How Do Emerging-Market Acquirers Create Value in Cross-Border Mergers and Acquisitions?

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As new emerging-market multinationals have large customer bases in the primary markets and the need to upgrade productivity, they set their globalization strategy accordingly. I find that emerging-market acquirers receive 0.93% mean return over the three-day announcement window in cross-border acquisitions. Three channels to acquire complementary resources are explored. Firstly, deals that facilitate knowledge transfer generate higher acquirer returns by targeting at firms with R&D record, retaining the target CEO, and utilizing the acquirers' primary market. Secondly, the acquirer returns are unaffected by transfer in managerial efficiency. Lastly, the acquirer returns are lower for the deals aiming at natural resources. Endogeneity concerns regarding the acquirer (target) selection is addressed with size-industry matched sample as control groups.

Keywords: cross-border M&A, emerging market, CEO retention, R&D, complementary resources

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1. Introduction

The volume of cross-border mergers and acquisitions ("M&As"[2]) by firms from emerging countries has surged since the year 2000. For instance, in 2008 the total transaction value was 80 trillion U.S. dollars for above-ten-million-USD cross-border acquisitions by firms from emerging countries[3], and the total value was 396 trillion U.S. dollars for such cross-border transactions by firms based in developed countries. Despite the difference in economy sizes[4], emerging-market acquirers have clearly exhibited themselves as important players in globalization activities (Figure 1). In this paper, I find that the average return to these emerging-market acquirers in cross-border M&As is significantly positive (0.93%). Secondly, I explore three motives to acquire complimentary resources that affect the returns to the emerging-market acquirers in cross-border transactions.

< Figure 1 about here>

The first proposed channel is to acquire technology know-how, or knowledge transfer. Eun, Kolodny, and Scheraga (1996) propose the reverse-internalization motive, as the acquirer can appropriate rents from taking control of intangible assets from the target and apply them on a larger scale. In addition, Cassiman and Veugelers (2002) show that firms with certain resources in the home country tend to invest aboard to obtain complementary resources and learning opportunities.

Indeed, I show that emerging-market acquirers benefit significantly, both statistically and economically, from the transactions that facilitates knowledge transfer. In specific, the deals that acquire R&D intensive targets, retaining the target CEO and still focusing on the primary product market. For instance, in year 2016 a Chinese electrical appliance manufacturer Midea acquired a German robot maker Kuka. Along with the €4.5 billion offer, Midea also offered to

[2] The term "mergers and acquisitions", "M&A", "deal" and "transaction" will be used interchangably in this paper.
[3] The origination of the deal is defined by the country of ultimate parent of the acquirer company. A country is classified as an emerging-market country if it is included in the MSCI Emerging-Market Index, and classified as a developed-market country if it is included in the MSCI World Index, which covers 23 developed-market countries. MSCI indices are maintained by MSCI Inc., formerly Morgan Stanley Capital International, as is used as a common benchmark for international stock funds.
[4] In Year 2008, the total GDP is approximately 15 trillion U.S. dollars for the defined emerging-market countries (excluding Taiwan, of which data is not available in the database of the World Bank), and is approximately 41 trillion U.S. dollars for the developed-market countries.

keep Kuka's headquarters, factories and jobs inside Germany for the next seven and a half years[5]. The synergy stems from utilizing the technological advantages from the target firm and the cheap production cost and large consumer market from the acquirer. The result provides support to the theory of complementary resources.

I address the endogeneity concerns regarding the acquirer (target) selection by running conditional logit regressions using different matched sample. I show that acquirer or target R&D record do not predict the selection of acquirer (target) into cross-border deals. However, higher acquirer market valuation and operating performance and lower target market valuation predicts higher likelihood for an emerging-market firm to engage in a cross-border deal, compared to the choice of engaging in a domestic deal. Furthermore, in the medium term after a cross-border transaction, the operating ROA decreases and the employee number increases significantly for the cross-border acquirers on average, compared to the domestic acquirers in the control group.

Further to knowledge transfer, I show that the second channel is the change of managerial decentralization. I employ a unique perspective on managerial decentralization within an organization. Bloom, Sadun, and Van Reenen (2012) use survey data to measure the country-level managerial autonomy within a large organization. In cross-border M&As, target firms change headquarters to the nation of the acquirer, and thus the level of managerial decentralization is changed. In the test, I use country-pair measurement to capture the change of managerial decentralization after the cross-border transaction. As a result, the target's announcement abnormal return increases in inverse proportion to the size of the gap in decentralization level between the target and acquirer country. However, the acquirer abnormal return is not affected.

Lastly, the third channel that affects acquirer return is acquiring natural resources. I show that natural resource-driven deals are associated with lower acquirer abnormal returns and higher offer premium paid to the targets, and thus higher target abnormal returns.

[5] https://www.chinasinopack.com/GPAC17/Press/lang-eng/news-5/ShowUpdateDetails.aspx

A strand of literature in cross-border M&A employs national level characteristics to explain deal outcome. Erel, Liao, and Weisbach (2012) focus on factors such as geography, the quality of accounting disclosures, bilateral trade, market and currency valuation, and show their relation to the volumes of cross-border M&As. National culture also affects foreign direct investments (Guiso, Sapienza, and Zingales, 2006), cross-border M&A volumes and synergy outcomes (Ahern, Daminelli, and Fracassi, 2015). Also, overcoming market frictions caused by institutional characteristics is a strong motivation for cross-border M&As. Martynova and Renneboog (2008) and Bris, Brisley, and Cabolis (2008) find that when the bidder country has strong shareholder orientation, the synergy partially results from the improvement in target's governance practices. Next to this, Fresard, Hege, and Phillips (2017) provide evidence on the internalization motive, and show that when acquirers apply local intangibles assets to overseas they obtain larger economic gains.

Only a few studies take the perspective of emerging countries. Chari, Ouimet and Tesar (2010) show that developed-market acquirers earn positive returns when obtaining control of emerging-market targets, but they receive negative returns when acquiring developed-market targets. Also, the returns are higher when the contracting environment is weaker in the target country and when the industry has higher asset intangibility. Deng and Yang (2014) focus on resource-based explanations for M&As, and they discuss the moderating effects of government effectiveness, resource and market availability on the intensity of international acquisitions by emerging-market companies. Rui and Yip (2008) focus on China and discuss the strategic intent of the acquirers using interviews for the study content.

Although the aforementioned studies touch upon key issues regarding cross-border mergers and acquisitions, some important questions remain unanswered. Primarily, whether emerging-market acquirers produce positive wealth gains in cross-border mergers and acquisitions. Secondly, the channels for value creation or destruction when the acquirers carry out their globalization strategies. Also, few studies take into account of the need of complementary resources for emerging-market acquirers. This paper contributes to the literature by exploring how the performance of emerging-market acquirers is affected through

the three channels: strategy of acquiring knowledge, change of managerial efficiency, and motive for natural resources.

The primary contribution is that I document positive announcement abnormal returns for emerging-market acquirers, as well as combined returns, when they conduct cross-border mergers and acquisitions. Using a sample of 185 foreign acquisitions originated from firms based in emerging markets, with majority control[6], transaction value above one million U.S. dollars, with public acquirer and public target, and announced between the year 2000 and 2015, the acquirers realized 0.93% mean abnormal return. In contrast, acquirers from developed market realized only 0.2% on average, and insignificantly different from zero, during the same period.

The paper also contributes to the literature in corporate governance and firm investment. As proposed by the theory that the acquirers benefit from acquiring complementary resources from the target company, my results confirm that higher value is created for an emerging-market acquirer when it chooses a target with R&D record, keeps the target CEO, and still focuses on the acquirer's primary product market. However, operating performance is lower in the medium term, compared to the domestic acquirers. I also fill in the picture by showing the channel of change in managerial decentralization. Decreasing target abnormal return is associated with a wider gap in managerial decentralization between the acquirer and target country. Lastly, the cross-border transactions aiming at acquiring natural resources are associated with lower acquirer abnormal returns, higher offer premiums, and higher target abnormal returns.

2. Data

2.1. Transaction and financial data

[6] In a majority control transaction, the acquirer has less than 50% of the target shares before deal, and obtains more than 50% of the target shares after deal completes.

The mergers and acquisition data used in this study is from the Thomson Reuters SDC Platinum database. The database provides detailed information on transactions, such as announcement date of the deal, offer premium and payment method in the deal agreement, and the financial characteristics of the involved parties. The selected sample is extracted based on the following criteria: (1) the cross border deal flag is "Y", i.e., the target country is different from the country of the acquirer's ultimate parent; (2) the transaction value is worth more than 1 million US dollars; (3) the deal is announced between 1 January 2000 and 31 December 2015, which is also the peak period of the cross-border M&A deals; (4) the deal is completed; (5) the acquirer and target firm is publicly listed; (6) the acquirer takes formal control of the target, which means that the acquirer owns more than 50% of the target's shares after transaction.

Next, each deal is merged with DataStream data to obtain the price of the stock and the corresponding market index. Following the literature, the estimation window is [-250, -50] days before the announcement date, and the Cumulative Abnormal Return[7] ("CAR") is calculated in the [-1, +1] day event windows. Both the raw and market-model abnormal returns are calculated.

Then the transactions with available acquirer CAR are separated into four sample groups as shown in Table 1: (1) DM-DM, or developed-market acquirers and emerging-market targets (1,381 observations); (2) DM-EM, or developed-market acquirers and emerging-market targets (218 observations); (3) EM-EM, or emerging-market acquirers and emerging-market targets (44 observations); (4) EM-DM, or emerging-market acquirer and developed-market targets (141 observations). The definition of emerging and developed market is based on the list of countries in the MSCI Emerging Market Index[8], which was established in 1988 and widely used in the literature and by practitioners.

< Table 1 about here>

[7] The market return is calculated using the total market equity index from Datastream, for which the market for extracting the index is from the "primary stock market code" in Thomson One. If there is no total market index available for a country, I use the MSCI country index instead.

[8] https://www.msci.com/emerging-markets

The focus of the study in on Sample 3 and 4. However, the data screening and merging procedures poses restrictions in the number of total observations. For instance, Sample 4 (EM-DM) originally has 1,824 deals included in the Thomson Reuters SDC Platinum database which meet screening requirements (1) to (4). Adding restriction (5), the number reduces to 365. Lastly, requiring the acquirer to have formal control of the target reduces the sample size to be 140. Also, some control variables could be unavailable for some countries. For example, the investor protection measurements are unavailable for China, and sample size is trimmed further. The total number of emerging-market originated deals (Sample 3 and 4) that meet all requirements is 185. The emerging-market acquirers include Brazil (5[9]), Chile (6), China (45), Colombia (6), Greece (3), India (23), Indonesia (4), Malaysia (15), Mexico (14), Peru (2), Philippines (5), Poland (3), Qatar (4), Russian Federation (16), South Africa (25), South Korea (8), Taiwan (8), Thailand (7), Turkey (2), and United Arab Emirates (4).

< Table 2 about here>

Table 2 presents summary statistics for the transaction details of the deals in each sample. The median transaction size is the largest for the DM-DM deals, and followed by the EM-DM deals. However, the largest acquirer market capitalization is the largest in the DM-EM deals, for which the acquirers are mainly the mature and large multinational enterprises. Formal control is acquired in 31.91% in the EM-EM sample, and 39.02% in the EM-DM sample. There are relatively more diversifying deals in the developed-market originated deals (DM-DM and DM-EM sample), compared with the emerging-market originated deals (EM-EM and EM-DM sample).

Similar to the results in Chari, Ouimet, and Tesar (2010), the DM-EM deals obtain much higher acquirer CAR (0.05%) compared to the DM-DM deals when control is acquired (1.32%). However, in the sample of DM-EM deals (Sample 2) the mean offer premium[10] paid to the targets is lower compared to the DM-DM deals (Sample 1). This is in alignment

[9] Total number of deals for the country of the acquirer's ultimate parent.
[10] The offer premium is measured as "offer price to 1-week/ 4-week prior target stock price" in Thomson One database.

with the fact that the market-value weighted CAR ("combined CAR") is lower for Sample 2 compared with Sample 1. It indicates that when developed-market acquirers bid for emerging-market targets, they have lower competition and more favorable terms, which leads to in fact lower target CAR and combined CAR than the deals inside developed market. The favorable terms may due to the fact that developed-market acquirers can extend their intangibles both in technology and management to the emerging-market targets, and thus become more attractive acquirers in the bidding game.

< Table 3 about here>

Financial characteristics of the acquirer and target companies from Compustat Global are further merged with the transaction data, summarized in Table 3. The median acquirer ROA[11] and operating ROA is higher than the median target in all samples. Interestingly, only the targets in the DM-EM sample (Sample 2) exhibit the most attractive financial performance.

< Table 4 about here>

The industry compositions for the four samples are shown in Table 4. The industry that has the highest number of cross-border M&As is the manufacturing industry, which represents the highest proportion of economy. There are some differences between emerging-market and developed-market acquirers in terms of industry composition, which indicates the differences in economic structure between two groups. For instance, 27.5% of the acquirers in the EM-DM sample (Sample 4) are in the mining industry, whilst there are only 14.81% in the DM-DM sample (Sample 1), indicating that one of the major aims of emerging-market acquirers is to buy natural resources.

2.2.Empirical specifications

To estimate the relationship between the acquirer/target returns and the proposed channels, I use OLS regression for the baseline specification, as shown in Model (1). The dependent variable is the acquirer CAR in [-1, 1] day window around the deal announcement date.

[11] All variables are defined in Appendix A.

$$Acquirer\ CAR_{i,t}$$
$$= \alpha + \beta_1 key\ Explanatory\ Variable_{i,t-1}$$
$$+ \beta_2 Acquirer\ and\ Target\ Characteristics_{im,t-1}$$
$$+ \beta_3 Deal\ Characteristics_{im,t-1} + Fixed\ Effects + \varepsilon_{i,t}. \quad (1)$$

1) The first channel is knowledge transfer from a target firm with R&D record to an emerging-market acquirer. The approach to proxy for the technology advantages is the variable "target R&D dummy", which equals one if the target company records positive R&D expenses in the year prior to the deal announcement. To further understand how emerging-market acquirer achieves reverse-internalization, I also investigate whether the target CEO continues his/her position within the first year after deal completion. By searching on LinkedIn, Business Insider and transaction filings, I obtain the employment information on the target CEO post to the deal completion. The dummy variable "CEO stays" is set to one if the CEO of the target company stays even after the deal completion. According to the hand-collected data, on average 40.6% of the deals keep the target CEO after deal completion.

   It is also hypothesized that emerging-market acquirers still focus on their primary product market while targeting at firms with R&D record, and I use the transaction purpose code from the Thomson Reuters SDC Platinum. Dummy variable "Primary mkt purpose" equals one if the purpose code states that the purpose of the transaction is to strengthen the primary product market of the acquirer, which is usually the country of the acquirer.

2) Endogeneity issues and long-term performance

   Furthermore, I address the endogeneity issues by estimating selection models of firms becoming acquirers or target firms, respectively. I run a conditional logit regression

model [12] using cross-sectional data as of the fiscal year-end before the deal announcement:

$$Event\ Firm_{im,t} = \alpha + \beta_1 Event\ Firm\ Characteristics_{im,t-1} + DealFixedEffect_m + \varepsilon_{im,t}. \quad (2)$$

The dependent variable, $Event\ Firm_{im,t}$, is equal to one if firm i is the acquirer (target firm) in deal m, zero if the firm i is from the control sample associated with deal m, and the independent variables $Event\ Firm\ Characteristics_{im,t-1}$ are defined in the Appendix. For each deal, there is one observation for the acquirer (target), which is also the treatment firm that involves in an emerging-market originated cross-border deal, and up to five observations are found for the control acquirers (targets).

For the selection model of the acquirer (target), I employ two different control samples. The first approach to form the control sample is matching on industry and size. For each acquirer (target) in an emerging-market originated cross-border deal announced in year t, I find up to five matching acquirers (matching targets) by acquirer (target) country, industry – where the industry is defined by 2-digit SIC code – and firm size from Compustat Global; also, the matching firm is not an acquirer or a target of any cross-border M&As in the [-3, 0] year window around year t. The second approach is random matching. For each acquirer (target) of an emerging-market originated cross-border deal announced in year t, I find up to five matching acquirers (matching targets) with Compustat record in the same acquirer (target) country and year; also, the matching firm is not an acquirer or a target of any cross-border M&As in the [-3, 0] year window around year t. In this way, the pool of potential merger firms, or the control group, captures the M&A clustering in time. Observations are dropped if no match can be found.

[12] For more on the methodology, see McFadden (1974). Recent application in finance include Dyck, Morse, and Zingales (2010), and Bena and Li (2014).

The abovementioned selection model answers the question: which firms are more likely to originate a cross-border transaction, or become the target of an emerging-market originated cross-border transaction, compared to the matched companies that do not involve in any cross-border transactions? However, another question has different implications: which emerging-market firms are more likely to acquire a foreign target, rather than a domestic one?

I address the second question using the same selection model, but different control sample. For each emerging-market acquirer that originated a cross-border deal announced in year t, I find up to five matching acquirers by acquirer country, industry – where the industry is defined by 1-digit SIC code – and firm size from Compustat Global; also, the matching firm is an acquirer of a domestic M&As in the [-3, 3] year window around year t, but not an acquirer or target in any cross-border M&As in the [-3, 0] year window around year t.

In addition to the selection model estimations, I use difference-in-difference method with panel data regression to test the medium-term operating performance and number of employee changes, as shown in Model (3). For each acquirer firm, the sample includes up to three years prior to and post to the transaction.

$$
\begin{aligned}
&Event\ Firm\ performance_{im,t} \\
&\quad = \alpha + \beta_1 Treatment_{im,t} * Post_{im,t} \\
&\quad + \beta_1 Event\ Firm\ Characteristics_{im,t} + DealFixedEffect_m \\
&\quad + \varepsilon_{im,t}. \qquad (3)
\end{aligned}
$$

The independent variable, $Treatment_{im,t}$, is equal to one if firm i is the acquirer in the emerging-market originated cross-border transaction m, zero for the acquirer in the matched domestic transaction. $Post_{im,t-1}$ is equal to one if year t is after the deal announcement year. The result help to evaluate ex post acquirer performance, complementary to the performance based on short-run stock market reactions.

3) Other value channels – managerial decentralization and natural resources

The second value channel is through the change of managerial decentralization. Bloom, N., Sadun, R., & Van Reenen, J. (2009) propose the country-level decentralization z-score, which is a survey-based index that measures the average level of autonomy that plant managers have within a multinational enterprise. The survey is carefully designed, and conducted in twelve countries by MBA students and consultants. The survey gathers information by interviewing the plant manager about the level of autonomy that they have in terms of hiring, investment and other decisions. Then, the data are summarized and standardized into country-level z-score, available on the website of the world management survey[13]. The managerial efficiency z-score is different from the World Value Survey in Ahern, Daminelli, and Fracassi (2015). The World Value Survey is based on trust, hierarchy and individualism, which is reflected in the way people coordinate with each other, and how fundamental economic decisions are made. However, the managerial efficiency z-score directly measures the level of autonomy that a manager has within large organizations.

Due to the nature of cross-border mergers and acquisitions, the target changes headquarter country when integrated into the acquirer company. The change of managerial decentralization especially affects the post-mergers integration, and thus affects the value created for the target. Investor's expectation on the value impact to the target should be incorporated into the target's announcement abnormal returns. To measure the change of managerial efficiency, I construct the pairwise variable "dif_z" as the acquirer country's z-score subtracted by the target country's z-score, or $dif\_z = bidder's\ z - target's\ z$.

Lastly, another major motive for emerging-market acquirer to conduct cross-border mergers and acquisitions is to acquire natural resources. I hand collect data on this purpose based on related news and target company profiles, and test how this motive

[13] http://worldmanagementsurvey.org/

affects wealth gains of the acquirers. The variable "natural resource-driven dummy" equals to one if the deal is driven by acquiring natural resources, such as options for exploring gold mines. For this channel, only deals with transaction value above 10 million U.S. dollars are included. On average, 35.1% of these deals are driven by natural resource purposes.

3. Results

3.1. Emerging-market acquirers generate positive returns in cross-border M&As

Table 5, Panel A shows the formal test for the acquirer abnormal returns when the emerging-market acquirers announce acquisitions. The acquirer abnormal returns are measured as CARs estimated over [-1, +1] day event window using event study. The mean CAR is 0.7% using market-model asset pricing estimation, and is significantly positive at 1% level. Raw acquire return calculated by subtracting the market return from the stock return generates a 0.94% CAR over the three-day window. The result is significantly positive at 1% level. Restricting the sample to the transactions in which formal control is acquired, the market-model generates 0.93% abnormal return, and 1.15% raw return, both significant at 5% level. The results indicate that emerging-market acquirers create positive returns when conducting cross-border mergers and acquisitions, and generates better performance compared to the zero or negative returns by the developed-market counterparties (Fuller, Netter, and Stegemoller 2002).

< Table 5 about here>

In Panel B, I further test the acquirer returns within different sub-groups. When compared between the subgroups of emerging-market and developed-market targets, diversifying deals and non-diversifying deals, cash-only deals and non-cash-only[14]

[14] "Cash-only" mean that the deal is paid by cash only, and "non-cash-only" means that the payment of the deal involves means other than cash.

deals, Chinese-acquirer deals and non-Chinese acquirer deals, there are no significant difference at 10% significance level. Though on average, it appears that Chinese-acquirer deals have high average announcement abnormal returns (2.24%).

In summary, the results confirm that emerging-market acquirers generate significantly positive returns when they announce cross-border M&As. The returns do not significantly change due to the target market, the diversification characteristic, the payment method, and the specific nationality of the acquirer.

3.2. Value channels

3.2.1. Knowledge transfer.

It is well understood in the literature that when developed-market firms make cross-border M&As in the emerging market, they create value by extending the specializations and good governance practices to the targets (Chari, Ouimet and Tesar 2010; Wang and Xie 2008; Fresard, Hege, and Philips, 2017). For the emerging-market acquirers, they could achieve wealth gain in cross-border mergers and acquisitions by transferring knowledge from the target companies to the emerging market. By acquiring resources that complements the cheap production cost or large consumer market, the emerging-market acquirers generate high synergies.

I firstly test the influence of knowledge transfer on acquirer abnormal returns, using data from all four samples. The estimation method is OLS regression, and later added with year and acquirer industry fixed effects. Control variables include "cash only dummy" and "common shares dummy" that captures the influence of payment method on acquirer returns (Fuller, Netter, and Stegemoller, 2002); "revised WLLSV rights" is a revised anti-director right index for 46 countries (Spamann, 2008), and I use the difference in the indices between the acquirer and target country to calculate the difference in institutional environment between the two countries; "log (geo distance)" measures the geographical distance between

the capitals of the two countries that may influence the deal value (Erel, Liao, and Weisbach, 2012); lastly the acquirer market capitalization for the value effect. The idea is to control for most factors but using only a few variables due to the limited observations available.

< Table 6 about here>

Table 6 tests the effect of target R&D record on acquirer returns. Having an R&D record in the previous year is not associated with higher acquirer returns for the four samples together (column 1). However, the effect is unique to the emerging-market acquirers. The coefficient of the interaction term between EM-market acquirer and target R&D dummy is significantly positive (column 2), indicating that the value of target R&D is unique to the emerging-market acquirers. Furthermore, I test the effect of target R&D when the sample is limited to emerging-market acquirers (EM-DM and EM-EM sample). The results confirm that when the target firm has R&D record in the year prior to deal announcement, the emerging-market acquirer return increases by around 5.6%. It should be noted that by adding the control variable on WLLSV rights, observations for the acquirers and targets from China, Czech Republic, Poland, Qatar, Russian Federal and United Arab Emirates are lost, due to unavailable data for this index. In columns 3 and 4, I keep only the transactions originated from emerging market, and rerun the regressions on target R&D dummy. Again, when the target has R&D record in the previous year, acquirers have higher announcement abnormal return on average.

< Table 7 about here>

To understand the strategy that emerging-market acquirers use in achieving knowledge transfer, I also hypothesize that keeping the target CEO has a positive effect on the acquirer abnormal returns. Column 1 in Table 7 shows that keeping the target CEO inside the firm is not associated with significantly higher

announcement returns. However, if the target has R&D record in the previous year, keeping target CEO is associated with much higher announcement returns (10.5%, column 2). Also, I try to address the counter-argument in the literature that target CEO may trade better deal terms to the acquirer for his/ her personal employment benefit, such as CEO retention. In the result, column 3 show that target CEO stay is not significantly related to lower offer premium paid to the target company. Furthermore, as in column 4 and 5 of Table 7, the effect of deal purpose of strengthening the primary product market. The coefficients for the single variable and interaction terms of the dummies for primary market purpose and target R&D record are significantly positive. The results indicate that in presence of target R&D record, the focus of the acquirer's primary product market is also beneficial to the emerging-market acquirers.

In summary, using multiple tests, I argue that an important venue for emerging-market acquirers to create value in cross-border M&As is knowledge transfer. New emerging-market multinationals have the advantage of cheap production cost and the need to upgrade their productivity. Therefore, they take ownership of R&D intensive firms as their targets, keep at arm's length with the original management team of the target, and apply the knowledge to the improvement inside their primary product market. Clearly, this strategy increases shareholder value, and is reflected by the response of investors during the deal announcement period.

3.2.2. Endogeneity issues and long-term performance

The effect of knowledge transfer is subject to endogeneity concerns. One would question whether the acquirers select the targets randomly, and other firm and deal characteristics may lead to the returns. I address these concerns using matching method as described in the earlier section.

< Table 8 about here>

Table 8 shows the estimated results for the conditional logit models for the acquirers (targets) in the emerging-market originated cross-border M&As. The first and third columns use the control samples based on industry and size matching, and the second and fourth columns use the control samples based on random matching. Both control samples are firms from the same acquirer country in the same fiscal year, and not involved in any cross-border transactions in the current and previous three years.

Columns 1 and 2 indicate that an emerging-market firm with larger size, and better operating performance is more likely to become an acquirer of a cross-border transaction, compared to the other firms from the same country and year. Columns 3 and 4 indicate that a firm with larger size is more likely to become the target of an emerging-market originated cross-border transaction, compared to other firms from the same country and year. However, the financial performance, R&D record do not have any predictive power regarding whether the firm becomes the target of the such cross-border transactions. Therefore, the concern for non-randomly choosing a R&D firm as a target is reduced.

< Table 9 about here>

Table 9 shows the estimated results for the conditional logit models for the acquirer in emerging-market originated cross-border M&As. The control group is either industry-size or randomly matched from the pool of acquirers of domestic M&As. Both control samples are firms from the same acquirer country, target industry, and not involved in any cross-border transactions in the current and previous three years. As the matched sample are domestic acquirers, the estimated selection model includes both company and deal characteristics.

Columns 1 and 2 shows that when the acquirer has higher market valuation, better operating performance, and when the target has low market valuation, the emerging-market firm is more likely to engage in a cross-border deal; the findings

are consistent with the market valuation theory in M&A (Jovanovic and Rousseau, 2002 and Rhodes-Kropf and Viswanathan, 2004). Furthermore, acquirer R&D record may increase the likelihood of engaging in a cross-border deal, but in such cases acquirers are less likely to find a R&D firm as the target for cross-border deals (column 2). The result suggests that R&D collaboration is preferred when there is geographical proximity, also suggesting that cross-border acquisitions aim to complementary resources, rather than substitutions. Column 3 further confirms the previous finding on knowledge transfer that when there is cross-border deal that involves a R&D target, the abnormal return increases by 5.9% on average, compared to domestic deals.

< Table 10 about here>

Lastly, Table 10 shows the medium-term operating performance of treatment group compared to the control group, using difference-in-difference approach in panel regression estimation. For each acquirer firm, the sample includes up to three years before and after the transaction. Column 1 and 2 shows that after the transaction, the operating ROA decreases and the the number of employees increases for the cross-border acquirers, compared to the similar acquirers involve in domestic transactions. For columns 3 and 4, the treatment variable equals one if the deal is cross-border, and the target firm has R&D record. The acquirers in the new treatment group on average have even lower operating ROA decrease, compared to the control group. But the number of employees do not change significantly. Overall, the results indicated that in the next three years after the transaction, the cross-border acquirers are not able to achieve better operating performance compared to domestic acquirers, which may be due to difficulties in post-merger integration.

3.2.3. Managerial efficiency

One strand of the literature in cross-border mergers and acquisitions tries to explain the volume and value effects with cultural difference (Ahern, Daminelli and Fracassi 2015). For this part, I take a different perspective to explain the target returns using managerial efficiency changes. In the setting of cross-border M&As with control acquired, the headquarter of the target company changes to the ultimate parent of the acquirer. Thus, the target company need to integrate with a new managerial style. Decentralization z-score measured by Bloom, Sadun, and Van Reenen (2009) gives precisely the managerial autonomy affects managerial efficiency within large multinational firms. Figure 2 shows the decentralization z-score for the twelve countries[15] measured in the survey. I take the difference in decentralization z-score between the the acquirer and target countries to measure the change of managerial efficiency take place to the target.

< Figure 2 about here>

< Table 11 about here>

Table 11 tests how such exogenous change in managerial efficiency influences the target abnormal returns. Columns 1 to 3 shows that as the gap in managerial efficiency between the acquirer and the target enlarges, the target CAR is negatively affected. For instance, a 0.5 difference in the z-score[16] between the acquirer and target country introduces 7.9% decrease in the target returns. A potential explanation is that the target improves (decreases) its managerial efficiency when changing its headquarter to a higher (lower) managerial efficiency of the acquirer country, and less (higher) offer premium is agreed due to the intangible benefit (loss) in terms of managerial improvement (decrease). In column 4 I test for this hypothesis, though the coefficient for dif(z-score) is not significant when regressing on offer premium, the direction of the sign gives some

[15] The countries include China, France, Germany, Greece, India, Italy, Japan, Poland, Portugal, Sweden, UK and US.
[16] An example of such change is when a Chinese acquirer gains control of a Greek target, or a US acquirer takes control of a Italian target.

support. It indicates that investors of the target firm take into consideration of the post-mergers integration process, and respond accordingly.

3.2.4. Natural resource seeking

Resource dependence theory is one of the explanations for engaging in M&As (Hillman, Withers, and Collins 2009). Firms have the purpose to reduce their dependence on the environment and uncertainty. Some emerging-market companies have strong interest in acquiring vital natural resources, and their purpose may be different from the traditional resource dependency theory, such as driven by the national strategy.

< Table 12 about here>

Columns 1 to 3 in Table 12 tests the effect of value chain integration on acquirer and target returns. Columns 1 and 2 show the influence of "natural resource seeking" on acquirer and target abnormal returns. When the cross-border M&A aims at acquiring natural resources from the target, acquirer return decreases by 3.4%, and the target return increases by 29% on average. Column 3 shows that the deals driven by natural resources have much higher offer premium paid to the target, which influences the target and acquirer returns accordingly.

This part exhibits a channel of value-destruction in the cross-border M&As originated by emerging-market acquirers. When the aim of the transaction is to acquire natural resources, the offer premium significantly increases, the acquirer return largely decreases, and the target increases. While the strategy to seek natural resources may not be economical sensible, it often reflects the national strategy that support such transactions. In the unreported tests, I test for how returns is associated with government involvement. However, with available data I do not find significant relationship, which is not surprising as many acquirers are special-purpose vehicles set up by government-related companies, but not directly owned by the government.

3.2.5. Robustness tests

To address the issue that the results may be driven by heterogeneity of payment methods, or acquirer nationalities, I rerun the main regressions within two different subsamples: (1) the group of transactions with only cash payment and the group that include non-cash payment; (2) the group of Chinese acquirers[17] and the group of non-Chinese acquirers.

The tables are included in the Internet Appendix. The main results still hold for most tables. One exception is that in the subsample with non-cash payment, the coefficient for the interaction term of CEO stays and target R&D is no longer significant. One potential reason is that the limited observation number leads to few variations in the sample.

I also compare the results between Chinese acquirer and non-Chinese acquirers. Main results still hold, except that the coefficient for the interaction term of CEO stays and target R&D is no longer significant for the Chinese-acquirer group. Again, this may be due to the limited variation within a small sample.

4. Conclusions

With an increasing number of emerging-market companies becoming new multinational enterprises, there has been a surge of cross-border mergers and acquisitions originated from the emerging market since the early 2000s. This paper investigates the performance of cross-border mergers and acquisitions originated from emerging-market firms, and discusses the channels for value creation or destruction.

For the first part of the paper, I use announcement abnormal returns to measure the wealth gains to the emerging-market acquirers when they bid abroad. I examine cross-border mergers

[17] Chinese acquirer is defined as an acquirer whose ultimate parent company is located in China.

and acquisitions that involve both public acquirers and public targets from the year 2000 to 2015, with a transaction value above one million U.S. dollars, where formal control of the target is acquired. In contrast to previous findings for U.S. acquirers, who achieve zero or negative returns inside the developed market, I show that emerging-market acquirers achieve on average 0.93% abnormal returns.

For the second part of the paper, three channels of resource-related motives are explored in the paper. Typically, emerging-market acquirers have low production cost, large primary product market, and the need to upgrade productivity and managerial efficiency. For the first channel, I find that the announcement abnormal returns for emerging-market acquirers increase significantly, both statistically and economically, as they acquire control of R&D intensive targets. I also show that in such deals choosing to keep the target CEO after deal completion, and focusing on the acquirer's primary product market is associated with even higher announcement abnormal returns. The evidence gives support to the value of acquiring complementary resources in technology for emerging-market acquirers.

To address the endogeneity concern regarding the acquirer (target) selection, I use matched samples to investigate which firms are more likely to engage in cross-border M&As. Compared to the firms not involved in any foreign deals, I show that target R&D or acquirer R&D record is not predictive in the selection model. Compared to the acquirers in the domestic M&As, I show that when the acquirer has higher market valuation, better operating performance, and the target has low market valuation, an emerging-market firm is more likely to engage in a cross-border deal. However, in the medium term after a cross-border transaction, the operating ROA decreases and employee number increases significantly for the cross-border acquirers on average, compared to the domestic acquirers in the control group.

The second channel for acquiring complementary resource is via the change of managerial efficiency, but does not affect the returns to the acquirer. As the gap in managerial efficiency between the acquirer and the target widens, target abnormal return is negatively affected.

Lastly, when the aim is to acquire natural resources and upstream integration, emerging-market acquirers tend to agree on high offer premiums and receive lower acquirer returns. This piece of evidence suggests a value-decreasing channel for the emerging-market acquirers.

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Figure 1.1

This graph shows the total transaction values and volumes of all cross-border mergers and acquisitions by emerging-market acquirers. All transactions have deal value above 10 million USD, announced from 1 January 2000 to 31 December 2015. List of emerging-market countries is in Table 2.

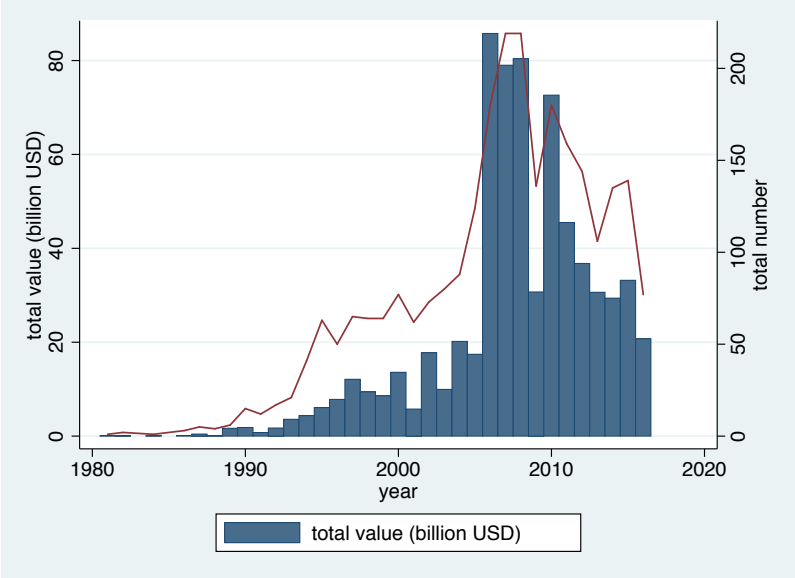

Figure 1.2

This graph shows the total transaction values and volumes of all cross-border mergers and acquisitions from developed-market acquirers. All transactions with deal value above 10 million USD, announced from 1 January 2000 to 31 December 2015. List of emerging-market countries is in Table 2.

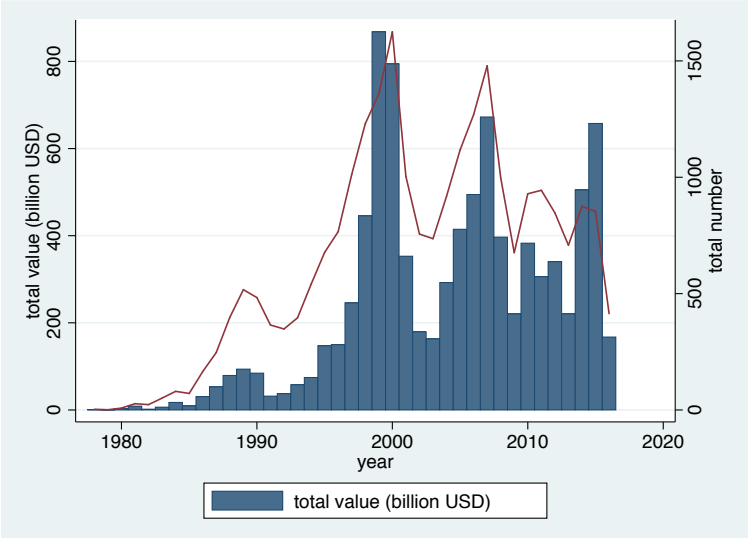

Figure 2

This figure depicts the decentralization z-score of twelve countries from the survey in Bloom, Sadun, and Van Reenen (2009). Variable definition is in Appendix A.

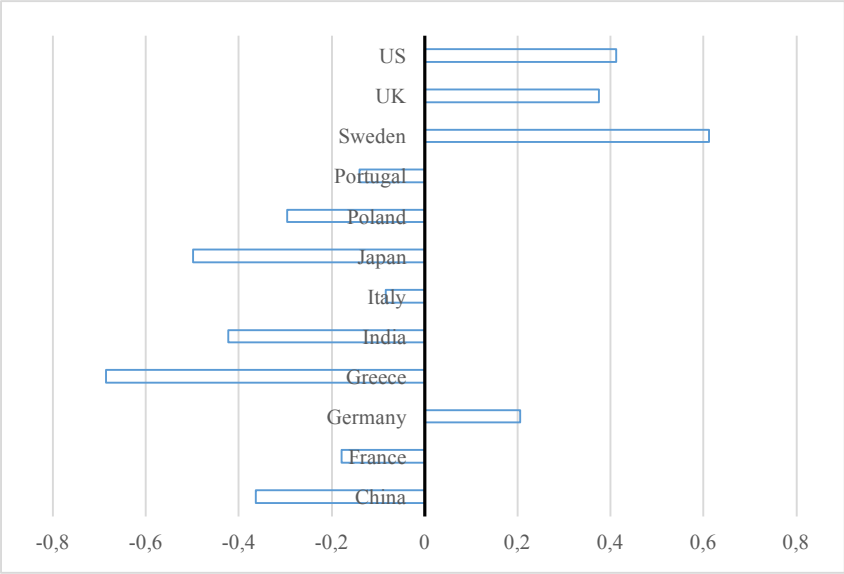

Table 1

List of countries in each sample

This table shows the countries that are included in each sample. All transactions have deal value above 1 million USD, announced from 1 January 2000 to 31 December 2015, with control acquired. "DM" is developed countries defined, and "EM" is emerging countries defined by MSCI. For instance, "DM-EM" stands for the cross-border M&A deals that originated from a developed country and targets into an emerging country.

	Sample 1 (DM-DM)	Sample 2 (DM-EM)	Sample3 (EM-EM)	Sample 4 (EM-DM)
Sample description	Developed-market acquirers and developed-market targets	Developed-market acquirers and emerging-market targets	Emerging-market acquirers and emerging-market targets	Emerging-market acquirers and developed-market targets
Acquirer nation	Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland-Rep, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, United Kingdom, United States	Australia, Austria, Belgium, Canada, Finland, France, Germany, Hong Kong, Ireland-Rep, Israel, Italy, Japan, Netherlands, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, United Kingdom, United States	Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, India, Indonesia, Malaysia, Mexico, Peru, Philippines, Poland, Qatar, Russian Fed, South Korea, Taiwan, Thailand, Turkey, United Arab Emirates	Brazil, Chile, China, Colombia, Greece, India, Indonesia, Malaysia, Mexico, Peru, Philippines, Poland, Qatar, Russian Fed, South Africa, South Korea, Taiwan, Thailand, United Arab Emirates
Target nation	Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland-Rep, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, United Kingdom, United States	Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Malaysia, Mexico, Peru, Philippines, Poland, Russian Fed, South Africa, South Korea, Taiwan, Thailand, Turkey, United Arab Emirates	Brazil, Chile, China, Colombia, Czech Republic, Egypt, Hungary, India, Indonesia, Malaysia, Mexico, Peru, Philippines, Russian Fed, South Africa, South Korea, Taiwan, Thailand, Turkey, United Arab Emirates	Australia, Austria, Belgium, Canada, Finland, France, Germany, Hong Kong, Ireland-Rep, Israel, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Switzerland, United Kingdom, United States

Table 2

Transaction characteristics

Transaction data are from the Thomson Reuters SDC Platinum database. This table presents the transaction characteristics of the deals included in each sample. Sample 1 includes transactions of both acquirer and target from developed market, sample 2 includes transactions of developed-market acquirer and emerging-market target, sample 3 includes transactions of emerging-market acquirer and developed-market target, and sample 4 includes transactions of both acquirer and target from emerging market. All transactions have deal value above 1 million USD, announced from 1 January 2000 to 31 December 2015, with control acquired, and all variables are defined in Appendix A.

	Sample 1 (DM-DM)	Sample 2 (DM-EM)	Sample3 (EM-EM)	Sample 4 (EM-DM)
Median transaction size ($M)	240.15	106.37	118.38	177.72
Median acquirer market capitalization 14-week prior ($M)	3217.75	6366.96	4450.26	2105.67
Median target market capitalization 14-week prior ($M)	197.83	210.94	264.88	163.20
Median percentage of shares sought (%)	100	67.05	70.84	100.00
Diversifying acquisition	49.73%	54.42%	37.78%	46.25%
Median acquirer CAR	0.17%	0.10%	0.63%	0.03%
Mean acquirer CAR	0.05%	1.32%	1.05%	0.89%
Median target CAR	19.76%	4.32%	5.96%	18.73%
Mean target CAR	27.39%	8.33%	8.71%	27.02%
Median MV-weighted combined CAR	1.56%	0.70%	0.80%	1.65%
Mean MV-weighted combined CAR	2.59%	1.87%	1.15%	10.82%
Median offer premium to 1-week prior target stock price (%)	33.88	19.58	17.27	26.44
Mean offer premium to 1-week prior target stock price (%)	51.47	23.13	57.49	41.27
Median offer premium to 4-week prior target stock price (%)	36.07	22.69	28.49	35.66
Mean offer premium to 4-week prior target stock price (%)	53.85	31.15	61.66	46.42
Percentage of control deals relative to all public acquirer deals	52.15%	27.56%	31.20%	34.39%
Sample size of all public acquirers deals	2,648	791	141	410
Sample size of control deals with public acquirers and targets, with available market data	1,289	190	44	141

Table 3

Financial characteristics of acquirer and target firms

Financial data are from Compustat Global. This table presents the financial characteristics of the acquirers and targets included in each sample. Sample 1 includes transactions of both acquirer and target from developed market, sample 2 includes transactions of developed-market acquirer and emerging-market target, sample 3 includes transactions of emerging-market acquirer and developed-market target, and sample 4 includes transactions of both acquirer and target from emerging market. All transactions have deal value above 1 million USD, announced from 1 January 2000 to 31 December 2015, with control acquired, and all variables are defined in Appendix A.

	Sample 1 (DM-DM)	Sample 2 (DM-EM)	Sample3 (EM-EM)	Sample 4 (EM-DM)
Acquirer Financials				
Median ROA	3.68%	4.01%	3.89%	4.48%
Median operating ROA	9.98%	11.09%	8.81%	9.52%
Median investment ratio	20.21%	19.38%	18.01%	20.58%
Median interest coverage	42.24%	40.33%	25.13%	29.61%
Median R&D ratio	56.97%	34.94%	20.76%	40.02%
Median intangible assets	9.31	8.94	5.64	8.44
Median 3-year earnings volatility	0.0276	0.0163	0.0037	0.0101
Median MTB ratio	1.659	0.709	0.067	0.327
Target Financials				
Median ROA	1.63%	2.98%	1.01%	0.82%
Median operating ROA	8.10%	9.68%	7.36%	6.20%
Median investment ratio	26.11%	22.74%	6.08%	18.17%
Median interest coverage	20.71%	35.34%	31.28%	13.46%
Median R&D ratio	40.18%	34.75%	14.51%	28.13%
Median intangible assets	5.57	5.01	1.92	6.18
Median 3-year earnings volatility	0.0563	0.0098	0.0006	0.0139
Median MTB ratio	1.430	0.115	0.020	0 .814

Table 4

Industry composition

Industry SIC codes are from Compustat Global. This table presents the industry composition of the acquirers and targets included in each sample. Sample 1 includes transactions of both acquirer and target from developed market, sample 2 includes transactions of developed-market acquirer and emerging-market target, sample 3 includes transactions of emerging-market acquirer and developed-market target, and sample 4 includes transactions of both acquirer and target from emerging market. All transactions have deal value above 1 million USD, announced from 1 January 2000 to 31 December 2015, with control acquired, and all variables are defined in Appendix A.

	Sample 1 (DM-DM)	Sample 2 (DM-EM)	Sample3 (EM-EM)	Sample 4 (EM-DM)
Acquirer industry (%)				
Agriculture, Forestry and Fishing	0.33	0.44	0	0
Mining	14.81	6.64	6.67	27.5
Construction	0.67	1.77	2.22	0.62
Manufacturing	43.03	43.81	40	43.12
Transportation, Communications, Electric, Gas and Sanitary service	7	13.72	20	5.62
Wholesale Trade	2.2	1.33	2.22	1.25
Retail Trade	2.54	2.65	0	1.88
Finance, Insurance and Real Estate	10.94	20.35	24.44	11.88
Services	18.41	9.29	4.44	8.12
Public Administration	0.07	0	0	0
Target industry (%)				
Agriculture, Forestry and Fishing	0.4	0	0	0.62
Mining	16.37	6.64	8.89	32.5
Construction	0.8	1.33	2.22	0.62
Manufacturing	38.28	44.25	33.33	35
Transportation, Communications, Electric, Gas and Sanitary service	7.35	11.06	15.56	2.5
Wholesale Trade	2.27	2.21	4.44	2.5
Retail Trade	1.67	3.1	2.22	3.75
Finance, Insurance and Real Estate	9.22	18.14	24.44	11.25
Services	23.58	13.27	8.89	11.25
Public Administration	0.07	0	0	0

Table 5

Student's t-test for announcement abnormal returns

This table reports the results of Student's t-tests for the announcement returns of the cross-border M&As originated by emerging-country acquirers (sample 3 and 4). In Panel A, columns (1) and (2) reports all the public emerging-market originated transactions in SDC. Columns (3) and (4) additionally requires that more than 50% of shares are owned by the acquirer after transaction. CAR [-1, 1] is the cumulative abnormal returns estimated using market model over three-day window around deal announcement date. Raw CAR [-1, 1] is calculated by subtracting market return from stock return. Combined CAR [-1, 1] is the average CAR [-1, 1] of acquirer and target abnormal returns weighted by market value. Panel B shows the Student's t-tests results for the acquirer returns when further compared between different subgroups. All transactions have deal value above 1 million USD, public acquirer and targets, and announced from 1 January 2000 to 31 December 2015.

Panel A:

	All SDC transactions		Gain-control transactions	
	Mean	p-value (Ha: mean>0)	Mean	p-value (Ha: mean>0)
CAR [-1,+1]	0.70%		0.93%	
#obs./ std. err.	500/ (0.0026)***	0.0044	185/(0.0655)**	0.0281
Raw CAR [-1,+1]	0.94%		1.15%	
#obs./ std. err.	539/ (0.0027)***	0.0003	199/(0.0693)**	0.0103
Combined CAR [-1,+1]	3.83%		8.64%	
#obs./ std. err.	340/(0.0204)**	0.0309	129/(.6062)*	0.0539

Panel B:

Emerging-market vs. developed-market targets

	Emerging-market targets	Developed-market targets	Difference	P-value (H0: diff=0)
CAR [-1,+1]	1.04%	0.89%	0.15%	
obs. #/ std. err.	44/ (0.074)	141/ (0.059)	(0.011)	0.89

Diversifying vs. non-diversifying deals

	Diversifying deals	Non- diversifying deals	Difference	P-value (H0: diff=0)
CAR[-1,+1]	0.37%	1.35%	-0.97%	
obs. #/ std. err.	81/ (0.006)	104/ (0.007)	(.097)	0.31

Cash only vs. hybrid deals

	Cash-only deals	Non-cash-only deals	Difference	P-value (H0: diff=0)
CAR[-1,+1]	0.91%	0.95%	-0.035%	
obs. #/ std. err.	113/ (0.005)	72/ (0.009)	(0.010)	0.97

Chinese vs. non-Chinese acquirers

	Chinese-acquirer deals	Non-Chinese acquirer deals	Difference	P-value (H0: diff=0)
CAR[-1,+1]	2.24%	0.54%	1.7%	
obs. #/ std. err.	42/ (0.010)	143/ (0.005)	(0.011)	0.14

Table 6

Target R&D and acquirer abnormal returns

The dependent variable is the cumulative abnormal announcement return ("CAR") of the acquirer over [-1, +1] days estimated using market model. OLS estimates are presented, where columns (1) and (2) include all the cross-border M&As (Sample 1 to 4), and columns (3) and (4) include only the cross-border M&As originated from emerging-market (Sample 3 and 4). "Target R&D" is dummy equals one when the target firm has R&D record in the year prior to deal announcement. "Acquirer R&D" is dummy equals one when the acquirer firm has R&D record in the year prior to deal announcement. "EM-acquirer" is dummy equals one when the ultimate parent of the acquirer is from emerging market. All transactions have deal value above 1 million USD, public acquirer and targets, and announced from 1 January 2000 to 31 December 2015, with control acquired. The variables are defined in Appendix A. Significance at 10%, 5%, and 1%, indicated by *, ** and *** with standard errors in parentheses.

	(1)	(2)	(3)	(4)
	Acquirer CAR	Acquirer CAR	Acquirer CAR	Acquirer CAR
	[-1, +1]	[-1, +1]	[-1, +1]	[-1, +1]
Target R&D	0.00376	-0.00868	0.0508***	0.0807***
	(0.00873)	(0.00970)	(0.0191)	(0.0283)
Acquirer R&D		-0.00274		0.00200
		(0.00574)		(0.0168)
EM-acquirer		-0.00267		
		(0.00898)		
EM-acquirer * Target R&D		0.0801**		
		(0.0365)		
Log(acquirer mkt cap)	-0.00458***	-0.00563***	-0.00252	-0.000617
	(0.000911)	(0.00102)	(0.00222)	(0.00291)
Dif(geo distance)		-0.00428**	-0.00111	-0.0207***
		(0.00175)	(0.00325)	(0.00543)
Cash only		0.0126***	0.00323	0.0108
		(0.00467)	(0.0105)	(0.0136)
Dif(revised WLLSV rights)		0.00240**		0.00856**
		(0.00112)		(0.00366)
Constant	0.0424***	0.210***	0.0317	0.216***
	(0.00751)	(0.0459)	(0.0308)	(0.0616)
Year fixed effects	No	Yes	No	Yes
Acquirer industry fixed effects	No	Yes	No	Yes
Observations	1,515	1,420	165	107
R-squared	0.017	0.079	0.052	0.468

Table 7

Target R&D, CEO stay and primary market purpose

OLS estimates are presented, where columns (1) to (5) include the cross-border M&As originated from emerging-market (Sample 3 and 4). The dependent variable for columns (1), (2), (4) and (5) is the cumulative abnormal announcement return ("CAR") of the acquirer over [-1, +1] days, and for column (3) it is the offer premium paid to the target. "Target R&D" is dummy equals one when the target firm has R&D record in the year prior to deal announcement. "CEO stays" is dummy equals one when the CEO of the target firm stays in the target or merged company on leadership role for one than one year after the transaction. "Primary mkt purpose" is dummy equals one when the main purpose of the transaction is to strengthen the primary product market of the acquirer firm as recorded in the database. All transactions have deal value above 1 million USD, public acquirer and targets, and announced from 1 January 2000 to 31 December 2015, with control acquired. The variables are defined in Appendix A. Significance at 10%, 5%, and 1%, indicated by *, ** and *** with standard errors in parentheses.

	(1) Acquirer CAR [-1,+1]	(2) Acquirer CAR [-1,+1]	(3) Offer Premium	(4) Acquirer CAR [-1,+1]	(5) Acquirer CAR [-1,+1]
Target R&D		-0.000372	-13.59		0.000211
		(0.0250)	(42.74)		(0.0305)
CEO stays	0.0116	0.00515	21.49		
	(0.0123)	(0.0127)	(19.66)		
CEO stays * Target R&D		0.105***	-35.35		
		(0.0401)	(70.94)		
Primary mkt purpose				0.0377**	0.000681
				(0.0170)	(0.0301)
Primary mkt purpose * Target R&D					0.348***
					(0.0814)
Log(acquirer mkt cap)	-0.00190	-0.00231		-0.00211	0.000201
	(0.00258)	(0.00273)		(0.00224)	(0.00282)
Cash only		0.00170			0.0109
		(0.0121)			(0.0131)
Diff(revised WLLSV rights)					0.00169
					(0.00344)
Constant	0.0200	0.0634	48.84	0.0227	0.0454
	(0.0213)	(0.0493)	(44.77)	(0.0175)	(0.0466)
Year fixed effects	No	Yes	Yes	No	Yes
Acquirer industry fixed effects	No	Yes	Yes	No	Yes
Observations	137	137	109	167	107
R-squared	0.011	0.352	0.383	0.034	0.510

Table 8

Which firms are the acquirers and the targets in an emerging-market originated cross-border deal?

This table reports coefficient estimates from conditional logit models in equation (2). For the columns (1) and (2), the dependent variable is equal to one for the acquirer in the emerging-market originated cross-border deal (treated), and zero for the matched firms that form the control group (control). For the columns (3) and (4), the dependent variable is equal to one for the target in the emerging-market originated cross-border deal (treated), and zero for the matched firms that form the control group (control). Columns (1) and (3) present the estimated coefficients from conditional logit models using year, industry and size matched control groups of firms in the same year. Columns (2) and (4) present the estimated coefficients from conditional logit models using randomly matched control groups of firms in the same year. In all control groups, the matched or randomly drawn firms are from the same country as the treated firm, and not involved in a cross-border M&A neither as a acquirer nor a target in the recent three years. All transactions have public acquirer and targets, and announced from 1 January 2000 to 31 December 2015, with control acquired. All models include industry fixed effects based on 1-digit SIC code. All firm characteristics are lagged for one year, and definitions are provided in the Appendix. Robust standard errors (clustered at the deal level) are reported in parentheses; *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.

	Acquirers		Targets	
	(1)	(2)	(3)	(4)
	Industry, Size	Random	Industry, Size	Random
Total assets	0.937***	0.598***	0.517***	0.344***
	(0.147)	(0.068)	(0.196)	(0.077)
Operating ROA	2.730***	4.112***	-2.401	-1.802
	(1.019)	(1.197)	(1.913)	(1.277)
Leverage	-0.322	-0.607	0.461	0.228
	(0.400)	(0.505)	(0.556)	(0.320)
Cash flow	0.000	-0.012	-0.003	0.000
	(0.001)	(0.066)	(0.010)	(0.010)
R&D	0.045	-0.103	0.205	0.457
	(0.278)	(0.287)	(0.505)	(0.405)
Interest coverage	-0.000	-0.000	-0.002	-0.001
	(0.000)	(0.000)	(0.003)	(0.001)
Observations	822	783	306	321
Number of treated firms	170	177	62	67
Number of control firms	652	606	244	254
Pseudo R-squared	0.214	0.373	0.0696	0.133

Table 9

Which emerging-market firms acquire foreign targets?

Columns (1) and (2) report coefficient estimates from conditional logit models in equation (2). Column (3) reports coefficient estimates from dif-in-dif model in equation (3). The dependent variable is equal to one for the acquirer in the emerging-market originated cross-border deal, and zero for the matched firms that form the control group. The control group consists of firms that have not been an acquirer or a target in a cross-border deal, and have acquired a domestic firm in the same acquirer country, industry, and matched by year, acquirer market value, and target market value. Columns (1) and (2) present the estimated coefficients from conditional logit models. Column (3) presents the estimated coefficients in the OLS regression. The dependent variable is the acquirer's raw cumulative abnormal return, calculated by subtracting the acquirer returns from the acquirer country's total market index return. All transactions have public acquirer and targets, and announced from 1 January 2000 to 31 December 2015, with control acquired. All firm characteristics are lagged for one year, and definitions are provided in the Appendix. All models include industry fixed effects based on 1-digit SIC code. Robust standard errors (clustered at the deal level) are reported in parentheses; *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.

	(1)	(2)		(3)
	Treatment			
	Industry, Size	Industry, Size		CAR[-1, 1]
Acquirer market value	0.272**	0.287**	Treatment group	-0.006
	(0.124)	(0.122)		(0.009)
Target market value	-0.213**	-0.215**	Target R&D dummy	-0.013
	(0.093)	(0.093)		(0.014)
Target R&D	0.538	0.919	Treatment group * Target R&D dummy	0.059**
	(0.375)	(0.671)		(0.029)
Acquirer R&D	-0.303	0.821**	Acquirer ROA	0.084*
	(0.503)	(0.394)		(0.049)
Target R&D * Acquirer R&D		-2.157**	Acquirer market value	-0.007*
		(0.915)		(0.004)
Acquirer operating ROA	2.681*	2.755*	Target market value	0.007*
	(1.521)	(1.634)		(0.004)
Acquirer leverage	-0.568	-0.424	Top advisor dummy	-0.011
	(0.834)	(0.873)		(0.010)
Acquirer cash flow	-0.004*	-0.004**	Constant	0.028
	(0.002)	(0.002)		(0.023)
Acquirer interest coverage	-0.002	-0.002		
	(0.001)	(0.001)		
Observations	335	335		264
Number of treated firms	102	102		
Number of control firms	233	233		
Pseudo R-squared	0.137	0.164	Adj. R-squared	0.078

Table 10

Long-term effect of foreign acquisition, compared to domestic acquisition

The table report coefficient estimates from acquirer company-year panel regressions. In columns (1) and (3) the dependent variable is the acquirer firms' ROA, and in columns (2) and (4) it is the acquirer firms' number of employees. For the independent variable, "Treat 1" equal to one for the acquirer in the emerging-market originated cross-border deal, and zero for the matched firms that form the control group. "Treat 2" equal to one for the acquirer in the emerging-market originated cross-border deal that acquired a target firm with previous R&D record, and zero for the matched firms that form the control group. The control group consists of firms that have not been an acquirer or a target in a cross-border deal, and have acquired a domestic firm in the same acquirer country, industry, and matched by year, acquirer market value, and target market value. "Post" equals to one in or after the year when the acquirer made the transaction, and zero otherwise. All transactions have public acquirer and targets, and announced from 1 January 2000 to 31 December 2015, with control acquired. All firm characteristics are lagged for one year, and definitions are provided in the Appendix. All models include industry fixed effects based on 1-digit SIC code. Robust standard errors (clustered at the deal level) are reported in parentheses; *, **, and *** denote significance at 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)
	ROA	Number of Employees	ROA	Number of Employees
Post	-0.007**	7.115**	-0.010***	4.965***
	(0.004)	(2.930)	(0.003)	(1.227)
Treat 1	0.025***	2.835***		
	(0.008)	(0.941)		
Treat 1 * Post	-0.017**	5.341*		
	(0.008)	(3.041)		
Treat 2			0.028***	-3.349
			(0.010)	(3.185)
Treat 2 * Post			-0.023**	0.465
			(0.009)	(5.915)
Total assets	-0.001	2.555***	-0.001	2.554***
	(0.001)	(0.695)	(0.001)	(0.697)
Acquirer R&D	0.012***	0.601	0.008	1.981
	(0.004)	(1.563)	(0.005)	(1.912)
Acquirer leverage	-0.005	-0.282	-0.007	-0.139
	(0.016)	(2.220)	(0.016)	(2.185)
Acquirer operating ROA		-3.203		-3.071
		(6.002)		(6.724)
Constant	0.105***	-10.578	0.110***	-9.482
	(0.013)	(6.570)	(0.013)	(6.418)
Observations	3,886	1,543	3,886	1,543
Total firm number	1,145	614	1,145	614
Adj. R-squared	0.020	0.115	0.014	0.081

Table 11

Decentralization difference and acquirer abnormal returns

The dependent variable for columns (1) and (2) is the cumulative abnormal announcement return ("CAR") of the target over [-1, +1] days, and for column (3) it is the offer premium paid to the target. OLS estimates are presented, where columns 1 - 3 include the cross-border M&As takes place in the twelve countries measured in Bloom, Sadun, and Van Reenen (2009). Illustration of decentralization z-score is shown in Figure 2. All transactions have deal value above 1 million USD, public acquirer and target, and announced from 1 January 2000 to 31 December 2015, with control acquired. The variables are defined in Appendix A. Significance at 10%, 5%, and 1%, indicated by *, ** and *** with standard errors in parentheses.

	(1) Target CAR [-1,+1]	(2) Target CAR [-1,+1]	(3) Offer premium
Dif(z-score)	-0.161***	-0.158***	-9.525
	(0.0484)	(0.0563)	(6.078)
Dif(geo distance)		0.0354	7.162***
		(0.0265)	(2.758)
Dif(revised WLLSV rights)		0.0154*	0.766
		(0.00929)	(0.922)
Cash only			9.192*
			(5.080)
Constant	0.259***	-0.288	-43.17
	(0.0236)	(0.260)	(26.67)
Year fixed effects	No	Yes	Yes
Acquirer industry fixed effects	No	Yes	Yes
Observations	405	385	354
R-squared	0.027	0.114	0.133

Table 12

Natural resources

The dependent variable for column (1) is the cumulative abnormal announcement return ("CAR") of the target over [-1, +1] days, and for column (2) it is the target cumulative abnormal announcement return and for column 3 is the offer premium paid to the target. OLS estimates are presented. Columns (1) to (3) tests on dummy variable for natural resource driven deals. All transactions have deal value above 1 million USD, public acquirer and target, and announced from 1 January 2000 to 31 December 2015, with control acquired. The variables are defined in Appendix A. Significance at 10%, 5%, and 1%, indicated by *, ** and *** with standard errors in parentheses.

	(1) Acquirer CAR [-1, 1]	(2) Target CAR [-1, 1]	(3) Offer premium
Natural resource driven dummy	-0.0344**	0.297**	43.25***
	(0.0156)	(0.122)	(12.50)
Log (acquirer mkt cap)	-0.00899**	-0.0542*	
	(0.00392)	(0.0302)	
Constant	0.0931***	0.443**	26.90***
	(0.0328)	(0.181)	(7.691)
R-squared	0.100	0.111	0.143
Observations	92	82	74

Appendix A

Definitions and sources of all variables

Variables	Definition	Source
Deal characteristics:		
Acquirer CAR[-1,+1]	The acquirer's announcement abnormal returns over three-day window estimated by market model, in which total market equity index of the acquirer nation is used as market return. Acquirer nation is from Thomson Reuters SDC Platinum ("SDC")	Datastream
Target CAR[-1,+1]	The target's announcement abnormal returns over three-day window estimated by market model, in which total market equity index of the target nation is used as market return	Datastream
Raw acquirer CAR[-1,+1]	The acquirer's announcement abnormal returns over three-day window, calculated by subtracting total market equity index of the acquirer nation from stock return of the acquirer	Datastream
Combined CAR[-1,+1]	Average of the acquirer CAR[-1, +1] and target CAR[-1, +1], weighted by the market value of acquirer and target. Market value is market capitalization of 14-week prior to the announcement date from SDC	Datastream, SDC
Offer premium	Premium of offer price to target closing stock price 1 week prior to the original announcement date in percentage	SDC
Log(acquirer mkt cap)	Logarithm of the acquirer's market capitalization 14-week prior to the deal announcement	SDC
Log(target mkt cap)	Logarithm of the target's market capitalization 14-week prior to the deal announcement	SDC
Cash only	Dummy variable equals one if the deal is paid by cash only	SDC
CEO stays	Dummy variable equals one if the CEO of the target firm stays within one year post to deal announcement	Hand collected
Primary mkt purpose	Dummy variable equals one if the purpose of the deal is to strengthen the acquirer's primary product market according to the purpose code in SDC	SDC
Natural resource driven dummy	Dummy variable equals one if the purpose of the deal is to acquire natural resources	Hand collected
EM-acquirer	Dummy variable equals one if the ultimate parent company of the acquirer is from emerging market, as defined by MSCI emerging-market index	SDC
Top advisor	Dummy variable equals one if the acquirer's financial advisor ranks among the top 5 globally in terms of total number of deals in the same year	SDC
Firm characteristics:		
Total assets	The natural logarithm of total assets in millions in the year prior to deal announcement	Compustat Global
Operating ROA	EBITDA scaled by total assets, in the year prior to deal	Compustat

	announcement	Global
Cash flow	Income before tax plus depreciation and amortization, scaled by plant and equipment, in the year prior to deal announcement	Compustat Global
Investment ratio	Capital expenditure scaled by net property, plant and equipment, in the year prior to deal announcement	Compustat Global
Interest coverage	Operating income before depreciation scaled by interest and related expense, in the year prior to deal announcement	Compustat Global
R&D ratio	R&D expense scaled by total assets, in the year prior to deal announcement	Compustat Global
Intangible assets	Total intangible assets scaled by total assets, in the year prior to deal announcement	Compustat Global
3-year earnings volatility	Standard deviation of operating income after depreciation scaled by total assets in the three year window before deal announcement	Compustat Global
MTB ratio	Market capitalization scaled by total assets subtracted by total liabilities	Compustat Global
Target R&D	Dummy variable equals to one if target has positive R&D record in the year prior to deal announcement	Compustat Global
Acquirer R&D	Dummy variable equals to one if acquirer has positive R&D record in the year prior to deal announcement	Compustat Global
Country characteristics:		
Log(geo distance)	Logarithm of the geographical distance between the capitals of acquirer and target nation	CEPII, Banque de France
Dif(revised WLLSV rights)	Difference of revised WLLSV rights indices between the acquirer and target nation. The revised WLLSV rights indices is revised by Spamann (2008) to correctly measure anti-director right in 46 countries.	Spamann, 2008
Dif(z-score)	Difference of decentralization z-score between the acquirer and target nation.	Bloom, Sadun, and Van Reenen (2012)