THREE ESSAYS ON CROSS-BORDER MERGERS AND ACQUISITIONS IN EMERGING MARKETS

BY

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ABSTRACT

Although cross-border Mergers and Acquisitions (M&As) in emerging markets has reached record levels in recent years, systematic knowledge about these M&As is almost non-existent in the existing literature. In this thesis, we fill this gap by examining the cross-border partial acquisitions in 22 emerging countries between 1990 and 2007. The thesis contains three essays. The first essay examines how information asymmetry has impacted acquisition deals, such as acquisition premium, payment method, and majority control. We find that a high level of information asymmetry results in the acquiring firms paying a higher premium in order to gain majority control and private information resources in the target firms. We construct a three-stage simultaneous equation model to control for endogeneity among acquisition premium, payment method, and the degree of control and show that our results remain robust.

The next two essays focus on the target firm's long-term performance and risk in the post-acquisition period, respectively. We find that, in contrast to the comparable domestic acquisitions, target firms in cross-border acquisitions demonstrate better operating performance than their rival firms before the acquisitions, but there is no significant improvement in their post-acquisition performance. Thus, we conclude that domestic acquisitions are conducted for corporate control while cross-border acquisitions are undertaken to gain market entry. We then show that cross-border acquisitions significantly reduce the target firm risk, while domestic acquisitions increase the target firm risk. This result can impact the risk-return trade-off of these partially acquired target firms. Our main conclusions are robust across time periods, acquirers in developed and emerging markets, endogeneity and sample selection problems, and methodological choices, including bootstrap. The thesis results have major implications for potential target and acquiring firms, domestic and foreign investors, and policy makers in emerging countries.

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Introduction

Cross-border Mergers and Acquisitions (M&As)¹ have increased substantially in the last few years. According to the World Investment Report (WIR, 2008) published by the United Nations Conference on Trade and Development (UNCTAD), cross-border M&As increased to \$1,637 billion U.S. in year 2007, which is 21% higher than the previous record in 2000. Although the majority of the cross-border M&As was still undertaken among developed countries, more and more acquisitions are taking place in the emerging countries (WIR, 2008).

Existing M&A literature predominantly focuses on the transactions within the developed markets/countries. We have very little knowledge about cross-border acquisitions involving firms in emerging markets². In this study, we fill the gap in the literature by examining the inward cross-border M&As in emerging countries (where the target firms are from the emerging markets and the acquiring firms are from either developed or other emerging market countries). Figure 1 outlines the research scope of the study³. Our study also includes domestic M&As (i.e., within country or in-border M&As) in the emerging markets as a comparison (i.e., control sample) for the cross-border M&A sample for hypotheses testing. In addition, when methodology warrants it, we also use a non M&A domestic company sample as a control sample.

¹ Cross-border M&As are defined as the corporate merger and acquisition transactions involving the target and the acquiring companies, which are headquartered in two different countries.

² The term “emerging market” is first used by the World Bank economist, Antoine van Agtmael, in the 1980s. A country is deemed “emerging” if its per capita GDP falls below a certain hurdle that changes over time. The basic idea behind the term is that these countries “emerge” from less-developed status and join the group of developed countries. In this study, we follow the categorization in the Morgan Stanley Emerging Market Index, which contains 25 countries that include Brazil, Russia, India, China, and Mexico.

³ Very recently, a new trend has appeared in global business where emerging market firms start expanding into developed markets via cross-border M&As. However, since the phenomenon is very new and the sample size is still very small, we do not examine this topic in our study.

The thesis includes three independent but interlinked essays. Each essay focuses on a unique aspect of the cross-border acquisitions in the emerging markets.

Figure 1. Research Scope of the Thesis

Figure 1 outlines the research scope of the thesis. We focus on the cross-border acquisitions of the target firms in emerging markets. More specifically, the cross-border acquisitions include the target firms that are emerging market firms, and the acquiring firms are either developed country firms or other emerging market firms. We also use the domestic (in country) M&As of emerging country firms as a benchmark to compare with the cross-border M&A sample (the gray shaded area). The patterned areas are not studied in the essay.

		Acquirers	
		Developed Markets	Emerging Markets
Targets	Developed Markets	Domestic (in country) acquisitions in developed markets	Emerging market firms acquire developed market firms
		Developed market firms acquire other developed market firms	
	Emerging Markets	Developed market firms acquire emerging market firms	Domestic (in country) acquisitions in emerging markets
			Emerging market firms acquire other emerging market firms

Our research on the emerging market cross-border M&As is motivated by several reasons. First, cross-border M&As have been growing significantly in the emerging countries. They have achieved a record high transaction value of \$127 billion U.S. in 2006, a 35% increase from the

2005 value (WIR, 2007)⁴. Many believe that emerging countries will continue to be the most attractive location for cross-border M&As in the coming years.

Second, understanding the emerging market M&As will make an important contribution to the literature and the business practices. The roughly 150 countries not regarded as developed are not only economically large but account for the majority of the world population, land mass, and natural resources. Some leading countries in the emerging market – specifically Brazil, Russia, India, and China – are expected to play an increasingly important role in the trend towards globalization and in contribution to world economic growth. For example, according to UNCTAD's World Investment Prospects Survey (WIR, 2007), the four leading emerging countries – Brazil, Russia, India, and China – are ranked in the top five most attractive cross-border M&A destinations in the world⁵.

Third, although we have seen the increasing importance of emerging economies and the growing trend of cross-border M&As in these countries, the academic research on these topics has not kept pace with this development. Much of the research in finance still focuses on the M&As in developed markets, in particular the U.S. (both in country and cross border) and other G-7 countries. The scarcity of studies on emerging markets demands more academic research on the topic.

Fourth, emerging markets significantly differ from developed markets in many areas; these differences include accounting transparency, liquidity, corruption, volatility, governance, taxes,

⁴ Among these transactions, the majority are actually partial acquisitions. According to SDC Platinum database, 75% of the 3,000 completed cross-border acquisitions of publicly listed target firms in emerging markets (between 1990 and 2007) are partial acquisitions.

⁵ United States is the only developed country ranked in the top-five list (it is ranked as the third most attractive foreign investment country following China and India).

and transaction costs⁶. These differences challenge existing finance theories and have resulted in the creation of new models (Bekaert and Harvey, 2002; Bruner, Conroy, Estrada, Kritzman, and Li, 2002). Studying emerging market cross-border M&As may allow us to test these models empirically and thus contribute new insights to the existing literature.

Fifth, most of the research on emerging markets uses aggregated data at the country/industry level. Relatively little work has used firm or transaction level data (Bekaert and Harvey, 2002). We conduct a comprehensive firm level study on corporate M&As that covers about 8,000 transactions in 22 emerging countries between 1990 and 2007. We believe this is one of the first studies to comprehensively examine the issues of cross-border M&As in the emerging markets⁷.

⁶ The literature shows three main aspects that distinguish the emerging markets from developed markets. First, emerging markets have less information transparency. Bruner, et al. (2002) suggest that the variations in accounting principles, weak legal systems to ensure the integrity of accounting information, and lack of sophisticated financial analysts may result in a poor information environment in the emerging markets. They suggest that asset valuation and financial investments are more likely to be subject to asymmetric information in the emerging markets. Second, emerging markets have relatively inefficient capital markets. It has been found that emerging market equity returns have a higher serial correlation than developed market returns. This serial correlation may be the result of slow adjustment to market information (Harvey, 1995; Kawakatsu and Morey, 1999). Bhattacharya et al. (2000) show that emerging market returns are less likely to be impacted by company-specific news announcements than developed market returns. There is also empirical evidence showing that insider trading occurs well before the release of information to the public. Thus, it is generally concluded that emerging markets are relatively less informational efficient than developed markets. Third, emerging markets are more segmented and thus have higher volatility and expected returns. Many studies have shown that segmented financial markets have an impact on security pricing (e.g., Errunza and Losq, 1985; Eun and Janakiramanan, 1986; Alexander et al., 1988; Errunza et al., 1998). These papers argue that in a completely segmented market, the local market volatility will be high due to the lack of diversification and financial assets will be priced against the local market return. The local expected return is a product of the local beta times the local market risk premium. Given the high volatility of local returns, it is likely that the local expected return is high. Convergence of the emerging market into the global market may impact the risk and expected return of the emerging market securities. In addition, emerging market convergence may also increase their correlation with the global market (Bekaert and Harvey, 2002), thus the benefits of global diversification may disappear over time.

⁷ Academic research on the cross-border acquisitions in emerging markets is very limited. To the best of our knowledge, there is only one study that has examined the wealth impact of cross-border acquisition announcements on the acquiring and target firms in 17 emerging countries (see Chari et al., 2004). Our study is significantly different from their study as we focus on partial acquisitions and the unique characteristics of the emerging markets, such as information asymmetry, new market entry, and firm volatility. Their primary focus is short-term event study on cross-border acquisition announcements in emerging markets.

Finally, the majority of the cross-border M&A studies focus on the acquiring firm perspective. Our analysis is directed more on the target firms' perspective in the emerging market (since we focus on partial acquisitions). Long-term studies on target firms are rare since the target firms are usually delisted from the public market after being acquired. Our study provides a unique contribution to the literature by focusing on a sub sample of target firms that are only partially acquired in cross-border M&As⁸. This allows us to track the long-term impact of acquisitions on target firms' operating performance, stock performance, and risk characteristics. We believe our study will have strong implications for policy makers in the emerging markets to comprehensively review the impact of foreign acquisitions on their domestic firms and economies.

The motivations explained above lead us to explore the three main aspects of the cross-border M&As in the emerging markets: acquisition premium, long-term performance, and risk changes of the target firms. Accordingly, the thesis contains three independent but interlinked essays.

The first essay examines the issue of information asymmetry in the cross-border acquisition. We particularly test the impact of information asymmetry on the acquisition premium paid to the target firms in the emerging markets. We find that the target firms that are characterized by higher information asymmetry receive a higher acquisition premium. We claim that acquiring firms pay a higher premium in order to gain majority control of the target firm to mitigate the

⁸ Some researchers have examined the partial acquisitions in the U.S. domestic M&As. For example, Choi (1991), Spencer, Akhigbe and Madura (1998), Spencer, Akhigbe and Madura (2001), and Akhigbe, Madura and Spencer (2004). However, there are very few studies on cross-border partial acquisitions, particularly in the emerging market firms.

information asymmetry problem; this higher premium also allows them to gain access to the unique information resources in the target firms.

The second essay compares the motivations of the cross-border and domestic acquisitions. Particularly, we test the market entry hypothesis for the cross-border acquisitions. Compared to the target firms in domestic acquisitions, we find that the target firms in cross-border acquisitions have better performance in the pre-acquisition period but there is no significant change in either their performance or ownership structure in the post-acquisition period. Based on our evidence, we argue that foreign companies use cross-border acquisitions as a market entry strategy to enter the emerging markets; in contrast, domestic acquirers look for poorly performing firms as the takeover target and the target firms in domestic acquisitions experience significant improvement in operating performance and radical changes in ownership structure after the acquisition. This evidence suggests that domestic acquisitions serve as a market for corporate control to discipline the poorly performing firms and managers.

Finally, we examine the impact of cross-border acquisitions on the target firm risk. It is important to understand the impact of firm risk, as emerging market firms are usually considered to have a much higher risk than the developed market firms. Changes in firm risk can significantly affect the investment returns and portfolio diversification effect for the investors. Thus, our study can provide useful implications to the investors who are interested in investing in emerging market firms. In addition, most studies focus on the performance issue and announcement effect of cross-border mergers and acquisitions. However, we have little knowledge about why these foreign acquisitions affect the valuation and performance of the target firms. We believe that our investigation of changes in risk may allow us to separate the

valuation impact that arises from the possible synergistic cash flow benefits associated with acquisitions and the changes in risk characteristics of the target firms in the post-acquisition period. In the third essay, we find that, compared to the domestic acquisitions, cross-border acquisitions significantly reduce the target firm's total risk and downside risk in the long term after the acquisitions. The risk reduction is mainly due to the better protection of investor's rights in the acquiring countries. We also find that risk reduction is associated with the improvement of long-term stock performance in the target firms. Thus, investors of the partially acquired target firms in the emerging markets benefit from the cross-border acquisitions in terms of reducing their investment risk and improving investment returns after the acquisitions. To summarize, Figure 2 illustrates the key topics investigated in the thesis.

The thesis is organized as follows: in the next section, we introduce the sample and descriptive analysis. After that, we present the three independent essays. In each essay we first introduce the background and the motivation. Then we review the relevant existing literature and present our research hypotheses. Next, we introduce the specific sample and methodologies we use to test these hypotheses followed by empirical results. Finally, we provide discussions and conclusions at the end of each essay.

Figure 2. Research Topics of the Thesis

Figure 2 summarizes the three research topics in the thesis. First, we examine the relationship between acquisition premium and information asymmetry in the cross-border acquisitions. The sample includes both full and partial acquisitions in emerging markets. Second, we focus on the partial acquisitions by examining the pre-acquisition performance and long-term performance of the target firms after the partial acquisitions in the emerging markets. Finally, we investigate the impact of cross-border acquisitions on a target firm's risk and risk-adjusted investment returns after the partial acquisitions. In all three studies, we use domestic acquisitions as well as not-acquired emerging market firms as benchmark samples to compare with the cross-border acquisitions. (In the figure below, boxes outlined in solid lines focus on both full and partial acquisitions, while boxes with dashed lines focus only on partial acquisitions. Gray-shaded boxes denote the controlling samples in the study.)

Data and Sample Description

As noted in the introduction, we have three samples of firms in each emerging market: target firms acquired by foreign firms, target firms acquired by domestic firms, and not-acquired firms.

The M&A sample is collected from the SDC Platinum database. We identify the completed acquisitions of the target firms in 22 emerging countries⁹ over the period from 1990 to 2007. As private firms do not disclose financial information to the public market, our sample only consists of the target firms that were publicly listed on the stock markets before the transaction. Similarly, we collect data on completed domestic (in country) acquisitions of public target firms as a comparison sample to the cross-border sample. Finally, we also collect a controlling sample of firms that were not acquired by any firm in the sampling period. The preliminary descriptive statistics of the acquisition sample are presented in Table 1.

According to Table 1, the population number of the completed M&As of publicly listed target firms in the 22 emerging countries is 2,999 in the 18-year period (1990 – 2007). Correspondingly, there are 5,102 domestic acquisitions in the sampled emerging countries.

⁹ We selected the emerging countries from the Morgan Stanley Emerging Market Index. One problem of adopting such an index is that, over time, some countries may be maintained in the index only for continuity, even though these countries may now have become developed. In such cases, we excluded these countries (such as Taiwan, South Korea and Israel) from the sample. The final list includes 22 countries, which we believe is a good representation for the emerging economies. These countries are: India, Brazil, Poland, Thailand, Indonesia, South Africa, Argentina, Malaysia, Czech Republic, China (mainland), Mexico, Hungary, Philippines, Chile, Peru, Russia, Turkey, Colombia, Egypt, Pakistan, Jordan, and Morocco. In the later stage of data analysis, some countries proved to have too few observations because of missing values. In these cases, we decided to include only those countries which have sufficiently large number of cross-border M&As (e.g., more than 10 observations in the sample period).

Table 1. Number of Completed Cross-border M&As by Year and Country for Publicly Listed Target Firms (with Comparison to the Corresponding Domestic M&As)

Table 1 shows the number of completed takeover transactions in 22 emerging countries between 1990 and 2007. We report both the number of completed transactions and withdrawn transactions by the domestic acquisitions and cross-border acquisitions separately. Overall, there are about 2,999 cross-border acquisitions and 5,102 domestic acquisitions of publicly listed target firms in our study.

Target Countries	Domestic M&As					Cross-border M&As					Grand Total
	Completed	%	Withdrawn	%	Domestic Total	Completed	%	Withdrawn	%	Cross-border Total	
India	1153	95.8%	51	4.2%	1204	547	96.1%	22	3.9%	569	1773
Brazil	291	94.5%	17	5.5%	308	290	95.4%	14	4.6%	304	612
Poland	173	95.6%	8	4.4%	181	266	95.7%	12	4.3%	278	459
Thailand	313	92.9%	24	7.1%	337	210	90.1%	23	9.9%	233	570
Indonesia	98	86.0%	16	14.0%	114	168	90.3%	18	9.7%	186	300
South Africa	417	93.1%	31	6.9%	448	172	92.5%	14	7.5%	186	634
Argentina	46	97.9%	1	2.1%	47	160	97.6%	4	2.4%	164	211
Malaysia	735	87.8%	102	12.2%	837	141	89.2%	17	10.8%	158	995
Czech Republic	104	95.4%	5	4.6%	109	140	94.6%	8	5.4%	148	257
China	791	92.3%	66	7.7%	857	125	88.0%	17	12.0%	142	999
Mexico	147	88.0%	20	12.0%	167	109	86.5%	17	13.5%	126	293
Hungary	90	91.8%	8	8.2%	98	115	95.0%	6	5.0%	121	219
Philippines	188	90.8%	19	9.2%	207	111	94.1%	7	5.9%	118	325
Chile	67	94.4%	4	5.6%	71	106	94.6%	6	5.4%	112	183
Peru	53	100.0%	0	0.0%	53	78	96.3%	3	3.7%	81	134
Russia	224	97.8%	5	2.2%	229	68	95.8%	3	4.2%	71	300
Turkey	75	93.8%	5	6.3%	80	63	90.0%	7	10.0%	70	150
Colombia	52	98.1%	1	1.9%	53	49	94.2%	3	5.8%	52	105
Egypt	46	95.8%	2	4.2%	48	28	82.4%	6	17.6%	34	82
Pakistan	8	100.0%	0	0.0%	8	24	96.0%	1	4.0%	25	33
Jordan	3	100.0%	0	0.0%	3	15	100.0%	0	0.0%	15	18
Morocco	28	100.0%	0	0.0%	28	14	100.0%	0	0.0%	14	42
Grand Total	5102	93.0%	385	7.0%	5487	2999	93.5%	208	6.5%	3207	8694

Since our study focuses on partial acquisitions in the emerging countries, we also split the overall sample above by ownership acquired in the M&A transactions. Following the traditional literature, we define partial acquisitions by the percentage of ownership acquired in the cross-border M&A transaction less than 100% and whether the target firm continues listing on the public market after the acquisition (by checking the stock trading price in the DataStream database). There are about 3,939 completed domestic partial acquisitions and 2,372 completed cross-border partial acquisitions in the sampling period.

In the study, we also collect historical stock price information and accounting information for each target firm from the DataStream (and Worldscope) database. The daily stock price data of the sample firms is collected for three years before and after the acquisition date¹⁰, while the accounting data is collected on an annual basis for the same time period. Deal characteristics variables are collected from the SDC Platinum database and country characteristics variables are collected from various sources, such as World Development Indicator database and CIA World Fact Book. Since some variables are unique to the individual essay topic, we introduce the specific variables in the separate essays. The list and definitions of the variables can be found in the Appendix of each essay.

¹⁰ We restrict the three-year period as the missing information is dramatic in a longer time period in the emerging market database.

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Essay One. Information Asymmetry and Acquisition Premiums in Domestic and Cross-border Mergers and Acquisitions in Emerging Markets

Abstract

In this essay, we test and find a strong positive relationship between information asymmetry and acquisition premium in the acquisitions of emerging market firms. The results are based on a large sample of domestic and cross-border acquisitions in 20 emerging countries between 1990 and 2007. We also confirm that under higher level of information asymmetry, acquiring firms tend to use lower cash payments (i.e., higher stock payments) and they are more likely to acquire majority control (>50%) in the target firms. After considering the endogenous relationship among acquisition premium, payment method, and majority control based on a simultaneous equation model, the positive relationship between asymmetric information and acquisition premium continues to exist. We also conduct various robustness tests with respect to the choice of information asymmetry proxy, estimation period and the correction of sample selection bias and find that the results do not change. We argue that acquiring firms pay high premium in order to gain majority control in the target firms to mitigate the information asymmetry problem and to access more valuable private information resources that are not accessible to public investors.

Introduction

In the last decade, we have witnessed a significant increase in corporate mergers and acquisitions (M&As) in both developed and developing countries. According to the World Investment Report (WIR, 2007) published by the United Nations Conference on Trade and Development (UNCTAD), cross-border M&As in the emerging markets have achieved a record high

transaction value of US \$127 billion in 2006, a 35% increase from the 2005 value (WIR, 2007). The four leading emerging countries – Brazil, Russia, India, and China (BRIC) – are ranked in the top list of most attractive cross-border M&A destinations in the world (WIR, 2007).

Emerging markets are characterized by high information asymmetry and this problem is compounded in cross-border acquisitions where potential foreign buyers may know even less about the value of the target firms (Balakrishnan and Koza, 1992; Reuer and Koza, 2000). However, the existing literature provides little empirical evidence and knowledge about the impact of asymmetric information in corporate takeovers and its implication on takeover premiums in the emerging markets. Since target firms and takeover deals are more likely to incur high information asymmetry in emerging markets, they represent an ideal choice for such a study. We also believe that ours is the first comprehensive paper which directly tests for the relationship between information asymmetry and takeover premiums using a large sample of emerging market takeovers.

More specifically, we examine asymmetric information in the context of the acquisition premium paid to the target firms in the emerging markets. Our interest originates from the observation that there are two competing, but yet somewhat untested hypotheses about the relationship between asymmetric information and premiums. A somewhat traditional hypothesis suggests that information asymmetry deters corporate acquisitions and makes acquisitions unattractive. Information asymmetry also causes high investigation costs in the due diligence process. Thus, acquiring firms would either not acquire or, when they acquire, would not be willing to pay a high premium due to this high information asymmetry.

However, an interesting and competing hypothesis is presented by other studies (Williamson, 1971 and 1983; Williamson, Wachter, and Harris, 1975; Teece, 1980) which suggest that under a high asymmetric information environment, it is costly to monitor the target firm operation and prevent the opportunism of the target firm management. Thus, it is essential for an acquiring firm to obtain control over the target firm to clarify the property rights between the parties. This hypothesis predicts that the acquiring firm would attempt to gain corporate control but may have to pay a higher acquisition premium to achieve it.

There may be an additional benefit to gaining control in a high asymmetric information environment. Acquiring firms may pay a higher premium to obtain valuable private information that is not accessible to general public investors. This view is based on the interpretation of the way information is disseminated in the stock markets. Roll (1988) proposes two ways of information dissemination in the stock markets. First, stock market prices reflect the public information available to the general investors; second, the stock market prices reflect private information through the trading activity of the investors who gather and analyze private information about the companies. Roll (1988) claims that the generally low explanatory power of assets pricing models indicates the importance of trading private information in the stock market. Durnev, Morck, Yeung and Zarowin (2003) further demonstrate that a firm's idiosyncratic volatility is associated with higher efficiency in its market price, which reveals the fundamental value and future earning prospects of the company. In other words, the channel of information dissemination through the trading of private information can significantly improve the price discovery mechanism in the stock market. Based on this school of thought, it is possible that firms with higher information asymmetry (from the view point of public investors) may

look more attractive to bidding firms as they can obtain valuable private information resources that are not accessible to general investors. This may lead bidding firms to pay higher premiums to gain control in the target firms that have high information asymmetry.

In this essay, we test these two hypotheses based on emerging market takeovers. Emerging market firms are a natural choice for this study as they have a more serious information asymmetry problem than developed market firms (Bruner, et al., 2002; Antras, 2003; La Porta, Lopez-de-Silanes, Sheilfer and Vishny, 1998). We believe our work will add significant value to the literature for the following reasons. First, to the best of our knowledge, no empirical study has directly tested these two hypotheses. From the existing literature, we have no clear answer about the impact of information asymmetry on the acquisition premium and the corporate control in firm takeovers. Second, this is one of the largest scaled studies on firm takeovers in emerging countries ever undertaken. The study includes both domestic and cross-border takeovers in 20 emerging countries from 1990 to 2007. This allows us to test alternative proxy for information asymmetry and to provide robust empirical evidence. Third, our study is based on transaction and firm level data, while most studies on emerging markets usually rely on aggregated country or industry level data (Bekaert and Harvey, 2002). We believe this firm level granularity can bring more insights to the proposed research question. In addition, we conduct robustness tests by adopting rigorous analysis, including correcting for sample selection bias, endogenous bias, cross-country heterogeneity, etc. Finally, we believe our study also has strong economic significance in today's global business since it provides valuable implications to policy makers and target firms in the emerging countries as well as the future acquirers in these markets.

The organization of the essay is as follows: first we review the relevant literature on information asymmetry and corporate takeovers. In addition, we review the measure of asymmetric

information and the factors affecting acquisition premium in the literature; next, we introduce the sample and methodology and show the empirical results. Finally, we conclude the essay with future research directions.

Literature Review

Information Asymmetry and Corporate Takeovers

Derived from the contract theory¹¹ in economics, information asymmetry refers to economic situations where one party in a transaction has more or better information than the other.

Information asymmetry commonly exists in corporate acquisitions. It arises from both sides of transactions. On one hand, the target firms have private information about their own intrinsic value unknown to the acquiring firms; on the other hand, the acquiring firms have private information about their own ability and the potential synergy to be created from the acquisition and corporate control.

Information asymmetry has a significant impact on the decision of corporate takeovers in all markets. Chen and Hennart (2004) suggest that information asymmetry can exist in both ex ante screening of the takeover targets and ex post enforcement of takeover contracts. Due to asymmetric information, self-interested target firms have an incentive to misrepresent the value of their firms (Ravenscraft and Scherer, 1987). Thus, the acquiring firm must incur extra costs to identify “lemons” and guard against overpaying for the target firm. In addition, the acquiring firm also needs to deal with ex post opportunism (i.e., entrenchment of combined firm value by

¹¹ Leading research work in this field includes: Coase (1937), Akerlof (1970), Spence (1973), Alchian, Crawford and Klein (1978), Williamson (1979) and Grossman and Hart (1986).

target firm managers). Successful integration of the combined firms requires the full cooperation of the target firm (Balakrishnan and Koza, 1992; Chi, 1994). Chen and Hennart (2004) propose that partial acquisitions can create a hostage effect that facilitates ex ante screening of targets and ex post enforcement of contracts. More specifically, the willingness of the seller to accept partial acquisition signals the ex ante quality of their firms, and the remaining equity that they keep posts a bond to restrain them from committing ex post opportunism. They found evidence to support the partial acquisition hypothesis: in the Japanese cross-border acquisitions of U.S. targets, the firms with high information asymmetry (measured by R&D and advertising intensity) were more likely to be partially taken over.

Asymmetric information also plays an important role in the post-acquisition integration process. Higher information asymmetry of the target firm induces higher transaction costs in terms of monitoring the target managers' opportunism and enforcing takeover contracts in the combined firm. High transaction costs reduce the productivity of combined firms and causes conflict of interest for commonly shared property rights between the two parties. High information asymmetry (with non-controlling ownership) also depresses the motivation of the acquiring firms to transfer new technology and specialized assets to the combined firm. Many theoretical studies have shown that acquisition of majority control is essential in the environment of incomplete contract and high information asymmetry (Coase, 1937; Alchian, et al., 1978; Williamson, 1979; Grossman and Hart, 1986). By controlling the majority ownership, the acquiring firms can increase their monitoring power and reduce the negotiation costs between the parties. Majority control also entitles the acquiring firm to achieve many property rights that are costly to define in a joint entity. In the emerging market context, we expect the information asymmetry problem to be more serious than that in the developed market (Antras, 2003; La Porta et al., 1998). Thus,

acquiring majority control is very important for the bidding firms in these markets, especially in cross-border acquisitions. Chari et al. (2004) have examined the impact of acquiring majority control on the target firm and the acquiring firm's stock returns in the cross-border acquisitions in emerging markets. Consistent with the information asymmetry hypothesis, they find that the acquisition of majority control in the emerging markets is associated with significant increases in the stock returns of the acquiring firm and target firm. This finding confirms that acquiring majority control is beneficial to the shareholders in the presence of high information asymmetry¹².

A few studies have also examined the impact of asymmetric information on the choice of payment method (either cash or stock) by the acquiring firms (e.g., Hansen, 1987; Fishman, 1989; and Eckbo, Giammarino, and Heinkel, 1990). The bidding firm is particularly concerned about overpaying the target firm under high information asymmetry. If the payment is made in cash, the target firms will accept the offer only when the offer value exceeds the firm's intrinsic value (known to the target but not known to the bidder). The risk of overpayment is much higher in this case. If the payment is made in the bidding firm's stock, the value of the offer is determined by the combined value of the bidder and the target as well as the synergy resulting from the takeover. Because of the "contingent-pricing effect" (Hansen, 1987) in the stock payment, the cost of overpayment is reduced, as any of such cost will be absorbed by the combined firms and,

¹² Our study is different from Chari et al. (2004), as we focus on the acquisition premium instead of announcement effect on stock returns. We believe the acquisition premium can directly reflect the management decision and negotiation outcome between the target and acquiring firms in firm takeovers. In addition, although they attribute their results to the generally high information asymmetry level in the emerging markets, they didn't measure the asymmetric information in their study and they didn't test the direct link between asymmetric information and the stock returns. In addition, their sample only contains the cross-border acquisitions by developed country acquirers in the emerging markets; we provide a more comprehensive sample of cross-border acquisitions from both developed and developing countries. Moreover, we also include a large sample of domestic acquisitions to compare with the cross-border acquisitions. Thus, we believe our study can provide a unique contribution to the existing literature.

thus, partly shared by the target firms. Therefore, one would expect that higher information asymmetry will lead to lower cash payment or more share swaps in firm takeovers.

Although researchers have been aware of the importance of information asymmetry in corporate takeovers, the existing literature contains little empirical evidence on this. Among the few empirical studies in this subject, Chen and Hennart (2004) only examine the impact of asymmetric information on the choice of partial acquisition over full acquisition. They conclude that higher asymmetric information leads to a higher tendency to undertake partial acquisitions. Chari et al. (2004) find positive announcement returns of the target and the acquiring firms in the emerging market takeovers. However, they do not specifically measure information asymmetry or test its impact on the announcement returns. Instead, they generally relate their results to the high asymmetric information level in those emerging countries. Essentially, current literature does not have any direct evidence about asymmetric information and its impact on acquisition premium, payment method, and corporate control in emerging market takeovers.

In this essay, we focus on acquisition premium in firm takeovers. Since asymmetric information is a key component of the study, the next section focuses on the literature that deals with measures of information asymmetry.

Measures of Information Asymmetry

While the concept of information asymmetry is now well established; there are difficulties in establishing quantitative measures of information asymmetry. As a consequence, researchers have used various proxies for information asymmetry. For example, Chen and Hennart (2004)

used R&D and advertising intensity as proxies for information asymmetry. They argue that higher R&D and advertising expenses lead to more intangible investments that are difficult to evaluate by outsiders. Thomas (2002) and Krishnaswami and Subramaniam (1999) use financial analyst data and they argue that analyst coverage and forecast error are related to the level of information asymmetry in a company. Dierkens (1991) measures firm information asymmetry by using the idiosyncratic risk in the firm's stock returns and suggests that the idiosyncratic risk is the portion of the firm's uncertainties that are not shared with the public market. Thus, we expect that a firm facing severe information asymmetry is more likely to have large idiosyncratic volatility.

It is also intuitive that takeovers can be influenced by two-sided asymmetric information, as both the target firms and the acquiring firms have their own private information (Hansen, 1987). It is possible to estimate this by using distance measures between the acquiring and the target firms. We argue that increased geographic distance leads to a higher cost in collecting and analyzing information. This creates asymmetric information at the same time for both the target firms and the acquiring firms. In addition, long distance also makes it costly to monitor the management performance in the target firms (Kang and Kim, 2008), which leads to further information asymmetry after the acquisitions.

Based on these arguments, we adopt two measures of information asymmetry. In the main analysis, we use idiosyncratic risk as a measure of a target firm's asymmetric information; in the robustness test, we use geographic distance between the capital cities of the acquiring and target countries as a measure of two-sided information asymmetry. Because of the limitation of

financial data sources on emerging market firms, we cannot use other asymmetric information variables – such as R&D expenses or analysts' coverage – as suggested in the literature¹³.

Factors Affecting the Acquisition Premium

Previous literature has found several groups of factors that affect the acquisition premium in the developed market takeovers. We do not intend to re-test these factors in the emerging market sample. Our main focus in the essay is to test the impact of asymmetric information on the acquisition premium. Thus, by reviewing the relevant literature, we control these confounding factors in the model and emphasize the impact of information asymmetry.

The takeovers in developed markets show that acquiring firm characteristics and actions may impact the acquisition premium. Barger, Schlingemann, Stulz and Zutter (2007) compare the acquisitions paid by private and public acquirers. They find that private acquiring firms tend to pay a lower premium than publicly listed acquiring firms. Betton and Eckbo (2000) examine the toe-hold acquisitions and find that pre-acquisition ownership by the bidding firm in the target firm reduces the competition from other bidding firms, thus it reduces the premium paid to the target firm. Chang and Rosenzweig (2001) find that the previous acquisition experience of the acquiring firms in the target market also reduces the acquisition premium.

Second, the acquisition premium also varies by the specific terms in acquisition deals. Andrade et al. (2001) find the percentage payment in cash to be positively related to the target firm

¹³ We do not have access to the financial analyst data for the emerging market firms. In addition, some firm level financial measures, such as R&D expenses and advertising expenses, have a large number of missing values in the Worldscope database for the emerging market firms.

premium: acquiring firms tend to pay higher premiums in tenders offers (Jensen and Ruback, 1983; Jarell et al., 1988) and in the presence of competing bidders (Betton and Eckbo, 2000).

Finally, in the context of cross-border acquisitions, country-level characteristics can also affect the acquisition premium. Based on a multi-country study, Weitzel and Berns (2006) find that acquisition premium is inversely related to the target country's corruption. Thus they conclude that foreign acquirers can buy discounted assets in the highly corrupt countries. In addition, they also control many country-level variables that they argue may have an impact on the acquisition premium (including economic development, legal system, cultural distance, official language, exchange rate, etc.¹⁴).

Based on this literature survey, we include these control factors in our analysis so that we can isolate the unique explanatory power of information asymmetry on the acquisition premium. In addition to the three groups of variables defined above, we also include target firm characteristics (such as firm size, growth potential, leverage, and pre-acquisition performance) and more deal characteristics (such as transaction size, and industry relatedness of target and acquiring firms) to check the robustness of the results. Specific measures of the control variables used in this essay are described in the following section.

¹⁴ The focus of the Weitzel and Berns (2006) study is country corruption. Thus, the other country characteristics are only included in their regression models as control variables.

Hypotheses to be Tested

Based on the literature review above, we propose to test a number of hypotheses in the essay.

The main hypothesis is to test the relationship between the asymmetric information and acquisition premium. According to the view of obtaining majority control and private information resources in high information asymmetry firms, we predict the following relationship:

Hypothesis 1: The higher the asymmetric information in the target firm, the higher is the premium paid by the acquiring firm in the emerging market takeovers.

We use the idiosyncratic risk of the target firms as a measure of information asymmetry and we collect acquisition premium from the SDC Platinum database. Detailed calculations of these measures can be found in the next section.

In addition to the main hypothesis, we also test two other hypotheses in the essay. Previous studies on firm takeovers in developed markets found that acquiring firms, with higher asymmetric information, tend to use lower cash payment and higher stock payment in the takeovers. We plan to test this relationship based on our study of emerging market takeovers for two reasons. First, no study has examined this relationship in the emerging market takeovers. Our study will provide out-of-sample evidence to the theory in the existing literature. Second, because asymmetric information can be measured by various proxies, by confirming the established theory in the literature, we can prove the validity of using the asymmetric information measure (i.e., idiosyncratic risk) in our study. Thus, we propose an additional hypothesis as follows:

Hypothesis 2: The higher the asymmetric information, the less likely is the use of cash payment by the acquiring firms (and more likely the use of stock payment).

In the first hypothesis, we argue that under higher information asymmetry, the acquiring firms pay higher premiums as they want to gain majority control in the target firms. If we can establish a direct relationship between information asymmetry and acquisition of majority control, it will strengthen the argument given above. Thus, we propose the third hypothesis as follows:

Hypothesis 3: Under higher asymmetric information, the acquiring firms are more likely to acquire majority ownership in the target firms in emerging markets.

In the following section, we introduce the sample and measures to test each of the hypotheses.

Sample and Measures

Sample and Data Sources

Our sample is collected from the SDC Platinum database. We identify the completed acquisitions of target firms in 20 emerging countries¹⁵ from 1990 to 2007. As private firms do not disclose financial information to the public market, our sample only consists of the target firms that were

¹⁵ We selected the emerging countries from the Morgan Stanley Emerging Market Index. One problem of adopting such an index is that, over time, some countries may be maintained in the index only for continuity, even though these countries may now have become developed. In these cases, we excluded these countries (such as Taiwan, South Korea, and Israel) from the sample. In addition, we exclude Jordan and Morocco due to the very small number of acquisitions in these countries. The final list includes 20 countries, which we believe is a good representation for the emerging economies. These countries are: India, Brazil, Poland, Thailand, Indonesia, South Africa, Argentina, Malaysia, the Czech Republic, China (mainland), Mexico, Hungary, Philippines, Chile, Peru, Russia, Turkey, Colombia, Egypt and Pakistan.

publicly listed on the stock markets before the transaction. Moreover, by following Betton, Eckbo and Thorburn (2008), we focus on “mergers,” “acquisition of majority interest,” “acquisition of partial interest,” and “acquisition of remaining interest” in the sample and exclude the “exchange offers,” “acquisition of assets,” “acquisition of certain assets,” “buybacks,” “recaps,” and “acquisition (of stock)” (defined in SDC deal form).

The sample includes both domestic (in-country) acquisitions and cross-border acquisitions in the emerging markets. The acquiring firms can be either public firms or private firms. In domestic acquisitions, the acquiring firms are the local firms in the emerging countries. In cross-border acquisitions, the acquiring firms are the foreign firms coming from either developed countries or other emerging countries. The initial sample includes 5,071 domestic (in-country) M&As and 2,970 cross-border M&As in the 20 emerging countries during the 18-year period of the study (1990 – 2007).

We collect financial information, such as daily stock price and firm accounting variables, of the target firms and acquiring firms (if they are publicly listed) from the DataStream/Worldscope database. Due to the large amount of missing financial information on the emerging market firms in the database, the final sample of acquisitions reduces to 2,029 domestic M&As and 1,127 cross-border M&As. The sample size varies in multivariate analysis because of the missing values in different variables.

SDC Platinum database provides us the deal characteristics – such as payment method, transaction value, industry of target and acquiring firms, percentage of ownership acquired, toe-hold ownership in the target firm, etc. For country-level information, we use multiple data

sources including World Development Indicator (WDI) database, Central Intelligence Agency (CIA) World Fact Book, Transparency International, World Bank database, Hofstede's (1980) cultural distance website, and the University of Ottawa Law Faculty website. A detailed list of variables and corresponding data sources can be found in Appendix 1A.

Measure of Acquisition Premium

The SDC Platinum database contains the data on acquisition premiums. The premium is calculated based on the percentage difference between the bid price and the target firm stock price at four weeks before the acquisition announcement. However, for emerging market M&As, this dataset has many missing values¹⁶. Therefore, we decide to follow Schwert (1996, 2000) to measure the takeover premium using the target firm's abnormal stock return to supplement the SDC dataset. In particular, we measure the total takeover premium as cumulative abnormal returns of the target firm stocks in a trading day window $[-30, +2]$, i.e., from four weeks before to two days subsequent to the takeover announcement date. We estimate the abnormal returns based on a simple market model and calculate the cumulative abnormal return (CAR) over the event window as follows: $R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$, where R_{mt} is the local market index return, R_{it} is the daily stock return of the target firm. The coefficients α_i and β_i are estimated in 120 days to 30 days before the takeover announcement. The coefficients are then used to compute daily expected returns around the acquisition announcement. The abnormal return is defined as the difference between the actual return and the expected return in the event window. Abnormal

¹⁶ Out of the 2,029 domestic M&As and 1,127 cross-border M&As, we only obtained 766 (38%) and 407 (36%), respectively, corresponding premium data from the SDC Platinum database. In the analysis, we exclude the extreme values of the acquisition premium: the dataset is truncated between the minimum value of zero and the maximum value of two (see Officer, 2003).

returns are cumulated by continuous compounding over the event window. The market returns used in the estimation are the broadest market index available for a particular country. For the target firms, return data is dropped from the sample if, during the event window, the target security did not trade for 50% of the trading days. Target firm stock returns are calculated based on the returns in US dollars¹⁷.

Since our sample includes both full and partial acquisitions, we adjust the two measures of premium above by multiplying the percentage of shares acquired¹⁸. We correlate the stock return based premium with the SDC premium data and find the correlation is as high as 0.7. Thus, we believe the two methods provide a consistent measure of acquisition premium and the sample size is significantly enlarged by combining the two premium samples (i.e., we substitute the missing values in the SDC dataset with the stock return based premium data)¹⁹.

Measure of Information Asymmetry

To measure target firm information asymmetry, we follow the method in Dierkens (1991) by using the idiosyncratic risk of the target firm stocks. More specifically, based on the simple market model ($R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$) estimated for each target firm in the estimation period (120 days to 30 days before the takeover announcement), we calculate the variance of the residuals, ε_{it} , in the estimation model for each target firm. This idiosyncratic risk is not explained by the

¹⁷ Therefore, the fluctuation of the foreign exchanges is reflected in the calculation of the acquisition premium.

¹⁸ Intuitively, if the acquiring firm only acquires partial ownership in the target firm, the acquisition premium must be adjusted by the fraction of the ownership acquired. For example, if the target firm has 100 shares outstanding and the acquiring firm only acquires 10 shares (10% ownership acquisition). The existing stock price is \$10 per share, and the bid price is \$12 per share. The actual acquisition premium paid to the target firm shareholders should be 2%, which is calculated by $(\$12 - \$10) / \$10 \times 10\%$.

¹⁹ We conduct a robustness test by using either the SDC premium data or the stock return based premium data separately. We repeat the main analysis in the essay and we find that the conclusion is robust to both measures of acquisition premium.

market information (β_i) and thus captures the degree of information asymmetry in the target firms.

In the robustness test, we also use geographic distance to measure the country level asymmetric information. This measure calculates the actual distance between the capital cities of the acquiring country and the target country. We collect this information for each pair of the countries in the cross-border acquisitions using the Geobytes database.

Other Controlling Variables

In the additional hypotheses, we also examine the impact of asymmetric information on payment method and the acquisition of majority control in the target firms. We measure the payment method by two different measures. First, we use a dummy variable: if the payment is made in pure cash, we code the variable as 1, and if the deal is paid by stock or mixed payment (i.e., cash with stock or other securities), we code the variable as 0. The second measure calculates the actual percentage of cash paid in the deal. Thus, the value of the measure ranges from zero percent (no-cash payment) to one hundred percent (pure cash payment). For the measure of majority control acquisitions, we also use a dummy variable. The measure equals one if the acquiring firm obtains controlling ownership (>50%) in the target firms after the acquisition; and equals zero if the acquiring firm does not have more than 50% ownership after the acquisition. This information is available in the SDC Platinum database.

Based on the previous literature review, we identify several factors that may affect corporate takeovers. To control the confounding effect from these factors, we include four sets of controlling variables in the study.

First, we control the deal characteristics, such as a dummy variable for tender offer or not, a dummy variable of industry relatedness (which equals one if the acquiring firm industry has the same 4-digit SIC code as the target firm industry), and the transaction value. We also identify the toe-hold acquisitions where the acquiring firms have ownership in the target firms prior to the acquisition (i.e., a dummy variable which equals one if the bidder owns the target firm shares prior to the takeover announcement; otherwise it equals zero).

Second, we control the acquiring firm characteristics. A dummy variable is used to identify the private bidding firms (which equals one if the bidding firm is privately owned and, otherwise, equals zero). In addition, we use a categorical variable to measure the bidding firm's acquisition experience in the target market. If the bidding firm did not have any acquisition experience in the target country before, we code the variable as zero. If the bidding firm has made one acquisition before, we code it as one, and if the bidding firm has more than one acquisition in the target country, we code it as two.

Third, we control for target and acquiring country characteristics, such as law system (civil law vs. common law system), cultural difference, official language, corruption, and developed versus developing acquiring countries. The country level variables are only applicable to the cross-border acquisition sample.

Finally, we also control the target firm characteristics as a robustness check of whether the conclusion changes for different types of target firms. The target firm characteristics include firm size (i.e., revenue), growth potential (i.e., book to market ratio), leverage (i.e., debt to total assets), operating performance (i.e., industry median adjusted return on assets [ROA]), and relative firm size (target firm market cap divided by acquiring firm market cap). The financial information is collected from the latest fiscal year end before the takeover announcement. In order to control the heterogeneity for a different fiscal year, industry, and country, we include the year dummy variable (from 1991 to 2007), target industry dummy (based on a two-digit GISC code²⁰), and target country dummy (20 target countries) in the models.

Results

Descriptive Statistics

Table 1.1 shows the descriptive statistics of the acquisition premium for the domestic acquisitions and cross-border acquisitions of the target firms in the 20 emerging countries. It shows that foreign acquirers tend to pay a higher premium than domestic acquirers (i.e., 8.2% average premium in cross-border acquisitions versus 7.0% in domestic acquisitions). The difference is statistically significant at a 5% level. We also split the cross-border acquisition sample into two: the acquisitions undertaken by the developed market acquirers versus the acquisitions made by the developing market acquirers. However, the acquisition premiums are very similar and any subsequent results are similar between the two samples. Therefore, we have

²⁰ Global Industry Standard Classification (GISC) is developed by MSCI and Standard & Poor's (S&P).

decided to present the results for the combined samples of the developed and developing country cross-border acquisitions.

Table 1.1 shows the deal characteristics and target firm characteristics in the domestic and cross-border M&As in the emerging markets. We find foreign acquirers tend to acquire more majority control in the acquisitions (23%) than the domestic acquirers do (18%). The table also shows that the transaction values in the cross-border acquisitions are significantly larger than that in the domestic acquisitions. Foreign acquiring firms have less acquisition experience than the domestic acquiring firms and they tend to make more acquisitions in the related industries. We also find that foreign acquiring firms use more tender offers than domestic firms in the emerging markets and there are less private firm bidders in the cross-border acquisitions than in the domestic acquisitions. In terms of target firm characteristics, we find that target firms in cross-border acquisitions are larger, and have a higher growth potential (i.e., low book to market ratio) and better operating performance (ROA) than the domestic target firms.

Since there are substantial differences between the domestic acquisitions and the cross-border acquisitions in emerging markets, we conduct the following analyses for the two samples separately.

Table 1.1 Domestic and Cross-border M&A Sample Descriptive Statistics

This table shows the descriptive statistics for the domestic and cross-border acquisition samples in the study. Detailed explanations and measures of the variables can be found in Appendix 1A. We report the sample size, mean and standard deviation for each variable in the two samples. The independent sample *t* test is used to compare the mean difference between the two samples for each variable in the table. We use logarithm transformation on the financial variables, such as transaction value, sales, book to market ratio, debt to assets ratio and ROA ratio.

Sample Descriptive Statistics	Domestic M&As			Cross-border M&As			Cross-border vs. Domestic
	N	Mean	Std. Deviation	N	Mean	Std. Deviation	t value
Acquisition premium	1222	0.070	0.109	834	0.082	0.126	2.308 **
Control ownership acquisition	2029	0.180	0.384	1217	0.230	0.421	3.396 ***
Log of transaction value	1468	2.924	2.035	906	3.799	2.085	10.022 ***
Industry relatedness (4-SIC)	2029	0.187	0.390	1217	0.313	0.464	7.958 ***
Prior acquisition experience	2029	0.704	0.903	1217	0.467	0.768	-7.964 ***
Tender offer	2029	0.085	0.279	1217	0.158	0.365	6.010 ***
Private acquiring firms	2029	0.439	0.496	1217	0.224	0.417	-13.267 ***
Target firm sales	1203	14.025	2.428	683	15.185	2.648	9.421 ***
Target firm book to market ratio	1132	-0.355	1.579	644	-0.072	1.698	3.462 ***
Target firm debt to assets ratio	1148	-1.652	1.153	633	-1.740	1.275	-1.451
Target firm ROA ratio	1191	0.684	0.049	677	0.694	0.040	5.017 ***

*** 1% significance, **5% significance, *10% significance.

Correlation Analysis

Next we use the Spearman correlation analysis in Table 1.2 to examine the bivariate relationship among deal characteristics and target/acquiring firm characteristics for the domestic and cross-border acquisitions. Particularly, we focus on the correlations of the acquisition premium, asymmetric information, and the controlling variables. Panel A shows the correlations in the domestic acquisition sample and Panel B shows the results of the cross-border acquisitions. In both samples, we find that acquisition premium is significantly positively correlated with the asymmetric information proxy (i.e., idiosyncratic risk).

Acquisition premium is also positively correlated with the majority control acquisitions and full acquisitions. This provides the evidence of value of control in the corporate takeovers, which is consistent with the theory and other empirical findings (see Damodaran, 2005; Williamson, 1971, 1983; Williamson et al., 1975; Teece, 1980). In terms of asymmetric information (measured by idiosyncratic risk), we find that a higher level of asymmetric information is associated with lower cash payments and positively correlated with the majority control acquisition.

We also note that acquisition premium is negatively related to the degree of corruption in the target country. In other words, acquiring firms pay lower premiums in more corrupt countries. This result supports the findings of Weitzel and Berns (2006), who argue that the firm assets are sold at a discounted value in the highly corrupt countries. In addition, we find that the acquisition premium is positively correlated with transaction size and tender offers. Our results also confirm that private firm acquirers pay a lower premium than public firm acquirers (Bargeron et al., 2007). In terms of the target firm characteristics, we find the target firm asymmetric information is negatively related to target firm size (revenue), growth potential (book to market ratio), and operating performance (ROA), and positively related to target firm leverage.

In Panel B, we include two country-level variables, such as cultural distance and geographic distance, which are only relevant to cross-border acquisitions. Although we do not find a significant correlation between acquisition premium and cultural distance, we find significant and positive correlation between acquisition premium and geographic distance in cross-border acquisitions.

Table 1.2 Correlation Analysis

Table 1.2 shows the Spearman correlation coefficients and the statistical significance of the correlations for each pair of the variables in the study. Panel A shows the results for domestic acquisitions and Panel B shows the results for cross-border acquisitions. Panel B includes two additional variables, cultural distance and geographic distance between the target country and the acquiring country, which are only relevant to the sample of cross-border acquisitions.

Panel A. Domestic Acquisitions

Domestic M&As: Spearman Correlation	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]
[1] Acquisition Premium	1	.163(***)	-.136(***)	.385(***)	.306(***)	-.135(***)	.268(***)	.060(***)	0.053	-.007	.074(***)	-.125(***)	-.084(***)	0.069	0.002	-.125(***)
[2] Asymmetric Information		1			.056(***)	-.0033	-.182(***)	-.086(***)	0.02	.093(***)	0.005	-.023	-.009	.281(***)	.144(***)	-.150(***)
[3] % of Cash in the Payment			1	-.091(***)	.070(***)	-.301(***)	-.068(***)	-.008	-.116(***)	-.021	.054(***)	.098(***)	-.009	0.038	-0.001	0.058
[4] Control ownership acquisition				1	.417(***)	-.039	.303(***)	.054(***)	.138(***)	.044(***)	.171(***)	-.140(***)	.059(***)	.102(***)	-0.041	-0.018
[5] Full Acquisition					1	-.184(***)	.298(***)	.103(***)	.167(***)	.065(***)	.133(***)	-.199(***)	.048	.079(***)	-.101(***)	.086(***)
[6] Pre-acquisition ownership in the target firm						1	-.162(***)	-.035	-.028	-.027	.113(***)	-.02	-.002	0.014	0.018	-0.013
[7] Log of Transaction Value							1	.212(***)	.117(***)	.197(***)	0.043	-.152(***)	.454(***)	.164(***)	-.070(***)	.164(***)
[8] Target Country Control of Corruption								1	0.031	.119(***)	.072(***)	-.166(***)	-.306(***)	.160(***)	-.107(***)	0.02
[9] Industry Relatedness (4-SIC)									1	-.009	.068(***)	-.185(***)	.082(***)	.071(***)	-0.006	0.048
[10] Prior Acquisition Experience										1	.048(***)	-.085(***)	.146(***)	.185(***)	0	0.023
[11] Tender Offer											1	1	.031	.115(***)	-.078(***)	.089(***)
[12] Private Acquiring Firms													1	-.063(***)	0.024	-.082(***)
[13] Target Firm Sales														1	.247(***)	.137(***)
[14] Target Firm Book to Market Ratio															1	0.036
[15] Target Firm Debt to Assets Ratio																1
[16] Target Firm ROA Ratio																

Panel B. Cross-border Acquisitions

Cross-border M&As: Spearman Correlation	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]
[1] Acquisition Premium	1	.171(***)	-.067	.421(***)	.192(***)	-.07	.241(***)	.075(***)	.141(***)	-.086(***)	.164(***)	-.069(***)	-.061	0.067	-.046	-.035	-0.042	.106(***)
[2] Asymmetric Information		1	-.019(***)	.046	.017	-.075(***)	-.263(***)	-.172(***)	-.03	-.043	-.097(***)	.073(***)	-.100(***)	.082(***)	.129(***)	-.227(***)	0.055	.119(***)
[3] % of Cash in the Payment			1	-.001	-.145(***)	.039	-.064	-.048	-.075(***)	.015	.078(***)	-.01	.026	.051	-.029	-.073	.029	.008
[4] Control ownership acquisition				1	.164(***)	.063(***)	.228(***)	.118(***)	.107(***)	-.042	.090(***)	-.059(***)	-.021	.045	-.066	-.032	-0.054	.023
[5] Full Acquisition					1	-.116(***)	.107(***)	.082(***)	.119(***)	-.016	.201(***)	-.058(***)	-.07	.047	-.065	.036	-0.054	.072(***)
[6] Pre-acquisition ownership in the target firm						1	-.021	-.021	.047	.100(***)	.167(***)	-.099(***)	.017	.009	-.057	.061	.035	-0.012
[7] Log of Transaction Value							1	.189(***)	.210(***)	.04	-.01	-.071(***)	.343(***)	.008	-.093(***)	.129(***)	-.055	.048
[8] Target Country Control of Corruption								1	.108(***)	.01	.099(***)	-.042	-.317(***)	.174(***)	-.117(***)	.003	-0.053	-.190(***)
[9] Industry Relatedness (4-SIC)									1	-.018	.136(***)	-.218(***)	.03	-.034	-.159(***)	.074	-0.023	-.064(***)
[10] Prior Acquisition Experience										1	-.032	.145(***)	.012	-.017	.035	.054	-0.012	-0.023
[11] Tender Offer											1	-.113(***)	-.095(***)	.001	-.098(***)	.071	.002	-.006
[12] Private Acquiring Firms												1	.005	.005	.044	.033	.029	.059
[13] Target Firm Sales													1	-.006	.072	-.055	.026	-0.036
[14] Target Firm Book to Market Ratio														1	-.111(***)	.078	-0.047	.082
[15] Target Firm Debt to Assets Ratio															1	-.247(***)	0.063	.042
[16] Target Firm ROA Ratio																1	.359(***)	1
[17] Cultural Distance																	1	
[18] Geographic Distance																		1

***1% significance, **5% significance, * 10% significance.

Multivariate Analysis

Asymmetric Information and Acquisition Premium

To test the two competing hypotheses about the impact of asymmetric information on acquisition premium, we use the OLS regression method by including many other control variables that may also impact the acquisition premium value. The OLS model is specified below:

$$\text{Acquisition Premium} = f(\text{Information Asymmetry, Control Variables}) \quad (1.1)$$

where the dependent variable is the acquisition premium, the independent variable is the information asymmetry measure (proxied by idiosyncratic risk of the target firm), control variables include target and acquiring firm characteristics, deal-specific variables and country level characteristics as described before. Heteroscedasticity is corrected using White's method (1980); multicollinearity is monitored by the Variance Inflation Factor (VIF must be less than 10). To support the first hypothesis, we expect that information asymmetry has a positive impact on the acquisition premium. Thus, the regression coefficient of the information asymmetry proxy is expected to be positive and statistically significant.

Table 1.3 shows the OLS regression results. To calculate the relative firm size, we require the acquiring firms to be publicly listed and have market cap information available in the DataStream database. This variable has a limited number of observations in our sample, thus, we only include it in model 1 of Table 1.3. Many missing values in the financial information of the emerging market firms also limit the sample size of the study. Thus, we only control the target firm financial characteristics in model 2 in Table 1.3. In the last two models, where sample size is sufficiently large (as we do not control the relative firm size and target firm financial ratios),

we include the year dummy variable (17 dummy variables for the years between 1990 and 2007), target industry dummy (9 dummies for 10 GISC sectors), and target country dummy variable (19 dummies for 20 target countries); this allows us to control the heterogeneity by year, target industry, and target country. Panel A of Table 1.3 shows the regression results for the domestic acquisitions, and Panel B shows the results for the cross-border acquisitions.

The results show that asymmetric information has significant impact on the acquisition premium paid to the target firms in the emerging markets. The regression coefficients of the information asymmetry proxy are consistently positive and statistically significant at the 1% level across different models. This suggests that the higher level of target firm information asymmetry leads to more acquisition premiums received from the bidding firm. The result holds for both domestic and cross-border acquisitions.

We also note that the acquisition of majority control leads to a higher acquisition premium in both samples. This is consistent with the argument that there exists a value of control in a firm. Damodaran (2005) suggests that the value of control lies in the expectation that the firm can be run differently by the new controlling owner and create more firm value under the new control. Thus, it is common that many bidding firms pay a higher acquisition premium in order to obtain the majority control in the target firms.

By including both the majority control variable and the asymmetric information proxy in the models, both coefficients remain positive and statistically significant. This suggests that the asymmetric information variable itself has unique explanatory power in addition to the majority

control effect. Our results are consistent with the study by Durnev et al. (2003), which find that firms with higher idiosyncratic risk contain more private information that is related to the fundamental value and future earning prospectus of the firm. By acquiring block ownership in the target firms, the acquiring firm becomes part of the company insiders and has access to the private information in the target firm that is not shared with the general public investors. Thus, we argue that the bidding firms are willing to or have to pay a higher premium for a target firm in order to gain the information competitive advantage over the general public investors.

In the full models, we also include cash payments along with the asymmetric information and majority control variables. Consistent with the literature (e.g., Hansen, 1987), we find cash payment is negatively related to an acquisition premium in the domestic acquisitions. However, we do not find such a significant relationship in the cross-border acquisitions. This inconsistent result may be due to the endogenous relationship among the three variables, such as cash payment, acquisition premium, and majority control. We conduct more detailed analysis to address the endogeneity issue in the next section.

Some other controlling variables also show significant results in the models. In both domestic and cross-border acquisitions, we find bidding firms tend to pay a lower acquisition premium if they have acquisition experience in the target country. We argue that this result is consistent with our main conclusion on information asymmetry. Intuitively, bidding firms with more acquisition experience would face less information asymmetry in the takeovers. They have more accurate evaluation for target firm business and the synergy values; they are more familiar with the legal and accounting rules in the target country; and they have a better idea about how to negotiate

good deals based on their previous experience. Thus, we find consistent evidence that more acquisition experience is associated with lower acquisition premium in both domestic and cross-border acquisitions.

Transaction size is found to have positive and significant impact on the acquisition premium in both samples. We believe larger-sized transactions mean higher economic significance to the acquiring firm, which increases the target firm bargaining power in the negotiation. Thus, we expect that it has a positive relation to acquisition premium. However, we find relatively larger acquiring firms (measured by the relative market cap of the acquiring and target firms) pay larger acquisition premiums in both domestic and cross-border samples. This result might be because of the management hubris problem commonly found in larger firms (e.g. Moellera, Schlingemannb and Stulz, 2004; Roll, 1986).

In domestic acquisitions, we also find that acquiring firms tend to pay lower premiums to larger-sized target firms (i.e., sales) and the target firms with better operating performance (ROA). We might expect a larger-sized and well-performing target firm to have more bargaining power in the takeover negotiation. Thus, the target firm should receive higher premiums from the bidding firm. However, it is also possible that bidding firms decide how much premium should be paid based on the potential synergy values created from the acquisition. One of the major functions of a competitive takeover market is to replace the poor-performing management team and, thus, increase the firm value (Mann, 1965). We expect higher synergy values to be released in poor-performing firms than relatively well-performing firms. It is also easier to restructure a smaller-sized firm than a larger-sized firm after the acquisition. Thus, we argue that this may be the

reason why target firm size and pre-acquisition performance have a negative impact on the acquisition premium. We only find this evidence in domestic acquisitions, suggesting that market for corporate control may be more dominant in the domestic acquisitions. In cross-border acquisitions, we only find that bidding firms pay a lower premium to higher leveraged firms.

Overall, the empirical evidence supports the first hypothesis that bidding firms pay a higher premium under high information asymmetry in order to gain the majority control as well as to obtain valuable private information resources. In the following section, we test the additional hypotheses to link the asymmetric information with payment method and majority control acquisition.

Table 1.3 Acquisition Premiums and Asymmetric Information

Table 1.3 shows the OLS regression results based on the domestic acquisition sample (Panel A) and the cross-border acquisition sample (Panel B). The dependent variable is the acquisition premium in each takeover transaction, independent variables include deal characteristics (such as tender offers, industry relatedness, transaction value, payment method), target firm characteristics (including asymmetric information level, size, growth potential, leverage, profitability, and acquisition experience) and country level variables (target country corruption and country dummy variables). Detailed explanations and measures of these variables can be found in Appendix 1A.

Panel A. Domestic M&As

OLS Regression			Domestic M&As					
Dependent Variable: Acquisition Premium	B	t value	B	t value	B	t value	B	t value
Asymmetric information	0.394	2.779 ***	0.523	6.791 ***	0.479	8.355 ***	0.455	7.659 ***
Tender offer	0.073	0.206	0.002	0.010	0.178	1.017	0.153	0.862
Prior acquisition experience	-0.249	-1.622	-0.226	-2.994 ***	-0.116	-2.014 **	-0.106	-1.795 *
Industry relatedness (4-SIC)	-0.246	-0.986	-0.250	-1.373	-0.279	-2.096 **	-0.296	-2.164 **
Target country control of corruption	0.069	0.591	0.051	0.664	0.088	1.672 *		
Log of transaction value	0.176	2.494 **	0.264	5.956 ***	0.212	6.770 ***	0.241	7.027 ***
Pre-acquisition ownership in the target firm	-0.118	-0.472	-0.142	-1.027	-0.331	-3.099 ***	-0.361	-3.325 ***
Control ownership acquisition	1.141	3.641 ***	1.121	6.409 ***	1.048	7.764 ***	1.046	7.613 ***
Pure cash payment	-0.950	-2.598 **	-0.901	-3.060 ***	-0.525	-2.756 ***	-0.520	-2.661 ***
Relative firm size	-0.190	-2.502 **						
Private acquiring firm			-0.161	-1.120	-0.171	-1.536	-0.159	-1.396
Target firm sales			-0.069	-2.144 **				
Target firm book to market ratio			0.003	0.068				
Target firm debt to assets ratio			0.009	0.155				
Target firm ROA ratio			-3.553	-2.321 **				
Year dummy					Yes		Yes	
Target industry dummy					Yes		Yes	
Target country dummy							Yes	
(Constant)	-0.769	-0.682	3.640	2.964 ***	-0.377	-0.230	-0.008	-0.005
F	7.893 ***		14.712 ***		9.925 ***		7.374 ***	
Adjusted R Square	0.347		0.332		0.303		0.310	
N	131		388		740		740	

Panel B. Cross-border M&As

OLS Regression			Cross-border M&As					
Dependent Variable: Acquisition Premium	B	t value	B	t value	B	t value	B	t value
Asymmetric information	0.517	2.999 ***	0.253	2.664 ***	0.278	4.087 ***	0.279	3.956 ***
Tender offer	0.636	1.599	0.671	2.248 **	0.289	1.618	0.283	1.578
Prior acquisition experience	0.008	0.043	-0.106	-0.826	-0.192	-2.199 **	-0.214	-2.461 **
Industry relatedness (4-SIC)	0.403	1.322	-0.041	-0.202	-0.005	-0.034	0.031	0.233
Target country control of corruption	0.031	0.234	-0.087	-0.969	-0.052	-0.871		
Log of transaction value	0.275	3.816 ***	0.164	2.859 ***	0.181	5.090 ***	0.203	5.213 ***
Pre-acquisition ownership in the target firm	-0.575	-1.857 *	-0.054	-0.295	-0.209	-1.648 *	-0.112	-0.885
Control ownership acquisition	0.813	2.312 **	1.144	5.137 ***	1.427	9.972 ***	1.354	9.243 ***
Pure cash payment	-0.029	-0.066	0.347	0.864	-0.288	-1.064	-0.245	-0.914
Relative firm size	-0.086	-1.868 *						
Private acquiring firm			0.001	0.003	-0.062	-0.378	-0.073	-0.447
Target firm sales			-0.027	-0.735				
Target firm book to market ratio			-0.055	-1.195				
Target firm debt to assets ratio			-0.125	-1.988 **				
Target firm ROA ratio			-2.715	-1.018				
Year dummy					Yes		Yes	
Target industry dummy					Yes		Yes	
Target country dummy							Yes	
(Constant)	-1.031	-0.762	-0.521	-0.258	-1.130	-0.580	-0.644	-0.333
F	5.613 ***		5.985 ***		7.564 ***		6.203 ***	
Adjusted R Square	0.354		0.210		0.316		0.354	
N	85		264		513		513	

*** 1% significance, **5% significance, *10% significance.

Asymmetric Information and Payment Method

Previous literature has shown the evidence in the developed market takeovers that asymmetric information has an impact on the choice of payment method (e.g., Travlos, 1987; Brown and Ryngaert, 1991; Martin, 1996); the argument is that higher information asymmetry leads to lower cash-based payment in the takeovers. However, empirical evidence to support this argument is limited in the emerging market takeovers. In addition, testing this hypothesis using our sample provides a good opportunity to check the validity of the information asymmetry measure. If the idiosyncratic risk is a valid measure of the information asymmetry, we expect higher idiosyncratic risk to be associated with lower cash payment. In the correlation analysis (Table 1.2), we already find that the asymmetric information measure has a negative impact on cash payment. In this analysis, we further test this hypothesis by using the multivariate analysis. First, we adopt a logistic regression model to test the impact of asymmetric information on the propensity of using pure cash payment in firm takeovers. The logistic regression model is specified as follows:

$$\text{Logit (Cash Payment)} = f(\text{Information Asymmetry, Control Variables}) \quad (1.2)$$

where the dependent variable (cash payment) is a dummy variable that equals one for the pure cash payment, and zero for stock payment or mixed payment. We regress the dummy variable on the information asymmetry proxy, and we control other deal characteristics and firm or country level variables. A significant and negative regression coefficient of the information asymmetry variable will confirm the findings in the developed market takeover literature that show a higher information asymmetry is associated with lower propensity to use a pure cash payment in the acquisitions.

In addition, as a robustness check, we also estimate an OLS regression by using the actual percentage of cash in the payment. The model is shown below:

$$\% \text{ of Cash Payment} = f(\text{Information Asymmetry, Control Variables}) \quad (1.3)$$

where % of cash payment is the cash value in the payment divided by the total transaction value of the acquisition (ranging between 0% to 100%). We regress the percentage cash payment measure to the information asymmetry variable and a similar pool of control variables. We expect the regression coefficient of the information asymmetry variable to be negative and significant in order to prove that a higher level of asymmetric information is associated with lower cash payment in firm takeovers.

Table 1.4 Panel A shows the results for the logistic regression model, and Panel B shows the results for the OLS regression. We estimate both models for the domestic and the cross-border acquisitions. We find some control variables are significant in explaining the choice of cash payment. In domestic acquisitions, related-industry acquisitions tend to use lower cash payment; more corrupt target countries are also associated with lower cash payment. For both domestic and cross-border acquisitions, we find bidding firms tend to use lower cash-based payments in larger transactions.

Most importantly, Table 1.4 shows consistent results regarding the impact of asymmetric information on the choice of cash payment. The regression coefficients for the information asymmetry proxy in both the logistic regression and the OLS regression are negative and statistical significant at a 1% level. This result supports the second hypothesis that higher asymmetric information leads to a lower cash payment. This evidence also provides support to

the argument that idiosyncratic risk is a valid measure of asymmetric information. The results are consistent with the predictions.

Table 1.4 Asymmetric Information and Choice of Payment Method

Table 1.4 Panel A shows the logistic regression results by regressing the asymmetric information measure, deal characteristics and country level control variables on the dummy variable of cash payment (which equals 1 if the acquisition is paid by pure cash and equals 0 if it is paid by stock or other mixed payment). Nagelkerke R square is reported to show the explanatory power of the binary model. The model is estimated for the domestic acquisitions and cross-border acquisitions separately.

Panel B shows the OLS regression results for the two acquisition samples in the study. The dependent variable is a continuous variable which measures the percentage of cash payment paid in the takeover transaction. Thus, the value ranges between 0% (no cash payment) and 100% (pure cash payment). We also estimate the model based on the same pool of control variables as in Panel A.

Panel A. Logistic Regression (Dependent variable: Pure Cash Payment Dummy Variable)					Panel B. OLS Regression (Dependent variable: % of Cash in the Payment)			
	Domestic M&As		Cross-border M&As		Domestic M&As		Cross-border M&As	
	B	Wald	B	Wald	B	t value	B	t value
Asymmetric information	-0.469	20.662 ***	-0.471	10.004 ***	-0.935	-3.672 ***	-1.350	-4.808 ***
Tender offer	-0.200	0.542	0.303	0.674	-0.270	-0.327	-0.007	-0.010
Private acquiring firm	1.317	20.142 ***	0.457	0.971	0.795	1.510	0.720	0.967
Industry relatedness (4-SIC)	-0.748	12.143 ***	-0.671	4.790 **	-1.146	-1.755 *	-0.801	-1.256
Prior acquisition experience	-0.081	0.539	0.018	0.009	0.049	0.172	-0.188	-0.486
Target country control of corruption	-0.313	9.421 ***	-0.299	6.275 **	-1.237	-4.307 ***	-0.386	-1.403
Target country_Civil law	0.800	1.167	-0.080	0.047	-1.596	-1.034	-0.270	-0.366
Target country_Common law	-2.747	0.034	0.241	0.263	-0.050	-0.012	0.633	0.790
Acquiring country_Civil law	0.049	0.004	0.870	2.527	2.200	1.455	-0.128	-0.113
Acquiring country_Common law	3.688	0.061	0.277	0.292	2.025	0.515	-0.846	-0.784
Log of transaction value	-0.483	67.474 ***	-0.450	26.235 ***	-0.253	-1.843 *	-0.404	-2.652 ***
(Constant)	1.206	2.315	1.956	3.231 *	95.928	46.472 ***	92.425	40.264 ***
R Square	0.313		0.164		0.031		0.029	
N	1426		885		1315		846	
F value	-		-		4.834 ***		3.277 ***	

*** 1% significance, **5% significance, *10% significance.

Asymmetric Information and Acquisition of Majority Control

In the previous sections, we have provided evidence that acquiring firms pay a higher premium to the target firms under higher information asymmetry. We explain this behavior by referring to

the theory that it is essential to gain majority control if the information asymmetry is high. Thus, we observe that acquiring firms pay a higher premium to obtain majority control.

This argument can be further strengthened by empirically establishing the relationship between the information asymmetry and the choice of making majority control acquisitions. According to the third testing hypothesis, we expect that higher asymmetric information leads to a higher propensity for acquiring majority control in the target firms (>50% ownership). We test this hypothesis by using the following logistic regression:

$$\text{Logit (Majority Control)} = f(\text{Information Asymmetry, Control Variables}) \quad (1.5)$$

where the dependent variable (*Majority Control*) is a binary variable that equals one if the bidding firm acquires controlling position (i.e., more than a 50% ownership) in the target firm through the acquisition, and zero if the bidding firms do not acquire a controlling position (less than or equal to 50% ownership). In addition to the asymmetric information variable, we control for relevant deal characteristics (such as tender offers, industry relatedness, and transaction value), acquiring firm characteristics (private or public acquiring firm, and acquisition experience), and target country characteristics (corruption and country law system).

Table 1.5 shows the logistic regression result. The models for the domestic acquisitions and the cross-border acquisitions are estimated separately. We find that bidding firms usually acquire majority control in tender offers; acquiring majority control is also associated with a larger transaction size deal. In domestic acquisitions, private firms are less likely to acquire majority control, while majority control acquisitions tend to take place more often in industry-related transactions. For cross-border acquisitions, bidding firms are more likely to acquire majority

control in those countries with better control of corruption. In addition, we found that the target country legal system also impacts the decision to acquire majority control: common law countries tend to have more majority control acquisitions by domestic firms, while civil law countries tend to attract more majority control acquisitions from foreign countries.

Most importantly, Table 1.5 shows that the regression coefficients of the asymmetric information variable have a consistently positive sign in both samples, and they are statistically significant at the 1% level. This result confirms the bivariate correlation analysis (in Table 1.2) and supports the hypothesis that a higher level of information asymmetry is associated with a higher tendency to acquire majority control in the target firms. This evidence also strengthens our argument in this essay that acquiring firms pay a higher premium under high information asymmetry in order to gain majority control in the target firms.

Table 1.5 Asymmetric Information and Acquisition of Majority Control

Table 1.5 shows the logistic regression results by regressing the asymmetric information measure, deal characteristics and country level control variables on the dummy variable of majority control (which equals 1 if the acquiring firm gains more than 50% ownership in the target firm after the acquisition and equals 0 if it does not have the majority control in the target firm). Nagelkerke R square is reported to show the explanatory power of the binary model. The model is estimated for the domestic acquisitions and cross-border acquisitions separately.

Logistic Regression	Domestic M&As		Cross-border M&As	
Dependent Variable: Majority Control Acquisitions	B	Wald	B	Wald
Asymmetric information	0.440	33.208 ***	0.361	18.023 ***
Tender offer	1.129	30.649 ***	0.428	4.578 **
Private acquiring firm	-0.324	3.693 *	-0.164	0.501
Industry relatedness (4-SIC)	0.416	5.749 **	0.064	0.122
Prior acquisition experience	-0.046	0.311	-0.079	0.474
Target country control of corruption	0.106	1.805	0.340	19.526 ***
Target country_Civil law	-0.599	1.731	-0.466	4.638 **
Target country_Common law	-2.069	4.259 **	-0.187	0.621
Acquiring country_Civil law	-0.143	0.099	-0.381	1.466
Acquiring country_Common law	1.560	2.484	-0.447	2.202
Log of transaction value	0.451	110.304 ***	0.338	45.387 ***
(Constant)	0.223	0.142	-0.467	0.511
Nagelkerke R Square	0.270		0.156	
N	1437		886	

*** 1% significance, **5% significance, *10% significance.

Combined Analysis of Acquisition Premium, Information Asymmetry, Payment Method, and Majority Control

In the previous sections, we demonstrate that information asymmetry has a positive impact on acquisition premium. In addition, we show that information asymmetry can also impact the decisions by the bidding firms of choosing a payment method and acquiring majority control.

We expect that these variables in the main regression models (Table 1.3) are endogenously determined along with the acquisition premium. In a typical corporate takeover, the bidding firm managers must simultaneously consider the payment method (cash or stock), the percentage of shares to acquire (i.e., acquire majority control or not), and the acquisition premium to be paid to

the target firm. Thus, it is essential to analyze the interdependent relations of these factors in one model so that we can address the potential endogeneity problem in the main analysis (Table 1.3).

To correct for this potential endogeneity bias, we adopt a simultaneous equation model approach (Maddala, 1983). Officer (2003) uses the same methodology to analyze the acquisition premium and termination fee agreement. More specifically, based on the knowledge from the previous hypothesis tests, we present the relationships in three parsimonious regression equations in a non-recursive system²¹:

$$\begin{aligned} \text{Acquisition Premium} = & \text{Asymmetric Information} + \text{Cash Payment} + \text{Majority Control} \\ & + \text{Related Industry} + \text{Acquisition Experience} + \text{Pre-acquisition} \\ & \text{Ownership} + \text{Transaction Value} + \text{Private Acquiring Firm} \end{aligned} \quad (\text{E1})$$

$$\begin{aligned} \text{Cash Payment} = & \text{Asymmetric Information} + \text{Majority Control} + \text{Acquisition Premium} \\ & + \text{Related Industry} + \text{Transaction Value} + \text{Target Country (civil law)} + \\ & \text{Acquiring Country (civil law)} + \text{Target Country Corruption} \end{aligned} \quad (\text{E2})$$

$$\begin{aligned} \text{Majority Control} = & \text{Asymmetric Information} + \text{Cash Payment} + \text{Acquisition Premium} \\ & + \text{Tender Offer} + \text{Related Industry} + \text{Transaction Value} + \text{Target} \\ & \text{Country (common law)} + \text{Acquiring Country (common law)} \end{aligned} \quad (\text{E3})$$

According to Maddala (1983), we followed a two-stage procedure to estimate the model above.

More specifically, the cash payment variable in the first equation is replaced by its fitted value

²¹ We set up these parsimonious models by selecting three unique exogenous variables in each equation (in addition to the two exogenous variables common to each equation) to make the structural model identifiable as there are two endogenous variables in each equation, we need more than two unique exogenous variables for each equation. The unique exogenous variables are in bold font in the equations (E1) to (E3). To estimate the simultaneous equation model, we follow the estimation method developed by Maddala (1983). However, Maddala (1983) only developed the estimations for a two-equation system (one for OLS regression, the other one for probit regression). Thus, we need to extend Maddala's (1983) method to a three-equation model in Appendix 1B.

from the first-stage (reduced form) OLS regression with Cash Payment²² as the dependent variable and all exogenous variables in equation (E1), (E2), and (E3) as the independent variables. The majority control variable in the first equation is the continuous fitted value from the first-stage reduced form probit regression with Majority Control (i.e., a dummy variable) as the dependent variable and all exogenous variables in the system as independent variables. The acquisition premium instrument in the second equation is the fitted value from a first-stage reduced form OLS regression with the Acquisition Premium as the dependent variable and all exogenous variables as independent variables; Majority Control is again represented by the continuous predicted values from the first-stage probit model. Finally, in equation (E3), Cash Payment and Acquisition Premium are the fitted values from the first-stage reduced form OLS regressions. Due to the presence of a probit-based generated regressors in the equations, OLS standard errors are biased (Maddala, 1983, p.245). We therefore use an ordinary non-parametric bootstrap method (Efron and Tibshirani, 1993) to estimate the standard errors of the regression coefficients in the three equations²³.

Table 1.6 shows the estimation results from the simultaneous equation model. First stage regressions are omitted for the sake of brevity. As we can see, after correcting for the endogenous bias, the regression coefficients of the asymmetric information proxy are still

²² In this case, we measure Cash Payment by the percentage of cash payment in the total transaction value. It is a continue variable which ranges from 0% (i.e. pure stock payment) to 100% (pure cash payment).

²³ Maddala (1983) only derived the standard errors for a simultaneous equation model with two regression equations. However, our model contains three regression equations (i.e., two OLS regressions and one probit regression). The asymptotic standard errors of the regression coefficients are complicated to derive in such system. We decide to use the ordinary non-parametric bootstrap method to estimate the standard errors. More specifically, we randomly select 500 observations (with replacement) from the respective domestic and cross-border acquisition samples and estimate the three equations following the descriptions above. For each random sample, we can estimate one set of regression coefficients for the three equations (for the domestic and cross-border acquisitions separately). We repeat such random sampling procedure 1,000 times so that we obtain the empirical distribution for each regression coefficients (with 1,000 observations). Thus, we are able to test the significance of the regression coefficients based on the empirical standard error from the bootstrap samples.

positive and statistically significant at the 1% level for both domestic and cross-border acquisitions. The estimated value of the coefficient for the majority control is also positive and statistically significant at the 1% level. This supports the argument that acquiring firms pay a higher premium in order to gain majority control in the target firms. After controlling for the majority control acquisitions, the information asymmetry variable is still positive and significant, suggesting the value of private information in the target firms with high asymmetric information. Results in equation (E1) also confirm the previous findings that acquiring firms tend to pay higher premium in larger acquisitions and toe-hold acquisitions (in which the acquiring firm has ownership in the target firm before the acquisition); this reduces the competition from other bidding firms and the acquisition premium.

Equation (E2) shows the impact of information asymmetry on the percentage of cash payment in emerging market takeovers. Previous studies (such as Ghosh and Ruland, 1998; Martin, 1996) examined payment methods as the only decision outcome made by bidding firms. However, we argue that bidding firm managers may simultaneously decide payment method with other terms, such as acquisition premium and majority control in a takeover transaction. As we can see, by considering the endogenous relationship in the simultaneous equation model, Equation (E2) shows an insignificant regression coefficient for the asymmetric information variable in the domestic acquisition sample; the significance of the regression coefficient in the cross-border acquisition sample has also decreased (from 1% to 5% significance level). These results contrast with the single OLS regression model results in Table 1.3 (particularly for the domestic acquisitions). This comparison suggests the importance of correcting for the endogenous problem in firm takeovers. By including the acquisition premium and majority control in one

model, we find that asymmetric information has no significant impact on the cash payment in domestic acquisitions.

Furthermore, after correcting the endogenous problem in Equation (E3), the impact of asymmetric information on the majority control disappeared in both domestic and cross-border acquisition samples. We argue that while asymmetric information may have an impact on all the three decisions (i.e., choice of payment method, acquisition premium, and choice of majority control), it seems asymmetric information has the greatest impact on acquisition premium. The evidence suggests that bidding firm managers may give higher priority to the decision about acquisition premium rather than payment method and majority control in emerging market takeovers. In addition, since the asymmetric information contains both majority control effect and the private information effect on acquisition premium, the explanatory power of the majority control variable may be limited in the simultaneous equation model.

Above all, we test the three hypotheses in the emerging market takeovers. We show the evidence that acquiring firms pay a higher premium in the presence of higher information asymmetry; this relationship is confirmed by controlling the simultaneous impact of asymmetric information on the payment method and majority control. Our empirical evidence suggests that bidding firms pay a higher premium because they want to obtain majority control and valuable private information resources in the target firms. Both effects exist in the domestic and cross-border acquisitions in emerging market takeovers.

Table 1.6 Simultaneous Equation Model of Acquisition Premium, Asymmetric Information, Cash Payment, and Majority Control

Table 1.6 shows the estimation results for equation (E1), (E2) and (E3) based on the simultaneous equation model (SEM). The model is estimated by a two-step procedure. In the first step, we regress each endogenous variable (i.e., acquisition premium, cash payment, and majority control) on all exogenous variables in the SEM system. In the second step, we use the fitted values of the endogenous variables with other specific exogenous variables to estimate equation (E1), (E2) and (E3), where equation (E1) and (E3) are estimated by the OLS regression method and equation (E2) is estimated by a Probit regression. We report the regression coefficients estimated from the second step for each equation. We use bootstrap method to estimate the standard errors of the regression coefficients and calculate the *t* values. Detailed explanations of the SEM method and bootstrap results can be found in Appendix 1B. We estimate the SEM model for the domestic acquisitions and cross-border acquisitions separately.

	Domestic Acquisitions (N=740)			Cross-border Acquisitions (N=510)		
Equation (E1)						
Dependent Variable: Acquisition Premium		Bootstrap			Bootstrap	
	β	Standard Error	t value	β	Standard Error	t value
(Constant)	-3.486	1.967	-1.772	-4.898	3.674	-1.333
Information Asymetry	0.495	0.089	5.535 ***	0.292	0.094	3.094 ***
P (Cash Payment)	0.030	0.022	1.358	0.027	0.040	0.684
P (Majority Control)	2.162	0.717	3.015 ***	2.408	0.424	5.677 ***
Related Industry	-0.019	0.246	-0.078	0.067	0.203	0.329
Acquisition Experience	-0.127	0.070	-1.823 *	-0.150	0.106	-1.414
Pre-acquisition Ownership	-0.469	0.160	-2.935 ***	-0.332	0.156	-2.130 **
Transaction Value	0.232	0.069	3.362 ***	0.126	0.060	2.088 **
Private Acquiring Firm	-0.350	0.174	-2.010 **	-0.053	0.220	-0.242
Equation (E2)						
Dependent Variable: Cash Payment		Bootstrap			Bootstrap	
	β	Standard Error	t value	β	Standard Error	t value
(Constant)	98.192	11.228	8.745 ***	97.206	11.507	8.448 ***
Information Asymetry	-1.744	2.794	-0.624	-2.320	1.150	-2.017 **
P (Acquisition Premium)	1.088	4.992	0.218	2.193	2.845	0.771
P (Majority Control)	-38.118	12.767	-2.986 ***	-2.682	8.340	-0.322
Related Industry	-7.202	3.444	-2.091 **	-3.074	1.829	-1.681 *
Transaction Value	-1.414	1.518	-0.931	-1.157	0.784	-1.475
Target country_Civil law	1.166	6.913	0.169	0.695	2.101	0.331
Acquiring country_Civil law	0.743	6.482	0.115	3.185	1.781	1.788 *
Target country control of corruption	-0.225	1.241	-0.182	-1.708	0.944	-1.809
Equation (E3)						
Dependent Variable: Majority Control		Bootstrap			Bootstrap	
	β	Standard Error	t value	β	Standard Error	t value
(Constant)	5.725	2.308	2.481 **	16.765	8.433	1.988 **
Information Asymetry	0.352	0.280	1.260	-0.266	0.251	-1.058
P (Cash Payment)	-0.078	0.031	-2.532 **	-0.174	0.089	-1.945 *
P (Acquisition Premium)	-0.441	0.569	-0.774	0.748	0.464	1.611
Tender Offer	1.713	0.432	3.962 ***	1.203	0.569	2.114 **
Related Industry	-0.293	0.452	-0.648	-0.566	0.427	-1.327
Transaction Value	0.291	0.137	2.117 **	0.018	0.168	0.106
Target country_Common law	12.846	3.001	4.281 ***	-0.118	0.364	-0.325
Acquiring country_Common law	-12.526	0.934	-13.413 ***	-0.780	0.379	-2.060 **

*** 1% significance, **5% significance, *10% significance.

We also show that asymmetric information, controlling ownership acquisition and choice of payment are highly interdependent with each other. By considering the endogeneity problem in the analysis, we find the significance of the direct impact of information asymmetry on payment method and majority control has either decreased or disappeared. However, the simultaneous equation model results confirm the strong evidence that asymmetric information has a positive impact on the acquisition premium in both domestic and cross-border takeovers in emerging markets. Since this is the key result in our study, we carry out several robustness tests in the following section to confirm the findings in the main analysis. Particularly we test to see if our conclusion is sensitive to the control of total risk, choice of estimation window, measure of asymmetric information, and the correction of sample selection bias.

Robustness Tests

Control of Total Risk and Sensitivity of Estimation Period

In the main analysis above, we have used idiosyncratic risk as a measure of information asymmetry. However, the level of the idiosyncratic risk can also be influenced by the total risk of the target firms. Intuitively, higher idiosyncratic risk may also be associated with higher total risk. Thus, in order to measure the pure impact of idiosyncratic risk on the acquisition premium, we need to control the impact from the target firm's total risk.

Accordingly, we conduct a robustness test by taking consideration of the target firm's total risk in the measure of the asymmetric information variable. More specifically, we take the ratio of the

idiosyncratic risk to the total risk: $\theta = \frac{\sigma_e^2}{\sigma_t^2}$, where σ_e^2 is the residual variance estimated from the estimation period of the market model for each target firm stock and σ_t^2 is the total variance of the daily stock returns in the estimation period for each corresponding target firm stock. Instead of regressing the acquisition premium on the residual variance σ_e^2 (as in the main analysis), we regress it on the θ (i.e., “sigma ratio” in the table below).

In addition to controlling for the total risk, the estimation of the risk measures might be sensitive to the estimation window we chose in the main analysis (which is -120 days to -30 days before the takeover announcement). Thus, we conduct a robustness test by using a different estimation period (i.e., -120 days to -60 days before the announcement) and, based on the new window, we re-estimate the total risk, idiosyncratic risk, and the sigma ratio. We input the new measures in the regression models and test whether the results are sensitive to the estimation window we have chosen in the main analysis. Panel A in Table 1.7 shows the regression results for the domestic acquisition sample; Panel B is for the cross-border acquisition sample.

As we can see, by controlling the deal characteristics, target firm characteristics, and year/industry/country dummy variables the regression coefficients of the sigma ratio are consistently positive and significant at the 1% level. The significance does not change for the different asymmetric information measures estimated from the different estimation windows. The results are robust in both domestic and cross-border acquisitions. The robustness test suggests that the acquisition premium is positively related with the idiosyncratic risk of the target firms even after controlling the total risk. The asymmetric information plays a more important role in determining the acquisition premium than the total risk of the emerging market target firms.

Table 1.7 Acquisition Premiums and Asymmetric Information (Sigma Ratio) with a Different Estimation Window

Table 1.7 shows the OLS regression results based on the domestic acquisition sample (Panel A) and the cross-border acquisition sample (Panel B). The dependent variable is the acquisition premium in each takeover transaction, independent variables include deal characteristics (such as tender offers, industry relatedness, transaction value, payment method), target firm characteristics (including asymmetric information level, size, growth potential, leverage, profitability, and acquisition experience) and country level variables (target country corruption and country dummy variables). Particularly, we include the sigma ratio (which is the idiosyncratic risk divided by the total risk) to test the robustness of the asymmetric information measure. We also estimate the sigma ratio by using two different estimation periods to check if the results are sensitive to the choice of estimation windows.

Panel A. Domestic M&As

OLS Regression		Domestic M&As							
Dependent Variable: Acquisition Premium		B	t value	B	t value	B	t value	B	t value
(Constant)		-3.485	-2.075 **	-3.766	-2.246 **	-0.193	-0.166	0.160	0.139
Tender Offer		0.165	0.904	0.122	0.667	-0.107	-0.413	-0.091	-0.350
Prior Acquisition Experience		-0.072	-1.181	-0.067	-1.107	-0.190	-2.425 **	-0.189	-2.407 **
Private Acquiring Firm		-0.109	-0.924	-0.126	-1.080	-0.127	-0.854	-0.130	-0.865
Industry Relatedness (4-SIC)		-0.313	-2.210 **	-0.297	-2.110 **	-0.176	-0.930	-0.189	-0.992
Control ownership acquisition		1.153	8.122 ***	1.125	7.980 ***	1.158	6.331 ***	1.167	6.348 ***
Pre-acquisition ownership in the target firm		-0.435	-3.878 ***	-0.433	-3.886 ***	-0.221	-1.546	-0.239	-1.668 *
Pure Cash Payment		-0.662	-3.282 ***	-0.657	-3.282 ***	-0.901	-2.937 ***	-0.934	-3.035 ***
Log of Transaction Value		0.151	4.597 ***	0.162	4.908 ***	0.209	4.801 ***	0.202	4.655 ***
Target Firm Sales						-0.086	-3.016 ***	-0.089	-3.122 ***
Target Firm Book to Market Ratio						0.040	0.880	0.047	1.019
Target Firm Debt to Assets Ratio						0.043	0.746	0.037	0.650
Target Firm ROA Ratio						-4.559	-2.845 ***	-4.520	-2.804 ***
Sigma Ratio (-120, -60)		1.017	2.982 ***					1.155	2.880 ***
Sigma Ratio (-120, -30)				1.417	3.880 ***	1.479	3.359 ***		
Year Dummy		Yes		Yes					
Target Industry Dummy		Yes		Yes					
Target Country Dummy		Yes		Yes					
F		6.055 ***		6.184 ***		12.218 ***		11.900 ***	
Adjusted R Square		0.263		0.267		0.273		0.268	
N		737		741		389		389	

Panel B. Cross-border M&As

OLS Regression		Cross-border M&As							
Dependent Variable: Acquisition Premium		B	t value	B	t value	B	t value	B	t value
(Constant)		-3.605	-1.873 *	-3.731	-1.923 *	-3.577	-1.825 *	-3.518	-1.778 *
Tender Offer		0.227	1.271	0.206	1.151	0.524	1.783 *	0.520	1.762 *
Prior Acquisition Experience		-0.191	-2.192 **	-0.199	-2.290 **	-0.086	-0.669	-0.089	-0.691
Private Acquiring Firm		-0.123	-0.749	-0.055	-0.341	0.031	0.135	0.034	0.144
Industry Relatedness (4-SIC)		0.001	0.005	0.028	0.212	-0.079	-0.390	-0.077	-0.373
Control ownership acquisition		1.267	8.477 ***	1.299	8.664 ***	1.046	4.590 ***	1.063	4.662 ***
Pre-acquisition ownership in the target firm		-0.085	-0.662	-0.117	-0.922	-0.059	-0.325	-0.044	-0.239
Pure Cash Payment		-0.356	-1.313	-0.304	-1.137	0.459	1.143	0.468	1.113
Log of Transaction Value		0.207	5.293 ***	0.205	5.195 ***	0.180	3.054 ***	0.176	2.951 ***
Target Firm Sales						-0.015	-0.415	-0.015	-0.433
Target Firm Book to Market Ratio						-0.064	-1.392	-0.067	-1.452
Target Firm Debt to Assets Ratio						-0.096	-1.535	-0.097	-1.542
Target Firm ROA Ratio						-3.598	-1.395	-3.584	-1.375
Sigma Ratio (-120, -60)		1.409	3.805 ***					1.405	2.813 ***
Sigma Ratio (-120, -30)				1.410	3.647 ***	1.476	2.839 ***		
Year Dummy		Yes		Yes					
Target Industry Dummy		Yes		Yes					
Target Country Dummy		Yes		Yes					
F		6.328 ***		6.130 ***		6.408 ***		6.314 ***	
Adjusted R Square		0.363		0.351		0.211		0.209	
N		505		513		264		262	

*** 1% significance, **5% significance, *10% significance.

Information Asymmetry Measure in Cross-border Acquisitions: Geographic Distance

In the main analysis above, we use target firm stock's idiosyncratic risk as a proxy of information asymmetry. But it is also possible that the idiosyncratic risk can be used as a proxy for firm riskiness, liquidity, noise trading, etc. In addition, using target firm stock's idiosyncratic risk only represents one-sided asymmetric information (particularly from the target firm's aspect).

In this robustness test, we address these issues by using another proxy of asymmetric information that is unique to the cross-border acquisition sample. We measure the geographic distance between the capital cities of the target country and the acquiring country, and we expect the information asymmetry between the target firm and the acquiring firm to increase with longer geographic distance. The advantage of using this measure is that it represents the two-sided asymmetric information in takeover transactions, and it is a supplementary measure that focuses on the macro-level asymmetric information. If the asymmetric information does have a positive impact on the acquisition premium, we should expect that the acquiring firms from a greater distance (i.e., higher information asymmetry) will pay a higher premium to the target firms in the emerging markets.

Table 1.8 shows the OLS regression where acquisition premium is the dependent variable and both asymmetric information proxies as the independent variable. We control for the deal, target, and acquiring country characteristics in the models. In this analysis, we only focus on cross-border acquisitions since the geographic distance measure (between capital cities) is not relevant for domestic (in-country) acquisitions. We also include cultural distance, commonality in the law

system and official language, and the economic development level of the acquiring country (classified by World Bank in terms of either developed or developing countries) in our models.

The first model re-estimates the impact of asymmetric information (i.e., target firm idiosyncratic risk) on the acquisition premium by controlling the new variables that are unique to the cross-border acquisitions. The regression coefficient of the asymmetric information variable is still positive and significant at a 1% level; this confirms the main analysis that foreign acquirers pay a higher premium in the presence of higher target firm asymmetric information.

In the second model, we replace the target firm's asymmetric information variable with the geographic distance (log transformed). The distance measure is also positive and significant at the 1% level. This result strengthens our main conclusion that acquirers pay a higher premium under higher information asymmetry. This conclusion is robust to both one-sided asymmetric information and two-sided asymmetric information scenarios.

Finally, we include both the firm- and the country-level asymmetric information variables in the last model. Both proxies are positive and significant at the 1% level in the model. Therefore, the robustness test supports the hypothesis that both firm-level asymmetric information and country-level asymmetric information lead to payment of a higher acquisition premium to the target firms in the emerging markets. These results also indicate that these two proxies are not substitutes.

Comparing Table 1.8 with Table 1.3 Panel B, we find that the signs and significance of the controlling variables also remain the same in the robustness test. The controlling ownership acquisitions continue paying a higher premium than non-controlling ownership acquisitions;

larger transactions are associated with a higher acquisition premium, suggesting the bargaining power of the target firm in large-sized deals; and acquiring firms with prior acquisition experience in the target country tend to pay lower premiums in cross-border acquisitions.

Table 1.8 Acquisition Premiums and Asymmetric Information (Geographic Distance)

Table 1.8 shows the OLS regression results based on the cross-border acquisition sample only. The dependent variable is the acquisition premium in each takeover transaction. The key independent variable is the geographic distance between the capital cities of the target and the acquiring country (as a proxy for country-level asymmetric information). Other independent variables include deal characteristics (such as tender offers, industry relatedness, transaction value, payment method), target firm characteristics (including target firm asymmetric information, firm size, growth potential, leverage, profitability, and acquisition experience) and country level variables (such as the difference in the target country and acquiring country's cultural, official language, legal system, and economic development status).

OLS Regression Dependent Variable: Acquisition Premium	Cross-border M&As					
	B	t value	B	t value	B	t value
Asymmetric information	0.308	3.834 ***			0.261	3.267 ***
Geographic distance			0.434	4.055 ***	0.398	3.675 ***
Tender offer	0.336	1.617	0.219	1.054	0.264	1.287
Prior acquisition experience	-0.212	-2.124 **	-0.240	-2.424 **	-0.212	-2.159 **
Industry relatedness (4-SIC)	-0.010	-0.067	-0.043	-0.298	-0.006	-0.039
Log of transaction value	0.185	4.313 ***	0.144	3.447 ***	0.175	4.126 ***
Pre-acquisition ownership in the target firm	-0.018	-0.126	-0.101	-0.702	-0.007	-0.047
Control ownership acquisition	1.123	6.540 ***	1.231	7.356 ***	1.152	6.819 ***
Pure cash payment	-0.106	-0.354	-0.152	-0.507	-0.124	-0.422
Private acquiring firm	0.059	0.317	0.047	0.258	0.018	0.097
Cultural distance	-0.050	-0.696	-0.103	-1.428	-0.109	-1.508
Common language	-0.169	-0.937	-0.285	-1.582	-0.287	-1.597
Similar law system	0.054	0.288	0.138	0.738	0.139	0.744
Developed country acquiring firm	0.154	0.757	-0.296	-1.307	-0.243	-1.072
Year dummy	Yes		Yes		Yes	
Target industry dummy	Yes		Yes		Yes	
Target country dummy	Yes		Yes		Yes	
(Constant)	-0.479	-0.245	-4.850	-2.438 **	-3.037	-1.486
F	4.378 ***		4.452 ***		4.686 ***	
Adj. R Square	0.318		0.320		0.341	
N	414		420		414	

*** 1% significance, **5% significance, *10% significance.

Sample Selection Bias

We recognize that making acquisitions in the emerging markets is an endogenous choice that both the bidding and the target firms make. In the main analysis, we are only able to observe the

emerging market firms that are acquired in the completed transactions recorded in the SDC database. We have ignored the large number of the emerging market firms that are not acquired in the sampling period. The literature on firm takeovers in the developed market has already shown that firms that are the target of takeovers have substantially different characteristics than the firms that are not acquired (e.g., Palepu, 1986). It is possible that the acquiring firms pay a high premium under information asymmetry because of the distinct characteristics of the target firms in the emerging markets. Ignoring the not-acquired firms may introduce sample selection bias and impact the overall conclusion of the essay.

To control for the sample selection bias, we follow Heckman's (1976, 1979) procedure. More specifically, we download all the publicly listed firms in the 20 emerging countries over the sampling period (1990 to 2007) from the DataStream database. Then we estimate a probit analysis based on this complete emerging market firm dataset: the dependent variable is a binary variable which equals one if the firm has been acquired by any domestic or foreign firm in the sampling period and equals zero otherwise. The independent variables include firm size (revenue), leverage (debt to assets ratio), liquidity (cash to total assets ratio), market valuation (book to market ratio), profitability (ROA), and efficiency (sales to total assets); these have been found to be the key characteristics of a firm that is a takeover target (see Palepu, 1986; Barnes, 2000). Following Heckman's method, we compute the "Inverse Mill's ratio²⁴" (IMR) for each target firm based on the estimated probit model and then include IMR as an additional control variable in the regression models of our main analysis (particularly the acquisition premium and

²⁴ Inverse Mill's Ratio is basically a ratio of the probability density function over the cumulative distribution function of a distribution. A detailed description of the ratio can be found in Heckman (1976).

asymmetric information regression models). This procedure can effectively correct the sample selection bias, as we can only observe part of the emerging market firm sample.

Table 1.9 gives the probit model estimates. It shows that the firms targeted for takeover, in general, have lower book-to-market ratio, higher cash ratio, larger firm size, and a lower efficiency ratio and operating performance than the not-acquired firms in the emerging markets.

Table 1.10 demonstrates the OLS regressions of the acquisition premium models (as in Table 1.3) but includes the IMR variable to correct the sample selection bias. Comparing Table 1.9 with the main analysis in Table 1.3, we found consistent results for the impact of controlling ownership acquisition and transaction size. Both variables have consistently positive and significant regression coefficients in the models. In addition, we confirmed that cash payment and a bidding firm's prior acquisition experience in domestic acquisitions leads to a lower premium; the significance of the acquisition experience, however, disappears in the cross-border acquisitions after correcting the sample selection bias. We also confirmed that acquiring firms pay a higher premium to the low-performing firms in both domestic and cross-border acquisitions.

Most importantly, we find that the regression coefficient of the information asymmetry proxy continues to be positive and highly significant (at a 1% level). Thus, it confirms the robust result that emerging market target firms gain a higher acquisition premium under higher information asymmetry.

Table 1.9 Probit Model of Emerging Market Target Firm Characteristics

Table 1.9 shows the results of the probit model based on a sample of all publicly listed firms in the 20 emerging markets between 1990 and 2007. The dependent variable is a dummy variable, which equals 1 if the firm is taken over by any other firm during the sampling period and equals 0 if the firm has never been acquired by any other firm in the period. The independent variables include book to market ratio, cash ratio, financial leverage, sales, sales turnover and profitability ratio of the firm. We also include dummy variables to control for the effect of different year, industry and target country in the sample. We use the estimated probabilities from the probit model to calculate the Inverse Mill's ratio for the subsequent OLS regressions (by using the "MicEcon" package in R).

Probit Model			
Dependent variable:			
Takeover target firm dummy	B	Std. Error	z value
(Intercept)	-8.545	207.827	-0.041
Book to market ratio	-0.103	0.010	-10.692 ***
Cash ratio	0.233	0.100	2.329 *
Leverage	0.092	0.065	1.413
Log (sales)	0.143	0.008	17.627 ***
Sales turnover	-0.180	0.015	-12.255 ***
ROA ratio	-0.252	0.117	-2.155 *
Year dummy	Yes		
Target industry dummy	Yes		
Target country dummy	Yes		
AIC	15020		
N	39,089		

*** 1% significance, **5% significance, *10% significance.

Table 1.10 OLS Regression of Acquisition Premium and Asymmetric Information (Controlling for the Inverse Mill's Ratio)

Table 1.10 shows the OLS regression by including the IMR measure as an independent variable in the model (in order to correct the sample selection bias). The dependent variable is the acquisition premium in each takeover transaction, other independent variables include deal characteristics (such as tender offers, industry relatedness, transaction value, payment method), target firm characteristics (including asymmetric information level, size, growth potential, leverage, profitability, and acquisition experience) and country level variables (target country corruption and country dummy variables). Detailed explanations and measures of these variables can be found in Appendix 1A. The model is estimated for the domestic acquisitions and cross-border acquisitions separately.

OLS Regression	Domestic M&As			Cross-border M&As		
	B	t value	B	t value	B	t value
Dependent Variable: Acquisition Premium						
Asymmetric Information	0.506	6.534 ***	0.588	8.116 ***	0.509	6.629 ***
Tender Offer	-0.038	-0.154	0.064	0.298	-0.091	-0.418
Prior Acquisition Experience	-0.222	-2.948 ***	-0.266	-3.810 ***	-0.243	-3.388 ***
Industry Relatedness (4-SIC)	-0.269	-1.488	-0.167	-1.045	-0.156	-0.949
Target Country Control of Corruption	0.036	0.465	0.126	1.946 *		
Log of Transaction Value	0.300	6.532 ***	0.288	7.207 ***	0.394	8.225 ***
Pre-acquisition ownership in the target firm	-0.108	-0.779	-0.013	-0.098	-0.052	-0.401
Private Acquiring Firm	-0.172	-1.205	-0.232	-1.729 *	-0.187	-1.390
Pure Cash Payment	-1.038	-3.509 ***	-0.834	-3.158 ***	-0.732	-2.750 ***
Control ownership acquisition	1.054	5.982 ***	0.944	5.547 ***	0.912	5.336 ***
Inverse Mill's Ratio (IMR)	0.638	2.463 **	0.585	2.357 **	1.302	3.732 ***
Target Firm Sales	-0.063	-1.960 *				
Target Firm Book to Market Ratio	-0.020	-0.453				
Target Firm Debt to Assets Ratio	0.008	0.155				
Target Firm ROA Ratio	-3.098	-2.115 **				
Year Dummy			Yes	Yes	Yes	Yes
Target Industry Dummy			Yes	Yes	Yes	Yes
Target Country Dummy						
(Constant)	2.058	1.526	-0.962	-0.551	-4.357	-2.111 **
F value	14.452 ***		7.377		6.007 ***	
Adjusted R Square	0.343		0.324		0.350	
N	387		494		494	

*** 1% significance, ** 5% significance, * 10% significance.

Conclusions

This study focuses on the acquisition premium paid to the target firms in emerging markets and specifically tests the impact of information asymmetry on the acquisition premium. Emerging market takeovers are the ideal choice in such a study, as the target firms and takeover deals are more likely to incur high information asymmetry in these countries.

Based on the 2,029 domestic and 1,127 cross-border mergers and acquisitions in 20 emerging countries during the period 1990 to 2007, our main results show that the acquisition premium is positively related to the information asymmetry of the target firms. This conclusion is robust with respect to the choice of information asymmetry proxy, estimation period, sample selection, and endogenous issues. In the single equation model, we find that a higher level of asymmetric information is associated with lower cash payment and a higher propensity toward acquiring majority control in the target firms. However, after controlling the simultaneous impact of asymmetric information on the three dependent variables (i.e., acquisition premium, cash payment, and majority control), we find the significance of the impact on cash payment and majority control decreases or disappears, but that asymmetric information continues to have the most significant impact on the acquisition premium in emerging market takeovers.

Our results are contrary to the view that asymmetric information may deter corporate takeovers and thus reduce the premium paid to the target firms. We provide strong evidence that bidders in the emerging market takeovers are actively seeking majority control in the target firms. Paying a higher premium to gain the majority control is one way to deal with the high information asymmetry in the emerging market takeovers. In addition, acquiring majority control in these

high-asymmetric information firms allows acquiring firms to gain access to the private information that is not available to the general public investors.

This essay has at least two limitations. The first relates to our inability to include alternative and additional measures of asymmetric information that are used in developed market studies – such as R&D expenses, analysts' coverage and measures of idiosyncratic risk based on industry indices. We could not use these measures as we have no access to such data for the emerging market firms. The second limitation of the study is that it focuses only on the actions of acquiring firms at and around takeovers. It would be instructive to expand the study to link the three key measures – premium, choice of payment, and controlling interest – to the subsequent long-term performance of both the acquiring and target firms.

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Appendix 1A – Variable Definitions and Data Sources

Variable Name	Variable Definition	Data Sources
Deal Characteristics		
	Percentage difference between offer price and the target firm stock price (4-weeks before takeover announcement); or the cumulative abnormal returns in 120 days prior to 2 days subsequent to the takeover announcement.	Collected from SDC Platinum database or computed from DataStream stock return data
Acquisition premium		
% of cash in the payment	Percentage of cash in total payment	SDC Platinum database
Pure Cash Payment	Dummy variable equals 1 if payment is made in pure cash, otherwise 0.	SDC Platinum database
Control ownership acquisition	Dummy variable equals 1 if the bidding firm gains controlling ownership (>50%) in the target firm, otherwise 0.	SDC Platinum database
Full acquisition	Dummy variable equals 1 if the bidding firm gains 100% ownership in the target firm, otherwise 0.	SDC Platinum database
Industry relatedness (4-SIC)	Dummy variable equals 1 if the acquiring industry shares the same 4-digit SIC code with the target industry, otherwise 0.	SDC Platinum database
Log of Transaction Value	Log transformed takeover transaction value (real value in 2006 USD dollar)	SDC Platinum database
Tender Offer	Dummy variable equals 1 for tender offer, otherwise 0.	SDC Platinum database
Target/Acquiring Firm Characteristics		
Asymmetric information	Idiosyncratic risk of target firm stock	Computed from daily stock returns from DataStream
Sigma ratio	Idiosyncratic risk divided by total risk of target firm stock	Computed from daily stock returns from DataStream
Target firm book to market ratio	Target firm book to market ratio at the latest fiscal year end before takeover announcement	DataStream/Worldscope database
Target firm debt to assets ratio	Target firm debt to assets ratio at the latest fiscal year end before takeover announcement	DataStream/Worldscope database
Target firm ROA ratio	Target firm return on assets ratio at the latest fiscal year end before takeover announcement	DataStream/Worldscope database
Target firm sales	Target firm total revenue (log transformed) at the latest fiscal year end before takeover announcement	DataStream/Worldscope database
Private acquiring firm	Dummy variable equals 1 if the bidder is private firm, public bidder and other type of bidder is coded as 0.	SDC Platinum database
Prior acquisition experience	Categorical variable equals 0 if the acquiring firm does not have acquisition in the target country before, equals 1 if the acquiring firm has made one acquisition before the current acquisition, equals 2 if the acquiring firm has made more than one acquisition in the target country before the current acquisition. Dummy variable equals 1 for the acquiring firm has ownership in the target firm before the current acquisition and equals 0 if the acquiring firm does not have ownership in the target firm.	Computed from SDC Platinum database
Pre-acquisition ownership in the target firm		SDC Platinum database
Relative firm size	Target firm market cap divided by acquiring firm market cap (at the latest fiscal year end before takeover announcement)	Calculated from DataStream/Worldscope database
Country Level Variable		
Acquiring country_civil law	Dummy variable equals 1 if the acquiring country adopts civil law system, other law systems are coded as 0.	University of Ottawa, Faculty of Law website
Acquiring country_common law	Dummy variable equals 1 if the acquiring country adopts common law system, other law systems are coded as 0.	University of Ottawa, Faculty of Law website
Target country_civil law	Dummy variable equals 1 if the target country adopts civil law system, other law systems are coded as 0.	University of Ottawa, Faculty of Law website
Target country_common law	Dummy variable equals 1 if the target country adopts common law system, other law systems are coded as 0.	University of Ottawa, Faculty of Law website
Target country control of corruption	Control of corruption index (averaged by target country over the years 1996 to 2006)	Transparency International: www.transparency.org
Cultural distance	Hofstede's cultural distance measures include: power distance index, individualism, masculinity, uncertainty avoidance index. The four measures are aggregated to one culture distance index proposed by Kogut and Singh (1988).	Hofstede (1980): www.geert-hofstede.com
Geographic distance	Distance between the capital cities of the acquiring country and the target country (in kilometers)	Geobytes database: www.geobytes.com
Common language	Dummy variable equals 1 if the acquiring country shares the same official language with the target country, otherwise 0.	CIA World Factbook: www.cia.gov/library/publications/the-world-factbook/
Developed country acquiring firm	Dummy variable equals 1 if the acquiring is from a developed country and equals 0 if it is from a developing country.	World Development Indicator/World Bank database

Appendix 1B. Extension of Maddala (1983) to a Three-equation Structure Model

Maddala (1983, p.242) proposed a two-stage method to estimate a simultaneous equation model (SEM). He showed an example for a two-equation SEM problem where one dependent variable is continuous and the other dependent variable is dichotomous. The model can be presented as follows:

$$y_1^* = \gamma_1 y_2^* + \beta_1' X_1 + \mu_1 \quad (P1)$$

$$y_2^* = \gamma_1 y_1^* + \beta_2' X_2 + \mu_2 \quad (P2)$$

where y_1 is observed and y_2 is dichotomous, so

$$y_1 = y_1^*$$

$$y_2 = 1 \text{ if } y_2^* > 0$$

$$y_2 = 0 \text{ otherwise}$$

Thus, the reduced forms can be presented as follows:

$$y_1 = \Pi_1 X + v_1 \quad (P3)$$

$$y_2^* = \Pi_2 X + v_2 \quad (P4)$$

As y_2^* is observed only as a dichotomous variable, we can only estimate Π_2 / σ_2 , where $\sigma_2 = \text{Var}(v_2)$. Hence, we write

$$y_2^{**} = \frac{y_2^*}{\sigma_2} = \frac{\Pi_2}{\sigma_2} X + \frac{v_2}{\sigma_2} = \Pi_2^* X + v_2^* \quad (P5)$$

The simultaneous equations can be now written as:

$$y_1 = \gamma_1 \sigma_2 y_2^{**} + \beta_1' X_1 + \mu_1 \quad (P6)$$

$$y_2 = \frac{\gamma_2}{\sigma_2} y_1 + \frac{\beta_2'}{\sigma_2} X_2 + \frac{\mu_2}{\sigma_2} \quad (P7)$$

Then Maddala (1983) suggests a two-stage procedure to estimate Π_1 (in P3) by using OLS regression and to estimate Π_2^* (in P4) by using probit maximum likelihood regression (where X

include all the exogenous variables in the system). Then equation P6 can be estimated by OLS after substituting $\hat{\Pi}_2^* X$ for y_2^{**} and equation P7 can be estimated by probit maximum likelihood regression after substituting $\hat{\Pi}_1 X$ for y_1 . Note that the estimable parameters in this model are $\gamma_1\sigma_2$, γ_2/σ_2 , β_1 , β_2/σ_2 , σ_1 and σ_{12}/σ_2 . However, since $\sigma_2 > 0$, the hypothesis test for $\beta_2/\sigma_2 = 0$ is also a test of $\beta_2 = 0$, which is our interest in the test.

In our current study, we have three equations in the simultaneous equation model. We can extend the method in Maddala (1983) to estimate the three-equation model. The structural model is shown as follows:

$$y_1 = \gamma_1 y_2 + \gamma_2 y_3^* + \beta_1' X_1 + \mu_1 \quad (\text{P8})$$

$$y_2 = \gamma_3 y_3^* + \gamma_4 y_1 + \beta_2' X_2 + \mu_2 \quad (\text{P9})$$

$$y_3^* = \gamma_5 y_2 + \gamma_6 y_1 + \beta_3' X_3 + \mu_3 \quad (\text{P10})$$

where y_1 and y_2 are observed continuous variables and y_3^* is the dichotomous variable.

We can write the three equations in the reduced forms:

$$y_1 = \Pi_1 X + v_1 \quad (\text{P11})$$

$$y_2 = \Pi_2 X + v_2 \quad (\text{P12})$$

$$y_3^* = \Pi_3 X + v_3 \quad (\text{P13})$$

where $X = (X_1', X_2', X_3')'$.

For the dichotomous variables y_3^* , we can estimate the following equation (similar to P5):

$$y_3^{**} = \frac{y_3^*}{\sigma_3} = \frac{\Pi_3}{\sigma_3} X + \frac{v_3}{\sigma_3} = \Pi_3^* X + v_3^* \quad (\text{P14})$$

Then we can estimate $\hat{y}_1$ from P11 and $\hat{y}_2$ from P12 based on OLS regression, and estimate $\hat{y}_3^*$ from P14 based on probit maximum likelihood regression. By substituting the fitted values of the endogenous variables (i.e. y_1 , y_2 , and y_3^*) in the equations (P8 – P10), we can estimate the structure model as follows:

$$y_1 = \gamma_1 y_2 + \gamma_2 \sigma_3 y_3^{**} + \beta_1' X_1 + \mu_1 \quad (\text{P15})$$

$$y_2 = \gamma_3 \sigma_3 y_3^{**} + \gamma_4 y_1 + \beta_2' X_2 + \mu_2 \quad (\text{P16})$$

$$y_3^* = \frac{\gamma_5}{\sigma_3} y_2 + \frac{\gamma_6}{\sigma_3} y_1 + \frac{\beta_3'}{\sigma_3} X_3 + \frac{\mu_3}{\sigma_3} \quad (\text{P17})$$

where P15 and P16 are estimated by using OLS regression and P17 is estimated by using probit maximum likelihood regression. In the study, we are interested in the impact of asymmetric information variable (one of the X s) on the acquisition premium (y_1), percentage of cash payment (y_2) and the propensity of acquiring majority control (y_3^*). Thus, we test if β_1 , β_2 or β_3 are statistically different from zero or not. Note in equation P17, we are actually testing whether β_3 / σ_3 equals zero or not. However, since σ_3 is larger than zero, we are effectively testing the null hypothesis that $\beta_3 = 0$.

We also check the identification problem in the structural model of P11, P12 and P14. In each model, there are two endogenous variables, which means each model needs to have at least more than two unique exogenous variables (which do not appear in the other structural models in the system) to make the model identifiable. Thus, as we can see in equation (E1) to (E3) in the essay, each equation contains three unique exogenous variables (in bold) that make the models identifiable.

Maddala (1983, p.245) also derived the asymptotic covariance matrix for the two-equation model. However, the asymptotic variance derivation for the three-equation model is not available in the literature, and the linearized variance estimate is tedious to derive. We therefore decided to use the non-parametric bootstrap method to empirically estimate the standard error for each regression coefficient in P15 to P17 to conduct the hypothesis testing. Detailed bootstrap procedure is introduced in footnote 23. Here, we show the bootstrap distribution for some regression coefficients (i.e. regression coefficients for the asymmetric information variable in the three equations). As we can see, the empirical distributions for the regression coefficients are close to a normal distribution. We use normal confidence intervals to make the statistical inference in the essay.

Equation 2: Percentage of Cash Payment

Regression beta value (Asymmetric Information)

Equation 2: Percentage of Cash Payment

Regression beta value (Asymmetric Information)

Equation 3: Majority Control

Regression beta value (Asymmetric Information)

Equation 3: Majority Control

Regression beta value (Asymmetric Information)

Essay Two. Partial Acquisitions and Target Firm Performance in Emerging Markets

Abstract

In this essay, we examine the motivations of acquirers undertaking partial acquisitions in the emerging markets and the subsequent post-acquisition performance of these target companies. We directly test the corporate control rationale of acquisitions versus the market entry rationale. By comparing both the domestic (within country) and cross-border partial acquisitions in 22 emerging countries between 1990 and 2007, we find that firms partially acquired by domestic acquirers have weaker pre-acquisition performance while firms partially acquired by cross-border acquirers have stronger pre-acquisition performance than the control firms. In addition, we find domestic target firms experience significant improvement in the operating performance and substantial change in the ownership structure that is not observed in the cross-border acquisitions. We also examine the long-term stock performance of the partially acquired target firms. Consistent with the efficient market hypothesis (Fama, 1998), we do not observe long-term abnormal returns for both domestic and cross-border target firms. We further investigate the cross-sectional variations in the post-acquisition operating and stock performance of the target firms and fail to detect correlation with any specific firm (or deal) characteristics. Our empirical evidence suggests that partial acquisitions in the emerging markets undertaken by domestic acquirers serve the function of market for corporate control, while cross-border partial acquisitions seem to be motivated by market entry rationale.

Introduction

The fifth global mergers and acquisitions (M&A) wave since the 1990s is characterized by the surging amount of cross-border deals undertaken by multinational firms (Bruner, 2005).

According to the World Investment Report (WIR, 2008) published by the United Nations Conference on Trade and Development, in 2007 the value of cross-border acquisitions amounted to US \$1,637 billion, 21% higher than the previous record in 2000. Domestic (within-country) acquisitions also surpassed the record in 2000 by reaching about US \$2,500 billion transaction value in 2007 (according to the SDC Platinum database). Although the majority of the M&As was still undertaken among and within developed countries, more and more acquisitions are taking place in the emerging countries (WIR, 2008).

There seem to be two competing rationales that can explain the motivations behind the cross-border acquisitions: market for corporate control and market entry. The market for corporate control hypothesis has been extensively examined in the context of the disciplining and monitoring effect of mergers and acquisitions on the target firm management, and it also holds true for within country (domestic) acquisitions. More specifically, the market for the corporate control hypothesis (Manne, 1965) states that companies performing poorly can become takeover targets in a competitive takeover market. As a consequence, inefficient managers in those firms are replaced by highly efficient managers, and it is expected that the subsequent performance will be improved. Thus, if the acquiring firm is motivated by the disciplining function, we expect the target firms to have lower pre-acquisition performance and their performance will improve after the acquisitions.

An alternative hypothesis is the strategic market entry hypothesis. Many policy reports (e.g., WIR, 2007) have shown the economic significance of cross-border acquisitions as an important market entry strategy for multinational firms into the new markets (i.e., about 70 – 80% of the foreign direct investments are cross-border acquisitions)²⁵. If this rationale explains the motivation for cross-border acquisitions, we expect the target firm performance in the pre-acquisition period to be strong, and we would expect no major changes to either its performance or governance structure in the post-acquisition period.

However, there is little empirical evidence in the literature that compares these two competing hypotheses. Furthermore, we have little knowledge about the impact of corporate M&As, as a market entry strategy, on the target firm performance. This analysis would be of interest from a public policy perspective, as many countries continue to be concerned with the overall impact of the market on corporate control especially when the acquirer is from a foreign country²⁶.

We believe it is important to compare the pre-acquisition performance of both domestic and cross-border targets, as this will shed light on the motivations of the two types of acquisitions.

We argue that domestic acquisitions are substantially different from cross-border acquisitions.

Domestic acquirers have already established their market shares in the local market and have

²⁵ Brakman, Garretsen, and Marrewijk (2006) show that cross-border M&As account for as high as 76% of the overall world foreign direct investment (FDI). Traditional FDI only focuses on greenfield investment, while a broad definition of FDI by the United Nations Conference on Trade and Development include cross-border M&As, international joint ventures, and greenfield investment.

²⁶ Foreign acquisitions are usually considered as a “double-edged sword” by the emerging countries. On one hand, emerging countries are eager to attract foreign acquirers that bring new capital, technology, management skills, and jobs to boost the local economy (Farrell, Remes, and Schulz, 2004); on the other hand, they are also wary of the multinational companies who only exploit cheap labour forces and natural resources and pursue short term gains rather than long-term business development in the local country. Some critics from leading emerging countries, such as China, are even warning that foreign companies are entering the emerging market with an intention to buy out the influential large companies in order to permanently eliminate competition from local brands or establish monopolies in the key industries. They fear that once foreign acquirers have established such monopoly position, they will manipulate the market and threaten the national economic security (Wang, 2007). However, policy makers may not be able to judge the pros and cons of foreign acquisitions based on these subjective arguments. Empirical evidence of the impact of foreign acquisition on local economy is in urgent demand for the newly opening emerging markets.

more information and networking advantages than foreign acquirers (Shimizu, Hitt, Vaidyanath and Pisano, 2004). Thus, it may be relatively easier for domestic acquirers to spot inefficiently managed companies in the local market. It is also less costly for domestic acquirers to restructure the target firms as they have fewer cultural and communication barriers and they are more familiar with the legal and governance system in the country. According to the traditional function of corporate M&As (e.g., Manne, 1965), we expect domestic acquisitions in the emerging markets to serve as a market for corporate control that disciplines the poorly performing management. The hypothesis suggests that under a poor management team, corporate resources are not efficiently used so that the firm performance is weak and the market value of the firm is discounted. It is more likely that the poorly performing management team would be replaced by a strongly performing team in a competitive takeover market. Acquisitions can release hidden values from the inefficient management, and firm performance can be improved after the acquisitions. This hypothesis predicts that the takeover targets are most likely to be inefficient firms and have lower performance than their peer firms (Jensen, 1988).

On the other hand, foreign acquirers usually have less knowledge and experience in the local markets. This effect is particularly strong in the cross-border takeovers of the emerging markets, as the liberalization of these markets only started in the later part of the last century. Most foreign acquirers coming from developed markets lack experience in doing business in these new markets. Most importantly, the cultural barrier, and differences in the language, political, and economic systems make it more difficult for the foreign firms to start up their business in those countries. Zaheer (1995) terms this as a “liability of foreignness” that threatens the success of foreign investment. More and more foreign companies choose cross-border acquisitions as an

important strategy to enter these new markets²⁷. Acquiring a well-established business and choosing a strongly performing partner allow the acquiring firm to obtain important strategic resources (such as knowledge base, networking relationship, human resources, distribution channels, and brands) and gain access to the market and to the key constituencies at the local level. Thus, the foreign company can quickly gain a competitive advantage in the market by acquiring a local company with strong capability and important strategic resources. Consistent with this “strategic market entry” hypothesis, we would expect the takeover targets in cross-border acquisitions to be the key players in their local markets. These firms should have a better performance, higher efficiency ratio, and higher market valuation than the control firms before the acquisitions.

This essay intends to provide direct examination of these two competing hypotheses by using both domestic and cross-border acquisitions in the emerging markets. Emerging markets are an ideal choice in our study, as these markets only became open to foreign investors in the last two decades or so (Bekaert and Harvey, 2000). The market entry hypothesis is more relevant in emerging markets than in developed countries. Most of the foreign companies typically have little knowledge and business experience in these emerging markets. However, due to the huge market potential in those countries, foreign companies are actively looking for opportunities to enter these new markets. Accordingly, we use a sample of domestic and cross-border acquisitions in 22 emerging markets between 1990 and 2007 to test these two hypotheses. We

²⁷ Most of the studies focus on the determinant factors for choice of mode entries (such as acquisitions, joint venture, green field investment, export, and alliance). Some empirical studies include Brouthers and Brouthers (2000), Hennart and Reddy (1997), Kogut and Singh (1988), Harzing (2002), and Barkema and Vermeulen (1998). However, there is no empirical study that examines the impact of cross-border acquisitions (as a market-entry strategy) on target firm performance in the existing literature. We have little empirical evidence about the market entry hypothesis in the emerging markets, which is the focus of our study.

believe that by comparing these two samples, we can provide clear empirical evidence on these two competing rationales.

The study is also motivated by some knowledge gaps in the existing literature. There have been numerous studies on the domestic (in-country) acquisitions in the developed markets (predominantly in the U.S. and in European countries). Studies on the emerging market firm acquisitions are rare. In addition, most M&A studies focus on the short-term impact of the acquisitions using the event study method. We have little knowledge about whether investors' expectations, reflected in the short-term stock price changes, actually materialize in the long-term stock and operating performance. Finally, previous M&A studies mostly focus on the acquiring firm's aspect since their focus is on "full" acquisitions; in these acquisitions, targets get fully acquired and, thus, there is no publicly available information about their performance in the post-acquisition period. There are a few studies that have examined the long-term performance of the target firms in the U.S. domestic acquisitions based on partial acquisitions²⁸. However, studies on partial acquisitions in emerging market firm acquisitions are non-existent in the current literature.

We believe that this is the first study in the literature to use a comprehensive sample of emerging market M&As, including 22 emerging countries from 1990 to 2007, to examine these issues.

Since we plan to test for the two competing hypotheses, we compare the domestic and cross-

²⁸ In partial acquisitions, the acquiring firm only acquires part of the ownership in the target firms, thus the publicly listed target firm continues listing on the public market. Using partial acquisition sample allows us to track long-term impact on the target firm performance and other firm characteristics. Most studies on partial acquisitions are conducted for domestic U.S. acquisitions (for example, Madden, 1981; Mikkelsen and Ruback, 1985; and Eyssell, 1989, 1990).

border acquisitions in terms of pre-acquisition performance and post-acquisition changes in target firm performance, ownership, and financial characteristics. Our evidence indicates that domestic acquisitions and cross-border acquisitions have different characteristics and that these acquisitions indeed serve different functions in the emerging markets. Domestic acquirers seem to acquire poorly performing target firms and significantly restructure the target firms after the acquisitions (supporting the market for corporate control hypothesis). In contrast, foreign acquirers seek strongly performing firms as stepping stones into new markets (supporting the strategic market entry hypothesis). Moreover, in the three years after the partial acquisitions, domestic target firms experience significant improvement in operating performance and changes in ownership structure; while cross-border target firms do not experience such changes. We also examined the long-term stock performance of the partially acquired target firms in the emerging market takeovers. Consistent with the efficient market hypothesis, we do not observe long-term abnormal returns in either domestic or cross-border target firms after the acquisitions. This suggests that the information about the operating performance improvement in the target firms may have already been reflected in the target firms' stock prices upon the acquisition announcement. Investors are not surprised by the improvement of operating performance (in domestic target firms) after the acquisitions.

The organization of the essay is as follows. First, we elaborate on the two hypotheses related to the motivations of the domestic and the cross-border acquisitions. Then, we review the literature on partial acquisitions in developed market takeovers. Second, we discuss our sample and methodologies. Empirical results are shown in the third section. Finally, we provide some study conclusions and limitations, and directions for further research.

Literature Review

Target Firm Pre-acquisition Characteristics and Performance

A majority of the existing studies predominantly focus on domestic acquisitions in the developed markets and provide comparisons on the firm characteristics of acquired firms with those not acquired. The overall evidence indicates that acquired firms tend to be smaller (Palepu, 1986; Franks et al., 1988), and they have a lower financial leverage (Safieddine and Titman, 1999), a higher liquidity ratio (Song and Walkling, 1993), a higher growth potential (Smith and Watts, 1992), a lower market valuation (Brealey and Myers, 1981; Hasbrouck, 1985; Byrd and Stammerjohan, 1997), and a weaker pre-acquisition firm performance (Palepu, 1986). Particularly, Palepu (1986) finds that acquired firms tend to have weaker operating performance (measured by Return on Assets [ROA]) and weaker long-term stock performance (measured by buy-and-hold returns) than the firms not acquired. These studies do not separate the target firms that are acquired by domestic firms or by foreign firms.

Only Chen and Su (1997) have compared the characteristics and performance between cross-border M&A targets and domestic (in-country) M&A targets. They focus on the acquisition target firms in the United States between 1980 and 1990 and find that domestic target firms tend to have higher R&D expenses than cross-border target firms, suggesting that cross-border acquisitions in the U.S. do not focus more on technology-intensive targets. In addition, they find that U.S. targets of cross-border takeovers are financially worse than U.S. targets of domestic takeovers. However, due to the lack of a rigorous matching sample (such as matching by firm size) and the small sample size of their study (only about 160 cross-border target firms), their results may not be generalizable to a larger scale. To the best of our knowledge, there is no study

that compares the domestic and cross-border acquisition targets in emerging markets. We do not know if domestic target firms perform differently from the cross-border target firms; this knowledge could shed light on the different motivations of the two types of acquisitions.

Acquisitions and Long-term Target Firm Performance

As target firms usually disappear from the public market after full acquisitions, it is almost impossible to track the post-acquisition performance of the target firms. As an alternative, previous research has used a sub sample of the target firms that are only partially acquired by the acquiring firms to investigate the post-acquisition performance of target firms. These target firms continue listing in the public market after the partial acquisitions and, thus, can be used in long-term studies. However, most research on partial acquisitions is conducted based on U.S. domestic acquisitions. Empirical evidence shows that a large percentage of bidders start with partial ownership, often 10-20 percent or more, at the time they make acquisition offers (e.g., Bradley, Desai, and Kim, 1988; Franks and Harris, 1989; Jarrell and Poulsen, 1989; Stulz, Walking, and Song, 1990; Jennings and Mazzeo, 1993; Betton and Eckbo, 2000; Franks, Mayer, and Renneboog, 2001; and Jenkinson and Ljungqvist, 1997). Researchers have used “partial acquisition,” “toehold/foothold acquisition” as well as “block ownership purchase” interchangeably in the literature. A brief review of these studies (for the domestic partial acquisitions in developed markets) can be found in Appendix 2A. The key conclusion from these studies is that partially acquired target firms achieve better performance after acquisitions. The improved performance is claimed to be primarily driven by the active monitoring and management role of the acquiring firms and the strategic investors.

Compared to the abundant evidence of domestic partial acquisitions in developed countries, studies on the post-acquisition performance in cross-border partial acquisitions and even on domestic acquisitions in emerging markets are rare²⁹. Some studies in the international business literature have examined the partial acquisition as a mode of entry into the foreign market (in addition to the other modes of entry such as full acquisition, joint venture, or Greenfield investment) (e.g., Lopez-Durate and Garcia-Canal, 2002, 2004; Nguyen, 2006). Kang and Kim (2005) studied the role of legal rules and law enforcement for foreign acquiring firms (mainly from other developed countries, such as UK, Japan, and Canada) in fostering their corporate governance activities in the U.S. targets between 1981 and 1999. They find that post-acquisition governance activities are less likely to occur when acquirers are from foreign countries with weak shareholder rights than when they are from countries with strong shareholder rights. The analysis of the abnormal returns for the U.S. targets at the announcement of block share purchases also indicates that they are positively related to the shareholder rights score of the acquirer's country. This result suggests that foreign investors from countries with good governance systems have the ability to carry their governance skills and expertise across national borders and perform an active role in disciplining target management.

In the current literature, no study was found to examine the long-term performance of partially acquired target firms in the cross-border M&As (and domestic M&As) of emerging market firms. We believe studying emerging market takeovers adds significant value to the literature. This is particularly true as it allows us to compare the domestic acquisitions and the cross-border acquisitions along with the different motivations by these two groups and to provide insights into

²⁹ This is probably because of the historical lack of easily available and longitudinal data sources on emerging market firms.

the long-term performance changes in the partially acquired target firms. More specifically, if the domestic acquisitions serve as a market for corporate control, we expect that the domestic acquirers purchase poorly performing firms and make significant restructuring efforts in the target firms that lead to improved performance. We should also be able to observe significant changes in the financial characteristics and ownership structure in the target firms after the acquisitions. On the other hand, if the foreign acquirers adopt cross-border acquisitions as a mode of entry strategy to enter the new markets, we expect these acquirers to seek stronger partners in the local market; these companies would have strong operating performance in the pre-acquisition period. Foreign acquirers intend to benefit from the strategic resources of their local partners to increase their footprint in that country instead of from improved performance.

Testable Hypotheses

With this background, we hypothesize that the domestic acquisitions are motivated by the corporate control and disciplining of poorly performing management, while the cross-border acquisitions are more focused on the purposes of strategic market entry. Along with our previous arguments, we propose the following testable hypotheses that predict the impact of takeover motivation on the pre- and post-acquisition performance of the target firms in the emerging market takeovers.

Hypothesis 1: Domestic acquirers tend to select relatively poorly performing firms as takeover targets (i.e., market for corporate control); while foreign acquirers seek relatively strongly performing firms as takeover targets in the emerging markets (i.e., strategic market entry).

Hypothesis 2: Domestic partial acquisitions improve the long-term operating performance of the acquired firms, while cross-border partial acquisitions do not have an impact on the target firm long-term performance.

Hypothesis 3: The target firms in the domestic partial acquisitions experience significant changes in ownership structure and financial characteristics, while there are no such changes for the target firms in the cross-border partial acquisitions.

In the following section, we introduce the sample and empirical methodologies to test each of these hypotheses.

Sample and Methodology

Sampling Method

Our universe consists of 3,939 completed domestic partial acquisitions and 2,372 completed cross-border partial acquisitions of publicly listed target firms in 22 emerging countries between 1990 and 2007³⁰. We create and focus on three samples of firms in these countries: the target

³⁰ We define partial acquisitions as the takeover transactions where the acquiring firm acquires less than 100% ownership (but more than 5%) in the target firm and the target firm continues to list on the public market after the acquisition. We note that the percentage of ownership acquisition may have impact on the ability and motivation of exercising corporate control in the target firms. Particularly, if the acquiring firm has more than 50% majority control, it may have more incentive to exercise the monitoring and disciplining power on the target management. Thus, in the study, we create a dummy variable, namely “control ownership acquisition”, which equals 1 if the acquiring firm acquires more than 50% ownership in the target firm, otherwise it equals 0. We control this variable in most of the cross-sectional regression analyses when we compare the domestic acquisitions with the cross-border acquisitions. Note that we have no way to ascertain whether the acquiring firm acts as a “passive” owner or an “active” owner.

firms acquired by the domestic firms; the target firms acquired by the foreign firms; and the control firms that were not acquired by any firm during the sampling period.

The first two samples essentially contain all publicly listed target firms involved in emerging market domestic and cross-border partial acquisitions identified in the SDC Platinum database.

We concentrate on the non-financial target firms³¹ and require the target firms to have pre-acquisition financial data available in the Datastream database. This reduces the sample firms to 1,087 domestic partial acquisitions and 532 cross-border partial acquisitions. To examine the long-term operating performance of the target firms, we concentrate on the partial acquisitions and require the target firms to have three-year, post-acquisition financial data available in the DataStream database³². This further reduces the sample to 712 observations of domestic partial acquisitions and 313 observations of cross-border partial acquisitions. The sample size also varies in some parts of our analysis due to the missing values of different variables.

We use two different methods to construct the control firm sample. First, we select all publicly listed, not-acquired firms in the emerging markets as a control sample³³. We require that control firms are not in the financial sector and have data available in the Datastream database. The control firm sample has 4,180 firm observations. Second, we construct a paired-matching sample for each takeover target firm. More specifically, for each domestic or cross-border acquisition,

³¹ Financial firms tend to have substantially different financial ratios than the non-financial firms. Including financial firms in the analysis will skew the statistical results. Thus, we only analyze the impact of takeovers on non-financial firms.

³² We document all measures of firm characteristics, deal characteristics, and country level variables in Appendix 2B.

³³ In order to remove the impact from some outlier firms in this large control sample (i.e., some firms in the emerging markets are extremely smaller or bigger than the takeover target firms in the sample), we sorted the firms in both the control sample and the takeover sample by their total assets value. Then we constructed a winsorized sample of the control firms by deleting the control firms that have larger assets value than the maximum assets value in the takeover sample and deleting the control firms that have smaller assets value than the minimum assets value in the takeover sample.

we look for a “not-acquired” firm that is in the same industry (two-digit GISC code) and has the closest firm size (measured by total assets³⁴) at the latest fiscal year end before the acquisition. Thus, the matching sample has the same sample size as the takeover samples. We use the first control sample in the multivariate analysis and the paired-matching sample in the univariate analysis to construct the controlled performance measures (i.e. difference in difference measure).

Methodology

Pre-acquisition Performance Comparison

We first use univariate analysis to compare the target firms with the pair-matching control firms in terms of pre-acquisition performance. A non-parametric test, such as the Wilcoxon ranked sign test, is used since the distribution of most financial variables is not close to the normal distribution³⁵.

Next, we use the multinomial logistic regression technique to compare the pre-acquisition performance of the domestic targets, cross-border targets, and non-target firms. The advantage of using this method is that we can compare the pre-acquisition performance of the target firms by controlling for many other firm characteristics. In addition, the multinomial logistic regression method also allows us to compare the three samples at the same time. We use the larger control sample (with all not-acquired firms) in this analysis. We code the control firms as 1, domestic

³⁴ Another way to match firm size is to use the sales measure or market capitalization. We find the three measures (i.e., total assets, sales and market capitalization) are highly correlated (i.e., Pearson correlation coefficients are at least more than 0.7 in both domestic and cross-border acquisition samples). Thus, we don't expect that the results will dramatically change by matching sales or market capitalization.

³⁵ We examine the empirical histograms of the variables in our dataset. Most of the distributions are symmetric, but the kurtosis is high. The Wilcoxon ranked sign test is more appropriate than the t test in this case. The Wilcoxon ranked sign test is a nonparametric test used with two related variables to test the hypothesis that the two variables have the same distribution. The test statistic is based on the ranks of the absolute values of the differences between the two variables.

target firms as 2, and cross-border target firms as 3. A multinomial model specifies the probability, P_{ij} , that firm i will belong to group j (e.g., to be a non-target control firm if $j=1$, a domestic target if $j=2$, or a cross-border target if $j=3$) as a function of firm performance and characteristic variables, X_i , of firm i . The model can be presented as follows:

$$P_{ij} = \frac{\exp(\beta_j' X_i)}{1 + \sum_j \exp(\beta_j' X_i)} \quad (2.1)$$

where β_j is a vector of parameters to be estimated. The parameters of the model are estimated using the maximum likelihood method. The estimation procedure will yield two sets of parameters: the first set representing domestic targets relative to cross-border M&A targets and the second representing non-targets relative to cross-border M&A targets.

Hypothesis 1 is supported if the performance variable (i.e., ROA) has significant and negative coefficient in the model where control firms are compared with the cross-border targets (meaning the cross-border M&A targets have better performance than the non-target firms), and if the performance variables have significant and negative coefficients in the sample of comparing domestic acquisitions and cross-border acquisitions (suggesting domestic targets have weaker pre-acquisition performance than the cross-border targets).

Long-term Operating Performance

We examine the long-term changes in the operating performance for all partially acquired firms in the three years after the acquisitions (i.e., the sample also includes those firms that are delisted or have disappeared from the public market within the period of three years so that the survival bias can be eliminated). In addition, there are some cases where a target firm is partially acquired

by the same firm (or other firms) at different times. The multiple partial acquisitions may create an overlapping impact on the same target (if the interval between any two acquisitions is less than three years). In order to deal with this overlapping problem, we first identify the earliest acquisitions of the target firm in our sampling period and then follow the target firm for the next three years. If there is any acquisition of the target firm in the three years, we exclude these overlapping acquisitions from the sample. If there is any acquisition after the three years (i.e., the observation is not overlapping with the previous one), we keep the acquisition in the sample and follow the target firm for another three years.

One major concern about the long-term performance studies in M&As is the lack of control of pre-acquisition performance and a matching sample for the target firms (e.g., Arnold and Javorcik, 2005). It is possible that the target firms show better (or worse) performance after the acquisitions simply because they are already performing well (or badly) before the acquisitions. Therefore, it may not be the impact of acquisitions that drive the target firm performance. Moreover, the target firms may be selected by the acquiring firms because of some “unobservable” firm characteristics that are related to the long-term performance. Therefore, we cannot simply compare the pre- and post-performance changes in the target firm itself. We need a matching sample that has similar firm characteristics (e.g., firm size and industry classification) to compare with the target firms. In this paper, we use difference-in-differences (DID) estimators to evaluate both the pre- and post-operating performances of target firms against their corresponding matching firms over the same period of time. The approach can help to clarify the causal relationship between the takeovers and target firm performance (Fukao, Ito and Kwon, 2006).

More specifically, we collect the return on assets (ROA) ratio for each target firm one year before and three years after the acquisition. We compare the changes in the ROA ratio corresponding to their control firms. Control firms are selected by one-to-one matching based on the closest assets value in the same industry (2-digit GISC code³⁶). The difference-in-difference estimator is calculated as follows:

$$DID_i = (T_{i,t} - T_{i,t'}) - (C_{i,t} - C_{i,t'}) \quad (2.2)$$

where $T_{i,t}$ is the target firm's performance measure (i.e., ROA) after the acquisition date, $T_{i,t'}$ is the target firm's performance measure before the acquisition date, $C_{i,t}$ is the corresponding performance measure of the control firm at the same time after the acquisition, and $C_{i,t'}$ is the corresponding performance measure of the control firm before the acquisition. We use a non-parametric, Wilcoxon ranked sign test to determine the statistical significance of the estimate. Significant and positive test statistics suggest the acquisitions can improve the long-term operating performance of the target firms in partial acquisitions in emerging markets. Similarly, we can also use the DID estimates to examine the changes in other financial characteristics after the acquisitions (e.g., financial leverage and sales growth).

Multivariate Analysis of Operating Performance

In addition to the univariate test of changes in the operating performance of the target firms, we also investigate the cross-sectional difference in the long-term operating performance by using the multivariate analysis. Based on the DID performance measures, we use OLS regression to

³⁶ We use 2-digit GISC code instead of 2-digit (or 4-digit) SIC code because the GISC code classifies the firms into ten broad sectors, which provides us sufficient number of matching firms (with complete financial information available in the DataStream database) to choose within each sector.

regress the DID measure on the target firm characteristics, and on the deal specific variables and the changes in the target firm financial and ownership characteristics after the acquisitions. The OLS regression model is specified as follows:

$$DID_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n \quad (2.3)$$

where DID_i is the difference-in-difference estimate for the performance measure (ROA) for firm i , and X_1 to X_n are the explanatory factors (e.g., target firm size, leverage, efficiency ratio before the acquisitions; and deal specific variables, such as payment method, industry relatedness, and acquiring firm status).

Long-term Stock Performance

Next, we also examine the long-term stock performance of the partially acquired target firms. Evaluating long-term stock performance is still a challenge in financial research. Particularly in the emerging markets, many sophisticated asset-pricing models (such as three-factor model in Fama and French [1993] or four-factor models in Carhart [1997]) are unavailable or potentially costly to compute and implement. As a result, we adopt the control firm methodology proposed by Barber and Lyon (1997), Lyon, Barber and Tsai (1999), and Mitchell and Stafford (2000) to calculate the buy-and-hold abnormal returns (BHAR) on the partially acquired target firm stocks in the three years after acquisition. The control firm approach has been proved to eliminate some common biases in long-term event studies, such as the new listing bias, the rebalancing bias, and the skewness bias (see Barber and Lyon, 1997).

We examine the target firm long-term stock performance up to three years after acquisitions. We first identify the domestic and cross-border takeover transactions in the SDC Platinum database.

We exclude the transactions involving financial target firms from the sample. Similar to the long-term operating performance study above, we also exclude the overlapping acquisitions from the sample. Next, for each target firm, we select a control firm matched by assets and industry. We collect the monthly stock returns for the three years before and after each M&A transaction for both the target firm and the matching firm. The buy-and-hold abnormal returns of firm i can be calculated as follows:

$$BHAR_{i\tau} = \prod_{t=1}^{\tau} [1 + R_{it}] - \prod_{t=1}^{\tau} [1 + R_{i^*t}] \quad (2.4)$$

where R_{it} is the monthly return for target firm i in month t and R_{i^*t} is the monthly return for the control firm i^* in month t . To test the statistical significance of BHAR for a sample of ' N ', a t statistics can be used as follows:

$$t_{BHAR} = \overline{BHAR_{i\tau}} / (\sigma(BHAR_{i\tau}) / \sqrt{N}) \quad (2.5)$$

where $\overline{BHAR_{i\tau}}$ is the sample average and $\sigma(BHAR_{i\tau})$ is the cross-sectional sample standard deviations of abnormal returns for the sample of ' N ' firms. However, the t statistic above assumes the independence of the cross-border M&A events in the sample. A well-known fact in the literature is that mergers and acquisitions usually take place in waves. A large number of acquisitions may happen at the same time, which may cause the independence assumption to be invalid. We follow Mitchell and Stafford (2000) to correct the dependence problem in estimating the standard deviation of the BHAR:

$$\frac{\sigma_{BHAR}(independence)}{\sigma_{BHAR}(dependence)} \approx \frac{1}{\sqrt{1 + (N-1)\rho_{i,j}}} \quad (2.6)$$

where, N is the sample size, and $\overline{\rho_{i,j}}$ is the average correlation of the individual BHAR in the sample.

Based on the adjustment, a positive and significant t statistic in (2.5) means that the acquisitions have a positive impact on the long-term stock performance of the partially acquired target firms in the emerging markets. We can also examine the cross-sectional differences in the long-term stock performance by estimating the OLS regression model similar to the equation 2.3. We regress BHAR on a set of firm and deal characteristics. This will shed light on the factors that lead to higher or lower stock performance of the target firms in the partial acquisitions.

Results

Pre-acquisition Performance

In this section, we compare the pre-acquisition performance and firm characteristics of the domestic target firms, cross-border target firms as well as the not-acquired control firms in the emerging markets. First, we conduct the univariate comparison test in Table 2.1 based on the pair-matching sample. We use the control firms as the benchmark to compare with the domestic targets and the cross-border targets respectively.

Table 2.1 Panel A shows that domestic target firms tend to have a higher debt ratio and a weaker operating performance (ROA) ratio than the control firms before the acquisitions. In contrast, Panel B shows that the target firms in cross-border acquisitions tend to have better operating performance than the control firms before the acquisitions. In addition, they also show a higher

market valuation (i.e., lower book-to-market ratio). These results provide the first overall evidence to support the first hypothesis. More specifically, consistent with the market for corporate control hypothesis, the domestic target firms have higher financial leverage and much weaker operating performance (significant at 1% level) than their peer firms in the local market. This makes them become easy takeover targets in a competitive M&A market. However, the motivation for cross-border acquisitions seems different and is consistent with the strategic market entry hypothesis. These target firms in cross-border acquisitions have higher growth potential (i.e., lower book-to-market ratio) and significantly better operating performance (significant at 1% level) than the control firms.

For both domestic and cross-border acquisitions, we do not find any difference in cash balance and sales growth between the target firms and the control firms.

Table 2.1 Comparison of Pre-acquisition Performance and Firm Characteristic for the Pair-matching Sample

In Table 2.1, we use the matching sample to compare the domestic target firms with the control firms (those firms that were not acquired by any firm within the sampling period: 1990 -2007). We match each target firm (either domestic or cross-border acquisition target firms) with a firm that has similar total assets (by the latest fiscal year end before the acquisition transactions) in the same industry (based on the two-digit GISC sector code). The sample excludes the target firms in the financial sector (as the financial ratios are substantially different between the finance firms and non-financial firms). We examine the growth potential (i.e., book-to-market ratio), cash ratio (i.e., cash balance divided by the total assets), leverage (i.e., debt to total assets), operating performance (return on assets), sales growth and firm size (total assets) for the target firms as well as the control firms. All values are measured at the latest fiscal year end of the target firms' financial statements before the M&A transaction. We use related sample non-parametric statistics (Wilcoxon Signed Rank Test) to test the difference between the domestic target firms and the not-acquired control firms for the firm characteristics and the operating performance measures. Panel A shows the results for domestic acquisitions and Panel B is for cross-border acquisitions. The samples have been winsorized by deleting the extreme values in each variable. More specifically, for each measured variables, we sort the variables from high to low and delete the upper 2.5% and lower 2.5% based on each variable's empirical distribution. Some skewed variables (such as book-to-market ratio, cash ratio, debt-to-total assets, and total assets) are corrected by taking the logarithm transformation in the analysis.

Panel A. Pre-acquisition Firm Charateristics and Performance	N	Target Firm Sample			Control Sample			Target vs. Control Firm
		Mean	Median	Std. Deviation	Mean	Median	Std. Deviation	
Domestic Partial Acquisitions								
Book-to-market ratio	1021	-0.563	-0.610	1.012	-0.448	-0.532	1.024	-0.448
Cash ratio	1083	0.115	0.083	0.105	0.117	0.088	0.105	-0.760
Debt-to-total assets	1044	0.280	0.264	0.181	0.268	0.251	0.179	1.814 *
ROA	1087	0.019	0.027	0.083	0.039	0.036	0.064	-5.052 ***
Sales growth	978	0.166	0.128	0.343	0.193	0.136	0.348	-1.578
Panel B. Cross-border Partial Acquisitions								
Book-to-market ratio	491	-0.305	-0.325	0.941	-0.102	-0.151	0.988	-3.613 ***
Cash ratio	532	0.102	0.064	0.102	0.084	0.045	0.097	0.010
Debt-to-total assets	509	0.265	0.251	0.186	0.268	0.240	0.194	-0.673
ROA	531	0.039	0.035	0.070	0.032	0.032	0.068	3.058 ***
Sales growth	470	0.225	0.166	0.356	0.181	0.135	0.326	1.200

*** 1% significance, ** 5% significance, * 10% significance

We conduct several tests to check the robustness of the univariate comparison results above. First, we repeat the analysis by using the industry-adjusted financial measures. More specifically, we use data on all publicly listed firms in each emerging market. We group these firms by two-digit Global Industry Standard Classification (GISC) code and compute the median statistics of each financial ratio by industry. If the firm's industry information is not available (the number of such cases is very small), we use the country median statistics to compute the relative financial ratios. Then we subtract each sample firm's measures by their respective industry median values. Although not reported here, we find similar results as the ones we presented above: domestic target firms have relatively poor pre-acquisition performance, while cross-border target firms show relatively better performance than their peer firms in their own industry.

In addition, as another robustness check, we use the multinomial logistic regression method to analyze the differences among all three samples of firms. Instead of using the pair-matching sample, we use all publicly listed emerging market firms in the control sample. We also use the cross-border acquisition target firms as the benchmark sample (instead of using the not acquired firms). This provides a direct comparison between the cross-border targets and domestic targets in terms of firm performance and characteristics. The multivariate analysis helps us to examine the performance difference among the three samples while controlling the effects of other firm characteristics. Table 2.2 shows the results from the multinomial logistic regression. The table compares the operating performance measure (ROA) and the firm characteristics – such as debt-to-equity ratio, total assets, cash balance, book-to-market ratio, and sales growth rate. We find that, compared to the cross-border target firms, domestic target firms tend to have significantly lower operating performance measures (ROA), higher financial leverage, and smaller firm size

(total assets). This evidence confirms that small and weakly performing firms are more likely to be taken over by domestic firms.

Table 2.2 also shows that cross-border target firms have better operating performance (ROA), and larger firm size than the control firms in the emerging markets. This set of results supports the first hypothesis that foreign acquirers use cross-border acquisitions as market entry strategy in the emerging markets: they identify and choose strongly performing partners in the local markets. These target firms have significant economic power (i.e., large firm size), and they are more likely to have access to important strategic resources (such as networking relationship, human capital, distributional channels, and company brands) in the local market. Foreign acquirers can easily establish their competitive advantage in the local market by gaining access to these resources and can benefit from their strongly performing partners.

Table 2.2 Multinomial Logistic Regression to Compare the Three Samples' Firms (i.e., Domestic Target Firms, Cross-border Target Firms and Not-acquired Control Firms)

Table 2.2 shows the multinomial logistic regression results. Cross-border target firms are used as benchmark sample to compare with the control firms (on the left panel) and the domestic target firms (on the right panel). The dependent variable is the group code for the three samples (control firms are coded as 1, domestic target firms are coded as 2, and cross-border target firms are coded as 3). The analysis contains 296 cross-border target firms, 691 domestic target firms, and 4,180 control firms that have information for all variables in the regression model. The goodness-of-fit test fails to reject the null hypothesis that the model fits the data well. We also present the three types of Pseudo R squares of the model. About 1 – 2% of the total variation in the dependent variable is explained by the set of independent variables. The Chi-square statistics show that the overall model is significant (compared to the null model).

Multinomial Logistic Regression						
	Control Sample vs. Cross-border Sample			Domestic Sample vs. Cross-border Sample		
	β	Std. Error	Wald	β	Std. Error	Wald
Intercept	5.920	0.491	145.120 ***	3.943	0.567	48.313 ***
ROA	-2.792	1.469	3.612 *	-4.468	1.658	7.267 ***
Book-to-market ratio	0.034	0.034	1.009	-0.041	0.042	0.958
Cash ratio	0.610	0.783	0.608	1.321	0.893	2.187
Debt-to-total assets	0.262	0.375	0.486	0.836	0.432	3.746 *
Sales growth	-0.318	0.258	1.520	0.016	0.295	0.003
Ln(Total assets)	-0.218	0.029	54.918 ***	-0.215	0.035	38.371 ***
Sample Size				Pseudo R-Square		
Cross-border Sample	296	6%		Cox and Snell		0.018
Domestic Sample	691	13%		Nagelkerke		0.025
Control Sample	4180	81%		McFadden		0.015
Total Sample Size	5167	100%				
Goodness-of-Fit Test				Model Fitting Information		
	χ^2	p value		Model	-2 Log Likelihood	χ^2
Pearson	10,339.9	0.4		Intercept only	6245.6	
Deviance	6,152.9	1.0		Final model	6152.9	92.7 ***

*** 1% significance, ** 5% significance, * 10% significance

The empirical results above suggest that foreign firms use partial acquisitions as an entry mode to enter the emerging markets, while domestic acquiring firms use partial acquisitions to exercise a stronger monitoring power in the target firms and discipline the target firm managers. This

conclusion can be further tested by following the long-term performance and characteristics changes in the partially acquired target firms. We provide detailed analysis on the post-acquisition performance of partially acquired target firms in the following sections.

Changes in the Long-term Financial Characteristics of Partially Acquired Target Firms

In this section, we test the second and third hypothesis in the study: whether the cross-border and domestic takeovers have an impact on the financial characteristics of the target firms.

In Table 2.3, we focus on the target firms' operating performance (ROA), financial leverage (debt to total assets), sales growth, cash ratio, book-to-market ratio, dividend payout, sales turnover, and capital expenditure up to three years after the partial acquisitions. Each post-acquisition measure value is compared with the value of the corresponding measure in the latest fiscal year end before the acquisition (Y-1) as well as with the changes in the measure value of the pair-matching firm in the corresponding period (i.e., DID measure). For statistical significance testing, we compare the DID value against zero (i.e., no changes after the acquisitions) for the domestic acquisitions and the cross-border acquisitions separately. We also directly compare the DID values between domestic acquisitions and cross-border acquisitions. As shown in the first panel of the table below, we find that the target firms in domestic partial acquisitions experience a significant increase in ROA ratios in each of the three years after the acquisitions. The DID measure shows that incremental increases in the ROA for the domestic targets is about 2.1% (in the third year) after acquisition compared with the pre-acquisition ROA and the control firm ROA. The Wilcoxon ranked sign test shows that the increase in operating performance is significant at the 1% level. On the contrary, we do not observe significant

operating performance changes in the target firms of the cross-border acquisitions. When we compare the domestic acquisition targets with the cross-border targets, the results also show that domestic target firms have relatively positive improvement in performance, compared to the cross-border target firms, in terms of the operating performance measure ROA in the three years after acquisitions. This finding supports the hypothesis that domestic acquisitions serve as a market for corporate control mechanism. Acquiring firms take over firms that are performing weakly, and improve their performance through, perhaps, stronger monitoring and increasing management effectiveness in the target firms.

However, no such improvement is observed in cross-border acquisitions. There could be two explanations for this observation. First, foreign acquirers may not have the motivation or ability to discipline the target firm management, considering that they only use acquisitions as a market-entry strategy and do not want get involved in day-to-day operations of the target firm. Second, most of the target firms in cross-border acquisitions are already performing strongly before the acquisition, and they are acquired as a stepping stone to enter the emerging market. It is also possible that the costs of active involvement, especially when the acquiring firm is from a developed country, may far outweigh the benefits; they may even have a negative impact since the target firm is already performing well. The acquiring firms are most probably motivated by access to strategic resources in these target firms and not for performance improvement reasons. Therefore, we do not observe a significant change in operating performance in the target firms of cross-border acquisitions.

Next, we examine other financial changes in the partially acquired target firms. Table 2.3 shows that target firms in both domestic and cross-border acquisitions experience significant decrease

in financial leverage and dividend payouts. There is only weak evidence that target firms in cross-border acquisitions tend to increase capital expenditure and, thus, reduce cash balance in the two years after acquisitions; market valuation (i.e., book-to-market ratio) also marginally increases in the cross-border target firms. These results provide mixed support for the second hypothesis. We do observe financial structural changes in the domestic acquisitions; but we also find similar changes in the cross-border target firms. In other words, although cross-border acquisitions seem to be motivated by a market entry strategy, foreign acquirers do make changes to financial structure and dividend policy in partially acquired target firms.

Table 2.3 Impact of Acquisitions on Target Firm Operating Performance and Characteristics

Table 2.3 shows the long-term, post-acquisition performance of the target firms in domestic and cross-border acquisitions. For each financial measure (such as ROA, debt ratio, sales growth, cash ratio, book-to-market ratio, dividend payout, sales turnover, and capital expenditure), we present the DID values for the acquisition year and each of the three years after the partial acquisitions. The DID measure is calculated based on the post-acquisition values of the financial measure deducted by the measure value at one year before the acquisition; then we also deduct the target firm measures by the corresponding control firm values in the same period. In the table below, we show the sample size, mean, standard deviation, and quartile information of the DID measure in each year after the partial acquisitions. We also show the percentage of positive value in the DID measure and the corresponding Wilcoxon signed rank test to examine the statistical significance of the DID measure. A positive and significant Wilcoxon Z value suggests that the financial measure has significantly increased after the acquisition (and negative value suggests decreasing financial measures). We test the DID measures for the domestic acquisitions and the cross-border acquisitions separately in the table below. In the last column, we also use the Mann-Whitney test (for independent samples) to compare the difference of the DID measures between the domestic and the cross-border samples. Positive and significant Z statistics suggest that domestic acquisitions have higher DID measures than the cross-border acquisitions.

Difference in Difference Measures	Domestic M&As								Cross-border M&As								Domestic M&As - Cross- border M&As	
	N	Mean	Std. Deviation	1st Quartile	2nd Quartile	3rd Quartile	% Positive	Wilcoxon Z	N	Mean	Std. Deviation	1st Quartile	2nd Quartile	3rd Quartile	% Positive	Wilcoxon Z	Z	
ROA																		
Y0 (Acquisition Year)	1171	0.013	0.109	-0.028	0.003	0.040	53.6%	3.087 ***	537	0.005	0.111	-0.045	0.000	0.036	50.3%	0.125	1.598	
Y1	991	0.021	0.133	-0.034	0.007	0.063	55.9%	4.623 ***	449	0.002	0.122	-0.052	-0.001	0.045	48.1%	0.192	2.571 **	
Y2	847	0.013	0.134	-0.045	0.004	0.068	53.4%	2.575 **	380	0.002	0.135	-0.055	0.000	0.070	49.7%	0.209	1.298	
Y3	712	0.021	0.139	-0.040	0.008	0.071	55.5%	3.528 ***	313	0.006	0.141	-0.056	0.000	0.055	49.2%	0.031	2.043 **	
Debt Ratio																		
Y0	1162	-0.005	0.123	-0.066	0.000	0.064	48.1%	-1.070	549	-0.019	0.119	-0.082	-0.010	0.045	43.0%	-3.427 ***	2.180 **	
Y1	988	-0.019	0.172	-0.110	-0.008	0.083	45.3%	-2.951 ***	452	-0.007	0.168	-0.110	-0.004	0.085	47.1%	-1.114	-0.269	
Y2	849	-0.016	0.218	-0.132	-0.012	0.116	46.1%	-1.669 *	377	-0.018	0.203	-0.136	-0.021	0.110	43.8%	-1.911 *	1.245	
Y3	713	-0.019	0.247	-0.149	-0.005	0.130	48.4%	-0.868	309	-0.019	0.231	-0.154	-0.009	0.122	46.6%	-1.226	-1.344	
Sales Growth																		
Y0	951	0.038	0.576	-0.313	0.009	0.310	51.0%	0.819	426	0.011	0.612	-0.294	-0.010	0.295	48.1%	0.190	0.027	
Y1	796	0.064	0.804	-0.364	0.010	0.368	50.5%	0.441	354	0.050	0.771	-0.299	0.000	0.298	49.4%	0.077	0.018	
Y2	673	0.054	0.723	-0.323	0.035	0.375	53.0%	1.376	283	0.038	0.714	-0.344	0.072	0.336	54.4%	0.550	0.219	
Y3	547	0.005	0.743	-0.310	0.017	0.370	51.6%	0.759	230	0.015	0.647	-0.293	0.007	0.300	51.7%	0.378	-0.868	

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Explaining the Cross-sectional Difference in the Operating Performance

In the previous sections, we have shown evidence that the changes in the long-term operating performance of the partially acquired target firms reveal the different motivations of the domestic and cross-border acquisitions. However, the evidence is based on the average effect in the samples. We don't know if our results are driven by certain types of target firms (which have particular characteristics) in the emerging market takeovers. In other words, we haven't examined the firm and deal characteristics that may explain the cross-sectional difference in the target firms' long-term operating performance.

In this section, we use OLS regression to examine the association between the firm (or deal) characteristics and the target firms' long-term operating performance³⁷. Table 2.4 presents the OLS regression models for domestic and cross-border acquisitions separately. The target firm characteristics include firm size (sales), growth potential (book-to-market ratio), and leverage (debt-to-assets ratio). The acquisition deal characteristics include transaction size, industry related transactions (which equals 1 if the target and acquiring firms share the same four-digit SIC code, otherwise the variable equals 0), tender offers, payment method (which equals 1 if the transaction is paid by pure cash, and equals 0 for stock or other mixed payment), and majority control acquisitions (which equals 1 if the acquiring firm gains more than 50% ownership in the target firm after the acquisition; otherwise it equals 0). Finally, we also control for the acquiring

³⁷ Before using the multivariate method, we also conducted bivariate correlation analysis between the firm (or deal) characteristics and target firm operating performance for both the domestic and cross-border acquisition samples. The firm characteristics include both pre-acquisition firm financial measures and industry-adjusted financial measures. In addition, we also examined ownership characteristics, changes in ownership structure, and acquiring firm characteristics in the correlation analysis. Most of the correlation results are consistent with the results of the multivariate analysis, which shows very weak or no significant correlation with the operating performance changes in the target firms. Thus, we do not show the correlation matrix here.

firm characteristics, such as its public status and the toehold ownership in the target firm before the current acquisition³⁸.

Table 2.4 shows the OLS regression estimates for both domestic and cross-border acquisition samples. None of the regression coefficients are statistically significant, suggesting that there are no particular firm (or deal) characteristics that can explain the cross-sectional variations in the long-term operating performance of the target firms. Several robustness tests are also conducted without showing the results here. For example, we tried various subsets of independent variables in the model and got similar conclusions. We also used shorter term (one-year and two-year) ROA ratios as the dependent variables. We do not find significant factors in the models either. Thus, we conclude that the average effect of the changes in the operating performance in the partially acquired target firms is generic to different types of target firms and acquisition deals. Our results are not driven by a particular group of target firms involved in the emerging market takeovers.

³⁸ We also collect and calculate the financial measures for the acquiring firms from the Worldscope database, including pre-acquisition performance (ROA and Tobin's Q), firm size (sales), leverage (debt to equity ratio), growth potential (book to market ratio), sales growth, cash balance, and capital expenditure ratio. Correlation analysis shows none of these variables has significant relationship with the long-term operating performance of the target firms. In addition, since there is a large number of missing information in the acquiring firm dataset, adding these variables in the OLS regression will significantly reduce the sample size and, thus, statistical power (the sample size for cross-border acquisitions after controlling for the acquiring firm characteristics is only 64 observations). Thus, we do not control for the financial variables of the acquiring firms in the OLS regression models.

Table 2.4 Multivariate Analysis: Target Firm Operating Performance

Table 2.4 shows the OLS regression model to explain the cross-sectional variation in the long-term changes in the target firm operating performance. The dependent variable is the DID measure of the ROA ratio in the third year after the partial acquisitions. Independent variables include deal characteristics (such as industry relatedness, tender offer, cash payment, public status of acquiring firms, toehold ownership in the target firm, and majority control acquisitions by acquiring more than 50% ownership and transaction values); we also examine target firm characteristics, including target firm size (measured sales), leverage (debt to equity ratio), and growth potential (book-to-market ratio). These financial ratios are collected at the latest fiscal year end before the acquisition. Thus, we can examine the impact of firm characteristics on the changes in the post-acquisition operating performance in the target firms. We estimate the model for the domestic and cross-border acquisitions separately. Due to the missing observations, we have 294 acquisition observations in the domestic M&A model and 137 acquisitions in the cross-border M&A model. Neither model seems significant based on the F test.

Dependent Variable: DID (ROA_3Y) Domestic and Cross-border Acquisitions	Domestic M&As		Cross-border M&As	
	B	t value	B	t value
(Constant)	0.043	0.838	0.057	0.787
Industry Relatedness (4-SIC)	-0.008	-0.362	-0.018	-0.704
Tender Offer	-0.034	-0.752	0.015	0.389
Pure Cash Payment	-0.009	-0.558	0.040	1.747
Public Acquiring Firm	0.016	0.815	0.010	0.435
Pre-acquisition ownership in the target firm	0.017	0.987	-0.014	-0.556
Control ownership acquisition	0.018	0.784	0.048	1.442
Log of Transaction Value	0.007	1.321	-0.011	-1.600
Target Firm Sales	-0.003	-0.832	-0.001	-0.266
Target Firm Debt to Equity Ratio	0.009	1.385	0.011	1.201
Target Firm Book to Market Ratio	-0.004	-0.789	0.006	1.077
N	294		137	
F	0.772		1.058	
Adj. R Square	-0.008		0.004	

*** 1% significance, ** 5% significance, * 10% significance.

Table 2.5 further tests the factors explaining the cross-sectional variations in the target firm performance in the cross-border acquisitions. We add some unique deal characteristics that are only relevant to cross-border acquisitions. For example, we examine the level of shareholder right protection of the acquiring country (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 2000, 2002), acquiring country's economic development (i.e., per capita GDP and GDP growth), cultural distance, geographic distance, and commonality in official language and legal system

between the acquiring and the target countries. However, we do not find consistent and significant factors that can explain changes in the operating performance of the target firms. This result confirms that there is no intention by any specific types of acquiring firms to improve target firm performance through the cross-border partial acquisitions. This is consistent with the strategic market entry hypothesis. Of course, due to the small sample size limitations, the conclusion should be interpreted with caution³⁹.

³⁹ When the sample size gets smaller, we check whether the results are dominated by a particular target country or a specific pair of the target-acquiring country group. We do not find such pattern in the final sample. The takeover observations are still spread across different target countries and acquiring countries in the final sample.

Table 2.5 Multivariate Analysis: Operating Performance of Cross-border Acquisitions

Table 2.5 shows the OLS regression results based on the cross-border acquisition sample only. The dependent variable is the DID measure of the target firm's ROA ratio in the third year after the partial acquisitions. Independent variables include the deal-specific variables and target firm characteristics that are similar to the regressions in Table 2.4. In addition, we include some country-level variables that are only relevant to cross-border acquisitions (such as shareholder right protection measure of the acquiring country, geographic distance between the capital cities of the target and acquiring countries, cultural distance and similarity of the legal system and official language between each pair of the countries, and the acquiring country's per capita GDP and GDP growth). We also examine the impact of pre-acquisition stock performance (using buy-and-hold abnormal returns in the one year before acquisition) and transaction value on the long-term operating performance of the target firms. Due to the large number of missing values in these variables, the sample size significantly decreases from 207 (in model 1) to 94 (in model 2). We also control for year dummy, target country dummy, and industry dummy variables in the regressions. The F test shows neither model is statically significant at the conventional level.

Dependent Variable: DID (ROA_3Y) Cross-border Acquisitions	Model 1		Model 2	
	B	t value	B	t value
(Constant)	0.690	1.886 *	1.543	1.704 *
Shareholder Protection	-0.017	-1.214	-0.007	-0.310
Industry Relatedness (4-SIC)	-0.003	-0.099	-0.025	-0.568
Tender Offer	-0.025	-0.510	-0.077	-1.094
Pure Cash Payment	0.009	0.378	-0.011	-0.286
Public Acquiring Firm	0.013	0.573	0.023	0.562
Pre-acquisition ownership in the target firm	-0.001	-0.026	0.062	1.357
Geographic Distance	-0.020	-1.336	-0.030	-1.136
Cultural Distance	0.014	0.993	0.026	1.078
Similar Law System	-0.016	-0.370	-0.049	-0.490
Similar Official Language	-0.013	-0.366	-0.096	-1.652
Acquiring Country Per Capita GDP	-0.036	-1.010	-0.071	-0.887
Acquiring Country GDP Growth	0.004	0.773	-0.006	-0.892
Control ownership acquisition	0.049	1.613	-0.013	-0.256
Target Firm Sales	-0.013	-1.813 *	-0.025	-1.614
Target Firm Book to Market Ratio	0.005	0.515	0.019	1.377
Target Firm Debt to Assets Ratio	0.011	0.882	0.036	2.079 **
Log of Transaction Value			0.009	0.637
Target Firm Prior Stock Performance:BHAR [-12, -1]			0.012	0.472
Year Dummy	Yes		Yes	
Target Industry Dummy	Yes		Yes	
Target Country Dummy	Yes		Yes	
N	207		94	
F	0.808		1.084	
Adj. R Square	-0.055		0.046	

*** 1% significance, ** 5% significance, * 10% significance.

Ownership Structure Changes in the Partially Acquired Target Firms

In addition to the financial characteristics changes, we also examine the changes in the ownership structure of the partially acquired target firms. This provides us additional indirect evidence on the differences in the acquisition motivations of domestic and foreign acquirers.

Based on the discussion above and as per hypothesis 3, we expect more changes in the governance and ownership characteristics in domestic than in cross-border acquisitions.

Unfortunately, our study is limited by the data availability and quality on the governance and management turnover for the emerging market firms. As an alternative, in this section, we examine the ownership structure changes in the post-acquisition period by focusing on six groups of shareholders: ownership by other companies (i.e., cross-holding); ownership by the target firm insiders (i.e., management, family owners, and employees); ownership by foreign investors/companies (i.e., foreign ownership); ownership by the local government; ownership by the public investors (i.e., public float); and ownership by the institutional investors (i.e., mutual fund, investment firm and pension fund, etc.). This data is collected from the Worldscope database. Because of the large number of missing values in this dataset, the sample size is significantly decreased in this analysis and we are unable to construct a meaningful control sample for such a small sample. Therefore, instead of using the DID measure, we only compare the pre- and post-ownership structure for the partially acquired target firms (i.e., ownership at two years after the acquisitions compared with the ownership at the latest fiscal year end before the acquisitions for each of the six ownership groups). The ownership data is only available in the database for the year 2002 onwards. Thus, we only use the measure of two-year ownership changes after acquisitions in order to avoid losing too many recent year observations.

Table 2.6 shows the changes in the ownership structure for the domestic and cross-border target firms, respectively. In the domestic acquisitions, we find that target firms experience significant ownership changes after the partial acquisition. There is a considerable reduction in the cross-holdings by other companies and insider ownership in the post-acquisition period. The domestic acquisitions are also associated with a broadening of public shareholder base in the target firms (i.e., public float increases). We do not observe such changes in the cross-border acquisition sample. This evidence suggests that after domestic partial acquisitions, the target firm ownership is less concentrated in the hands of insiders or a small number of control groups (i.e., cross-holding companies). This might be the consequence of the partial acquisition to create an external block shareholder who can actively monitor the target firm management and effectively reduce the opportunity of management entrenchment of shareholders' value in the poorly performing target firms. Improving monitoring power by the external block ownership reduces the agency problem between the insider managers and non-controlling minority shareholders. Shareholders' rights are better protected and firm values are expected to improve after the partial acquisition. Thus, we observe that the public investor basis of the target firms increases after the partial acquisition. These ownership changes are consistent with the hypothesis that domestic acquisitions serve as a market for corporate control to restructure poorly performing firms and benefit the shareholders' welfare through the monitoring power from the external block owners⁴⁰.

⁴⁰ We strengthen this argument by also showing the link between the target firm ownership structure and operating performance before the acquisitions. In Appendix 2C, we estimate the Pearson correlation between each of the ownership components in the target firms (one year before the acquisition) and the industry-adjusted ROA measure in the target firm in the same year. Cross-sectional correlation analysis shows that the higher cross-holdings and government ownership are associated with lower firm operating performance in the emerging markets; while the public float is positively related to the firm operating performance. This means that the diversified ownership base in emerging markets is associated with better firm performance. These results are the most significant in the domestic acquisitions. Thus, we argue that it supports the hypothesis that domestic acquisitions serve the function of market for corporate control so that poorly performing firms can be restructured through ownership changes (such as reducing cross-holdings and increasing public float) to improve their operating performance.

On the contrary, in the cross-border acquisition sample, we do not observe significant changes in the target firm ownership structure (i.e., insider ownership, company cross-holding ownership, and public float). This implies that the interests of the original shareholders in the target firms are not affected by introducing the foreign block owners. Consistent with the market entry hypothesis, we conclude that foreign acquirers do not intend to discipline the target firm management and interfere with the governance setup and operations in the target firm. Instead, they are motivated by utilizing the strategic resources in the target firms to enter the new market and taking advantage of the competitive strength of the target firms to establish and expand their business in the local market.

Finally, in Table 2.6, we find that both domestic acquisitions and cross-border acquisitions attract more institutional investors after the acquisitions. We believe this is reasonable, as the institutional investors may be attracted by the improving performance in the domestic target firms; while they may also be attracted by the increasing international publicity and globalization potential of the cross-border target firms after the partial acquisitions⁴¹.

⁴¹ Based on these ownership structure changes, we also tried to link these changes to the DID measures of ROA in the target firms. However, we do not find statistical significant impact of ownership changes on the long-term operating performance of target firms. The insignificant results may be because of the small sample size after joining the ownership dataset with the long-term operating performance dataset (i.e., we only have about 20 observations in the cross-border acquisition sample).

Table 2.6 Impact of Acquisitions on Target Firm Ownership Structure

Table 2.6 shows the changes in the ownership structure of the partially acquired target firms in emerging market takeovers. We examine the ownerships by other companies (i.e. cross-holdings), by insiders (i.e. founder family members, managers and employees), by foreign investors, by local government, by public investors (outside the company) and the institutional investors (including pension fund, investment fund and mutual fund). We compare the ownership value in the second year after acquisitions with that in the year before the acquisition. Because there are many zero values in different ownership categories, the distribution of the ownership data is significantly deviating from normal distribution. Thus, we do not use t test to compare the ownership values before and after the acquisitions. Instead, we count the number of cases where the ownership value increases and decreases in each category. Then we use binomial test to test if the percentage increase or decrease is statistically different from random changes (i.e. equal percentage of increase cases and decrease cases). We present the results for domestic M&As and cross-border M&As separately in the table below.

	Domestic M&As					Cross-border M&As				
	% of Decrease	% of Increase	% of No Change	N	Increase vs. Decrease*	% of Decrease	% of Increase	% of No Change	N	Increase vs. Decrease*
Change in company ownership	36%	21%	43%	494	***	15.8%	18.8%	65.4%	272	
Change in insider ownership	9%	5%	86%	569	**	4.8%	2.2%	93.0%	272	
Change foreign ownership	8%	6%	85%	562		9.2%	15.4%	75.4%	272	*
Change in government ownership	5%	5%	89%	399		4.0%	2.9%	93.0%	272	
Change in public float	20%	34%	45%	576	***	22.8%	23.5%	53.7%	272	
Change in institutional ownership	4%	10%	86%	678	***	5.3%	13.8%	80.9%	341	***

*** 1% significance, ** 5% significance and *10% significance.

Additional Analysis

Partial Acquisitions and Target Firm Long-term Stock Performance

To further augment the analysis on post-acquisition operating performance, we examine the long-term stock performance of the target firms based on the partial acquisitions in the emerging market takeovers in this section. The stock performance is measured by the buy-and-hold abnormal returns (BHAR) for each domestic and cross-border acquisition in the three years before and after the acquisition announcements. The abnormal returns are calculated based on the matching firm sample. Each matching firm is selected based on the closest firm size (in terms

of total assets) within the same industry (two-digit GISC code) of the takeover target firms⁴². In Table 2.7, we report two types of t statistics: the first t test is calculated based on the original standard deviation of the BHAR measure, and the second t test is calculated based on the adjusted standard deviation of the BHAR (see equation 2.6) to correct for the sample dependence problem (details about the adjustment are presented in Appendix 2D).

Table 2.7 shows that both the domestic target firms and cross-border target firms experienced a significant increase in the stock prices before the acquisitions. The superior performance of the stocks one year before the acquisition is most probably due to the anticipation of the potential acquisition and the premium that might be paid by the acquiring firms⁴³. However, in the cross-border acquisition, the abnormal stock returns even go back to two years before the acquisition (for the unadjusted t statistics). This implies that the cross-border target firms may have been really “star” firms that create substantially higher shareholder values than their peer firms (confirming our previous finding that the target firms taken over by foreign acquirers have better operating performances than their peer firms in the local market).

However, Table 2.7 also shows that in the three years following acquisitions, there is no abnormal return on the target firm stock prices even when their operating performance increases in the post-acquisition period. The results are largely consistent between the two types of t tests. Fama (1998) believes that it is very unlikely that any corporate event would induce long-lasting

⁴² We use a two-digit GISC code (that is broader than a four-digit SIC code) because we want to have a large enough number of control firms in each industry that have non-missing values for the measures we need in the analysis. As a robustness check, we also calculate the BHAR based on the local stock market index. The results are similar to the findings using the matching sample (particularly after adjusting for the sample dependence problem using the adjusted t statistics). Thus, we only present the matching sample results in the paper.

⁴³ We also split the one-year BHAR into two periods (-12, -7) months and (-6, -1) months before the acquisitions. We find similar results that positive abnormal returns occur in both sub-periods before the acquisitions.

abnormal stock performance. Fama (1998) – who replicated long-term stock performance studies on IPO, mergers, and stock splits – dismisses any systematic claim of long-term abnormal returns and concludes that “consistent with the market efficiency hypothesis ... the anomalies are chance results, apparent overreaction of stock prices to information is about as common as under-reaction. And post-event continuation of pre-event abnormal returns is about as frequent as post-event reversal” (p. 304). For a firm to have long-term abnormal stock returns requires continuous “surprises” from the target firm’s information disclosure to the external investors. If the investors already expect that acquiring poorly performing firms and replacing poor management by strong management will improve the long-term operating performance in the target firms, the stock price should instantly (or at least in a very short time) reflect this market expectation upon the acquisition announcement. Thus, it is unlikely that the partially acquired target firms could systematically create positive-earnings surprises over a long time period. Table 2.7 shows the results that are consistent with this argument. Most of the abnormal positive returns are observed before the acquisition announcement. We argue that part of this abnormal return is due to the anticipation of acquisition and may also contain market expectation of the improvement in the target firm operating performance after the partial acquisitions.

Table 2.7 Pre- and Post-Acquisition Long-term Stock Performance: Domestic vs. Cross-border Acquisitions

Table 2.7 shows the BHAR for the partially acquired target firms in the emerging market takeovers. Each target firm is matched by a not-acquired firm based on the total assets and industry classification. We calculate the cumulative monthly returns for the target firms in the three years before and after the acquisitions and deduct the returns by the corresponding returns in the control firms during the same period. In the table below, we show the BHAR measures for the firms three years before the acquisitions and the cumulative returns of target firms in one year, two years, and three years after the partial acquisitions. Sample size and the mean and median statistics for the sample BHAR measures are reported. We use traditional *t* test and an adjusted *t* test (according to Mitchell and Stafford [2000]) to test the statistical significance of the long-term stock performance. Detailed explanation about the adjusted *t* test can be found in Appendix 2D.

	Domestic M&As					Cross-border M&As				
	N	Mean	Median	traditional t statistics	adj. t stats	N	Mean	Median	traditional t statistics	adj. t stats
BHAR-matching [-36, -25]	749	0.001	-0.023	0.065	0.023	416	0.054	0.020	1.611	0.518
BHAR-matching [-24, -13]	860	0.025	-0.003	1.255	0.404	489	0.064	0.025	2.182 **	0.700
BHAR-matching [-12, -1]	980	0.128	0.070	5.291 ***	1.704 *	537	0.172	0.094	5.101 ***	1.653 *
BHAR-matching (0, +12]	988	0.003	0.011	0.140	0.046	531	0.000	0.000	-0.015	-0.004
BHAR-matching (0, +24]	859	-0.002	-0.049	-0.051	-0.015	477	-0.002	0.000	-0.043	-0.013
BHAR-matching (0, +36]	752	-0.068	-0.067	-1.083	-0.346	394	0.009	0.004	0.106	0.037

*** 1% significance, ** 5% significance, * 10% significance.

Next, we test the robustness of the results on long-term stock performance regarding some firm characteristics and deal characteristics. We present the results in Appendix 2E, which confirm that there are no significant abnormal returns in the target firms with respect to the payment method (cash vs. stock), target and acquiring firm status (public vs. private), industry relatedness, tender offers, controlling acquisitions, previous acquisition experience, geographic distance, and cultural distance between the target and acquiring countries.

Finally, we present the multivariate regression models by regressing the target firm long-term stock performance measure (BHAR) on the deal characteristics and the target firm financial characteristics in Table 2.8. The OLS regression models are estimated for the domestic target firms and the cross-border target firms, respectively. The year, country, and industry dummy

variables are included in the model to control for the heterogeneity in the sample firms. Most of the variables cannot explain the cross-sectional differences in the long-term stock performance of the target firms. However, we find that a target firm's pre-acquisition book-to-market ratio has a positive impact on the long-term target firm stock performance in the domestic acquisitions, suggesting that those domestic target firms having had depressed firm values under poor management may have a higher potential to release hidden shareholder's values after the acquisitions. On the contrary, we found that in cross-border acquisitions, a lower book-to-market ratio (i.e., higher growth potential) and the larger size of the target firms contribute to a somewhat better long-term stock performance. This evidence suggests that cross-border acquisitions strengthen the market performance of those larger and higher growth potential target firms in the emerging markets.

Table 2.8 Multivariate Analysis: Target Firm Long-term Stock Performance

Table 2.8 shows the OLS regression results by investigating the determinant of the cross-sectional variation in the long-term stock performance of the partially acquired target firms in emerging market takeovers. The dependent variable is the cumulative buy-and-hold abnormal returns of the target firm stocks in the three years after the partial acquisitions. Independent variables include deal characteristics, such as industry relatedness, tender offer, cash payment, public status of the acquiring firm, toehold ownership in the target firm, majority control acquisition and transaction value. We also control for target firm characteristics – including firm size (sales), leverage, growth potential (book-to-market ratio), operating performance (ROA), and stock performance prior to the acquisition (12-month BHAR before the acquisition) in the regression model. The target firm financial values are measured in the latest fiscal year end before the acquisitions. We also include year dummy, target industry dummy, and target country dummy to control for the heterogeneity in our multiple-country longitudinal dataset. There are 450 acquisition observations in the domestic M&A model and 237 observations in the cross-border M&A model. However, neither model is significant (at the conventional level) based on the *F* test.

Dependent Variable: 3-year BHAR	Domestic M&As		Cross-border M&As	
	B	t value	B	t value
(Constant)	-0.588	-0.368	-6.325	-2.335 **
Industry Relatedness (4-SIC)	-0.185	-0.811	-0.263	-0.985
Tender Offer	-0.162	-0.415	-0.282	-0.713
Pure Cash Payment	0.019	0.106	-0.314	-1.282
Public Acquiring Firm	-0.239	-1.179	-0.170	-0.698
Pre-acquisition ownership in the target firm	0.202	1.233	-0.028	-0.139
Control ownership acquisition	0.259	0.994	-0.074	-0.244
Target Firm Sales	0.081	1.439	0.202	2.604 ***
Target Firm Book-to-market Ratio	0.274	3.309 ***	-0.177	-2.031 **
Target Firm Debt-to-assets Ratio	0.095	1.011	0.097	0.719
Target Firm ROA Ratio	-1.336	-0.624	4.672	1.305
Log of Transaction Value	0.030	0.559	-0.069	-0.960
Target Firm Prior Stock Performance: BHAR [-12, -1]	0.017	0.141	0.009	0.052
Year Dummy	Yes		Yes	
Target Industry Dummy	Yes		Yes	
Target Country Dummy	Yes		Yes	
N	450		237	
F	1.383		1.811	
Adj. R Square	0.043		0.152	

*** 1% significance, ** 5% significance, * 10% significance.

Table 2.9 shows the OLS regression models by focusing on the cross-border acquisitions. The models include some country level variables that are only relevant to the cross-border acquisitions (similarly to the variables introduced in Table 2.5). Most of the variables are not significant in the models. Some significant variables are also not consistent between Table 2.8

and 2.9 (for example, cash payment and public acquiring firms). However, one variable is highly significant in both models in Table 2.9. We find that the shareholder right protection has positive and significant impact on the long-term stock performance of the partially acquired firms. This result is consistent with the latest finding in Bris, Brisley and Cabolis (2008) that cross-border acquisitions undertaken by the countries with good shareholder right protection bring significant value to the target industry (i.e., higher overall Tobin's Q). Our study confirms the important role of shareholder right protection in cross-border acquisitions, and we also provide more detailed evidence (at the firm level) to show its positive impact on the long-term stock performance of the partially acquired target firms in the emerging markets. Thus, although cross-border acquisition may not have a substantial impact on target firm ownership and operating performance, emerging market shareholders may perceive the benefit of having foreign acquisitions to improve the shareholder right protections in the target firms. Thus, investors react positively to such protection mechanism and shareholders' wealth is relatively improved in the long run even without further improvement in the operating performance of the target firms.

Table 2.9 Multivariate Analysis: Long-term Stock Performance of Cross-border Acquisitions

Table 2.9 shows the OLS regression results based on the cross-border acquisition sample. The dependent variable is the buy-and-hold abnormal returns of the target firm stocks in the three years after the partial acquisitions. Independent variables include deal-specific variables and target firm characteristics that are similar to the regressions in Table 2.8. In addition, we include some country level variables that are relevant to cross-border acquisitions (such as shareholder right protection measure of the acquiring country, geographic distance between the capital cities of the target and acquiring countries, cultural distances, the similarity of the legal system and official language between the each pair of the countries, and the acquiring country's per capita GDP and GDP growth). We also examine the impact of pre-acquisition stock performance (using buy-and-hold abnormal returns in the year before the acquisition) and transaction value on the long-term stock performance of the target firms. Due to the missing values in target firm financial measures and some variables of the deal characteristics, the sample size significantly decreases from 308 (in model 1) to 211 (in model 2). We also control for year dummy, target country dummy, and industry dummy variables in the regressions. The *F* test shows neither model is statically significant at the conventional level.

Dependent Variable: 3-year BHAR Cross-border Acquisitions	Model 1		Model 2	
	B	t value	B	t value
(Constant)	2.141	0.624	-2.987	-0.584
Shareholder Protection	0.358	2.940 ***	0.428	2.810 ***
Industry Relatedness (4-SIC)	-0.040	-0.152	0.027	0.088
Tender Offer	-0.500	-1.308	-0.562	-1.263
Pure Cash Payment	-0.493	-1.953 *	-0.703	-2.506 **
Public Acquiring Firm	-0.373	-1.707 *	-0.452	-1.619
Pre-acquisition Ownership in the Target Firm	-0.184	-1.111	-0.165	-0.682
Geographic Distance	0.115	0.812	-0.051	-0.280
Cultural Distance	-0.023	-0.188	0.068	0.428
Prior Acquisition Experience	-0.456	-1.880 *	-0.388	-1.191
Similar Law System	-0.420	-1.082	-0.205	-0.521
Similar Official Language	-0.004	-0.015	0.008	0.124
Acquiring Country Per Capita GDP	-0.309	-0.948	-0.013	-0.035
Acquiring Country GDP Growth	-0.010	-0.211	-0.380	-0.755
Log of Transaction Value			0.029	0.339
Control Ownership Acquisition			0.181	0.487
Target Firm Sales			0.086	0.916
Target Firm Book-to-market Ratio			-0.138	-1.243
Target Firm Debt-to-assets Ratio			0.042	0.272
Target Firm ROA Ratio			3.738	0.965
Year Dummy	Yes		Yes	
Target Industry Dummy	Yes		Yes	
Target Country Dummy	Yes		Yes	
N	308		211	
F	1.649		1.381	
Adj. R Square	0.097		0.094	

*** 1% significance, ** 5% significance, * 10% significance.

Conclusions

In this essay, our main intention is to test two competing hypotheses on M&As: the market for corporate control vs. market entry, using a large sample of emerging market partial acquisitions. Based on 22 emerging market takeovers in the period between 1990 and 2007, we investigate the pre-acquisition performance of the partially acquired domestic and cross-border target firms. We also examine the impact of the domestic and cross-border partial acquisitions on the target firm's long-term operating and stock performance and changes in ownership characteristics.

Our results show that the motivation leading to domestic partial acquisitions is substantially different from that of cross-border partial acquisitions. Domestic acquirers tend to take over poorly performing firms and the domestic target firms experience significant changes in financial characteristics and ownership structure after the acquisitions. Most importantly, we find that the operating performance of the domestic target firm shows significant improvement in the three-year period after the acquisitions. Thus, the empirical evidence supports the hypothesis that domestic acquisitions serve as a market for corporate control that disciplines the poorly performing management and improves the overall firm operating performance.

On the other hand, we show that cross-border partial acquisitions are better explained using strategic market entry hypotheses. We find that foreign acquirers tend to take over strongly performing, large firms. Although the target firms also experience some changes in the financial structure (i.e., debt level decreases), the ownership structure is almost unaffected after the foreign acquisition. In addition, we do not find a long-term improvement in the target firm operating performance, and we argue that since the target firms in cross-border acquisitions are already performing well, less improvement is expected and possible. Similarly, acquirers do not

have reason to change the governance setup and operations in the target firms in emerging markets.

Finally, we also examine the long-term stock performance of these partially acquired target firms. Although we are restricted by a somewhat smaller sample, we do not find abnormal stock performance for both domestic and cross-border target firms. Although this contrasts with the operating performance results in the paper, we believe the results are reasonable given many recent long-term event studies that support the efficient market hypothesis (e.g., Fama, 1998; Mitchell and Stafford, 2000). We should not expect to observe long-term abnormal returns if the anticipation of the superior operating performance in the domestic target firms has been reflected in its stock prices in the short time period around the acquisition announcements.

Since this is the first study to examine partial acquisitions in the emerging markets, it is important to note some caveats and provide some cautionary notes. First and foremost, despite the commercially available data sources, data availability and quality is the biggest challenge to these types of studies that rely on data for emerging market firms. For example, most of the ownership information of the emerging market firms is missing in the Worldscope database and we are not able to collect governance and management turnover information for the emerging market firms in the 22 emerging countries. Future research can add value by examining the direct impact of foreign acquisition on the governance and management composition changes in the target firms. Second, our study is focused on the publicly listed target firms only; we have very little evidence on the acquisitions of private firms by both domestic and cross-border acquirers. In addition, we do not study acquiring firm characteristics and their impact on the partial acquisitions in this study. Future research can expand the current study by examining the private

targets and the role of acquiring firms in the emerging market takeovers. Third, due to the data limitations in the emerging markets, many sophisticated methodologies – such as three-factor or four-factor asset pricing models – cannot be applied to the emerging market firms. Thus, we are not able to conduct a better robustness check for the long-term stock performance of the target firms in the paper. Fourth, it would be interesting to also investigate a full-acquisition sample, provided there is a way to get some data on their post-acquisition results (such as sending surveys or conducting interviews with the acquired firm managers). Fifth, it would also be interesting to investigate the evolution of partially acquired firms to full acquisitions, if and when this takes place, and compare them across the same two dimensions – domestic and cross-border acquisitions.

Despite these limitations, we believe that our results show a clear distinction between domestic and cross-border acquisitions in emerging markets using a fairly large sample and careful methodological choices. The impact of acquisitions on performance and governance continues to be an interesting topic for academics, practitioners, and policy makers, and we hope that our evidence adds an as yet unexplored dimension to the understanding of emerging markets.

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Appendix 2A. Summary Review of the U.S. Domestic Partial Acquisitions

Existing literature mostly focuses on performance changes in the target firms after the partial acquisitions. The studies have particularly highlighted the monitoring effect of the acquirers and relate it to the improvement of long-term performance in the partially acquired target firms.

Most studies in the literature are based on the evidence of the U.S. domestic M&As. Earlier studies – such as Madden (1981), Mikkelsen and Ruback (1985), and Eyssell (1989, 1990) – find a significantly positive wealth effect to the acquirer and the target firms upon the announcements of partial acquisitions in the U.S. market. Unlike full acquisitions, where target firms disappear from the public market, partial acquisition firms remain independent after the transaction. Thus, it is possible to track the long-term performance of the target firms after acquisitions. Mikkelsen and Ruback (1985) found that if a completed takeover eventually occurs, the total gain is significant and positive for target firms and zero for the acquirer. If the partial acquisition is later repurchased by the target or sold to a third party (or in the open market), the acquirer and the target firm experience significant positive abnormal returns. Eyssell (1989, 1990) tracks the financial characteristics of the target firms before and after the partial acquisitions but he did not detect any significant difference. Amoako-Adu and Smith (1993) compare the gains to target shareholders in complete and partial acquisitions; they find that full acquisitions provided target shareholders with larger gains than did partial acquisitions.

Later studies mainly show the active role of acquiring firms to improve the performance of the partially acquired targets. Holderness and Sheehan (1985) study the “corporate raiders” in partial acquisitions. Contrary to the traditional view that corporate raiders only focus on short-term

profits by selling undervalued corporate assets in parts, they find that the targets acquired by these raiders actually experienced a significant positive wealth effect in the acquisitions. They suggest that the raiders may have helped bring management changes that increased the target's value. Choi (1991) provides more concrete evidence to show that partial acquisitions followed by takeovers, proxy fights, and management turnovers resulted in significantly positive abnormal returns to the partially acquired targets that extended beyond the announcement period. By contrast, partial acquisitions with no change in control resulted initially in significantly positive abnormal returns to the targets, but these dissipated when the market realized there was to be no change in control. He also found that partially acquired targets are characterized by a period of poor performance before the acquisition announcement, which supports the market of corporate control theory. Spencer, Akhighe, and Madura (1998) and Spencer, Akhigbe, and Madura (2001) expand the role of acquiring firms to other corporate events. They find that subsequent investment decisions and financing decisions by the partially acquired targets have significant impacts on the firm value of both the targets and the acquirers. The target firm's long-term performance is highly dependent on the corporate control characteristics of the target and acquiring firms in the partial acquisitions (Akhigbe, Madura, and Spencer, 2004). In addition, partial ownership in the target firm also assures a high rate of success in the following full acquisitions. Bulow, Huang, and Klemperer (1999), and Burkart (1995) and Singh (1998) show that toeholders tend to bid more aggressively than non-toeholders. A toehold can sharply improve a bidder's chance of winning an acquisition and raise the bidder's expected profits. The size of the partial ownership is also found to be related to post-acquisition performance. Chowdhry and Jegadeesh (1994) assume that the size of the toehold is used endogenously by bidders to signal the post-acquisition value of the target. Low value bidders acquire a small

toehold, whereas high value bidders acquire a large toehold. Demsetz and Lehn (1985) and Shleifer and Vishny (1986) argue that, as the size of large shareholding increases, monitoring effectiveness also increases. The large shareholder's share of the added value must exceed the cost of monitoring for the large shareholding to be profitable.

All of these studies are based on domestic acquisitions in the United States. The literature has very few studies on partial acquisitions in other international markets. Jog and Riding (1988) examined 75 partial acquisitions of the publicly listed firms on the Toronto Stock Exchange between 1970 and 1981. They found that the target firms' stock performance and operating performance generally improve in the four years after the partial acquisitions. Thus, they conclude that the shareholders of target firms benefit from the changes in corporate control in Canada. To the best of our knowledge, there is no study on partial acquisitions in other countries. Furthermore, evidences of partial acquisitions in cross-border transactions do not exist in the current literature.

Appendix 2B. Variable Definitions and Data Sources

Variable Name	Variable Definition	Data Sources
<i>Target firm characteristics</i>		
Debt-to-total assets	Target firm total debt divided by total assets value	DataStream/Worldscope database
Book-to-market ratio	Target firm book value of equity divided by market value of equity	DataStream/Worldscope database
ROA	Target firm net income divided by total assets value	DataStream/Worldscope database
Firm sales	Target firm total revenue value	DataStream/Worldscope database
Sales growth	Target firm sales growth rate from last year to this year	DataStream/Worldscope database
Total assets	Target firm total assets value	DataStream/Worldscope database
Cash ratio	Target firm cash balance divided by total assets value	DataStream/Worldscope database
Dividend payout	Target firm dividend payment divided by net income	DataStream/Worldscope database
Sales turnover	Target firm total sales dividend by total assets value	DataStream/Worldscope database
Capital expenditure	Target firm capital expenditure dividend by total assets	DataStream/Worldscope database
Target firm prior stock performance: BHAR [-12, -1]	Target firm's buy-and-hold abnormal returns against the matching firms in the 12 months prior to the acquisition	DataStream/Worldscope database and SDC
Company ownership	Percentage of ownership in the target firm by other companies	Platinum database
Insider ownership	Percentage of ownership in the target firm by insiders (i.e. managers, founding family members, employees)	DataStream database
Foreign ownership	Percentage of ownership in the target firm by foreign investors	DataStream database
Government ownership	Percentage of ownership in the target firm by local country government	DataStream database
Public float	Percentage of outstanding shares issued by the target firm that is available to public investors	DataStream database
Institutional ownership	Percentage of ownership in the target firm by institutional investors (i.e., pension fund, mutual fund and, investment fund)	DataStream database
BHAR-matching	Buy-and-hold abnormal returns (against matching firms) of the target firm stocks	DataStream/Worldscope database and SDC Platinum database
BHAR-sector	Buy-and-hold abnormal returns (against sector index) of the target firm stocks	DataStream/Worldscope database and SDC Platinum database

Appendix 2B. (Continued)

<i>Deal characteristics</i>		
Industry relatedness (4-SIC)	Dummy variable equals 1 if the acquiring industry shares the same 4-digit SIC code with the target industry, otherwise 0.	SDC Platinum database
Log of Transaction Value	Log transformed takeover transaction value (real value in 2006 USD dollar)	SDC Platinum database
Tender Offer	Dummy variable equals 1 for tender offer, otherwise 0.	SDC Platinum database
Pure Cash Payment	Dummy variable equals 1 if payment is made in pure cash, otherwise 0.	SDC Platinum database
Public acquiring firm	Dummy variable equals 1 if the bidder is public firm, private bidder and other type of bidder is coded as 0.	SDC Platinum database
Control ownership acquisition	Dummy variable equals 1 if the bidding firm gains controlling ownership (>50%) in the target firm, otherwise 0.	SDC Platinum database
Pre-acquisition ownership in the target firm	Dummy variable equals to 1 for the acquiring firm has ownership in the target firm before the current acquisition and equals to 0 if the acquiring firm does not have ownership in the target firm.	SDC Platinum database
<i>Country-level variables</i>		
Cultural distance	Hofstede's cultural distance measures include: power distance index, individualism, masculinity, uncertainty avoidance index. The four measures are aggregated to one culture distance index proposed by Kogut and Singh (1988).	Hofstede (1980): www.geert-hofstede.com
Geographic distance	Distance between the capital cities of the acquiring country and the target country (in kilometers)	Geobytes database: www.geobytes.com
Shareholder protection	Measure of shareholders' rights (i.e., Anti-director index) developed by La Porta et al. (1998)	La Porta et al. (1998)
Similar law system	Dummy variable equals 1 if the target country has the same legal system as the acquiring country, otherwise it equals 0.	University of Ottawa, Faculty of Law website CIA World Factbook: www.cia.gov/library/publications/the-world-factbook/
Similar official language	Dummy variable equals 1 if the target country has the same official language as the acquiring country, otherwise it equals 0.	World Development Indicator database
Acquiring country per capita GDP	Acquiring country's per capita GDP in the year of the acquisition.	
Acquiring country GDP growth	Acquiring country's GDP growth from the year before the acquisition to the year of the acquisition.	World Development Indicator database

Appendix 2C. Correlation between Target Firm Ownership Structure and Pre-acquisition Performance

Domestic Acquisitions (N = 511)	[1]	[2]	[3]	[4]	[5]	[6]	[7]
[1] Industry adjusted ROA (Y -1)	1	-0.114 ***	-0.021	0.025	0.104 **	-0.073 *	0.052
[2] Company ownership (cross-holding)		1	-0.107 **	0.020	-0.881 ***	0.005 ***	-0.030
[3] Insider ownership			1	0.024	-0.242 ***	0.036	0.057
[4] Foreign ownership				1	-0.250 ***	-0.012	0.093 **
[5] Public float					1	-0.131 ***	-0.209 ***
[6] Government ownership						1	0.042
[7] Institutional ownership							1

Cross-border Acquisitions (N = 237)	[1]	[2]	[3]	[4]	[5]	[6]	[7]
[1] Industry adjusted ROA (Y -1)	1	0.051	0.029	0.051	-0.033	-0.109 *	-0.044
[2] Company ownership (cross-holding)		1	-0.031	0.163 **	-0.760 ***	-0.015	0.050
[3] Insider ownership			1	-0.017	-0.362 ***	-0.032	-0.048
[4] Foreign ownership				1	-0.419 ***	0.031	0.182 ***
[5] Public float					1	-0.179 ***	-0.363 ***
[6] Government ownership						1	-0.005
[7] Institutional ownership							1

*** 1% significance, ** 5% significance and * 10% significance.

Appendix 2D. Correlation Structure for the Emerging Market Target Firm Sample

Number of months of overlapping	Number of unique correlation: $n(n-1)/2$	Assumed Correlation Structure	Estimated Correlation
72	4515	ρ	0.0191
71	7668	$71/72 * \rho$	0.0189
70	7243	$70/72 * \rho$	0.0186
69	7641	$69/72 * \rho$	0.0183
68	7775	$68/72 * \rho$	0.0181
67	7398	$67/72 * \rho$	0.0178
66	6966	$66/72 * \rho$	0.0175
65	6951	$65/72 * \rho$	0.0173
64	7202	$64/72 * \rho$	0.0170
63	7053	$63/72 * \rho$	0.0167
62	6349	$62/72 * \rho$	0.0165
61	6601	$61/72 * \rho$	0.0162
60	7254	$60/72 * \rho$	0.0159
59	6699	$59/72 * \rho$	0.0157
58	6374	$58/72 * \rho$	0.0154
57	6274	$57/72 * \rho$	0.0151
56	6272	$56/72 * \rho$	0.0149
55	6294	$55/72 * \rho$	0.0146
54	5814	$54/72 * \rho$	0.0143
53	5783	$53/72 * \rho$	0.0141
52	5722	$52/72 * \rho$	0.0138
51	5889	$51/72 * \rho$	0.0135
50	5410	$50/72 * \rho$	0.0133
49	5553	$49/72 * \rho$	0.0130
48	5823	$48/72 * \rho$	0.0127
47	5473	$47/72 * \rho$	0.0125
46	5088	$46/72 * \rho$	0.0122
45	5029	$45/72 * \rho$	0.0119
44	4998	$44/72 * \rho$	0.0117
43	5060	$43/72 * \rho$	0.0114
42	4719	$42/72 * \rho$	0.0112
41	4854	$41/72 * \rho$	0.0109
40	4595	$40/72 * \rho$	0.0106
39	4622	$39/72 * \rho$	0.0104
38	4506	$38/72 * \rho$	0.0101
37	4682	$37/72 * \rho$	0.0098
36	5133	$36/72 * \rho$	0.0096
35	4754	$35/72 * \rho$	0.0093
34	4465	$34/72 * \rho$	0.0090
33	4642	$33/72 * \rho$	0.0088
32	4467	$32/72 * \rho$	0.0085
31	4401	$31/72 * \rho$	0.0082
30	4209	$30/72 * \rho$	0.0080
29	4220	$29/72 * \rho$	0.0077
28	4069	$28/72 * \rho$	0.0074
27	3970	$27/72 * \rho$	0.0072
26	3829	$26/72 * \rho$	0.0069
25	3813	$25/72 * \rho$	0.0066
24	4126	$24/72 * \rho$	0.0064
23	3926	$23/72 * \rho$	0.0061
22	3845	$22/72 * \rho$	0.0058
21	3459	$21/72 * \rho$	0.0056
20	3851	$20/72 * \rho$	0.0053
19	3880	$19/72 * \rho$	0.0050
18	3485	$18/72 * \rho$	0.0048
17	3357	$17/72 * \rho$	0.0045
16	3437	$16/72 * \rho$	0.0042
15	3358	$15/72 * \rho$	0.0040
14	3034	$14/72 * \rho$	0.0037
13	2999	$13/72 * \rho$	0.0035
12	3317	$12/72 * \rho$	0.0032
11	3092	$11/72 * \rho$	0.0029
10	2909	$10/72 * \rho$	0.0027
9	2545	$9/72 * \rho$	0.0024
8	2625	$8/72 * \rho$	0.0021
7	2828	$7/72 * \rho$	0.0019
6	2463	$6/72 * \rho$	0.0016
5	2317	$5/72 * \rho$	0.0013
4	2380	$4/72 * \rho$	0.0011
3	2295	$3/72 * \rho$	0.0008
2	2144	$2/72 * \rho$	0.0005
1	1994	$1/72 * \rho$	0.0003
0	76368	0	0.0000
Total	418155	Weighted average	0.0093

Calculating “Corrected” *t*-Statistics

Following the methodology in Mitchell and Stafford (2000), we calculate “corrected” *t*-statistics that account for cross-correlation of 6-year BHARs (as we are examining the stock performance for three years before and three years after the acquisitions). We assume a simple correlation structure to calculate the average correlation of six-year BHARs across all of our 950 observations in the M&A sample (Note: the 950 observations have the complete 6 years BHAR data for the analysis). We first estimate the average correlation of six-year BHARs for sample firms with complete (72 months) calendar-time overlap. Consistent with Mitchell and Stafford, we also assume that the correlation is decreasing linearly as the degree of overlap falls from a complete calendar-time overlap of 72 months to no overlap between observations (see table above). We calculate that the average correlation of BHARs with 72 months of calendar-time overlap is 0.0191. We estimate the correlation of six-year BHARs with 71 months of overlap as $71/72 \cdot 0.0191 = 0.0189$, and so on. The estimate for non-overlapping observations is zero. This procedure produces a weighted average correlation for the BHARs of 0.0093 (weighted by the number of unique pairs of observations to the time that we calculated the correlations in each overlapping group). We then use the average correlation of the BHARs to adjust the *t*-statistic that assumes independence. Using equation (2.6), we are able to calculate the adjusted standard deviation of the BHAR measure and in turn the adjusted *t* statistics. The adjustment factor is calculated as follows:

$$\frac{\sigma_{BHAR}(independence)}{\sigma_{BHAR}(dependence)} = \frac{1}{\sqrt{1 + (N - 1) \times \bar{\rho}_{i,j}}} = \frac{1}{\sqrt{1 + (950 - 1) \times 0.0093}} = 0.319$$

Not shown in the essay, we also consider another type of sample dependence problem. The multiple-country sample in our study may introduce the sample dependence bias in the estimation of the standard errors of the BHAR statistics within each country cluster. Ignoring the clustering effect within a country (usually positive correlations among the observations in each cluster) will underestimate the standard errors of the sample statistics and thus inflate the type I error. To investigate the effect of the country-clustering effect, we conduct an experiment in the study. Based on the bivariate correlations of the six-year BHAR measures for each pair of the observations in our sample, we construct a correlation matrix that empirically estimates the correlations within each country cluster, and we assume the clusters are independent with each other (i.e., thus, we set the correlations between clusters as zero). Then, we calculate the overall average of the correlations ($\rho_{i,j}$) and plug it into the formula above to calculate the adjustment factor. Based on our sample, we calculate the factor as 0.676. Then we use this factor to adjust the t statistics.

We get very similar results as the findings in Table 2.7 in the paper. The following table confirms that there is no systematic abnormal performance in the target firm stocks after the partial acquisitions. We only observe positive and significant abnormal stock returns in the entire year before the partial acquisitions.

Long Term Stock Performance Adjusted for Country- clustering Dependence	Domestic M&As					Cross-border M&As				
	N	Mean	Median	traditional t statistics	adj. t stats	N	Mean	Median	traditional t statistics	adj. t stats
BHAR-matching (-36, -25)	749	0.001	-0.023	0.065	0.046	416	0.054	0.020	1.611	1.099
BHAR-matching (-24, -13)	860	0.025	-0.003	1.255	0.855	489	0.064	0.025	2.182 **	1.485
BHAR-matching (-12, -1)	980	0.128	0.070	5.291 ***	3.640 *	537	0.172	0.094	5.101 ***	3.548 *
BHAR-matching (0, +12)	988	0.003	0.011	0.140	0.096	531	0.000	0.000	-0.015	-0.010
BHAR-matching (+13, +24)	888	-0.019	-0.032	-0.893	-0.604	485	-0.005	0.028	-0.175	-0.120
BHAR-matching (+25, +36)	778	-0.040	-0.030	-1.724 *	-1.168	409	-0.061	-0.011	-1.939 *	-1.324
BHAR-matching (0, +24)	859	-0.002	-0.049	-0.051	-0.033	477	-0.002	0.000	-0.043	-0.028
BHAR-matching (0, +36)	752	-0.068	-0.067	-1.083	-0.732	394	0.009	0.004	0.106	0.075

Appendix 2E. Univariate Test of Target Firm Long-term Stock Performance

Pre- and Post-Acquisition Long-term Stock Performance: Industry Relatedness

Domestic M&As	Not Related Industry (4-SIC)						Related Industry (4-SIC)					
	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats
BHAR-matching (-36, -25)	668	-0.006	-0.034	0.584	-0.274	-0.084	141	0.033	0.049	0.601	0.661	0.214
BHAR-matching (-24, -13)	774	0.009	-0.013	0.573	0.458	0.149	154	0.105	0.067	0.620	2.097 **	0.686
BHAR-matching (-12, -1)	876	0.138	0.070	0.750	5.458 ***	1.760 *	184	0.051	0.035	0.741	0.942	0.303
BHAR-matching (0, +12)	892	-0.001	0.007	0.660	-0.049	-0.014	176	0.051	0.040	0.597	1.129	0.360
BHAR-matching (+13, +24)	802	-0.008	-0.021	0.606	-0.372	-0.119	156	-0.062	-0.086	0.676	-1.138	-0.360
BHAR-matching (+25, +36)	707	-0.040	-0.032	0.649	-1.634	-0.522	143	0.001	-0.013	0.649	0.024	0.008
BHAR-matching (0, +24)	764	-0.002	-0.061	1.138	-0.036	-0.009	152	0.029	0.011	1.222	0.295	0.099
BHAR-matching (0, +36)	663	-0.083	-0.086	1.729	-1.229	-0.393	138	-0.129	-0.099	1.745	-0.865	-0.271
BHAR-sector (-36, -25)	1440	0.009	-0.043	0.478	0.737	0.241	309	-0.001	-0.038	0.464	-0.035	0.003
BHAR-sector (-24, -13)	1563	0.004	-0.055	0.469	0.295	0.100	345	0.020	-0.019	0.438	0.851	0.281
BHAR-sector (-12, -1)	1657	0.126	0.001	0.602	8.499 ***	2.805 ***	372	0.093	-0.019	0.575	3.114 ***	1.037
BHAR-sector (0, +12)	1613	-0.035	-0.070	0.529	-2.694 ***	-0.850	361	-0.014	-0.079	0.535	-0.486	-0.145
BHAR-sector (+13, +24)	1491	-0.032	-0.078	0.492	-2.493 ***	-0.787	324	-0.063	-0.079	0.462	-2.455 ***	-0.766
BHAR-sector (+25, +36)	1291	-0.038	-0.070	0.521	-2.604 ***	-0.822	289	-0.081	-0.100	0.458	-2.997 ***	-0.924
BHAR-sector (0, +24)	1414	-0.106	-0.169	0.925	-4.298 ***	-1.346	315	0.009	-0.171	1.032	0.154	0.062
BHAR-sector (0, +36)	1170	-0.152	-0.239	1.274	-4.082 ***	-1.278	275	-0.029	-0.134	1.492	-0.319	-0.088

Cross-border M&As	Not Related Industry (4-SIC)						Related Industry (4-SIC)					
	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats
BHAR-matching (-36, -25)	313	0.088	0.016	0.707	2.212 **	0.717	112	0.003	0.060	0.652	0.042	0.006
BHAR-matching (-24, -13)	365	0.092	0.029	0.670	2.635 ***	0.847	133	-0.014	0.025	0.580	-0.281	-0.091
BHAR-matching (-12, -1)	407	0.208	0.099	0.818	5.134 ***	1.667 *	144	0.064	0.087	0.632	1.213	0.391
BHAR-matching (0, +12)	401	0.040	0.036	0.652	1.213	0.387	141	-0.111	-0.087	0.528	-2.500 ***	-0.792
BHAR-matching (+13, +24)	382	0.007	0.056	0.662	0.213	0.066	131	-0.035	-0.096	0.563	-0.703	-0.220
BHAR-matching (+25, +36)	327	-0.051	-0.001	0.650	-1.424	-0.459	114	-0.026	-0.016	0.614	-0.450	-0.146
BHAR-matching (0, +24)	360	0.081	0.101	1.252	1.227	0.392	128	-0.231	-0.141	1.080	-2.425 ***	-0.777
BHAR-matching (0, +36)	295	0.041	0.033	1.777	0.398	0.129	109	-0.180	-0.109	1.531	-1.226	-0.401
BHAR-sector (-36, -25)	616	0.098	0.006	0.541	4.475 ***	1.471	245	0.026	-0.007	0.489	0.846	0.284
BHAR-sector (-24, -13)	676	0.093	0.014	0.548	4.414 ***	1.443	286	0.044	0.015	0.425	1.760 *	0.582
BHAR-sector (-12, -1)	745	0.194	0.041	0.640	8.267 ***	2.763 ***	315	0.074	0.013	0.532	2.480 ***	0.820
BHAR-sector (0, +12)	743	-0.013	-0.044	0.535	-0.651	-0.202	316	-0.086	-0.127	0.460	-3.319 ***	-1.032
BHAR-sector (+13, +24)	676	-0.023	-0.042	0.497	-1.227	-0.384	298	-0.030	-0.049	0.450	-1.134	-0.351
BHAR-sector (+25, +36)	605	-0.050	-0.036	0.483	-2.546 ***	-0.801	281	-0.027	-0.025	0.473	-0.963	-0.299
BHAR-sector (0, +24)	643	-0.021	-0.064	0.934	-0.568	-0.174	286	-0.104	-0.148	0.851	-2.071 **	-0.632
BHAR-sector (0, +36)	556	-0.038	-0.070	1.300	-0.681	-0.210	264	-0.172	-0.106	1.169	-2.392 ***	-0.746

Pre- and Post-Acquisition Long-term Stock Performance: Tender Offer

Not Tender Offer							Tender Offer						
Domestic M&As	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats	
BHAR-matching (-36, -25)	748	0.004	-0.021	0.587	0.195	0.065	61	-0.042	-0.075	0.586	-0.556	-0.164	
BHAR-matching (-24, -13)	859	0.026	-0.006	0.585	1.326	0.427	69	0.010	-0.022	0.536	0.150	0.048	
BHAR-matching (-12, -1)	986	0.122	0.061	0.747	5.123 ***	1.649 *	74	0.140	0.099	0.773	1.562	0.511	
BHAR-matching (0, +12)	1004	0.006	0.009	0.649	0.315	0.102	64	0.024	0.018	0.667	0.283	0.096	
BHAR-matching (+13, +24)	906	-0.009	-0.026	0.616	-0.441	-0.141	52	-0.151	-0.094	0.644	-1.686 *	-0.564	
BHAR-matching (+25, +36)	816	-0.034	-0.033	0.650	-1.487	-0.475	34	-0.012	0.000	0.637	-0.112	-0.043	
BHAR-matching (0, +24)	867	0.013	-0.056	1.151	0.323	0.106	49	-0.156	-0.001	1.163	-0.940	-0.319	
BHAR-matching (0, +36)	769	-0.096	-0.089	1.740	-1.526	-0.487	32	0.036	0.174	1.531	0.131	0.040	
BHAR-sector (-36, -25)	1587	0.006	-0.042	0.471	0.519	0.171	162	0.021	-0.047	0.519	0.508	0.179	
BHAR-sector (-24, -13)	1739	0.007	-0.048	0.461	0.644	0.211	169	0.000	-0.076	0.490	0.006	0.018	
BHAR-sector (-12, -1)	1862	0.113	-0.010	0.595	8.186 ***	2.698 ***	167	0.196	0.141	0.618	4.087 ***	1.376	
BHAR-sector (0, +12)	1839	-0.034	-0.071	0.527	-2.770 ***	-0.874	135	0.003	-0.079	0.573	0.060	0.030	
BHAR-sector (+13, +24)	1696	-0.036	-0.072	0.487	-3.029 ***	-0.956	119	-0.059	-0.112	0.486	-1.328	-0.401	
BHAR-sector (+25, +36)	1487	-0.043	-0.072	0.513	-3.205 ***	-1.011	93	-0.094	-0.134	0.466	-1.936 *	-0.579	
BHAR-sector (0, +24)	1621	-0.082	-0.169	0.945	-3.479 ***	-1.092	108	-0.133	-0.207	0.967	-1.424	-0.432	
BHAR-sector (0, +36)	1362	-0.128	-0.225	1.318	-3.584 ***	-1.124	83	-0.137	-0.276	1.334	-0.938	-0.265	

Not Tender Offer							Tender Offer					
Cross-border M&As	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats
BHAR-matching (-36, -25)	370	0.086	0.044	0.710	2.322 **	0.748	55	-0.068	-0.135	0.555	-0.910	-0.298
BHAR-matching (-24, -13)	437	0.074	0.030	0.652	2.367 ***	0.759	61	-0.007	-0.057	0.621	-0.085	-0.017
BHAR-matching (-12, -1)	487	0.184	0.102	0.793	5.111 ***	1.657 *	64	0.071	0.081	0.631	0.900	0.294
BHAR-matching (0, +12)	479	0.005	0.003	0.630	0.187	0.060	63	-0.038	-0.033	0.595	-0.506	-0.162
BHAR-matching (+13, +24)	454	-0.010	0.019	0.635	-0.323	-0.104	59	0.044	0.082	0.663	0.510	0.156
BHAR-matching (+25, +36)	391	-0.037	-0.001	0.638	-1.148	-0.370	50	-0.104	-0.058	0.662	-1.112	-0.360
BHAR-matching (0, +24)	432	-0.001	0.000	1.203	-0.023	-0.007	56	0.002	0.013	1.319	0.010	0.012
BHAR-matching (0, +36)	357	0.017	-0.005	1.680	0.188	0.063	47	-0.286	0.014	1.965	-0.997	-0.355
BHAR-sector (-36, -25)	725	0.083	0.006	0.536	4.146 ***	1.357	136	0.049	-0.009	0.479	1.203	0.413
BHAR-sector (-24, -13)	814	0.067	0.007	0.508	3.786 ***	1.236	148	0.140	0.074	0.549	3.097 ***	1.026
BHAR-sector (-12, -1)	900	0.155	0.032	0.609	7.647 ***	2.542 ***	160	0.176	0.046	0.634	3.524 ***	1.188
BHAR-sector (0, +12)	908	-0.023	-0.046	0.520	-1.346	-0.423	151	-0.103	-0.150	0.481	-2.630 ***	-0.801
BHAR-sector (+13, +24)	841	-0.028	-0.042	0.473	-1.748 *	-0.550	133	-0.005	-0.061	0.546	-0.114	-0.022
BHAR-sector (+25, +36)	772	-0.040	-0.034	0.476	-2.335 ***	-0.736	114	-0.061	-0.024	0.505	-1.296	-0.406
BHAR-sector (0, +24)	798	-0.044	-0.087	0.872	-1.421	-0.445	131	-0.063	-0.177	1.114	-0.645	-0.181
BHAR-sector (0, +36)	705	-0.034	-0.075	1.246	-0.720	-0.222	115	-0.369	-0.342	1.316	-3.010 ***	-0.957

Pre- and Post-Acquisition Long-term Stock Performance: Payment Method

Cash Payment							Stock Payment					
Domestic M&As	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats
BHAR-matching (-36, -25)	565	0.011	-0.020	0.572	0.458	0.148	226	-0.048	-0.052	0.612	-1.174	-0.364
BHAR-matching (-24, -13)	646	0.026	-0.016	0.589	1.130	0.365	261	0.016	0.007	0.557	0.467	0.152
BHAR-matching (-12, -1)	742	0.144	0.059	0.751	5.219 ***	1.683 *	294	0.076	0.063	0.764	1.703 *	0.550
BHAR-matching (0, +12)	748	-0.009	0.000	0.657	-0.364	-0.115	297	0.058	0.044	0.639	1.571	0.507
BHAR-matching (+13, +24)	677	-0.019	-0.044	0.628	-0.795	-0.253	259	0.002	0.012	0.597	0.057	0.015
BHAR-matching (+25, +36)	601	-0.045	-0.090	0.638	-1.730 *	-0.552	231	-0.001	-0.019	0.666	-0.012	-0.007
BHAR-matching (0, +24)	640	0.023	-0.064	1.201	0.495	0.162	255	-0.005	-0.001	1.025	-0.084	-0.030
BHAR-matching (0, +36)	565	-0.091	-0.093	1.805	-1.194	-0.381	219	-0.066	0.002	1.581	-0.619	-0.202
BHAR-sector (-36, -25)	1211	0.011	-0.030	0.472	0.832	0.272	485	-0.011	-0.079	0.480	-0.510	-0.150
BHAR-sector (-24, -13)	1320	0.008	-0.048	0.468	0.659	0.216	530	0.004	-0.050	0.452	0.178	0.067
BHAR-sector (-12, -1)	1410	0.112	-0.016	0.603	6.998 ***	2.303 **	555	0.136	0.025	0.585	5.472 ***	1.829 *
BHAR-sector (0, +12)	1368	-0.051	-0.091	0.522	-3.636 ***	-1.144	544	0.022	-0.029	0.551	0.933	0.305
BHAR-sector (+13, +24)	1251	-0.043	-0.087	0.484	-3.110 ***	-0.979	509	-0.014	-0.063	0.495	-0.631	-0.195
BHAR-sector (+25, +36)	1116	-0.046	-0.083	0.513	-2.970 ***	-0.934	421	-0.033	-0.056	0.508	-1.334	-0.418
BHAR-sector (0, +24)	1198	-0.086	-0.190	0.997	-2.984 ***	-0.934	478	-0.050	-0.129	0.823	-1.317	-0.410
BHAR-sector (0, +36)	1023	-0.129	-0.243	1.369	-3.019 ***	-0.944	382	-0.096	-0.168	1.218	-1.543	-0.480

Cash Payment							Stock Payment					
Cross-border M&As	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats
BHAR-matching (-36, -25)	306	0.059	0.029	0.719	1.443	0.464	111	0.097	0.030	0.638	1.610	0.532
BHAR-matching (-24, -13)	359	0.074	0.019	0.650	2.147 **	0.689	131	0.031	0.049	0.661	0.532	0.174
BHAR-matching (-12, -1)	402	0.172	0.086	0.800	4.315 ***	1.399	141	0.182	0.159	0.712	3.033 ***	0.989
BHAR-matching (0, +12)	395	-0.011	0.000	0.654	-0.322	-0.102	139	0.041	0.022	0.545	0.893	0.286
BHAR-matching (+13, +24)	368	-0.005	0.031	0.626	-0.139	-0.046	137	0.021	0.000	0.674	0.358	0.113
BHAR-matching (+25, +36)	319	-0.022	-0.001	0.635	-0.620	-0.201	114	-0.112	-0.031	0.646	-1.844 *	-0.600
BHAR-matching (0, +24)	355	-0.012	0.031	1.254	-0.181	-0.059	125	0.056	-0.048	1.132	0.552	0.192
BHAR-matching (0, +36)	296	0.018	0.004	1.688	0.185	0.059	101	-0.104	-0.016	1.842	-0.570	-0.179
BHAR-sector (-36, -25)	581	0.072	-0.003	0.535	3.249 ***	1.064	259	0.088	0.011	0.517	2.752 ***	0.912
BHAR-sector (-24, -13)	660	0.092	0.018	0.515	4.602 ***	1.506	283	0.036	-0.011	0.509	1.195	0.397
BHAR-sector (-12, -1)	742	0.163	0.040	0.624	7.112 ***	2.370 ***	295	0.153	0.025	0.589	4.452 ***	1.486
BHAR-sector (0, +12)	738	-0.033	-0.048	0.519	-1.747 *	-0.549	295	-0.035	-0.081	0.513	-1.163	-0.358
BHAR-sector (+13, +24)	681	-0.039	-0.050	0.476	-2.125 **	-0.668	270	0.009	-0.037	0.509	0.306	0.108
BHAR-sector (+25, +36)	629	-0.037	-0.036	0.489	-1.875 *	-0.589	237	-0.057	-0.017	0.467	-1.870 *	-0.590
BHAR-sector (0, +24)	645	-0.083	-0.103	0.857	-2.444 ***	-0.768	260	0.042	-0.091	1.036	0.654	0.226
BHAR-sector (0, +36)	574	-0.109	-0.098	1.206	-2.167 **	-0.681	225	-0.009	-0.065	1.417	-0.097	-0.018

Pre- and Post-Acquisition Long-term Stock Performance: Acquiring Firm Public Status

Private Acquiring Firms							Public Acquiring Firms						
Domestic M&As	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats	
BHAR-matching (-36, -25)	357	-0.014	-0.030	0.595	-0.445	-0.140	216	0.044	0.057	0.611	1.051	0.341	
BHAR-matching (-24, -13)	413	0.007	-0.017	0.556	0.263	0.088	251	0.048	0.035	0.637	1.200	0.388	
BHAR-matching (-12, -1)	473	0.131	0.058	0.743	3.823 ***	1.235	289	0.168	0.143	0.780	3.660 ***	1.183	
BHAR-matching (0, +12)	475	0.029	0.036	0.676	0.948	0.304	291	-0.033	-0.003	0.587	-0.948	-0.300	
BHAR-matching (+13, +24)	433	0.021	-0.014	0.579	0.745	0.239	255	-0.015	-0.027	0.636	-0.376	-0.120	
BHAR-matching (+25, +36)	380	0.014	0.000	0.633	0.444	0.140	225	-0.076	-0.051	0.662	-1.732 *	-0.552	
BHAR-matching (0, +24)	410	0.071	-0.030	1.204	1.192	0.386	246	-0.027	-0.049	1.100	-0.382	-0.120	
BHAR-matching (0, +36)	352	-0.017	-0.032	1.804	-0.181	-0.058	219	-0.096	-0.093	1.720	-0.823	-0.262	
BHAR-sector (-36, -25)	825	-0.001	-0.058	0.498	-0.077	-0.016	470	0.021	-0.023	0.469	0.980	0.324	
BHAR-sector (-24, -13)	890	-0.007	-0.064	0.473	-0.432	-0.131	524	0.000	-0.051	0.465	0.005	0.011	
BHAR-sector (-12, -1)	948	0.106	-0.025	0.597	5.484 ***	1.806 *	568	0.184	0.072	0.638	6.888 ***	2.299 **	
BHAR-sector (0, +12)	928	-0.023	-0.069	0.556	-1.264	-0.397	548	-0.033	-0.058	0.504	-1.535	-0.480	
BHAR-sector (+13, +24)	875	-0.028	-0.069	0.484	-1.717 *	-0.540	489	-0.053	-0.091	0.489	-2.413 ***	-0.756	
BHAR-sector (+25, +36)	737	-0.023	-0.052	0.546	-1.160	-0.364	450	-0.083	-0.097	0.482	-3.645 ***	-1.139	
BHAR-sector (0, +24)	820	-0.062	-0.170	0.988	-1.805 *	-0.563	476	-0.058	-0.133	0.986	-1.280	-0.396	
BHAR-sector (0, +36)	659	-0.100	-0.233	1.381	-1.854 *	-0.578	417	-0.091	-0.137	1.334	-1.394	-0.432	

Private Acquiring Firms							Public Acquiring Firms						
Cross-border M&As	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats	
BHAR-matching (-36, -25)	116	0.126	0.048	0.705	1.926 *	0.629	141	-0.073	-0.018	0.637	-1.358	-0.437	
BHAR-matching (-24, -13)	139	0.068	0.000	0.669	1.191	0.388	170	0.061	0.008	0.596	1.341	0.433	
BHAR-matching (-12, -1)	154	0.281	0.135	0.861	4.051 ***	1.331	189	0.086	0.074	0.666	1.776 *	0.574	
BHAR-matching (0, +12)	150	0.106	0.061	0.655	1.989 **	0.643	186	-0.066	-0.057	0.593	-1.517	-0.485	
BHAR-matching (+13, +24)	133	-0.016	0.054	0.620	-0.305	-0.104	188	-0.076	-0.084	0.677	-1.531	-0.493	
BHAR-matching (+25, +36)	120	-0.036	-0.028	0.640	-0.614	-0.201	168	-0.060	-0.018	0.641	-1.217	-0.395	
BHAR-matching (0, +24)	124	0.129	0.096	1.138	1.266	0.409	181	-0.155	-0.081	1.188	-1.758 *	-0.563	
BHAR-matching (0, +36)	106	0.074	0.033	1.840	0.414	0.128	154	-0.179	-0.071	1.665	-1.337	-0.422	
BHAR-sector (-36, -25)	196	0.038	-0.022	0.504	1.068	0.355	350	0.047	0.005	0.500	1.763 *	0.585	
BHAR-sector (-24, -13)	226	0.108	0.015	0.551	2.948 ***	0.978	390	0.049	0.014	0.472	2.031 **	0.666	
BHAR-sector (-12, -1)	264	0.229	0.080	0.689	5.390 ***	1.818 *	421	0.083	0.007	0.543	3.130 ***	1.035	
BHAR-sector (0, +12)	256	-0.030	-0.031	0.553	-0.868	-0.267	429	-0.062	-0.075	0.485	-2.650 ***	-0.824	
BHAR-sector (+13, +24)	237	-0.069	-0.048	0.442	-2.392 ***	-0.750	402	-0.030	-0.051	0.478	-1.247	-0.387	
BHAR-sector (+25, +36)	217	-0.076	-0.062	0.488	-2.287 **	-0.718	371	-0.043	-0.025	0.455	-1.817 *	-0.571	
BHAR-sector (0, +24)	218	-0.052	-0.095	0.888	-0.861	-0.264	392	-0.090	-0.126	0.835	-2.126 **	-0.661	
BHAR-sector (0, +36)	188	-0.054	-0.021	1.343	-0.550	-0.165	357	-0.133	-0.150	1.207	-2.076 **	-0.641	

Pre- and Post-Acquisition Long-term Stock Performance: Partial and Full Acquisitions

Non-controlling ownership acquisitions							Controlling ownership acquisitions					
Domestic M&As	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats
BHAR-matching (-36, -25)	600	0.003	-0.027	0.569	0.148	0.050	137	-0.041	-0.016	0.608	-0.787	-0.249
BHAR-matching (-24, -13)	695	0.028	-0.012	0.578	1.273	0.410	151	-0.036	-0.021	0.507	-0.884	-0.274
BHAR-matching (-12, -1)	794	0.112	0.061	0.737	4.280 ***	1.379	171	0.206	0.115	0.827	3.262 ***	1.053
BHAR-matching (0, +12)	815	0.013	0.010	0.639	0.562	0.181	160	0.078	0.077	0.679	1.446	0.467
BHAR-matching (+13, +24)	739	-0.002	-0.027	0.619	-0.102	-0.033	136	-0.050	0.000	0.626	-0.930	-0.299
BHAR-matching (+25, +36)	668	-0.020	-0.029	0.644	-0.819	-0.262	105	-0.038	-0.027	0.619	-0.631	-0.200
BHAR-matching (0, +24)	712	0.051	-0.041	1.137	1.197	0.385	123	-0.011	-0.035	1.169	-0.106	-0.026
BHAR-matching (0, +36)	625	-0.062	-0.062	1.681	-0.925	-0.296	104	0.069	-0.061	2.004	0.349	0.123
BHAR-sector (-36, -25)	1288	0.008	-0.041	0.463	0.630	0.208	295	-0.007	-0.062	0.505	-0.234	-0.064
BHAR-sector (-24, -13)	1408	0.007	-0.041	0.456	0.569	0.187	315	-0.011	-0.106	0.483	-0.387	-0.111
BHAR-sector (-12, -1)	1500	0.103	-0.016	0.583	6.821 ***	2.249 **	330	0.204	0.093	0.667	5.541 ***	1.849 *
BHAR-sector (0, +12)	1487	-0.036	-0.071	0.528	-2.638 ***	-0.832	300	0.040	-0.032	0.527	1.301	0.425
BHAR-sector (+13, +24)	1368	-0.033	-0.069	0.486	-2.476 ***	-0.781	264	-0.050	-0.141	0.488	-1.653 *	-0.506
BHAR-sector (+25, +36)	1191	-0.038	-0.068	0.520	-2.552 ***	-0.804	225	-0.044	-0.096	0.507	-1.312	-0.407
BHAR-sector (0, +24)	1326	-0.077	-0.166	0.948	-2.940 ***	-0.923	242	0.008	-0.145	0.994	0.119	0.057
BHAR-sector (0, +36)	1107	-0.143	-0.229	1.321	-3.596 ***	-1.126	203	0.098	-0.191	1.434	0.971	0.333

Non-controlling ownership acquisitions							Controlling ownership acquisitions					
Cross-border M&As	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats
BHAR-matching (-36, -25)	283	0.101	0.045	0.714	2.391 ***	0.768	112	0.003	-0.033	0.645	0.052	0.028
BHAR-matching (-24, -13)	334	0.109	0.054	0.653	3.062 ***	0.988	121	-0.016	0.000	0.592	-0.301	-0.098
BHAR-matching (-12, -1)	371	0.183	0.102	0.811	4.356 ***	1.411	133	0.127	0.083	0.651	2.245 **	0.733
BHAR-matching (0, +12)	365	0.046	0.029	0.649	1.364	0.436	131	-0.104	-0.076	0.577	-2.054 **	-0.653
BHAR-matching (+13, +24)	350	0.028	0.073	0.654	0.805	0.254	118	-0.040	-0.060	0.627	-0.697	-0.217
BHAR-matching (+25, +36)	304	-0.035	-0.011	0.638	-0.970	-0.314	97	-0.060	-0.009	0.640	-0.922	-0.299
BHAR-matching (0, +24)	330	0.062	0.095	1.204	0.929	0.294	114	-0.108	-0.216	1.299	-0.885	-0.267
BHAR-matching (0, +36)	279	0.085	0.040	1.866	0.764	0.245	90	-0.197	-0.124	1.239	-1.506	-0.481
BHAR-sector (-36, -25)	515	0.116	0.025	0.542	4.844 ***	1.595	262	0.028	-0.019	0.504	0.913	0.309
BHAR-sector (-24, -13)	583	0.110	0.015	0.531	4.997 ***	1.647 *	286	0.034	0.015	0.503	1.160	0.382
BHAR-sector (-12, -1)	655	0.197	0.050	0.637	7.901 ***	2.651 ***	304	0.094	-0.007	0.501	3.267 ***	1.071
BHAR-sector (0, +12)	663	-0.012	-0.031	0.536	-0.564	-0.174	293	-0.068	-0.136	0.466	-2.493 ***	-0.773
BHAR-sector (+13, +24)	616	-0.019	-0.032	0.478	-0.960	-0.300	262	-0.021	-0.069	0.498	-0.683	-0.207
BHAR-sector (+25, +36)	563	-0.046	-0.050	0.486	-2.227 **	-0.699	234	-0.020	-0.012	0.497	-0.631	-0.195
BHAR-sector (0, +24)	583	-0.007	-0.046	0.894	-0.181	-0.050	253	-0.101	-0.197	0.924	-1.738 *	-0.531
BHAR-sector (0, +36)	513	0.005	-0.054	1.195	0.093	0.038	228	-0.167	-0.222	1.349	-1.867 *	-0.582

Pre- and Post-Acquisition Long-term Stock Performance: Acquiring Firms' Prior Acquisition Experience

No Prior Acquisition Experience							Little Acquisition Experience							More Acquisition Experience						
Domestic M&As	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats		
BHAR-matching (-36, -25)	536	-0.027	-0.032	0.562	-1.124	-0.356	189	0.072	0.019	0.627	1.574	0.512	57	0.007	0.008	0.605	0.088	0.033		
BHAR-matching (-24, -13)	623	0.015	-0.013	0.588	0.624	0.202	212	0.082	0.009	0.565	2.105 **	0.690	62	-0.064	-0.027	0.470	-1.064	-0.354		
BHAR-matching (-12, -1)	715	0.111	0.064	0.736	4.041 ***	1.299	243	0.158	0.039	0.771	3.199 ***	1.042	68	0.173	0.134	0.814	1.754 *	0.576		
BHAR-matching (0, +12)	730	-0.007	0.005	0.631	-0.292	-0.092	240	0.019	0.008	0.685	0.441	0.145	62	0.111	0.192	0.669	1.309	0.424		
BHAR-matching (+13, +24)	653	-0.014	-0.035	0.591	-0.598	-0.190	221	-0.016	0.000	0.688	-0.353	-0.115	48	-0.011	0.002	0.577	-0.136	-0.055		
BHAR-matching (+25, +36)	602	0.000	-0.015	0.647	-0.012	-0.004	173	-0.121	-0.055	0.637	-2.505 ***	-0.812	38	-0.079	0.000	0.567	-0.857	-0.295		
BHAR-matching (0, +24)	626	0.019	-0.042	1.133	0.411	0.134	209	-0.041	-0.094	1.175	-0.504	-0.156	46	0.206	0.165	1.071	1.304	0.442		
BHAR-matching (0, +36)	565	-0.090	-0.062	1.726	-1.244	-0.398	162	-0.097	-0.147	1.613	-0.766	-0.241	39	0.936	0.280	1.981	1.060	0.372		
BHAR-sector (-36, -25)	1190	-0.009	-0.045	0.459	-0.653	-0.201	391	0.048	-0.036	0.488	1.947 *	0.642	123	0.026	-0.020	0.556	0.510	0.178		
BHAR-sector (-24, -13)	1298	-0.012	-0.058	0.441	-0.982	-0.307	426	0.063	-0.018	0.501	2.569 ***	0.848	131	-0.002	-0.090	0.504	-0.044	0.004		
BHAR-sector (-12, -1)	1379	0.102	-0.018	0.577	6.539 ***	2.151 **	461	0.156	0.045	0.639	5.257 ***	1.760 *	134	0.223	0.119	0.661	3.902 ***	1.312		
BHAR-sector (0, +12)	1344	-0.046	-0.085	0.510	-3.280 ***	-1.033	453	-0.001	-0.035	0.578	-0.003	0.000	119	-0.017	-0.069	0.510	-0.361	-0.107		
BHAR-sector (+13, +24)	1246	-0.041	-0.074	0.478	-3.028 ***	-0.954	400	-0.031	-0.104	0.526	-1.195	-0.371	108	-0.060	-0.096	0.427	-1.421	-0.438		
BHAR-sector (+25, +36)	1107	-0.048	-0.075	0.521	-3.070 ***	-0.967	321	-0.026	-0.077	0.499	-0.928	-0.287	83	-0.140	-0.140	0.457	-2.788 ***	-0.828		
BHAR-sector (0, +24)	1194	-0.094	-0.171	0.941	-3.464 ***	-1.085	387	-0.060	-0.162	0.995	-1.194	-0.366	93	-0.080	-0.204	0.923	-0.833	-0.244		
BHAR-sector (0, +36)	1011	-0.159	-0.241	1.312	-8.861 ***	-1.206	304	-0.092	-0.198	1.375	-1.165	-0.359	76	0.017	-0.231	1.421	0.103	0.073		

No Prior Acquisition Experience							Little Acquisition Experience							More Acquisition Experience						
Cross-border M&As	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats		
BHAR-matching (-36, -25)	288	0.079	0.014	0.714	1.885 *	0.611	81	0.025	0.114	0.703	0.317	0.092	46	-0.013	-0.145	0.544	-0.157	-0.036		
BHAR-matching (-24, -13)	340	0.086	0.039	0.647	2.459 ***	0.791	90	0.043	0.046	0.638	0.636	0.207	55	-0.067	-0.077	0.648	-0.769	-0.248		
BHAR-matching (-12, -1)	374	0.196	0.114	0.792	4.779 ***	1.555	104	0.121	0.101	0.810	1.519	0.486	56	0.046	0.050	0.494	0.694	0.225		
BHAR-matching (0, +12)	359	0.028	0.017	0.650	0.890	0.266	105	-0.061	-0.048	0.619	-1.013	-0.327	60	-0.074	-0.030	0.490	-1.174	-0.379		
BHAR-matching (+13, +24)	348	0.010	0.051	0.634	0.294	0.092	95	0.013	0.045	0.702	0.179	0.053	51	-0.116	-0.136	0.630	-1.317	-0.409		
BHAR-matching (+25, +36)	301	-0.076	-0.023	0.632	-2.094 **	-0.674	79	0.050	0.067	0.720	0.620	0.184	45	-0.106	-0.055	0.541	-1.316	-0.419		
BHAR-matching (0, +24)	330	0.049	0.080	1.232	0.727	0.233	90	-0.054	-0.085	1.222	-0.420	-0.137	50	-0.241	-0.211	1.210	-1.409	-0.433		
BHAR-matching (0, +36)	275	0.091	0.011	1.697	0.890	0.289	73	-0.218	0.009	2.081	-0.895	-0.299	43	-0.343	-0.075	1.291	-1.743 *	-0.567		
BHAR-sector (-36, -25)	514	0.092	0.008	0.537	3.894 ***	1.277	198	0.097	0.014	0.535	2.561 ***	0.854	126	0.013	-0.048	0.500	0.294	0.119		
BHAR-sector (-24, -13)	575	0.093	0.015	0.535	4.154 ***	1.362	222	0.075	0.016	0.489	2.283 **	0.760	135	0.056	0.032	0.481	1.355	0.448		
BHAR-sector (-12, -1)	644	0.175	0.044	0.618	7.172 ***	2.390 ***	242	0.142	0.016	0.613	3.602 ***	1.205	143	0.122	0.007	0.567	2.579 ***	0.868		
BHAR-sector (0, +12)	646	-0.032	-0.049	0.534	-1.502	-0.470	237	0.002	-0.022	0.477	0.081	0.036	141	-0.114	-0.140	0.464	-2.927 ***	-0.909		
BHAR-sector (+13, +24)	594	-0.041	-0.056	0.467	-2.156 **	-0.677	223	0.011	-0.018	0.488	0.323	0.113	121	-0.022	-0.079	0.529	-0.459	-0.133		
BHAR-sector (+25, +36)	549	-0.061	-0.045	0.480	-2.976 ***	-0.938	191	-0.003	-0.029	0.487	-0.093	-0.016	109	-0.030	-0.015	0.480	-0.652	-0.197		
BHAR-sector (0, +24)	558	-0.052	-0.083	0.891	-1.566	-0.433	216	0.034	-0.038	0.907	0.555	0.194	120	-0.192	-0.247	0.954	-2.208 **	-0.657		
BHAR-sector (0, +36)	494	-0.073	-0.091	1.274	-1.259	-0.394	187	0.009	-0.018	1.110	0.106	0.045	110	-0.291	-0.299	1.421	-2.148 **	-0.671		

Pre- and Post-Acquisition Long-term Stock Performance: Geographic Distance

Short Geographic Distance							Long Geographic Distance					
Cross-border M&As	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats
BHAR-matching (-36, -25)	176	0.035	0.027	0.647	0.719	0.230	198	0.110	0.045	0.748	2.064 **	0.670
BHAR-matching (-24, -13)	215	0.048	0.024	0.651	1.071	0.341	220	0.053	-0.003	0.664	1.180	0.384
BHAR-matching (-12, -1)	235	0.198	0.132	0.761	3.991 ***	1.302	245	0.153	0.071	0.817	2.931 ***	0.951
BHAR-matching (0, +12)	234	-0.004	-0.003	0.609	-0.090	-0.027	240	-0.003	-0.025	0.663	-0.076	-0.024
BHAR-matching (+13, +24)	211	0.008	0.052	0.628	0.196	0.061	241	0.012	0.000	0.643	0.284	0.090
BHAR-matching (+25, +36)	185	-0.059	-0.023	0.644	-1.250	-0.404	202	-0.032	-0.005	0.634	-0.717	-0.233
BHAR-matching (0, +24)	208	0.053	0.024	1.240	0.617	0.199	224	-0.051	-0.049	1.281	-0.591	-0.188
BHAR-matching (0, +36)	171	0.094	0.053	1.661	0.738	0.235	184	-0.051	-0.080	1.841	-0.376	-0.117
BHAR-sector (-36, -25)	364	0.047	0.004	0.493	1.804 *	0.596	389	0.114	0.008	0.543	4.124 ***	1.359
BHAR-sector (-24, -13)	420	0.039	0.002	0.433	1.845 *	0.603	419	0.105	0.024	0.589	3.665 ***	1.204
BHAR-sector (-12, -1)	459	0.150	0.016	0.578	5.546 ***	1.862 *	472	0.174	0.044	0.647	5.837 ***	1.942 *
BHAR-sector (0, +12)	453	-0.084	-0.085	0.478	-3.738 ***	-1.174	470	0.000	-0.038	0.533	0.008	0.010
BHAR-sector (+13, +24)	424	-0.041	-0.073	0.500	-1.699 *	-0.529	430	-0.012	-0.043	0.486	-0.533	-0.163
BHAR-sector (+25, +36)	385	-0.063	-0.039	0.454	-2.729 ***	-0.852	387	-0.016	-0.003	0.522	-0.594	-0.185
BHAR-sector (0, +24)	398	-0.086	-0.142	0.800	-2.149 **	-0.669	413	0.001	-0.052	1.017	0.019	0.016
BHAR-sector (0, +36)	348	-0.113	-0.170	1.092	-1.922 *	-0.600	363	0.010	-0.018	1.451	0.138	0.051

Pre- and Post-Acquisition Long-term Stock Performance: Cultural Distance

Similar Cultural							Different Cultural					
Cross-border M&As	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats	N	Mean	Median	Std. Deviation	traditional t statistics	adj. t stats
BHAR-matching (-36, -25)	166	0.028	0.001	0.680	0.531	0.173	169	0.053	-0.001	0.684	1.011	0.325
BHAR-matching (-24, -13)	191	-0.016	0.008	0.585	-0.387	-0.123	201	0.053	0.000	0.670	1.122	0.360
BHAR-matching (-12, -1)	208	0.162	0.091	0.788	2.964 ***	0.967	217	0.141	0.074	0.750	2.773 ***	0.894
BHAR-matching (0, +12)	206	-0.009	-0.045	0.629	-0.206	-0.063	220	0.008	-0.008	0.651	0.172	0.055
BHAR-matching (+13, +24)	191	-0.005	0.043	0.608	-0.112	-0.035	209	0.014	0.028	0.648	0.312	0.097
BHAR-matching (+25, +36)	167	-0.023	-0.009	0.621	-0.486	-0.160	184	-0.077	-0.015	0.639	-1.624	-0.525
BHAR-matching (0, +24)	189	0.051	0.029	1.282	0.548	0.177	196	-0.042	-0.018	1.227	-0.474	-0.151
BHAR-matching (0, +36)	159	0.135	0.078	1.478	1.151	0.377	166	-0.109	-0.078	1.835	-0.764	-0.245
BHAR-sector (-36, -25)	336	0.038	0.005	0.477	1.453	0.480	338	0.119	0.013	0.528	4.158 ***	1.382
BHAR-sector (-24, -13)	383	0.047	0.011	0.453	2.010 **	0.657	381	0.059	-0.001	0.529	2.160 **	0.711
BHAR-sector (-12, -1)	415	0.135	0.018	0.587	4.685 ***	1.559	424	0.153	0.039	0.596	5.271 ***	1.765 *
BHAR-sector (0, +12)	415	-0.072	-0.087	0.493	-2.965 ***	-0.924	418	-0.011	-0.042	0.527	-0.431	-0.131
BHAR-sector (+13, +24)	393	-0.033	-0.079	0.502	-1.286	-0.400	382	-0.024	-0.033	0.465	-1.019	-0.316
BHAR-sector (+25, +36)	361	-0.027	-0.022	0.463	-1.124	-0.350	348	-0.052	-0.019	0.512	-1.907 *	-0.599
BHAR-sector (0, +24)	373	-0.060	-0.142	0.866	-1.339	-0.412	365	-0.030	-0.060	0.938	-0.615	-0.186
BHAR-sector (0, +36)	328	-0.011	-0.145	1.189	-0.173	-0.042	325	-0.104	-0.054	1.295	-1.449	-0.455

Essay Three. Target Firm Risk Changes due to Cross-border Mergers and Acquisitions in Emerging Markets

Abstract

In this essay, we examine the impact of cross-border mergers and acquisitions on the target firm's risk based on a sample of partially acquired target firms. Compared with the domestic acquisitions in 22 emerging countries between 1990 and 2007, we find that cross-border acquisitions significantly reduce both the total and downside risk of the target firms in these markets. We also investigate the cross-sectional variations in the target firm risk changes. We find that the reduction in target firm risk is more significant in the acquisitions undertaken by the bidders from countries that have better protection of investor rights. Furthermore, we find the risk reduction is also associated with better long-term stock performance for the investors. More specifically, the investment returns adjusted for total risk and downside risk are significantly higher for the target firms in the cross-border acquisitions than for those in the domestic acquisitions. We conclude that cross-border partial acquisitions benefit the emerging market investors' risk-return trade off by reducing investment risk and increasing investment returns.

Introduction

Over the last few years, cross-border M&As have become major components of foreign direct investment in the global economy. According to the World Investment Report (2007) published by the United Nation, about 70 – 80% of the foreign direct investment is cross-border M&As. The total transaction value in 2006 increased by 88% (compared to 2004), to \$716 billion U.S.,

and the number of deals rose by 20% to 6,134 (WIR, 2007). Although the developed countries account for the lion's share of cross-border acquisitions, transactions in the developing and emerging countries are also becoming important in recent years⁴⁴. Business practitioners and policy makers in the emerging countries are eager to know the impact of foreign acquisition on their business and local economy.

The motivation behind this essay is three fold. First, it is based on the evidence in the literature that stocks in emerging market typically display higher risk and, notwithstanding their potential diversification benefits, investors would require higher expected returns unless there are other indicators that may reduce firm risk. As noted later in the essay, many of these indicators are typically described at the country level (e.g., legal system and corruption index, among others) but not much work has been done in these markets to investigate whether firm characteristics impact riskiness. We believe that one important firm-specific factor is the ownership variable that, in the case of partial acquisitions, is related to the identity and characteristics of the acquirer. For example, we do not know if foreign acquirers have a different impact than domestic acquirers on the target firms' risk in emerging markets. Accordingly, we believe that cross-border partial acquisitions in emerging markets provide us an ideal sample to investigate this topic.

Second, there is only one study (Chari et al., 2004) that has examined the cross-border acquisitions in 17 emerging countries during the period 1980 to 2003. Chari et al. (2004) focus on the valuation impact of M&A announcements on target and acquiring firms, using the event

⁴⁴ The proportion of the cross-border acquisitions in emerging markets have increased from almost 0% in the late 1980s to 15% at the end of 2006 (WIR, 2007).

study method, and they conclude that both target firms and acquiring firms gain positive abnormal returns upon the acquisition announcements. Further, the target firms gain almost two-thirds of the total gains in the announcements. However, they do not explain why these foreign acquisitions affect the valuation and performance of the target firms. We believe that our investigation of changes in risk may allow us to separate the valuation impact that arises from the possible synergistic cash flow benefits associated with acquisitions and the changes in risk characteristics of the target firms in the post-acquisition period. Given the same projected cash flow from the operations, risk reduction will directly increase the firm valuation and improve the stock performance of the firm. Therefore, studying the risk impact on target firms can provide further insights about the valuation effect of the cross-border acquisitions.

Third, studying risk impact also has profound implications for investors who invest in the emerging markets. From an international portfolio diversification perspective, emerging markets provide attractive investment opportunities, as they are more segmented from the international financial market and thus provide a better diversification effect⁴⁵. However, investors cannot ignore the fact that emerging markets are far more volatile than the developed markets (Bekaert and Harvey, 1997). Before making the investment decision, investors need to make a prudent comparison of the risk-return characteristics of the investments in these countries. For example, investors may find that investing in the stocks of a group of partially acquired target firms can generate higher investment returns. However, a lack of knowledge about the risk characteristics of these firms would significantly bias their investment decisions.

⁴⁵ There is evidence, however, that such an international diversification effect becomes weaker in more recent years because of the globalization of the world economy and integration of the international financial markets (for example, Goetzmann, Li, and Rouwenhorst, 2005).

In addition, we investigate changes in risk by using not only the traditional risk measures, such as standard deviation, that capture the uncertainty or variability of stock returns on both gains and losses of the investment but also a measure that represents “downside risk”. We believe that it is necessary to do so for at least two reasons. First, the traditional measure of risk may not match an investor’s intuition and experience about risk in these emerging markets. Standard deviations treat the large positive outcomes as equally as risky as large negative ones. In reality, however, investors should be more concerned about the risk of losses that may occur to their portfolio if things go wrong. Second, it has been found in the literature that the stock returns in emerging market are neither normally nor symmetrically distributed (Adcock and Shutes, 2005). Therefore, the volatility under losses (i.e., the left tail of the stock return distribution) is considered more relevant to measure the risk of an investment. To address this problem, we use the measure proposed by Sortino and van der Meer (1991), which captures the volatility of the stock returns below the benchmark return (for example, zero).

Accordingly, we have three research objectives in the essay. First, we examine the impact of foreign acquisitions on the long-term risk changes in the target firms, including the downside risk change. Second, we investigate the driving forces of the risk changes in the target firms; we particularly focus on the investor right protection rationale in the cross-border acquisitions. Finally, we examine whether the risk change is associated with improving stock performance in the target firms so that useful investment implications can be made to the investors. Our sample

consists of all (cross-border and domestic) partial acquisitions⁴⁶ in 22 emerging countries during the period between 1990 and 2007.

The essay is organized as follows: first we review the literature on cross-border acquisitions with specific focus on firm risk. Then we develop the testing hypotheses of the current study. Samples and methodologies are introduced in the next section followed by the empirical results. We conclude the paper and provide future research direction in the last section.

Literature Review

“Risk is one of the most elusive concepts in finance, and it is particularly so in emerging markets.” (Estrada, 2005). It has been found that equities from emerging capital markets have significantly different characteristics than equities from developed capital markets. The most distinct feature is the higher volatility of the stock prices in the emerging markets (Bekaert and Harvey, 1997).

However, Barry et al. (1997) and Claessens et al. (1995) have shown that investing in emerging markets is beneficial in a risk/return framework. They claim that investors are compensated for bearing the extra risk by receiving a higher average return and low correlation with other markets. This risk premium, termed “emerging market risk premium”, is found to be priced in emerging market equity returns. Some researchers (Bansal and Dahlquist, 2002) think of the risk premium as the adjustment for political risk, that is, for the likelihood that the market for the investment

⁴⁶ Using partial acquisitions allow us to track the long-term impact of the acquisition on the target firm risk. Since the firms are only partially acquired in the takeover, their stocks continue listing on the public market and, thus, we can access their financial data from publicly available data sources.

will close for political reasons, while others (including Bekaert, Harvey and Lundblad, 2003) think it is related to low liquidity in the emerging financial markets.

A few studies attribute the high risk level in the emerging countries to their weak legal enforcement and corporate governance systems. In a weak governance environment, majority controlling owners can easily engage in self-dealing and asset-stripping, thereby driving firms into bankruptcy and destroying the minority shareholders' value (Shleifer and Vishny, 1997). Most emerging countries have less effective protection of minority investor rights than the developed countries (La Porta et al., 1998). Therefore, the conflicts between majority and minority shareholders inject additional uncertainty into the business environment and increase the firm risk and investment risk in the emerging markets (Shkolnikov, 2006).

One way to mitigate the governance risk is to strengthen the shareholder's rights. There is a rapidly growing literature that shows that the investor protection by legal systems, especially shareholder rights, is an essential element of governance structures and has an important influence on the governance activities of shareholders and corporate evaluation. Strong shareholder rights can reduce the risk of expropriating minority shareholder value by corporate insiders; they also mitigate the agency problem between managers and outside investors, as protected shareholder rights can provide corporate managers with strong incentives to maximize shareholder wealth (Shleifer and Vishny, 1997; La Porta et al., 1998, 2000, 2002). Recent studies (such as DeFond and Hung, 2004) further show that foreign shareholders from countries with stronger shareholder protection and law enforcement possess governance skills and expertise that are superior to those from countries with poor shareholder protection. This argument also carries to cross-border acquisitions, as they have been found to be an effective way to transfer the protection of investors' rights and governance systems to the target firms

(Bris and Cabolis, 2008; Martynova and Renneboog, 2008; and Bris, Brisley and Cabolis, 2008). These studies predominately examine the governance transfer effect on firm evaluation, and they show that target firms' shareholders benefit (in terms of getting higher acquisition premiums and increasing Tobin's Q) from better corporate governance and improving investor protections in the acquiring firms. However, no study has examined the effect of governance transfer on the risk reduction of the target firms, which might also be an important channel to link improved governance and better firm performance.

Another reason for the higher firm risk in emerging markets may be because of the lack of risk management talents who have sufficient experience and skills to manage the operating risk of the company (Bekaert and Harvey, 2002). Well-managed companies not only focus on the operating performance but also make an effort to manage the fluctuations in the operating cash flows to the firm. Smooth cash flows reduce the operating risk and, in turn, reduce the volatility of the stock prices in the market. Many studies argue that cross-border acquirers can bring important managerial experience and skills (including the risk management skills) to the target firms in the emerging markets (e.g., Shimizu et al., 2004). Therefore, target firm risk might be reduced because of the introduction of a better risk management system by the foreign acquirers. A somewhat similar argument based on the emerging market context relates to the immature financial market and incomplete financial products available for the firms to manage their risk; for example, many emerging markets do not have a well-established commodity derivatives market. Thus, even though the emerging market firms may have the capability to understand and manage the risk by themselves, they don't have an appropriate risk management toolkit to implement their strategy (Shimizu et al., 2004). Foreign acquirers can bring value to the target

firms that have difficult access to the risk hedging tools in the international market. Thus, we expect that emerging market firm risk can be better managed after the cross-border acquisitions.

Finally, since emerging market firms are more segmented from the international market, cross-border acquisitions may help increase their international exposure by raising the awareness of the firm and, thereby, attract more international investors (e.g., mutual funds investing in emerging market stocks). This is particularly true if the international investors believe that foreign acquirers have followed a good due diligence procedure to identify strongly performing firms or the firms with high potential to succeed in the future, and they will continue to govern them in a prudent manner. In that situation, potential investors will consider the cross-border acquisition as a positive signal that reveals the investment value in these target firms. Thus, we expect that cross-border acquisitions may lead to a more diversified and broader international investor base. This may reduce the overall volatility of the target firm stocks as the liquidity risk may decrease due to a broader investor base, and the country-specific political risk may also decrease due to a tighter relationship with the international financial market.

Based on this information, we empirically test whether cross-border acquisitions do have an impact on target firm risk in the emerging markets. Particularly, we test the long-term impact on the target firm risk based on the partial acquisitions. This will provide significant insights about why the cross-border acquisitions affect firm performance and valuation, and through which channel the risk is affected by the firm acquisitions. No previous studies have examined these issues for the target firms in acquisitions⁴⁷.

⁴⁷ There are a few studies that have examined the risk impact of corporate M&As. These studies agree that studying the firm risk will improve our understanding about the performance and valuation impact in corporate M&As.

Measure of Risk

Several measures of risk have been used in the literature. The most commonly used measure is the standard deviation of historical equity returns. Ever since Nobel laureate Harry Markowitz (1950, 1952) published his seminal papers on portfolio theory, mean-variance analytical framework has been popularly used in academic research and professional portfolio management. We use this traditional measure of risk in the essay to measure the target firm risk before and after the partial acquisitions in the emerging markets.

Some researchers also feel it is important to decompose the total risk into systematic and unsystematic risk. Classical financial theory suggests that investors should only be concerned about the systematic risk, as the unsystematic risk can be diversified away through portfolio investment. However, in the emerging market context, due to the weak information disclosure requirement and an unsophisticated investor group (Bruner, et al., 2002), stock prices may be more influenced by the firm-specific information and private information that leads to higher unsystematic risk component in the total risk. Moreover, because of the segmented and incomplete financial market in the emerging countries, constructing a fully diversified portfolio might be more costly and difficult than in the developed market. Thus, unsystematic risk might become a very important risk factor for investment in the emerging market. In addition, based on the developed market evidence, it has been found that unsystematic risk may increase over time (Campbell, Lettau, Malkiel and Xu, 2001) and it may even change after a firm takeover event

However, most of these studies are focused on domestic acquisitions; even in that domain, most of the papers only examine the impact of M&As on acquiring firm risk (e.g., Jayaraman, Mandelker and Shastri, 1991; Bharath and Wu, 2005). Only two studies have specifically examined the risk changes in cross-border acquisitions but still focus on the acquiring firm's perspective (see Kiymaz and Mukherjee, 2001; Amihud, DeLong and Saunders, 2002). A brief summary of the past literature on M&A impact on acquiring firm risk is documented in Appendix 3A.

(e.g. Kiyamaz and Mukherjee, 2001). Thus, in our paper we also investigate the impact of cross-border acquisitions on the unsystematic risk component of the emerging market firms.

Another risk measure we use in the essay is the downside risk. It is calculated as a semi-deviation statistic that describes the volatility of the stock returns below a target return. The interest in downside risk arose in the early 1950s when Roy (1952) formulated the Safety First criterion. The criterion suggests gauging investment risk by some shortfall probability that measures the chances of the investment returns falling below the minimum return requirement. Intuitively, any investment must first ensure the returns that satisfy the borrowing costs and protect the real principal value. Therefore, investors want to minimize the shortfall probability to avoid the disasters of losing money. On the other hand, investors may consider the fluctuations in the upside potential of the investment returns as a reward. Thus, it is important to separate the return fluctuations into downside risk and upside potential, which is exactly the advantage of the downside risk over the traditional risk measures (such as standard deviation). The concept of downside risk has had a strong appeal for portfolio managers and pension fund managers in particular who strive to preserve the principal value and minimize the potential losses subject to a target return. The measure has been popularly used in the investment community to measure investment performance. For example, Morningstar uses semi-deviation to create its influential star ratings (Estrada, 2006).

Lastly, we need to mention that all the risk measures just explained are based on historical returns. However, most finance theory suggests using expected return and risk in constructing an investment portfolio or determining security prices. This leads to criticism of these measures and some researchers have proposed to use “ex ante” risk measures. Bharath and Wu (2005) use

“implied volatility” based on the call option price. This measure reflects the forward-looking risk changes in the underlying stocks of the call option. However, it is not feasible to apply this measure in the emerging countries where there is no mature financial derivative market. Thus, we do not investigate the “implied volatility” measure in this essay.

After reviewing the literature above, we propose five specific hypotheses in the empirical analysis. First, we will examine the impact of the cross-border acquisitions on target firm risk based on the partial acquisitions in the emerging markets. To highlight the unique impact of the cross-border acquisitions, we use domestic acquisitions as a benchmark for comparison in the study. According to the several conjectures we proposed before, we expect the cross-border acquisitions to reduce target firm risk. We use three risk measures in the test, namely total risk (i.e., standard deviation of the stock returns), downside risk, and unsystematic risk. Our five hypotheses are described below.

Hypothesis 1: Cross-border acquisitions reduce the total risk of the partially acquired target firms in the emerging markets (compared to the domestic acquisitions).

Hypothesis 2: Cross-border acquisitions reduce the downside risk of the partially acquired target firms in the emerging markets (compared to the domestic acquisitions).

Hypothesis 3: Cross-border acquisitions reduce the unsystematic risk of the target firm stock returns with respect to the target country market index (compared to the domestic acquisitions).

In addition, we test the cross-sectional variations in the target firm risk. We particularly test the impact of protection of investor right in the acquiring country on the risk reduction in the target firms through cross-border acquisitions. According to our conjecture previously described, we suggest there is a negative relationship between the acquiring country's shareholder right protection and the target firm risk change in the cross-border acquisitions. The hypothesis is formulated as follows:

Hypothesis 4: Target firm risk is reduced more significantly if it is acquired by a firm from a country with better protection of investor rights.

Finally, we investigate the risk-adjusted stock performance for investing in the partially acquired target firms in the emerging markets. The stock performance will be adjusted for total risk (Sharpe ratio), downside risk (Sortina ratio), and systematic risk (Traynor ratio), respectively.

Hypothesis 5. Risk-adjusted stock performance measures (such as Sharpe ratio, Sortina ratio, and Traynor ratio) for the partially acquired target firms increase after the cross-border acquisitions.

Next, in the following section we introduce the sample and methodologies to test each of these hypotheses.

Sample and Methodology

We focus on the completed cross-border and domestic acquisitions in 22 emerging countries between 1990 and 2007. We concentrate on the publicly listed target firms that are only partially

acquired (and thus continue listing on the stock market) in the acquisitions. We require the target firms to have stock price data in the DataStream database. The final sample for our study includes 2,575 partial acquisitions, in which there are 1,669 domestic partial acquisitions and 906 cross-border partial acquisitions. Due to the missing values and delisting in different years after the partial acquisitions, the sample size varies in different tests.

The basic methodology we use in the study is to compare the risk measures of the target firms before and after the acquisitions. In addition, as a robustness test, we also use a matching sample technique to compare the risk changes in the partially acquired target firms with the non-target firms in the emerging markets. The results of the study are quantitatively similar.

We also examine several risk measures – such as total risk, unsystematic risk, and downside risk – in this essay. The specific measures are introduced as follows.

Measures of Target Firm Risk

Total Risk

We use the historical variance of a firm's stock return to measure total risk. Based on the daily stock returns for each target firm, we calculate the variance of the stock returns in the year before the acquisition (day -10 to -260), and the three years after the acquisition (day +10 to +260; day +261 to +510; and day +511 to +760). Since a firm's stock return volatility can be influenced by the volatility level in the target country, we standardize the variance of the target firm stock returns by the variance of the local market index returns. We denote the measures as “total relative risk” (TRR) as follows:

Total relative risk (TRR_i) = total relative risk of target firm i ,

$$TRR_{i,t} = \frac{Var(R_{i,t})}{Var(R_{m,t})} \quad (3.1)$$

where $R_{i,t}$ is the daily returns for the target firm i in the time period t ; and $R_{m,t}$ is the daily return of the target country index for the same period t . We then calculate the change in the total relative risk, $\Delta TRR_{i,t}$,

$$\Delta TRR_{i,t} = TRR_{i,t} - TRR_{i,t^*} \quad (3.2)$$

where t^* is the time period before the acquisition (which is -260 to -10 before the acquisitions⁴⁸) and t is the time period after the acquisition (which is the first, second, and third year after the acquisition date). We use paired sample t test as well as Wilcoxon signed rank test to test the statistical significance of the changes in the total relative risk measure for the three samples, respectively: the target firms acquired by the developed market acquirers, the target firms acquired by the developing market acquirers, and the target firms acquired by the domestic acquirers. We also use the independent sample t test and the Mann-Whitney test to compare the degree of risk changes among the three samples.

Unsystematic Risk

We decompose the total risk by using the traditional market model. More specifically, in each time window, we regress the daily stock returns on the local market index return for each target firm in the sample. The market model is specified as follows:

⁴⁸ We also conduct a robustness test by comparing the risk measures in the three years after the acquisitions with the risk measures in the three years before the acquisitions. The results are documented in Appendix 3B. They confirm the main conclusions in the essay.

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad (3.3)$$

where $R_{i,t}$ is the daily returns for the target firm i in the time period t ; and $R_{m,t}$ is the daily returns of the target country index for the same period t . Based on the estimated α and β values from the regression, we calculate the residuals (ε_{it}) and then the variance of the residuals, $\text{Var}(\varepsilon_{it})$, for each target firm. Finally, we standardize the residual variance by the total variance as follows:

$$\hat{\theta} = \frac{\text{Var}(\varepsilon_{i,t})}{\text{Var}(R_{i,t})} \quad (3.4)$$

Similarly, we compare the post-acquisition unsystematic risk with the pre-acquisition unsystematic risk for the three samples of target firms.

$$\Delta\hat{\theta}_{i,t} = \hat{\theta}_{i,t} - \hat{\theta}_{i,t*} \quad (3.5)$$

We also compare the risk change in cross-border acquisitions with that in the domestic acquisitions to highlight the impact of foreign acquisitions on the target firm risk.

Downside Risk

Downside risk captures the asymmetric property of the return distribution in emerging market firms. The measure requires a benchmark return so that any stock returns below the benchmark will be included in the semi-deviation calculation. An intuitive benchmark in finance could be zero, as most investors are concerned about losing their principal in any investment (Sortino and Price, 1994). Following the methodology in Estrada (2006), we measure the downside risk by calculating the semi-deviation of the stock returns for each target firm:

$$DR = \sqrt{\sum_{it} ((R_{it} - r)^-)^2} \quad (3.6)$$

where $R_{i,t}$ is the daily returns for the target firm i in the time period t ; and r is the benchmark return (in our case, it is equal to zero).

We then compare the changes in the downside risk measures before and after the acquisitions.

$$\Delta DR_{i,t} = DR_{i,t} - DR_{i,t*} \quad (3.7)$$

where $DR_{i,t*}$ is the downside risk before the acquisition and $DR_{i,t}$ is the corresponding measure after the acquisition. We also compare downside risk change in cross-border acquisitions with that in the domestic acquisitions by using both the t test and the Mann-Whitney test.

Cross-sectional Variations in the Target Firm Risk

We further test the cross-sectional variation in the risk changes of the target firms. We focus on the impact of protection of investor rights of the acquiring country.

The measure of protection of investor rights is taken from La Porta et al. (1998). They developed the anti-director rights' index based on the presence/absence of six specific elements of investor protection in a country's corporate law practices. The six-point index measures how easily outside/minority stockholders can exercise their rights against opportunistic behavior by

managers and majority control owners⁴⁹. In our sample, the acquiring country index ranges from 1 (for China, Uruguay, and Venezuela) to 5 (for the UK, Spain, and Singapore).

We use OLS regression to investigate the impact of these factors on the risk changes in cross-border acquisitions. The model is specified as follows:

$$\Delta \text{ Risk Changes} = f(\text{Anti-director Rights' Index, Control Variables}) \quad (3.8)$$

where Δ Risk Changes include the risk change for total risk (ΔTRR), unsystematic risk ($\Delta\theta$), and downside risk (ΔDR).

We also control for many deal characteristics (such as payment method, relatedness of target and acquiring industries, transaction size, public status of acquiring firm) and target country characteristics (such as degree of uncertainty avoidance in the national culture, control of corruption) in the regression model in order to make sure that our conclusion is not sensitive to different types of deals (or countries) in the emerging market takeovers. A summary of these variables can be found in Appendix 3C.

⁴⁹ This index is based on six specific elements of investor protection dealing with the ability of outside (minority) investors to challenge the control of the firm by managers and dominant (inside) owners. It is a country-level measure ranging from zero to six based on the sum of six indicator variables that reflect shareholder rights: (1) the ability to vote by mail, (2) the ability to gain control of shares during the shareholder's meeting, (3) the possibility of cumulative voting for directors, (4) the ease of calling an extraordinary shareholder's meeting, (5) the availability of mechanisms allowing minority shareholders to make legal claims against directors, and (6) shareholders have preemptive rights that can be waived only by a shareholder's vote. Larger values of the anti-director rights' index indicate that minority shareholders are better protected against expropriation by management and large controlling shareholders.

Risk-adjusted Stock Performance

Reduced risk is only beneficial to investors if accompanied by a reasonable return relative to the market benchmark. In this essay, we also investigate the risk-adjusted investment returns of the partially acquired target firms in the cross-border acquisitions.

More specifically, we compare the risk-adjusted stock performance measures before and after the acquisitions. This would allow us to judge whether reduction in the sample firms' risk actually improve the investment returns to the investors. Since we used three risk measures in the paper, we also use three types of risk-adjusted performance measures to account for different risk factors.

First, we examine the Sharpe ratio (Sharpe, 1966), which is the standard mean-variance measure of return above the risk-free rate divided by the standard deviation of the stock returns;

$$SharpeRatio = \frac{E(R_i) - r_f}{\sigma_i} \quad (3.9)$$

where $E(R_i)$ is the expected stock return of target firm i , r_f is the risk-free rate of return, and σ_i is the standard deviation of stock returns for target firm i .

Second, we use the Traynor measure to adjust for the systematic risk of the stock returns.

$$TraynorRatio = \frac{E(R_i) - r_f}{\beta_i} \quad (3.10)$$

where $E(R_i)$ is the expected stock return of target firm i , r_f is the risk-free rate of return, and β_i is the beta risk for target firm i (estimated from the simple market model).

Finally, following Sortino and Price (1994), we measure the stock performance adjusted for the downside risk. The Sortino ratio is computed by dividing the excess return by the semi-deviation of the stock returns:

$$Sortino = \frac{E(R_i) - r}{\sqrt{\sum_{it} ((R_{it} - r)^-)^2}} \quad (3.11)$$

where R_i is the return of target firm i , r is the expected/acceptable rate of return, and $(R_{it} - r)^-$ are negative returns, those below the target rate r (in our case, we set up the target rate as zero).

After calculating the performance measures for the partially acquired target firms in the three years before the acquisitions and the three years after the acquisitions, we compare the measures of the two periods and test whether the risk-return characteristics of the target firms have changed due to the acquisition events. Both the parametric t test and non-parametric Wilcoxon ranked sign test are used to test the statistical difference between the measures for the two periods.

All measures introduced above are documented in Appendix 3C, including the risk measures, risk-adjusted stock performance measures, and the cross-sectional deal characteristics variables. Next we show the empirical results to test the hypotheses.

Results

Impact of Cross-border Acquisitions on Target Firm Risk

First, we examine the changes in target firm risk in the three years after the acquisitions. We split the partial acquisition sample into three subgroups: the target firms acquired by the domestic acquirers, the target firms acquired by developing country acquirers, and the target firms acquired by the developed country acquirers. We also test four different risk measures for each of the target firm samples: total risk (the standard deviation of the stock returns), relative total risk (total stock risk divided by local market index risk), downside risk (semi-deviation statistics), and unsystematic risk ratio (unsystematic risk divided by total risk). Using the year before the acquisitions as the benchmark, we examine the risk changes in the each of the three years after the partial acquisitions. We term risk changes in the first two years as a short-term comparison and the third year risk change as a long-term comparison. In addition, we also use the domestic acquisitions as a benchmark to compare with the two cross-border acquisition samples. Table 3.1 provides a summary of our results of the risk changes in the target firms of the emerging market takeovers.

Table 3.1 Overview of the Risk Impact on Target Firms in Emerging Market Takeovers

Table 3.1 provides an overview of the key empirical findings in this paper. We examine the impact of firm acquisitions on the four risk metrics in the target firms: total risk, relative total risk (adjusted by market volatility), downside risk, and unsystematic risk (relative to the total risk). We conduct short-term and long-term comparisons of the risk changes in three samples of firms: firms acquired by domestic firms, firms acquired by the foreign firms from developed countries, and firms acquired by the foreign firms from developing countries. The short-term impact includes the post-acquisition risk changes in the target firms for the first and the second years and the long-term impact denotes the third year post-acquisition risk changes compared to the firm risk before the acquisition. We also compare the degree of risk changes between the cross-border acquisitions and the domestic acquisitions. The shaded area highlights this comparison (where domestic acquisitions are used as a benchmark to compare with the two samples of cross-border acquisitions). We use “+” to denote risk increase; “-” for risk decrease and “n/a” for the not-applicable comparison. We also show the general significance level of the risk changes: three plus or minus signs stand for 1% significance level, two signs stand for 5% significance level, one sign stands for 10% significance level, and X means insignificant results.

Risk Metrics	Comparison	Domestic Acquisitions	Cross-border acquisitions from developing countries	Cross-border acquisitions from developed countries
Total risk	Short-term comparison	X	- - -	- - -
	Long-term comparison	+ +	- - -	- - -
	Domestic acquisition comparison	n/a	- - -	- - -
Total relative risk	Short-term comparison	+ +	- -	- - -
	Long-term comparison	+ +	- -	- -
	Domestic acquisition comparison	n/a	-	- -
Downside risk	Short-term comparison	+ +	- - -	- - -
	Long-term comparison	+ + +	- - -	- - -
	Domestic acquisition comparison	n/a	- - -	- - -
Unsystematic risk ratio	Short-term comparison	+ + +	+ + +	+ + +
	Long-term comparison	+ + +	X	+ +
	Domestic acquisition comparison	n/a	X	X

As we can see in the summary table above, the cross-border acquisitions significantly reduce the total risk and downside risk compared to the domestic acquisitions. The unsystematic risk

component increases in all three sub samples, however, the increase is not significantly different among the three samples. This suggests that cross-border acquisition does not induce a higher unsystematic risk.

We show more detailed results in Table 3.2 for each of these subsamples (from left to right panels). Table 3.2 shows the values of the risk measures at one year before the acquisitions (i.e. -10 days to -260 days) and in each of the three years subsequent to the acquisitions. In each subgroup, we compare the post-acquisition risk levels (in each of the three years) with the pre-acquisition risk level (at one year before the acquisition). Both the paired sample t test and non-parametric Wilcoxon ranked sign test results are presented in the table. Some measures, such as total risk, relative total risk, and downside risk have highly skewed distributions. Thus, we use logarithm transformation on the measures before conducting the statistical tests here.

As we can see, in the domestic partial acquisitions, target firms experienced a significant increasing trend in firm risk. The variance of the target firm stock returns in the third year after acquisitions is significantly higher than that in the year before the acquisition (significant at 5% level for both t test and Wilcoxon test). The trend is even more pronounced by controlling for the market-wide risk changes. After standardizing the firm volatility by the market index volatility, we see an increase in firm risk in the one to three years after the acquisition. Furthermore, we also find a consistent trend toward an increase in the downside risk. This evidence suggests that target firm risk significantly increases after being acquired by a domestic acquirer. Investors may be facing higher volatility (particularly the risk of losing money is higher) after the domestic partial acquisitions. We also decompose the total risk into the systematic and unsystematic risk components. The ratio of the unsystematic risk to total risk suggests that there is also structural

change in the risk components in the partially acquired target firms. The unsystematic risk component of the target firm continues to increase in the subsequent three years after the acquisitions.

In the next two panels in Table 3.2, we show the corresponding results in cross-border acquisitions broken down between developing country acquirers and developed country acquirers. Interestingly, we found that the two sub samples demonstrate substantially different patterns than the domestic acquisitions. While domestic acquisitions tend to have higher firm risk after the partial acquisitions, we find there is a consistent decreasing trend in the risk of the target firms in the cross-border acquisitions. More specifically, both sub samples show that total risk and relative total risk are decreasing after the acquisitions (statistical significances are at least 5% level). In addition, the downside risk of the target firms significantly decreases in each of the three years after the acquisition (significant at 1%). This suggests that not only do the target firms experience a reduction in firm risk after the cross-border acquisition, the investors also benefit from the lower risk of losing money by investing in these partially acquired target firm stocks. We also investigate the unsystematic risk component changes in the target firms. There is some weak evidence that an unsystematic risk component increases in the target firms in cross-border acquisitions (which rejects the third hypothesis).

To highlight the unique impact of cross-border acquisition on target firm risk, in Table 3.3 we compare the risk changes in the cross-border acquisitions against the changes in domestic acquisitions. We also compare the difference in the cross-border acquisitions undertaken by the developing country firms and the ones taken over by the developed country firms. The first three panels (from left to right) show the descriptive statistics of the changes in risk measures for each

subgroup. The last three panels (on the right) show the pair-group comparison among the three subgroups. Both the independent sample t test and the non-parametric Mann-Whitney test are used to test the differences in the risk measures.

As we can see, the cross-border acquisitions have a significantly different impact on the target firm risk than the domestic acquisitions. Compared to the domestic acquisitions, both cross-border acquisition samples have reduced the total risk of the target firms in the three years after the acquisitions. However, we do not find a difference between developing and developed country acquisitions. By controlling for the local market index volatility, the results are less significant than those of the total risk measures. The relative total risk reduction is most significant in the cross-border acquisitions from developed country firms. In the acquisitions from developing countries, the relative risk change is only significant in the long term (three years after the acquisition). Again we do not find a difference between the two cross-border acquisition samples.

Most importantly, in Table 3.3, we find that cross-border acquisitions have a significant impact on the downside risk of the target firm stocks compared with domestic acquisitions. Both developing and developed country acquisitions lead to a consistent decreasing downside risk in target firms in each of the three years after the partial acquisitions (significant at 1% level). This clearly shows that cross-border acquisitions generally reduce the downside risk and, thus, benefit the investors of the target firms.

Table 3.2 Target Firm Risk Changes before and after the Partial Acquisitions

Table 3.2 shows the comparison of the four risk metrics of the target firms before and after the partial acquisitions. For each risk metric, we show the values in the one year before the acquisitions and each of the three years subsequent to the acquisitions. Sample size, mean, median, and standard deviation statistics are reported for each risk measure of the three samples of target firms in the study (i.e., domestic acquisitions, cross-border acquisitions by developing country acquirers, and cross-border acquisitions by developed country acquirers). In the table, we also compare each of the subsequent three-year's post-acquisition risk measures to the risk measures in the one year before the acquisition (Y-1). Both paired-sample *t* test and Wilcoxon ranked sign test are used to test the significance of the risk changes in each sample. For total variance measure and downside risk measure, we use log-transformation to make the distribution close to normal distribution in order to conduct the parametric test.

Target firm risk after the acquisitions	Domestic Acquisitions										Cross-border Acquisitions by Developing Country Acquirers										Cross-border Acquisitions by Developed Country Acquirers									
	Compare with Y-1					Compare with Y-1					Compare with Y-1					Compare with Y-1					Compare with Y-1					Compare with Y-1				
	N	Mean	Median	Std. Deviation	Std.	t value	% Positive	Wilcoxon Z			N	Mean	Median	Std. Deviation	Std.	t value	% Positive	Wilcoxon Z			N	Mean	Median	Std. Deviation	Std.	t value	% Positive	Wilcoxon Z		
Total variance Y-1	1,652	-7.13	-7.16	0.77	0.77	0.88	49.5%	-0.06			998	-7.01	-7.05	0.76	0.74	-4.06 ***	40.7%	-4.48 ***			506	-7.00	-7.00	0.80	0.80	-	-	-	-	-
Total variance Y+1	1,605	-7.12	-7.06	0.77	0.77	0.88	49.5%	-0.06			373	-7.14	-7.16	0.74	0.74	-4.06 ***	40.7%	-4.48 ***			482	-7.13	-7.13	0.77	0.77	-5.16 ***	37.3%	-5.35 ***		-
Total variance Y+2	1,433	-7.11	-7.11	0.80	0.80	1.04	50.3%	0.66			315	-7.23	-7.24	0.84	0.84	-4.96 ***	37.7%	-5.00 ***			437	-7.22	-7.25	0.79	0.79	-5.69 ***	37.2%	-5.54 ***		-
Total variance Y+3	1,198	-7.08	-7.06	0.80	0.80	2.36 **	51.6%	2.49 **			250	-7.17	-7.21	0.72	0.72	-5.20 ***	38.2%	-5.17 ***			385	-7.28	-7.31	0.84	0.84	-7.92 ***	31.1%	-7.89 ***		-
Relative total variance Y-1	1,654	1.53	1.46	0.79	0.79	-2.73 ***	48.2%	-2.25 **			399	1.44	1.44	0.68	0.68	-	-	-			503	1.41	1.38	0.77	0.77	-	-	-		-
Relative total variance Y+1	1,604	1.49	1.43	0.73	0.73	-2.73 ***	48.2%	-2.25 **			374	1.35	1.33	0.73	0.73	-2.34 **	47.9%	-2.25 **			482	1.50	1.23	0.78	0.78	-4.15 ***	42.5%	-4.42 ***		-
Relative total variance Y+2	1,435	1.47	1.44	0.78	0.78	-2.27 **	49.9%	-1.10			312	1.34	1.30	0.80	0.80	-1.98 **	44.2%	-2.11 **			438	1.29	1.16	0.81	0.81	-3.49 ***	42.1%	-3.88 ***		-
Relative total variance Y+3	1,198	1.52	1.46	0.78	0.78	2.01 **	55.2%	2.92 ***			252	1.37	1.23	0.74	0.74	-1.54	42.9%	-2.09 **			387	1.30	1.19	0.87	0.87	-2.05 **	45.1%	-2.25 **		-
Downside risk Y-1	1,619	-4.01	-4.02	0.37	0.37	-	-	-			390	-3.97	-3.99	0.36	0.36	-	-	-			487	-3.97	-3.94	0.39	0.39	-	-	-		-
Downside risk Y+1	1,605	-3.98	-3.97	0.38	0.38	2.97 ***	52.0%	2.24 **			373	-4.00	-4.02	0.38	0.38	-2.43 **	41.1%	-3.17 ***			482	-4.00	-3.99	0.39	0.39	-2.90 ***	39.4%	-3.54 ***		-
Downside risk Y+2	1,431	-3.98	-3.95	0.39	0.39	2.07 **	51.2%	1.73 *			315	-4.06	-4.04	0.42	0.42	-4.31 ***	38.3%	-4.53 ***			438	-4.04	-4.03	0.38	0.38	-5.43 ***	40.5%	-5.35 ***		-
Downside risk Y+3	1,197	-3.96	-3.95	0.39	0.39	3.24 ***	53.2%	3.06 ***			248	-4.02	-4.02	0.36	0.36	-3.84 ***	42.6%	-3.91 ***			387	-4.08	-4.09	0.42	0.42	-8.12 ***	32.4%	-7.62 ***		-
Unsystematic risk ratio Y-1	1,656	0.77	0.81	0.18	0.18	-	-	-			394	0.79	0.83	0.16	0.16	-	-	-			510	0.80	0.84	0.17	0.17	-	-	-		-
Unsystematic risk ratio Y+1	1,622	0.78	0.82	0.16	0.16	4.33 ***	54.1%	3.94 ***			372	0.80	0.83	0.16	0.16	1.53	54.2%	1.33			490	0.80	0.85	0.17	0.17	0.75	50.7%	0.47		-
Unsystematic risk ratio Y+2	1,434	0.78	0.81	0.17	0.17	4.46 ***	54.6%	4.72 ***			312	0.80	0.84	0.17	0.17	2.23 **	57.9%	2.64 ***			441	0.81	0.86	0.17	0.17	1.86 *	52.5%	1.65 *		-
Unsystematic risk ratio Y+3	1,215	0.78	0.80	0.17	0.17	4.80 ***	57.6%	5.08 ***			250	0.78	0.83	0.18	0.18	0.65	53.6%	1.11			390	0.81	0.87	0.16	0.16	2.30 **	53.4%	2.19 **		-

*** 1% significance, ** 5% significance, * 10% significance.

Table 3.3 Comparison of Short-term and Long-term Risk Changes after the Partial Acquisitions

Table 3.3 shows the value of the risk changes for the four risk metrics in each target firm sample. The risk changes are calculated based on the risk measures in each of the three years after the acquisition deducted by the risk measures in the one year before the acquisition. The sample size, mean, median, and standard deviation of the risk measure differences are reported in the table. Then we use the independent sample *t* test and the Mann-Whitney test to compare the degree of risk changes among the three samples (i.e., domestic acquisitions, cross-border acquisitions by developing country acquirers, and cross-border acquisitions by developed country acquirers).

	Domestic M&As												Cross-border M&As by Developing Country Acquirers						Domestic vs. Developing Country Cross-border M&As						Developing vs. Developed Country Cross-border M&As	
	Domestic M&As						Cross-border M&As by Developing Country Acquirers						Domestic vs. Developing Country Cross-border M&As			Domestic vs. Developing Country Cross-border M&As			Developing vs. Developed Country Cross-border M&As							
	N	Mean	Median	Std. Deviation	N	Mean	Median	Std. Deviation	N	Mean	Median	Std. Deviation	t value	Z	t value	Z	t value	Z								
Changes in Target Firm Risk																										
Total variance Y+1 vs. Y-1	1580	-3E-05	-2E-06	8E-04	364	-1E-04	-1E-04	9E-04	476	-2E-04	-1E-04	8E-04	2.55 ***	3.82 ***	4.13 ***	5.27 ***	0.92	0.74								
Total variance Y+2 vs. Y-1	1441	-5E-05	-1E-05	1E-03	312	-3E-04	-2E-04	1E-03	435	-9E-04	-2E-04	1E-03	3.23 ***	3.69 ***	4.15 ***	4.90 ***	0.34	0.54								
Total variance Y+3 vs. Y-1	1239	-6E-05	-2E-05	1E-03	264	-4E-04	-2E-04	1E-03	390	-5E-04	-4E-04	1E-03	4.39 ***	4.85 ***	5.93 ***	6.96 ***	0.64	1.11								
Relative total variance Y+1 vs. Y-1	1579	-5E-01	-9E-02	5E+00	364	-3E-01	-2E-01	4E+00	477	-7E-01	-4E-01	4E+00	-0.92	0.29	1.14	1.97 **	1.71	1.31								
Relative total variance Y+2 vs. Y-1	1443	-6E-01	-8E-02	6E+00	314	-2E-01	-4E-01	5E+00	431	-7E-01	-4E-01	5E+00	-1.41	0.75	0.38	2.26 **	1.53	1.05								
Relative total variance Y+3 vs. Y-1	1240	-4E-02	2E-01	6E+00	267	-4E-01	-6E-01	4E+00	386	-3E-01	-4E-01	5E+00	1.28	2.79 ***	0.67	2.67 ***	-0.48	-0.51								
Downside risk Y+1 vs. Y-1	1574	5E-04	3E-04	8E-03	364	-8E-04	-1E-03	7E-03	466	-1E-03	-1E-03	8E-03	2.88 ***	3.90 ***	3.91 ***	4.58 ***	0.60	0.28								
Downside risk Y+2 vs. Y-1	1433	-3E-05	-9E-05	1E-02	313	-2E-03	-2E-03	9E-03	427	-3E-03	-2E-03	9E-03	4.37 ***	4.30 ***	4.75 ***	4.90 ***	0.24	0.13								
Downside risk Y+3 vs. Y-1	1229	-3E-04	7E-05	1E-02	266	-4E-03	-3E-03	1E-02	386	-5E-03	-5E-03	1E-02	4.38 ***	4.73 ***	6.55 ***	7.21 ***	1.12	1.44								
Unsystematic risk ratio Y+1 vs. Y-1	1603	2E-02	9E-03	2E-01	371	1E-02	5E-03	2E-01	487	5E-03	2E-03	1E-01	0.59	0.58	1.51	1.58	0.68	0.72								
Unsystematic risk ratio Y+2 vs. Y-1	1436	2E-02	1E-02	2E-01	311	2E-02	2E-02	2E-01	438	2E-02	6E-03	2E-01	0.00	0.43	0.46	0.89	0.34	1.08								
Unsystematic risk ratio Y+3 vs. Y-1	1197	3E-02	2E-02	2E-01	250	7E-03	1E-02	2E-01	389	2E-02	9E-03	2E-01	1.44	1.25	0.37	0.77	-0.97	-0.53								

*** 1% significance, ** 5% significance, * 10% significance.

We also compare the risk component changes among the three samples. This test provides a better view of the unsystematic risk changes than the test in Table 3.2. As we mentioned before, Campbell et al., (2001) show that firm-level idiosyncratic volatility has consistently increased in the U.S. market (from 1962 to 1997) although the market and industry volatility are almost constant. Therefore, the findings in Table 3.2, which show that unsystematic risk component has increased for all three samples, may be because of the overall unsystematic risk increases in the market. Therefore, without using a benchmark sample, we are not able to conclude that the foreign acquisitions lead to changes in the unsystematic risk component of the target firms. In Table 3.3, we use domestic acquisitions as a benchmark sample. When we compare the change in the unsystematic risk component in the cross-border acquisitions with that in the domestic acquisitions, the statistical significance disappears. This suggests that the increasing unsystematic risk component is mainly due to the overall increasing trend in the emerging market rather than to the cross-border acquisitions. The results, thus, provide out-of-sample evidence to the study by Campbell et al. (2001) by showing that the idiosyncratic risk may have also increased in the emerging markets⁵⁰.

Above all, the empirical results support the first and the second hypothesis that cross-border acquisitions decrease the total risk and the downside risk of the target firms (compared to the domestic acquisitions) in the emerging markets. We do not find evidence that cross-border

⁵⁰ Of course, it can be argued that the unsystematic risk component has increased in all three acquisition samples. By only using the domestic acquisitions as benchmark, we would not be able to see the increasing trend in the target firms. To address this problem, we also collect data for the non-target firms (with similar asset size and in the same 2-digit GISC industry) for each domestic and cross-border acquisition target firms in our study. We compare the unsystematic risk changes in the non-target firm sample and each of the three target firm samples. The conclusion remains the same: there is no significant difference in the unsystematic risk component changes in either domestic or cross-border acquisitions.

acquisitions change the unsystematic risk component in the target firm risk (thus, the third hypothesis is not supported in the emerging market sample).

Cross-sectional Variation in the Changes of Target Firm Risk

Based on the empirical evidence above, we conclude that cross-border acquisition reduces the risk of target firms in the emerging markets. However, we still don't know which factors influence or relate to the changes in the target firm risk. In this section, we investigate the cross-sectional variation in the target firm risk changes after the acquisitions. We regress the target country and acquiring country characteristics and deal specific variables on the risk change measures in the corporate acquisitions. Table 3.4 shows the regression models for three different risk measures as dependent variables, such as change in relative total risk, change in downside risk, and change in the unsystematic risk component of the total risk. Each dependent variable is measured for both a short-term (i.e., one year after the acquisition) and a long-term period (i.e., three years after the acquisition).

It may be recalled that in the hypothesis development section, we proposed three conjectures that may explain the reduction in target firm risk as a result of cross-border acquisitions. However, due to the limitations in the emerging market dataset, two of the conjectures – introducing better risk management skills and a broader international investor base through cross-border acquisitions – cannot be directly tested in the current study⁵¹. In this essay, we focus on testing

⁵¹ The first hypothesis suggests that foreign acquisitions may bring advanced risk management skills and experience to the target firms through partial acquisitions. A better risk management system can smooth the operating cash flows and, thus, reduce the volatility of the stock returns. In addition, foreign acquirers may have more access to the international financial markets and, thus, have more options from a range of sophisticated risk management tools to manage their firm risk (such as using commodity derivatives that are not available in many emerging markets). Therefore, we expect that the firm risk can be better managed after the cross-border acquisitions. However, due to

the conjecture that suggests that the risk reduction in the target firms is due to the better investor protection mechanism transferred from the acquiring countries.

More specifically, we adopt the measure of investor protections of the acquiring countries developed by La Porta et al. (1998), and we link this measure to the degree of risk reduction in the target firms in the cross-border acquisitions. According to the conjecture, if the cross-border governance transfer exists in the emerging market takeovers, we expect to see that the acquiring firms from countries with better protection of investors' rights will have a more significant risk reduction effect on target firms. This means the risk of management opportunism and expropriation of minority shareholder's value can be mitigated through introducing a better investor protection system by the foreign acquirers. This conjecture is strongly supported in our emerging market takeover sample. Table 3.4 shows that the regression coefficients for the "anti-director index" are consistently negative and significant in total risk models. It also has a significant impact on the long-term downside risk reduction in the target firms. Furthermore, stronger protection of investor rights in the acquiring firms also leads to a lower weight for unsystematic risk in the total risk of the target firms. This evidence is consistent with the recent literature, which shows that shareholders' rights are an important governance mechanism affecting a firm's operation and performance. Our results further establish the link between shareholder right protection and risk reduction in the target firms. In addition, our study shows the effect of international governance transfer through cross-border acquisitions (by focusing on

the limit of the operating performance dataset, we are not able to directly test the conjecture by showing that the volatility of operating cash flows actually decreases after the cross-border acquisitions. (i.e., we only have the annual operating cash flow measures for three years before and three years after the acquisitions. Thus, there is not sufficient information to measure the volatility of the cash flows in the target firms.) In addition, the second conjecture suggests that cross-border acquisition may increase the international investor base and, thus, reduce the liquidity risk and country-specific political risk of target firms. However, since we do not have access to information on investor base and investor composition changes after the partial acquisitions, we are not able to directly test this conjecture either.

the impact of target firm risk), which confirms the latest findings in the M&A literature that is more focused on the valuation impact in the acquisition announcements (Bris et al., 2008; Martynova and Renneboog, 2008).

In addition to the main variables above, we also include many control variables in the models. We find that if the acquiring firm gains majority control in the target firm (>50% ownership), there are more significant risk reductions in the target firms. Acquiring firms can use majority control to mitigate the high information asymmetry in the target firms in emerging markets (Chari et al., 2004). Such strategy seems to be effective in the long run as the downside risk is reduced in majority control acquisitions. It also directly benefits the investors as the risk of losing money is reduced after the acquisitions.

Table 3.4 OLS Regression: Factors Impacting the Short-term and Long-term Risk Changes in the Target Firms

Table 3.4 shows the OLS regression results to explain the cross-sectional variations in the risk changes of relative total risk, downside risk, and unsystematic risk ratio in the target firms. The models are estimated based on the combined sample of domestic and cross-border acquisitions in emerging markets. The dependent variable is the changes in risk measures (by comparing the post-acquisition risk measure with the pre-acquisition risk measure). We use two measures of risk changes in the analysis. First, we measure the long term change in target firm risk by comparing the third year's risk measure after the acquisition with the one year's risk measure before the acquisition in the target firm. Second, we measure the short term change in target firm risk by comparing the first year's risk measure after the acquisition with the one year's risk measure before the acquisition. For each risk metric, we run two models for the long term impact and the short term impact on target firm risk. Independent variables include deal characteristics (such as payment method, transaction value, industry relatedness, tender offer, controlling acquisition, cross-border acquisitions), and acquiring firm characteristics (including developed country acquirers, pre-acquisition ownership in the target firm, public status) and target country characteristics (such as uncertainty of avoidance index and corruption). Detailed explanations and measures of these variables are introduced in Appendix 3C.

	Impact on Relative Total Risk				Impact on Downside Risk				Impact on Unsystematic Risk Ratio			
	Long term: Y+3 vs. Y-1		Short term: Y+1 vs. Y-1		Long term: Y+3 vs. Y-1		Short term: Y+1 vs. Y-1		Long term: Y+3 vs. Y-1		Short term: Y+1 vs. Y-1	
	β	t value	β	t value	β	t value	β	t value	β	t value	β	t value
(Constant)	0.666	0.543	-1.128	-1.101	0.004	1.545	-0.003	-1.463	0.079	1.689 *	0.064	1.731 *
Cross-border acquisition	0.393	0.715	0.342	0.923	-0.002	-1.998 **	-0.001	-1.947 *	0.015	0.853	0.029	2.197 **
Developed country acquirer	-0.765	-1.445	-0.461	-1.107	-0.001	-1.002	0.000	-0.030	-0.031	-1.551	-0.041	-2.764 ***
Anti-director index	-0.329	-3.133 ***	-0.374	-4.693 ***	-0.001	-5.998 ***	0.000	-1.065	-0.028	-6.994 ***	-0.024	-8.517 ***
Industry relatedness	0.164	0.442	0.062	0.206	0.000	-0.354	0.000	0.272	0.037	2.639 ***	0.021	1.914 *
Pre-acquisition ownership	-0.015	-1.711 *	0.010	1.456	0.000	-1.730 *	0.000	0.199	-0.001	-2.995 ***	0.000	-0.850
Controlling ownership acquisition	-0.555	-1.295	-0.369	-1.092	-0.003	-2.748 ***	-0.001	-1.716 *	-0.007	-0.414	0.009	0.717
Tender offer	-0.132	-0.237	-0.520	-1.195	0.000	-0.022	0.000	-0.216	0.069	3.248 ***	0.052	3.341 ***
Public acquirer	-0.629	-1.594	-1.217	-3.813 ***	-0.001	-0.603	-0.001	-2.073 **	0.003	0.191	0.000	-0.026
Private acquirer	0.161	0.420	-0.512	-1.708 *	0.000	0.158	0.000	0.285	0.011	0.773	-0.007	-0.696
Target uncertainty avoidance index	0.006	0.722	0.008	1.257	0.000	-5.259 ***	0.000	-2.444 **	0.000	0.013	0.000	-1.122
Target country corruption	0.196	1.209	0.721	5.414 ***	0.001	2.023 **	0.000	0.898	-0.001	-0.223	0.006	1.243
LNTRAN	0.025	0.302	0.012	0.185	0.001	5.058 ***	0.000	4.049 ***	0.000	0.086	0.003	1.384
Cash payment	-0.311	-0.325	-0.443	-0.547	0.001	0.369	0.003	2.370 **	0.039	1.066	0.015	0.498
Stock payment	0.932	0.773	0.004	0.004	-0.003	-1.191	0.004	2.208 **	0.150	3.131 ***	0.017	0.475
Adjusted R Square	0.016		0.037		0.124		0.024		0.069		0.051	
F	2.313 ***		4.908 ***		12.151 ***		3.527 ***		6.635 ***		6.592 ***	
N	1114		1426		1101		1424		1058		1449	

*** 1% significance, ** 5% significance, * 10% significance.

We also find that the reduction of target firm risk is more significant if the degree of uncertainty avoidance is higher in the target country. The measure of avoidance of uncertainty is taken from Hofstede (1980). Uncertainty avoidance index⁵² (UAI) is one of the four cultural dimensions developed and measured by Hofstede (1980). The measure deals with a society's tolerance for uncertainty and ambiguity. It indicates to what extent the people in the country feel either uncomfortable or comfortable in uncertain situations that are novel, unknown, surprising, and different from the usual. In Table 3.4, we find that the regression coefficients of the UAI are consistently negative and significant in the downside risk model. This indicates that the national culture of the target country does have an impact on the operations of the partially acquired target firms in emerging markets. The results are reasonable, as the target firms in a higher uncertainty avoiding culture may tend to adopt less risky investment and operational strategies after the acquisitions. They may also have a higher incentive to put more effort and resources in managing the risk in the post-acquisition integration process. Thus, we observe the negative impact of UAI on the downside risk changes in the target firms.

Finally, we find that larger transaction size is associated with higher downside risk in both the short term and long term after the acquisitions. The results are consistent with the literature that larger sized transaction may induce higher risk in the integration process (Shimizu, Hitt, Vaidyanath and Pisano, 2004; Hennart and Reddy, 1997). Both acquiring firms and target firms face higher uncertainty and bear more significant economic consequences in larger transactions.

⁵² The value of the measure ranges from 1 to 120 (the higher score stands for more avoidance of uncertainty). Our sample of target firms has a diverse national cultural background in terms of the uncertainty avoidance measure. The index in our sample ranges from around 40 (such as Malaysia, China, and India as low uncertainty avoiding countries) to about 90 (including Poland, Peru, Argentina and Chile as high uncertainty avoiding countries).

Risk Changes and Investment Performance

In this section, we link the changes in firm risk with the long-term investment performance of the target firm stocks. Previous studies only focus on the announcement effect of acquisition on firm valuation using event studies (e.g., Chari, et al., 2004). However, there is no clear empirical evidence that shows whether investors actually gain higher long-term investment returns by investing in a portfolio of firms that are involved in M&A events (such as the target firms partially acquired by the foreign acquirers). Most importantly, given the findings we have shown earlier, it is important to provide better investment performance measures that account for the change in firm risk (particularly the downside risk).

Table 3.5 shows the results of three risk-adjusted stock performance measures, namely Sharpe ratio (adjusted for total risk), Traynor ratio (adjusted for systematic risk), and Sortina ratio (adjusted for downside risk). Because the risk impact on the two sub samples of the cross-border acquisitions are very similar (see Table 3.2 and 3.3), we combine the two cross-border acquisition samples and compare this with the domestic acquisitions in Table 3.5. Panel A shows the risk-adjusted stock performance measures for the target firms in domestic acquisitions. The measures are calculated based on the three-year daily returns before and after the acquisitions. The daily returns are aggregated to calculate the three-year overall risk-adjusted returns in the two periods. We compare the stock performance in the two periods and show the percentage of cases in which the stock performance increases after the acquisitions. We use the non-parametric Wilcoxon ranked sign test to examine the statistical significance of changes in the risk-adjusted stock performance in these target firms.

In the domestic acquisition sample, we do not find any significant change in any of the three risk-adjusted stock performance measures (i.e., none of the z statistics are significant in the test). However, in the cross-border acquisition sample (see Panel B), there is a significant increase (at 5% level) in the Sharpe ratio after the partial acquisitions; the Sortina ratio also marginally increases in the target firms acquired by the foreign firms (significant at 10%).

We further test the difference in the performance changes between the domestic acquisitions and the cross-border acquisitions. In Table 3.6, we use the independent t test and non-parametric Mann-Whitney test to investigate if cross-border acquisitions bring value to the investors who invest in the partially acquired target firms in the emerging markets. Both tests provide consistent results that cross-border acquisitions create higher investment returns to the investors. Both the increases in the Sharpe ratio and Sortina ratio in the cross-border acquisition sample are significantly higher than those in the domestic acquisition sample. Most importantly, the advantage of the reduction in downside risk is more pronounced for cross-border acquisitions. We find the cross-border acquisitions provide investors better stock performance (adjusted for downside risk) than the domestic acquisitions and the difference is significant at the 5% level in the non-parametric test.

However, in both tables, we do not find significant changes in the Traynor measure. As we argued before, the unsystematic risk is not only higher but also more difficult to diversify away in the emerging market than in the developed market. The Traynor measure (which is calculated based on the assumption of no existence of unsystematic risk) might not be meaningful if most of the portfolios cannot achieve enough diversification due to the limits of the financial market in

the emerging countries. This probably explains the insignificant impact on the Traynor ratio in the emerging market takeovers.

In summary, our analysis provides a complete picture of the risk impact of cross-border acquisitions on the target firms in emerging markets. We found the cross-border acquisitions reduce target firm risk; the benefit arises mostly because of reducing the expropriation risk of minority shareholder's value through the better protection of investor rights from the foreign acquiring firms. We also show that risk reduction leads to better long-term investment returns in the target firms after the partial acquisitions in the emerging markets. Thus, both hypotheses 4 and 5 are supported based on the evidence of the cross-border acquisitions in the emerging markets.

Table 3.5 Target Firm Risk-adjusted Stock Performance Changes before and after the Partial Acquisitions

Table 3.5 compares the risk-adjusted stock performance measures in the target firms for the three years before the partial acquisitions and the three years after the partial acquisitions. We report the measures for three types of performance measures adjusted for different risk metrics (i.e., Sharpe ratio adjusted for total risk, Traynor ratio adjusted for systematic risk, and Sortina ratio adjusted for downside risk). We report the sample size, mean, median, and standard deviation of the performances measure for the two periods before and after the acquisitions. We also compare the performance measure differences between the two periods by calculating the mean difference and percentage of case increases in the target firms. We use the Wilcoxon ranked sign test to examine the statistical significance of the difference in the two samples (*t* test is not used because of the distribution of the measures are not close to normal distribution, even after log transformation). Panel A shows the results for domestic acquisitions and Panel B shows the results for cross-border acquisitions.

Wilcoxon Ranked Sign Test												
Three Years Before Acquisitions					Three Years After Acquisitions					Post vs. Pre-Acquisitions		Sign Test
Std.					Std.					Mean Difference	% of cases increase	
Panel A. Domestic acquisitions												
N	Mean	Median	Std. Deviation	N	Mean	Median	Std. Deviation	N	Mean	Median	Std. Deviation	Z
Sharpe ratio	1087	0.473	0.471	0.816	1062	0.464	0.389	0.956	-0.009	48.0%	-0.526	
Traynor ratio	1105	0.332	0.179	0.444	965	0.275	0.183	0.314	-0.057	48.8%	-1.525	
Sortina ratio	1168	0.893	0.805	1.584	1103	0.815	0.604	1.644	-0.078	47.6%	-0.931	
Panel B. Cross-border acquisitions												
Sharpe ratio	550	0.606	0.586	0.737	501	0.609	0.622	0.753	0.003	54.4%	2.123 **	
Traynor ratio	545	0.355	0.202	0.471	509	0.290	0.190	0.317	-0.066	46.3%	-1.477	
Sortina ratio	599	0.975	0.883	1.529	585	1.004	0.929	1.573	0.029	54.3%	1.837 *	

*** 1% significance, ** 5% significance, * 10% significance.

Table 3.6 Comparison of Risk-adjusted Stock Performance Changes after the Partial Acquisitions

Table 3.6 compares the changes in risk-adjusted stock performance in domestic target firms and cross-border acquisition target firms. The risk-adjusted stock performance measures include Sharpe ratio, Traynor ratio, and Sortina ratio. We calculate the differences of these performance measures between the two periods around the partial acquisitions (i.e., the three years after the acquisitions versus the three years before the acquisitions). The table shows the sample size, mean, median, and standard deviation of the differences between the two periods for each performance measure in the two samples of firms (i.e., domestic acquisitions and cross-border acquisitions). We also use the independent sample t test and the Mann-Whitney test to compare the degree of stock performance changes between the domestic acquisitions and cross-border acquisitions.

Changes in Risk-adjusted Investment Returns (three years before vs. three years after acquisitions)	Domestic Acquisitions			Cross-border Acquisitions			Cross-border vs. Domestic Acquisitions		
	N	Mean	Median	Std. Deviation	N	Mean	Median	Std. Deviation	t value
Sharpe ratio	903	-0.02	-0.04	1.26	421	0.10	0.16	1.05	1.68 *
Traynor ratio	836	-0.04	-0.01	0.43	430	-0.05	-0.01	0.45	-0.29
Sortina ratio	998	-0.06	-0.10	2.26	540	0.16	0.31	2.10	1.87 *
									1.99 **

*** 1% significance, ** 5% significance, * 10% significance.

Conclusions

This essay examined the risk changes of the target firms in the cross-border acquisitions. Based on a sample of partial acquisitions in 22 emerging countries between 1990 and 2007, we find strong evidence that cross-border acquisitions significantly reduce the target firm risk (particularly the downside risk) in both the short term and the long term (up to three years) period after the partial acquisitions. Correspondingly, we find domestic acquisitions increase a target firm's risk after the acquisitions. We argue that the reduction in the target firm's risk is due to the better governance and investor right protection mechanism introduced by the foreign acquirers. The hypothesis is supported by the regression analysis, which shows that the degree of risk changes is negatively related to the degree of protection of investor's rights in the acquiring countries. In other words, if the acquiring firm comes from a country with better protection of investor's rights, we observe a more significant risk reduction in the target firms. We further show that such risk reduction is beneficial to the emerging market investors as the risk-adjusted stock performance also improves after the partial acquisitions. Therefore, we conclude that cross-border acquisitions in emerging markets seem to be beneficial to the target firms by introducing a better governance system and reducing firm risk; it also benefits the investors by both reducing investment risk and improving investment returns.

There are several extensions for future research to improve our understanding of the emerging market takeovers. First, although we find the evidence that the better governance systems in the acquiring country can transfer to the target firms in the emerging markets through cross-border acquisition, we do not have direct evidence about the governance changes in the partially acquired target firms. In addition, we do not have data on changes in monitoring power and

actions taken by the acquiring firm to further protect of shareholder's rights in the emerging market firms in the post-acquisition period. We do not have enough information on the operating cash flow volatility and investor base and composition changes before and after the partial acquisitions. This limits the direct tests of some conjectures that may explain the risk reduction in the target firms. Future research can strengthen our argument by providing more direct empirical evidence to test these conjectures.

Second, our study only investigates the risk impact on target firms through cross-border acquisitions. Future research may expand our study by looking at the impact of partial cross-border acquisitions on the industry level or even on competing firms in the target industry. As foreign investment may change the competition balance in the local market or change the technology, management style, and corporate governance in a larger scale through the "spillover effect", we expect that the risk and performance of the rival firms in the target country can also be affected by the cross-border acquisitions. This extension of the research can provide us a more complete picture about how the foreign investments impact the host country volatility and economy.

Finally, although in this essay we focus on the cross-border acquisitions in the emerging markets, studies on the partially acquired target firms in developed markets are not yet examined in the literature. In addition, because of the unique risk environment in the emerging countries, we do not know if the risk reduction impact is unique to the emerging market firms or if it is generalizable to the developed country acquisitions. Future research can provide useful insights to make a comparison between the two economies.

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Appendix 3A. Impact of M&As on Acquiring Firm Risk

In the domestic M&A literature, there are few studies about risk impact on the acquiring firm's risk changes. Jayaraman et al. (1991) use the "residual income approach" to calculate the implied market discount rate for the acquiring firms. They found that acquiring firms experienced an increase in volatility before the acquisition announcement but there is a significant drop in volatility on the announcement date. Bharath and Wu (2005) confirmed the run-up in volatility before the acquisition. They suggest that industry shocks – such as changes in demand, technology and entry barrier – may lead to greater levels of firm volatility before acquisitions. They also observed a prolonged risk increase in acquiring firms, particularly the idiosyncratic risk, up to three years after acquisition. They relate this to the post-merger integration risk, which is the uncertainty of successfully integrating the target and acquiring firms into one entity.

Two studies have specifically examined the acquiring firm risk changes in cross-border acquisitions. Kiymaz and Mukherjee (2001) focused on the systematic risk of 112 U.S. firms that acquired foreign firms during the period from 1982 to 1991. They found that beta coefficients estimated from the market model decreases in the year immediately after acquisition announcements. Amihud, DeLong and Saunders (2002) exclusively study the risk changes in cross-border acquisitions on the bidder firms. However, they found that, on average, there is no evidence that the acquiring bank's risk either increases or decreases in cross-border M&As. In particular, they find either total risk or systematic risk falls, relative to the acquiring country index or target country index. They also test the linkage between the risk changes and announcement effect of cross-border M&As on the acquiring bank's abnormal returns. They find

the relationship to be positive, but not statistically significant. They argue that investors do not consider risk changes (if any) to be detrimental to the firm value.

To the best of our knowledge, there is no existing study that has examined the impact of cross-border M&As on target firm risk, particularly in the emerging markets.

Appendix 3B. Changes in Target Firm Risk using Three Year Pre- and Three Year Post-Acquisition Risk Measures

In this table, we show the risk changes in the domestic and cross-border acquisition target firms based on the benchmark of the firm risk in the three years before the acquisitions. The analysis is different from the analysis in Table 3.2, which only examines one year before the acquisition as the benchmark.

However, both analyses provide largely the same conclusions. As we can see in the table, the target firms in the domestic acquisitions experience a significant increase in the relative total risk and unsystematic risk ratio; while the target firms in cross-border acquisitions experience significant decrease in the total risk and downside risk, although the unsystematic risk component also increases after the acquisitions.

	Three Years Before Acquisitions				Three Years After Acquisitions				Post vs. Pre-Acquisitions			Wilcoxon Ranked
	N	Mean	Median	Std. Deviation	N	Mean	Median	Std. Deviation	% of case decrease	% of case increase	Total	Sign Test Z
Domestic Acquisitions												
Total variance	1217	-7.03	-7.07	0.65	1102	-7.05	-7.08	0.64	51.1%	48.9%	100%	-1.94 *
Relative total variance	1144	1.44	1.32	0.73	1144	1.51	1.46	0.74	41.0%	59.0%	100%	4.89 ***
Downside risk	1174	-3.94	-3.96	0.30	1102	-3.95	-3.95	0.30	52.0%	48.0%	100%	-1.51
Unsystematic risk ratio	1225	-0.31	-0.25	0.24	1102	-0.24	-0.22	0.16	37.5%	62.5%	100%	9.84 ***
Cross-border Acquisitions												
Total variance	650	-6.80	-6.80	0.79	603	-7.13	-7.12	0.85	68.7%	31.3%	100%	-10.05 ***
Relative total variance	595	1.42	1.36	0.76	595	1.36	1.31	0.77	51.8%	48.2%	100%	-1.30
Downside risk	622	-3.85	-3.85	0.37	603	-4.00	-3.99	0.40	68.9%	31.1%	100%	-9.54 ***
Unsystematic risk ratio	630	-0.28	-0.21	0.24	580	-0.21	-0.16	0.18	37.7%	62.3%	100%	6.25 ***

In the panel below, we directly compare the cross-border acquisitions with the domestic acquisitions. The results confirm the findings in Table 3.3. We conclude that cross-border acquisitions significantly reduce the target firm total risk and downside risk, but the unsystematic risk changes are not significantly different between the two samples.

Changes in Target Firm Risk (three years before vs. three years after acquisitions)	Domestic Acquisitions				Cross-border Acquisitions				Cross-border vs. Domestic Acquisitions	
	N	Mean	Median	Std.	N	Mean	Median	Std.	t value	z value
				Deviation				Deviation		
Total variance	1035	-0.04	-0.02	0.67	600	-0.35	-0.37	0.81	-8.34 ***	-7.82 ***
Relative total variance	1102	0.07	0.13	0.70	595	-0.06	-0.03	0.72	-3.48 ***	-4.05 ***
Downside risk	994	-0.02	-0.02	0.34	572	-0.17	-0.18	0.39	-7.89 ***	-7.44 ***
Unsystematic risk ratio	1053	0.08	0.05	0.22	559	0.07	0.04	0.22	-0.86	-1.09

*** 1% significance, ** 5% significance, * 10% significance.

Appendix 3C. Variable Definitions and Data Sources

Variable Name	Explanations	Data Source
Risk Measures		
Total risk	Variance of stock daily returns	Calculated based on Datastream data
Relative total risk	Variance of stock daily returns divided by variance of the stock market index returns	Calculated based on Datastream data
Downside risk	Semi-deviation measure of the stock daily returns (using benchmark return as zero)	Calculated based on Datastream data
Unsystematic risk ratio	Unsystematic risk divided by the total risk	Calculated based on Datastream data
Risk-adjusted Stock Performance Measures		
Sharpe ratio	Expected excess stock returns divided by total risk	Calculated based on Datastream data
Traynor ratio	Expected excess stock returns divided by systematic risk	Calculated based on Datastream data
Sortina ratio	Expected excess stock returns divided by downside risk	Calculated based on Datastream data
Cross-sectional Characteristics Variables		
Cross-border acquisitions	Dummy variable which equals 1 if the acquirer is a foreign company, otherwise 0.	SDC Platinum database
Developed country acquirer	Dummy variable which equals 1 if the acquiring firm comes from a developed country (defined by World Bank), otherwise 0.	SDC Platinum database
Anti-director index	Measure of shareholders' rights developed by La Porta et al. (1998)	La Porta et al. (1998)
Pre-acquisition ownership	Dummy variable which equals 1 if the acquiring firm has ownership in the target firm before the current acquisition, otherwise 0.	SDC Platinum database
Controlling ownership acquisition	Dummy variable which equals 1 if the acquiring firm controls more than 51% of the ownership in the target firm, otherwise 0.	SDC Platinum database
Tender offer	Dummy variable which equals 1 if it is a tender offer, otherwise 0.	SDC Platinum database
Private acquirer	Dummy variable which equals 1 if the acquiring firm is a private firm, otherwise 0.	SDC Platinum database
Target uncertainty avoidance index	One of the cultural dimensions developed by Hofstede (1980)	Hofstede (1980)
Target country corruption	Measure of control of corruption by country	Transparency International
LNTRAN	Log transformed transaction value (in million USD dollar)	SDC Platinum database
Cash payment	Dummy variable which equals 1 if the transaction is paid in pure cash, otherwise 0.	SDC Platinum database
Stock payment	Dummy variable which equals 1 if the transaction is paid in pure stock, otherwise 0.	SDC Platinum database

Conclusions

In this thesis, we analyze the cross-border acquisitions in the emerging markets from three unique aspects: high information asymmetry, new potential markets, and firm level volatility. Our study focuses on partially acquired companies by developed and emerging acquirers to develop and test our hypotheses in these three aspects.

Overall, we find that these three perceived “disadvantage” characteristics of the emerging markets do not deter the foreign acquisitions. Focusing on the aspect of high information asymmetry in emerging markets, our first essay shows that foreign acquirers use majority control and appropriate payment method to mitigate this asymmetric information problem. The second essay shows that although foreign acquirers have little knowledge and market share in these countries, they can use partial acquisitions as a market entry strategy to collaborate with strong competitors in the local market to establish their footprint and expand their future business in the emerging countries. Finally, the third essay shows that foreign acquirers foster strong corporate governance and shareholder right protection rules in the target firms to mitigate the high risk in the emerging markets. We argue that cross-border acquisitions effectively transfer the protection mechanism of shareholder rights to the target firms and, thus, reduce the risk of shareholder value entrenchment and management opportunism that are commonly seen in the emerging countries.

In addition, we also find that cross-border acquisitions bring benefits to the investors and target firms in the emerging countries. Target firm shareholders gain a higher acquisition premium in cross-border acquisitions than in domestic acquisitions and these high premiums are offered to

high-performing firms. Although we do not have data on post-acquisition management intervention by foreign acquirers, we hypothesize that foreign acquisitions may change the reputation of the target firms by attracting more institutional investors and, most importantly, reducing the firm risk in the target firms. The risk reduction is beneficial to the investors as the risk-adjusted investment performance of the stocks of the partially acquired target firm increases after the foreign acquisitions.

Our study has several implications for the policy makers and participants interested in the emerging market takeovers. First, we show that gaining majority control is used as an effective way to mitigate information asymmetry by the foreign acquirers. However, emerging countries often place restrictions to prevent majority ownership by foreign companies. Some critics of foreign acquisitions simply believe that foreign control will be harmful for domestic market competition and result in loss of some national brands and possibly economic independence. In our study, we show that gaining majority control in a high asymmetric information environment is the right entry strategy for foreign acquirers. Thus, policy makers may review their policies before placing ownership restrictions on cross-border transactions.

Second, our study also sheds light on the motivations of the cross-border acquisitions in the emerging countries. Unlike many policy makers who believe foreign acquirers may increase efficiency and operating performance of the target firms, we do not find such evidence in our sample of partial acquisitions in the sampling period. We believe that in the current stage of foreign acquisitions in emerging markets, foreign acquirers are mainly motivated by seeking a strong collaborator to enter the new market and establishing their footprint in the local market. We do not find evidence that foreign acquisitions actually affect the real operations and

operating performance in the target firms. Thus, policymakers may need to review their foreign investment policies to see how to better motivate foreign acquisitions to acquire poorly performing firms and to assist them in improving the real operating performance of the acquired firms. Target firm managers may also need to think about innovative ways to improve the firm-specific asymmetric information to make themselves more attractive to foreign acquirers and gain operational benefits. If foreign acquisitions are deemed as one method of increasing shareholder value, high performing and dominant domestic firms should seek opportunities to improve competitive advantage in the domestic market to increase their attractiveness to cross-border acquirers.

Finally, with the “open door” policy adopted by more and more emerging countries, not only are their financial markets and national economies becoming more integrated with the developed markets, some governance and legal reforms are also under pressure to adjust to the international standard. Policy makers in the emerging countries may consider attracting foreign acquirers to improve the governance mechanism and increase information transparency in their local firms. Corresponding legal systems and investor right protection rules may also need to be strengthened, considering the higher requirement of corporate governance from the foreign investors. We believe such reform will eventually benefit the local investors and economies, as we have seen in our study that firm risk and investment returns improve after the cross-border acquisitions from better governance systems.

Since this is one of the first studies to examine the cross-border acquisitions in emerging countries, many areas are still open for future research. First, because of the limitations of the data sources for emerging market firms, we are not able to apply more sophisticated and

available methodologies in our study. For example, we know that identification of long-term stock performance is usually sensitive to the choice of methodology and benchmarks. However, we are not able to use three-factor or four-factor models in our study. These benchmarks are simply not available and construction of these benchmarks is beyond the scope of this study. In this study, we use buy-and-hold abnormal returns (BHAR) with a matching sample in Essay Two, and we use some risk-adjusted performance measures (such as Sharpe ratio, Traynor ratio and Sortina ratio) in Essay Three as acceptable alternatives. As a result, some of our findings in these two essays are not quite consistent. For example, we do not find improved post-acquisition performance using BHAR methodology in the target firms acquired by foreign firms but we do find a significant improvement in the Sharpe and Sortina ratios. It is possible that when we constructed the matching sample to calculate the BHAR measure, we could not control all risk factors⁵³. In addition, traditional risk-adjusted performance measures, such as BHAR, do not consider the downside risk changes. We believe that the use of portfolio based measures in Essay Three provides a better understanding of the implications of cross – border acquisitions on the risk-return trade-offs. In addition, in Essay Two we show that foreign acquirers generally do not intervene with target firm operations or affect its firm operating performance. However, in Essay Three, we argue that target firms may experience risk reduction through better corporate governance mechanisms and shareholder right protection rules from the acquiring company. Unfortunately, we do not have data that can allow us to directly observe changes to board structures or indirectly through electronic and readily available prospectuses. Much work is required to understand the post-acquisition behavior of foreign acquirers in the post-acquisition

⁵³ As we mentioned in the essay, we are only able to match the firms by total assets and industry, but not able to match other risk factors such as book to market ratio, etc. Matching multiple variables (such as propensity score matching) will significantly reduce the sample size because of the large number of missing values in the emerging market firms. Therefore, we believe this may have caused the inconsistent results between Essay Two and Essay Three in terms of long-term stock performance.

period and its implications on firm performance in the post-acquisition period. It is possible that foreign acquirers use cross-border acquisitions only as a market entry strategy and do not intend to actively direct target firm operations and governance. However, investors may perceive the foreign acquisitions as a positive sign about the improving governance and international reputation of the target firm. Thus, the investor base and even investors' investment strategy may change after the foreign acquisitions, which may directly affect the equity risk in the stock market. However, we do not have access to either the governance and investor composition changes for the emerging market firms. Future research may provide more concrete evidence to resolve the questions left from the current study, especially focusing on the reaction of institutional investors and those of international investors in the post-acquisition period. We also believe that much work needs to be conducted in the context of the roles and benefits that foreign acquirers may bring to the emerging markets. We have shown that there seems to be some systematic aspects associated with acquisitions undertaken by cross-border acquirers compared to those undertaken by domestic acquirers. Finally, this thesis predominantly focuses on the emerging market takeovers. However, information asymmetry, new market entry, and market volatility also exist in the developed market economies; future research can expand our knowledge by comparing the emerging market takeovers with the developed market takeovers, which will add more insights to the cross-border acquisition literature.