The Impact of Cross-Listing on Corporate Governance: A Test of the Governance-Bonding Hypothesis

Paul Brockman
Perella Department of Finance
Lehigh University
621 Taylor Street, Bethlehem, PA 18015
e-mail: pab309@lehigh.edu

Jesus M. Salas
Perella Department of Finance
Lehigh University
621 Taylor Street, Bethlehem, PA 18015
e-mail: jsalas@lehigh.edu

Andrey Zagorchev
Department of Commerce and Business
Rhodes College
2000 North Parkway, Memphis, TN 38112
e-mail: zagorcheva@rhodes.edu

Abstract

The bonding hypothesis states that firm characteristics of cross-listed firms will converge to those of the domestically-listed population. To date, much of the controversy in the bonding literature is due to the specification and testing of different firm characteristics, all under the rubric of the bonding hypothesis. In this paper, we specify and test the governance-bonding hypothesis by examining the impact of cross-listing on the corporate governance quality in a set of 454 involuntary cross-listings between 2004 and 2008. Our results show that the governance quality of cross-listed firms converges to that of domestically-listed firms in a statistically significant manner. In addition to converging to the cross-listing market, we also show that governance quality of cross-listed firms diverges from their home market counterparts. The simultaneous convergence of governance quality toward the cross-listed market and divergence from the home market provide strong evidence in favor of the governance-bonding hypothesis. Finally, we show that bonding is associated with 1.5% higher firm value for cross-listing firms.

JEL: G10; G15: M41
Keywords: Bonding hypothesis; Cross listing; Corporate governance

The Impact of Cross-Listing on Corporate Governance: A Test of the Governance-Bonding Hypothesis[1]

1. Introduction

There is considerable controversy about the impact of cross-listing on the characteristics of cross-listed firms. Some studies argue that cross-listed firms become more similar to the population of firms currently traded in the cross-listed market by taking on various characteristics of the domestic firms. Other studies argue that bonding is either non-existent or superficial at best. Much of the controversy lies in different specifications of the bonding hypothesis; that is, cross-listed firms might bond along one dimension but fail to bond along other dimensions. In this study, we specify and test the governance-bonding hypothesis. This definition of the bonding hypothesis posits that the corporate governance quality of cross-listed firms will converge toward that of domestic firms currently traded in the cross-listed market. In a parallel way, the governance-bonding hypothesis also posits that the governance quality of cross-listed firms will diverge from that of the original home-market firms. Evidence of the simultaneous convergence toward the cross-listed market and divergence from the home market will provide consistent support for the governance-bonding hypothesis by limiting the feasibility of alternative explanations (e.g., worldwide governance convergence across home markets and cross-listed markets).

In addition to specifying and testing the governance-bonding hypothesis, we also argue that this particular specification represents a fundamental version of the bonding hypothesis. Other forms of bonding, including legal and regulatory (or disclosure) bonding, are likely to be consequences of corporate governance bonding – and not vice versa. Cross-listed firms are more

[1] We thank participants of the Infiniti 2014 conference and the European meeting of the Financial Management Association for comments on earlier drafts of this paper. Remaining errors are our own.

likely to follow the letter and intent of the adopted laws, regulations, and disclosure requirements if internal governance is improved. Overall, the degree to which cross-listing leads to changes in the internal governance of executive decision-making is an important issue to shareholders, creditors, market makers, and regulators. In addition to its fundamental nature, corporate governance includes considerable discretion on the part of senior management – while other forms of bonding (e.g., legal or regulatory) tend to be more mechanical in nature. The discretionary nature of governance bonding provides a rich environment in which to examine the impact of cross-listing on managerial decision making.

While there are many reasons why a firm might want to cross-list its shares, most previous studies focus on the potential benefits of cross-listing from a weaker institutional environment to a stronger institutional environment.[2] The unifying idea behind "bonding" is that cross-listed firms can substitute their home-country institutional environment for a new and improved institutional setting (Coffee, 1999 and 2002; and Stulz, 1999). The degree to which cross-listing leads to bonding is a point of contention among academic researchers and the business community. A *Wall Street Journal* article (Ip, 2006), "Is a U.S. Listing Worth the Effort?," highlights this controversy by citing differences of opinion among prominent academics (e.g., Glenn Hubbard, Andrew Karolyi, Andrei Shleifer, Hal Scott, and Luigi Zingales) and influential government regulators and business practitioners (e.g, former Treasury Secretary Henry M. Paulson, Jr. and Goldman Sachs executive John Thornton). The lack of consensus on such an important issue emphasizes the need for additional research.

Several previous studies find empirical evidence consistent with some form of bonding (Foerster and Karolyi, 1999; Reese and Weisbach, 2002; Mitton, 2002; and Doidge, Karolyi, and

[2] See Karolyi (2006) and Benos and Weisbach (2004) for detailed analyses of cross-listing motivations and consequences.

Stulz, 2004), while others cast doubt on cross-listing's bonding effectiveness (Ball, 2001; Licht, 2003; Siegel, 2004; and Lang, Raedy, and Wilson, 2006). While controversial, the results of these studies have important implications for stock exchange competition, capital market regulation, and accounting standards setting. The debate over the 2002 Sarbanes-Oxley Act, for example, hinges on the trade-off between potential bonding benefits and increased costs of cross-listed firms. As mentioned above, part of this controversy can be attributed to testing different aspects or dimensions of bonding. We classify most (if not all) earlier tests of implications of the bonding hypothesis as falling into one of two main categories – legal bonding or regulatory bonding. Legal bonding refers to the ability of cross-listed firms to rent the host country's legal code and securities laws, while regulatory bonding refers to the ability of cross-listed firms to rent the host country's accounting and disclosure standards. Siegel (2004), for example, explores the legal aspects of bonding, and Lang, Raedy, and Wilson (2006) focus on regulatory aspects of firm disclosures.

Corporate executives of cross-listed firms have some latitude in the way that they conform to corporate and securities laws (legal bonding). These executives probably have even more latitude in the way that they conform to accounting and regulatory disclosures (regulatory bonding). But in contrast to both legal and regulatory requirements, corporate executives of cross-listed firms have few (if any) binding requirements to improve the quality of their internal governance simply because of cross-listing.[3] The governance-bonding hypothesis is therefore better able to capture changes in discretionary corporate behavior due to cross-listing – arguably the most relevant type of behavior to investigate. In addition, while it is possible that changes in corporate governance lead to changes in legal and regulatory compliance, it is unlikely that this

[3] Our primary measure of corporate governance quality, Corporate Governance Quotient (CGQ), is based on 41 firm-specific governance components.

causal chain works in the opposite direction. This analysis suggests that the governance bonding represents a more fundamental relationship between cross-listing and corporate behavior than either the legal or regulatory bonding.

To test the governance-bonding hypothesis, we collect data on new American Depository Receipts (ADRs) over the period 2004 to 2008. Most notable in this period is the 2008 Securities and Exchange Commission (SEC) disclosure regulation that led to a significant increase in cross-listings. Rule 12g3-2(b) enables U.S. depository banks to create unsponsored (involuntary) OTC cross-listings (Iliev, Miller and Roth, 2014). This is important to our study for a number of reasons. First, the increase in cross-listings allows for a large enough sample to test the governance-bonding hypothesis. Prior to 2004, there were never more than 100 new cross-listings in a given year. In contrast, there were 768 new cross-listings in 2008 alone. Second, we are able to test the bonding hypothesis by using a quasi-natural experiment by looking at firms who were involuntarily cross-listed. Thus, firms in our sample did not choose to cross-list after anticipated changes in corporate governance. Firms were "shocked" with an announcement that their stock would now be cross-listed in the US. Third, the vast majority of the involuntary cross-listings that came about from this regulation change were level I cross-listings. Level I ADRs are not subject to exchange governance requirements. These are also not typically subject to the Sarbanes-Oxley Act (Foley, Goldsmith-Pinkham Greenstein, and Zwick, 2014). Thus, if level I ADRs improve their governance structures after cross-listing, they do so voluntarily.[4]

To measure corporate governance quality, we use Riskmetrics' Corporate Governance Quotient (CGQ) of each ADR firm before and after its cross-listing. The CGQ measure is an

[4] Level II and III ADRs are subject to exchange governance regulations, but they also often opt out of at least one exchange governance rule (Foley et al. 2014).

index composed of 41 governance items divided into four subcategories.[5] The corporate board subcategory includes 24 items such board size and cumulative voting rights; the audit subcategory includes three items that capture audit quality; the anti-takeover subcategory includes six items related to the firm's anti-takeover provisions; and the compensation and ownership subcategory includes eight items such as option-granting rules and repricing prohibitions. In addition to our main empirical results based on all 41 components (i.e., Gov 41 index), we also examine the impact of cross-listing on various subcategories of the CGQ measure. Our final sample includes 454 unsponsored ADRs over the 2004-2008 period with sufficient corporate governance data.

All of these 454 unsponsored cross-listings are level I ADRs. Level I ADRs maintain the Exchange Act's Rule 12g3-2(b) exemption from registration and are not exchange-listed. We use propensity score matching to match each ADR with a domestic US counterpart based on firm size and industry. As expected, the average governance quality of US firms is significantly higher than that of the ADRs. Whether or not they try and/or succeed in improving corporate governance is an open empirical question – and the focus of our study. Using both univariate and multivariate analyses, we find that the governance quality of ADRs does in fact begin to converge to that of their US counterparts after cross-listing. This convergence is both statistically and economically significant. We interpret these findings as evidence in favor of the governance-bonding hypothesis.

Next, we examine the possibility that our convergence results could be due to an endogenous improvement in corporate governance outside of the US. If non-US-listed companies have lower average governance quality than US-listed firms at the beginning of our period, and if these non-US-listed firms experience a general upward trend in governance quality

[5] See Appendix I for definitions of all CGQ components.

over the sample period, then our convergence results might be attributable to this worldwide trend – and not to the process of cross-listing.[6] We examine this possibility by using propensity score matching to match each ADR with a home-country counterpart based on firm size and industry. As with the US-based matches, we use both univariate and multivariate analyses to examine pre- and post-listing relationships between ADRs and their home-country matches. Our empirical findings show that ADRs' governance quality begins to diverge from that of their home-country counterparts after cross-listing. Similar to the convergence results, the divergence results are both statistically and economically significant. We interpret the combined results of convergence to US-matched firms and divergence from home-country-matched firms as strong evidence in favor of the governance-bonding hypothesis. We also perform tests based on CGQ subcategories and a series of robustness checks. The last question we address is whether bonding affects firm value. Using both changes-in-changes and difference-in-difference analysis, we confirm that bonding leads to an increase in firm value. In particular, we find that greater improvements in governance lead to greater increases in firm value. On average, we find that firm value of cross-listing firms improved about 1.5% because of their improvements in corporate governance.

Our study contributes to the cross-listing literature by specifying and testing the governance-bonding hypothesis. Previous research that examines some version of the bonding hypothesis focuses directly on legal or regulatory/disclosure bonding, with (at best) indirect implications for governance bonding. In contrast, we directly examine the impact of cross-listing on the underlying firm's corporate governance. We use a direct measure of the cross-listed firm's corporate governance quality both before and after cross-listing, and compare these governance

[6] Cumming, Hou and Wu (2014) points to the importance of observing home country governance in tests of the bonding hypothesis.

quality measures to both home-country and cross-listed-country counterparts. Our empirical results consistently show that cross-listing has a direct and significant impact on corporate governance quality. This causal link is especially important since changes in corporate governance are likely to have second-order effects on legal and regulatory/disclosure bonding. Previous literature shows, for example, that better-governed firms are less likely to commit legal/regulatory infractions and more likely to provide value-relevant disclosures. In sum, our findings confirm that cross-listing in the US provides a significant improvement in the underlying firm's governance quality.

In section 2, we describe our data, variables, and methodology. In section 3, we present and discuss our empirical findings, and in section 4, we conclude the study.

2. Data

We identify all new cross-listings from Citibank, JP Morgan, and the Bank of New York ADR databases between 2004 and 2008. Our sample starts in 2004 because our measures of corporate governance, the Corporate Governance Quotient (CGQ) index and its subcomponents are first available starting in 2004. Our sample ends in 2008 since this is the beginning of the global financial crisis and because we want to evaluate changes in governance for at least one year after the cross-listing.[7] We identify 1,256 cases of firms choosing to cross-list sometime between 2004 and 2008. We then manually merge this sample of cross-listings with our measure of corporate governance. We lose 682 observations due to the lack of corporate governance data. This leaves us with a sample of 574 sponsored and unsponsored cross-listings. Finally, we exclude "voluntary" ADRs from our sample because voluntary cross-listings may have chosen to cross-list in part because of anticipated improvements in corporate governance quality. Thus, our

[7] Starting on July of 2010, Riskmetrics changed the definition of CGQ (which is now known as the Governance Risk Indicator, GRId), making it inconsistent with CGQ before July of 2010.

final sample is composed of 454 involuntary cross-listings. The sample firms include 454 level I unsponsored cross-listings.

Table 1 presents our sample selection summary and the distribution of cross-listings by country of origin. Cross-listings from Japan are the most common. These represent about 25% of our sample. Another 14% of cross-listings come from the United Kingdom. The remainder of the sample is well diversified among countries across Europe, Asia, and Oceania.

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

The next challenge is to collect some measure of governance for both US and foreign firms. Black et al. (2012) point out the limited coverage of international corporate governance databases. We use Riskmetric's CGQ as our main measure of corporate governance for several reasons. First, Riskmetrics covers more firms than any other international governance dataset. Specifically, CGQ consistently covers more than 4,500 US firms and 2,000 non-US firms starting in 2003. In comparison, S&P publishes governance ratings for 901 firms from 40 countries starting in 2002 (e.g. Durnev and Kim, 2005). Credit Lyonnais Securities Asia (CLSA) ratings are available for 495 firms in 25 Asian countries starting in 2000 (e.g. Durnev and Kim, 2005). Finally, the Governance Metrics International governance index covers between 1,200 and 1,400 US firms and between 1,200 and 1,500 non-US firms on any given year starting in 2006 (e.g. Griffin, Guedhami, Kowk, Li and Shao, 2014). Broad coverage is especially important for us given that cross-listings are uncommon events.

Second, CGQ has various subcomponents that allows us to examine whether firms bond only in some areas of corporate governance. Third, Riskmetrics applies a standard estimation procedure for governance quality across all firms and all markets. Riskmetrics measures corporate governance quality based on 41 separate governance subcomponents within four broad

categories for both US and foreign firms. This standardization is crucial for our analysis because we are testing whether foreign firms move closer to their US counterparts over time. Having consistent governance measures for both cross-listed firms and their US counterparts allow us to compare foreign firms to US matches over time. The four broad categories include board characteristics, audit related characteristics, anti-takeover provisions, and executive compensation/ownership characteristics. Following Aggarwal et al. (2012), Gov 41 is the percentage of governance attributes in a firm. So, this variable ranges between 0% (when a firm does not meet any of the governance attributes in a given year) and 100% (when a firm meets all of the governance attributes in a given year). We describe in more detail each of the 41 subcomponents and four categories in Appendix 1.

Our primary research question is whether firms bond after they cross-list in the US. In the context of corporate governance, this implies that foreign firms adjust their corporate governance characteristics to become more similar to their US counterparts. To test this hypothesis, we first identify US counterparts for each cross-listed firm by using two approaches. Our first approach matches each cross-listed firm to five US firms based on company size and industry. One advantage of this approach is that we are likely to identify close competitors in the US to the foreign firm. Cross-listed firms are likely to look to their closest competitors when deciding to make changes to corporate governance. The disadvantage of this approach is that any type of matching procedure is always imperfect. The second approach is to simply compare the governance characteristics of the cross-listed firm to the average characteristic of all US firms. This second approach eliminates the difficulty of selecting a match but it also introduces more noise.

In Table 2, we present summary statistics of our cross listings. In Panel A, we first test for differences in firm size between the cross-listed firms and the US matches. The mean size is virtually the same between the cross-listed firms and their US counterparts. The book value of assets for both the cross-listed firm and their US matches is roughly $32 billion.

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

In Panel B of Table 2 we present summary statistics of what we call "governance deviations", the difference between CGQ of a particular firm in a particular year and the CGQ of the match (or the mean of the CGQ of the matches if we match to multiple firms). These summary statistics are for the whole sample – from one year before the cross listing to one year after the cross listing. Overall, governance deviations tend to be negative, which means that our cross-listing firms have worse corporate governance than their matches. Compared to US matched firms, governance deviations average -0.22, with a standard deviation of 0.10. Alternatively, cross-listing firms tend to have slightly better governance structures than their home matches. Governance deviations compared to the home counterparts average 0.02. Finally, Tobin's Q averages about 1.6 for cross-listing firms.

If the corporate bonding hypothesis holds, the foreign firms will move closer to their US counterparts. In Panel C of Table 2, we test whether the US matches have better governance than cross-listed firms for each year in our sample. We present mean corporate governance for the cross-listed firms and their US counterparts on the year before the cross-listing. We observe that cross-listed firms have a significantly lower average CGQ than their US matches. Average CGQ for cross-listed firms is 0.45 compared to 0.69 for their US counterparts on the year before the cross-listing and the difference between the two is significant at the 1% level. In subsequent

section of this paper, we test whether cross-listed firms improve their corporate governance characteristics to become more in-line with US firm governance quality.

3. Empirical Results

3.1 Cross-listing impact on overall governance

In Table 3, we present results of univariate tests of the governance-bonding hypothesis. More specifically, we test whether cross-listing firms improve their governance quality more than their matched counterparts. To do this, we first calculate the difference in corporate governance quality for cross-listings and their matches. We refer to these differences as the "governance deviations." We use the 41 components of CGQ that are common to both foreign firms and US firms as our measure of corporate governance (Gov 41 index). Thus, the Gov 41 deviation is the difference in the Gov 41 index between the cross-listing firm and the average of the comparison group. In Panel A1, we present Gov 41 deviations starting two years before the cross-listing, and extending out to two years after the cross-listing. For this section of the analysis, we use the maximum number of observations available. That means that the sample of firms two years before the cross-listing is *not* the same as the sample of firms two years after the cross-listing. The mean Gov 41 deviations are negative before and after the cross-listing. Thus, cross-listed firms have lower quality governance than their US counterparts both before and after cross-listings.

Our main focus is the change in Gov 41 deviations following cross-listings. As hypothesized, results show that these deviations become less negative after the cross-listing. The mean Gov 41 deviation is -0.24 two years before the cross-listing and -0.19 two years after the cross-listing. Using year *t* as the year of the cross-listing, Gov 41 deviations experience little to

no change between t-2 and t-1. In contrast, Gov 41 deviations become less and less negative in every year after t-1. When we test the significance of these changes, we find that all Gov 41 deviations decline from before the cross-listing to after the cross-listing in a statistically significant manner. The lack of significant deviations in the Gov 41 index from t-2 to t-1 is further evidence that later changes in corporate governance quality are due to the process of cross-listing; that is, we find no evidence of governance improvements immediately before the cross-listing, but significant evidence of governance improvements immediately after the cross-listing.

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

In Panel A1, we do not hold the sample fixed across time. Thus, the firms with available information in t+1 are not the same firms with available information in t-1. One possible concern with this analysis is that any trend we observe could be due to sample selection problems. For example, it is possible that governance data of firms with high quality governance is only available after the cross-listing. In such case, we may observe an improvement in governance following cross-listings that is not due to real improvements of governance. In Panel A2, we re-do all analysis by holding samples constant. In particular, we examine changes in governance for firms with available data between t-1 and t+1.[8]

As we look at results holding the sample fixed (Panel A2), we see that Gov 41 deviations move toward zero after cross-listing. Gov 41 deviations move from -0.25 to -0.21 between t-1 and t+1. There are 422 observations in this analysis and the difference in Gov 41 deviations between t-1 and t+1 is significantly different from zero at the 1% level. We also compare Gov 41 deviations between t-2 and t, between t-2 and t+1 and t-1 and t+2 but do not tabulate these results

[8] We only have 17 observations when we compare Gov 41 deviations between t-2 to t+2. Nonetheless, we still find a significant trend in this extreme comparison (at the 10% level).

for brevity. All in all, Gov 41 deviations consistently move toward zero following cross-listings regardless of the years we check. Furthermore, the trend in Gov 41 deviations is statistically significant at the 1% level.

In Panels A1 and A2 of Table 3 we compare cross-listings to their matched US counterpart. A different way to test the bonding hypothesis is to compare the Gov 41 index of cross-listed firms to the average Gov 41 index of all US firms. We present results of these alternate tests in panels B1 and B2 of Table 3. Because we do not identify matches for the cross-listing firm, we have more observations in panels B1 and B2 than we did in panels A1 and A2. As before, we summarize results with and without restricting the sample to verify our results hold when we restrict the sample to those with available governance data before and after the cross-listing. In panel B1 (no restriction on the sample), the average Gov 41 deviation is also negative before and after the cross-listing. However, the average Gov 41 deviation is somewhat less negative here than in panel A1. For example, Gov 41 deviations move from -0.17 to -0.15 in between t-1 and t+1. Again, the change in Gov 41 deviations between t-2 and t-1 is not significant. Also consistent with earlier results, Gov 41 deviations move toward zero in a statistically significant manner starting in t-1 up to t+2 when we compare governance quality of cross-listed firms to governance of the average US firm. The results are similar if we restrict the sample to make sure we look at Gov 41 deviations for the same sample of firms before and after the cross-listing. For example, there are 430 observations with available Gov 41 deviations one year before and one year after the year of cross-listing. For this set of firms, Gov 41 deviations also move from -0.17 to -0.15. The difference in Gov 41 deviations is statistically significant at the 1% level. As before, we test whether the trend in Gov 41 deviations moves toward zero across different windows but we do not tabulate those results for brevity. Our results in Panels

B1 and B2 are similar with earlier findings: the changes in Gov 41 deviations are statistically significant at the 1% level.

3.2 Cross-listing impact on subcomponents of governance

One of the advantages of using CGQ as a measure of governance is that it has numerous components that we can examine separately. Following Bruno and Claessens (2010) and Borisova et al. (2012), we create 6 categories of CGQ governance: board independence, board committee strength, board entrenchment, committee independence, board transparency and CEO power. *Board Independence* is a dummy variable that takes a value of 1 if the board is controlled by a majority of independent outsiders and zero otherwise.[9] Weisbach (1988) finds that independent boards are more likely to remove a CEO following poor performance. Because board committees are a major focus of the Sarbanes-Oxley Act of 2002 we also use the *Board Committee* variable ranges from 0 to 4. A firm gets a point if it has an audit, compensation, governance, or nomination committee. The NYSE requires some of these committees if the company wants to list there. Otherwise, firms can choose not to have these committees. Gompers et al. (2003) and Bebchuk et al. (2009) find inferior performance for firms with greater number of antitakeover provisions. We thus check differences in anti-takeover provisions over time for cross-listed firms by looking at the *Board Entrenchment* variable. This group takes values ranging from 0 to 4, where higher values are associated with fewer anti-takeover provisions.

Committee Independence is a measure ranging from 0 to 3, where higher values represent greater committee independence. We give a point when the nomination, compensation or audit committee exclusively consists of independent members. Some examples of studies finding

[9] According to RiskMetrics proxy analyses, board independence for two-tier board structures in German firms, for example, is based exclusively on supervisory board members, since the management board consists only of company executives.

benefits in committee independence include Klein (2002) and Davidson et al. (1998). *Board Transparency* is the sum of three dummy variables: an auditor ratification dummy variable, a variable identifying firms that pay auditors only for audit fees and a variable confirming that the CEO is not involved in related transactions. This variable ranges between 0 and 3. Finally, *CEO power* takes one point for each of the following: (1) board independence, (2) the separation of CEO and the chairman of the board and (3) the presence of a former CEO on the current board.[10]

For brevity, we only present subcomponent scores for cross-listed firms one year before the cross-listing and one year after the cross-listing. For this analysis we restrict the sample to firms with available data for each year between t-1 and t+1. Given that firms cross-listing in the US have worse corporate governance scores than their US counterparts, we are looking for improvements following cross-listings. Results of this analysis are provided in Table 4. In short, we see improvements in board committee strength, board transparency and CEO power. We do not find improvements in either board independence, board entrenchment or committee independence. Since most of our cross-listings are Level 1 unsponsored ADRs, they are not subject to board independence. Our results suggest that our firms are voluntarily improving their corporate governance structures to be more similar to other firms in the US. This result stands in contrast to evidence in Foley et al. (2014) that Level II and Level III ADRs often opt out of exchange governance regulations. Firms in our sample tend to opt-in to governance structures that they are not required to adopt. The variable with the most significant change is "board committee". This is likely the case because it is also the easiest variable to change.

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

3.3 Divergence: Comparison to home-country firms

[10] Most of our firms are Level 1 unsponsored ADRs, which are not subject to regulatory or exchange governance requirements, such as having a majority of independent directors on the board of directors.

In previous results, we show that cross-listed firms converge to US firms in their governance following the cross-listing. A possible explanation for our results is that firms in the country of origin for the cross-listing firm also improve their governance during the cross-listing period. If firms in the home country improved their governance, the governance-bonding hypothesis would predict larger improvements in governance for firms that cross-list. Table 5 presents results of this analysis. We present Gov 41 deviations between the cross-listed firms and the average of the matched firms in the country of origin between t-1 and t+1. We also present p-values for the difference of means test for the change in Gov 41 deviations between t-1 and t+1. First, note that the average Gov 41 deviation of cross-listed firms is close to zero one year before the cross-listing. That suggests that governance for cross-listed firms is similar to that (on average) to firms in the home country before the cross-listing. However, Gov 41 deviations of cross-listed firms average 0.03 one year after the cross-listing. This suggests that cross-listed firms improve their governance more than comparable firms in the home country. The change in Gov 41 deviation (from 0 to 0.03) is significant at the 1% level. In fact, average Gov 41 deviations for the whole sample of cross-listed firms improve in most countries. Cross-listings do not seem to improve their governance quality more than the home country in Austria, Denmark and Norway but we only have 21 cross-listings from these three countries combined. Our results suggest that firms improve their governance more than their counterparts in both the US and in their home country following cross-listings.

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

3.4 Multivariate analysis of bonding

We have thus far found univariate evidence in support of the bonding hypothesis. In Table 6, we provide multivariate evidence of the bonding hypothesis. We do this in two ways: First, we

estimate changes-in-changes regressions of corporate governance against a cross-listing dummy and control variables. The advantage of the changes-in-changes methodology over the DiD methodology is that the year of cross-listing is not important. We use all cross-listings and matches with available financial data in this analysis. Therefore, we test whether governance changes more for cross-listings than for matches after controlling for changes in other potentially confounding factors. A second way to test the bonding hypothesis in a multivariate setting is to estimate difference-in-differences (DiD) regressions of governance and cross-listings. For the DiD analysis, we need to identify a year in which an "exogenous" shock takes place. Thus, we need to limit the sample to cross-listings that take place in one particular year for this analysis. Because the majority of cross-listings happened in 2008, we limit the sample to cross-listings from 2008 and the matches of those firms for the DiD analysis.

The dependent variable for the changes-in-changes analysis is the change in Gov 41 around the year of cross-listing (between t+1 and t-1) for our cross-listing firms and their matched US counterparts. We then include changes in several variables as controls, such as firm size, leverage, sales growth, liquidity, pre-tax margins, ROA, capital expenditures and cash holdings. We also include a dummy variable that equals one if the firms raise money after the cross-listing (financing) and zero otherwise. The argument is that US institutions may require that the firms improve their governance structures before raising funds in the US. Finally, we include civil-law and bank-based dummy variables as control variables. Firms from bank based countries may have unique financing needs that may affect our results. Similarly, firms from civil law countries may be expected to improve their corporate governance more than their counterparts because civil law firms are known to have weak home shareholder protection laws. Standard errors are adjusted for potential firm-level clustering in all multivariate analyses.

We present results for two types of matching procedures: One match to each cross-listing firm (models) and 5 matches for each cross-listing firm (model 2). We present results of this analysis in Table 6. The coefficients on our control variables are mostly insignificant in our models. This suggests that changes in governance are not predictably related to changes in firm characteristics. Our variable of interest in this analysis is our cross-listing dummy variable. This variable is equal to one if the firm of interest is a cross-listing firm and zero if the firm of interest is a matched firm. Because the dependent variable in our regressions is governance after the cross-listing minus governance before the cross-listing, a positive coefficient on the cross-listing dummy variable suggests that cross-listing firms improved their governance more than their matched counterparts. Consistent with our univariate results, we find a positive and significant coefficient on our cross-listing dummy variable in all models of Table 6. In addition, financing does not drive our results. The coefficient on our financing dummy is not statistically different from zero in any of our models, which suggests that financing needs do not explain our results.

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

The second approach we use is a difference-in-difference (DiD) methodology following Roberts and Whited (2013). For the DiD methodology, we need to identify one year when the treatment took effect. Because our cross-listings take place in several years, we cannot use the DiD methodology to analyze all cross-listings simultaneously. We restrict the DiD analysis to 2008 cross-listings since the majority of our cross-listings took place in 2008. More formally, let $Gov41_{it}$ be the governance score of firm i at time t and let d_t be an event dummy that equals one after 2008 and zero before. Let z_{it} be a vector of controls that contains factors affecting $Gov41_{it}$

that may have changed around the event. Our sample in these DiD regressions include firms that cross-list in 2008 and their US matches. We model:

$$Gov41_{it} = \alpha + \beta d_t + \omega T_i + \theta d_t T_i + z_{it}\delta + \varepsilon_{it}.$$

Here T_i is an indicator variable that equals one if the firm is a cross-listing firm and zero otherwise.[11] The coefficient on the interaction term θ gives the DiD estimate of the effect of cross-listing on governance, $Gov41_{it}$. Theory suggests that firms cross-list in order to rent stricter governance structures, which means we expect governance to increase following the cross-listing (which means we expect $\theta > 0$).

Unbiased estimation of θ is not affected by common trends in both the treated and control group, but trends that differentially affect treatment and control groups can induce bias in θ (this known as the parallel trends assumption). For instance, our estimation of θ will be biased if treated firms (cross-listed firms) are hit with an unobservable shock that coincides with the cross-listing and also increases their incentives to improve their corporate governance quality.

To guard against the presence of differential trends, we use propensity score matching to identify US firms have similar size and come from the same industry.[12] In Figure 1, we show trends in governance for 2008 cross-listings and the US matches between 2005 and 2009. As we can see, governance does not change much for the matches of our cross-listing firms throughout the period. For cross-listing firms, governance is also fairly stable before 2008. Thus, it seems the parallel trends assumption seems to hold. On the year of the cross-listing, alternatively, Gov41 rises and stays high through 2009.

Results of our DiD analysis of governance and cross-listings are presented in models 3 and 4 of Table 6. For our sample, results show that governance improves after 2008 (since the

[11] We include firm fixed effects in our regressions, which is why we do not estimate ω in our regressions.
[12] We also obtain similar results if we obtain matches from the home country of the cross-listing firm.

coefficient on the post-2008 dummy variable is positive and significant). Larger, more liquid growth firms with high cash holdings have better governance structures than their counterparts. These firms likely receive more investor attention and thus are under more pressure to have strong governance structures. Moving to our variable of interest, we predict a positive coefficient on the interaction between our cross-listing dummy variable (2008 cross-listing) and the post-2008 dummy variable. Consistent with our prediction, we find that 2008 cross-listing firms have higher corporate governance quality after 2008 than their matched counterparts. The result is statistically significant for both the 1-to-1 matching (model 3) and the 5-to-1 matching (model 4).

3.5. Bonding and firm value

A follow-up question to our analysis is whether bonding affects firm value. In other words, does the improvement in corporate governance lead to an increase in firm value? Griffin et al. (2013) argue that corporate governance quality may not be universally valuable. Different countries have diverse cultural attributes and may thus value governance attributes differently. Thus, it is possible that improvements in the Riskmetrics' Gov 41 governance measure may not lead to increases in firm value. To test this hypothesis, we again estimate changes-in-changes and DiD regressions. However, the dependent variable in this analysis is Tobin's Q. We want to test whether changes in corporate governance around cross-listings are associated with increases in firm value. Therefore, we limit the changes-in-changes analysis to cross-listing firms. In the DiD analysis, we are interested in the interaction of Gov 41, the cross-listing dummy variable and the post-2008 dummy variable. This is because we want to show that improvements in governance after 2008 lead to increases in firm value only in the sample of cross-listing firms (i.e. relative to non-cross-listing firms). Thus, using the same terminology as before, we estimate the following:

$$TobinQ_{it} = \alpha + \beta d_t + \omega T_i + \theta d_t T_i + \gamma Gov41_{it} d_t T_i + \tau Gov41_{it} d_t + \rho Gov41_{it} T_i + z_{it}\delta + \varepsilon_{it}.$$

And we are interested in ρ. If bonding following cross-listings leads to increases in firm value, we expect to find $\gamma > 0$. Results of the changes-in-changes and the DiD analysis are provided in Table 7. As before, the DiD analysis is restricted to 2008 cross-listings.

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

Turning first to our changes-in-changes analysis in model 1 of Table 7, we observe that changes in pre-tax margins, ROA and liquidity are positively related to changes in Tobin's Q. Since liquidity is negatively related to the cost of capital, it follows that increases in liquidity are positively related to firm value. Our variable of interest is the change in corporate governance (Gov 41). Given that the sample is limited to cross-listings, a positive coefficient on the change in corporate governance variable suggests that bonding leads to increases in firm value. Our results confirm this idea. The coefficient on the change in governance is positive and significant. This result is especially surprising given the relatively small sample size in the regressions (281 cross-listings).

Switching to our DiD regressions in models 2 and 3 of Table 7, we find that Tobin's Q is positively related to ROA, but negatively related to liquidity and margins. Small firms are more valuable than large firms and capital expenditures are also associated with lower firm value. Turning to governance, our results first suggest that governance is negatively associated with firm value in the sample as a whole. Also, we observe a negative coefficient on the interaction between the cross-listing and the Post 2008 dummy variable, which implies that cross-listed firms become less valuable after the cross-listing. Because most of our cross-listings are

unsponsored, our results are consistent with evidence in Iliev, Miller, and Roth (2008) that firms that were involuntarily cross-listed lost value after the cross-listing. However, as can be seen from the positive coefficient on the triple interaction of Gov41, the Post 2008 dummy variable and the cross-listing dummy variable, improvements in governance following cross-listings are associated with higher firm value, which suggests that bonding is positively related to firm value.

3.6 Economic significance of bonding

We have thus far provided statistical evidence of governance bonding following cross-listings. In this subsection, we discuss economic significance of our results. As discussed before, Gov 41 is constructed by first aggregating 41 governance subcomponents. In particular, Gov 41 is the percentage of the 41 components that a firm has in a particular year and so varies between 0% and 100%. Using our multivariate results in Table 6, we see that cross-listing firms improve their governance somewhere between 0.01 and 0.02. Given that Gov 41 for cross-listing firms before the cross listing averaged about 0.44, it seems that firms improve their governance about 3.4%, which is modest. Given that the standard deviation of Gov 41 is 0.0885, the 0.015 increase in governance represents 17% of a standard deviation of Gov 41.[13]

The next question is related to the economic magnitude of the impact of bonding on firm value. To answer this question, we turn to the coefficient on the bonding variables in Table 7. We focus on models II and III in Table 7 because it is easier to estimate economic significance when the dependent variable is levels (models II and III) than when the dependent variable is in changes (model I). The coefficient on the variable of interest (the triple interaction) is somewhere between 0.97 and 1.17. Here, our dependent variable is the natural logarithm of industry adjusted Tobin's Q. So, we should interpret these results carefully. A one unit increase in the independent

[13] The 17% is calculated as 0.015 divided by 0.0885.

variable leads to about a 100% increase in industry adjusted Tobin's Q.[14] Because governance improved about 0.015, on average, in our sample, our results suggest that industry adjusted Tobin's Q improved about 1.5% as a result of bonding. Thus, our results suggest that bonding lead to a 1.5% increase in firm value.

3.7 Potential "de-bonding" following de-listings

So far, we have analyzed potential improvements in governance following decisions to cross-list in the US. We find that firms, on average, improve their governance after they begin listing in the US. In this subsection we examine what happens to corporate governance after firms de-list. If firms move to the US in order to adopt stricter governance mechanisms, it is possible that firm corporate governance structures will weaken following de-listings. Alternatively, it is possible that firms that choose to delist were the ones that did not improve their corporate governance. This is consistent with the argument that many firms do not benefit from cross-listing as much as the literature anticipates (Zingales, 2007). Our results so far show that some firms bond more than others and some firms do not bond at all, especially since bonding is not legally mandated. Firms that choose not to bond may enjoy fewer benefits following a cross-listing, which may be enough to drive them to de-list from the US. Finally, it is also possible that firms that choose to de-list had strong governance structures even before cross-listing. These firms also do not benefit from cross-listing as much as firms that had poor governance before the cross-listing (all else equal). Thus, it is difficult to predict whether firms de-bond after they de-list from the US. In Table 8, we present results from analysis of changes in governance deviations following de-listings. In a similar way to what we did before, we analyze at changes in governance deviations (compared to matched firms in the US) before and after de-

[14] When we express the dependent variable as the natural logarithm of variable Y, the interpretation of results is that a one unit increase in the independent variable leads to a β x 100% increase in the Y variable, where β is the coefficient on the independent variable of interest.

listing events between 2004 and 2008.[15] We have a total of 104 de-listings with necessary governance and financial data, which is relatively small. Results suggest that firms do not de-bond following de-listings. Governance deviations do not change significantly following a firm's delisting from the US stock market.

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

3.8 Determinants of governance bonding

Previous results suggest that firms bond to the US when they are involuntarily cross-listed. A follow-up question is whether the degree of governance bonding is related to firm/country characteristics? We test whether differences in firms before cross-listing help predict the degree of bonding we observe. To answer this question, we first construct our measure of governance bonding as the difference in Gov 41 deviations between t-1 and t+1. We use deviations from matched US firms and deviations from the average of all US firms for the construction of our governance-bonding variable. For this analysis, a higher value in our governance-bonding variable means that governance improved more. In the context of our earlier results, a higher bonding variable means that the Gov 41 deviation moved toward zero. We then estimate regressions of bonding against several potential determinants of bonding. Among firm characteristics that we evaluate, we have firm size, ROA, cash/assets, R&D/assets, an external finance measure, leverage, capital expenditures/sales, sales growth and dividends per share. We also control for the country legal origin, an investor protection index, a law and order indicator variable, a corruption index variable, GDP per capita, stock market capitalization, and the amount of foreign national debt service by the country. We include industry dummies in all our models and country dummies when appropriate (e.g. when we do not include legal origin as an

[15] The majority of de-listings in our sample take place in 2008 because the SEC implemented rule 12h-6, which made it easier for foreign firms listing in the US to deregister.

independent variable). In addition, we adjust all our standard errors for possible firm-level clustering. All our variable definitions are provided in Appendix 2. Because of the stricter data requirements, the sample in this analysis is limited to about 377 observations.

We present the result of this analysis in Table 9. The counterparts to calculate Gov 41 deviations are US matched firms.[16] Our results show that the degree of governance bonding is stronger for more highly leveraged firms with lower sales-growth that pay fewer dividends. It is possible that these firms have a more difficult time raising money in US capital markets. On the other hand, we find that firms in countries with stronger investor protection rights (common law countries, countries with higher investor protection index, higher law and order and higher GDP per capita) bond more than firms in countries with weaker investor protection rights.

***** Insert Table 9 here *****

4. Conclusions

In this study, we specify and test the governance-bonding hypothesis; specifically, the claim that corporate governance quality of cross-listed firms will converge toward that of domestic firms. Similarly, the governance-bonding hypothesis argues that governance quality of cross-listed firms will diverge from that of the home market. We also suggest that this particular specification represents the most fundamental version of the bonding hypothesis, with other forms of bonding (e.g., legal and regulatory/disclosure bonding) likely to be consequences of corporate governance bonding.

We test the governance-bonding hypothesis using data from Riskmetrics' Corporate Governance Quotient (CGQ) and 454 unsponsored American Depository Receipts (ADRs) and over the period 2004 to 2008. We use propensity score matching to match each ADR with a

[16] If we use Gov 41 deviations compared to the average of all US firms, the only major difference in the results is that capital expenditure is positive and significant for bonding. The other results are virtually unchanged.

domestic US counterpart (and a home-country counterpart) based on firm size and industry. Using both univariate and multivariate analyses, we find that the governance quality of ADRs begins to converge to that of their US counterparts only after cross-listing. In sharp contrast, we also find that the governance quality of ADRs begins to diverge from that of their home-country counterparts after cross-listing. We interpret this evidence of simultaneous convergence toward the cross-listed market and divergence from the home market as strong support for the governance-bonding hypothesis.

References

Aggarwal, R., Erel, I., Ferreira, M., Matos, P., 2011. Does governance travel around the world? Evidence from institutional investors. *Journal of Financial Economics* 100, 154-181.

Ali, A., and L. Hwang, 2000, Country-specific factors related to financial reporting and the value relevance of accounting data, *Journal of Accounting Research* 38, 1-23.

Bailey, W., Karolyi, A., and C. Salva, 2006, The economic consequences of increased disclosure: Evidence from international cross-listings, *Journal of Financial Economics*, forthcoming.

Baker, H. K., Nofsinger, J., and D. Weaver, 2002, International cross-listing and visibility, *Journal of Financial and Quantitative Analysis* 37, 495-521.

Ball, R., 2001, Infrastructure requirements for an economically efficient system of public financial reporting and disclosure, *Brookings-Wharton Papers on Financial Services*, 127-169.

Ball, R., Kothari, S. P., and A. Robin, 2000, The effect of international institutional factors on properties of accounting earnings, *Journal of Accounting and Economics* 29, 1-51.

Bebchuk, L., Cohen, A., Ferrell, A., 2009. What matters in corporate governance? *Review of Financial Studies* 22, 783-827.

Benos, E., and M. Weisbach, 2004, Private benefits and cross-listings in the United States, *Emerging Markets Review* 5, 217-240.

Bhattacharya, U., Daouk, H., and M. Welker, 2003, The world price of earnings opacity, *Accounting Review* 78, 641-678.

Black, B. S., A. G. de Carvalho, and É. Gorga, 2012. What matters and for which firms for corporate governance in emerging markets? Evidence from Brazil (and other BRIK countries), *Journal of Corporate Finance* 18, 934 -952.

Borisova, G., Brockman, P., Salas, J., Zagorchev, A., 2012. Government ownership and corporate governance: Evidence from the EU. *Journal of Banking and Finance* 36, 2917–2934.

Bourbakri, N., Cosset, J-C, and A. Samet, 2013, International cross-listings and subsequent security-market choices: Evidence from ADRs, *Financial Review* 48, 311-341.

Bruno, V., Claessens, S., 2010. Corporate governance and regulation: Can there be too much of a good thing? *Journal of Financial Intermediation* 19, 461-482.

Burgstahler, D., and I. Dichev, 1997, Earnings management to avoid earnings decreases and losses, *Journal of Accounting and Economics* 24, 99-126.

Chen, F., Weiss, I. S., and L. Zheng, 2007, The predictive role of analyst coverage intensity: Evidence from cross-listing in the U.S., *Journal of Contemporary Accounting and Economics*, forthcoming.

Coffee, J. C. Jr., 1999, The future as history: The prospects for global convergence in corporate governance and its implications, *Northwestern Law Review* 93, 641-707.

Coffee, J. C. Jr., 2002, Racing toward the top? The impact of cross-listings and stock market competition on international corporate governance, Columbia Law School working paper.

Cumming, D., Humphery-Jenner, M., and E. Wu, H., 2010. The value of home-country governance for cross-listed stocks, *European Journal of Finance*, forthcoming.

Davidson, W., Pilger, T., Szakmary, A., 1998. Golden parachutes, board and committee composition, and shareholder wealth. *Financial Review* 33, 17-32.

DeFond, M., Hung, M., and R. Trezevant, 2007, Investor protection and the information content of annual earnings announcements: International evidence, *Journal of Accounting and Economics* 43, 37-67.

Doidge, C., Karolyi, G. A., and R. M. Stulz, 2004, Why are foreign firms listed in the U.S. worth more? *Journal of Financial Economics* 71, 205-238.

Durnev, A., and H. Kim, 2005. To steal or not to steal: Firm attributes, legal environment, and valuation, *Journal of Finance* 60, 1461- 1493.

Eleswarapu, V. R., and K. Venkataraman, 2006, The impact of legal and political institutions on equity trading costs: A cross-country analysis, *Review of Financial Studies*, forthcoming.

Errunza, V. R., and D. Miller, 2000, Market segmentation and the cost of capital in international equity markets, *Journal of Financial and Quantitative Analysis* 35, 577-600.

Fernandes, N., and M. A. Ferreira, 2006, Does international cross-listing really improve the information environment?, Universidade Catolica Portuguesa working paper.

Foerster, S., and G. A. Karolyi, 1999, The effects of market segmentation and investor recognition on asset prices: Evidence from foreign stocks listing in the U.S., *Journal of Finance* 54, 981-1013.

Foley, C. F., P. S. Goldsmith-Pinkham, J. Greenstein, and Eric Zwick, 2014. Opting out of good governance. NBER working paper.

Fuerst, O., 1998, A theoretical analysis of the investor protection regulations argument for global listing of stocks, Yale University working paper.

Gompers, P., Ishii, J., Metrick, A., 2003. Corporate governance and equity prices. *Quarterly Journal of Economics* 118, 107-155.

Goto, S., Watanabe, M., and Y. Xu, 2006, Strategic disclosure and stock returns: Theory and evidence from U.S. cross-listing, University of South Carolina working paper.

Griffin, D. O. Guedhami, C.Y. Kwok, K. Li and L. Shao, 2014. National Culture, Corporate Governance Practices, and Firm Performance, University of British Columbia Working paper.

Ip, G., 2006, Is a U.S. listing worth the effort? *Wall Street Journal*, online addition, November 28.

Jin, L., and S. C. Myers, 2006, R^2 around the world: New theory and new tests, *Journal of Financial Economics* 79, 257-292.

Karolyi, G. A., 2006, The world of cross-listings and cross-listings of the world: Challenging conventional wisdom, *Review of Finance* 10, 99-152.

Khurana, I. K., Xiumin, M., and R. Pereira, 2006, Financial Development and the Cash Flow Sensitivity of Cash, *Journal of Financial and Quantitative Analysis* 41, 787–807.

Klein, A., 2002. Audit committee, board of director characteristics, and earnings management. *Journal of Accounting and Economics* 33, 375-400.

Lang, M. H., Lins, K. V., and D. P. Miller, 2003, ADRs, analysts, and accuracy: Does cross listing in the U.S. improve a firm's information environment and increase market value?, *Journal of Accounting Research* 41, 317-345.

Lang, M. H., Raedy, J. S., and W. Wilson, 2006, Earnings management and cross listing: Are reconciled earnings comparable to U.S. earnings? *Journal of Accounting and Economics*, forthcoming.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., and R. W. Vishny, 1998, Law and finance, *Journal of Political Economy* 106, 1113-1155.

Lel, U., and D. P. Miller, 2006, International cross-listing, firm performance and top management turnover: A test of the bonding hypothesis, Southern Methodist University working paper.

Leuz, C., 2003, Discussion of ADRs, analysts, and accuracy: Does cross-listing in the United States improve a firm's information environment and increase market share?, *Journal of Accounting Research* 41, 347-362.

Leuz, C., 2006, Cross listing, bonding and firms' reporting incentives: A discussion of Lang, Raedy and Wilson (2006), *Journal of Accounting and Economics* 42, 285-299.

Leuz, C., Nanda, D., and P. Wysocki, 2003, Earnings management and investor protection: An international comparison, *Journal of Financial Economics* 69, 505-527.

Licht, A., 2003, Cross-listing and corporate governance: Bonding or avoiding?, *Chicago Journal of International Law* 4, 141-163.

Love, I., 2003, Financial Development and Financing Constraints: International Evidence from the Structural Investment Model, *The Review of Financial Studies* Vol. 16, 765-791.

Miller, D., 1999, The market reaction to international cross-listings: Evidence from depository receipts, *Journal of Financial Economics* 51, 103-123.

Mitton, T., 2002, A cross-firm analysis of the impact of corporate governance on the East Asian financial crisis, *Journal of Financial Economics* 64, 215-241.

Morck, R., Yeung, B., and W. Yu, 2000, The information content of stock markets: Why do emerging markets have synchronous price movements? *Journal of Financial Economics* 58, 215-260.

Reese, W., and M. Weisbach, 2002, Protection of minority shareholder interests, cross-listings in the United States, and subsequent equity offerings, *Journal of Financial Economics* 66, 65-104.

RiskMetrics Group, 2007. ISS governance services: International corporate governance policy 2008 Updates. New York.

Roberts, M and T. Whited, 2013, Endogeneity in empirical corporate finance, in George M. Constantinides, Milton Harris and Rene M. Stulz (eds.), Handbook of the Economics of Finance, Volume 2A, Elsevier B.V.

Siegel, J., 2004, Can foreign firms bond themselves effectively by renting U.S. security laws?, *Journal of Financial Economics* 75, 319-359.

Stulz, R. M., 1999, Globalization, corporate finance, and the cost of capital, *Journal of Applied Corporate Finance* 12, 8-25.

Weisbach, M., 1988. Outside directors and CEO turnover. *Journal of Financial Economics* 20, 431-460.

Yeung, B.Y., Litov, L. P., and K. John, 2006, Corporate Governance and Corporate Risk Taking: Theory and Evidence, http://ssrn.com/abstract=890915.

Zingales, L. 2007. Is the US capital market losing its competitive edge? University of Chicago working paper.

Appendix 1.

This table reports the 41 corporate governance components included in the governance index (Gov 41). The Gov 41 index consists of four subcategories: 1) board, 2) audit, 3) anti-takeover provisions, and 4) compensation and ownership. A higher Gov 41 index indicates better corporate governance. The data source is Risk Metrics and Aggarwal et al. (2011).

Panel A: Board	
1	All directors attended 75% of board meetings or had a valid excuse
2	CEO serves on the boards of two or fewer public companies
3	Board is controlled by more than 50% independent outside directors
4	Board size is at greater than five but less than 16
5	CEO is not listed as having a related-party transaction
6	Compensation committee composed solely of independent outsiders
7	Chairman and CEO positions are separated, or there is a lead director
8	Nominating committee composed solely of independent outsiders
9	Governance committee exists and met in the past year
10	Shareholders vote on directors selected to fill vacancies
11	Governance guidelines are publicly disclosed
12	Annually selected board (no staggered board)
13	Policy exists on outside directorships (four or fewer boards is the limit)
14	Shareholders have cumulative voting rights
15	Shareholder approval is required to increase/decrease board size
16	Majority vote requirement to amend charter/bylaws (not supermajority)
17	Board has the express authority to hire its own advisers
18	Performance of the board is reviewed regularly
19	Board-approved succession plan in place for the CEO
20	Outside directors meet without CEO and disclose number of times met
21	Directors are required to submit resignation upon a change in job
22	Board cannot amend by laws without shareholder approval or can do so only under limited circumstances
23	Does not ignore shareholder proposal
24	Qualifies for proxy contest defenses combination points
Panel B: Audit	
25	Consulting fees paid to auditors are less than audit fees paid to auditors
26	Audit committee composed solely of independent outsiders
27	Auditors ratified at most recent annual meeting
Panel C: Anti-takeover provisions	
28	Single class, common shares
29	Majority vote requirement to approve mergers (not supermajority)
30	Shareholders may call special meetings
31	Shareholders may act by written consent
32	Company either has no poison pill or a pill that is shareholder approved
33	Company is not authorized to issue blank check preferred
Panel D: Compensation and ownership	
34	Directors are subject to stock ownership requirements
35	Executives are subject to stockownership guidelines
36	No interlocks among compensation committee members
37	Directors receive all or a portion of their fees in stock
38	All stock-incentive plans adopted with shareholder approval
39	Options grants align with company performance and reasonable burn rate
40	Officers' and directors' stock ownership is at least 1% but not over 30% of total shares outstanding
41	Repricing prohibited

Appendix 2. Variable definitions

Variable	Definition
Corporate governance proxies	
Board committee	Board committee takes values ranging from zero to four, where one point is assigned for the existence of each of the following committees: 1) audit, 2) compensation, 3) governance, and 4) nomination.
Board entrenchment	Board entrenchment takes values ranging from zero to four, where one point is assigned to a firm for each of the following governance practices: 1) no poison pills, 2) an annually-elected board, 3) a majority vote requirement for mergers, and 4) a majority vote requirement for charter/bylaw amendments.
Board independence	Board independence takes a value of one if a majority of independent outsiders controls the board, and zero otherwise.
Board transparency	Board transparency takes values ranging from zero to three, where one point is assigned to a firm for each the following governance practices: 1) the auditor's ratification at fiscal year end, 2) auditor expenses being strictly related to auditing fees, and 3) the CEO not being involved in any related party transactions.
CEO power	CEO power takes values ranging from zero to three, where one point is assigned to a firm for each of the following governance practices: 1) the separation of the CEO and the chairman, 2) board independence, and 3) the presence of a former CEO on the current board.
Change in Gov 41	Change in Gov 41 is calculated as Gov 41 at (t+1) minus Gov 41 at (t-1) and is winsorized at one percent.
Corporate Governance Components Index (Gov 41)	The corporate governance components index (Gov 41) includes 41 corporate governance components. A higher Gov 41 index indicates better corporate governance. The details of the Gov 41 index are provided in Appendix 1.

Appendix 2. Variable definitions; continued.

Firm characteristics	
Capital expenditure / Sales	Capital expenditure / Sales represents the capital expenditures of firm for acquiring or upgrading its fixed assets scaled by total sales.
Cash / Total assets	Cash / Total assets is the cash used for normal operations of the firm divided by total assets.
Dividend per share	Dividend per share represents the amount of dividend per share.
External finance	External finance is the difference between the actual growth rate of total asset and the firm's sustainable growth rate using retained earnings, where the sustainable growth is [ROE/(1-ROE)]*100 when we assume constant ratios of short-term and long-term debt to assets.
Leverage	Leverage represents the ratio of total liabilities to total assets.
Liquidity	Liquidity is calculated as the volume at (t+1) minus volume at (t-1) divided by market value of equity at (t-1). Volume is the number of shares traded for a stock on a particular day multiplied by the stock price at the end of the year. Market value of equity is the number of common shares outstanding times the stock price at the end of the year.
Size	Size is the log of the total assets of the firm in millions of US$.
Pretax margin	Pretax margin is calculated as income before taxes divided by total sales.
R&D / Assets	R&D / Assets is the research and development expenses scaled by total assets.
ROA	ROA is the return on assets calculated as [net income / total assets].
Sales growth	Sales growth is the percentage growth in sales calculated as the change in the sales in the current period divided by the previous period's total sales.
Tobin's Q	Tobin's Q is calculated as the log(1+(Tobin's q - median Tobin's q for the firm)). Tobin's q is (total asset minus book value of common equity plus market value of equity) / total asset. Market value of equity is the number of common shares outstanding times the stock price at the end of the year.
Cross-listing dummy	Cross-listing dummy takes a value of one if a firm is an unsponsored cross-listing in the US, and zero if a firm is in the matched sample of US firms.
Financing dummy	Financing dummy takes a value of one if a firm has issued equity or debt during the sample period, and zero otherwise.
Change in Tobin's Q	Change in Tobin's Q is calculated as Tobin's q at (t+1) minus Tobin's q at (t-1). Tobin's q is (total asset minus book value of common equity plus market value of equity) / total asset. Market value of equity is the number of common shares outstanding times the stock price at the end of the year.
Change in Size	Change in size is calculated as total assets at (t+1) minus total assets at (t-1), where total assets is in millions of US$.
Change in Leverage	Change in leverage is calculated as the leverage ratio at (t+1) minus the leverage ratio at (t-1).

Appendix 2. Variable definitions; continued.

Change in Sales Growth	Change in sales growth is calculated as sales growth at (t+1) minus sales growth at (t-1). Sales growth is the percentage growth in sales calculated as the change in the sales in the current period divided by the previous period's total sales.
Change in Liquidity	Change in liquidity is calculated as liquidity at (t+1) minus liquidity at (t-1).
Change in Pretax Margin	Change in pretax margin is calculated as pretax margin at (t+1) minus pretax margin at (t-1).
Change in ROA	Change in ROA is calculated as ROA at (t+1) minus ROA at (t-1).
Change in Capital Expenditure	Change in capital expenditure is calculated as capital expenditure at (t+1) minus capital expenditure at (t-1).
Change in Cash Ratio	Change in cash ratio is calculated as cash ratio at (t+1) minus cash ratio at (t-1).
Country characteristics	
Bank-based dummy	Bank-based dummy takes a value of one if a firm is located in a bank-based country, and zero if a firm is located in a market-based country. The variable indicates the financial orientation of the country. Based on Demirguc-Kunt and Levine (2001), and Anderson and Gupta (2009).
Civil law dummy	Civil law dummy takes a value of one if a firm is located in a civil law country, and zero if a firm is located in a common law country. The variable measures the legal origin of the country.
Corruption index	The corruption index by ICRG assesses the degree of corruption within the political system, where higher values indicate less corruption.
Foreign national debt service	Foreign national debt service represents the risk rating for foreign national debt service as a percentage of exports in a given year from ICRG, where higher rating values indicate lower risk.
Investor protection index	The investor protection index is the degree of investor protetction in a country, where higher values are associated with a better investor protection index.
Log (GDP per capita)	Log (GDP per capita constant 2000 US$) is from the WDI database.
Stock Market Cap.	Stock market cap. is the stock market capitalization scaled by GDP.

Figure 1. Governance for 2008 unsponsored cross-listings and US matches before and after 2008

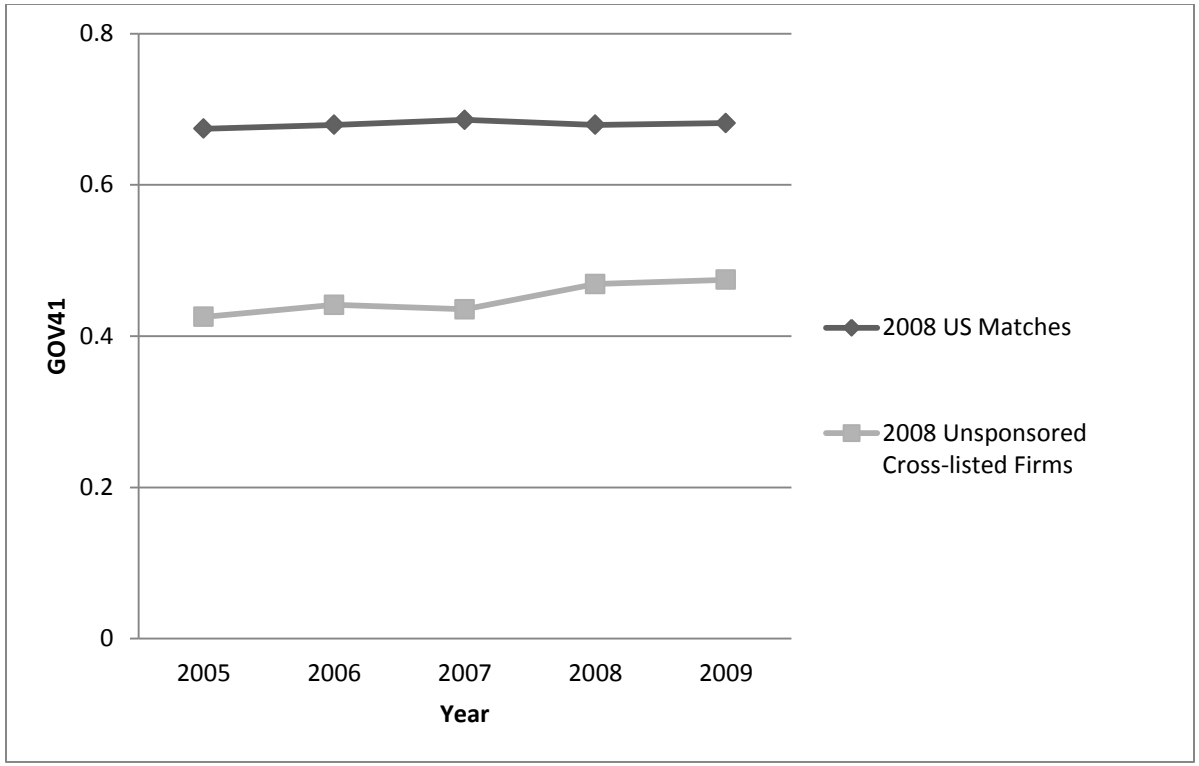

Table 1. Sample description

This table summarizes the construction of the sample used in this paper. In panel A, we describe the sources for our data. In panel B, we summarize the number of unsponsored cross-listed firms in the final sample by country of origin.

A. Sample construction

Number of cross-listed firms covered in the ADR database	1256
Less firms without corresponding corporate governance data	682
Less the number of sponsored ADRs	120
Final sample of unsponsored ADRs with available data (number of firms)	454

B. Number of unsponsored cross-listed firms by country

Country	Number of unsponsored cross-listed firms
Australia	35
Austria	2
Belgium	11
Denmark	11
Finland	13
France	28
Germany	19
Greece	9
Hong Kong	12
Ireland	4
Italy	22
Japan	126
Netherlands	3
New Zealand	11
Norway	8
Portugal	8
Singapore	26
Spain	19
Sweden	24
Switzerland	17
United Kingdom	46
Total	454

Table 2. Univariate Analysis of Unsponsored Cross-listings and Corporate Governance

This table presents characteristics of the unsponsored cross-listings and their counterparts. We use propensity score matching to identify the US counterparts including Log (assets) and industry dummies as independent variables. Panel A reports tests that the mean of the unsponsored cross-listed firms is different from the mean of the matched US counterparts by year and for the whole sample. Panel B presents average GOV 41 scores for unsponsored cross-listed firms and for their matches on the year before the cross-listing and summary statistics for selected firm variables. Matches are firms that operate in the same industry and that have similar firm size. GOV 41 is the governance score used in this study. For details of the measure, see Appendix 1. We also present the p-value for the test that the mean GOV 41 score of the unsponsored cross-listings is different from the mean GOV 41 score of the matched firm. We don't report unsponsored cross-listings for 2005 because we have zero observations.

A. Unsponsored cross-listed firms vs. Matched US counterparts

Firm Variable	Summary Variable	Unsponsored cross-listed firms	US matches	P-value for difference of means test
Log (assets) for 2004	Mean of ADR/US firms	9.126	8.843	0.228
Log (assets) for 2006	Mean of ADR/US firms	9.156	9.103	0.732
Log (assets) for 2007	Mean of ADR/US firms	9.160	9.158	0.987
Log (assets) for 2008	Mean of ADR/US firms	8.990	8.957	0.094
Whole sample	Mean of ADR/US firms	8.999	8.964	0.063
	N. Obs.	435	435	

B. Average governance score for unsponsored ADR listings and the matched US firms one year before cross-listing

Year (Cross-Listing Year)	Mean CGQ of unsponsored ADRs one year before cross-listing	Mean CGQ of matched US firms	P-value for difference of means
2005 (2006)	0.44512	0.70732	<0.001
2006 (2007)	0.47764	0.68699	<0.001
2007 (2008)	0.43536	0.68578	<0.001
All cross-listing years	0.43669	0.68620	<0.001

Summary Statistics for Selected Firm Variables	Observations	Mean	St. Dev.
Governance deviation for US matches	1310	-0.2239	0.1054
Governance deviation for all US firms	1321	-0.1586	0.0873
Governance deviation for home country matches	1297	0.0217	0.0642
Tobin's Q for cross-listed firms	1147	1.5855	1.1200
Tobin's Q for cross-listings and US matches	3878	1.6834	1.2279
Log(1+Demeaned Tobin's Q) for cross-listings and US matches	3836	0.0232	0.6382
Demeaned Tobin's Q for cross-listings and US matches	3878	0.2397	1.1630
Gov 41 index for cross-listed firms	1310	0.4586	0.0885
Gov 41 index for the average of US matches	1310	0.6826	0.0491
Gov 41 index for cross-listings and US matches	3878	0.5957	0.1435

Table 3. Average governance deviation of unsponsored ADR listings from the matched US firms and from all US firms

This table presents average governance deviations for unsponsored cross-listings in the US around the year of the cross-listing. Governance deviations are defined as Gov 41 minus the average of the corresponding "matches" for the firm. We use two approaches to find "matches". First in panels A1 and A2, we identify firms in the US operating in the same industry as the unsponsored cross-listing firm and with similar size. Second in panels B1 and B2, we simply calculate the average GOV 41 for all US firms. In panels A1 and B1, we include all available observations. In panels A2 and B2, we limit our analysis for the sample of firms with consistently available data for the period in question.

Panel A1. The average governance deviation of unsponsored ADR listings from the matched US firms

Variable	Mean	Obs.
Gov 41 deviation two years before cross-listing	-0.2387	437
Gov 41 deviation one year before cross-listing	-0.2495	439
Gov 41 deviation on the cross-listing year	-0.2122	435
Gov 41 deviation one year after cross-listing	-0.2099	436

Note: The difference in means between t-1 and t+1 is significantly different from zero at the 1% level.

Panel A2. The average governance deviation of unsponsored ADR listings from the matched US firms (fixed sample)

Variable	Mean / Obs.
Gov 41 deviation one year before cross-listing (t-1)	-0.2504 / 422
Gov 41 deviation one year after cross-listing (t+1)	-0.2087 / 422

Note: The difference in means between t-1 and t+1 is significantly different from zero at the 1% level.

Panel B1. The average governance deviation of unsponsored ADR listings from the average of all US firms

Variable	Mean	Obs.
Gov 41 deviation two years before cross-listing	-0.1566	438
Gov 41 deviation one year before cross-listing	-0.1714	440
Gov 41 deviation on the cross-listing year	-0.1523	437
Gov 41 deviation one year after cross-listing	-0.1520	444

Note: The difference in means between t-1 and t+1 is significantly different from zero at the 1% level.

Panel B2. The average governance deviation of unsponsored ADR listings from the average of all US firms (fixed sample)

Variable	Mean / Obs.
Gov 41 deviation one year before cross-listing (t-1)	-0.1720 / 430
Gov 41 deviation one year after cross-listing (t+1)	-0.1518 / 430

Note: The difference in means between t-1 and t+1 is significantly different from zero at the 1% level.

Table 4. Annual Changes in the Subcomponents of the Corporate Governance Score

This table presents the average yearly governance scores of the unsponsored cross-listed companies for six subcomponents of corporate governance and tests for significant differences in the values between t-1 and t+1. The governance subcomponents follow. Board independence takes a value of one if a majority of independent outsiders controls the board, and zero otherwise. Board committee takes values ranging from zero to four, where higher values are associated with more committees. Board entrenchment takes values ranging from zero to four, where higher values represent fewer anti-takeover provisions. Committee independence takes values ranging from zero to three, where higher values are related to more independent outside directors that serve on committees. Board transparency takes values ranging from zero to three, where higher values indicate greater board transparency. CEO power takes values ranging from zero to three, where higher values are associated with less CEO power.

1. The average board independence of unsponsored ADR listings

Variable	Mean	St.Dev.	Obs.
Board independence one year before cross-listing	0.2730	0.4461	381
Board independence on the cross-listing year	0.2887	0.4538	381
Board independence one year after cross-listing	0.2887	0.4538	381
P-value for upper tail test for mean of differences using t+1 minus t-1	0.145		

2. The average board committee of unsponsored ADR listings

Variable	Mean	St.Dev.	Obs.
Board committee one year before cross-listing	2.1140	1.1860	430
Board committee on the cross-listing year	2.2326	1.1372	430
Board committee one year after cross-listing	2.2256	1.1416	430
P-value for upper tail test for mean of differences using t+1 minus t-1	<0.001		

3. The average board entrenchment of unsponsored ADR listings

Variable	Mean	St.Dev.	Obs.
Board enternchment one year before cross-listing	1.2674	0.5160	430
Board enternchment on the cross-listing year	1.2744	0.5055	430
Board enternchment one year after cross-listing	1.2791	0.5075	430
P-value for upper tail test for mean of differences using t+1 minus t-1	0.287		

4. The average committee independence of unsponsored ADR listings

Variable	Mean	St.Dev.	Obs.
Committee independence one year before cross-listing	0.5163	0.9229	430
Committee independence on the cross-listing year	0.4860	0.8382	430
Committee independence one year after cross-listing	0.4837	0.8382	430
P-value for lower tail test for mean of differences using t+1 minus t-1	0.139		

5. The average board transparency of unsponsored ADR listings

Variable	Mean	St.Dev.	Obs.
Board transparency one year before cross-listing	1.2512	0.6124	430
Board transparency on the cross-listing year	1.2907	0.6158	430
Board transparency one year after cross-listing	1.2860	0.6142	430
P-value for upper tail test for mean of differences using t+1 minus t-1	0.085		

6. The average CEO power of unsponsored ADR listings

Variable	Mean	St.Dev.	Obs.
CEO power one year before cross-listing	1.0735	0.8795	381
CEO power on the cross-listing year	1.1181	0.8701	381
CEO power one year after cross-listing	1.1234	0.8694	381
P-value for upper tail test for mean of differences using t+1 minus t-1	0.049		

Table 5. Unsponsored cross-listed firms vs. Home country counterparts
This table presents GOV 41 deviations of unsponsored cross-listings from the average of similar firms in the home country. GOV 41 represents the governance score used in this paper. A higher score means better governance. Thus, an increase in GOV 41 means more bonding in the context of the paper. Individual results for Portugal are missing because there is not enough information on matches to cross-listings from Portugal. Finally, we test whether GOV 41 deviations change between t-1 and t+1.

Firm Variable	Gov 41 deviation at (t-1) / N.Obs.	Gov 41 deviation at (t+1) / N.Obs.	P-value for difference of means
Australia	0.013 / 34	0.025 / 33	0.439
Austria	0.048 / 2	0.027 / 2	0.723
Belgium	-0.003 / 10	-0.000 / 11	0.924
Denmark	0.067 / 11	-0.030 / 11	0.001
Finland	0.029 / 13	0.045 / 12	0.529
France	0.019 / 25	0.033 / 26	0.329
Germany	0.008 / 19	0.026 / 19	0.069
Greece	-0.090 / 9	0.010 / 9	0.012
Hong Kong	0.016 / 12	0.020 / 12	0.857
Ireland	0.042 / 4	0.083 / 3	0.523
Italy	-0.006 / 22	0.074 / 22	0.001
Japan	-0.011 / 121	0.023 / 124	0.000
Netherlands	-0.016 / 3	0.091 / 3	0.014
New Zealand	-0.042 / 11	-0.055 / 10	0.386
Norway	0.101 / 7	-0.009 / 8	0.013
Singapore	-0.017 / 25	0.040 / 26	0.003
Spain	0.018 / 19	0.058 / 19	0.049
Sweden	-0.017 / 24	0.068 / 24	0.002
Switzerland	0.033 / 17	0.135 / 16	0.002
United Kingdom	-0.041 / 44	0.053 / 46	0.000
All countries	-0.003 / 432	0.035 / 436	0.000

Table 6. Multivariate Analysis of Unsponsored Cross-listings, Changes in Firm Characteristics and Corporate Governance, and Difference-in-Differences

This table presents regression results of bonding vs. unsponsored cross-listings using changes-in-changes with random effects and differences-in-differences with firm-fixed effects methodologies. The dependent variable is the change in the Gov 41 index from (t+1) to (t-1), where Gov 41 are 41 components of the RiskMetrics corporate governance quotient. Firm-level data are from Thomson Worldscope. Cross-listing dummy takes a value of one if a firm is an unsponsored cross-listing in the US, and zero if a firm is in the matched sample of US firms. Financing dummy takes a value of one if a firm has issued equity or debt during the sample period, and zero otherwise. All the independent variables used in the models are defined in Appendix 2. The values in parentheses are t-statistics based on standard errors that are clustered by firms. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Changes in changes			**Difference in difference**	
	Model 1	**Model 2**		**Model 3**	**Model 4**
Variable	**US Matches 5-to-1 Change in Governance**	**US Matches 1-to-1 Change in Governance**	**Variable**	**US Matches 5-to-1 Gov41**	**US Matches 1-to-1 Gov41**
Dummy for Cross-listing	0.024***	0.023**	2008 Cross-listing x Post 2008	0.006022**	0.011117***
	(2.99)	(2.49)		(1.97)	(3.14)
Financing Dummy	-0.005	-0.004	Post 2008	0.022628***	0.019212***
	(-0.38)	(-0.32)		(16.80)	(8.40)
Change in Size	0.000	-0.000	Financing Dummy	-0.005450	-0.005196
	(0.60)	(-0.84)		(-0.93)	(-0.90)
Change in Leverage	-0.017	-0.008	Size	0.022359***	0.014559***
	(-0.96)	(-0.28)		(8.18)	(3.85)
Change in Sales Growth	0.003	0.007**	Leverage	-0.002813	0.008031
	(1.18)	(2.39)		(-0.29)	(0.45)
Change in Liquidity	0.000	0.000	Sales Growth	0.000001**	-0.000002
	(0.42)	(0.08)		(2.15)	(-1.58)
Change in Pretax Margin	0.000	-0.000	Liquidity	0.001189***	0.001216***
	(0.90)	(-0.76)		(7.23)	(4.92)
Change in ROA	-0.020	-0.014	Pretax Margin	0.000067	0.000050
	(-1.30)	(-0.44)		(0.65)	(0.46)
Change in Capital Expenditure	-0.001**	-0.001**	ROA	-0.006800	-0.000073
	(-2.42)	(-2.48)		(-0.61)	(-0.00)
Change in Cash Ratio	0.032	0.089*	Capital Expenditure	0.000044	-0.000005
	(1.09)	(1.94)		(0.53)	(-0.04)
Bank-based dummy	-0.013	-0.013	Cash Ratio	0.035792**	0.039621*
	(-0.99)	(-0.95)		(2.38)	(1.71)
Civil law dummy	-0.002	-0.004	Constant	0.510353***	0.411515***
	(-0.15)	(-0.30)		(17.38)	(12.60)
Constant	0.030*	0.029			
	(1.78)	(1.34)			
Firm fixed effects	No	No	Firm fixed effects	Yes	Yes
Industry dummies	Yes	Yes	Industry dummies	Yes	Yes
Observations	1,038	450	Observations	7,655	3,878
R-squared	0.058	0.103	R-squared	0.171	0.148

Table 7. Multivariate Analysis of value implications of cross listings

This table presents regression results of firm value vs bonding using changes-in-changes with random effects and differences-in-differences with firm-fixed effects methodologies. Firm-level data are from Thomson Worldscope. Cross-listing dummy takes a value of one if a firm is an unsponsored cross-listing in the US, and zero if a firm is in the matched sample of US firms. All the independent variables used in the models are defined in Appendix 2. The values in parentheses are t-statistics based on standard errors that are clustered by firms. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Changes in changes		**Difference in difference**	
	Model I		**Model II**	**Model III**
Variable	**Change in industry adjusted Tobin's Q**	**Variable**	**US matches 5-to-1**	**US Matches 1-to-1**
			Log (1 + industry adjusted Tobin's Q)	
Change in Governance	0.967*	Gov41 x Crosslisting x Post 2008	0.9690***	1.1749***
	(1.76)		(3.74)	(3.42)
Financing Dummy	0.053	Post 2008	0.0719	0.2591
	(0.50)		(0.71)	(1.39)
Change in Size	-0.000	Gov41	-0.8445***	-0.8896***
	(-1.37)		(-4.84)	(-3.27)
Change in Leverage	0.911	Gov41 x Post 2008	-0.1965	-0.4060
	(1.43)		(-1.37)	(-1.54)
Change in Sales Growth	-0.041	Gov41 x Crosslisting	-0.6083*	-0.5580
	(-0.74)		(-1.90)	(-1.46)
Change in Liquidity	0.474***	Crosslisting x Post 2008	-0.4427***	-0.6273***
	(2.81)		(-3.09)	(-2.94)
Change in Pretax Margin	0.010***	Financing Dummy	0.0108	0.0167
	(4.91)		(0.24)	(0.37)
Change in ROA	1.192**	Size	-0.5061***	-0.5165***
	(2.26)		(-16.41)	(-12.35)
Change in Capital Expenditure	-0.000	Leverage	0.1498	0.0957
	(-0.10)		(1.47)	(0.66)
Change in Cash Ratio	0.825	Sales Growth	-0.0000***	-0.0001***
	(0.78)		(-6.60)	(-12.74)
Bank-based dummy	0.185	Liquidity	-0.0074***	-0.0053***
	(1.50)		(-5.55)	(-3.08)
Civil law dummy	-0.069	Pretax Margin	0.0000	0.0006
	(-0.51)		(0.00)	(0.25)
Constant	-0.213	ROA	1.0481***	1.1023***
	(-0.94)		(6.78)	(5.78)
		Capital Expenditure	-0.0034***	-0.0037***
			(-4.01)	(-3.48)
		Cash Ratio	0.2545*	0.1955
			(1.78)	(0.91)
		Constant	4.3923***	5.1265***
			(14.73)	(13.50)
Industry dummies	Yes	Industry dummies	Yes	Yes
Firm fixed effects	No	Firm fixed effects	Yes	Yes
Observations	281	Observations	7,564	3,836
R-squared	0.258	R-squared	0.274	0.295

Table 8. Average governance deviations of sponsored ADR de-listings from the matched US firms
This table presents average governance deviations for sponsored firm de-listings from the US around the year of the delisting. Governance deviations are defined as Gov 41 of the sponsored de-listings minus the average of the corresponding "matches" for the firm. We use two approaches to find "matches". In panels A and B, we identify firms in the US operating in the same industry as the cross-listing firm and with similar size. In panel A, we include all available observations. In panel B, we limit our analysis for the sample of firms with consistently available data for the period in question.

Panel A. The average governance deviation of sponsored ADR listings from the matched US firms

Variable	Mean	Obs.
Gov 41 deviation two years before delisting	-0.1256	70
Gov 41 deviation one year before delisting	-0.1126	80
Gov 41 deviation on the delisting year	-0.1214	50
Gov 41 deviation one year after delisting	-0.1164	36
Gov 41 deviation two years after delisting	-0.1519	29

Note: The differences in means are not statistically significant.

Panel B. The average governance deviation of sponsored ADR listings from the matched US firms (fixed sample)

Variable	Mean / Obs.
Gov 41 deviation one year before cross-listing (t-1)	-0.0989 / 26
Gov 41 deviation one year after cross-listing (t+1)	-0.1253 / 26

Note: The differences in means are insignificantly different from zero.

Table 9. Multivariate Analysis of Firm and Country Characteristics and Corporate Governance

This table reports firm random effects regression results. The dependent variable is the degree of bonding by a firm (i.e. a higher value means that the firm bonded more after the unsponsored cross-listing), and the explanatory variables follow. Firm-level data are from Thomson Worldscope, and country-level data are from the World Bank and ICRG. Gov 41 are 41 components of the RiskMetrics corporate governance quotient. Bank-based dummy takes a value of one if a firm is located in a bank-based country, and zero if a firm is located in a market-based country. Civil law dummy takes a value of one if a firm is located in a civil law country, and zero if a firm is located in a common law country. The investor protection index is the degree of investor protection in a country, where higher values are associated with a better investor protection index. When R&D expenses and dividend per share are not available, the two variables are set equal to zero. All the independent variables used in the models are defined in Appendix 2. The values in parentheses are t-statistics based on standard errors that are clustered by firms. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Degree of Bonding (Matched US Firms)		
Variable	**Model 1**	**Model 2**	**Model 3**
Log (assets)	-0.007	-0.004	-0.006
	(-1.32)	(-0.72)	(-1.12)
ROA	0.012	0.068	0.019
	(0.17)	(0.92)	(0.27)
Cash / Total assets	-0.001	0.008	-0.015
	(-0.01)	(0.11)	(-0.20)
R&D / Assets	0.053	-0.038	0.028
	(0.25)	(-0.17)	(0.15)
External finance	0.007	0.007	0.007
	(1.50)	(1.50)	(1.43)
Leverage	0.054*	0.073***	0.051*
	(1.95)	(2.83)	(1.80)
Capital expenditure / Sales	0.000	0.000	0.000
	(0.88)	(1.01)	(0.91)
Sales growth	-0.032***	-0.043***	-0.035***
	(-2.76)	(-3.80)	(-2.83)
Dividend per share	-0.001***	-0.001***	-0.001**
	(-2.63)	(-3.12)	(-2.47)
Bank-based dummy		-0.059***	
		(-3.11)	
Civil law dummy		-0.003	
		(-0.20)	
Investor protection index			-0.615***
			(-2.81)
Corruption index		-0.021**	0.038
		(-2.37)	(0.30)
Log (GDP per capita)		0.005	-0.507
		(0.91)	(-0.35)
Stock Market Cap.			0.010**
			(2.58)
Foreign national debt service		-0.023**	-0.318
		(-2.00)	(-0.71)
Constant	-0.094	0.083	16.995
	(-0.74)	(0.47)	(0.49)
Industry dummies	yes	yes	yes
Country dummies	yes	no	yes
Observations	377	376	376
R-squared	0.293	0.203	0.313