

The developed target, the emerging bidder and the management hubris in cross-border M&A

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Introduction

The takeover market has grown rapidly over the last few decades, fueling the ongoing discussion on the essential aspects of mergers and acquisitions such as acquirer motives, wealth effects on shareholders' value, synergies, agency problems and management hubris behavior. One of the current trend in the international market for corporate control is the capital flow from emerging to developed countries. Millions of M&A transactions occurring with this trend have been recorded but not many papers have been published to reflect the increasing reverse capital flow from emerging to developed countries.

As an attempt to fill this gap, this paper emphasizes on the agency problems and management hubris as the determinant of long – term wealth effects in the cross-border acquisitions in emerging nations. The weak corporate governance and monitoring in these countries may entail incremental impacts of agency and hubris problem, compared to such impacts in developed markets. This study is one of few studies addressing the agency and hubris in emerging countries, while many papers have yielded significant findings in US, UK and European markets such as *Jensen and Ruback, 1983; Agrawal and Jaffe, 2000; Bruner, 2004; and Martynova and Renneboog, 2011*. Therefore, the findings of this paper will shed more light on agency and hubris problems in international market for corporate control.

We examine the link between long-run abnormal return, agency and hubris problems using 281 merger events in emerging countries in 1990 – 2010 period. The long-run abnormal return is calculated with a non-parametric approach combining propensity score matching and difference-

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in- differences techniques. Such non-parametric is better than traditional models in controlling selections on observables and unobservables (Girma et al., 2006; Blundell and Costa-Dias, 2000). We find that acquirers with a high market-to-book ratio (glamour bidder) and ones with excessive cash holdings underperform in the long run. These findings are consistent with the hubris hypothesis and agency theory since managers of “glamour” firms tend to be overconfident and managers with more cash at their discretion are willing to spend cash on unprofitable projects, exerting agency problems and resulting in the shareholders’ value destruction.

Theoretical Review

The existing literature suggests three main motives of mergers and acquisitions: synergy, agency and hubris (Berkovitch and Narayanan, 1993). The synergy in M&A is the difference between the value of combined firms and the sum of individual firm's value. It is the most common motive documented in the literature (Bradley, Desai, and Kim, 1988; Seth, 1990; Maquiera, Megginson, and Nail, 1998; Hubbard and Palia, 1990). However, other studies suggest agency and hubris as the motives of M&A in certain settings. The agency problem entails the management, in pursuit of private interests, compromise the shareholders' value (Mitchell and Lehn, 1990; Berkovitch and Narayanan, 1993). In mergers and acquisitions, management can extract private benefits via spending excessive cash on unprofitable projects (such as acquiring another firm) for "empire building" and higher compensation, rather than paying dividend to the shareholders (Servaes, 1991; Lang, Stulz, and Walking, 1989, 1991).

Under the hubris hypothesis, Roll (1986) highlights the effects of management's overconfidence in valuing the synergies of the M&A transactions, leading to significant markup of the acquisition price, thus impairing shareholders' value. Several empirical papers confirm that managers with overconfidence issue overestimates the return on the investment and hence overpays the target firms (Malmendier and Tate, 2005; Heaton, 2002).

The empirical evidences in the literature show the mixed results relating to three competing hypotheses. For example, Goergen and Renneboog (2004) finds supporting evidence of synergy hypothesis, Gondhalekar, Sant, and Ferris (2004) believe that overpayment in M&A transactions derives from moral hazard of agency problems rather than synergy or hubris. Meanwhile, the empirical evidence in Hietala, Kaplan, and Robinson (2003) is consistence with managerial overconfidence hypothesis. Mueller and Sirower (2003) find supporting evidence for both agency theory and hubris hypothesis.

There is the strong link between motives and the result of M&A abnormal return. If the firm is motivated by the agency and hubris, the shareholders' value is likely to be impaired. However, if the deal is driven by the synergy, shareholders are likely to obtain positive abnormal returns. For instance, Gondhalekar and Bhagwat (2003) find a significant relationship between negative abnormal return and agency motive. The link between different motives and abnormal returns in emerging countries are very scant since most existing papers focus on developed markets. To our knowledge, this paper is a rare attempt to shed more light on the potential relationship between traditional motives and M&A long run abnormal returns in emerging countries.

The model

The following model is used to examine the link between long – run abnormal return (LRAR), agency and hubris problem.

$$LRAR_t = F(\text{Agency proxies}_t, \text{Hubris Proxies}_t, \text{Control variables}_t)$$

The independent variables

On the right side of the equation, the relative size of acquiring firm is the proxy of agency problems while market-to-book ratio is the proxy for hubris behavior of the management. Absolute size and cash level of the acquirer are proxies for both agency and hubris issues as in Moeller et al. (2004) and Harford (1999). Other control variables include event-specific, firm-specific and macroeconomics variables.

The relative size between acquirer and target is the traditional determinant of the abnormal return. Asquith et al. (1983) find that a bidder's abnormal return is positive and significantly higher when relative size is taken into consideration. Asquith and his colleagues argue that when acquiring a smaller target, even if the net present value (NPV) is relatively large compared to the size of the target firm, this NPV may be small for a large bidder. As a result, the ratio of dollar gain from the acquisition is trivial to the bidder, resulting in a positive but minor impact on the bidder's stock performance. Roll (1986) argues that the hubris level is expected to rise for firms that have a good track record before the acquisition. He wrote:

“...One would expect a higher level of hubris and thus more aggressive pursuit of a target in firms that had experienced recent good times...” Roll (1986 p. 206).

Consistently, Rau and Vermaelen (1997) uses market-to-book (MTB) as a proxy for hubris since high MTB represents the appreciation of the stock market on the performance of the firm in the long run, which ignites the manager's overconfidence. Rau and Vermaelen (1997) find that high-MTB acquirer tends to experience negative long-run abnormal return due to overpayment to the

target. Specifically, high-MTB firm experiences -57% abnormal return while low-MTB acquirer gains 26% on average three years after the M&A event.

Both agency and hubris problems can also be captured with firm size. Moeller et al. (2004) defines the size effects as “the difference between the abnormal returns of small and large acquirers”. According to these authors, managers in large firms have either succeeded in increasing the firm size over the years or overcome more obstacles to achieve managerial status of a large corporation than in the case of the managers in the small firms. Thus, they are more confident and aggressive in pursuit of takeover transactions, resulting in overpayment and ex-post underperformance. Firm size can also be a proxy of agency problem in M&A. In a small firm, manager’s incentives are more aligned with the owners since they often hold a fair portion of outstanding shares (Demsetz and Lehn, 1985). However, the ownership in large corporation is more diverse. The managers also have more resources at their discretion, while the growth opportunities are gradually depleted. Such combination is the condition of agency problem of free cash flow (Jensen, 1986). Jensen (1986) theorizes that managers with excessive free cash flow in a firm lacking of investments opportunities tend to spend cash on negative NPV projects. Thus, a large firm is more vulnerable to agency and hubris problem than in a small firm.

Along with firm size and MTB ratio, level of cash holding can be a component of agency and hubris. Harford (1999) examines acquisitions of cash-rich firms and finds that acquirers with large cash reserves tend to destroy value. The result shows that for every dollar of excessive cash reserve, a cash-rich bidder destroys seven cents. Harford also finds that bidders with a large cash reserve tend to acquire targets which are unattractive to other bidders. The ex-post underperformance of cash – rich firm is consistent with Jensen’s free cash flow theory in that excessive cash flow fuels the managerial self – interest and encourages the value-destroying decisions.

This paper also controls for numerous potential determinants of long – run abnormal

returns, such as whether target is public or private company, the hostile/friendly attitude of the acquirer and several macroeconomics factors. For example, Fuller et al. (2002) finds acquisition of private firms yields positive wealth gains regardless of payment method. However, Bradley and Sudaram (2004) shows the declining effects of M&A on shareholders' wealth. In addition, some papers find hostile takeovers are associated with value destruction (Gregory, 1997; Frank and Mayer, 1996; Goergen and Renneboog, 2004), while others find hostility yields positive wealth gains (Higson and Elliott, 1993; Sudarsanam et al., 1996). Other deal-specific control variables are the relatedness between target and acquirer's industry, the payment method, the deal value, whether the control right is transferred via acquisition or not, and whether acquirers engages in multiple M&A events or not. Beside firm-specific and deal-specific, Kiyamaz (2004) suggest controlling for GNP in the target country since countries with favourable economic conditions are more likely to be destinations of an expansion strategy. Hope et al. (2011) argue that the difference in GDP level between target and acquirer country also determines the abnormal returns in the sense that bidder's technology must pass certain threshold to integrate successfully with target's technology. Other control variables include industrial relatedness between acquirer and target (Agrawal et al., 1992), the Herfindahl index measuring the competition in the target country, M&A method of payment (Loughran and Vijh, 1997; Moeller et al., 2004), whether the control rights are transferred after the acquisition or not (Chari et al., 2008), whether the acquiring firm has prior M&A experience in target country or not (Barkema et al., 1996).

The estimation of long run abnormal return (LRAR)

The LRAR in M&A is calculated with a non – parametric approach. Non-parametric approach is essentially an extension of the propensity score matching (PSM) method. Current literature extends the PSM framework and takes into consideration the longitudinal nature of a certain sample (Heckman et al., 1997, 1998). If the outcomes of the treated (and control) are observed at

two different points in time, PSM can then be combined with the difference-in-differences technique (DIDs) to estimate the counterfactual outcome in a more dynamic fashion. DIDs estimator, while retaining the quality of the PSM method, can further reduce selection bias associated with temporal time-invariant unobservables (Blundell and Costa Dias, 2000; Girmal et al., 2006).

Propensity Score Matching

The propensity score is normally estimated with logistic function with independent variables are factors determining whether the M&A event takes place or not. According to Baber and Lyon (1997) finds matched firm by filtering upon firm size and market-to-book. This paper adds level of cash as an extra independent variable. These variables form a covariate vector used to estimate the propensity score. In PSM framework, if two firms share the same propensity score, they will have the same probability of engaging in M&A transactions. Essentially, instead of finding a matched firm upon three covariates, the PSM framework assigns a firm (or group of firms) having similar propensity score as counterfactual firm (matched firm). The propensity score estimator is as follow:

$$Prob(Acquisition = 1) = Function(acquirer\ size, acquirer\ MTB, acquirer\ cash\ holding)$$

After calculating the propensity score, this paper adopts kernel-based matching (KBM) to find matched firm as it allows for one-to-many matching. In KBM framework, the number of non-treated controls is identified within a radius of the propensity score of the treated. The advantage of KBM lies in the use of kernel functions or other sophisticated mechanisms to generate weights assigned to the non-treated cases. KBM allows for matching on a group of firms. Moreover, the outcomes of matched firm in the matched group are weighted so that the outcome of a non-treated firm is assigned a higher weight if its propensity score is closer to that of the treated firm (a.k.a. Kernel smoothing technique). Thus, the counterfactual outcome in KBM is the weighted average of non-treated outcomes. KBM model measures the average treatment effect on the treated (ATT) or

the M&A wealth effects with the following formula:

$$ATT = \frac{1}{n_1} \sum_{i \in T} [Y_{1i} - \sum_{j \in C} W(i, j) Y_{0j}] \quad (\text{Equation 1})$$

Where:

$T = \{i_1, i_2, \dots, i_{n_1}\}$ is the set of treated cases (the acquirers)

$C = \{j_1, j_2, \dots, j_{n_2}\}$ is the set of control cases (the control firms)

(Y_1, Y_0) is the outcomes of treated and control firms, respectively

$W(i, j)$ is the Kernel weight function with the estimated propensity scores

$\sum_{j \in C} W(i, j) Y_{0j}$ is the weighted average of all controls' outcomes, essentially the counterfactual outcome within the Kernel Based Matching (KBM) framework.

Within KBM framework, the control and treated cases must stay within a common support region since the treated case falling off the support region may have zero match. Even if the treated and control groups share the same common support region, the potential matches for the treated case may be sparse, which undermines the power of the KBM. To deal with this issue, Heckman (1997) recommend a trimming strategy. Various levels of trimming such as 2%, 5% or 10% at two ends of the treated and control distribution can be cut off to decrease the chance that both the treated and control cases fall off the common support region. Different trimming specifications can therefore be treated as sensitivity analysis of ATT against the distributional property of propensity scores (Guo and Fraser, 2009).

The DIDs estimator is expressed as follow:

$$DIDS = \frac{1}{n_1} \sum_{i \in T} [(Y_{1t_1i} - Y_{1t_0i}) - \sum_{j \in C} W(i, j) (Y_{0t_1j} - Y_{0t_0j})] \quad (\text{Equation 2})$$

$T = \{i_1, i_2, \dots, i_{n_1}\}$: set of acquirers

$C = \{j_1, j_2, \dots, j_{n_2}\}$: set of control firms

Y_1, Y_0 : outcome of treated and control case, respectively

$W(i, j)$: Kernel weight function or Nearest Neighbor Matching using PSM

t_1, t_0 : time after and before the treatment (acquisition event), respectively

$(Y_{1t_1i} - Y_{1t_0i})$: outcome growth of the treated

$(Y_{0t_1j} - Y_{0t_0j})$: outcome growth of the control

$\sum_{j \in C}^{n_2} W(i, j)(Y_{0t_1j} - Y_{0t_0j})$: weighted average of outcome growths or the outcome growth counterfactual estimator in this combined approach.

In sum, the combination of propensity score matching and difference-in-differences deals with selection on observables and unobservables more effectively than single-index model and traditional matching approach. This advantage is highly important because “the power of event study methodology depends crucially on the quality of the benchmark” Dimson and Marsh (1996). Thus, we employ this approach to estimate the long run abnormal return.

Data

The mergers and acquisitions events are collected for the period of 1990-2010 in the Thomson One Banker database (T1B). Originally all events since 1980 were collected, but the events in the 1980-1990 period were dropped since covariates and return data are not simultaneously available to form a usable record for this examination. The mergers and acquisitions package in T1B provides deal-specific characteristics including countries and industries of acquirers and targets, deal value, payment method, attitude of the acquirers, percentage of target shares owned by acquirer after the transaction, targets public status and the announcement and completion date of the merger transaction. The matching procedure required the identity of acquirers and peer firms (SEDOL codes) and data of conditioning variables (size, market-to-book and cash holding over total assets ratio). The former is again collected from T1B, while data of the latter is collected from WorldScope. GDP data from 1990 to 2010 is collected from the World Bank website.

The M&A transactions in 1990-2010 period reach nearly 140,000 worldwide but only 1130 of which are M&A from emerging to developed markets. Majority of the deals were screened out due to lack of data on covariate vector (size, market-to-book and cash holding). Table 1 shows the sample breakdown by acquirer country, which illustrates that India, Malaysia and South Africa are the most active countries in cross-border M&A into developed markets rather than the presumable China. Meanwhile, firms in US, UK and Australia are the main targets. Table 2 shows descriptive statistics of independent and dependent variables. The dependent variables are measured with a non-parametric estimator as in equation 2. Two proxies used are abnormal returns after two and three years after the M&A announcement.

The mean abnormal returns (DIDs) of all event windows are negative, signaling the underperformance of the bidding firms. The negative mean increases rapidly with the length of the event window, which is in line with our argument on the value destruction agency problems. The

standard deviation of the abnormal return also increases with the number of years in the event window, perhaps because of the high level of volatility in emerging stock markets.

Results and Discussions

The results also show evidence of significant impacts of Market-to-book ratio (MTB) on bidders abnormal return, mostly in robust OLS regression. MTB statistics in panel A of Table 4.2 indicate significant negative impacts of MTB on two, three, four and five year abnormal returns. The coefficient ranges from -1.7% to -7%, and the impact appears to escalate over the time horizon of the event window. A similar pattern is documented in panel A of Table 4.3, where two, three and four year abnormal returns are significantly affected by the MTB ratio. The magnitude of negative effect also seems to increase along with the width of the event window, from -3.1% to -3.6% and -4.6% in the two, three and four year event windows respectively. Panel B of Table 4.3 adds more evidence of the significant negative impact of MTB ratio on the four-year abnormal return. The coefficients of MTB in Tables 4.2 and 4.3 appear to be smaller than the respective size's coefficients in many settings. While this might suggest that the size effect is stronger than the MTB effect, it is not possible to draw such a conclusion under this circumstance since both size and MTB are not standardized as a unit of measurement.

This finding is in line with Rau and Vermaelen (1997). Rau and Vermaelen found evidence of the significant long-term underperformance of "glamour bidders," while "value bidders" significantly outperform the control portfolio of peers with the same size and MTB ratio. More specifically, they examined the performance of bidders three years after the completion date of the merger event. They found that on average the glamour bidder earns a negative return of -57% after three years when compared with other bidders. They also find that glamour bidders performed worse than value bidders in every setting.

This finding is also consistent with the proposition advocated by Jensen (2003) who believes that overvalued equity is "managerial heroin" since it may make the managers feel good in the short run but can destroy them and their firm before long. The reason for this is that overvalued equity

can boost a manager's confidence, but "if equity is overvalued, by definition, the manager will not, except by pure luck, be able to deliver the performance the market requires to justify that valuation" (Jensen, 2003, p.552). The pressure to meet market expectation, plus the fact that overvalued equity can be used as cheap currency for acquisitions, is likely to lead the managers to making poor acquisition decisions, consequently destroying the firm's value.

Conclusion

This paper sets out to examine the hubris motive of the manager in cross-border M&A from emerging to developed country. We hypothesize on the relationship between hubris behavior in the cross-border M&A decision and the pure effects of the M&A event on firm performance. The M&A effects are estimated with difference-in-differences in tandem with propensity score matching technique and used as independent variable. Various dependent variables are used to control for deal-specific, firm-specific and macro-specific effects which theoretically influence the M&A outcome. On a sample of 281 cross-border M&A transactions, we find the proxy for hubris behavior is significant in various measures of M&A long-term effects, either variety of event window or variety of neighbor and kernel matching setup. The significant empirical supports our hypothesis on the hubristic behavior of the managers in cross-border M&A from emerging to developed market. This finding is consistent with Jensen (1986, 2003) and Rau and Vermaelen (1997).

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Apendices

Table 1 Sample breakdown by country

Bidder Country	Frequency	Percent	Target country	Frequency	Percent
India	96	34.16	USA	86	30.6
Malaysia	51	18.15	UK	52	18.51
South Africa	34	12.1	Australia	47	16.73
Taiwan	25	8.9	Canada	17	6.05
China	20	7.12	Germany	15	5.34
Russia	8	2.85	Italy	10	3.56
Mexico	7	2.49	Netherlands	7	2.49
Philippines	6	2.14	Japan	6	2.14
Poland	6	2.14	Spain	6	2.14
Korea	5	1.78	Denmark	4	1.42
Brazil	4	1.42	Finland	4	1.42
Egypt	3	1.07	Swiss	4	1.42
Hungary	3	1.07	Austria	3	1.07
Thailand	3	1.07	Belgium	3	1.07
Turkey	3	1.07	France	3	1.07
Argentina	2	0.71	Norway	3	1.07
Columbia	2	0.71	Sweden	3	1.07
Indonesia	1	0.36	Iceland	2	0.71
Pakistan	1	0.36	Luxembourg	2	0.71
Peru	1	0.36	Portugal	2	0.71
			Ireland	1	0.36
			New Zealand	1	0.36
Total	281	100	Total	281	100

Table 2: Descriptive Statistics of Variables

Variable	Description	Mean	Median	Standard deviation
The Independent variables				
Size	Acquirer's size	6.103	6.046	1.907
Mtbv	Acquirer's Market – to – book	3.479	2.170	4.901
Cashratio	Acquirer's level of cash	0.160	0.114	0.148
Relatedness	Industrial relatedness between acquirer and target	0.448	0.000	0.498
Payment	Method of payment (Cash or Stock)	0.594	1.000	0.492
ControlRight	Acquisition of more than 50% of target's share ownership	0.725	1.000	0.447
Experience	Previous M&A experience of the acquirer	0.324	0.000	0.469
Attitude	Hostile or Friendly attitude of the acquirer	0.943	1.000	0.232
Target status	Private or Public status of the target	0.281	0.000	0.450
Dealvalue	Transaction value	250.2	20.0	1219.7
Ddpdiff	Difference in GDP between acquirer and target (proxy for difference in technological level)	24.320	36.120	51.480
Target HI	Herfindahl Index measuring competition level in target country	0.168	0.077	0.198
The dependent variable				
DIDs1	Abnormal return ONE year after the M&A announcement, measured by difference-in-differences technique	-0.011	-0.158	0.827
DIDs2	Abnormal return TWO year after the M&A announcement, measured by difference-in-differences technique	-0.076	-0.426	1.243
DIDs3	Abnormal return THREE year after the M&A announcement, measured by difference-in-differences technique	-0.264	-0.686	1.374
DIDs4	Abnormal return FOUR year after the M&A announcement, measured by difference-in-differences technique	-0.378	-0.973	1.645
DIDs5	Abnormal return FIVE year after the M&A announcement, measured by difference-in-differences technique	-0.672	-1.422	2.199
<i>Number of events: 281</i>				
<p>Note: DIDs1 to DIDs5 represent the long-run abnormal return of an individual bidder. Size is measured by the market capitalization of the bidder, cash ratio by the cash amount over total assets. Relatedness =1 if target and bidder are in the same industry; =0 otherwise, payment =1 if bidders pays cash and =0 otherwise, control = 1 if bidders acquires more than 50% of target's shares, experience = 1 if bidder has prior experience in the target country, and target status =1 for public company and takes value 0 otherwise. Gdpdiff is the GDP gap, representing technology gap between the two nations. Finally, Target Hi shows the Herfindahl Index of the target industry.</p>				

Table 3: The Cummulative Average Abnormal Returns Estimation

Event window	Acquirers/Total matching groups	Estimator 1	Sig.	Estimator 2	Sig.	Estimator 3	Sig.
one-year	277/351615	-0.009		-0.008		-0.002	
two-year	226/26242	-0.071		-0.077		-0.071	
three-year	201/22707	-0.261	**	-0.281	**	-0.259	**
four-year	165/19891	-0.368	**	-0.397	**	-0.354	**
five-year	120/14279	-0.691	**	-0.714	**	-0.617	**

Note: The event window is calculated from the completion date of the merger to one or several years after that. The number of acquirers and total firms decreases with the longer event window because investing in developed countries is a recent phenomenon for emerging-markets acquirers, therefore a low number of acquirers have long ex-post track records. This number indicates that a large number of deals in the samples were completed within the last five years. Estimator 1: Local linear regression matching technique, where no trimming is made and bandwidth is set to 0.8.; Estimator 2: 5% of the treated cases are trimmed in order to drop cases in the off-support region, Estimator 3: The bandwidth is set to a smaller value of 0.5, meaning that a smaller number of control cases are used in the calculation of the counterfactual outcomes. **: Significant at 95% confidence interval, generated by bias-corrected (BC) method in bootstrapping procedure.

Table 4 Determinants of Abnormal Returns estimated with Kernel Matching

Independent variables	Kernel matching and Ordinary Least Square Regressions						Panel B: Kernel matching and outlier robust regression					
	kar2	Sig.	kar3	Sig.	kar4	Sig.	kar2	Sig.	kar3	Sig.	kar4	Sig.
Size (ln(mv))	0.146	**	0.074		0.229	*	0.162	***	0.107	**	0.096	
	(-2.4)		(-0.6)		(-1.9)		(-3.1)		(-2.5)		(-1.4)	
Mtb	-0.017	**	-0.033	***	-0.039	**	-0.004		-0.012		-0.021	
	(-2.78)		(-3.17)		(-2.63)		(-0.35)		(-1.31)		(-1.33)	
Cashratio	0.484		1.027		-1.458		-0.175		-0.020		-0.002	
	(-0.8)		(-1.1)		(-1.35)		(-0.31)		(-0.05)		(-0.00)	
Relatedness	-0.187		-0.148		-0.041		-0.274		-0.122		-0.289	
	(-1.15)		(-0.91)		(-0.17)		(-1.65)		(-0.96)		(-1.47)	
Payment method	0.279		0.260		0.319		-0.040		0.190		-0.030	
	(-1.4)		(-1.1)		(-1.1)		(-0.16)		(-1)		(-0.10)	
Acqui. for control	0.115		-0.201		-0.019		0.237		0.380	**	-0.366	
	(-0.6)		(-0.61)		(-0.05)		(-1.2)		(-2.6)		(-1.56)	
Multievent	-0.169		-0.026		-0.144		-0.026		0.133		0.664	***
	(-0.78)		(-0.08)		(-0.42)		(-0.14)		(-0.9)		(-2.7)	
Deal attitude	-1.532	**	-1.941		-0.145		-1.072	***	-0.290		-0.097	
	(-2.19)		(-1.60)		(-0.22)		(-3.24)		(-1.17)		(-0.23)	
Target public status	0.078		-0.460		-0.423		0.184		0.148		-0.818	***
	(-0.3)		(-1.34)		(-1.21)		(-1)		(-1)		(-3.39)	
Dealvalue	0.000	***	0.000	*	0.000		0.000	***	0.000		0.000	
	(-6.22)		(-2.11)		(-1.62)		(-2.99)		(-1.32)		(-1.5)	
GDP difference	0.000		0.000		0.000		0.000		0.000		0.000	
	(-0.1)		(-0.93)		(-0.9)		(-0.3)		(-0.43)		(-0.40)	
Target HI index	0.844		0.328		0.373		0.517		-0.419		-1.652	***
	(-1.4)		(-0.4)		(-0.4)		(-1.4)		(-1.43)		(-3.73)	
R-squared	0.175		0.2		0.108		n.a.		n.a.		n.a.	
N	129		118		100		129		118		100	

Note: The event window is calculated from the completion date of the merger to one or several years after that. The number of acquirers and total firms decreases with the longer event window because investing in developed countries is a recent phenomenon for emerging-markets acquirers, therefore a low number of acquirers have long ex-post track records. This number indicates that a large number of deals in the samples were completed within the last five years. Estimator 1: Local linear regression matching technique, where no trimming is made and bandwidth is set to 0.8.; Estimator 2: 5% of the treated cases are trimmed in order to drop cases in the off-support region, Estimator 3: The bandwidth is set to a smaller value of 0.5, meaning that a smaller number of control cases are used in the calculation of the counterfactual outcomes. **: Significant at 95% confidence interval, generated by bias-corrected (BC) method in bootstrapping procedure.

Table 5 Determinants of Abnormal returns estimated with nearest neighbour matching

Independent variables	Panel A: NN (5) matching and robust OLS						Panel B: NN (5) matching and outlier robust regression					
	nnar2	Sig.	nnar3	Sig.	nnar4	Sig.	nnar2	Sig.	nnar3	Sig.	nnar4	Sig.
Size (ln(mv))	0.143	*	-0.046		0.196	*	0.139	**	0.040		0.061	
			(-0.36)		(-2.1)		(-2)		(-0.6)		(-0.5)	
Mtb	-0.031	***	-0.036	***	-0.046	*	-0.018		-0.020		-0.043	*
			(-4.45)		(-2.03)		(-1.16)		(-1.39)		(-1.71)	
Cashratio	0.536		1.055		-3.350	**	0.380		0.527		-2.504	*
			(-1)		(-2.67)		(-0.5)		(-0.8)		(-1.98)	
Relatedness	-0.244		-0.322	*	-0.333		-0.338		-0.348	*	-0.330	
			(-1.87)		(-0.75)		(-1.55)		(-1.70)		(-1.01)	
Payment method	-0.014		0.475		0.742	*	-0.220		0.314		0.899	*
			(-1.5)		(-1.8)		(-0.69)		(-1)		(-1.7)	
Acqui. for control	0.070		0.070		0.586		0.279		0.624	***	0.601	
			(-0.2)		(-1.1)		(-1.1)		(-2.7)		(-1.5)	
Multievent	-0.046		0.253		0.190		0.023		0.191		0.314	
			(-0.9)		(-0.6)		(-0.1)		(-0.8)		(-0.8)	
Deal attitude	-1.369	**	-1.306		0.704		-1.641	***	-1.087	***	-1.127	*
			(-1.04)		(-0.6)		(-4.05)		(-2.97)		(-1.78)	
Target public status	0.095		-0.548		-1.051	**	0.368		0.017		-0.571	
			(-1.44)		(-2.34)		(-1.5)		(-0.1)		(-1.45)	
Dealvalue	0.000	***	0.000		0.000		0.000	**	0.000		0.000	
			(-0.81)		(-0.40)		(-2.12)		(-1.51)		(-1.03)	
GDP difference	0.000		0.000		0.000		0.000		0.000		0.000	
			(-0.90)		(-1.4)		(-0.63)		(-0.88)		(-0.7)	
Target HI index	-0.141		-0.576		-0.155		0.135		-0.185		-0.007	
			(-0.68)		(-0.20)		(-0.3)		(-0.49)		(-0.01)	
R-squared	0.131		0.13		0.242		n.a.		n.a.		n.a.	
N	128		116		96		128		116		96	
max VIF	1.52											

Note: This table reports the results of the OLS regression (panel A) and outlier robust regression (panel B) of the bidders long-run abnormal returns for five different event windows. The abnormal return in this case is estimated within the nearest neighbor matching framework. nnar1 to nnar5: long-run abnormal return estimated in nearest neighbour matching for one to five year event windows. Relatedness = 1 denotes acquisitions of targets in the related industry, otherwise relatedness is 0. Payment =1 denotes that payment is made by cash and cash only. Other than that, payment is 0. Acquisition for control =1 denotes that acquirers gains at least 50% of the targets outstanding shares. Otherwise, this variable receives the value 0. Multievent =1 if the acquirer has prior experience in developed markets, otherwise it is 0. Dealattitude =1 if the attitude is friendly. If it is an unfriendly bid this variable is 0. Target public status =1 if the target firm is a listed firm in a developed country. If the target is a private firm this variable is 0. GDP diff.: The difference between the acquirer country's GDP and the target country's GDP. Target Hi index: The Herfindahl index of the target industry, denoting the level of competition within the targets industry. VIF: Variance inflation factor. As a rule of thumb, no further multicollinearity concern is required if VIF is less than 10. N: Number of acquirers in the sample. For each variable, the coefficient and t value in parentheses is listed. *, **, *** indicators stand for statistically significant at 1%, 5% and 10%, respectively.