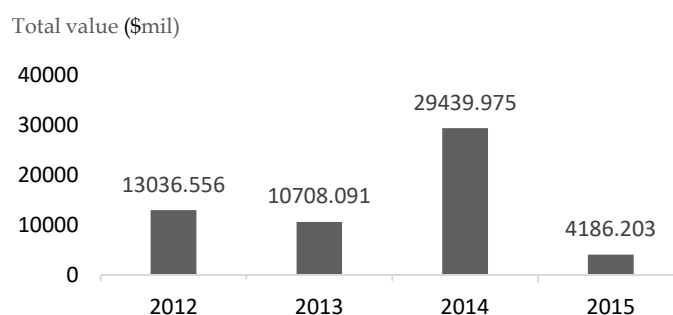
Total value ($mil)

FIGURE 1 Total value of CBMA deals by Chinese companies
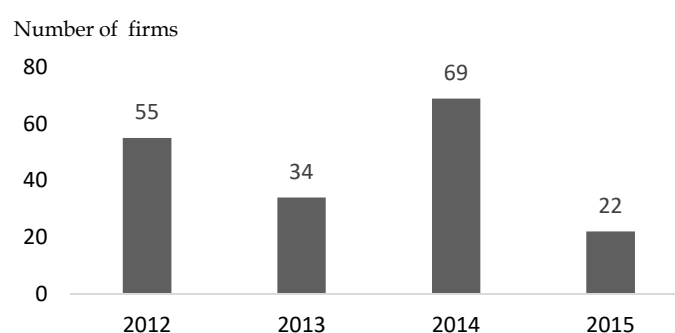
Number of firms

FIGURE 2 Number of CBMA deals by Chinese companies

From the total amount of deals, in order to create a suitable test sample for an event study analysis, sample selection is narrowed down using the following criteria:

1. The CBMA deal is made by a Chinese (mainland) company
2. The deal is a completed transaction
3. Announcement date is between 30.11.2011 and 28.01.2015 and effective date between 27.02.12 and 20.04.15
4. Firm is publicly traded in Shanghai or Shenzhen stock exchange and has stock price data available
5. Acquirer shares have been traded for at least -160 days prior to the respectable announcement date
6. Target company is located outside mainland China
7. Proportion of shares acquired exceeds 50%

The final usable sample that fulfills the above criteria contains 41 deals valued total in 6210.691 $mil. Table 1 gives the overview of sample distribution of the CBMA deals by Chinese companies. Acquirer firms are categorized by the industry they represent, and whether the target of the deal has been operating in the

same industry as the acquirer (same-industry) or in a different industry (cross-industry). Deals are also categorized by the country of the target company. Chinese acquirers operated in 18 different industries and the most part of the CBMA activities was completed in Electronic and Electrical Equipment and in Machinery industries. This supports the idea, that although Chinese economy is developing and companies are moving to increasingly high technology areas, the majority of companies capable of performing CBMA are still in the traditional, manufacturing based, industries. Targets were acquired from 15 different countries, most frequent target countries being Hong Kong and United States. For Hong Kong this is clearly explained by the existing industrial connections and geographical and cultural distance between Mainland China and Hong Kong. It is important to note, that although Hong Kong is a special administrative region of the People's Republic of China, it is still economically very independent from the Mainland. For this reason this study focuses on the Mainland China's more state influenced Shanghai and Shenzhen stock exchanges. Excluding Hong Kong, the other popular target countries are explained by the size of the economy of these countries. Size of the economy correlates with the amount of potential target firms available for the CBMA. Still, sample also includes resource based CBMA, which is again very situational and geographically motivated.

Sample of this study contained Chinese acquirers that operated in 18 different industries and targets were acquired from 15 different countries. This selection leaves speculation for CBMA gains on the industries not represented in this time period. However, complete lack of CBMA on other industries and relatively many on others indicates better possibilities for CBMA gains, in general, in these industries. Still, it remains unclear whether this is caused by the characteristics of the industry or purely by the small number of companies, and thus available M&A possibilities. Also, CBMA deals targeted only 15 different countries and it cannot be concluded whether deals to specific countries or areas result in better M&A gains.

TABLE 1 Industry and country distribution of Chinese CBMA deals, number of deals reported.

Acquirers' industry	Total	Same-industry	Cross-industry	Target country	Number of deals
Business Services	3	1	2	Australia	1
Chemicals and Allied Products	1		1	Bolivia	2
Commercial Banks, Bank Holding Companies	1	1		Brazil	1
Construction Firms	1		1	Canada	4
Electronic and Electrical Equipment	9	6	3	Denmark	3
Food and Kindred Products	2	1	1	France	1
Investment & Commodity Firms,Dealers,Exchanges	4	1	3	Germany	5
Machinery	5	4	1	Hong Kong	9
Measuring, Medical, Photo Equipment; Clocks	1		1	Italy	1
Metal and Metal Products	2		2	Japan	1
Mining	3	3		New Zealand	1
Miscellaneous Manufacturing	1		1	Singapore	2
Prepackaged Software	3		3	Slovak Rep	1
Printing, Publishing, and Allied Services	1	1		United Kingdom	1
Public Administration	1		1	United States	8
Retail Trade-General Merchandise and Apparel	1	1			
Rubber and Miscellaneous Plastic Products	1	1			
Wholesale Trade-Nondurable Goods	1		1		
	41	20	21	0	41

3.3   Data analysis

This research aims to analyze 41 CBMA deals by Chinese listed companies using event study methodology. As Brown and Warner (1980) have shown, market model, using several stock indices in this case, provides an excellent empirical model for the examination of abnormal returns created by CBMA. By using financial market data, an event study measures the impact of a specific event on the value of a firm. Aajor strength of the event study methodology is that abnormal returns, due to a firm-specific but time-independent event, may be precisely estimated by aggregating results over many firms experiencing a similar event, such as announcement of CBMA deal, at different times (Ahern 2009). The usefulness of this method comes from the fact that, given rationality in the marketplace, the effects of an event will be reflected immediately in security prices. Thus, a measure of the event's economic impact can be constructed using security prices observed over a relatively short period of time (McWilliams & Siegel 1997). What is more, without access to firm specific standardized accounting information of all the Chinese publicly traded companies participating in the examined deals, event study methodology enables us to examine the value creation directly from the public stock data: After all, firms' stock price represents the value of all of its assets and functions.

The structure of an event study is summarized by MacKinlay (1997). The first step is to identify the event or events the study is interested in and then establish the periods of time over which the security prices are investigated. These periods will be of different lengths as the examination of the effect is not possible on all event windows. For example, when interested in CBMA announcement effects on firm value, announcement date and period surrounding announcement date will form the event window. As MacKinlay (1997) states, at least the day of the announcement and the day after the announcement should be examined to capture the price effect of an announcement. To find the price effect during the days of the event window, abnormal returns are used. Abnormal return is the actual return of the security over the event window minus the normal return of the event window. The normal return is defined as the expected return without conditioning on the event taking place. For firm i and event date t the abnormal return is $R_{it} = R_{it} - E(R_{it}|X_t)$, where AR_{it} is the abnormal return, R_{it} the actual return and $E(R_{it}|X_t)$ the normal return for time period t. The modelling of the normal model is commonly based on a constant mean return model or market model. To construct the model for normal return, the most common way is to use period prior to event window as an estimation window. The market model parameters are then estimated from this period. The final step is to define the null hypothesis and to aggregate the individual firm abnormal returns. (MacKinlay 1997).

Event study has been widely used to examine international CBMA and more specifically Chinese CBMA activity. Several studies (Boateng et al. 2008, Du & Boateng 2015, Chen & Young 2010, Bhabra & Huang 2013, Li et al. 2016, Zhou

et al. 2015, Tao et al. 2017) have used event study to examine Chinese CBMA value creation. Although, Park (2004) using multi-country event study setting concluded that the use of the single country market model in a multi-country event study is likely to overestimate changes in the firm value, standard market model is adequate in this setting as the two separate exchanges still operate in the same country. As the method is supported by previous literature, similar market model approach is used in this study.

Although event study is in many ways a relatively straight forward method, McWilliams and Siegel (1997) emphasize the research design of event studies as lack of attention may lead to false inferences regarding the significance of the events and the validity of the theories being tested. The crucial assumptions for using event study method are: (1) markets are efficient, (2) the event was unanticipated, and (3) there were no confounding effects during the event window.

Cumulative abnormal returns and significance testing of this study are calculated using Event Study Metrics (Andres et al. 2015), a statistical testing software.

Returns will be indexed in event time using T. T0 is set as the event date and -T1 to T2 represents the event window. –T1 represents, as an example, for the 20 days window, 1 to 20 days before the event date and T2, 1 to 20 days after the event date. Event dates are the CBMA deal announcement dates of the sample firms. The market model is estimated from:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \tag{1}$$

Where,

R_{it} = Return on security of firm i at time t.

R_{mt} = Return on market portfolio m at time t. In this examination, we use market returns from the Shanghai and Shenzhen Stock Exchanges assigned to corresponding securities.

α_i β_i = parameters of relationship between the individual security and the market.

ε_{it} = random error term

Parameters of the market model are estimated from the estimation period -160 to -21 days prior the event date, as supported by existing studies, and used to calculate the expected returns over the test period. Abnormal returns (AR_{it}) are the difference between these expected returns and actual returns from the event window. Abnormal returns are calculated for each day and for each company.

$$AR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt}) \tag{2}$$

From this equation, daily average abnormal return rate AAR_t and cumulative average abnormal return CAR_t are calculated for the given n events

$$AAR_t = \frac{\sum_{i=1}^{n} AR_{it}}{N} \tag{3}$$

$$CAR_t = \sum_{i=0}^{n} AAR_t. \tag{4}$$

In order to use common statistical tests for abnormal returns, cross sectional average is calculated for the cumulative abnormal returns.

$$CAAR_t = \frac{1}{N} \sum_{i=1}^{n} CAR_t. \tag{5}$$

Various parametric and nonparametric statistical tests are used for significance testing in order to determine whether the results of the event study testing are valid. Parametric tests assume abnormal returns to be normally distributed and nonparametric tests relax this assumption. The significance tests used in this study are time-series and cross-sectional t-test, standardized residual test by Patell (1976), standardized cross-sectional test by Boehmer et al (1991), Corrado (1989) rank test and Sign test by Cowan (1992). If the CAAR observed during the announcement of Chinese CBMA is significantly different from zero, it can be concluded that this event has a significant impact on the acquiring firms' stock prices.

Cross-sectional t-test proposed by Brown and Warner (1980) is used to overcome the cross-correlation issue of the time series t-test and it is a straight forward method used to determine, whether CAAR is caused by share price fluctuations. However, as Brown and Warner (1985) found, these parametric tests are prone to event-induced volatility resulting in low power of the test. Cross-correlation is an issue that arises when events occur for multiple companies during the same days and event-induced volatility when the events are clustered. Presence of these issues can lead to downwards biases and result in over-rejection of the null-hypothesis (Schimmer et al. 2015).

Standardized residual test by Patell (1976) is robust to the heteroscedastic event-window abnormal returns. The abnormal returns of securities with large variances are assigned with less weight resulting in more accurate testing. The event-induced volatility issue is resolved by Boehmer et al (1991) by combining the standardized residual test with the standardized cross-sectional test.

Nonparametric tests further reduce the problem of over-rejection. Corrado (1989) rank test is also a nonparametric test and it transforms abnormal returns into ranks to test the significance of the null hypothesis. Corrado rank test applies re-standardized event window returns and has proven robust against induced volatility and cross-correlation (Schimmer et al. 2015). Cowan (1992) sign test is based on the ratio of positive CARs over the event window exceeding the number expected in the absence of abnormal performance. According to Schimmer (2015) Sign test null hypothesis includes the possibility of asymmetric return distribution. Because this test considers only the sign of the difference between abnormal returns, associated volatility does not influence in any way its rejection rates thus recommending the sign test in the presence of the induced volatility (Schimmer et al. 2015).

4   RESULTS AND DISCUSSION

Table 2 presents the results of the empirical analysis of the daily cumulative average abnormal returns (CAARs) of 41 CBMA deals by Chinese listed firms from 2012 to 2015 with different time windows (-20, +20), (-10, +10), (-5, +5), (-2, +2) and (-1, +1) surrounding the deal announcement dates. These results are set to answer the research question connected to hypothesis 1, to indicate whether announcement of CBMA by Chinese listed companies results in a positive market reaction. CAARs are, according to time-series t-test, significantly positive for windows (-5, +5), (-2, +2) and (-1, +1) with respective values of 2.13%, 2.89% and 2.64%. All are significant at 5% level and also at 1% level for windows (-2, +2) and (-1, +1). However, cross-sectional t-test indicates statistically significant results only for windows (-2, +2) and (-1, +1) with respectable significance levels of 5% and 1%. This indicates that cross-correlation was possibly not an issue with the sample as the cross-sectional t-test would correct the possible downward biased resulted in standard time-series t-testing: Instead, the results are less significant. The Patell Z (1976) Z-test with standardized residuals is immune to robust heteroscedastic event-window abnormal returns and yields highly significant (1%) results for windows (-5, +5), (-2, +2) and (-1, +1). This result indicates a possible over-rejection of null-hypothesis by cross-correlation t-test (Patell 1976). However, by combining standardized residual test with standardized cross-sectional test, Boehmer et al. (1991) test reduces the possible effects of event-induced volatility on Patell (1976) test, resulting in weaker significance levels on (-5, +5) and (-2, +2) windows with respectable significance levels of 10% and 5% with window (-1, +1) remaining at 1% significance level. Nonparametric Corrado (1989) rank test, reducing also the cross-correlation and event induced volatility, also reports significant CAARs for windows (-2, +2) and (-1, +1) with respectable significance levels of 5% and 1%. Similarly, Cowan (1992) Sign test further reduces the induced volatility effects resulting for significant CAARs for windows (-2, +2) and (-1, +1) with respectable significance levels of 10% and 1%. Corrado rank test (1989) and Cowan (1992) Sign test both have weak performance on longer event windows, which explains significance only on the short event windows of this sample.

To summarize, CAARs on windows (-2, +2) and especially (-1, +1) are statistically significant according to all the test statistics. The findings suggest that CBMAs by Chinese listed firms generated a positive short-term market reaction by producing positive abnormal returns for the investors. These findings are also consistent with previous studies using older data sets, (Boateng et al. 2008), (Li et al. 2016), (Tao et al. 2017), (Bhabra & Huang 2013) and others that report positive abnormal returns for investors on their results. Boateng et al. (2008) used older data from 2000 to 2004 with slightly different event windows. Especially the most significant CAR of 1.32% was measured on window (0, +1) which was not tested in this study. Still, the most similar window in this study, (-1, 1), provided positive cumulative abnormal returns. However, the CAAR for window (-1, 1) of this

study resulted in CAR of 2.68% which means that the firms examined in this study produced much larger returns than the ones examined in Boateng et al. (2008). It is possible that the difference in the CAR effect is explained by the different data set from a different time period. Also, the relatively small sample sizes of both studies affect the results. Li et al. (2016) analysis with data from 2000 to 2011, right before the sample used in this study, provided significant CAR of 2.7% on window (-1,+1). This result is very similar to the one observed in this study and indicates that there has not been significant changes on the Chinese market affecting CBMA possibilities between these two periods. Compared to the Boateng et al. (2008) results, cumulative average abnormal returns created by CBMA by Chinese firms has increased but shows no further indication to increase even further. However, only standard t-testing and in the case Bhabra & Huang (2013), Patell Z testing were used to validate the results of the previous literature. And as noted earlier at the methodology, standard t-test is easily affected by cross-correlation and event-induced volatility, often resulting in downward biases and over-rejection of the null-hypothesis. The results of the various significance testing of this study show that this is also the case with the recent Chinese CBMA data, as the different test statistics yield different results. All in all, these results support the Hypothesis 1, that the announcement of CBMA by Chinese listed companies results in a positive market reaction.

TABLE 2 Cumulative average abnormal returns (CAAR) for Chinese acquiring firms.

Event window	N	CAAR	T-test (time series)	Prob.	T-test (cross-sectional)	Prob.	Patell Z	Prob.
(-20, 20)	41	-0.0011	-0.0578	0.9539	-0.0541	0.9569	0.3908	0.6959
(-10, 10)	41	0.0084	0.6126	0.5401	0.5469	0.5845	1.5742	0.1154
(-5, 5)	41	0.0213	2.1373**	0.0326	1.5372	0.1242	3.5859***	0.0003
(-2, 2)	41	0.0289	4.3043***	0	2.2327**	0.0256	6.076***	0
(-1, 1)	41	0.0264	5.0607***	0	2.7217***	0.0065	6.7788***	0
Event window	N	CAAR	Boehmer et al.	Prob.	Corrado rank	Prob.	Sign test	Prob.
(-20, 20)	41	-0.0011	0.3121	0.755	-1.0117	0.3117	0.4668	0.6406
(-10, 10)	41	0.0084	1.1386	0.2549	-0.2001	0.8414	1.405	0.16
(-5, 5)	41	0.0213	1.8011*	0.0717	1.0705	0.2844	1.405	0.16
(-2, 2)	41	0.0289	2.2041**	0.0275	2.4695**	0.0135	1.7177*	0.0859
(-1, 1)	41	0.0264	2.7078***	0.0068	2.9354***	0.0033	3.2813***	0.001

This table reports the CAARs for the event windows surrounding the announcement date and the test statistics for significance. Event window represents the days surrounding the announcement dates to which CAARs are calculated. CAARs are computed using the market model and estimated from days -160 to -21. This table includes the complete sample of all the deals examined in this study. *, **, and *** refer to statistical significance at 10, 5 and 1 % risk levels, respectively.

Figure 3 below illustrates the announcement effect on firm value around the announcement date. Figure 3 is the graphical illustration of the CAAR of event window (-20, 20) described in more detail in Table 2 above. As seen from the graph, the announcement of a CBMA deal causes a powerful reaction in stock prices. However, this effect is very short lasting, reflecting insignificant CAAR results on longer windows. It is also interesting to note that firms studied experienced negative abnormal returns prior to the announcement dates. Bhabra & Huang (2013) found similar negative returns prior to the announcement, and argued that

one possible explanation could be the classic free cash flow problem in the absence of new investments for acquiring firms. However, Bhabra & Huang (2013) negative prior-returns were associated only with their cash acquirers-sub-sample, where as in this study the negative prior-returns were associated with the whole sample. Thus, the negative prior returns cannot be fully explained.
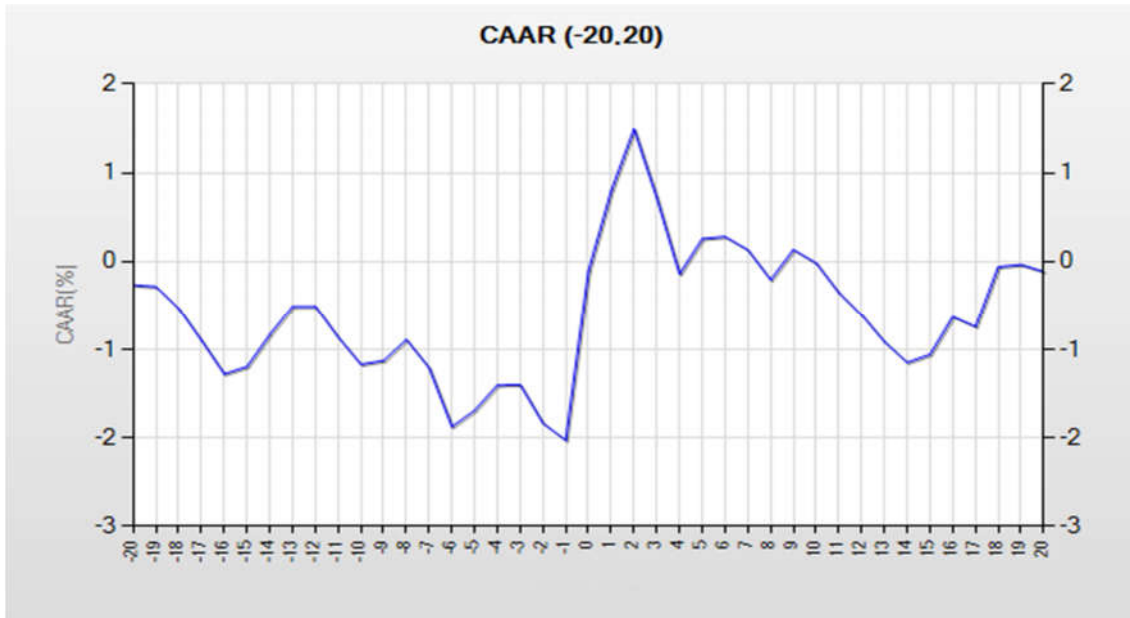

FIGURE 3 CAAR(%) for Chinese Acquirers on event window (-20,+20) surrounding the announcement date

Table 3 below presents the results of the empirical analysis of the daily CAARs of 21 cross-industry CBMA deals by Chinese listed firms with different time windows (-20, +20), (-10, +10), (-5, +5), (-2, +2), (-1, +1) surrounding the deal announcement dates. CAARs are, according to time-series t-test, significantly positive for windows (-5, +5), (-2, +2) and (-1, +1) with respective values of 3.13%, 3.29% and 3.14%. All are significant at 5% level and also at 1% risk level for windows (-2, +2) and (-1, +1). Surprisingly, cross-sectional t-test indicates significant results only for window (-1, +1) with respectable significance level of 10%. Similarly to the complete sample analysis, this indicates that cross-correlation was possibly not an issue with the sample and instead, the results are much less significant. Patell (1976) Z test results highly significant (at 1 % level) results for windows (-5, +5), (-2, +2) and (-1, +1). Significant CAAR is also found on event window (-10, 10) with CAAR value of 1.64% and a significance level of 10%. This is an unexpected result as there was no significant results for window (-10, 10) for the CAARs of the full sample. This also result indicates a possible over-rejection of null-hypothesis by cross-correlation t-test (Patell 1976). Again however, Boehmer et al. (1991) test reduces the possible effects of event-induced volatility on Patell (1976) test, resulting in only one significance CAAR on event window (-1, +1) at 10% significance level. Nonparametric Corrado (1989) rank test reports

no significant CAARs for any windows and Cowan (1992) Sign test reports significant CAARs only for window (-1, +1) with respectable significance level of 10%. Corrado (1989) rank tests and Cowan (1992) Sign tests weak performance on longer event windows does not explain results in this case. It is relatively unexpected for the Patell Z (1976) to provide as conflicting results as observed here in comparison to other test statistic designed to overcome cross-correlation and event-induced volatility and it remains unclear what is the main cause of these results.

TABLE 3 Cumulative average abnormal returns (CAAR) of cross-industry deals for Chinese acquiring firms.

Event window	N	CAAR	T-test (time series)	Prob.	T-test (cross-sectional)	Prob.	Patell Z	Prob.
(-20, 20)	21	0.0257	0.9527	0.3408	0.7482	0.4543	1.576	0.115
(-10, 10)	21	0.0164	0.8483	0.3963	0.5869	0.5572	1.8775*	0.0604
(-5, 5)	21	0.0313	2.2346**	0.0254	1.3034	0.1924	3.6642***	0.0002
(-2, 2)	21	0.0329	3.4926***	0.0005	1.4158	0.1568	5.2804***	0
(-1, 1)	21	0.0314	4.2956***	0	1.9362*	0.0528	5.8061***	0
Event window	N	CAAR	Boehmer et al.	Prob.	Corrado rank	Prob.	sign test	Prob.
(-20, 20)	21	0.0257	1.0503	0.2936	-0.0648	0.9483	0.8896	0.3737
(-10, 10)	21	0.0164	1.0309	0.3026	-0.4603	0.6453	0.8896	0.3737
(-5, 5)	21	0.0313	1.4006	0.1613	0.102	0.9187	0.8896	0.3737
(-2, 2)	21	0.0329	1.4298	0.1528	0.5738	0.5661	0.8896	0.3737
(-1, 1)	21	0.0314	1.8158*	0.0694	1.3383	0.1808	1.7636*	0.0778

This table reports the CAARs for the event windows surrounding the announcement date and the test statistics for significance. Event window represents the days surrounding the announcement dates to which CAARs are calculated. CAARs are computed using the market model and estimated from days -160 to -21. This table includes the sub-sample of deals consisting of the cross-industry deals of the sample period. *, **, and *** refer to statistical significance at 10, 5 and 1 % risk levels, respectively.

Table 4 below presents the results of the empirical analysis of the daily CAARs of 20 same-industry CBMA deals by Chinese listed firms. In this case, CAARs are, according to time-series t-test, significantly positive for windows (-2, +2) and (-1, +1) with respective values of 2.39% and 2.08%. Both are significant at 5% level and also at 1% level for window (-1, +1). Cross-sectional t-test indicates significant results for windows (-2, +2) and (-1, +1) with respectable significance levels of 5% and 10%. This is an interesting exception as longer event window as the longer event window results in significance level. Patell Z (1976) test results highly significant (1%) results for windows (-2, +2) and (-1, +1). This result indicates a possible over-rejection of null-hypothesis by cross-correlation t-test (Patell 1976). Again, Boehmer et al. (1991) test reduces the possible effects of event-induced volatility on Patell (1976) test, resulting in two significance CAARs on event windows (-2, +2) and (-1, +1) on respectable significance levels of 5% and 5%. Nonparametric Corrado (1989) rank test reports significant CAARs for event windows (-2, +2) and (-1, +1) on significance level 1% for both windows and Cowan (1992) Sign test reports significant CAARs only for window (-1, +1) with respectable significance level of 11%. Corrado (1989) rank tests and Cowan

(1992) Sign tests weak performance on longer event windows is a possible explanation for no significant results on longer windows. However, other test statistics provide similar results to the examination of the complete sample.

The comparison between test statistics of cross industry and same-industry samples shows that parametric tests give more significant results for the cross-industry CAARs but the nonparametric test show more significance on the nonparametric testing. This is possibly due to the relatively small sample size that can affect the performance of all the statistical testing.

TABLE 4 Cumulative average abnormal returns (CAAR) of same industry deals for Chinese acquiring firms.

Event window	N	CAAR	T-test (time series)	Prob.	T-test (cross-sectional)	Prob.	Patell Z	Prob.
(-20, 20)	20	-0.0304	-1.0949	0.2735	-1.3716	0.1702	-1.0998	0.2714
(-10, 10)	20	-0.0015	-0.0749	0.9403	-0.1158	0.9079	0.2724	0.7853
(-5, 5)	20	0.0102	0.7124	0.4762	0.7744	0.4387	1.3417	0.1797
(-2, 2)	20	0.0239	2.4698**	0.0135	2.1242**	0.0337	3.1884***	0.0014
(-1, 1)	20	0.0208	2.7763***	0.0055	1.927*	0.054	3.6703***	0.0002
Event window	N	CAAR	Boehmer et al.	Prob.	Corrado rank	Prob.	sign test	Prob.
(-20, 20)	20	-0.0304	-1.2541	0.2098	-1.431	0.1524	-0.2909	0.7712
(-10, 10)	20	-0.0015	0.3918	0.6952	0.0357	0.9715	1.0516	0.293
(-5, 5)	20	0.0102	1.3456	0.1784	1.3458	0.1784	1.0516	0.293
(-2, 2)	20	0.0239	2.5586**	0.0105	2.7921***	0.0052	1.4991	0.1339
(-1, 1)	20	0.0208	2.401**	0.0164	2.7872***	0.0053	2.8415***	0.0045

This table reports the CAARs for the event windows surrounding the announcement date and the test statistics for significance. Event window represents the days surrounding the announcement dates to which CAARs are calculated. CAARs are computed using the market model and estimated from days -160 to -21. This table includes the sub-sample of deals consisting of the same-industry deals of the sample period. *, **, and *** refer to statistical significance at 10, 5 and 1 % risk levels, respectively.

TABLE 5 CAAR Industry effect for Chinese acquirers

	Cross-industry			Same-industry			Industry effect
Event Window	N	CAAR CI	t-stat	N	CAAR SI	t-stat	CAAR CI – CAAR SI
(-20...20)	21	0.0257	0.9527	20	-0.0304	-1.0949	0.0561
(-10...10)	21	0.0164	0.8483	20	-0.0015	-0.0749	0.0179
(-5...5)	21	0.0313	2.2346**	20	0.0102	0.7124	0.0211
(-2...2)	21	0.0329	3.4926***	20	0.0239	2.4698**	0.009
(-1...1)	21	0.0314	4.2956***	20	0.0208	2.7763***	0.0106

This table reports the CAARs for the event windows surrounding the announcement date and the test statistics for significance. Event window represents the days surrounding the announcement dates to which CAARs are calculated. This table includes the comparison between cross-industry and same-industry sub-samples and defines the industry effect for the Chinse CBMA deals. *, **, and *** refer to statistical significance at 10, 5 and 1 % risk levels, respectively.

Table 5 above presents the difference between CAARs of cross-industry CBMA deals and between same-industry CBMA deals of Chinese listed companies. These results are set to answer the hypothesis 2, to indicate whether announcement of the cross-industry CBMA deals by Chinese listed companies results in different market reaction than the same-industry deals. Industry effect is acquired similarly to Tao and Liu (2017). CAARs for Cross-Industry deals are

significantly positive for windows (-5, +5), (-2, +2) and (-1, +1) with respective values of 3.13%, 3.29% and 3.14%. All are significant at 5% level and (-2, +2) and (-1, +1) also at 1% level. CAARs for Same-Industry deals are significantly positive for windows (-2, +2) and (-1, +1) with respective values of 2.39%, and 2.08%. Both are significant at 5% level and (-2, +2) and (-1, +1) also at 1% level on standard time-series t-testing. Thus, the industry effects for significant CAARs, for windows (-2, +2) and (-1, +1), are respectively 0.9% and 1.06%. The findings suggest that CBMA deals where acquirer and target represent different industry are seen more positively than the deals between firms representing the same industry by the investors.

Industry effect has not been widely examined using event study methodology with similar data and settings by the previous literature and thus finding comparable empirical evidence is difficult. Still, findings are supported by Kling & Ghobadian (2014) arguing that CBMA enhances the risk–return profile of home-region firms. However, these findings are in contrast with Bruner (2002), Berger & Ofek (1995) and Lim & Lee (2016) that all concluded diversification to decrease the firm value. However, as the settings are very different, it is difficult to make to full comparison. Also, cross-industry CBMA deals might be executed for reasons other than diversification, reducing the explanatory effect of diversification. Most comparable results, although from M&A deals instead of CBMA deals, are found from Bhabra and Huang (2016) who analyzed Chinese M&A deals from 1997 to 2007. They found in their regression analysis that M&A within the same industry creates more value. Again, the first reason for different results can be found from the different data set that includes different firms, deals and economical events to the sample. It seems that the periods of 1997-2007 and 2012-2015 provide different opportunities for Chinese M&A. Secondly, and perhaps more importantly, CBMA deals are a sub-sample of all the M&A deals. The firms participating in international CBMA deals are arguably much better positioned to gain from the cross-industry expansion compared to the firms with only domestic M&A activity. All in all, the results of this study support the hypothesis 2. The market reaction is different between cross-industry deals and same-industry deals. The positive market reaction is stronger in cross-industry deals than in same-industry deals for cross-borders mergers and acquisitions.

5 CONCLUSION

This study examined the short-term performance of 41 cross-border mergers & acquisitions (CBMA) by Chinese firms from 2012 to 2015. As Chinese economy, forecasted to become the biggest economy of the world in few decades, grows, Chinese companies become international at an increasingly a rapid rate (Changqi & Ningling 2010). Chinese outward CBMA has not been, until recently, researched excessively, creating a need to understand better how these deals create value. What is more, empirical evidence suggests that the CBMA performance of Chinese firms has changed during the last two decades. The sample of this study consists of Chinese CBMA deals between 2012 and 2015. This is the most up to date data used to research short-term Chinese CBMA with event study methodology and it adds up to the earlier research such as Boateng et al. (2008) and Li et al. (2016), who examined Chinese CBMA performance before 2012. The second point of interest of this study is in the cross-industry dynamics of Chinese firms. The previous empirical evidence on whether a company should participate in CBMA within its own industry (same-industry) or between industries (cross-industry) is controversial (Kling et al. 2014), (Berger & Ofek 1995) and focused mainly on developed markets. The complex structure of Chinese economy (Cui 2009) provides a unique set up to test whether the previous evidence from developed markets also holds for Chinese firms participating in CBMA activity as acquirers. Thus, the research questions of this study were set to answer whether the announcement of CBMA by Chinese listed companies results in a positive market reaction and whether the positive market reaction is stronger in cross-industry deals than in same-industry deals.

Results from the event study analysis show that, on average, Chinese companies should participate in CBMA. The first result of this study indicates that Chinese acquirer companies gain significant cumulative average abnormal returns (CAARs) from cross-border mergers and acquisitions. Further examination shows that deals between companies of different industries create more value compared to deals between companies of the same industry because Chinese acquirer companies gain bigger CAARs from CBMA when the acquiring firm and the target firm operate in different industries. These findings, along with the existing literature about Chinese CBMA, indicate that examination of Chinese CBMA performance requires several factors to be taken into account in order to determine which firms and which industries are in the best position to create value.

Results are intuitive: companies that are able to acquire firms internationally usually possess assets and required knowledge to create value through these deals. However, this creates a selection bias as the companies studied will most likely be from the population that is able to get better results out of CBMA deals compared to companies that did not participate in CBMA activity. Also, partially for the same reason, it is intuitive that CBMA deals of these strong, often international, firms create more value when the target is outside of their own industry:

it can be reasoned that, as described in the literature review by Seth (1990) and Kling et al. (2014), diversification and acquiring assets that cannot be found in the same industry would create more value. This reasoning assumes that the CBMA deal will affect firms' internal assets and resources positively.

On the other hand, as the performance is measured based on the stock prices, it is also possible that the cross-industry deals do not create more real value than same-industry deals if the M&A gains are not accurately measured in stock prices as the accurate valuation of the "new company" is in many cases difficult. It is possible that pricing cross-industry deals is more difficult for the market: financial information, even when accessible, often does not perfectly reflect the motive and the strategic reasoning behind the CBMA deal. Rather, one explanation could be that investors merely believe the cross-industry deals to create more value without factual evidence: only the later years will show the absolute value of the deal. As seen in stock valuation, companies expanding to new businesses are often the ones with aggressive expansion strategies and high projected expectations for growth and future earnings. If the acquirer companies have internationally successful history, it is possible that market will react, in lack of proper data and information, according to previous events and misprice the announcement event. Thus, it is possible that the selection bias, along with relatively small sample size, also have an effect on the second hypothesis: companies involved in cross-industry deals might be the ones that are the best positioned to gain from these deals anyway. It is very likely that companies involved in cross-industry deals would not even have opportunities for (higher CBMA value) cross-industry deals.

It is important to note that that the CBMA deals examined were completed deals. As Lim and Lee (2016) showed, the completion of CBMA deal is more likely when the degree of relatedness between the businesses of the acquirer and the target is high. It is then possible, that the results of this study, presenting only the completed deals, could be affected by a possible selection bias in this part. It could be possible that cross-industry deal is less likely to succeed but when it succeeds, it creates more value on average, as observed in this study. Following these findings, finding the most valuable CBMA deals remains difficult for Chinese companies and for investors: Chinese firms should participate in CBMA deals cross-industry but they need to first reach a position where they have opportunities to take part of these deals. This means for example need for larger revenue and already established international operations.

Limitations and future research areas

In this study, CBMA performance is measured with CAARs which are calculated using event study methodology. As the results rely significantly on the methodology used, it is important to cover the limitations of the event study settings used and how it might have affected the results of this study. Event study is a powerful research method, but as Du and Boateng (2015) state, it is important to note that event study is based on the assumption that stock markets are semi-

strong under the efficient market hypothesis. Thus, the results should be interpreted with caution. The event study reflects the market evaluation of complex and, in some cases, infrequent, strategic initiatives. It may be possible that the value implications of such complex strategic ventures are not fully understood by market participants and the results may thus be prone to heuristic biases. (Park 2004) notes that using single country model in multi-country event study may overestimate changes in firm value, although in this study the use of only two stock indices might reduce the risk of overestimation. Also, the event study guidelines set by (McWilliams, Siegel 1997) were, in lack of time and resources, not perfectly met in the research settings. Kolari and Pynnönen (2010) argue that cross-sectional correlation with clustered events is also seen as a potential problem as it can lead to over rejection of the null hypothesis. In the sample of this study, there exists a few companies announcing several CBMA deals on the same date. According to Kolari and Pynnönen (2010) this might cause the effect of separate deals to mix, especially if the deal and target values executed by the same company on the same or consecutive days differ significantly. Similarly, Edamura et al. (2014) point out that examining only the direct link between CBMA deals and stock market reaction does not take into account companies' performance outside stock markets and leaves room for endogeneity biases due to the sample selection. It is possible to conclude that with more available resources and access to data, sample size should be expanded to eliminate the selection, clustering and correlation biases.

It would be important for future research to compare different industries to find out whether investor expectations and thus the valuation of CBMA gains might differ between different industries. Technology driven firms often enjoy high market valuation compared to more traditional industries, such as mining. However, do investors see these high valuation companies to be better able to take advantage on CBMA compared to firms in traditional industries? Does higher stock price, reflecting firms' functions and assets, automatically mean that that these firms are also extract more value with M&A deals? These question remain open for future research on the Chinese CBMA deals and in the M&A research in general.

Another important topic for future research is to examine, as the result indicate cross-industry returns, whether there are specific industries, or industry pairs of two different industries, in which the expected CBMA gains are bigger than on average. The asymmetric development of different industries, for example between business services and mining, has a potential to change the operating landscape and to affect greatly what kind of assets companies of the different industries need and how value can be created by mergers and acquisitions between these companies.

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