



Centre Interuniversitaire sur le Risque,
les Politiques Économiques et l'Emploi

Cahier de recherche/Working Paper **10-23**

Does Cross-Listing in the US Foster Mergers and Acquisitions and Increase Target Shareholder Wealth ?

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Juillet/July 2010

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We appreciate the valuable comments and suggestions from Georges Tannous and participants at the 2010 meeting of the Administrative Sciences Association of Canada (ASAC). Siham Meknassi gratefully acknowledges the financial support from the FQRSC (Fonds Québécois de la Recherche sur la Société et la Culture).

Abstract:

We examine the role of cross-listing in alleviating domestic market constraint and facilitating cross-border mergers and acquisitions. Cross-listing appears to strengthen the bargaining power of target firms, allowing them to extract higher takeover premiums relative to their non-cross-listed peers. Moreover, shareholders of Sarbanes-Oxley-compliant targets seem to benefit from a higher premium. We also find that cross-listed firms are more likely to be acquisition targets. This evidence is consistent with the idea that cross-listing increases firms' attractiveness and visibility on the market for corporate control. Our results are robust to various specifications and to the self-selection bias arising from the decision to cross-list.

Keywords: Cross-listing, mergers & acquisitions, governance, Sarbanes-Oxley Act

JEL Classification: G15, G34, K00

I. Introduction

In many countries, investors face significant constraints that increase the expense and the difficulty of selling their holdings. Numerous studies document the effects of these restrictions on the ownership structures prevailing in these countries. La Porta et al. (1999) show that, in most countries outside the US, firms typically have a controlling shareholder, often within a family structure. Underdevelopment of capital markets and weak investor protection in these countries account for the prevalence of this family structure (Bhattacharya and Ravikumar, 2001; Burkart et al., 2003). Ayyagari and Doidge (2010) argue that cross-listing on a US stock exchange allows controlling shareholders to overcome the limitations they face in their domestic market and facilitates changes in corporate ownership and control. Tracking ownership structures over time, Ayyagari and Doidge (2010) find that controlling shareholders of cross-listed firms are more likely to sell their stakes than those of non-cross-listed firms.

In this study, we extend this literature by investigating the effects of US cross-listings on mergers and acquisitions (M&As). Specifically, we address the following questions: (1) Does cross-listing in US markets facilitate the sale of cross-listed firms? (2) Does it allow target shareholders to maximize their selling proceeds? Controlling shareholders may want to sell their block stakes for various reasons, including diversification and the need for liquidity. However, in countries where the market for corporate control is inefficient and poorly developed, it may be difficult to find an acquirer company, especially for large firms. In addition, low corporate valuations, illiquid stock markets, and weak corporate governance generally characterize these countries. Such restrictions in the domestic market render selling block stakes extremely costly and difficult. Cross-listing in the US offers an interesting channel through which shareholders of foreign firms can surmount their home market constraints and maximize the proceeds from selling off their firm.

The high percentage of acquisitions following a cross-listing in the US suggests that this strategy may be more frequent than it first appears. For instance, Chaplinsky and Ramchand (2009) report that M&As following a cross-listing on a US stock exchange represent 43% of total delistings and 24% of total new listings. Furthermore, according to Chaplinsky and Ramchand (2009), these firms tend to be large and high-quality firms, suggesting that they may seek larger acquirers and higher valuations, otherwise inaccessible in their domestic market. Thus, maximizing sales proceeds could be an important motivation for the cross-listing.

Our paper is also related to the Initial Public Offerings (IPOs) literature that presents the IPO as an effective first-stage in the planned sale of a firm. In a model that analyzes the decision to go public, Zingales (1995) shows that an initial sale of a portion of the cash-flow rights to dispersed shareholders, when followed by transfer of control in a second stage, enables the incumbent to extract a greater surplus from the buyer. Likewise, Mello and Parsons (1998) show that an optimal strategy for the sale of a firm should proceed in stages, where the initial sale of shares to passive and small investors (that is, an IPO) will provide the seller with valuable information to negotiate the terms of sale of the controlling block to active investors. These models that view the transfer of control as a key factor in the going-public decision seem relevant to the decision to cross-list on a US stock exchange. Indeed, prior to the sale of the foreign firm, controlling shareholders could have incentives to offer a portion of their shares to the US market through a cross-listing. This two-stage process would allow them to increase their proceeds over and above what they would have obtained without a prior cross-listing.

To our knowledge, our research is the first to examine the impact of cross-listings on the acquisition of cross-listed firms. Existing studies on the effect of cross-listings on M&As examine how cross-listing affects the acquisition behavior of cross-listed firms (Tolmunen and Torstila, 2005; Burns et al., 2007; Owers et al., 2008). These papers show that cross-listed firms

are significantly more active in acquiring US companies than their non-cross-listed peers. Several reasons are invoked to explain this evidence. First, cross-listed acquirers obtain valuable exposure in the target's market (the US) through increased visibility, transparency, and recognition. Second, cross-listing creates an "acquisition currency" (the Depositary Receipt) that is better aligned with target shareholder preferences, providing a convenient solution to the home bias.

We contribute to the literature in four ways. First, we examine whether cross-listing increases the attractiveness of foreign firms on the market for corporate control. The literature associates cross-listing with several benefits that would make cross-listed firms more likely takeover targets. Cross-listing on US stock exchanges involves adherence to more rigorous disclosure requirements which enhance transparency and reduce asymmetric information vis-à-vis potential acquirers, hence allowing a more accurate assessment of the value of the target firm. Cross-listing also increases international recognition and visibility as a result of increased analyst coverage and broadened investor base.¹ Consequently, cross-listing would expose foreign firms to a wider range of potential acquirers, including foreign as well as domestic ones.

Second, we contribute to the literature on both target shareholders' gains from takeovers and the benefits of cross-listing when we examine whether shareholders of target cross-listed firms obtain higher premiums relative to their non-cross-listed peers. Based on the "double-exit" IPO models previously discussed (Zingales, 1995; Mello and Parsons, 1998), cross-listing should allow original shareholders to maximize their proceeds in two ways. (1) Cross-listing triggers a positive stock price reaction on its announcement date (Miller, 1999) and produces a permanent valuation differential over non-cross-listed firms (i.e. the "cross-listing premium" documented in Doidge et al., 2004), thus allowing controlling shareholders to raise the value of their shares. (2)

¹ See Karolyi (2006) for a thorough review of the benefits of cross-listing.

As a result of higher bargaining power and lower information asymmetries, shareholders of cross-listed firms should be able to extract an additional gain from a subsequent block sale of the firm.

Third, there is still no consensus that the *bonding hypothesis* holds for firms that cross-list on a US stock exchange. This hypothesis, initially proposed by Coffee (1999, 2002) and Stulz (1999), posits that firms intentionally cross-list in the US to limit expropriation of minority shareholders by managers and controlling shareholders. Acquisitions of cross-listed firms provide a valuable setting to investigate whether cross-listing in the US is an effective bonding mechanism. If cross-listing leads to better corporate governance, the probability of acquisition will be higher for cross-listed firms than for non-cross-listed firms. Additionally, the premium paid to cross-listed firms would also be greater, since the acquiring firm would perceive benefits from owning a target subject to stringent disclosure and governance standards. Furthermore, if the bonding hypothesis holds, this premium would be higher for cross-listed targets originating from countries with weak investor protection.

Fourth, we contribute to the literature on the impact of the Sarbanes-Oxley Act (SOX) when we examine the takeover likelihood and the acquisition premium of foreign cross-listed firms following its adoption. Since its enactment in 2002, SOX has been the subject of a growing number of empirical researches focusing mostly on its repercussions on listing/delisting decisions and stock market reactions (e.g., Engel et al., 2007; Litvak, 2007; Doidge et al., 2010). However, how SOX affects M&As remains an unexplored issue. Some SOX requirements are likely to have a considerable impact on the acquisition decision and on the way these transactions are conducted (Walton and Greenberg, 2004). Indeed, SOX imposes certification and reporting requirements that apply to the entire firm, including its acquired entities immediately after the deal is completed. Therefore, the target firm's level of compliance is a

major factor when a SOX-compliant firm is considering a takeover, since inheriting weaknesses in the target's reporting and internal control system may be very costly.

We analyze an extensive sample of non-US targets of M&As announced between 1990 and 2008, and we compare exchange-listed firms (via level II and Level III ADRs and direct listings), non-exchange-listed firms (via Rule 144a or level I ADRs), and non-cross-listed firms. We show that foreign firms that cross-list on US stock exchanges have a significantly higher takeover likelihood than non-exchange-listed and non-cross-listed firms. In contrast, non-exchange-listed firms exhibit a takeover likelihood that is not significantly different from their non-cross-listed peers. This evidence is robust to accounting for the self-selection bias arising from the decision to cross-list and is more pronounced among emerging market countries. Furthermore, controlling for various determinants of the takeover premium, we find that cross-listing on US exchanges significantly increases the premium obtained by cross-listed targets. In contrast, cross-listing via non-exchange ADRs has a positive but insignificant impact on the takeover premium. These results support the idea that cross-listing on US exchanges increases the value and attractiveness of foreign firms on the market for corporate control.

When we examine the impact of SOX on M&As, we find that SOX-compliant cross-listed targets (exchange-listed) obtain significantly higher premiums after the adoption of SOX, compared to non-SOX compliant targets (non-exchange-listed). This result suggests that acquirers perceive SOX as value-adding and are willing to overpay to buy a transparent company with an efficient internal control system. However, we provide no evidence of a link between the enactment of SOX and the takeover likelihood.

The remainder of the paper is organized as follows. Section 2 presents the related literature and the main hypotheses. Section 3 describes the sample construction and the variables used in the analysis, while section 4 presents the empirical results. Section 5 concludes.

II. Related literature and hypothesis development

The literature attributes several benefits to listing abroad. For instance, Pagano et al. (2002) argue that listing abroad allows divesting shareholders to sell out on better terms by increasing the market value of their stake. A notable case is privatization, where governments often target foreign investors to sell out their companies. Listing on a more liquid foreign market allows governments to maximize privatization proceeds (Bortolotti et al., 2002). Indeed, floating a large stake in a country providing higher legal protection to investors is a signal that the selling government is committed to refrain from expropriating minority shareholders. In turn, investors will be willing to pay more for a less risky asset. Large shareholdings by foreign investors may also play an important role in monitoring managers, thereby inducing higher efficiency and profitability.

This argument may be extended to private companies as well. Divesting blockholders of firms from less developed markets may find it more advantageous to sell out on foreign markets. For instance, cross-listing on US markets may be an efficient way to increase the market value of the firm and, eventually, to transfer control with maximum proceeds. In countries with illiquid stock markets and inefficient markets for corporate control, a prior cross-listing may be rewarding for large shareholders who seek to divest their block stake. The literature on cross-listing points out several benefits associated with listing on US markets that are likely to make cross-listed firms attractive takeover targets. Since several articles review these benefits in great detail (e.g., Pagano et al., 2002; Karolyi, 1998, 2006; King and Mittoo, 2007), we confine the following section to a brief discussion of some of these benefits relating to our hypotheses.

1. Cross-listing benefits and acquisitions

Doidge et al. (2004) document that foreign firms cross-listing their shares in the US are worth more than their non-cross-listed peers. This "cross-listing premium" stems from the reduced risk that managers and controlling shareholders will expropriate minority shareholders through their commitment to abide by stringent US regulations. By setting a limit on private benefits, cross-listing in the US improves the ability of firms to generate and exploit growth opportunities through a better use of resources. We conjecture that this cross-listing advantage (better governance and growth opportunities) would make cross-listed firms more attractive and thus more likely targets than their non-cross-listed counterparts.

Several other studies document additional benefits from cross-listing in the US that enhance firm value. In particular, cross-listing has been related to lower cost of capital (Hail and Leuz, 2009), increased international recognition and visibility, and higher stock liquidity stemming from a larger shareholder base and increased analyst coverage (Baker et al., 2002; Lang et al., 2003; Bailey et al., 2006; King and Segal, 2009). Cross-listing on US exchanges also imposes rigorous disclosure requirements which increase the firm's transparency and reduce asymmetric information vis-à-vis potential acquirers (US and non-US). Lang et al. (2003) observe that cross-listed firms benefit from wider analyst coverage and more accurate forecasts.

Benefits from cross-listing vary with the type of listing. By listing on an organized exchange (via Levels II and III ADRs or direct listings), foreign firms adopt the same disclosure and regulatory requirements as US listed firms, while non-exchange listings (Rule 144a private placement and OTC listings) involve minimal reporting. Doidge et al. (2004) report higher cross-listing premiums for exchange listings, suggesting that the benefits from cross-listing are higher for this type of listing. We would then expect a higher probability of acquisition for firms cross-listing on a US stock exchange. Although listing by means of non-exchange ADRs only requires

incremental disclosure relative to the home market, it provides a relatively larger shareholder base and wider recognition compared to non-cross-listed firms. Hence, the impact of cross-listing on the probability of becoming a target is still expected to be significant for this type of listing.

From the previous discussion, we derive the following hypothesis:

H1: *Foreign firms that cross-list in the US are more likely to become acquisition targets in comparison to their non-cross-listed peers. This probability increases for exchange-listed firms which are subject to more stringent disclosure requirements.*

2. Investor protection, private benefits, and acquisitions

The M&A literature provides evidence on the impact of regulation and shareholder protection on M&A activity and transaction terms. Overall, the findings from previous studies suggest that both the volume of acquisitions and the acquisition premium increase with higher investor protection and better accounting standards. Our hypotheses related to these findings are discussed in the following section along with a brief review of the literature.

2.1. Investor protection and the takeover premium

Rossi and Volpin (2004) observe that target firms from countries with stronger investor protection obtain higher takeover premiums. They report an average increase of 6% in the premium for a one-point increase in the level of shareholder protection. Similarly, Black et al. (2007) find that US acquirers pay lower premiums for targets from countries where accounting data are less value relevant. Rossi and Volpin (2004) put forward two explanations for the higher takeover premium they document for target firms from countries with stronger investor protection. First, targets subject to tighter regulation have lower cost of capital; this fosters competition among bidders and therefore increases the premium paid by the winning bidder.

Second, countries with higher investor protection are characterized by dispersed ownership. This aggravates the free-rider problem in takeovers and forces the bidder to pay a higher premium to induce all shareholders to tender (Grossman and Hart, 1980).

These results lead us to posit that shareholders of foreign firms cross-listing on US markets would be able to extract higher acquisition premiums owing to their higher disclosure and regulatory standards and their more dispersed ownership of capital. Further, acquisitions often involve restructuring the acquired entity. Targets operating in weak investor protection environment and thus having less rigorous corporate governance and internal control practices, would require more costly post-acquisition restructuring than targets from a better legal regime. These costs decrease the value of expected acquisition synergies and thus reduce the price acquirers are willing to pay in excess of the prevailing market price (the acquisition premium). Therefore, a value should be assigned to better governance practices and observed through higher takeover premiums. We propose to test the following hypothesis for the premium:

H2: *Foreign firms cross-listing in the US extract higher acquisition premiums than their non-cross-listed peers. This premium increases for exchange-listed firms.*

2.2. Legal bonding and acquisitions of cross-listed firms

In their study of the role of the legal environment in cross-border takeovers, Rossi and Volpin (2004) report that better shareholder protection in the target country is associated with a higher M&A volume. Nenova (2003) and Dyck and Zingales (2004) find that high investor protection is related to low levels of private benefits of control. This finding suggests that the market for corporate control operates more effectively with higher shareholder protection, since managers enjoying lower private benefits, would not oppose a value-enhancing takeover. In addition, potential targets in these countries are easily identifiable with better disclosure and accounting

standards. Overall, the evidence suggests that there are more potential targets in countries with better investor protection and accounting standards. When cross-listing on US stock exchanges, foreign firms commit to meet the requirements of US regulations, thereby limiting their private benefits and entering a more efficient market for corporate control. These firms are therefore more likely to become takeover targets.

We rely upon the bonding hypothesis, suggested by Coffee (1999, 2002) and Stulz (1999), to develop predictions regarding the takeover likelihood and premium obtained by cross-listed firms. This hypothesis posits that firms intentionally cross-list in the US to prevent expropriation of minority shareholders by managers and controlling shareholders, which should in turn increase the market value of these firms.² Indeed, Doidge et al. (2004) provide evidence that firms from countries with poorer investor protection experience a greater increase in their market value after listing their shares in the US. We would expect acquirers to perceive larger benefits from a US listing for firms from weak investor protection countries and we hypothesize that this will have a positive effect on their selection and valuation of such target firms. If acquiring firms perceive that cross-listed firms gain greater growth potential and better corporate governance by committing to more stringent regulation, they will then prefer purchasing cross-listed firms rather than non-cross-listed ones. We also expect the differential in acquisition premiums between cross-listed and non-cross-listed targets to be higher for firms from weak regulatory regimes, since these firms gain the most from a US listing. We therefore formulate the following hypothesis:

H3: *Cross-listed firms from weak investor protection countries are more likely to be acquired and to obtain higher premiums compared to their non-cross-listed peers.*

² Some studies have questioned the effectiveness of a US cross-listing in protecting minority shareholders and enforcing stringent US regulations (e.g., Siegel, 2005; Lang et al., 2006).

3. The effects of SOX

The adoption of the Sarbanes Oxley Act in 2002 has introduced radical changes in the reporting and corporate governance environment of firms listed on US exchanges. Since then, a mounting number of empirical studies has tried to assess its effects on various issues, in particular on listing, going-private, and going-dark decisions (e.g., Engel et al., 2007; Marosi and Massoud, 2007; Leuz et al., 2008; Kamar et al., 2009). Other papers focus on firm value and market reaction around key SOX events (e.g., Chhaochharia and Grinstein, 2007; Litvak, 2007; Zhang, 2007; Li et al., 2008); market liquidity (e.g., Jain et al., 2008); firm risk and cost of equity (e.g., Akhigbe et al., 2008; Ashbaugh-Skaife et al., 2009); accounting and audit costs (e.g., Asthana et al., 2004; Eldridge and Kealy, 2005). Leuz (2007) argues that the key problem in most studies of SOX's impact on US firms is the absence a control group of comparable firms that are not affected by SOX. To address this shortcoming, recent studies have taken an international perspective and opposed foreign firms cross-listed on US exchanges (subject to SOX) to foreign firms cross-listed via unlisted ADR programs (not subject to SOX) and to non-cross-listed foreign firms which are not affected by US regulations (e.g., Litvak, 2007; Doidge et al., 2009a).

Despite the considerable number of studies related to SOX effects, to our knowledge, the question of how SOX affects M&A activity has not yet been empirically examined. A few papers discuss SOX's potential implications for M&A practices, particularly with regard to the negotiation process and due diligence as well as reporting and post-merger integration (e.g., Walton and Greenberg, 2004; Karan and Sharifi, 2006). A document by PriceWaterHouseCoopers (2004) also draws attention to the effects of SOX on M&A transactions. According to these studies, some SOX requirements are so stringent that weak internal controls in the target firm could constitute a "deal-breaker".

To avoid the problem documented in Leuz (2007), we examine the impact of SOX on the acquisition of cross-listed firms by comparing exchange-listed and non-exchange-listed targets. We expect the adoption of SOX to have contributed to increasing acquisitions of SOX-compliant cross-listed firms for two reasons. First, many studies associate SOX with the going-private and the going-dark decisions of firms listed on US exchanges and seeking to escape from SOX and its onerous compliance costs (Engel et al., 2007, Marosi and Massoud, 2007; Leuz et al., 2008). One way to do so is by selling the firm to a private US (or non-US) acquirer which releases the acquired firm from its SEC duties (Kamar et al., 2009). The second explanation, which we investigate in this paper, is that cross-listed firms have become more attractive targets after SOX owing to their commitment to more stringent governance and reporting requirements. Before developing this hypothesis, we briefly discuss how some provisions of SOX would impact the M&A activity in general.

3.1. SOX key provisions and the M&A activity

While complying with SOX is demanding for one company, it is even more challenging when two companies are involved. As discussed by Walton and Greenberg (2004) and Karan and Sharifi (2006), some SOX provisions affect both the acquisition and the subsequent integration processes. In particular, Sections 302 and 404 of SOX impose certification and reporting requirements that apply to the entire firm, including acquired entities. Section 302, effective since August 29, 2002, requires that the chief executive and financial officers certify the accuracy of quarterly and annual reports and the effectiveness of internal controls.³ A corollary of section 302 is that acquired entities must be included in this certification in the first quarter-end following the acquisition, which would imply a more complex process if the acquired firm

³ Sarbanes-Oxley Act - Section 302 "Certification of Disclosure in Companies' Quarterly and Annual Reports", Securities and Exchange Commission.

was subject to a weak accounting and governance regime before the acquisition. Section 404, effective since November 15, 2004, requires an annual management report on internal controls over financial reporting as well as the certification of their effectiveness by an outside auditor.⁴ The acquired firm becomes subject to the same requirements starting from the first year-end following the acquisition. This section of SOX is considered to be the most burdensome and thus is expected to produce the largest impact on the M&A activity.

From this discussion, it appears that SOX could affect M&As in a number of ways. First, acquirers subject to SOX must deploy greater efforts and resources in due diligence, since they will be responsible for the target's actions and financial reports for the year preceding the takeover. Consequently, firms with weak accounting standards and control procedures may not be the perfect targets, since the acquisition process would require higher due diligence, more time and resources to insure that the target meets SOX requirements. SOX may also trigger more post-merger failures among M&As involving a SOX-compliant acquirer (US public firm) and a non-SOX-compliant target (US private or foreign firm). Indeed, bringing the acquired firm into compliance may fail, especially given the tighter delays for the quarterly certification imposed by Section 302.

3.2. SOX and acquisitions of cross-listed firms

Acquirers subject to SOX should assess the extent to which their targets are in compliance with SOX requirements before the acquisition. In particular, they need to take into consideration the legal environment of their potential targets before engaging in costly negotiations and due diligence. As a consequence, SOX-compliant acquirers may prefer to purchase firms that are already conforming to SOX to avoid costs and uncertainties related to bringing the target into

⁴ Sarbanes-Oxley Act - Section 404 "Management's Report on Internal Control Over Financial Reporting and Certification of Disclosure in Exchange Act Periodic Reports", Securities and Exchange Commission.

compliance. An acquirer seeking international expansion through cross-border M&As would naturally target cross-listed firms. This is particularly true if the target is from a country with poor governance and accounting standards. In this case, complying with SOX would be the most costly and challenging. Even for non-SOX-compliant acquirers, SOX-compliant targets would be more attractive since they are more transparent and possess a certified effective internal control system (supposing that they actually meet SOX requirements). Accordingly, we enunciate the following hypothesis:

H4: *Foreign firms that cross-list on US exchanges (subject to SOX) are more likely to become targets after SOX compared to non-cross-listed firms and to non-exchange-listed firms (not subject to SOX), especially firms from countries with weak governance and accounting standards.*

Given the substantial resources necessary to ensure the compliance of the acquired entity to SOX, it is plausible that the premium paid by SOX-compliant acquirers would reflect these costs. The enactment of SOX may have increased the costs of compliance with US regulations, but, in the mean time, it offers "a certification effect" for the transparency of the firm and the efficiency of its governance and control system. In this context, the question we ask is: Do acquirers value this certification effect by paying higher premiums to SOX-compliant targets compared to non-SOX-compliant targets? Assuming that their reporting and internal control systems are efficient, target firms already complying with SOX require lower acquisition costs (e.g., in audit and post-restructuring), and therefore would obtain higher premiums as a result of higher expected synergies. We therefore formulate the following hypothesis:

H5: *Following the enactment of SOX, foreign firms that cross-list on US exchanges (subject to SOX) obtain higher acquisition premiums than non-exchange-listed firms (not subject to SOX), especially firms from countries with weak governance and accounting standards.*

III. Data description

1. Sample selection

We collect data on mergers and acquisitions from Thomson's Securities Data Corporation (SDC hereafter) and include all completed domestic and cross-border transactions involving public non-US targets announced between 1 January 1990 and 31 December 2008.⁵ We start from 1990 because Worldscope database, from which we obtain financial statement data, became more comprehensive from the 1990s. Following Rossi and Volpin (2004), we restrict the sample to M&As of majority interests⁶ in order to minimize potential biases due to cross-country differences in disclosure requirements of minority stakes' transfers (below 50%). With these criteria, our M&A list counts 39,380 transactions, 36% of which are cross-border. The next step is to identify, from this M&A list, firms that were cross-listed in the US at the moment of the acquisition. For this purpose, we collect data on all foreign firms that cross-listed in the US, whether through direct listing (via common shares) or indirect listing (via ADRs), as described in the following paragraph. As in previous studies (e.g., Reese and Weisbach, 2002; Doidge et al., 2004), we include direct cross-listings in our sample, since they are subject to the same reporting requirements as exchange-listed ADRs.

We obtain data on ADR listings from the websites of the major depository banks (Bank of New York, Citibank, JP Morgan, and Deutsch bank). Since none of these four sources provides an exhaustive list of the ADR universe, the four lists are merged based on the CUSIP (which is a unique identifier for each issue). In the presence of inconsistencies between the different sources (e.g., in the listing date, the ADR type, the home country, etc.), data provided by the corresponding depository bank are maintained. Listing dates are validated using various sources,

⁵ Cross-border transactions are defined by SDC as transactions in which the target is not located in the same country as the acquirer's ultimate parent.

⁶ Applicable when the acquirer owns less than 50% of the target company's stock before the deal, and more than 50% after the deal.

including data from NYSE and Nasdaq on international firms listed on these exchanges, SDC new issues and CRSP.⁷

We also obtain Information on delisted firms from the depository banks, mainly from Citibank which keeps track of inactive issues, supplemented with data on terminated ADRs from the other banks. With the exception of Citibank, the other depository banks provide limited data on delisted ADRs and do not report their listing date. We cross-check, fill in the missing listing dates, and supplement this list using CRSP (which has the advantage of providing data on delisted firms as well) and SDC new issues database. We could not obtain full information on the missing listing dates for all terminated ADRs reported by the depository banks, and neither the stock exchanges nor the OTC Bulletin Board keeps publicly available records for these issues. Therefore, we disregard terminated ADRs for which we could not find a listing date.

Finally, we obtain the list of direct cross-listings on US exchanges (via ordinary shares) from CRSP (for listed and delisted issues), and we validate and complete it with data from NYSE and Nasdaq on international firms listed directly on these exchanges. Again, these stock exchanges only provide data on currently listed firms. Using CRSP, however, allows us to alleviate the survivorship bias, as this database keeps track of delisted firms. The final sample of firms that have cross-listed between 1990 and 2008 includes 4,896 issues, 18% of which are Exchange-listed ADRs (levels II and III), 22% are direct listings (common shares), 43% are Over-The-Counter (or level I) ADRs and 17% are Rule 144a (or level IV) ADRs.

To identify whether cross-listed firms in our sample have been takeover targets, we match them with the M&A list obtained from SDC. Most papers use CRSP's delisting codes to identify the delisting reason (merger or others). Since CRSP only provides data for Exchange-listed

⁷ CRSP database only covers listings on major US exchanges (NYSE, AMEX, and Nasdaq), thus providing only data on Level II and Level III ADRs and direct listings. Share codes 12, 30, and 31 in CRSP refer to all foreign firms that are listed on a major US stock exchange. Share codes 30 and 31 are attributed to ADRs while share code 12 refers to common shares listed by companies incorporated outside the U.S (direct cross-listings).

firms, using SDC is necessary to identify the status of Level I and Rule 144a listed firms. We use SDC for this purpose and cross-check with CRSP delisting codes and dates for Exchange-listed firms.⁸ Panel A of Table 1 provides a breakdown of the sample according to the cross-listing type and the acquisition status (over the entire period and within 5 years from the cross-listing). Over the entire period, exchange-listed firms are associated with a high percentage of acquisitions (34% for exchange ADRs and 26% for direct listings, resulting in an average 30% for exchange-listings), whereas 23% among Rule 144a listings are acquired and only 16% among level I ADRs. The same pattern is observed 5 years after cross-listing in the US, where nearly 17% of exchange-listed firms are targets of successful acquisitions.

Panel B depicts the acquisition status of cross-listed firms by year for each cross-listing type. For each year, we report the number of new listings and the proportion of acquisitions among these new listings. A cross-listed firm is considered as acquired if the acquisition occurs between the cross-listing date and the last date in the sample (31 December 2008). In this stage of the analysis, we do not account for the time-to-acquisition since the cross-listing date—in the sense that we do not distinguish between a firm acquired within 2 years from its cross-listing and a firm acquired after 10 years. We shall take this effect into consideration in a duration analysis that we present in the last section of the paper. Panel C presents the acquisition status by country over the entire period. Figure 1 shows that firms from the U.K. and Canada carry out the highest number of cross-listings in the US and are also associated with the highest percentage of acquisitions. Indeed, over the entire period, 38% of the cross-listed firms originating from these two countries were targets of acquisitions.

*** *Insert Table 1 about here* ***

⁸ Firms do not necessarily delist when acquired. Any firm that has been the target of an acquisition by a majority interest, as classified by SDC, is considered to be acquired in our sample.

In addition to the cross-listing sample, we construct a control sample of foreign firms that did not cross-list in the US over the same period (acquired or not). We use this control sample in the panel regressions on the takeover likelihood. We select it among all public firms from the same home countries as those included in the cross-listing sample, and for which data is available on Thomson Financial's Worldscope database for at least three years. To determine the acquisition status of these firms, we match them with target firms from SDC's M&A list, resulting in 6,665 targets with available data. Finally, among the remaining non-acquired firms, we exclude firms that were delisted as of 31 December 2008, keeping only active firms, in order to avoid any specific effects related to the delisting. This results in a control sample of 9,633 foreign public firms that have not cross-listed in the US.

Following Doidge et al. (2009a), we exclude firms headquartered in tax-havens (e.g., Bermuda, Channel Islands, ...) since many are US firms that adopt the foreign status only for tax purposes. Finally, we eliminate firms operating in the financial sector (first digit SIC code of 6) to ensure better comparability of financial statement data across industries. In some of the analysis, the sample size is reduced due to data limitation, in particular for the acquisition premium. The number of retained observations is specified in the tables displaying the results.

2. Definition of variables

We consider several variables at the firm-, transaction-, and country-levels and ascertain their impact on the takeover likelihood and the premium paid to cross-listed targets. Appendix 1 summarizes these variables and indicates their sources.

Firm-level variables

We retrieve firm-level attributes from Worldscope database. In the takeover likelihood regressions, we base the choice of firm-level variables on existing theories and empirical studies modeling the takeover likelihood. We measure these variables at the beginning of the firm-year:

- *Size*, measured by the logarithm of market capitalization in US dollars. Takeovers generate costs related to the integration of the target into the acquirer's organizational structure. These costs increase with target size. As a result, large firms are exposed to a narrow set of potential acquirers that are able to absorb high takeover costs. Several studies provide empirical support for this hypothesis (Palepu, 1986; Powell, 1997). Thus, we expect the target size to be negatively related to the takeover likelihood.

- *Growth*, measured by the three-year growth rate of sales, and *leverage*, measured by the total debt to total assets ratio. The "growth-resource imbalance" theory (Palepu, 1986; Powell, 1997, 2004) advocates that high-growth and financially constrained (highly leveraged) firms are more likely to be targeted since they have limited bargaining power, making them attractive targets. Alternately, low-growth firms with high resources are more likely to be targeted by acquirers seeking to absorb their resources.

- *Tobin's Q*, is the ratio of the market-to-book value of assets, computed as $(\text{book value of assets} + \text{market capitalization} - \text{book value of equity}) / \text{book value of assets}$. This measure is generally used as an indicator of whether a firm's assets are over- or undervalued by the market. Lower Q indicates a cheaper target and therefore increases its probability of being acquired. Recent theories and empirical work in the M&A literature advance that market misvaluation drives mergers and that overvalued firms tend to buy less overvalued firms (Shleifer and Vishny, 2003; Andrade and Stafford, 2004; Rhodes-Kropf and Viswanathan, 2004; Rhodes-Kropf, Robinson, and Viswanathan, 2005; Dong et al., 2006; Ang and Cheng, 2006). Overvalued firms may be more able to survive and expand through acquisitions, while undervalued firms are less likely to survive as independent entities.

- *Return on Equity (ROE)*, the ratio of net income to book value of equity, as a measure for management performance. Pros of the "inefficient management theory" consider takeovers as an

important disciplinary mechanism to correct management inefficiency by replacing poorly performing managers with more efficient ones. Accordingly, poorly managed firms are more likely to become targets. Agrawal and Jaffe (2003a, 2003b) review related empirical evidence and reexamine this hypothesis but do not find much support for it.

- *Free Cash-Flows (FCFs)*, the ratio of free cash-flows to total assets, as a measure for corporate liquidity. According to Jensen (1986), *FCFs* must be distributed to shareholders in order to maximize value and increase the firm's efficiency. As a result, managers have lower resources under their control, which reduces their power and subjects them to monitoring by capital markets when the firm needs outside financing. This theory predicts that firms that have retained high levels of *FCFs* are more likely to become takeover targets (Powell, 1997, 2004).

- The ratio of *foreign sales to total sales* is used as a proxy for the firm's level of openness to international markets. Since we are examining cross-border takeovers (as well as domestic ones), we need to control for this factor. Openness to international markets increases the firm's visibility, exposing it to a larger pool of potential acquirers.

For regressions involving the acquisition premium, the firm-level variables are *size*—measured as the logarithm of the firm's market capitalization four weeks before the M&A's announcement—and the three-year *growth* rate of the firm's sales as a proxy for growth opportunities, measured at the fiscal-year-end preceding the acquisition. Larger transactions are associated with lower premiums, while firms with higher prospects of growth obtain higher premiums (e.g., Rossi and Volpin, 2004).

Transaction-level variables

At the transaction level, we include a number of control variables identified in the traditional M&A literature as determinants of the acquisition premium. First, we use three dummy variables to indicate whether the deal involves a tender offer (*Tender*), multiple bidders (*Contested bid*), or

is classified as hostile or unsolicited (*Hostile*). These variables are known to have a positive impact on the takeover premium. The bidder in a tender offer needs to pay a higher premium in order to induce all shareholders to tender their shares (the free-rider hypothesis, Grossman and Hart (1980)), while the presence of multiple bidders increases the premium through a competition effect. Hostile takeovers are unwanted by the target's board and therefore acquirers are expected to pay a higher price in order to attract the maximum number of shares.

We also control for cross-border transactions using a dummy variable, as they may have a different impact relative to domestic transactions. In addition, the percentage of the target's shares owned by the acquirer before the announcement (*Toehold*) is expected to be negatively correlated to the premium. One explanation is that the higher the toehold, the lower the proportion of shares the acquirer needs to purchase after the announcement and, therefore, the lower the target's bargaining power (Hirshleifer and Titman, 1990)⁹. Finally, glamour acquirers (as measured by high market-to-book ratios) are expected to overpay for their acquisitions as they tend to overestimate the gain from future synergies generated in the target (Rau and Vermaelen, 1998). We control for this effect through the market-to-book ratio (MB) of the acquirer four weeks before the announcement. Following Rossi and Volpin (2004), we measure the acquisition premium by the natural logarithm of the percentage of the offer price to the closing price of the target four weeks before the M&A's announcement.

Country-level variables

Based on Rossi and Volpin's (2004) evidence that countries with higher shareholder protection are characterized by higher M&A volumes, we expect the probability of becoming a target to be positively related to the level of investor protection. On the other hand, M&As are

⁹ Many researchers have tried to model this relation. Another explanation is that the toehold induces a run-up in the stock price when it is detected by the market, which makes the bid premium lower (Bris, 2002).

considered a mechanism for improving corporate governance when acquirers pursue acquisition in countries with poorer investor protection (Rossi and Volpin, 2004). A lower level of investor protection may increase the likelihood of becoming a target. In addition, the level of shareholder protection in the target country is expected to be positively related to the takeover premium (Rossi and Volpin, 2004).

At the country level, we use a number of institutional variables in the home country that have been considered in the literature:

1. The anti-self-dealing index of Djankov et al. (2008) which measures the legal protection of minority shareholders against “managerial self-dealing” and private benefit extraction¹⁰;
2. A common law dummy to identify the legal system (common versus civil law), since common law countries are characterized by a stronger legal enforcement;
3. The accounting standards index, which is produced by the Center for International Financial Analysis and Research (1991) and retrieved from La Porta et al. (1998). It measures the quality of accounting and disclosure standards and thus the degree of transparency vis-à-vis outside investors. Note that the availability of institutional variables confines our dataset to 47 countries.

IV. Empirical evidence

1. The takeover likelihood

In this section, we investigate whether foreign firms cross-listed in the US are more likely to become targets for acquisitions relative to their domestically listed peers. We use a panel data approach to model the probability of becoming a takeover target. Our sample consists of 6,104 non-US firms, 1,961 of which were targets in acquisitions and 817 of which were cross-listed in the US between 1990 and 2008, resulting in a total of 43,146 firm-year observations. The

¹⁰ Data is available on Shleifer's web page: <http://www.economics.harvard.edu/faculty/shleifer/dataset>

dependent variable takes the value of 1 if the acquisition occurs during the firm-year and 0 otherwise. The general specification is as follows:

$$Acquired_{it} = \beta_0 + \beta_1 Exchange-listed_{it} + \beta_2 Non-exchange-listed_{it} + \beta_3 Firm-level\ variables_{it} \\ + \beta_4 Country-level\ variables_i + \varepsilon_{it}$$

Exchange-listed_{it} and non-exchange-listed_{it} are two dummy variables that equal 1 if firm *i* is cross-listed in year *t* via exchange or non-exchange listing respectively, and 0 otherwise.

At the country-level, we use the anti-self-dealing index of Djankov et al. (2008) as a proxy for shareholder protection in the home country. We also include a dummy variable to indicate whether the firm is domiciled in an emerging market.¹¹ Emerging market firms may exhibit a different takeover likelihood, as these firms are relatively more financially constrained (Lins et al., 2005) and operate in a less efficient market for corporate control. To account for potential time and firm effects in the data, we include year dummies and estimate robust standard errors clustered at the firm-level as recommended by Petersen (2009).

We estimate four specifications of the takeover likelihood equation and report the estimation results in Table 2. The results from the first specification that includes only cross-listing, industry, region, and year dummies show a positive and significant effect of the exchange-listing on the probability of becoming a target. In contrast, non-exchange listing has a positive but insignificant effect on the takeover probability. Specification 2 includes firm-level variables expected to influence the takeover probability, while country-level variables are added in specification 3. In both specifications 2 and 3, the impact of exchange-listing remains positive and significant, while the non-exchange type is still insignificant, corroborating the idea that listing on US exchanges makes firms more attractive targets. The other control variables show mixed results: Consistent with the evidence, size and Tobin's Q are negatively related to the

¹¹ We use the country classification from the World Economic Outlook and include emerging and developing economies in the same group.

probability of becoming a target, whereas the leverage level significantly increases this probability. However, lower growth levels of the target seem to increase the takeover likelihood. Finally, our measures of management efficiency (ROE) and corporate liquidity (FCF) show no significant effect on the takeover likelihood.

In specification 3, the positive and significant coefficient of the anti-self-dealing index variable suggests that the takeover likelihood increases if the target originates from a stronger shareholder protection country. Additionally, belonging to an emerging country significantly reduces the likelihood of becoming a target. In the last section of the paper, we perform a robustness test that compares the results of separate regressions for emerging and developed countries. Specification 4 includes two interaction variables between the difference in shareholder protection levels between the US and target countries and both types of cross-listing (exchange and non-exchange). The coefficients associated with both interaction variables are not statistically significant, suggesting that the impact of cross-listing on the takeover likelihood does not vary with the level of shareholder protection in the target country.

****Insert Table 2 about here****

Self-selection bias correction

Following previous studies (e.g., Doidge et al., 2004), we correct for the self-selection bias arising from the decision to cross-list using Heckman's (1979) procedure. Disregarding this potential problem and using standard statistical methods would produce biased results. Heckman's (1979) two-step procedure consists of estimating a probit model for the decision to cross-list as a first step, with the dependent variable being equal to 1 for cross-listed firms and 0 for non-cross-listed firms. The estimated cross-listing probabilities (the fitted values from the first-stage probit) are then used to compute the inverse Mill's ratio (λ) that is included in the main regression as a correction for self-selection in the second stage.

In the first step, the probit regression for the decision to cross-list is modeled as a function of firm and country attributes (Dooidge et al., 2004). Larger firms with higher growth opportunities and more financial constraints are more likely to cross-list. Thus, we use the following firm-level variables in the probit regression: the *size*, measured by the logarithm of market capitalization in US dollars; the *three-year growth rate of sales*, as a proxy for investment opportunities; *leverage* as a proxy for the level of financial constraints that would entice firms to raise equity capital, in particular through cross-listing. We also include the *ratio of foreign sales to total sales* as a proxy for the level of firm's openness to international markets. Moreover, firms from countries with weak investor protection seem to voluntarily cross-list in the US with the intention of conforming to stringent US regulation (the bonding hypothesis). We therefore include the following measures for legal environment and accounting standards presented in the data description section: the common law dummy and the accounting standards index.

The last two columns of Table 2 present the results of the second-step regressions including inverse Mill's ratio (λ). Interestingly, in both specifications, the coefficient of the exchange-listing dummy is still significant, suggesting that the relation we found between exchange-listing and the takeover likelihood is robust to the self-selection bias. Additionally, the coefficient associated with λ is positive and significant in specification (5), suggesting that the correction for self-selection is relevant.

2. The acquisition premium

In this section, we investigate whether cross-listing on US markets helps target firms extract higher takeover premiums. We use a sample of 3,413 transactions for which the acquisition premium and firm level data are available. The premium is winsorized at the 1st and the 99th percentiles to reduce the impact of outliers.

2.1. Univariate differences

In Table 3, we report the means and medians of the explanatory variables for both cross-listing types (exchange- and non-exchange-listings), for the non-cross-listed control sample as well as for the entire sample. We provide tests of differences in means (t-statistics) and medians (wilcoxon-z) between the sub-groups on the right-hand side of the Table.

On average, foreign firms with shares cross-listed on major US exchanges obtain significantly higher acquisition premiums, compared to both non-exchange-listed and non-cross-listed firms (logarithm premium of 0.302 versus 0.206 and 0.208, respectively). However, there is no significant difference in the average acquisition premium between non-exchange-listed and non-cross-listed foreign firms. The test on medians corroborates this result and confirms our second hypothesis: Foreign firms cross-listed on US exchanges extract higher premiums when acquired, compared to their non-exchange-listed and non-cross-listed peers. One explanation is that exchange-listed firms, being subject to stringent US rules and therefore having better corporate governance practices, would require lower post-acquisition restructuring costs, consequently increasing the expected synergies and thus the acquisition premium. Alternatively, non-exchange-listed and non-cross-listed foreign firms, generally subject to weaker disclosure and legal standards compared to those in the US, would theoretically require higher restructuring costs, resulting in a lower acquisition premium.

The higher growth level among exchange-listed firms (18.88% on average, 7.3% in median value) compared to non-exchange-listed firms (average of 6.6% and median of 4.9%) is consistent with the conclusions drawn by previous studies: Cross-listing on US exchanges reduces the extent to which insiders and controlling shareholders can engage in expropriation a result of compliance with stringent US regulations and hence increases the firm's ability to

generate and exploit growth opportunities (Doidge et al., 2004; Hail and Leuz, 2009). However, this conclusion is mitigated when we compare these two sub-groups to the control sample of non-cross-listed firms. The latter is characterized by a lower growth rate on average, but this rate is not significantly different from that of the exchange-listed firms, whereas it is significantly higher compared to that of non-exchange-listed firms.

We also observe a significantly higher percentage of cross-border deals for cross-listed firms as compared to non-cross-listed firms. Within the former sub-group, exchange-listed firms exhibit a significantly higher proportion of cross-border deals in comparison to non-cross-listed firms. This is consistent with the idea that cross-listing, especially on US exchanges, increases the firm's visibility on the international market for corporate control and enlarges its range of potential acquirers.

The subsample of exchange-listed targets is also characterized by a higher percentage of contested bids (13.2%) as compared to non-exchange-listed firms (8.1%) and especially to non-cross-listed firms (6.4%), suggesting that exchange-listed firms are highly attractive targets. Furthermore, exchange-listed firms exhibit a lower proportion of hostile takeovers as compared to non-exchange-listed firms. This evidence provides some support for the hypothesis that cross-listing on US exchanges decreases hostile takeover attempts as a result of successful bonding and lower private benefits available to managers of these firms. Indeed, managers, acting in shareholders' interests, will not reject value increasing takeover offers. In contrast, managers of non-exchange-listed firms would tend to resist or reject takeover offers in order to preserve their private benefits, thus inviting hostile takeover attempts.

Comparing institutional variables in the target home country across the different sub-groups leads to the following observations:

- The anti-self-dealing index of Djankov et al. (2008) is significantly lower for exchange-listed firms as compared to non-exchange-listed and to non-cross-listed firms, in terms of both mean and median. In other words, firms that list on US major exchanges are, on average, from countries with lower investor protection. This observation is consistent with the bonding hypothesis: insiders and controlling shareholders from countries with lower investor protection countries commit to enhance the protection of minority shareholders by submitting to stringent US rules through a US exchange listing.

- The common law variable shows the opposite results, i.e. significantly higher legal enforcement for exchange-listed firms as compared to non-exchange-listed and non-cross-listed firms. The accounting standards index also provides little evidence for the bonding hypothesis with no significant difference between exchange- and non-exchange-listed firms.

*** *Insert Table 3 about here* ***

2.2. Multivariate analysis

The main question we address in this section is whether cross-listing in the US has any effect on the acquisition premium obtained by cross-listed targets. For this purpose, we estimate the following model using ordinary least squares with robust standard errors corrected for clustering at the country level:

$$\begin{aligned}
 \text{Premium}_i = & \beta_0 + \beta_1 \text{Exchange-listed}_i + \beta_2 \text{Non-exchange-listed}_i + \beta_3 \text{Control variables}_i \\
 & + \beta_4 \text{Shareholder protection}_i + \varepsilon_i
 \end{aligned}$$

Control variables are related to firm- and transaction-level attributes as described previously: target size, growth opportunities, cross-border dummy, tender offer dummy, contested bid dummy, hostile dummy, percentage toehold, and acquirer's MB ratio. As a measure for shareholder protection, we use the anti-self-dealing index of Djankov et al. (2008).

We report the estimation results in Table 4. Interestingly, for all five specifications, we find that cross-listing on US exchanges, whether listed via ADR programs (Level II or III) or directly via common shares, significantly increases the premium obtained by cross-listed targets. This increase is of a magnitude of 0.10 in the logarithm of the premium, which translates into an average increase of 10.5% in the premium. Cross-listing with non-exchange ADRs (level I or Rule 144a) also has a positive but insignificant impact on the acquisition premium. These results support the idea that cross-listing on US exchanges increases the attractiveness and the value of foreign firms on the market for corporate control.

In specification 2, we add control variables at the transaction level. The results correspond to the expected outcomes and the existing literature: Except for the toehold, all control variables (cross-border, tender offer, contested bid, and hostile) show positive and significant coefficients. More importantly, the impact of a cross-listing on US exchanges on the takeover premium remains significant at the 1% level. In specification 3, we include the market-to-book (MB) ratio of the acquirer to control for the willingness of growth firms to overpay for their acquisitions. The sample drops to 983 observations due to limitations on acquirers' firm-level data, since our initial sample also includes private acquirers. Contrary to our expectations, the effect of the acquirer's MB is negligible, and, even if the sample size drops, the significance and magnitude of the cross-listing effect is only slightly modified. Therefore, we conduct the next analysis using the entire sample and excluding the acquirer's MB ratio from the regressions.

Specifications (4) and (5) introduce the impact of the level of shareholder protection in the target country on the takeover premium. We use the anti-self-dealing index of Djankov et al. (2008) as a measure for the shareholder-protection level. Consistent with the results of Rossi and Volpin (2004), we find that shareholder protection in the target country is positively related to the acquisition premium at the 10% significance level. As noted by Rossi and Volpin, one

possible explanation is that targets subject to tighter regulation have lower cost of capital which exacerbates competition among bidders and therefore increases the acquisition premium. Furthermore, to account for the portion of the premium attributable to the private benefits that the acquirer is expecting to extract from its target, we add the difference between the acquirer and target countries' shareholder protection in specification (4). Control would be more valuable for acquirers coming from countries with poor shareholder protection, since they are better able to extract private benefits of control. Therefore, we should observe higher acquisition premiums for deals involving acquirers from countries with low investor protection. As in Rossi and Volpin (2004), we do not find a significant effect for this variable, though it has the expected sign.

In specification (5), we add two interaction variables between the difference in shareholder protection levels between the US and target countries and both types of cross-listing (exchange and non-exchange). The overall impact of shareholder protection on the acquisition premium is still positive and significant at the 10% level as in the previous specification. The difference in shareholder protection levels for non-exchange firms (measured by the second interaction variable) has a negative and significant effect on the premium, suggesting that lower shareholder protection in target countries (a higher difference with US standards) is associated with a lower premium. For firms cross-listed on US exchanges, however, this variable has the opposite sign, which implies that the weaker the legal protection in the target country, the higher the premium. This result is interesting and provides support for the bonding hypothesis: The benefit from cross-listing in US exchanges measured by the takeover premium is higher for firms from countries with poorer investor protection. Cross-listing is viewed as a signal of commitment to non-expropriation of minority shareholders. This raises investors' expectations about future cash flows, lowers the firm's cost of capital and improves its ability to generate and exploit growth opportunities (Hail and Leuz, 2009). Acquirers perceive cross-listing on US exchanges as a

bonding device and are therefore willing to pay more to acquire a less risky firm with higher growth prospects. Thus, their valuation is higher for exchange-listed targets, especially those coming from poorly regulated countries, while the non-cross-listed and non-exchange-listed ADR firms are valued downward.

**** Insert Table 4 about here ****

3. The impact of SOX

In this section, we investigate whether SOX has an impact on the takeover likelihood and the acquisition premium obtained by foreign targets cross-listed in the US.

3.1. SOX and the takeover likelihood

To evaluate the effect of SOX on the takeover likelihood, we use the same determinants of the takeover likelihood examined previously and include additional dummy variables related to SOX. The variable SOX takes the value of 1 for each observation recorded after 2002 and 0 before. Table 5 reports the estimation results for the entire period as well as for the pre- and post-SOX periods separately. In specification (1), the post-SOX period is characterized by increased takeover activity as shown by the positive and significant coefficient associated with the SOX dummy, while the impact of both types of cross-listing after SOX is also positive but statistically insignificant. This result does not support our hypothesis that exchange-listed firms become more likely targets after SOX as a result of compliance with tighter rules of disclosure and governance.

We also conjecture that compliance with SOX is more challenging for cross-listed firms domiciled in countries with weak investor protection and we expect this to make them even more attractive relative to their non-cross-listed peers. To examine this proposition, we include in

specification 2 the interaction between both types of cross-listing after SOX and the difference in shareholder protection between the US and the target home country. The coefficient associated with this interaction variable is positive but insignificant for both types of cross-listing, suggesting that the takeover likelihood of cross-listed firms is not affected by their home regulation even after the enactment of SOX.

Specifications (3) and (4) report the results of estimating the same model for the pre- and post-SOX periods separately. Both periods exhibit a significant and positive impact of cross-listing on US exchanges on the takeover likelihood, while non-exchange-listing is associated with a positive but insignificant effect. Overall, we do not find evidence for a significant difference between pre- and post-SOX periods regarding the effect of cross-listing on the takeover likelihood.

**** Insert Table 5 about here ****

3.2. SOX and the takeover premium

In this section, we investigate whether acquirers attribute a value to complying with SOX by comparing the acquisition premium for SOX compliant targets versus non-SOX-compliant targets. Table 6 compares average and median acquisition premiums before and after SOX for exchange-listed targets (Levels II and III ADRs and direct listings) versus non-exchange-listed targets (Level I and Rule 144A ADRs).

In the pre-SOX period, there is no significant difference in the average and median premium between both groups. Interestingly, during the post-SOX period, exchange-listed targets obtain significantly higher premiums than non-exchange-listed targets. Furthermore, comparing the sub-periods within each group, we notice that the acquisition premium has significantly decreased after SOX for non-exchange-listed targets from 0.25 to 0.14 on average. For

exchange-listed firms, the average acquisition premium is slightly higher after SOX but the difference is not statistically significant (0.29 versus 0.31). Overall, these results are consistent with our expectations: Exchange-listed firms, being subject to the stringent disclosure and governance rules imposed by SOX and therefore having better internal control systems, would require lower post-acquisition costs, thus increasing expected synergies and the premium paid by the acquirer. On the other hand, non-exchange-listed foreign targets, which are subject to their local accounting and governance standards, would require higher acquisition costs thus resulting in a lower takeover premium.

**** Insert Table 6 about here ****

In Table 7, we explore the impact of the enactment of SOX on the acquisition premium in a multivariate context. Consistent with our hypothesis, the regression over the entire period (column 1) shows that SOX-compliant, cross-listed firms (measured by the interaction variable between the SOX dummy and exchange-listed firms) obtain significantly higher premiums after SOX came into effect, while this premium is reduced (but not significantly) for non-SOX-compliant cross-listed firms (measured by the second interaction variable). This result suggests that acquirers perceive some benefits from SOX and are willing to pay more after SOX to buy a transparent company with an efficient internal control system. Column (2) includes interactions between both cross-listing types and the difference in anti-self-dealing levels between the US and the target country. The results show that, after SOX, exchange-listed firms from countries with lower investor protection than US standards are associated with higher takeover premiums. We obtain similar results when estimating the pre- and post-SOX periods separately in columns (3) and (4). In addition, the impact of a US exchange listing on the takeover premium is still positive and significant at the 1% level for both periods.

**** Insert Table 7 about here ****

4. Robustness tests

In this section, we conduct a set of robustness tests to provide further support to our findings.

4.1. Duration analysis

One limitation of the logistic regression used to examine the takeover likelihood is that it ignores the effect of time. Indeed, the takeover likelihood may differ as time progresses. In addition, data censoring could also bias the estimation. Right censoring arises when firms have not experienced the event (the acquisition) by the end of the period under study.¹² Indeed, the acquisition could occur after this period but is not observed. The objective of our first set of robustness tests is to examine the acquisition of cross-listed firms using survival analysis which handles both limitations.

We use Cox (1972) proportional-hazard model which allows us to relate the acquisition event to time-varying firm attributes (called covariates in the survival analysis). One advantage of Cox model is that it does not require any assumption regarding the shape of the underlying survival distribution (the baseline hazard). This model is widely used in survival analysis. For instance, Wheelock and Wilson (2000) use Cox's methodology to model the hazard of bank failure and acquisition, while Doidge et al. (2009b) apply it to predict the decision of cross-listing on US exchanges.

Like panel data models, hazard models deal with repeated observations over time on the same individual; however, they explicitly incorporate information about the timing of the event and track events over time to assess the influence of explanatory variables on their occurrence. While logistic regressions describe the event probability during the entire sample period, Cox regression models the instantaneous event likelihood at a given point in time. This model allows

¹² Censoring also arises when the firm is dropped out of the sample due to missing data.

us to assess the probability of acquisition at any point in time, given that the firm has not been a target up to this time (called hazard rate).

We estimate Cox model by maximizing the partial likelihood function. With our panel setting (used in the takeover likelihood regressions), each firm is observed T_i different times, with either acquisition or right censoring taking place at time T_i . The first observation date differs across firms. The event hazard depends on a set of covariates X :

$$h(t, X) = h_0(t) \exp(X\beta)$$

Where $h_0(t)$ is the survival time distribution (i.e. the baseline hazard function); β is the vector of parameters to estimate; X is the vector of explanatory variables.

As covariates for the hazard models, we use the same set of firm- and country-level variables employed in logistic regressions. Standard errors are robust and corrected for clustering at the firm level. Estimates of the Cox hazard model, shown in Table 8, provide further support for our findings: In all specifications, exchange-listing is associated with a positive and significant effect on the takeover likelihood, whereas non-exchange-listing does not have a significant impact on this likelihood. The other variables exhibit effects and significance levels similar to those reported for the logit regressions, except for the size effect which becomes insignificant and the foreign sales ratio which becomes positive and significant, indicating a positive relation between the takeover hazard and openness to international markets.

**** Insert Table 8 about here ****

4.2. Developed versus emerging countries

To provide additional robustness to our results, we examine whether the cross-listing effect varies with the economic development level of the target firm's home country. Our previous results indicate that emerging markets are associated with a lower takeover likelihood. This

result is likely to reflect the lower volume of M&As observed in these countries as compared to developed ones. Data limitations regarding financial statements for emerging market firms could bias the results toward a higher takeover likelihood, as more M&As are observed among developed countries. Similarly, the results on the acquisition premium could be driven by characteristics prevailing in developed markets, since our sample is mainly composed of developed market firms because of broader SDC coverage for these firms (3,062 developed market firms versus only 334 emerging market firms for which the takeover premium is available).

Furthermore, motives behind cross-listing could differ between emerging and developed market firms. Emerging countries are generally characterized by lower investor protection, more financial constraints, and less efficient markets for corporate control. Firms in these countries have more incentives to cross-list in the US in order to overcome these barriers. They may cross-list with the intention of seeking a buyer for the firm and higher bids. As a result, the effect of cross-listing on the takeover likelihood and premium could be more pronounced among emerging market firms.

To test the robustness of our results with the economic development of the home country, we run previous regressions for emerging and developed countries separately. Tables 9 and 10 depict the results for the takeover likelihood and premium respectively. Exchange-listing seems to have a more pronounced effect on both the takeover likelihood and the premium for emerging countries relative to developed countries. Testing the difference in exchange-listing coefficients between the two subsamples indicates indeed that the cross-listing's positive effect on both the premium and the takeover likelihood is significantly stronger for emerging markets¹³. This

¹³ t-statistics for coefficient differences in the takeover premium regressions range between 2.29 and 4.77 across specifications. Wald chi-square statistics for coefficient differences in the takeover likelihood regressions range between 8.22 and 11.47.

evidence is consistent with the idea that firms cross-list in order to overcome their domestic market constraints. Emerging market firms appear to benefit more from cross-listing on US exchanges.

*** *Insert Tables 9 and 10 about here* ***

4.3. Additional robustness checks

Endogeneity issues: One potential concern in our analysis is that the cross-listing variable may be endogenous, resulting in biased and inconsistent estimates. Indeed, some unobserved factors explaining the takeover premium may also determine the cross-listing status. To address this problem, we use an instrumental variable estimation. Specifically, we estimate a two-stage least-squares regression for the takeover premium using economic proximity as an instrument for the cross-listing dummy. In our choice of instrument, we rely upon the results of Sarkissian and Schill (2004) suggesting that the cross-listing decision is dominated by proximity considerations, namely geographic, economic, cultural, and industrial proximity. Economic closeness between countries is highly correlated with the cross-listing dummy and uncorrelated with the takeover premium, which makes it a good instrumental variable candidate. Economic closeness, obtained from Sarkissian and Schill (2004), is defined as the percentage of a country's exports going to the US. Tests of the relevance and the excludability (exogeneity) of this instrumental variable confirm its validity (F-test = 51; p-value ≈ 0).

Table 11 displays the results of the instrumental variable estimation. The results of the first-stage regression (unreported but available from the authors) confirm that economic proximity is a good determinant of the exchange-listing status. The second-stage regression in column (1) validates our previous results: the instrumented value of exchange-listing is still positively related to the takeover premium at the 1% significance level. We repeat the same analysis for

non-exchange-listing as the endogenous variable instrumented with economic proximity and find no significant effect of this cross-listing type on the takeover premium (column 2).

*** *Insert Table 11 about here* ***

Country weights in the sample: To further test the robustness of our results, we re-estimate the takeover premium regressions using weighted least squares, where the weights are the inverse of the number of observations in each country. This correction allows the different countries to exert the same impact in the regressions. Estimation results in Panel A of Table 12 corroborate our main conclusions: Exchange-listing has a significantly positive effect on the takeover premium while the impact of non-exchange-listing is sometimes negative but marginal in all specifications.

One related concern is that the results might be driven by transactions involving UK targets which constitute 25% of our sample. Benefits from a US cross-listing are lower for UK firms, which are already operating in high corporate governance environment and active takeover market. Consequently, the cross-listing effect might be insignificant for UK firms. Moreover, according to Rossi and Volpin (2004), UK (and US) targets obtain significantly higher takeover premiums than other countries. This may influence the results because of the relatively higher concentration of UK firms in our sample. We replicate our analysis excluding these firms and find similar results (Panel B of Table 12).

*** *Insert Table 12 about here* ***

In summary, the results of our robustness tests confirm our predictions that exchange-listing has a positive effect on the takeover likelihood and premium, while the impact of non-exchange-listing is marginal.

V. Conclusion

Using an extensive sample of M&As involving non-US targets, we examine target shareholders' gains from a US cross-listing preceding the takeover. While a US listing is expected to reduce controlling shareholders' private benefits owing to increased disclosure and monitoring, it will also increase the value of their stake and allow them to extract a higher premium when selling the company. We investigate this proposition and find that exchange-listed firms do indeed obtain a higher takeover premium as compared to their non-cross-listed peers. This result suggests that divesting shareholders could use a US listing to overcome the constraints prevailing in their domestic markets and to reduce the cost of transferring control.

Examining the impact of home-country regulation, we find that exchange-listed targets from countries with weak legal protection obtain higher premiums. This result is consistent with the bonding hypothesis, that is, the benefit from cross-listing on US exchanges as measured by the takeover premium is higher for firms from countries with poorer investor protection. Acquirers perceive cross-listing on US exchanges as a bonding mechanism to improve corporate governance and are therefore willing to pay more to acquire less risky firms with higher growth prospects relative to their non-cross-listed peers.

Furthermore, we find that cross-listed firms are more likely takeover targets, supporting the idea that cross-listing increases the attractiveness of foreign firms on the market for corporate control. This result is attributed to the various benefits gained from cross-listing on US markets: better corporate governance, enhanced visibility, improved transparency, and lower information asymmetry vis-à-vis acquirers. Consequently, cross-listing increases the exposure of foreign firms to international markets, thus attracting a wider range of potential acquirers. This evidence is robust to different specifications and to correction of the self-selection bias. Additional robustness tests, including survival analysis, further support this finding.

Finally, we investigate the impact of the adoption of SOX on M&As, an area still unexplored. While we find no evidence supporting that SOX affects the acquisition likelihood of cross-listed firms, our data show that exchange-listed firms obtain significantly higher takeover premiums after SOX. This result is consistent with the proposition that these firms—since they conform to SOX’s stringent disclosure and governance rules and therefore have better internal control systems—would require lower acquisition costs (in due diligence, post-acquisition restructuring, etc.), thus increasing expected synergies and the premium paid by the acquirer. Acquirers seem to value SOX-compliance and are willing to pay more to acquire a transparent firm with reduced uncertainty. For target shareholders, whether this higher premium outweighs the compliance costs remains unclear and requires further research.

Appendix 1 Variable Definitions and Sources

Variables	Definition	Source
Firm-level variables		
Size	Log market value of the target 4 weeks before the M&A's announcement, or at the beginning of the firm-year for panel regressions (in US\$ million)	SDC Worldscope
Growth	Sales growth, measured by the 3-year geometric average of annual growth in sales	SDC Worldscope
Leverage	The ratio of total debt to total assets	Worldscope
Tobin's Q	(book value of assets + market capitalization - book value of equity)/book value of assets	Worldscope
Foreign sales	The ratio of foreign sales to total sales	Worldscope
ROE	The ratio of net income to book value of equity	Worldscope
FCF	The ratio of free cash-flows to total assets	Worldscope
Home country variables		
Common law	Dummy = 1 if the country follows the English Common Law; and 0 otherwise	La Porta et al. (1998)
Anti-self-dealing	An index that measures the degree of investor protection against "managerial self-dealing"	Djankov et al. (2008)
Accounting standards Index	Created by the Center for International Financial Analysis and Research to rate the quality of annual reports on their disclosure of accounting information	La Porta et al. (1998)
Emerging	Dummy = 1 if the firm is originated from an emerging or developing country, and 0 otherwise	World Economic Outlook classification
M&A transaction variables		
Acquisition premium	Natural logarithm of the bid price as a % of the closing price of the target 4 weeks before the announcement, and winsorized at the 1 st and 99 th %	SDC
Acquirer MB	Equity market-to-book ratio of the bidder computed 4 weeks before the announcement	SDC
Contested bid	Dummy = 1 if there are multiple bidders, and 0 otherwise	SDC
Cross-border	Dummy = 1 if the target country differs from the acquirer country, and 0 otherwise	SDC
Hostile	Dummy = 1 if the transaction is classified as unsolicited or hostile, and 0 otherwise	SDC
Tender offer	Dummy = 1 if the takeover involves a tender offer, and 0 otherwise	SDC
Toehold	% of target equity owned by the acquirer prior to acquisition	SDC
Cross-listing variables		
Exchange-listed	Dummy = 1 if the firm is cross-listed via exchange-listed ADRs (Levels II and III) or direct listing (common shares), and 0 otherwise	Depository banks, CRSP, Exchanges web sites
Non-exchange-listed	Dummy = 1 if the firm is cross-listed via non-exchange-listed ADRs (Level I or Rule 144a), and 0 otherwise	Depository banks, CRSP, Exchanges web sites

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FIGURE 1

Total Cross-Listings and Acquisitions by Country

This figure exhibits the number of total cross-listings made by foreign firms in the US over the 1990-2008 period in declining rank for the top 20 countries. We include all cross-listing types: exchange and non-exchange ADRs and direct cross-listing. For each country, we report the proportion of firms acquired over the same period.

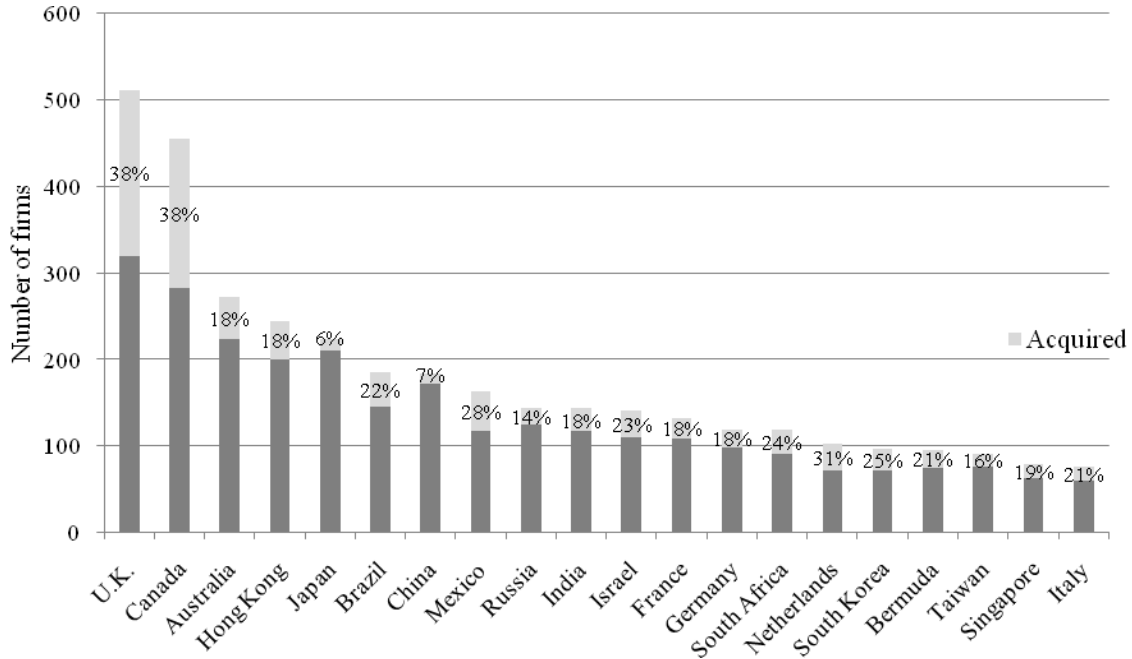


TABLE 1

Cross-Listed Firms and Their Acquisition Status

This table presents the proportion of acquisitions among cross-listed firms according to the cross-listing type. The entire universe of cross-listed firms between 1990 and 2008 (as reported by the main depository banks) is considered, whether ADRs are sponsored or not, provided that the listing date and country of origin are available. The Exchange listing type includes Level II and III ADR listings and direct listing.

<i>Panel A Acquisition status of cross-listed firms by listing type over the entire period</i>						
Listing type	Number of observations	% of total	Acquired over the entire period		Acquired within 5 years from the cross-listing	
			Number	%	Number	%
Exchange	1 944	40%	576	29.6%	336	17.3%
Level I	2 124	43%	341	16.1%	174	8.2%
Rule 144a	831	17%	188	22.6%	85	10.2%
Total	4 899	100%	1 105	22.6%	595	12.2%

<i>Panel B Acquisition status of cross-listed firms by year and listing type</i>									
Listing type	Exchange			Level I			Rule 144a		
Listing year	Number of listings	Acquired over the entire period		Number of listings	Acquired over the entire period		Number of listings	Acquired over the entire period	
		Number	%		Number	%		Number	%
1990	52	14	27	71	40	56	19	12	63
1991	67	28	42	67	23	34	20	5	25
1992	88	35	40	59	29	49	26	9	35
1993	147	57	39	87	20	23	31	8	26
1994	148	59	40	131	42	32	129	41	32
1995	134	46	34	101	27	27	57	16	28
1996	173	64	37	107	34	32	76	25	33
1997	187	61	33	96	22	23	67	24	36
1998	132	40	30	83	15	18	46	12	26
1999	102	34	33	83	19	23	43	6	14
2000	189	59	31	74	16	22	23	6	26
2001	85	24	28	86	15	17	20	3	15
2002	46	10	22	75	10	13	17	2	12
2003	55	10	18	48	7	15	29	2	7
2004	69	15	22	78	11	14	25	6	24
2005	82	14	17	46	2	4	47	6	13
2006	69	5	7	53	6	11	51	2	4
2007	87	1	1	59	3	5	64	3	5
2008	32	0	0	720	0	0	41	0	0
Total	1944	576	30%	2124	341	16%	831	188	23%

TABLE 1 (Continued)

<i>Panel C Acquisition status of cross-listed firms by country and listing type</i>									
Listing type	Exchange			Level I			Rule 144a		
Country	Number of listings	Acquired over the entire period		Number of listings	Acquired over the entire period		Number of listings	Acquired over the entire period	
		Number	%		Number	%		Number	%
Argentina	29	14	48%	11	5	45%	17	3	18%
Australia	37	10	27%	225	38	17%	10	1	10%
Austria	0	0	0%	31	10	32%	6	3	50%
Bahamas	3	1	33%	0	0	0%	0	0	0%
Bahrain	0	0	0%	0	0	0%	2	0	0%
Belgium	7	4	57%	21	1	5%	1	0	0%
Bermuda	87	20	23%	7	0	0%	1	0	0%
Bolivia	0	0	0%	5	1	20%	0	0	0%
Brazil	52	17	33%	88	18	20%	45	5	11%
British Virgin Islands	3	0	0%	0	0	0%	1	0	0%
Canada	455	172	38%	0	0	0%	0	0	0%
Cayman Islands	20	2	10%	0	0	0%	1	0	0%
Channel Islands	0	0	0%	0	0	0%	2	0	0%
Chile	38	17	45%	4	0	0%	8	2	25%
China	104	8	8%	69	4	6%	10	0	0%
Colombia	3	1	33%	8	2	25%	10	4	40%
Croatia	0	0	0%	0	0	0%	4	1	25%
Cyprus	0	0	0%	1	0	0%	1	0	0%
Czech Republic	2	0	0%	1	1	100%	5	3	60%
Denmark	7	2	29%	17	1	6%	1	1	100%
Dominican Republic	0	0	0%	1	0	0%	0	0	0%
Ecuador	0	0	0%	2	0	0%	3	1	33%
Egypt	0	0	0%	3	1	33%	13	2	15%
Estonia	0	0	0%	0	0	0%	2	0	0%
Finland	5	2	40%	23	2	9%	6	1	17%
France	33	10	30%	85	8	9%	14	6	43%
Georgia	0	0	0%	0	0	0%	6	0	0%
Germany	34	8	24%	75	11	15%	10	2	20%
Ghana	1	1	100%	0	0	0%	1	1	100%
Greece	9	3	33%	17	0	0%	7	0	0%
Hong Kong	32	9	28%	209	35	17%	3	0	0%
Hungary	1	0	0%	6	0	0%	9	3	33%
India	19	1	5%	4	0	0%	120	25	21%
Indonesia	6	2	33%	9	3	33%	3	0	0%
Ireland	36	13	36%	24	3	13%	4	0	0%
Israel	124	32	26%	14	0	0%	3	0	0%
Italy	22	11	50%	38	3	8%	16	2	13%
Jamaica	0	0	0%	4	2	50%	0	0	0%
Japan	17	3	18%	199	9	5%	7	1	14%
Jersey	1	0	0%	0	0	0%	0	0	0%
Jordan	1	1	100%	2	0	0%	1	0	0%
Kazakhstan	0	0	0%	1	0	0%	11	0	0%
Korea (South)	19	6	32%	7	1	14%	70	17	24%
Kuwait	0	0	0%	0	0	0%	1	0	0%
Latvia	0	0	0%	0	0	0%	1	1	100%

Panel C (Continued) Acquisition status of cross-listed firms by country and listing type

Listing type	Exchange			Level I			Rule 144a		
Country	Number of listings	Acquired over the entire period		Number of listings	Acquired over the entire period		Number of listings	Acquired over the entire period	
		Number	%		Number	%		Number	%
Lebanon	0	0	0%	0	0	0%	4	0	0%
Lithuania	0	0	0%	0	0	0%	3	0	0%
Luxembourg	15	9	60%	9	1	11%	4	1	25%
Malawi	0	0	0%	0	0	0%	1	0	0%
Malaysia	0	0	0%	17	4	24%	0	0	0%
Malta	0	0	0%	0	0	0%	1	1	100%
Marshall Islands	27	0	0%	0	0	0%	0	0	0%
Mexico	57	18	32%	66	15	23%	40	13	33%
Morocco	0	0	0%	0	0	0%	1	0	0%
Netherlands	61	22	36%	36	9	25%	6	1	17%
New Zealand	13	6	46%	26	0	0%	0	0	0%
Nigeria	0	0	0%	0	0	0%	3	0	0%
Norway	10	4	40%	38	13	34%	6	3	50%
Oman	0	0	0%	0	0	0%	1	0	0%
Pakistan	0	0	0%	0	0	0%	8	0	0%
Panama	3	0	0%	2	0	0%	0	0	0%
Peru	3	2	67%	5	0	0%	6	1	17%
Philippines	3	1	33%	8	1	13%	13	4	31%
Poland	0	0	0%	4	1	25%	17	6	35%
Portugal	3	2	67%	18	1	6%	4	2	50%
Puerto Rico	4	1	25%	0	0	0%	0	0	0%
Qatar	0	0	0%	0	0	0%	2	0	0%
Romania	5	1	20%	0	0	0%	1	0	0%
Russia	6	1	17%	64	11	17%	74	8	11%
Singapore	9	5	56%	66	10	15%	3	0	0%
Slovakia	0	0	0%	1	0	0%	0	0	0%
Slovenia	0	0	0%	0	0	0%	1	1	100%
South Africa	17	6	35%	83	14	17%	18	8	44%
South Korea	2	0	0%	0	0	0%	4	3	75%
Spain	9	3	33%	34	5	15%	5	3	60%
Sri Lanka	0	0	0%	0	0	0%	2	0	0%
Sweden	17	7	41%	47	11	23%	6	3	50%
Switzerland	28	7	25%	42	2	5%	6	1	17%
Taiwan	13	1	8%	1	0	0%	77	14	18%
Thailand	0	0	0%	22	4	18%	3	0	0%
Trinidad	0	0	0%	1	0	0%	0	0	0%
Tunisia	0	0	0%	0	0	0%	1	0	0%
Turkey	2	2	100%	22	0	0%	23	7	30%
Ukraine	0	0	0%	11	1	9%	5	0	0%
United Arab Emirates	0	0	0%	0	0	0%	1	0	0%
United Kingdom	208	96	46%	268	76	28%	35	20	57%
Uruguay	0	0	0%	0	0	0%	1	0	0%
Venezuela	5	3	60%	22	3	14%	8	3	38%
Zimbabwe	0	0	0%	0	0	0%	1	0	0%
Total	1788	576	32%	2124	341	16%	831	188	23%

TABLE 2 Determinants of the Takeover Likelihood

This table reports logistic regressions for a sample of 6,104 non-US firms over the 1990-2008 period, for a total of 43,146 firm-year observations. The dependent variable equals one if the acquisition occurs during the firm-year. Explanatory variables related to the **cross-listing** are: *Exchange-listed*, a dummy variable to identify ADRs listed on an organized exchange (Level II and III) and direct listings via common shares; *Non-exchange-listed*, a dummy variable to identify ADRs listed over the counter (Level I) or via Rule 144a. **Firm-level variables**, measured at the beginning of the year, are: *Size*, the logarithm of market capitalization; *Growth*, the 3-year growth rate of sales; *Leverage*, the ratio of total debt to total assets; *Tobin's Q*, computed as (book value of assets + market capitalization - book value of equity)/book value of assets; *Foreign sales*, the ratio of foreign sales to total sales; *ROE*, the ratio of net income to book value of equity; *FCF*, the ratio of free cash-flows to total assets. **Country-level variables** are: *Emerging*, equals one if the firm is originated from an emerging country; *Anti-self-dealing*, an index from Djankov et al. (2008) measuring the degree of legal protection of minority shareholders; *Diff anti-SD_(US-Target)*, the difference in the anti-self-dealing levels between the US and target countries; *Accounting*, an index from Laporta et al. (1998) measuring the quality of accounting standards; *Common law*, a dummy variable for the legal system (common vs. civil law). *Lambda* is the inverse Mill's ratio in the Heckman model. Year, region and industry dummies (at one-digit SIC code level) are included in all regressions. Standard errors are robust and corrected for clustering at the firm level. z-statistics are reported in parentheses.

	Logit (1)	Logit (2)	Logit (3)	Logit (4)	Heckman correction		
					Probit	Logit (5)	Logit (6)
Exchange-listed	0.196 ** (1.94)	0.340 *** (3.05)	0.355 *** (3.25)	0.355 *** (3.26)		0.298 *** (2.85)	0.361 *** (3.34)
Non-exchange-listed	0.047 (0.49)	0.092 (0.94)	0.121 (1.25)	0.121 (1.25)		0.099 (1.02)	0.129 (1.32)
Size		-0.117 ** (-1.94)	-0.119 ** (-2.1)	-0.119 ** (-2.09)	0.330 *** (3.12)		-0.075 (-0.78)
Growth		-0.509 *** (-6.22)	-0.540 *** (-6.67)	-0.540 *** (-6.67)	-0.003 (-0.25)		-0.540 *** (-6.67)
Leverage		0.003 *** (7.16)	0.004 *** (7.14)	0.004 *** (7.14)	0.000 ** (2.04)		0.004 *** (6.95)
Tobin's Q		-0.188 *** (-6.84)	-0.215 *** (-7.43)	-0.215 *** (-7.43)			-0.215 *** (-7.42)
Foreign sales		-0.000 (-0.38)	-0.002 *** (-2.64)	-0.002 *** (-2.64)	0.001 *** (30.81)		-0.002 ** (-2.19)
ROE		0.003 (0.82)	0.002 (0.82)	0.002 (0.82)			0.002 (0.82)
FCF		-0.003 (-1.33)	-0.003 (-1.45)	-0.003 (-1.45)			-0.003 (-1.45)
Emerging			-1.166 *** (-11.62)	-1.166 *** (-11.61)			-1.159 *** (-11.46)
Anti-self-dealing			0.830 *** (10.56)	0.830 *** (10.15)			0.830 *** (10.56)
Diff anti-SD _(US-Target) × Exchange-listed				-0.004 (-0.01)			
Diff anti-SD _(US-Target) × Non-exchange-listed				-0.002 (-0.01)			
Accounting					-0.011 ** (-2.33)		
Common law					0.132 * (1.67)		
Lambda						0.564 *** (2.77)	0.224 (0.56)
Pseudo R ²	4.12%	5.15%	6.60%	6.60%	11.80%	4.18%	6.61%
χ^2	618	739	957	958	1 657	627	958
Prob > χ^2	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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

TABLE 3

Differences between Exchange-Listed, Non-Exchange-Listed and Non-Cross-Listed Target Firms

This table reports the means and medians of the different variables for exchange and non-exchange-listed targets and for the non-cross-listed targets. The sample consists of 3,413 non-US targets, 447 of which were cross-listed in the US at the moment of the acquisition, over the 1990-2008 period. *Exchange-listed* are firms listed on an organized exchange via Levels II or III ADRs or via direct listings by common shares; *Non-exchange-listed* are firms listed via Level I or Rule 144a ADRS. The t-test statistic for differences in means and Wilcoxon-z statistic for differences in medians between the 3 subsamples are reported in the right-hand side of the table. Variables at the **firm level** are: *Target size*, the logarithm of the target's market capitalization four weeks before the M&A's announcement; *Growth*, the 3-year growth rate of the target's sales, measured at the year-end preceding the announcement. Variables at the **transaction level** are: the natural logarithm of the takeover premium, measured as the percentage of the offer price to the closing price of the target four weeks before the M&A's announcement. *Cross-border*, a dummy variable that equals 1 if the target country differs from the acquirer country and 0 otherwise; *Tender offer*, a dummy variable that equals 1 if the deal involves a tender offer and 0 otherwise; *Contested bid*, a dummy variable that equals 1 if the number of bidders is greater than 1 and 0 otherwise; *Hostile*, a dummy variable that equals 1 if the transaction is classified as hostile or unsolicited and zero otherwise; *Toehold*, the percentage of *the* target's shares owned by the acquirer at the announcement. Variables at the **country level** are: *Anti-self-dealing*, an index from Djankov et al. (2008) measuring the degree of legal protection of minority shareholders; *Common law*, a dummy variable to identify the legal origin (common versus civil law); *Accounting*, an index retrieved from La Porta et al. (1998) and measuring the quality of accounting standards.

	All firms	Exchange-listed	Non-exchange-listed	Non-cross-listed	Exchange vs. Non-exchange	Exchange vs. Non-cross-listed	Non-exchange vs. non-cross-listed
Variables	Mean (Median)	Mean (Median)	Mean (Median)	Mean (Median)	t-statistic (Wilcoxon z)	t-statistic (Wilcoxon z)	t-statistic (Wilcoxon z)
Log Premium	0.214 (0.214)	0.302 (0.277)	0.206 (0.207)	0.208 (0.208)	3.72 *** (3.99) ***	4.75 *** (4.64) ***	-0.10 (-0.53)
Target size	5.00 (4.87)	6.81 (6.81)	6.67 (6.85)	4.74 (4.66)	0.71 (0.51)	16.38 *** (14.16) ***	14.09 *** (13.63) ***
Growth	14.60 (7.09)	18.88 (7.29)	6.60 (4.91)	14.92 (7.38)	3.95 *** (2.97) ***	1.34 (0.86)	-5.00 *** (-3.41) ***
Cross-border	0.35 (0.00)	0.58 (1.00)	0.45 (0.00)	0.32 (0.00)	2.73 *** (2.71) ***	7.61 *** (7.54) ***	3.93 *** (3.92) ***
Tender offer	0.58 (1.00)	0.51 (1.00)	0.62 (1.00)	0.59 (1.00)	-2.49 ** (-2.48) **	-2.35 ** (-2.35) **	1.03 (1.03)
Contested bid	0.07 (0.00)	0.13 (0.00)	0.08 (0.00)	0.06 (0.00)	1.75 * (1.76) *	2.88 *** (3.81) ***	0.93 (1.03)
Hostile	0.05 (0.00)	0.09 (0.00)	0.15 (0.00)	0.04 (0.00)	-2.07 ** (-2.04) **	2.67 *** (3.82) ***	4.91 *** (8.31) ***
Toehold	9.66 (0.00)	6.17 (0.00)	11.86 (0.00)	9.74 (0.00)	-3.99 *** (-4.88) ***	-3.51 *** (-3.90) ***	1.92 * (2.48) **
Anti-self-dealing	0.66 (0.64)	0.62 (0.64)	0.66 (0.76)	0.66 (0.64)	-1.87 * (-2.39) **	-2.50 ** (-2.48) **	0.06 (0.27)
Common law	0.56 (1.00)	0.66 (1.00)	0.58 (1.00)	0.55 (1.00)	1.79 * (1.78) *	3.11 *** (3.11) ***	0.85 (0.85)
Accounting	71.22 (74)	70.69 (74)	70.01 (74)	71.35 (74.00)	-0.78 (-0.84)	-1.09 (-1.51)	-2.02 ** (-0.61)
N	3413	212	235	2966			

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

TABLE 4
The Impact of Cross-Listing on the Takeover Premium

This table reports OLS regressions for a sample of 3,413 non-US targets, 447 of which were cross-listed in the US at the moment of the acquisition, over the 1990-2008 period. The dependent variable is the natural logarithm of the takeover premium, measured as the percentage of the offer price to the closing price of the target four weeks before the M&A's announcement. Explanatory variables related to the **cross-listing** are: *Exchange-listed*, a dummy variable to identify ADRs listed on an organized exchange (Level II and III) and direct listings via common shares; *Non-exchange-listed*, a dummy variable to identify ADRs listed over the counter (Level I) or via Rule 144a. Explanatory variables at the **country level** are: *Emerging*, equals 1 for target firms originated from emerging countries and 0 otherwise; *Anti-self-dealing*, an index from Djankov et al. (2008) measuring the degree of legal protection of minority shareholders; *Diff anti-SD*_(Acquirer-Target); *Diff anti-SD*_(US-Target), the differences in anti-self-dealing levels between the acquirer and target countries and between the US and the target country, respectively. Control variables at the **firm level** are: *Target size*, the logarithm of the target's market capitalization four weeks before the M&A's announcement; *Growth*, the 3-years growth rate of the target's sales, measured at the year-end preceding the announcement. Control variables at the **transaction level** are: *Cross-border*, a dummy variable that equals 1 if the target country differs from the acquirer country and 0 otherwise; *Tender offer*, a dummy variable that equals 1 if the deal involves a tender offer and 0 otherwise; *Contested bid*, a dummy variable that equals 1 if the number of bidders is greater than 1 and 0 otherwise; *Hostile*, a dummy variable that equals 1 if the transaction is classified as hostile or unsolicited and 0 otherwise; *Toehold*, the percentage of target's shares owned by the acquirer at the announcement; *Acquirer MB*, the market-to-book ratio of the acquirer four weeks before the announcement. Year and industry dummies (at one-digit SIC code level) are included in all regressions but are not reported. Robust standard errors are used and corrected for clustering at the country level. t-statistics are reported in parentheses.

	(1)	(2)	(3)	(4)	(5)
Exchange-listed	0.109 *** (2.87)	0.097 *** (2.97)	0.086 ** (2.49)	0.103 *** (3.34)	0.089 *** (4.83)
Non-exchange-listed	0.019 (1.11)	0.010 (0.62)	0.006 (0.2)	0.000 (0.03)	0.003 (0.28)
Target Size	-0.010 * (-1.74)	-0.015 *** (-3.13)	-0.010 * (-1.73)	-0.012 ** (-2.69)	-0.012 ** (-2.63)
Growth	0.001 ** (2.02)	0.000 ** (2.51)	0.000 (1.29)	0.000 ** (2.41)	0.000 ** (2.48)
Cross-border		0.074 *** (4.64)	0.084 *** (3.83)	0.076 *** (4.83)	0.075 *** (5)
Tender offer		0.141 *** (8.44)	0.086 *** (4.11)	0.135 *** (7.33)	0.132 *** (7.16)
Contested bid		0.101 *** (4.62)	0.174 *** (5.07)	0.101 *** (4.86)	0.101 *** (4.85)
Hostile		0.061 *** (3.64)	0.035 (0.68)	0.057 *** (3.38)	0.059 *** (3.61)
Toehold		-0.170 *** (-4.49)	-0.223 *** (-4.72)	-0.158 *** (-4.94)	-0.163 *** (-4.94)
Acquirer MB			0.000 (-1.26)		
Emerging				-0.000 (-0.01)	
Anti-self-dealing				0.077 * (1.72)	0.090 * (1.84)
Diff anti-SD _(Acquirer-Target)				-0.012 (-0.37)	
Diff anti-SD _(US-Target) × Exchange-listed					0.281 ** (2.52)
Diff anti-SD _(US-Target) × Non-exchange-listed					-0.098 ** (-2.06)
R ²	6.11%	15.67%	18.20%	16.24%	16.49%
N observations	3413	3408	983	3360	3396

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

TABLE 5 SOX and the Takeover Likelihood

This table reports logistic regressions for a sample of 6,104 non-US firms over the 1990-2008 period, for a total of 43,146 firm-year observations. The dependent variable takes the value of one if the acquisition occurs during the firm-year. Explanatory variables related to the **cross-listing** are: *Exchange-listed*, a dummy variable to identify ADRs listed on an organized exchange (Level II and III) and direct listings via common shares; *Non-exchange-listed*, a dummy variable to identify ADRs listed over the counter (Level I) or via Rule 144a. **Firm-level variables**, all measured at the beginning of the year, are: *Size*, the logarithm of market capitalization; *Growth*, the 3-year growth rate of sales; *Leverage*, the ratio of total debt to total assets; *Tobin's Q*, computed as (book value of assets + market capitalization - book value of equity)/book value of assets; *Foreign sales*, the ratio of foreign sales to total sales; *ROE*, the ratio of net income to book value of equity; *FCF*, the ratio of free cash-flows to total assets. **Country-level variables** are: *Emerging*, equals 1 for firms originated from emerging countries and 0 otherwise; *Anti-self-dealing*, an index from Djankov et al. (2008) measuring the degree of legal protection of minority shareholders; *Diff anti-SD*_(US-Target), the difference in the anti-self-dealing levels between the US and target countries. **SOX** is a dummy variable that takes the value of 1 after 2002. Year, region, and industry dummies (at one-digit SIC code level) are included in all regressions. Standard errors are robust and corrected for clustering at the firm level. z-statistics are reported in parentheses.

	Entire Period : 1990-2008		Pre-SOX 1990-2001	Post-SOX 2003-2008
	Logit (1)	Logit (2)	Logit (3)	Logit (4)
Exchange-listed	0.242 *	0.348 ***	0.314 *	0.328 **
	(1.72)	(3.17)	(1.83)	(1.94)
Non-exchange-listed	-0.019	0.120	0.081	0.233
	(-0.14)	(1.23)	(0.55)	(1.53)
Size	-0.128 **	-0.121 **	-0.349 *	-0.042
	(-2.15)	(-2.13)	(-1.78)	(-0.74)
Growth	-0.538 ***	-0.540 ***	-0.768 ***	-0.401 ***
	(-6.65)	(-6.67)	(-5.24)	(-4.11)
Leverage	0.004 ***	0.004 ***	0.003 *	0.003 ***
	(7.2)	(7.1)	(1.79)	(4.76)
Tobin's Q	-0.215 ***	-0.215 ***	-0.250 ***	-0.168 ***
	(-7.43)	(-7.42)	(-5.03)	(-4.32)
Foreign sales	-0.002 ***	-0.002 ***	-0.003 ***	-0.001
	(-2.63)	(-2.63)	(-2.8)	(-0.61)
ROE	0.002	0.002	0.003	0.001
	(0.82)	(0.83)	(0.81)	(0.2)
FCF	-0.003	-0.003	-0.005	-0.011 *
	(-1.44)	(-1.46)	(-1.05)	(-1.66)
Emerging	-1.167 ***	-1.169 ***	-1.370 ***	-1.026 ***
	(-11.63)	(-11.63)	(-6.76)	(-7.97)
Anti-self-dealing	0.830 ***	0.844 ***	0.968 ***	0.543 ***
	(10.57)	(10.54)	(7.76)	(3.73)
Diff anti-SD _(US-Target) × Exchange-listed			-0.352	-0.080
			(-0.51)	(-0.12)
Diff anti-SD _(US-Target) × Non-exchange-listed			0.124	-0.132
			(0.25)	(-0.26)
SOX	2.518 ***	2.556 **		
	(4.29)	(4.35)		
SOX × Exchange-listed	0.263			
	(1.33)			
SOX × Non-exchange-listed	0.314			
	(1.51)			
SOX × Exchange-listed × Diff anti-SD _(US-Target)		0.423		
		(0.62)		
SOX × Non-exchange-listed × Diff anti-SD _(US-Target)		0.289		
		(0.52)		
Pseudo R ²	6.63%	6.61%	9.94%	3.92%
χ ²	961	960	569	264
Prob > χ ²	0.000	0.000	0.000	0.000

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

TABLE 6
The Acquisition Premium before and after the Enactment of SOX

This table compares mean and median acquisition premiums before and after the enactment of SOX for both exchange and non-exchange-listed targets. The acquisition premium is measured by the natural logarithm of the percentage of the offer price to the closing price of the target four weeks before the M&A's announcement. The pre-SOX period consists of six years before the enactment year (2002), i.e. between 1996 and 2001; while the post-SOX period consists of the six years following the enactment year, i.e. the period between 2003 and 2008. The significance of the difference in means and medians is tested using the two-tailed t-test and Wilcoxon-z test respectively.

	Exchange-listed targets	Non-exchange-listed targets	t-stat / Wilcoxon-z
Entire period : 1996-2008 (including 2002)			
N	197	210	
Mean	0.303	0.199	3.97***
Median	0.279	0.191	3.12***
Pre-SOX 1996-2001			
N	81	99	
Mean	0.291	0.254	0.96
Median	0.285	0.238	1.34
Post-SOX 2003-2008			
N	105	98	
Mean	0.312	0.140	5.06***
Median	0.273	0.144	4.14***
t-stat	-0.55	3.33***	
Wilcoxon-z	0.15	2.77***	

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

TABLE 7 SOX and the Takeover Premium

This table reports OLS regressions for a sample of 3,413 non-US targets, 447 of which were cross-listed in the US at the moment of the acquisition, over the 1990-2008 period. The dependent variable is the natural logarithm of the takeover premium, measured as the percentage of the offer price to the closing price of the target four weeks before the M&A's announcement. Explanatory variables for the **cross-listing** are: *Exchange-listed*, a dummy variable to identify ADRs listed on an organized exchange (Level II and III) and direct listings via common shares; *Non-exchange-listed*, a dummy variable to identify ADRs listed over the counter (Level I) or via Rule 144a. Explanatory variables at the **country level** are: *Anti-self-dealing*, an index from Djankov et al. (2008) measuring the degree of legal protection of minority shareholders; *Diff anti-SD_(US-Target)*, the difference in anti-self-dealing levels between the US and target country. Control variables at the **firm level** are: *Target size*, the logarithm of the target's market capitalization four weeks before the M&A's announcement; *Growth*, the 3-year growth rate of the target's sales, measured at the year-end preceding the announcement. Control variables at the **transaction level** are: *Cross-border*, a dummy variable that equals 1 if the target country differs from the acquirer country and 0 otherwise; *Tender offer*, a dummy variable that equals 1 if the deal involves a tender offer and 0 otherwise; *Contested bid*, a dummy variable that equals 1 if the number of bidders is greater than 1 and 0 otherwise; *Hostile*, a dummy variable that equals 1 if the transaction is classified as hostile or unsolicited and 0 otherwise; *Toehold*, the percentage of target's shares owned by the acquirer at the announcement. Additional **dummy variables** include: *SOX*; which is equal to 1 for mergers announced after August 29, 2002. Year and industry dummies (at one-digit SIC code level) are included in all regressions but are not reported. Robust standard errors are used and corrected for clustering at the country level. t-statistics are reported in parentheses.

	Entire Period	1990-2008	Pre-SOX	Post-SOX
	(1)	(2)	1990-2001	2003-2008
	(1)	(2)	(3)	(3)
Exchange-listed	0.058 ** (1.92)	0.054 * (1.71)	0.089 *** (5.67)	0.104 *** (3.09)
Non-exchange-listed	0.027 (1.22)	0.023 (1.03)	0.044 * (2.01)	-0.021 (-1.06)
Target size	-0.013 ** (-2.69)	-0.012 ** (-2.68)	-0.022 *** (-6.03)	-0.003 (-0.53)
Growth	0.000 ** (2.52)	0.000 ** (2.46)	0.000 ** (2.27)	0.000 * (1.91)
Cross-border	0.070 *** (4.79)	0.071 *** (4.98)	0.057 *** (3.91)	0.082 *** (4.73)
Tender offer	0.136 *** (7.62)	0.136 *** (7.71)	0.159 *** (7.38)	0.109 *** (5.08)
Contested bid	0.101 *** (4.48)	0.098 *** (4.69)	0.092 *** (2.87)	0.100 ** (2.35)
Hostile	0.060 *** (3.81)	0.060 *** (3.86)	0.052 *** (2.79)	0.081 * (1.95)
Toehold	-0.158 *** (-4.98)	-0.156 *** (-4.86)	-0.120 ** (-2.06)	-0.178 *** (-5.5)
Anti-self-dealing	0.083 ** (2.04)	0.083 * (1.96)	0.103 ** (2.40)	0.059 (1.12)
Diff anti-SD _(US-Target) × Exchange-listed			0.243 *** (2.94)	0.276 * (1.84)
Diff anti-SD _(US-Target) × Non-exchange-listed			-0.137 (-1.64)	-0.053 (-0.98)
SOX	-0.028 (-0.46)	-0.025 (-0.39)		
SOX × Exchange-listed	0.090 ** (2.66)	0.108 ** (2.64)		
SOX × Non-exchange-listed	-0.036 (-1.18)	-0.039 (-1.19)		
SOX × Exchange-listed × Diff anti-SD _(US-Target)		0.211 * (1.81)		
SOX × Non-exchange-listed × Diff anti-SD _(US-Target)		-0.063 (-0.8)		
R ²	16.12%	16.35%	18.07%	11.98%
N observations	3396	3396	1667	1729

TABLE 8 Cox Regressions : *Determinants of the Takeover Hazard*

This table reports Cox proportional hazard regressions for a sample of 6,104 non-US firms over the 1990-2008 period, for a total of 43,146 firm-year observations. The dependent variable equals one if the acquisition occurs during the firm-year. Explanatory variables related to the **cross-listing** are: *Exchange-listed*, a dummy variable to identify ADRs listed on an organized exchange (Level II and III) and direct listings via common shares; *Non-exchange-listed*, a dummy variable to identify ADRs listed over the counter (Level I) or via Rule 144a. **Firm-level variables**, measured at the beginning of the year, are: *Size*, the logarithm of market capitalization; *Growth*, the 3-year growth rate of sales; *Leverage*, the ratio of total debt to total assets; *Tobin's Q*, computed as (book value of assets + market capitalization - book value of equity)/book value of assets; *Foreign sales*, the ratio of foreign sales to total sales; *ROE*, the ratio of net income to book value of equity; *FCF*, the ratio of free cash-flows to total assets. **Country-level variables** are: *Anti-self-dealing* is an index from Djankov et al. (2008) measuring the degree of legal protection of minority shareholders. The table reports coefficient estimates \hat{a} (which are equal to the logarithm of hazard ratios). Standard errors are robust and corrected for clustering at the firm level. z-statistics are reported in parentheses.

	(1)	(2)	(3)
Exchange-listed	0.370 *** (3.98)	0.474 *** (4.82)	0.492 *** (5.02)
Non-exchange-listed	0.145 (1.47)	0.116 (1.18)	0.134 (1.36)
Size		-0.023 (-0.55)	-0.015 (-0.38)
Growth		-0.735 *** (-10.06)	-0.732 *** (-10.17)
Leverage		0.003 *** (8.15)	0.003 *** (8.08)
Tobin's Q		-0.178 *** (-7.62)	-0.177 *** (-7.61)
Foreign sales		0.000 *** (2.79)	0.000 ** (2.37)
ROE		0.002 (0.59)	0.002 (0.60)
FCF		-0.002 (-1.42)	-0.002 (-1.41)
Anti-self-dealing			0.323 *** (3.58)
Log likelihood	-16 661	-16 520	-16 514
χ^2	17	243	268
Prob > χ^2	0.000	0.000	0.000

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

TABLE 9 The Takeover Likelihood : Developed versus Emerging Countries

This table reports logistic regressions for the takeover likelihood for both developed and emerging countries. The sample of developed countries includes 4,421 non-US firms while emerging countries includes 1,683 firms over the 1990-2008 period. The dependent variable takes the value of one if the acquisition occurs during the firm-year. Explanatory variables related to the **cross-listing** are: *Exchange-listed*, a dummy variable to identify ADRs listed on an organized exchange (Level II and III) and direct listings via common shares; *Non-exchange-listed*, a dummy variable to identify ADRs listed over the counter (Level I) or via Rule 144a. **Firm-level variables**, all measured at the beginning of the year, are: *Target size*, the logarithm of market capitalization; *Growth*, the 3-year growth rate of sales; *Leverage*, the ratio of total debt to total assets; *Tobin's Q*, computed as (book value of assets + market capitalization - book value of equity)/book value of assets; *Foreign sales*, the ratio of foreign sales to total sales; *ROE*, the ratio of net income to book value of equity; *FCF*, the ratio of free cash-flows to total assets. **Country-level variables** are: *Anti-self-dealing*, an index from Djankov et al. (2008) measuring the degree of legal protection of minority shareholders; *Accounting*, an index from Laporta et al. (1998) measuring the quality of accounting standards; *Common law*, a dummy variable to identify the legal origin (common versus civil law). Year, region and industry dummies (at one-digit SIC code level) are included in all regressions but are not reported. Standard errors are robust and corrected for clustering at the firm level. z-statistics are reported in parentheses.

	Panel A. Developed countries				Panel B. Emerging countries			
	Logit (1)	Logit (2)	Heckman correction		Logit (4)	Logit (5)	Heckman correction	
			Probit (1)	Logit (3)			Probit (2)	Logit (6)
Exchange-listed	0.248 ** (2.16)	0.246 ** (2.14)		0.244 ** (2.11)	1.452 *** (4.23)	1.377 *** (3.65)		1.476 *** (4.28)
Non-exchange-listed	0.107 (0.99)	0.108 (0.99)		0.095 (0.86)	0.310 (1.4)	0.303 (1.34)		0.327 (1.47)
Size	-0.100 * (-1.94)	-0.098 * (-1.89)	0.296 *** (3.04)	-0.134 * (-1.89)	-0.973 ** (-2.55)	-0.980 ** (-2.55)	1.007 *** (4.11)	-0.429 (-1.08)
Growth	-0.565 *** (-6.43)	-0.565 *** (-6.42)	-0.037 (-1.62)	-0.560 *** (-6.36)	-0.545 ** (-1.97)	-0.547 ** (-1.97)	0.033 (1.01)	-0.508 * (-1.85)
Leverage	0.004 *** (6.82)	0.004 *** (6.81)	0.000 * (1.76)	0.004 *** (6.61)	-0.003 (-0.82)	-0.003 (-0.83)	0.001 (1.61)	-0.003 (-0.7)
Tobin's Q	-0.224 *** (-7.1)	-0.224 *** (-7.09)		-0.223 *** (-7.07)	-0.141 * (-1.88)	-0.141 * (-1.88)		-0.131 * (-1.77)
Foreign sales	-0.002 *** (-2.66)	-0.002 *** (-2.66)	0.001 (1.23)	-0.002 *** (-2.78)	0.001 (0.37)	0.001 (0.42)	0.005 *** (3.11)	0.005 (1.32)
ROE	0.003 (0.82)	0.003 (0.82)		0.003 (0.82)	-0.003 (-0.76)	-0.003 (-0.74)		-0.003 (-0.82)
FCF	-0.004 (-1.38)	-0.004 (-1.38)		-0.004 (-1.38)	-0.004 (-0.97)	-0.004 (-0.98)		-0.005 (-1.03)
Anti-self-dealing	0.823 *** (10.32)	0.815 *** (9.83)		0.792 *** (9.14)	1.241 ** (2.19)	1.289 ** (2.20)		0.478 (0.6)
Diff Anti-SD _(US-Target) × Exchange-listed		-0.302 (-0.63)				0.521 (0.40)		
Diff Anti-SD _(US-Target) × Non-exchange-listed		0.049 (0.14)				0.223 (0.20)		
Accounting			-0.028 *** (-4.19)				0.017 * (1.67)	

Common law			0.450 *** (4.34)				-0.728 *** (-3.50)	
Lambda				-0.182 (-0.95)				0.899 (1.61)
Pseudo R ²	5.34%	5.34%	11.06%	5.35%	5.60%	5.61%	19.55%	5.72%
χ^2	667	667	262	668	137	135	297	140
Prob > χ^2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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

TABLE 10 The Takeover Premium : Developed versus Emerging Countries

This table reports OLS regressions on the takeover premium for developed and emerging countries over the 1990-2008 period. The dependent variable is the natural logarithm of the takeover premium, measured as the percentage of the offer price to the closing price of the target four weeks before the M&A's announcement. Explanatory variables related to the **cross-listing** are: *Exchange-listed*, a dummy variable to identify ADRs listed on an organized exchange (Level II and III) and direct listings via common shares; *Non-exchange-listed*, a dummy variable to identify ADRs listed over the counter (Level I) or via Rule 144a. Explanatory variables at the **country level** are: *Anti-self-dealing*, an index from Djankov et al. (2008) measuring the degree of legal protection of minority shareholders; *Diff Anti-SD*, the difference in the anti-self-dealing levels between the US and target countries. Control variables at the **firm level** are: *Target size*, the logarithm of the target's market capitalization four weeks before the M&A's announcement; *Growth*, the 3-year growth rate of the target's sales, measured at the year-end preceding the announcement. Control variables at the **transaction level** are: *Cross-border*, a dummy variable that equals 1 if the target country differs from the acquirer country and 0 otherwise; *Tender offer*, a dummy variable that equals 1 if the deal involves a tender offer and 0 otherwise; *Contested bid*, a dummy variable that equals 1 if the number of bidders is greater than 1 and 0 otherwise; *Hostile*, a dummy variable that equals 1 if the transaction is classified as hostile or unsolicited and 0 otherwise; *Toehold*, the percentage of target's shares owned by the acquirer at the announcement. Year and industry dummies (at one-digit SIC code level) are included in all regressions but are not reported. Robust standard errors are used and corrected for clustering at the country level. t-statistics are reported in parentheses.

	Panel A. Developed countries			Panel B. Emerging countries		
	(1)	(2)	(3)	(4)	(5)	(6)
Exchange-listed	0.098 ** (2.39)	0.086 ** (2.40)	0.077 *** (4.48)	0.234 *** (4.84)	0.203 *** (5.65)	0.222 *** (7.79)
Non-exchange-listed	0.024 (1.32)	0.012 (0.68)	-0.002 (-0.16)	0.020 (0.38)	0.003 (0.07)	0.006 (0.12)
Target Size	-0.008 (-1.24)	-0.013 ** (-2.49)	-0.010 * (-1.94)	-0.035 ** (-2.10)	-0.037 ** (-2.26)	-0.037 ** (-2.26)
Growth	0.001 ** (2.02)	0.001 ** (2.50)	0.001 ** (2.44)	0.000 (0.69)	0.000 (0.91)	0.000 (0.79)
Cross-border		0.068 *** (4.04)	0.069 *** (4.47)		0.115 ** (2.49)	0.111 ** (2.54)
Tender offer		0.143 *** (7.58)	0.134 *** (6.38)		0.119 ** (2.61)	0.126 ** (2.49)
Contested bid		0.108 *** (5.35)	0.107 *** (5.43)		-0.015 (-0.11)	-0.012 (-0.09)
Hostile		0.055 *** (3.65)	0.054 *** (3.53)		0.362 * (1.93)	0.365 * (1.79)
Toehold		-0.203 *** (-4.95)	-0.191 *** (-5.00)		-0.001 (-0.01)	-0.002 (-0.03)
Anti-self-dealing			0.099 * (1.94)			-0.071 (-0.75)
Diff Anti-SD _(US-Target) × Exchange-listed			0.301 ** (2.69)			-0.175 (-0.75)
Diff Anti-SD _(US-Target) × Non-exchange-listed			-0.099 * (-1.81)			-0.107 (-0.80)
R ²	6.11%	16.32%	17.23%	11.81%	19.13%	19.34%
N observations	3066	3062	3062	335	334	334

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

TABLE 11 *The Takeover Premium : Instrumental Variable Estimation*

This table reports the second-stage (instrumented) regressions for a sample of 3,413 non-US targets, 447 of which were cross-listed in the US at the moment of the acquisition, over the 1990-2008 period. The dependent variable is the natural logarithm of the takeover premium, measured as the percentage of the offer price to the closing price of the target four weeks before the M&A's announcement. Explanatory variables at the **country level** are: *Anti-self-dealing*, an index from Djankov et al. (2008) measuring the degree of legal protection of minority shareholders. Control variables at the **firm level** are: *Target size*, the logarithm of the target's market capitalization four weeks before the M&A's announcement; *Growth*, the 3-year growth rate of the target's sales, measured at the year-end preceding the announcement. Control variables at the **transaction level** are: *Cross-border*, a dummy variable that equals 1 if the target country differs from the acquirer country and 0 otherwise; *Tender offer*, a dummy variable that equals 1 if the deal involves a tender offer and 0 otherwise; *Contested bid*, a dummy variable that equals 1 if the number of bidders is greater than 1 and 0 otherwise; *Hostile*, a dummy variable that equals 1 if the transaction is classified as hostile or unsolicited and 0 otherwise; *Toehold*, the percentage of target's shares owned by the acquirer at the announcement. Year and industry dummies (at one-digit SIC code level) are included in all regressions but are not reported. Standard errors are robust and t-statistics are reported in parentheses.

	(1)	(2)
Exchange-listed (fitted)	0,306 *** (2,82)	
Non-exchange-listed (fitted)		0,020 (0,07)
Target Size	-0,019 *** (-3,77)	-0,012 (-1,12)
Growth	0,000 *** (2,81)	0,000 ** (2,26)
Cross-border	0,063 *** (5,17)	0,073 *** (6,52)
Tender offer	0,137 *** (11,2)	0,133 *** (11,81)
Contested bid	0,093 *** (4,39)	0,106 *** (5,04)
Hostile	0,040 (1,49)	0,060 (1,34)
Toehold	-0,156 *** (-5,17)	-0,162 *** (-5,29)
Anti-self-dealing	0,077 *** (3,65)	0,102 *** (3,87)
R ²	12,64%	16,59%
N observations	3142	3169

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

TABLE 12 The Takeover Premium : Country weight adjustment

Panel A reports WLS regressions for a sample of 3,413 non-US targets, 447 of which were cross-listed in the US at the moment of the acquisition, over the 1990-2008 period. Panel B reports OLS regressions for a sub-sample of 2,574 non-UK targets, 344 of which were cross-listed in the US at the acquisition. The dependent variable is the natural logarithm of the takeover premium, measured as the percentage of the offer price to the closing price of the target four weeks before the M&A's announcement. Explanatory variables related to the **cross-listing** are: *Exchange-listed*, a dummy variable to identify ADRs listed on an organized exchange (Level II and III) and direct listings via common shares; *Non-exchange-listed*, a dummy variable to identify ADRs listed over the counter (Level I) or via Rule 144a. Explanatory variables at the **country level** are: *Anti-self-dealing*, an index from Djankov et al. (2008) measuring the degree of legal protection of minority shareholders; *Diff Anti-SD*, the difference in the anti-self-dealing levels between the US and target countries. Control variables at the **firm level** are: *Target size*, the logarithm of the target's market capitalization four weeks before the M&A's announcement; *Growth*, the 3-year growth rate of the target's sales, measured at the year-end preceding the announcement. Control variables at the **transaction level** are: *Cross-border*, a dummy variable that equals 1 if the target country differs from the acquirer country and 0 otherwise; *Tender offer*, a dummy variable that equals 1 if the deal involves a tender offer and 0 otherwise; *Contested bid*, a dummy variable that equals 1 if the number of bidders is greater than 1 and 0 otherwise; *Hostile*, a dummy variable that equals 1 if the transaction is classified as hostile or unsolicited and 0 otherwise; *Toehold*, the percentage of target's shares owned by the acquirer at the announcement. Year and industry dummies (at one-digit SIC code level) are included in all regressions but are not reported. Robust standard errors are used and corrected for clustering at the country level. t-statistics are reported in parentheses.

	Panel A. Weighted Least Squares			Panel B. Non-UK targets		
	(1)	(2)	(3)	(4)	(5)	(6)
Exchange-listed	0,170 *** (5,46)	0,148 *** (5,57)	0,163 *** (4,15)	0,149 *** (4,73)	0,134 *** (5,95)	0,130 *** (4,99)
Non-exchange-listed	-0,036 (-1,05)	-0,025 (-0,73)	0,015 (0,34)	0,005 (0,23)	-0,005 (-0,27)	0,006 (0,28)
Target Size	-0,008 (-1,29)	-0,013 ** (-2,34)	-0,014 ** (-2,31)	-0,004 (-0,76)	-0,011 ** (-2,27)	-0,010 ** (-2,07)
Growth	0,000 (0,64)	0,000 (1,3)	0,000 (0,68)	0,000 * (1,77)	0,000 ** (2,13)	0,000 ** (2,15)
Cross-border		0,075 *** (2,91)	0,076 *** (3,05)		0,086 *** (5,48)	0,088 *** (5,55)
Tender offer		0,118 *** (4,8)	0,124 *** (4,79)		0,132 *** (8,34)	0,132 *** (8,17)
Contested bid		0,061 * (1,93)	0,051 * (1,6)		0,076 *** (3,16)	0,076 *** (3,28)
Hostile		0,124 *** (3,23)	0,111 *** (2,77)		0,079 *** (3,69)	0,076 *** (3,33)
Toehold		-0,096 * (-1,94)	-0,121 ** (-2,33)		-0,127 *** (-4,53)	-0,131 *** (-4,6)
Anti-self-dealing			0,084 * (1,74)			0,087 * (1,81)
Diff Anti-SD _(US-Target) × Exchange-listed			0,197 (2,02) **			0,252 (2,15) **
Diff Anti-SD _(US-Target) × Non-exchange-listed			-0,017 (-1,42)			-0,088 * (-1,89)
R ²	9,22%	15,54%	14,97%	4,03%	12,76%	12,94%
N observations	3413	3408	3396	2574	2569	2557

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