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## PERFORMANCE OF U.S. TAKEOVERS EVIDENCED FROM DOMESTIC AND CHINESE TARGETS

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### ABSTRACT

The purpose of this research study is to investigate the performance of U.S. takeovers of domestic and Chinese targets. The study examined 83 Chinese and 99 domestic sample deals over a period of 10 years (between 2004 and 2014). The research findings suggest that the shareholders from U.S. acquiring firms gain negative abnormal returns from both domestic and Chinese mergers and acquisitions (M&A). Furthermore, they are likely to suffer value destruction in domestic acquisitions of U.S. target firms. Despite facing the risk of negative returns, U.S. firms have strong motivation to engage in M&A, because of the opportunity that such transactions provide for portfolio diversification.

This paper also seeks to explain the motives behind M&As while providing empirical evidence showing how U.S. takeovers profoundly affect shareholders wealth within these M&As.

**Keywords:** M&A, Takeover, Abnormal return, Acquisition, CBA

### INTRODUCTION

Mergers and acquisitions (M&A) is an important strategic tool for companies to strengthen their competitive position and improve earnings. In a merger, two separate companies are combined to create a single stronger and more profitable company. In an acquisition, one company acquires or takes over another company. This paper, in particular, is focused specifically on acquisitions and takeovers.

Previous studies have often concentrated on the post-M&A corporate performance, with specific regard to whether said M&As bring benefit to the acquiring and target companies. The results have shown that the return to the acquiring company is either significantly negative or insignificantly positive. In direct contrast, the target company always benefits from M&A transaction. Although the information presented in these studies aides in explaining the effects of cross-border M&As, there is one significant limitation to the data. That is, the research conducted was restricted to within U.S., UK and Canadian markets. Studies have rarely examined developing country experiences, despite an increase in

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globalization. Thus, there is an immediate need for research that is focused more specifically on M&As in developing countries.

One such developing country that has been the focal point of foreign investors for the past few decades is China. With its phenomenal growth, China has been attracting many foreign companies that have not only invested in the country, but also have merged with or acquired local companies. Global companies from the U.S. have been in the forefront of the recent M&A activities in China. Research has shown that U.S. investors favorably reacted to the announcement of U.S.-China joint ventures (Chen, 1991). However, the study does not shed light on the price effect of acquisitions. This study attempts to answer that question of whether the post-acquisition performance of the acquiring companies is consistent with the findings of previous literatures.

## LITERATURES REVIEW

A primary goal of this research besides explaining the post-acquisition performance is to explain the reasons and motives behind mergers and acquisitions (M&A). Among the many benefits of M&As the most fundamental one, however, is to create value for the firms. The theories of M&A can be divided into two categories: neoclassical and behavioral.

In neoclassical theories, managers are assumed to be rational and are expected to make M&A decisions to maximize shareholders wealth, thus increasing firms' value. In terms of existing empirical work on motive, Bradley et al. (1988) defined synergistic gain from a successful tender offer as: the sum of the change in wealth of the stock holders of both the target and acquiring firms. In addition, Berkovitch and Narayanan (1993) documented and discussed three distinct motives for an acquisition: synergy, agency and hubris. They present relationships between observed target and total gains, and between observed target and acquirer gains.

Motives for cross-border acquisitions (CBAs) are theoretically similar to those for domestic acquisitions, but CBAs provide additional opportunities. For example, Moeller and Schlingemann (2004) argue that CBAs can reward the acquiring firm with some distinctive upgrades, such as improved technology, risk management, and favorable government policy. According to Erel et al. (2012) and Dutta et al. (2013), compared to domestic acquisitions, some additional factors can contribute to the function of CBAs. These include geographical factors, tax benefits, country-specific factors, new market penetration, lower labor costs and exchange rate factors. Bris and Cabolis (2008) suggest that the differences in corporate governance can also be a motive for cross-border acquisitions; especially, for merger companies. Furthermore, they analyzed CBAs from a governance standpoint and showed evidence of the acquiring firms being more likely to impose their corporate governance practices on the target firms. If an acquiring firm comes from a country with better shareholders' protection and better accounting standard, then there is a strong likelihood that the merger company's performance will improve.

Behavioral theories, on the other hand, assume that managers are not rational, and their decisions are made, not based on shareholders' interest, but on their own interests (such as a CEO's compensation related to his/her firm's performance). For example, Ravenscraft and Scherer (1987) documented that, when M&As improve economies of scale, the merger can be seen as a positive net present value project. Another empirical study conducted by Shleifer and Vishny (1992) showed that in M&As (CBA or domestic), acquirers are able to increase debt capacity that could lower their cost of capital.

## PERFORMANCE OF U.S. TAKEOVERS

In M&As, both domestic and CBA, it is not uncommon to see a growth in hubris, or even a motivation to undergo M&As because of it. This theory of hubris is based on Roll's (1986) hypothesis, which suggests that managers often tend to acquire firms for their own motive. The theory assumes that managers are often overconfident, resulting in a rational blindness and non-maximization of the firm's value. Thus, acquirers' will gain negative returns. Jensen (1986) proposed a free cash flow (FCF) theory of low stock market valuation of targets of hostile takeovers. The theory suggests that the firms' managers (seeking personal gains) will often and intentionally, invest inefficiently. To test this theory, Gregory and O'Donohoe (2014) conducted a study and found that bidder gearing (debt to market value ratio of the acquirer) has a positive relationship with domestic acquirer, suggesting clear evidence of the FCF hypothesis motive.

Jensen and Meckling's (1976) proposed agency theory, suggesting that conflicts can arise due to differences in managers' and shareholders' interests. For example, managers may act for personal objectives at the expense of shareholders, resulting in a decline of the shareholder's gains. Morck et al. (1990) tested this theory and found that managers will sometimes overpay for target companies, simply to reap the high personal benefits associated with the acquisition. Further, when a manager's job is threatened because of poor firm performance, the manager may try to enter into new business, where he/she may perform better. The study also suggests that the managers, who have limited choices to maximize their firms' value, are more likely to enter into a bad acquisition. Through their research, Bradley et al. (1988), Mitchell and Lehn (1990) and Firth (1991), also found that acquisitions can be driven by the managers' objectives, further supporting the theory that managers are willing to overpay for the bid in order to pursue those personal objectives. When this happens, the shareholders of the bidding company can experience losses. Agrawal et al. (1992) found that conglomerate mergers are less likely to succeed when managers of acquiring firms are either not familiar with the target industry, or they waste free cash flow on bad acquisitions; consistent with the finding of Jensen (1986). Additionally, Devos et al. (2009) documented that a diversifying merger may be undertaken for empire building or manager's self-interest, with the goal of improving human capital.

The determinants of CBA were further examined by Erel et al. (2012). Their research findings suggest that valuation plays a major role in motivating the merger in CBAs. In addition, factors such as currency appreciation, stock market performance, and firm's market-to-book value in local currency appear to have a profound effect on merger attractiveness. Furthermore, the differences between the target and acquirer's geographical location, and the quality of accounting and bilateral trade can also act as the main motives for the CBA. They conclude that the imperfect integration of the capital market across the countries leads to a merger in which a higher-valued acquirer purchases a relatively inexpensive target.

According to Morck et al. (1988), a takeover can be classified, based on target firm's management reactions, into two types: disciplinary and synergistic takeover. Grossman and Hart (1980) documented that [target] shareholders tend to make takeover propositions difficult from a social point of view, leading to a reduced stock value. Mitchell (1991) found that Research has shown that when hostile targets were acquired, they systematically reduced their stock value and they seem to occur in strong shareholder-protected countries (Rossi and Volpin, 2004 and Martynova and Renneboog, 2008)

Fishman (1989) focused his research on the role of payment methods in acquisitions. His study showed that the market is likely to view a cash offer as more favorable

## THE JOURNAL OF INTERNATIONAL BUSINESS &amp; LAW

than a stock offer, because when bidders offer cash to the target firm, it is believed that the target firm's shares are properly valued. Research has also shown that cash payment is used more frequently in CBAs than domestic acquisitions (Moeller and Schlingemann, 2004). Furthermore, CBAs are mostly financed by cash, whereas domestic acquisitions are mostly financed by stock (Gregory and O'Donohoe, 2014). When equity is used as a payment method, research has shown that domestic acquisitions have positive abnormal returns (in percentage), but dollar abnormal returns are negative (Moeller et al., 2005). One of the major reasons why acquirers experience negative returns in M&As is because of the high premiums they pay in the acquisitions.

The most common measure of firm performance used in finance literature is Tobin's  $q$ ; a method that was introduced by Lindenberg and Ross (1981). Bris et al. (2008) showed that the Tobin's  $q$  of a particular industry tends to increase if firms in that industry are acquired by foreign firms with higher governance practice. It can also be argued that the acquiring firms take a substantial risk by targeting firms with inferior corporate governance standard. In such a situation, the acquiring firm's shareholders will most likely utilize some type of "contingent payment" to share the risk with the target firms.

Rau and Vermaelen (1998) classified firms involved in M&As, based on book-to-market equity ratio. High book-to-market ratio is referred to as a value firm, and low book-to-market ratio is referred to as a glamour (growth) firm. They argued that the manager from the glamour firm overestimated their capabilities to manage an acquisition. In the research they supported the performance extrapolation hypothesis. Andrade et al. (2001) also found that glamour acquirers experience negative gains, and value acquirers gain positive returns over the three year horizon.

This paper aims to provide an evaluation of the cross-border and domestic M&A performance of U.S. acquiring firms. Most of the existing literature that was reviewed for the purpose of this study focuses on M&As between emerging and developed countries or vice versa. The closest existing literature to this paper is the comprehensive study of Moeller and Schlingemann (2004), which focuses on domestic and cross border acquisition, but the study, does not focus on any one specific country. This paper differs from other studies in several ways. Firstly, this paper presents separate results for each of the two countries (U.S. and China). This allows for easier comparison and the ability to gain better insight on shareholder's wealth from U.S. acquiring firms. Secondly, this study contributes to finance literature by showing the impact of U.S. acquirers' shareholders' wealth on domestic and CBAs, specifically, in China.

## METHODOLOGY

According to Bruner (2002), some of the most widely used measurements of M&A performances are: survey of executives, accounting measures, clinical case studies and event studies. The two types that are predominantly used to measure M&A performance for empirical research, are accounting and event studies. The first published event-based study was conducted done by James Dolly in 1933 (Mackinlay 1997)). The current research in event-based studies widely uses the methodology developed by Dolly. Researchers have found abnormal return of event-based studies for the M&A to be an effective approach (McWilliams and Siegel, 1997). They argue that the event study will provide an accurate change in the stock price due to the takeover, because the market demonstrates the right value

## PERFORMANCE OF U.S. TAKEOVERS

for a firm (assuming the market is efficient). Furthermore, they suggested that shorter event windows will produce a strong conclusion in both a domestic and cross-border setting.

One main assumption that researchers have when utilizing event study is that the markets are efficient. There is a considerable amount of literature on the analysis of the efficient market hypothesis. Efficient Market Hypothesis (EMH) states that it is not possible to 'beat the market' because stock price always incorporates and reflects all relevant information, (Fama, et al., 1969).

### TESTABLE HYPOTHESIS

Based on the extensive literature review and the data collected from the Bloomberg Database, the following hypothesis are developed and tested.

**Hypothesis 1: There is a relationship between target country governance environments and acquirer country governance environment.**

**Hypothesis 2: Acquirers in countries with strong investor protection have higher pre-announcement returns than acquirers in countries with weak investor protection.**

This hypothesis is considered supported, if the takeovers' cumulative average abnormal return CAAR (-5, -1) is significantly higher when the acquired firm is located in a strong investor-protected country. This hypothesis will be rejected if the abnormal returns are lower in the firms with weaker investor-protected countries.

This study also takes a look at the firm's pre-announcement abnormal returns to examine if the information about the M&A has been leaked prior to its public announcement. As reported earlier in the literature review, Bradley et al. (1988) concluded that if the firm gains significantly in the event period then it is likely that there has been some form of information leakage about the merger program.

As shown by Martynova and Renneboog (2008) acquirers gain benefit from less developed countries. Therefore, it is assumed that CBA acquirer's pre-announcement return will be higher in less developed countries.

**Hypothesis 2a: Acquirers pre-announcement returns will be higher in stronger investor-protected countries than the acquirers in weak investor-protected countries.**

This hypothesis is supported if the takeovers' cumulative average abnormal (-5, -1) is significantly higher in acquiring firms located in strong investor-protected countries.

Literature has shown that U.S. acquirers experience significant loss in pre-merger/post-merger and operating performance more for cross-border than for domestic transactions (Krishnamurti, et al., 2008). Therefore, the study assumes that the cross-border acquisitions will receive lower announcement returns than domestic acquisitions.

**Hypothesis 3: Acquirers in cross-border acquisition will receive higher announcement returns than those in domestic acquisitions.**

This hypothesis is supported if the takeovers cumulative average abnormal return (-1, +1) is significantly higher for cross-border than for domestic takeovers.

As mentioned in the literature review section, Moeller et al. (2005) and Anderson et al. (2009) suggest that the acquirers from countries with higher investor protection have more information leakage.

**Hypothesis 3a: Acquirers in countries with strong investor protection have a higher possibility of information leakage in the pre-merger event period.**

This hypothesis is supported if the takeovers' cumulative average abnormal (-5, -1) return is significantly different when the acquired firm is located in strong investor-protected countries.

As discussed earlier in the literature review, Dutta et al. (2013) and Moeller et al. (2004) showed that, in CBAs and in domestic acquisitions, there is evidence of stock-financed acquisitions creating positive abnormal returns. Thus it is assumed that a stock financed deal will have positive returns in the M&A.

**Hypothesis 3b: The market is likely to react more positively to the acquirers' cross-border stock-financed deals than the cross-border cash financed deals.**

**Hypothesis 4: There is a relationship between related industry and acquirer's CARR**

This hypothesis is tested by using regression model. If relation exists between industry and acquirer CARR, then the related industry factor will be significant.

**DATA COLLECTION**

The event study method is used to examine the short-term announcement returns to the United States acquiring firms that acquired domestic firms and to those who acquired the Chinese target firms. The dataset used for this study was retrieved from the Bloomberg Database. The list extracted from the Bloomberg database is comprised of all takeover announcements in the United States of America and China. The sample contains all domestic and Chinese acquisitions (takeovers) in the U. S. from January 2004 to December 2014. The sample data is reduced to the announcements of only those acquisitions that meet the following criteria:

- The acquirers are listed on the stock market and the takeover has to be announced on Bloomberg and Wall Street Journal (WSJ)
- The acquisitions are completed
- Acquisition is announced between January 2004 and December 2014
- Both hostile and friendly categories were used
- Market cap is used as firm's size
- Form of payments category was used; such as Cash, Security or mixed

## PERFORMANCE OF U.S. TAKEOVERS

Only those transactions that contained complete information about the announcement date, deal type, deal value, target and acquirers' names and their countries of origin, were retained in the study. Day 0 "Zero" is defined as the M&A announcement day. The ticker information was collected to download the historical stock prices of the acquirer. S&P 500 was used as the market benchmark and the sample was reduced to 99 domestic and 83 Chinese acquisition deals after the final review and correction of the data.

Panel A of Table 1 represents the distribution of the sample by "year of takeover". The Table shows that the highest takeovers occurred in the years 2004, 2008 and 2013 for domestic acquisition. The highest Chinese takeovers occurred in the years 2006 and 2011. The data in Panel B shows that for the U.S. acquirers, 16.9% of the takeovers are within a similar industry when targets are Chinese. Whereas in domestic acquisitions, 30.3% of the takeovers are within a similar industry. Panel B also shows that the majority of the domestic targets are service firms (36%), followed by manufacturing firms (26%). In contrast, a majority of the targets in CBAs are manufacturing firms (63%), followed by the service firms (16%). Panel C stratifies the sample according to the reaction of management. All Chinese takeovers were friendly and only 1 domestic takeover was hostile. Panel D shows that cash is the dominant form of payment for 39% of Chinese takeovers and 60% of domestic takeovers. A similar result was found by Servaes (1991), where 82.2% of the takeover transactions were friendly transactions and cash was the dominant form of payment.

**Table 1** Sample description

	Domestic N = 99		CBA China N = 83	
	N	Average of Announcement Value Mill \$		Average of Announcement Value Mill \$
<b>Panel A: Yearly distribution</b>				
2004	12	489.338	8	40.583
2005	9	4825.948	9	11.383
2006	7	2626.810	15	36.650
2007	8	640.264	8	38.120
2008	13	3405.278	5	13.265
2009	9	1691.222	4	64.500
2010	7	700.020	6	25.793
2011	9	1455.983	13	37.568
2012	9	398.762	6	91.787
2013	13	2293.414	6	138.445
2014	3	460.570	3	159.197
<b>Panel B: Industry</b>				
		%		%
Communication Elec, Gas and Sani	9	9.1	4	4.8
Construction	2	2.0	1	1.2
Finance Insurance & Real Estate	22	22.2	2	2.4
Manufacturing	26	26.3	53	63.9
Mining	3	3.0	5	6.0



## THE JOURNAL OF INTERNATIONAL BUSINESS &amp; LAW

Retail	1	1.0	3	3.6
Services	31	31.3	13	15.7
Whole Sales	5	5.1	2	2.4
Related industry *				
Same	30	30.3	14	16.9
Different	69	69.7	69	83.1

**Panel C: Management reaction**

Friendly	77	78.0	62	75.0
Hostile	1	1.0	--	-----
Undisclosed	21	21.0	21	25.0

**Panel D: Form of payment**

Cash	60.0	47.0
Mixed	23.0	10.8
Stock	10.0	1.2
Undisclosed	7.0	41.0

\*4 digit SIC codes are used to classify division. Data source Bloomberg database

**ABNORMAL RETURN MEASURES - RESIDUAL ANALYSIS AND EVENT STUDY**

Brown and Warner (1985) suggested that the market model is the most powerful method to measure abnormal return. In this study, during the estimation period, daily returns of each stock among the full sample from -252 to 6 days were regressed against the S&P500 benchmark returns.

To measure the impact of the announcement on the stock of each security, the abnormal returns (AR) are calculated as the difference between the normal (benchmark) return and the actual (event) returns. The abnormal return is calculated with the following formula:

$$AR_{i,t} = R_{i,t} - R_{m,t}$$

Where,  $R_{i,t}$  is the actual return on security i, at time t and  
 $R_{m,t}$  is the actual return for S&P 500 index at day t.

The expected return of each security for each day during the event window (-5, 5) is calculated with the following formula:

$$ER_{i,t} = AR_{i,t} - \alpha_i - \beta_i * R_{m,t}$$

Where  $ER_{i,t}$  = observed log return for security i at day t,  
 $R_{m,t}$  = return for S&P 500 index at day t,  
 $AR_{i,t}$  = Abnormal return for security i at day  $[E(AR_{i,t}) = 0]$   
 $\alpha_i$  and  $\beta_i$  are OLS value from the estimation period

## PERFORMANCE OF U.S. TAKEOVERS

The individual security's AR is aggregated using  $AR_{i,t}$  for each event period,  $t_1 = T1+T2$ . Given  $N$  events, the sample aggregated AR for period  $t$  is:

$$AR_t = \frac{1}{N} \sum_{i=1}^N AR_{i,t}$$

The aggregated average AR is:  $CAR_{(t1,t2)} = \sum_{t=t1}^{t2} AR_t$

An 11 day event window is employed, comprised of 5 pre-event days, the event day itself, and 5 post event days. For each announcement, the 252 trading day period prior to the event window is used as the estimation window.

**Statistical Test**

Brown and Warner (1980) argue that a cross-sectional statistical test is a robust and commonly used method in event studies. As mentioned earlier, under the null hypothesis, the average cumulative abnormal return from day  $t1$  to day  $t2$  is equal to 0. Thus, the cross-sectional t-test is calculated for average cumulative abnormal return according to

$$T_{CAR_{(t1,t2)}} = CAR_{(t1,t2)} / \sigma_{CAR}$$

Where,  $\sigma_{CAR}$  is the standard deviation of CARs.

$$\sigma_{CAR_{(t1,t2)}} = \frac{1}{N(N-d)} \sum_{i=1}^N [CAR_{i,(t1,t2)} - CAR_{(t1,t2)}]^2$$

**Non Parametric Tests**

MacKinlay (1997) used a sign test, which is based on the sign of the abnormal return. His methodology was used in this study to perform a non parametric test. The study assumed abnormal returns are independent across stocks and the expected proportion of the positive abnormal returns under the null hypothesis is 0.05. The null hypothesis states that there is an equal probability that the CAR will be positive or negative. The null hypothesis is defined as *there is a positive abnormal return associated with the given event*,

$$H_0: p > 0.5 \text{ where } p = pr [CAR_i \geq 0.0]$$

Test statistics are calculated with the following formula:

$$J = \left[ \frac{N^+}{N} - 0.5 \right] * \frac{\sqrt{N}}{.05} \approx N(0, 1)$$

Where

$N^+$  = total positive abnormal return

$N$  = total number of cases

The null hypothesis rejected if  $j > \phi^{-1}(\alpha)$ .

For example, if  $j > 1.65$ , this indicates that the median of the CARs are different from zero, meaning it is statistically significant. Thus, the AR on the event announcement date has a significant impact on the returns (positive or negative).

## THE JOURNAL OF INTERNATIONAL BUSINESS &amp; LAW

The Wilcoxon sign test is also used, since it considers the fact that both the sign and the magnitude of abnormal returns are significant. The test statistic is given by:

$$W \text{ test} = \sum_{t=1}^N r_t^+$$

Where  $r_t^+$  is the positive rank of the absolute value of abnormal returns. This test assumes that none of the absolute values are equal, and that each is a nonzero value. The null hypothesis is equally likely positive or negative abnormal returns when N is large.

### Results of the Event Study

By applying the event study methodology that was mentioned in the residual analysis and the event study sections, (within the general framework of study) abnormal return has been calculated in the event period. The results of the study are presented within Tables 4 and 5. Table 4 reports the results from all testing done on the 83 Chinese firm's announcements over 11 trading days. These included the AR, CAAR, T-statistic, Wilcoxon sign-rank test for the median, as well as a negative/positive market reaction percentage. Figure 1 plotted the AR and CAAR for Chinese takeovers for a graphical view of the data. The results in the daily abnormal returns, in Table 4, indicate that the CBAs conducted by the U.S. firms, on average, create immediate positive market reaction and negative market reaction for post-merger. The result is consistent with Danbolt and Maciver (2012) and Dutta et al. (2013). All average cumulative abnormal returns and CAAR were statistically insignificant at a conventional level except announcement day and immediate post-announcement day (2). Positive market reactions with varying event windows range from 40% to 55%. The positives and negatives test shows significant  $p$  values for announcement day (0) at the 10% significance level. The percentage of positive abnormal returns on announcement day is 39.8%, which is significantly high. This implies that the investors favorably reacted, upon announcement, to the U.S. takeover of Chinese targets. The results indicate that the overall investor sentiment is positive, with reference to international expansions through takeovers. These results are consistent with the research done by Doukas and Travlos (1988). The results also indicate that the U.S. firms suffer losses during the post-merger periods. This information is consistent with Agrawal et al. (1992). The results support Hypothesis 3a: "There is a difference in stock performance before and after the merger announcement which is measured by Average Abnormal Return".

## PERFORMANCE OF U.S. TAKEOVERS

**Table 4**

The table represents the daily abnormal return of 83 cross-border acquisition (China) announcements by U.S. acquirers over the 2004-2014 periods. Daily ARs are computed from the market model. Day 0 refers to the announcement day of acquisitions as reported in Bloomberg database. Medians. One-sample t statistic is used to test for the significance of means. The Wilcoxon Sign-Rank (W) statistics test is used to test for the statistical significance of medians. The sign test is used to test for the statistical significance of positive/negatives. Announcement day of acquisitions are as reported in Bloomberg database. Medians. One-sample t statistic is used to test for the significance of means. The Wilcoxon Sign-Rank (W) statistics is used to test for the statistical significance of medians. The sign test is used to test for the statistical significance of positive/negatives.

Significance tests of mean, median and sign									
Day	N	Mean	CAAR	t stat	Median	W stat	Pos:Neg	Pos:Neg %	Sign test p value
-5	83	-0.0041	-0.0041	-0.7300	0.0011	1874.0	41:42	49.4	1.0000
-4	83	0.0033	-0.0008	0.5000	-0.0022	1467.0	45:38	54.2	0.5102
-3	83	0.0157	0.0149	0.8500	0.0026	1983.0	38:45	45.8	0.5102
-2	83	-0.0033	0.0116	-0.6100	-0.0024	1478.0	44:39	53.0	0.6606
-1	83	-0.0027	0.0089	-0.6000	0.0009	1827.0	39:44	47.0	0.6606
0	83	<b>0.0193*</b>	0.0282	1.7000	<b>0.0033*</b>	2124.0	<b>33:50*</b>	<b>39.8</b>	0.0790
+1	83	-0.0004	0.0278	-0.1000	0.0017	1932.0	38:45	45.8	0.5102
+2	83	<b>-0.0044*</b>	0.0234	-1.8400	-0.0027	1453.0	46:37	55.4	0.3799
+3	83	-0.0108	0.0126	-1.0700	-0.0023	1446.0	46:37	55.4	0.3799
+4	83	-0.0039	0.0087	-0.9700	-0.0027	1503.0	44:39	53.0	0.6606
+5	83	-0.0056	0.0032	-1.4500	-0.0018	1508.0	41:42	49.4	1.0000

\*\*\*, \*\* and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively.

**Table 4a : Cross-border acquisitions (China)**

CARR (-1, +1) is the acquirer's cumulative abnormal return during the three days around the acquisition announcement. Similarly, CAR (-5, +5) is the acquirer's cumulative abnormal return during the 11 days around the acquisition announcements.

N = 83

Significance tests of mean, median and sign Cross border acquisitions

Event Window	Mean	t stat	Median	W -stat	Pos:Neg	Sign test p value
(+2,+5)	-0.0247*	-1.930	-0.0077*	1332	50:33*	0.0790
(-5,+5)	0.0031	0.140	0.0068	1947	37:46	0.3799
(-4,+4)	0.0128	0.670	0.0083	1992	33:50*	0.0790
(-3,+3)	0.0134	0.880	0.0111*	2122	36:47	0.2724
(-2,+2)	0.0085	0.650	0.0048	1986	37:46	0.3799
(-1,+1)	0.0162	1.590	0.0078**	2213	34:49	0.1244

\*\*\*, \*\* and \* denote statistical significance at the 1%, 5%, and 10% levels respectively.

## THE JOURNAL OF INTERNATIONAL BUSINESS &amp; LAW

**Table 5**

The table represents the daily abnormal return of 99 domestic announcements by U.S. Acquirers over the 2004-2014 period. Daily ARs are computed from the market model. Day 0 refers to the announcement day of acquisitions as reported in the Bloomberg database. One-sample t statistic is used to test for the significance of means. The Wilcoxon Sign-Rank (W) statistics is used to test for the statistical significance of medians. The sign test is used to test for the statistical significance of positive/negatives.

Significance tests of mean, median and sign									Sign test
Day	N	Mean	CAAR	t stat	Median	W stat	Pos:Neg	Pos:Neg %	p value
-5	99	-0.0014	-0.0014	-0.7600	-0.0008	2339.0	52:47	52.5	0.68770
-4	99	-0.0025	-0.0039	-1.3300	-0.0026*	1993.0	59:40*	59.6	0.07040
-3	99	-0.0008	-0.0047	-0.5400	-0.0017	2081.0	55:44	55.6	0.31490
-2	99	-0.0022	-0.0069	-1.1800	-0.0014	2232.0	52:47	52.5	0.68770
-1	99	-0.0008	-0.0077	-0.3800	-0.0013	2241.0	56:43	56.6	0.22780
0	99	-0.0021	-0.0098	-0.3400	-0.0050	2027.0	58:41*	58.6	0.10780
+1	99	0.0010	-0.0088	0.4000	0.0005	2547.0	51:48	51.5	0.84070
+2	99	-0.0023	-0.0111	-1.3700	-0.0021*	1991.0	59:40*	59.6	0.07040
+3	99	-0.0031	-0.0141	-1.3500	-0.0024	2118.0	56:43	56.6	0.22780
+4	99	0.0006	-0.0135	0.2700	0.0006	2590.0	42:57	42.4	0.15940
+5	99	-0.0028	-0.0163	-1.5200	-0.0024*	1980.0	58:41*	58.6	0.10780

\*\*\*, \*\* and \* denote statistical significance at the 1%, 5%, and 10% levels respectively.

**Table 5a Domestic acquisitions**

CARR (-1, +1) is the acquirer's cumulative abnormal return during the three days around the acquisition announcement. Similarly, CAR (-5, +5) is the acquirer's cumulative abnormal return during the 11 days around the acquisition announcements.

N = 99

Significance tests of mean, median and sign domestic acquisitions							Sign test
Event Window	Mean	t stat	Median	W Stat	Pos:Neg		p value
(-5,+5)	-0.0163*	-1.900	-0.0195***	1570.0	64:35**		0.0049
(-4,+4)	-0.0121	-1.400	-0.0149***	1681.0	63:36*		0.0090
(-3,+3)	-0.0103	-1.230	-0.0133***	1742.0	61:38**		0.0270
(-2,+2)	-0.0064	-0.790	-0.0089*	1978.0	60:39**		0.0444
(-1,+1)	-0.0019	-0.250	-0.0033	2281.0	55:44		0.3149
(-5,-2)	-0.0069**	-2.190	-0.0063*	1904.0	60:39*		0.0444

\*\*\*, \*\* and \* denote statistical significance at the 1%, 5%, and 10% levels respectively.

PERFORMANCE OF U.S. TAKEOVERS

Figure 1: AR and CAAR measurements for the days surrounding the announcement of U.S. acquirers engaging in a deal with Chinese targets

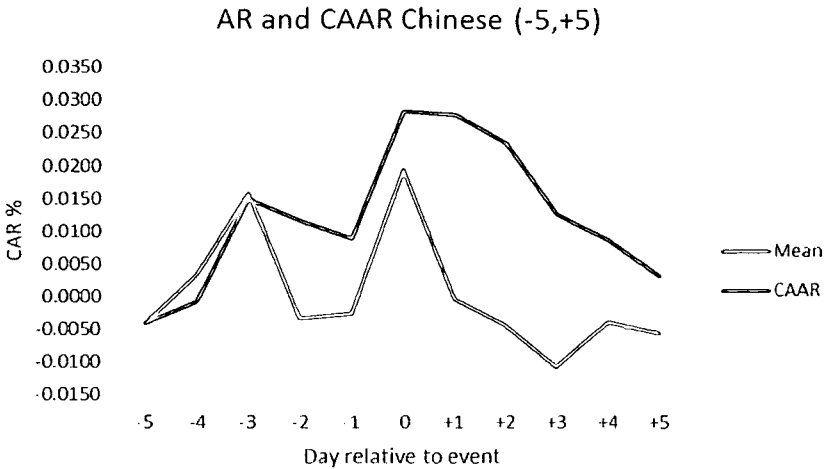


Figure 2: AR and CAAR measurements for the days surrounding the announcement of U.S. acquirers engaging in a deal with domestic targets

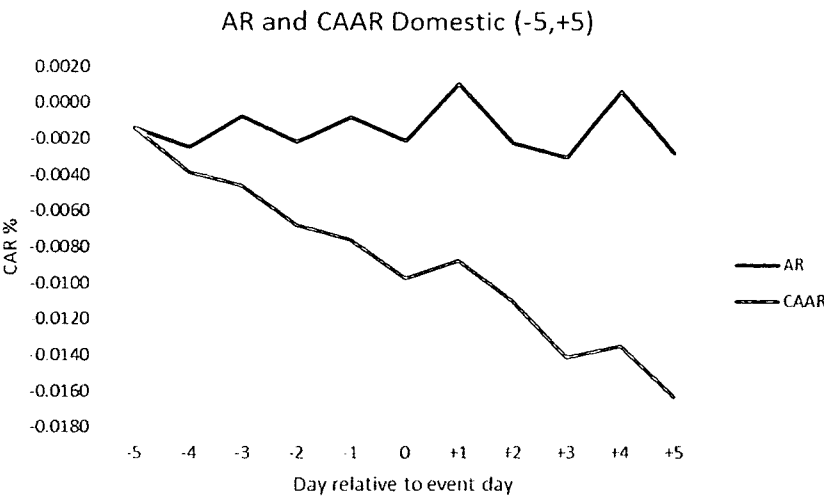
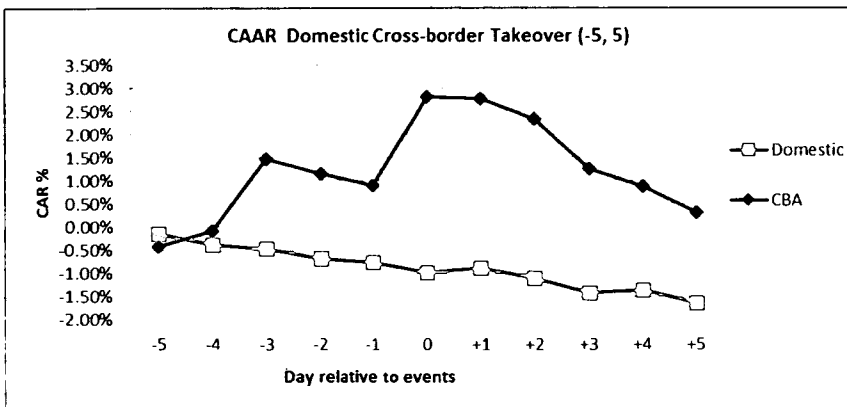


Table 5 reports the results of all tests run on the sample of domestic takeovers (during the period of 2004-2014) including 92 firms combined with 99 observations. These tests included the AR, CAAR, T-statistic, W-stat for median, and negative/positive market reaction percentages. Average cumulative abnormal returns and CAAR's for domestic takeovers are plotted in Figure 2. Positive market reactions with varying event windows range from 42% to 59.7%. The positives and negatives test shows significance at day (0), day (+2), day (+5) and day (-4) at 5% levels. The percentage of positive abnormal returns on announcement day is 58%, which is significantly higher than 50 ( $Z=1.507$ ). The results in the daily abnormal returns, in Table 5, indicate that the domestic acquisitions conducted by the U.S. firms, on average, generate a negative market reaction. However, they do generate a positive reaction immediately after the merger-announcement day. Table 5 additionally shows that the average cumulative abnormal returns are more significant in the post-merger window, compared to the pre-merger event window. On day (+2) acquirers that were engaged in domestic acquisitions gained negative abnormal returns, which is a direct contrast to the data from table 4 (Chinese acquisition). Figure 3 presents a comparison of average abnormal returns between these two kinds of acquiring firms and visually indicates that CBAs are better. The graph shows the CAAR curve first beginning to rise 5 days prior to the announcement, indicating the investors have known that the company intends to increase its capital by offering stocks for placement. The results support hypothesis 2 *"Acquirers in countries with strong investor-protection have higher pre-announcement returns than acquirers' in countries with weak investor-protection"*. The result also supports hypothesis 1 *"There is a relationship between target country governance environments and acquirer country governance environment"*. The results show that the CAAR for the cross-border acquirer is better than that for the domestic acquirer. CBA's CAARs are higher compared to the domestic takeovers, and are statistically significant from the event day, (-3), as shown in Figure 3. The results indicate both domestic and Chinese acquirers gain negative returns, which is consistent with Bruner (2002) and Bradley et al. (1998). The negative valuation effect of domestic firm acquisitions documented here also appears to be consistent with the value reducing diversification reported by Jensen (1986) and Roll (1986).

**Figure 3: A comparison of the CAAR measurements for the days surrounding the announcement of U.S. acquirers engaging with domestic and Chinese targets**



## PERFORMANCE OF U.S. TAKEOVERS

Do U.S. acquiring firms in M&A activities aimed at foreign-based targets have a different effect? To examine the effect of varying event window lengths on empirical results, abnormal returns were studied on the windows  $(-1,+1)$ ,  $(-2,+2)$ ,  $(-3,+3)$ ,  $(-4,+4)$ ,  $(-5,+5)$ ,  $(+2,+5)$ , and are presented in Table 4a. Furthermore, returns were studied on windows  $(-1,+1)$ ,  $(-2,+2)$ ,  $(-3,+3)$ ,  $(-4,+4)$ ,  $(-5,+5)$ ,  $(+2,+5)$ , and are presented in Table 5a. Table 4a presents the AR (mean) on the different event windows. The table shows all returns are positive except for the event window  $(+2, +5)$ . The only statistically significant (t-stat) event window is  $(+2, +5)$ . As shown in Table 4a, the event windows  $(-1, +1)$ ,  $(-3, +3)$  and  $(-4, +4)$  were proven to be statistically significant by the Wilcoxon and sign test, producing results of 1.28%, 1.34% and 1.62% respectively. In contrast to domestic acquisition, all of the CARs (mean) are negative as shown in Table 5a. Most of the event windows CARs are statistically significant. The results indicate value creation in CBA for the U.S. acquirer, but value destruction in domestic merger and acquisition activities. The results also suggest that in domestic acquisitions, a wider event window is more sensitive to the market reaction than the shorter window.

Based on the results from the event study, it can be concluded that Chinese acquisitions create more positive than negative returns surrounding the event days. Chinese CAARs before and after the announcement day fluctuate as shown in figure 3. This implies that the information did not reach all the investors, but some still benefited from the acquisition. As for domestic takeover, it is obvious that the merger announcement has an impact on the stock price because the U.S. CAAR is consistently declining over time. The result implies that the U.S. market is efficient. These results are consistent with the finding of Bruner (2002) and Bradley et.al. (1988) about negative returns for the bidding firms. The results support our 1<sup>st</sup> Hypothesis: "Takeovers in strong investor-protected countries receive lower announcement returns than takeovers in weaker investor-protected countries". There is a leak in the information relating to the stock before the approval of commission on the offering. This is proven by the increase in CAAR before event day, as shown in Figure 3, Table 4 and Table 5. But this is noticeable only in cross-border takeovers.

## UNIVARIATE ANALYSIS

This section presents univariate analysis for acquirers to assess the impact of the related variables of abnormal return. Table 6 presents means and medians for a sample of 99 domestic and 83 CBAs. In order to test the significance of differences between domestic and cross-border acquisitions, this study used t-tests and Mann-Whitney tests. Variable descriptions are presented in appendix A. Focusing on Panel A, the results show evidence that the Market capitalization for domestic acquisition is significantly larger compared to CBAs. Domestic acquirers also have insignificantly higher Book-to-Market ratio. This is consistent with Rau and Vermaelen's (1998) theory that cross-border acquirers have significantly higher R&D to Total-Asset ratio and R&D percentage change. Cross-border acquirers also have insignificantly higher q ratio and leverage compared to domestic acquirers. In Panel B, as expected, cross-border acquirers are involved in more conglomerate acquisitions (approximately 83%), than are domestic acquirers. Domestic acquirers more often engage in M&As in the same or related industry. This finding is consistent with Rau and Vermaelen (1998) and Andrade et al. (2001), where they argue that "managers from the glamour firm overestimate their capabilities to manage an acquisition" and, as a result, experience negative gain. The Domestic acquirers often engage more in related industry, as compared to CBAs.



Acquisition between unrelated industries could be another reason for negative CAR values for domestic takeover. As reported by Morck et al. (1990), managers of poor performing firms will try to enter into new business, where they have the opportunity to perform better. Surprisingly, domestic acquirers use cash more often than cross-border acquirers. In conclusion, based on the descriptive analysis, cross-border acquirers are smaller in size, more R&D intensive firms, and are more frequently involved in conglomerate acquisitions. The results also show evidence that they use cash as a payment method less frequently.

Table 6

Descriptive statistics for the entire sample of targets domiciled in domestic and cross-border acquisitions are presented. Means and medians and the differences between the samples of cross-border and domestic transactions are presented as well. The medians are in the parenthesis. Acquiring firms' log transformed market capitalization in the fiscal year prior to the takeover announcement (log acquirer current market Cap) can be seen. As well as the acquiring firms' Tobin's Q in the fiscal year prior to the takeover announcement. Research and development expense to firm's total asset ratio in the fiscal year prior to the takeover announcement (R&D to Total Assets). Research and development expense percentage change prior to the takeover announcement year. The market value of assets is measured as the market value of equity (share outstanding times the price) plus the book value of long term debt and the liquidity value of preferred stock. Book to market value ratio of the acquirer as at year end prior to deal announcement (Book to market). Market value is the sum of all issue-level market values, including trading and non-trading issue. There are three dummy variable are examined including whether a transaction; Acquirer's Tobin's Q is high or low (Q ratio), solely cash based offer (payment method), acquirer and target from same industry (same related industry). Percentage conglomerate is the fraction of the transactions where the acquirer and target have a different four digit industry. The difference tests are based on t-tests for equality in means and Mann-Whitney tests for the medians.

Independent variables descriptive statistics and difference of means and medians between domestic and CBAs.								
	Full Sample		Domestic Sample		Chinese Sample		Difference (1)-(2)	P- Value
	Mean (Median)		Mean (Median)		Mean (Median)		Mean (Median)	
<b>Panel A: Acquirer characteristics</b>								
		(1)		(2)				
<b>Log Size (MarketCap)</b>	3.6991 (3.807) N = 182	***	3.9515 (3.978) N = 99	***	3.3980 (3.5970) N = 83	***	0.5535 (0.3893)	*** 0.0072
<b>Q Ratio</b>	1.9236 (1.780) N = 180	***	1.8879 (1.7100) N = 99	***	1.9672 (1.8600) N = 81	**	-0.0793 (-0.1418)	0.5630 0.1614
<b>R&amp;D to-Total-</b>	0.6580		0.0280	***	1.4100	**	-1.3820	** 0.0320

## PERFORMANCE OF U.S. TAKEOVERS

<b>Asset</b>	(0.0137) *** N = 180	(.0098) *** N = 99	(0.0207) *** N = 83	(-0.0013) ***	0.0017
<b>R&amp;D</b>	***	**	***		
<b>Percentage</b>	0.0558	0.0410	0.0736	-0.0326	0.2280
<b>Change</b>	(0.0329) *** N = 181	(.0000) *** N = 99	(0.0638) *** N = 82	(-0.00309) **	0.0285
<b>Book-to-Market</b>	-2.6800 (0.4272) *** N = 171	0.4159 (0.4352) *** N = 99	-6.2800 (0.4135) *** N = 79	6.6959 (0.0164)	0.2850 0.6690
<b>Leverage</b>	0.5728 *** (0.5552) *** N = 182	0.5641 *** (0.5661) *** N = 99	0.5832 *** (0.5431) *** N = 83	-0.0191 (0.0259)	0.6840 0.5104

## Panel B: Deal characteristics

<b>Conglomerate (%)</b>	0.7582 N = 182	0.6970 N = 99	0.8313 N = 83	-0.1343	**	0.0350
<b>Same Related Industry (%)</b>	0.2418 N = 182	0.3030 N = 99	0.1687 N = 83	0.1343	**	0.0350
<b>Payment Cash (%)</b>	0.5385 N = 182	0.5960 N = 99	0.4699 N = 83	0.1261	*	0.0900
<b>Payment Mixed (%)</b>	0.1758 N = 182	0.2323 N = 99	0.1084 N = 83	0.1239	**	0.0290
<b>Payment Stock (%)</b>	0.0604 N = 182	0.1010 N = 99	0.0120 N = 83	0.0890	***	0.0120
<b>Payment Undisclosed (%)</b>	0.2253 N = 182	0.0707 N = 99	0.4096 N = 83	-0.3389	***	0.0000

\*, \*\* and \*\*\* indicates significant at the 10%, 5% and 1% levels, respectively

As observed in Table 6 and Table 1, cash payment is the most frequently used payment method. To have more insightful results, the full sample is further classified into cash and non-cash deals, as presented in Table 7. The sample was not classified by stock financed, because in the entire sample, only one transaction was financed by stocks in CBAs (as seen in Table 1). The table displays all deals that use only cash and non-cash as a payment method and mean differences between domestic acquisitions and CBAs. In panel A, the full sample mean difference is statistically significant at 10% level between domestic acquisitions and CBAs. However, there is no significant difference found by cash or non-cash deals between domestic acquisitions and CBAs. On the contrary, in Panel B, acquirer market cap (as proxy of firm size), R&D to total assets, and leverage are statistically significant. The Q ratio and book-to-market ratio have no impact. The results imply that the cross-border acquirers who are using cash for the deals are R&D intense investment firms, high financial

## THE JOURNAL OF INTERNATIONAL BUSINESS &amp; LAW

leverage firms, and have smaller firm size. On the other hand, those not utilizing cash have less financial leverage and Q ratio and R&D investment is higher, in comparison to domestic acquirers. Surprisingly, firm size has no impact on non-cash deal. In conclusion, in CBAs, acquirers tend to have high financial leverage, high R&D investment and small firm size, when deals are financed by cash, as opposed to when they are not.

**Table 7**

Comparison of acquiring firm characteristics

	Domestic Sample		Chinese Sample		Difference	P-Value
	N	Mean	N	Mean	Mean	
CAR (-1,+1)						
<b>Panel A: Cash versus other payment methods in takeover</b>						
<b>Full sample</b>	<b>99</b>	<b>-0.0019</b>	<b>83</b>	<b>0.01883**</b>	<b>-0.02076*</b>	<b>0.0870</b>
Cash payment	59	0.0007	39	0.0140	-0.0132	0.2720
Other	40	-0.0059	44	0.0230	-0.0290	0.1970
<b>Panel B: Cash financed deal</b>						
Log current market cap	59	4.1950***	39	3.2790***	<b>0.9160***</b>	0.0000
Q Ratio	59	2.0200***	38	1.8560***	0.1640	0.4020
R&D to-Total-Asset	59	0.0332***	39	1.0610	<b>-1.0278*</b>	0.0980
R&D Percentage						
Change	59	0.0367	38	0.0331	0.0036	0.9310
Book-to-Market	55	0.4415***	35	-14.8000	15.2415	0.2120
Leverage	59	0.5368***	39	0.6947***	<b>-0.1579**</b>	0.0350
<b>Panel C: Payment method other than cash</b>						
Log Acquirer Current						
Mar	40	3.592***	44	3.503***	0.089	0.7240
Q Ratio	40	1.692***	43	2.066***	<b>-0.374*</b>	0.0540
R&D to-Total-Asset	40	0.020**	44	1.720	-1.700	0.1590
R&D Percentage						
Change	40	0.047**	44	0.109***	<b>-0.061*</b>	0.0750
Book-to-Market	37	0.378**	44	0.462***	-0.084	0.5540
Leverage	40	0.605***	44	0.484***	<b>0.120**</b>	0.0200

\*, \*\* and \*\*\* indicate significant at the 10%, 5% and 1% levels, respectively

**PRE-MERGER AND POST-MERGER PERFORMANCE**

Table 7a presents the means and medians for post-merger and pre-merger cumulative abnormal returns for both domestic acquisitions and CBAs. Focusing on the premerger window, the domestic mean and median are both higher when compared to CBAs, but only the domestic mean and median are statistically significant at the 5% level. The results further show that the domestic effect is significant (-1.04%). The results are statistically significant, based on the Mann-Whitney median test which suggests that domestic

## PERFORMANCE OF U.S. TAKEOVERS

acquirers are significantly different from cross-border acquirers. It also states that the domestic premerger return is larger compared to CBAs. The event window of  $(-1, +1)$  shows that the domestic effect is a significant  $(-1.21\%)$  value. The results suggest that the cumulative return for domestic acquisitions is higher than that for CBAs, however there is no post-merger effect. It is important to point out the fact that the pre-announced returns are lower than the returns around the announcement day presented in Table 4 and Table 5. Thus, Hypothesis 3 “Acquirers in cross-border acquisition will receive higher announcement returns than the domestic.” Is rejected. The results also imply that the strong investor protected firms’ (U.S. acquirers) have more leakage than weaker investor protected firms. That result supports Hypothesis 3a “*Acquirer in countries with strong investor protection have higher possibility of information leakage in pre-merger event period.*”

**Table 7a**

Acquiring firms CAR pre-announcement and post-announcement windows across partitioned based on target domiciled. T-tests are used to test the significance of differences between means of the two samples and Mann-Whitney tests are used to test the significance of differences between medians of the two samples.

		Pre-merger			Post-merger	
		$(-5, -2)$	$(-5, -1)$	$(-1, +1)$	$(+1, +5)$	$(+2, +5)$
Domestic	Mean	-0.0069 **	-0.0077 **	-0.0019	-0.0065	-0.0053
	Median	-0.0083 **	-0.0052	-0.0062	-0.0087	-0.0027
CBA	Mean	0.0116	0.0090	0.0162	-0.0251 *	-0.0247 *
	Median	0.0017	0.0028	0.0039	-0.0046	-0.0057 *
Difference	Mean	-0.0185	-0.0166	-0.0181	0.0186	0.0194
	Median	-0.0104 **	-0.0150 **	-0.0121 **	0.0004	0.0023

\*, \*\* and \*\*\* indicate significant at the 10%, 5% and 1% levels, respectively.

**Stock Price Performance**

In the previous section, sample descriptions and mean difference test results were provided. This section aims to present empirical evidence based on stock performances. Table 7.b shows means and medians for the sample of 83 cross-border acquisitions and compares these, with means and medians of the 99 domestic acquisitions. The analysis uses t-tests and Man-Whitney tests to prove the significance of the differences between the two samples. The table displays the announcement returns for the 11 day window for the full sample based on the domicile of the target. By looking at the CAR results in the table, it is clear that the acquisition of a U.S. target can have a significant wealth destructing effect on the U.S. acquirer as a whole. The cross-border effect is  $-2.08\%$ , which is significant, and can be defined as the difference between the three day  $(-1, +1)$  market adjusted return of  $-0.19\%$  for domestic acquisition and  $1.88\%$  for CBA. Cross-border (China) acquisitions experience significant positive returns of  $1.88\%$  and an insignificant negative return of  $.19\%$ . This supports the first hypothesis on differences in returns across domicile of acquirers, which is

## THE JOURNAL OF INTERNATIONAL BUSINESS &amp; LAW

consistent with Martynova and Renneboog (2008), Danbolt and Maciver (2014) and Gregory and O'Donohoe (2014).

**Table 7.b**

Announcement day average excess return for domestic and cross-border acquisitions				
Full sample CAR (-1,+1)				
Full Sample	Domestic Sample	Chinese Sample	Difference (1)-(2)	P-Value
(Median)	(Median)	(Median)	(Median)	
	(1)	(2)		
0.0075	-0.0019	0.0188 **	-0.0208 *	0.0870
(0.0024)	(-0.0033)	(0.0078)	(-0.0122) **	0.0397
N = 182	N = 99	N = 83		

\*,\*\* and \*\*\* indicate significant at the 10%, 5% and 1% levels, respectively

**MULTIVARIATE ANALYSIS**

This section presents cross sectional regression analysis, with the purpose of assessing the impact of additional control variables on the Abnormal Return (Table 6 and Table 7 display the variables). This assessment allows for verification of the event study conducted earlier. The models that are used for assessment are below.

**Full sample CAR** =  $\alpha + b_1$  (region dummy) +  $b_2$  (q ratio dummy) +  $b_3$  (payment dummy) +  $b_4$  (target SIC div dummy) +  $b_5$  (hostile dummy) +  $b_6$  (R&D to-total-Assets) +  $b_7$  (R&D percentage change) +  $b_8$  (Book-to-Market) +  $b_9$  (leverage)

**Equation 1 CAR** =  $\alpha + b_1$  (q ratio dummy) +  $b_2$  (payment dummy) +  $b_3$  (target SIC div dummy) +  $b_4$  (hostile dummy) +  $b_5$  (R&D to-total-Assets) +  $b_6$  (R&D percentage change) +  $b_7$  (Book-to-Market) +  $b_8$  (leverage)

Where

$\alpha$  = constant

**CAR** = cumulative abnormal return from the takeover announcement

**Region** = dummy variable to one if the target region is domestic otherwise Zero

**Q** = dummy variable is equal to one if the company's q ratio is larger than 1 otherwise Zero

**Size** = logarithm of the ratio of the market cap of the acquirer

Other variables act as indicator variables, meaning they are equal to 1 if the condition is fulfilled and zero otherwise zero. Full variable descriptions are presented in Appendix A.

Full sample model 1 represents the acquirer returns for the overall sample and shows the results for the combined (domestic and Chinese) sample. In the target region, hostile bids and related industry (different) have a negative relationship with the acquirer's CAR. Related industry is insignificant. The result indicates that the domestic acquirers gain less compared to the CBAs. In model 2, firm size and target division are added as variables. Now the region becomes insignificant, but target division is significant. This implies that,

## PERFORMANCE OF U.S. TAKEOVERS

when the acquiring firm size is large and the target SIC division is construction, the acquirer's abnormal return declines. In model 3, firm size is replaced with q ratio and payment method, and accounting variables are added. Now, only region and q ratio are significant and they have a negative relationship with the CAR value. However, none of the accounting variables are significant. The result of this test implies that when the q ratio is large, the U.S. acquirers experience significantly less returns in domestic acquisitions compared to CBAs. During the sample period of 2004-2014, it was observed that Tobin's Q and region were consistently correlated negatively with cumulative abnormal return at the 5% level. When the acquirer's q ratio is low and the target firm is Chinese, acquirers gain on average, 8.6%. These returns are reduced by 2.5% if the target firm is domestic. Three regression coefficients are significant at the 10% level, and (all?) the constant coefficients are significant at 5% level. The result is consistent with Servaes (1991), Rossi and Volpin (2004) and Bris and Cabolis (2008) which showed bidder returns are negative and significant.

In the full sample regression, the final result implies that abnormal returns decline after the takeover. The results support Agrawal et al. (1992), Jensen and Ruback (1983) and Chen, Hu and Shieh (1991) but are inconsistent with Aybar and Ficci (2009). The results support Doukas and Travlos (1988), and Martynova and Renneboog (2008), which concluded that the acquirers benefit greatly from less developed countries. It could also be assumed that the high premium payment is the reason for a negative CAR (for domestic), as reported by Bhagat et al. (1990). The hubris hypothesis, as reported by Roll's (1986), could be another reason for a negative CAR. The study finds support for the 1st hypothesis "Takeovers in strong investor-protected countries receive lower announcement returns," through the analysis of both full and domestic samples.

**Table 8 Full sample****Full sample announcement return regression results**

Sample: 3/29/2004 - 10/01/2014, Included observations: 182

variables	Model 1		Model 2		Model 3	
	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
White heteroskedasticity-consistent standard errors & covariance						
INTERCEPT	0.018 **	2.247	0.081 *	1.659	0.086 **	1.973
Region domestic	-0.020 *	-1.635	-0.014	-1.187	-0.025 *	-1.757
Log size (acquirer market cap)			-0.013 *	-1.964		
Q ratio is large (acquirer)					-0.079 **	-1.960
Cash payment					0.013	0.759
Mixed payment					0.018	0.849
Stock payment					0.038	1.134
Hostile bid nature	-0.015 *	-1.795			-0.033	-0.372
TARGETSIC_DIVISION="Construction"			-0.149 *	-1.799		
TARGETSIC DIVISION="Fin, Insurance and Real Estate"			-0.010	-0.272		
TARGET DIVISION="Manufacturing"			-0.017	-0.483		
TARGET DIVISION="Mining"			0.021	0.243		
TARGETSIC DIVISION="Retail"			-0.035	-0.892		
TARGETSIC DIVISION="Services"			-0.015	-0.402		
TARGETSIC DIVISION="Whole Sales"			-0.007	-0.133		
R&D to-Total-Asset					0.001	0.737
R&D Percentage Change					0.056	1.573
Book-to-Market					0.000	-0.848
Leverage					-0.009	-0.346
Different related industry	-0.001	-0.049	-0.008			
Same Related Industry						
R-squared	0.017		0.102		0.077	
F-statistic	0.748		1.943		1.203	
Prob(F-statistic)	0.561		0.042		0.289	

\*, \*\* and \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

The dependent variable is CAR (-1,+1) in each regression. CAR (-1, +1) is the acquirer's cumulative return during the three days around the acquisition announcement. t-statistics are computed using heteroscedasticity-consistent standard errors.

Table 9 below, summary of multiple regression results (Chinese takeovers), provides a summary of multiple regression results for the period of 2004-2014 of Chinese takeovers, including a sample of 75 firms with 83 observations. In model 1 and model 2 the only difference is the addition of "firm size" in model 2. In model 1, q ratio, stock payment, construction division and mining are statistically significant. However, when firm size was added into model 2, q ratio became insignificant, but all the coefficients remained the same. Stock payment and construction industry variables still work on the regression line, and are significant at the 5% level. However, mining industry becomes statistically significant at the 10% level after the adjustment. Q ratio and mining both have a negative coefficient, but construction has positive coefficient. The result of the regression implies that when the acquirer has a large Q ratio and division is mining, CAR declines 6.3% on average. Stock payment is significant and positively associated with CAR. The coefficient signs are the same for both models. Target firms' industry division was used to test which industry is beneficial to CAR. In addition, Travlos (1987) suggested that different payment methods would result in different performances of the acquirers. As shown in the regression table, after adding payment method, the effect of the large Tobin's Q explanatory variable was changed in model 2. It has the same coefficient but is not significant. In addition, stock payment and construction industry variables are statistically significant at the 1% level and positively

## PERFORMANCE OF U.S. TAKEOVERS

associated with CAR (-1, 1). Notably, however, stock payments that contribute to CAR are not consistent with the results of Travlos (1987), Rossi and Volpin (2004) and Dutta et al. (2013). In model 5, when accounting variables are replaced with SIC division, the acquirer size and Book-to-Market ratio become significant at the 10% level. Both of the variables have a negative relationship with the returns. The result implies that the large acquirer will experience a 1.2% less return than the small acquirer, on average. In general, CBAs intercepts consistently maintain a positive relation with CAR (-1, +1).

**Table 9** Summary of multiple regressions results (Chinese takeovers)**Acquirer's (U.S firms) announcement return regression results**

Sample: 3/29/2004 - 10/01/2014		Included observations: 83									
		Model 1		Model 2		Model 3		Model 4		Model 5	
White heteroskedasticity-consistent standard errors & covariance											
variables		Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
INTERCEPT		0.0469 **	2.455	0.0631 ***	3.552	0.081 **	2.230	0.350	1.610	0.412 *	1.817
LOG(AQUIRER SIZE)				-0.0033	-1.108	-0.015	-1.074			-0.012 **	-2.098
AQUIRER Q:IS LARGE		-0.0451 ***	-3.779	-0.0292	-1.218	-0.018	-0.516	-0.348	-1.598	-0.344	-1.526
CASH PAYMENT		0.0029	0.241	-0.0028	-0.275	-0.003	-0.303				
MIXED PAYMENT		0.0129	1.222	0.0060	0.440	0.000	0.008				
STOCK PAYMENT		0.6705 ***	28.723	0.6831 ***	19.583	0.689 ***	14.546				
TARGET SIC Div = Communication								0.002	0.181		
TARGETSIC_DIVISION="Construction"		0.0470 ***	4.584	0.0490 ***	4.000	0.067 ***	3.573	0.068 ***	6.140		
TARGETSIC DIVISION="Fin, Insurance and Real Esta		-0.0022	-0.195	0.0061	0.473	0.018	1.017	0.007	0.632		
TARGET DIVISION="Manufacturing"		0.0105	0.958	0.0079	0.618	0.021	1.292	0.021 **	2.058		
TARGET DIVISION="Mining"		-0.0420 *	-1.926	-0.0634 *	-1.870	-0.059	-1.296	0.068	0.839		
TARGETSIC DIVISION="Retail"		-0.0202	-0.749	-0.0168	-0.576	-0.007	-0.204	-0.009	-0.334		
TARGETSIC DIVISION="Services"		0.0090	0.568	0.0070	0.410	0.025	1.258	0.031 *	1.982		
TARGETSIC DIVISION="Whole Sales"		-0.0166	-1.008	-0.0130	-0.733	0.002	0.092				
R&D to-Total-Asset								-0.001	-0.220	-0.001	-0.459
R&D Percentage Change											
Book-to-Market						-0.034	-0.889	-0.033	-1.351	-0.041 *	-1.863
Leverage								0.002	0.100	0.010	0.483
Different Industry										0.003	-0.003
Same Related Industry											
R-squared		0.7366		0.745		0.427		0.439		0.427	
F-statistic		18.051		17.080		8.827		4.703		8.827	
Prob(F-statistic)		0.00000		0.000		0.000		0.000		0.000	

\*,\*\* and \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

The dependent variable is CAR (-1,+1) in each regression. CAR (-1, +1) is the acquirer's cumulative return during the three days around the acquisition announcement. t-statistics are computed using heteroscedasticity-consistent standard errors.

Table 10 below, entitled "Summary of multiple regressions results (Domestic takeovers)", provides a summary of multiple regression results for the period of 2004-2014 of domestic takeovers. The sample for this regression was 92 firms combined with 99 observations. The same regression equation models were used for the domestic and Chinese takeovers. In Model 1, none of the independent variables are significant for the event window (-1, +1). After trying different event windows, it was evident that domestic acquisitions are more sensitive to a wider event window. The only differences between model 1 and model 2 are bid nature and the length of the event window. In model 2, acquirer q ratio and bid nature have a significant positive relationship with CAR (-5, +5). In model 2, the large Tobin's q and stock payment are significant at the 10% level, but related industry is not significant. The



coefficient on the q ratio dummy variable is positive and significant at the 10% level, indicating that the firm with a larger q ratio generates higher returns in the acquisition. The coefficients of payment method and R&D to-total-Assets are negative and significant at the 10% level, suggesting that the stock financed acquisition and R&D intense investment firm experiences lower returns. The explanatory variables, q ratio and payment method, both are consistent through model 2 to model 4. The negative returns in domestic acquisition are consistent with Andrade et al. (2001), Ross and Volpin (2004) and Martynova and Renneboog (2008). This study finds a positive relationship between a stock-financed deal and the returns in CBAs, but sees the opposite in domestic acquisitions. This result is consistent with Dutta et al. (2013) for CBAs and with Travlos (1997), Andardre et al. (2001) and Moeller et al. (2005) for domestic acquisitions. But the results are inconsistent with Gregory and O'Donohoe (2014), since CBAs are mostly financed by cash. In conclusion, the results indicate that the firm with a higher Q ratio generates higher returns. In addition the firm will experience lower returns when the deal is stock-financed and the target is from the construction division.

**Table 10 Summary of multiple regressions results (Domestic takeovers)****Domestic sample announcement return regression results**

variables	Model 1		Model 2		Model 3		Model 4	
	CAR (-1,+1)		CAR (-5,+5)		CAR (-5,+5)		CAR (-5,+5)	
	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
White heteroskedasticity-consistent standard errors & covariance								
INTERCEPT	-0.074	-1.162	-0.127 ***	-2.776	-0.095	-1.331	-0.007	-0.047
LOG(Acquirer SIZE)					-0.009	-0.578	-0.011	-0.688
Qratio large (acquirer)	0.089	1.455	0.119 *	3.423	0.124 ***	3.317	0.078 *	1.774
CASH PAYMENT	0.000	0.006	-0.029	-1.416	-0.029	-1.281	-0.031	-1.205
MIXED PAYMENT	-0.003	-0.096	-0.029	-0.796	-0.037	-1.099	-0.031	-0.989
STOCK PAYMENT	-0.035	-1.182	-0.075 ***	-2.727	-0.076 ***	-2.684	-0.066 *	-1.921
Hostile bid			0.083 ***	3.233	0.087 ***	3.279	0.078 *	1.721
TARGETSIC_DIVISION ="Construction"							-0.163 *	-1.662
TARGETSIC DIVISION ="Fin, Insurance and Real Estate"							-0.030	-0.389
TARGET DIVISION ="Manufacturing"							-0.030	-0.386
TARGET DIVISION ="Mining"							-0.030	-0.390
TARGETSIC DIVISION ="Retail"							-0.014	-0.153
TARGETSIC DIVISION ="Services"							-0.027	-0.337
TARGETSIC DIVISION ="Whole Sales"							-0.034	-0.397
R&D to-Total-Asset	-0.173	-1.495	-0.204 *	-1.825	-0.184 *	-1.665	-0.180	-1.508
R&D Percentage Change			-0.048	-0.763	-0.052	-0.804	-0.042	-0.545
Book-to-Market	-0.008	-1.167	-0.004	-0.443	-0.003	-0.394	-0.002	-0.216
Leverage	-0.016	-0.548	0.008	0.223	0.013	0.373	0.010	0.290
Same Related Industry	0.012	0.556	0.017	0.685	0.019	0.747	0.014	0.502
R-squared	0.086		0.121				0.177	
F-statistic	0.976		1.003				0.815	
Prob(F-statistic)	0.460		0.451				0.682	

\*,\*\* and \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

The dependent variable is CAR (-1,+1) in model 1 and CAR (-5,+5) is used rest of the model. CAR (-5,+5) is the acquirer's cumulative return during the three days around the acquisition announcement. t-statistics are computed using heteroscedasticity-consistent standard errors.

## PERFORMANCE OF U.S. TAKEOVERS

### CONCLUSION

This paper analyzed the relation between U.S. takeovers of domestic and Chinese targets and found mixed results compared to that of existing literatures. Overall, the evidence indicates that U.S. acquiring firms gain more than Chinese takeovers. The results also imply that the abnormal returns of acquirers are not related to target region (based on regression). The study could not establish a strong relationship between the acquirer's gain, and the variables firm size and related industry. Thus the study was unable to reject hypothesis 4. Based on the event study carried out in this paper, investors favorably reacted to Chinese takeovers and negatively reacted to domestic takeovers. The findings show that the domestic takeovers result in value destruction for the U.S. acquirers. Using univariate testing and regression analysis, the study reveals the factors that contribute to acquirers' returns. One of the interesting findings of the study is that the cross border acquirers, compared to domestic acquirers, are more R&D intense, more glamorous firms, small in size, and are more frequently involved in conglomerate acquisitions. Surprisingly, acquirers use cash as a payment method less frequently in CBAs than in domestic acquisitions. The results also imply that the larger acquirers' average gain (return) is less compared to the average gain of the smaller acquirers. There is evidence showing that the U.S. acquirers more frequently acquired firms from the manufacturing division in CBAs, consistent with Zhou and Simson (2008).

### Limitations and Further Research

- The study focuses only on Chinese and domestic (U.S.) takeovers using daily stock returns data. Using monthly event data may help to avoid a few possible challenges, such as lack of synchronisms in stock market trading hours and data availability.
- Due to the lack of available data for the target firm, the study only used acquirer Tobin's q ratio.
- Another key limitation of this study is the regional concentration of the parent companies in China.

In this research, I only investigated the effect of the stock returns around the announcement day. However, an important area of future research could be to investigate the effect of the Tobin's Q ratio around the announcement date. If data from other emerging countries are included in the sample, the findings of this study would have been more robust.

## APPENDIX A

## Variable descriptions

Variables	Descriptions
<b>Continuous variables</b>	
CAR (-1, +1)	Acquirer's cumulative abnormal return during the three days around the acquisition announcement. Abnormal returns based on the market model.
Acquirer's market cap	Acquiring firms' log transformed market capitalization (at the fiscal year end before acquisition).
Tobin's Q	Acquiring firm's Tobin's Q (at the latest fiscal year end before acquisition).
R&D to-Total-Asset	Research and development expense to total book value of the asset. Book value and R&D used prior year of announcement day.
R&D Percentage Change	Research and development expense percentage change prior to the announcement day.
Book-to-Market	Book to market value ratio of the acquirer as at year end prior to deal announcement
Leverage	Total liabilities to total asset book value
<b>Binary variables</b>	
Related industry	Dummy is equal to one if the acquirer and target share the same 4 digit SIC code.
Tobin's Q	Dummy is equal to one if the Q ratio is higher than one. (1 is yes, 0 is not)
Payment type	Classified to cash, mixed, stock and undisclosed. (1 is cash, other wise 0)
Hostile	Dummy is equal to one if the acquisition is defined as hostile by Bloomberg terminal ( 1 is hostile, otherwise 0)

PERFORMANCE OF U.S. TAKEOVERS

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