Benefits of International Cross-Listing and Effectiveness of Bonding

The paper examines the long term impact of the first significant deregulation of U.S. disclosure requirements since 1934 on cross-listed foreign companies. We find that the deregulation, Rule 12h-6 in 2007, has significantly reduced the benefits enjoyed by exchange cross-listed firms. We document a decline in the cross-listing premium, in the voting premium difference between cross-listed and non-cross-listed firms with dual-class shares, and in the abnormal amount of capital raised for firms cross-listed on major U.S. exchanges. We find decrease of benefits to be particularly significant for firms from weak investor protection countries. These results are consistent with the argument that Rule 12h-6 has weakened the effectiveness of bonding by listing on U.S. exchanges.

I. Introduction

U.S. market has long been considered as attractive to foreign cross-listings. The bonding hypothesis argues that the strict legal and registration rule of US market has made it particularly attractive to foreign companies that need to credibly adopt a stronger governance mechanism. Consistent with this argument, empirical studies that examine the economic impact of cross-listing in the U.S. have documented significant benefits that can be explained by the bonding hypothesis. Some of these benefits include relatively higher valuation (Doidge, Karolyi and Stulz (2004, 2009)), more access to external finance (Reese and Weisbach (2002)), lower cost of capital (Hail and Leuz (2009)), and lower voting premium (Doidge, Karolyi and Stulz (2004)).

However, recent SEC changes in registration and disclosure requirements have called the effectiveness of bonding into question. Until recently, even though foreign firms can delist at will after cross-listing, it is extremely difficult for them to deregister from SEC even after delisting. However, on March 21, 2007, the SEC adopted a new Rule (referred to as Exchange Act Rule 12h-6) that makes it much easier for foreign firms to deregister. The new rule essentially allows any foreign firm to be able to deregister after one year of waiting time post cross-listing. Thus, Rule 12h-6 becomes the first significant deregulation of U.S. disclosure requirements since 1933/1934 Exchange and Securities Act.

Theoretically this new rule should have significant impact on the effectiveness of bonding by US market. Under Rule 12h-6, foreign firms are given a free option to opt-out of the strict US legal system whenever the controlling shareholder believes that the cost of giving up private of control outweighs the benefit of cross-listing. While this certainly reduces the cost of cross-listing, it also decreases the creditability of cross-listed firms' commitment towards the strict U.S. investor protection regulations. The reduction in the effectiveness of bonding will in turn reduces the economic benefits associated with U.S. disclosure and investor protection laws. Consistent with this idea, initial research on market reaction to the announcement of the new rule finds that market reacted negatively to cross-listed firms from weak investor protection countries (Le and Miller (2010)). Additional research also finds that cross-listed firms with higher agency problems incur significant negative stock returns when they announce their intention to deregister (Doige, Karolyi, and Stulz (2010)). However, while the research has examined immediate market reactions around regulation announcement and subsequent deregistration decisions of cross-listed firms; the

important question of what long term economic impact Rule 12h-6 has on the remaining cross-listed firms is still largely unexplored.

Cross-listing literature has long documented significant benefits associated with cross-listed firms. Some of the most important benefits that have been associated with the bonding role of cross-listing include easier access to capital markets and lower cost of capital. Reese and Weisbach (2002) find that cross-listed firms raise significantly more capital after they cross-list on U.S major exchanges. They also find that cross-listed firms from low investor countries are more likely to raise capital in domestic markets, which supports the argument that investor protection offered by the bonding mechanism of U.S. exchanges makes cross-listed firms more appealing to domestic investors. Regarding to lower cost of capital for cross-listed firms, Doige, Karolyi, and Stulz (2004, 2009) find that cross-listed firms enjoy a significant premium over non-cross-listed firms and this premium is more pronounced for firms from low investor protection countries. They also find that growth opportunities are valued higher for firms from countries with low level of investor protection.

Since Rule 12h-6 passed, one question need to be asked then is does U.S. market still offers the same benefits to the cross-listed firms as before? If benefits provided by bonding is material and rule 12h-6 has significantly weakened the bonding role of U.S market, we should observe a decline or even disappearance of some of the benefits associated with cross-listing. In this paper, we seek to address this question by investigating whether there is a change in the previous documented benefits of cross-listing before and after the adoption of SEC Rule 12h-6.

We find results that are generally supportive of the notion that Rule 12h-6 has a negative impact on cross-listing benefits. Using difference of Tobin's q between cross-listed companies and non-cross-listed companies as measurement of cross-listing premium, we find that average premium for firms cross-listed on major U.S. exchanges has significantly declined since 2007 (year of Rule 12h-6). In contrast, the average premium for firms cross-listed through OTC market has largely remained constant. Since exchange cross-listed firms are the only ones that are affected by Rule 12h-6, the fact that only premium of exchange cross-listed firms declined lend support to the argument that Rule 12h-6, not other factors such as the global financial crisis, is the main driver behind the phenomenon.

To further separate out the impact of financial crisis and to focus on the long term impact of Rule 12h-6 on cross-listing benefits due to bonding, we examine the change in voting premium difference since 2007 between non-cross-listed dual class firms and cross-listed dual class firms. Consistent with the argument that Rule 12h-6 reduces the effectiveness of bonding and thus decreases the long-term benefit of cross-listing, we find that the voting premium difference between exchange cross-listed firms and non-cross-listed firms have significantly declined since the passage of Rule 12h-6. This change in voting premium difference is caused by an increase in voting premium of exchange cross-listed firms, and the change is more significant for firms from weak investor protection countries. These results further support the argument that Rule 12h-6 has significant impact on the long-term benefits of cross-listing.

Similar results are found when we compare the capital raising activities through seasoned equity offerings by cross-listed firms before and after year 2007. Foreign firms that cross-listed on major U.S. exchanges issued abnormally larger amount of equity in non-U.S. market than non-cross-listed firms with similar firm characteristics before 2007. However, this abnormal equity issuance has largely disappeared after 2007. We further show that this decline in abnormal equity issuance is not due to constraints in the capital market caused by the global financial crisis. In fact, both cross-listed firms and non-cross-listed firms have issued a larger amount of equity since 2007.

For both cross-listing premium and abnormal equity issuance, we are also able to show that the decline in both benefits is significantly larger for cross-listed firms from weak investor protection countries than for firms from strong investor protection countries. This is consistent with the hypothesis that compliance with more stringent U.S. disclosure and investor protection laws provided more economic benefits for firms from poor investor protection countries.

Lastly, we provide some initial investigation on the net impact of Rule 12h-6 on foreign firms' cross-listing decisions. Since Rule 12h-6 reduces the cost of cross-listing as well as the benefits of cross-listing, it is difficult to predict the overall impact on firms' listing choices. Further, due to the global financial crisis, the number of new cross-listings is limited. We find that the firm-level characteristics of cross-listed firms have not significantly changed before and after 2007. Firms with

given characteristics are just likely to list on an exchange after 2007 as before 2007. One exception we find is that cross-listed firms are less likely to come from strong investor protection countries after 2007. At first, this seems to indicate that the reduction in cost of cross-listing is higher than the reduction of benefits. However, this result seems to be primarily driven by a large number of newly cross-listed Chinese firms (accounts for more than 50% of new listings post 2007). When we exclude Chinese firms from our sample, the impact of country level investor protection remain largely unchanged from pre 2007 to post 2007.

Our study makes several contributions to the literature. First, our paper is the first to study the long term economic impact of disclosure deregulation. While couple studies examined short-term market reactions to rule 12h-6, we are the first to provide empirical evidence that shows a strong negative long term economic impact caused by disclosure deregulation. Through this way, our paper adds to the stream of research on disclosure and investor protection regulations. Second, our paper complements the current research on the role of bonding in cross-listing. By showing that deregulation does decrease the benefits of cross-listing, we provide additional support to the bonding hypothesis

The remainder of the paper proceeds as follows. Section II introduces the background of Rule 12h-6. Section III describes data and provides an overview of the sample. Section IV presents evidence on the impact of Rule 12h-6 on cross-listing premium. Section V examines the impact of Rule 12h-6 on voting premium difference between cross-listed firms and non-cross-listed firms. Section VI discusses how capital raising activities of cross-listed firms are affected by the new rule. Section VII empirically examines the net impact of Rule 12h-6 on listing decisions. Section VIII concludes.

II. Background on Exchange Act Rule 12h-6
In this section, we give a brief background introduction of Exchange Act Rule 12h-6, which was approved by SEC on March 21, 2007 and took effect on June 4, 2007. The rule substantially eased the previous conditions that foreign private issuers need to satisfy in order to terminate the registration of a class of securities and the corresponding obligation to file reports as required by the U.S. Securities and Exchange Act of 1934.

A. Pre Rule 12h-6 Requirements for Deregistration

Under the previous Exchange Act rules, in order for a foreign private issuer (FPI) to terminate its registration of a class of securities under section 12(g) of the Securities Exchange Act of 1934 or suspend its reporting obligations under section 15(d), the FPI must have its securities to be hold by less than 300 residents in the United States or alternatively, less than 500 residents worldwide if the FPI's assets are less than $10 million. In addition, the counting method of the rules required the FPI to ''look through'' the record ownership of brokers, dealers, banks, or other nominees on a worldwide basis and counting the number of separate accounts of customers resident in the U.S. for which the securities are held.

As a result, for many FPI, it was very difficult if not impossible to deregister even when the FPI's U.S. holdings were small and when trading in the U.S. was low (Greene and Underhill (2008). Without deregistration, even if the FPI is delisted, it is still required to carry out the ongoing SEC reporting obligations, including the provisions of the SOX that apply, which can cost the foreign firm up to $1 million a year since SOX. Moreover, the reporting obligations can only be suspended, not terminated, under the previous rules. Each year, the firm needs to determine if it meets the reporting exemption criteria and if the number of U.S. holders exceeds 300 (or 500, if assets are less than $10 million) at the end of a fiscal year, the FPI must resume its reporting obligations.

B. The New Rule 12h-6

The Rule 12h-6 was initially proposed in December 2005, and after a commenting period, was re-proposed on December 13, 2006 and formerly adopted on March 21, 2007. In the interest of reducing "the burdens and uncertainties associated with terminating registration and reporting under the Exchange Act", the new rule simplifies the exit rules for foreign private issuers by establishing an alternative standard based solely on a comparison of the average daily trading volume of a foreign private issuer's equity securities in the United States with that in its primary trading market.

Under Exchange Act Rule 12h-6, the FPI can, regardless of the number of U.S. securities holders or firm size, terminate its registration and reporting obligations if for a recent 12 month period, the U.S. average daily trading volume (ADTV) of the security has been no greater than 5% of its worldwide average daily trading volume. The standard can be met either at the time of delisting or ADR

termination, or after 12 months if the standard was not met at the time of delisting or termination. In addition to allow the FPI to terminate rather than just suspending the reporting obligations, the new rule also simplified the counting method by allowing the FPI to limit its search to U.S. and its home country of incorporation.

There are three additional conditions that a FPI must met before deregister: (1) The foreign firm must have been an Exchange Act reporting company for at least one year, filed or submitted all Exchange Act reports required for this period, and have filed at least one annual report. (2) The foreign firm must not have sold securities in the U.S. in a registered offering during the 12-month period prior to its deregistration. (3) Prior to deregistration, the firm must have maintained a listing for at least one year in a foreign jurisdiction that constitutes its primary trading market.

Since delisting from the U.S. exchange will reduce the trading volume in the U.S. to a trickle, Rule 12h-6 means that any foreign firms that are listed on U.S. exchanges can choose to deregister and stop the reporting obligations to SEC by simply delist or terminate its ADR program and wait for 12 months.

III. Data and Summary Statistics

A. Sample Selection

We obtain our foreign firm data for 42 countries from Worldscope for the period 1995 to 2009. The Worldscope database covers over 24,000 public companies in more than 50 countries and represents more than 96 percent of the world market value. To make firms comparable across countries, following Doidge, Karolyi and Stulz (2004, 2009), we require all firms to have an asset size of over $100 million and we exclude firms in the financial industry and firms that have less than two years of financial data because of estimation requirement. Cross-listed firm were identified from various sources including Bank of New York, Citibank, NYSE, JP Morgan, and Nasdaq. We include both Exchange-traded cross-listings (level 2 and 3 listings) and cross-listings through OTC and private placements such as Rule 144a[1].

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[1] These firms are not required to register under the Exchange or Securities acts and are exempt from most civil liability provisions and do not have to follow U.S. disclosure practices (Doidge (2004)).

In addition to financial data, we also collect information about the capital raising activity for our foreign firms from Securities Data Company (SDC). Because the number of IPOs is limited after 2007 due to the financial crisis, we choose to have our sample only consists of seasoned equity offerings (SEO) issued by cross-listed and non-cross-listed firms from 1995 to 2009. For each SEO issue, we collect the date of issue, the market in which the security was issued, and the proceeds from each issue from SDC. The data on security issuances from SDC are then merged with firm-level financial data from Worldscope.

B. Summary Statistics

Table I provides summary statistics for the sample based on firm's country of domicile. Panel A shows the number of firms based on listing status from each country. In total, our sample consists of 13108 firms from 43 countries in various time periods, out of which 500 firms are traded on major U.S. exchanges and 1033 firms are cross-listed on OTC market. Similar to other studies (see Lel and Miller (2008)) that employ the Worldscope database, there is a clustering of observations in Japan. Although our analysis is based on fixed country effects to compare differences within countries, we remove the observations from Japan in our robustness check (unreported) to ensure that our results are not driven by these cases.

Panel B compares the firm level and country level characteristics of cross-listed firms with non-cross-listed firms in the pre-Rule-12h-6 period and post-Rule-12h-6 period. Surprisingly, there are no significant changes in most of the firm characteristics before and after 2007. One exception is sales growth rate, compared with pre-Rule-12h-6 period, the difference in sales growth rate (defined as the geometric mean of the sales growth rates of the past two years) between exchange cross-listed firms and non-cross-listed firms decreased in the post-Rule-12h-6 period. However, this change is actually driven by a higher sales growth rate for non-cross-listed firms after 2007, which is contradicting to what's supposed to happen during a global recession. One explanation for this result is that the sample of non-cross-listed firms before and after 2007 consists of different firms with different firm characteristics. To control for this problem, later in the paper we adopt a propensity score match procedure to ensure that we are comparing cross-listed firms with the same non-cross-listed firms in both periods.

Panel C reports the total number of SEO issues by cross-listed firms before and after Rule 12h-6. In counting the number of total issues, if a firm has multiple issues in the same year, we count them as one issue regardless of the market place. We then further break down the number of issues by U.S. market, home market, and other markets. During this process, each issuance at different location each year is counted as a separate issue. In total, there are 1282 SEOs issued by cross-listed firms (597 by Exchange listed firms and 585 by OTC listed firms) and 7079 SEOs issued by non-cross-listed firms from 1995 to 2009. Cross-listed firms account for 15.3% of the total number of issuance by non-U.S. firms, a significant number given the number of cross-listed firms. For cross-listed firms, most of issuance is in home and other market while the percentage of U.S. issuance is higher for exchange cross-listed firms than for OTC cross-listed firms. This is consistent with Reese and Weisbach (2002) where they find very limited equity issuance by OTC firms in the U.S. markets. We find the number of issuance from 2007 to 2009 is surprisingly high compare to the number of issuance from 1995 to 2006. The total number of issuance in the three year period since 2007 accounts for more than 50% of the total number of issuance in the previous 11 years. One explanation is that foreign firms were more active in using the equity market after 2007 in order to alleviate the financial constraint caused by the global financial crisis. Alternatively, the phenomenon may caused by more incomplete information on SEO from SDC in the early years. To control for this, we conduct robustness tests (unreported) using data from later years only and find our results largely unchanged.

IV. Impact of Rule 12h-6 on Cross-Listing Premium

A. Change in Premium Before and After 2007

We first examine the change of premium (measured by Tobin's Q) that cross-listed firms have enjoyed over non-cross-listed firms as documented by Doige, Karolyi, and Stulz (2004, 2009). Doige, Karolyi, and Stulz (2004) argues that cross-listed firms should have higher valuation than non-cross-listed firms because they have higher growth opportunities, because they can take advantage of growth opportunities better, and because they can reduce exploitation by controlling shareholders. While higher growth opportunities may only cause a temporary value increase, the other two factors should lead to permanent increase in valuation. However, by offering the cross-listed companies an option to opt-out of the bonding commitment, SEC rule 12-6h may weaken the

market belief in cross-listed firms' commitment and add uncertainty to investors' valuation of the firms' growth opportunity, which in turn can lead to a decrease in the cross-listing premium.

In this section we examine this hypothesis by comparing the documented cross-listing premium before and after 2007, the year which Rule 12h-6 took effect. The global financial crisis started in 2007 complicates our test as it is difficult to determine whether any possible changes in premium are caused by a reduction in governance benefits or a decrease in growth opportunities. To solve this problem, we also compare firms cross-listed through OTC market along with firms that cross-listed on major U.S. exchanges. Doige, Karolyi, and Stulz (2009) document a valuation premium for both OTC cross-listed firms and Exchange cross-listed firms, yet it is believed that only the premium for the latter firms are associated with the governance benefits of bonding. Since Rule 12h-6 only affects cross-listed firms on major U.S. exchanges, we should observe a larger decline in premium for exchange cross-listed firms than for OTC cross-listed firms.

Following Doidge, Karolyi and Stulz (2009), our sample includes all non-financial firms with asset bigger than 100 million with no missing financial data. The sample from 1995 to 2009 covers 13108 companies with 100056 firm year observations. Out of which, 500 are exchange cross-listed firms. Before rule 12h-6, there are 320 foreign firms listed on U.S exchanges, by the end of 2009, 277 of that 320 firms still remain cross-listed.

Table II examines the cross-listing premium over time starting from year 1995 to 2009 (only 2000 to 2009 are reported). We follow Doige, Karolyi, and Stulz (2009) and regress Tobin's q on varies cross-listing type dummies along with firm characteristics, including sale's growth (proxy for growth opportunity), median tobin's q from firm's global industry, log of total sales as size proxy, and country dummies. The regressions are estimated using OLS and the standard errors are clustered at country level.

Consistent with previous findings by Doige, Karolyi, and Stulz (2009), we find that Exchange cross-listed firms enjoy significantly higher valuation than non-cross-listed firms before 2007. Compare with the average Tobins' q ratios of firms that are not cross-listed, firms cross-listed on U.S. exchanged are worth 16% to 20% more from 2003 to 2006. However, this cross-listing

premium was significantly lowered after year 2007 to the range of 6% to10%, which is consistent with the idea that Rule 12h-6 has reduced the benefits of cross-listing. One concern of this result is that it is driven by the recession starting in 2007 instead of Rule 12h-6 as the disappearance of the cross-listing premium simply reflects a lack of growth opportunity for cross-listed firms. However, we also find that not only OTC cross-listed firms also has a premium as documented by previous studies, but also this premium has not really declined throughout the 2007 to 2009 period, which is not consistent with the recession explanation.

In Table III, we formerly test the difference in value premium of cross-listed firms before and after year 2007. We follow the approach of Doige, Karolyi, and Stulz (2009) where we estimate a pooled OLS model with interactions of all firm-level variables with pre-12h-6 (equals one for 1995-2006, zero otherwise) and post- 12h-6 (equals one for 2007–2009, zero otherwise) dummy variables. This is effectively as estimating two separate regression models, one for before 2007 and one for post 2007, but the approach allows us to compare whether coefficient on exchange and OTC listing type dummies are equal between two periods.

The first model in Table III estimates the model with all non-financial firms with over 100 million assets. Similar to Table II, we find that the premium on cross-listed firms on major exchanges is significant both before and after 2007, but the premium has declined from 23.4% to 9.8% in the post-rule-12h-6 period. In contrast, the premium on OTC firms remains roughly unchanged across the two sub-periods. F-tests are performed to determine the equality of the coefficients on listing types across sub-periods and the test rejects the null hypothesis that the coefficients on exchange cross-listed firms are equal pre and post 2007. However, the test fails to reject the null hypothesis for OTC cross-listed firms. In unreported test we also investigate whether the coefficients on exchange cross-listed firms and OTC cross-listed firms are equal, we are able to reject the equality hypothesis in the pre-2007 period but are not able to reject the null hypothesis for the post-2007 period.

To further test whether the decline in premium is governance related, we then separate our sample to low investor protection countries and high investor protection countries based on anti-director index from LLSV(1998) and anti-self-dealing index. The results are supportive to the argument that

Rule 12h-6 hurts cross-listed firms from weak investor protection countries the most as they are the ones that benefit the most from bonding. We find that the valuation premium for firms from weak investor protection countries suffer a decline of 17% while the premium for firms from strong investor protection countries only declined for about 5%. In all the subsamples, the premium for OTC cross-listed firms remains largely unchanged.

B. Propensity Score Matching Approach

So far we have largely followed Doige, Karolyi, and Stulz (2009) to test for changes in cross-listing premiums. However, Litvak (2008) raise the concern that the simple regression framework in Doige et al (2009) may not fully capture the contemporaneous events that could affect the Tobin's q of foreign companies generally. Instead the author uses a propensity score matching approach and finds that cross-listing premium for level 2/3 firms declined after SOX, which is in contrast to the findings in Doige et al (2009). In this study, we follow Litvak (2008) to conduct additional tests. The propensity score matching approach provides several advantages to our investigation. Since the matching pair sample only include cross-listed firms and non-cross-listed firms that exist both before and after 2007, it allows us to test whether our results in Table 3 are driven by changes in the composition of sample firms in the post rule 12h-6 period. The approach also allows us to test the determinants of change in cross-listing premium.

To carry out the matching procedure, we first select all exchange listed cross-listed firms that cross-listed before 2007 and still exist at the end of our sample period. Then for each cross-listed firm on major U.S. exchanges, a matching firm is selected from non-cross-listed firms based on propensity to cross list (the predicted probability of cross-listing from a logit model of a firm's decision to cross-list). We estimate the following logit model for all non-financial firms with more than $100 million assets and have complete financial data from Datastream; we also exclude firms that cross-listed through OTC or private placement:

$$prob(D_i = 1) = \alpha + \beta_i * X_i + \varepsilon_i$$

Where D is a dummy variable that equals to one is the firm is cross-listed on a major U.S. exchange, X is a vector of firm and country level variables. Firm level variables include log of sales, leverage ratio, geometric mean sale's growth of past two years, and median tobin's q from firm's global industry. All financial data are from year 2006, the last pre-Rule 12h-6 year. Ideally we would like to estimate a separate logit model for each country; however, because the sample size of some countries is limited, we choose to include firms from all countries in one sample and controlling for country characteristics. The country-level variables include anti-director-right index, stock-market-to-GDP ratio, and log of GNP per capita.

I then use the coefficients from the logit regression to compute the probability of cross-listing $E(D_i)$ for each firm:

$$E(D_i) = \alpha + \beta_i * X_i$$

Within each country, I then match each cross-listed firm to its 'nearest neighbor' based on the expected probability of cross-listing from the non-cross-listed firms without replacement. To avoid the risk of bad matches, we set the tolerance level on the maximum propensity score distance (caliper) to 0.001. After removing firms without matches, out of the 277 cross-listed firms that exist until the end of 2009, we find matching firms for 224 of them.

Panel A in Table IV compares the firm characteristics of cross-listed firms and matching firms in both before Rule 12h-6 period and after Rule 12h-6 period. Not surprisingly, the firm characteristics between cross-listed firms and their matching firms are very similar. The matching sample has slightly higher sales growth rate than cross-listed firms in the pre 2007 period; however this difference has significantly declined since 2007. We are also happy to find that the ROA ratios between two groups are very similar in both periods. Since we did not include ROA in our propensity score matching procedure, the similarity of this variable indicates that our matching procedure was able to capture firm characteristics beyond what's specified in the model. Additionally, unlike in Table I, this time we are able to detect significant changes in firm characteristics that are consistent with what we would expect during a global financial crisis. Both cross-listed firms and non-cross-listed firms experience a decline in sales growth rate and ROA ratios after 2007.

Lastly, we compare the difference in Tobin's Q between cross-listed firms and matching firms. Despite higher sales growth rate, we find that matching firms have significantly lower Tobin's Q than cross-listed firms. This supports the argument that market expects the cross-listed firms to take advantage of growth opportunities better than non-cross-listed firms. We also find that this difference in Tobin's Q declined to 12.3% in the Post-Rule-12h-6 period, this is consistent with what we find in previous section.

Panel B conducts formal testing using a pooled OLS model with firm-level clustering of standard errors to examine whether the cross-listing-premium has indeed declined since 2007. The dependent variable in the model is the Tobin's Q difference between the cross-listed firm and its matching firm. To ensure our results are robust, we limit our sample period from 2004 to 2009, exactly three years before and after rule 12h-6. In addition to firm and country level control variables, we also include an "afterevent" dummy variable that is equal to one from 2007 to 2009 and equals zero from 2004 to 2006.

The results are not surprising and confirm our previous finding that there is a significant decline in cross-listing premium since Rule 12h-6 and this decline is more significant for firms from low investor protection countries (model 1 and 2). In addition, we find that the decline in premium is primarily driven by declining in premium associated with cross-listed firms' growth opportunities (model 3 and 4).

V. Impact of Rule 12h-6 on Voting Premium

In previous section we have shown that the cross-listing premium of exchange cross-listed firms have significantly declined since the passage of Rule 12h-6 in 2007, which is consistent with the idea that the new regulation reduces the effectiveness of bonding and as a result decreases the long-term benefits of cross-listing. However, one concern with the previous approach is that it is difficult to fully separate the change in Tobin's Q caused by the declining of bonding effectiveness from the change caused by the concurrent changes in growth opportunities. Since the time period after Rule 12h-6 coincide with the global financial crisis of 2007 and the cross-listing premium is linked to the growth opportunities enjoyed by the cross-listed firms, it is possible that the decrease in cross-listing premium is temporary rather than long term.

In order to address this problem and distinguish the impact of Rule 12h-6 on the long term benefits of cross-listing from the impacts of the financial crisis, in this section we compare the differences in voting premium between cross-listed and non-cross-listed firms before and after the passage of Rule 12h-6 in 2007. Unlike the cross-listing premium, which may be affected by changes in Tobin's Q due to change in growth opportunities, the voting premium measures the price difference between high-voting class of shares and low-voting class of shares of the same firm, which theoretically should be independent from the outside economic conditions. Literature has long argued that the right to control a corporation is valuable because the person in control is able to take the advantage of the position to gain significant private benefits. To quantify these private benefits of control, past research (such as Zingales, 1994) has used the voting premium of dual-class shares to infer the value of control. Applying this method to cross-listed firms, Doidge (2004) is able to demonstrate that cross-listed dual-class firms have significantly lower voting premium than non-cross-listed firms and the difference is caused by a higher value for low-voting class of shares, Doidge uses these findings as evidence to support the bonding hypothesis of cross-listing.

Following Doidge(2004)'s argument, we argue that if Rule 12h-6 decreases the long-term benefits of cross-listing by increasing the present value of agency costs, we should observe a decrease in the difference in voting premium between cross-listed and non-cross-listed firms after 2007. This change in the difference in voting premium should be driven by an increase in cross-listed firms' voting premium and should be more significant for cross-listed firms from low investor protection countries.

A. Sample Selection and Measurement of Voting Premium

A.1 Sample Selection

The sample includes all dual-class firms from the country lists from Datastream from 1995 to 2010. To be considered as a dual-class firm and to be included in the sample, we follow Nenova (2003) and Doidge (2004) and require the firm to meet the following criteria: (1) firms have at least two

classes of shares with different voting rights, (2) both class of shares are publically traded on domestic market, (3) the low-voting class of shares cannot be converted to high class of shares, (4) neither class of shares receive a fixed dividend payment. Since the number of firms that meets the criteria is relatively small, we do not impose any size limitation on the firms.

For each firm meets the above criteria, we collect the weekly data of price, turnover, market value, number of shares, and dividend yield for both shares of classes from Datastream. In case the home market turnover data is missing, we replace the turnover information with data collected from Bloomberg and CRSP for cross-listed firms. To be included in the sample, we follow Nenova (2003) and Doidge (2004) and require the firm to have at least 20 weekly observations. We then collect the voting rights information for each firm using documents provided by Datastream, firms' annual reports, country conventions, and online searches. Once we have the dual-class firms, we identify which firms are cross-listed using information from Bank of New York, Citibank, NYSE, JP Morgan, and Nasdaq. We include both Exchange-traded cross-listings (level 2 and 3 listings) and cross-listings through OTC and private placements such as Rule 144a. After these criteria, the final sample includes 886 dual class firms, out of which 157 are cross-listed.

A.2 Methodology for Voting Premium Calculation

To calculate the voting premium, we follow Zingales (1995) and Doidge (2004) and using the ratio of the price of a voting right to the price of a cash flow right, which equals to:

$$VP = \frac{P_H - P_L}{P_L - rvP_H}$$

Where P_H is the price of high voting class of shares and P_L is the price of low voting class of shares, rv is the relative number of votes of low voting share to the number of votes of high voting shares. Since each country have different votes attached to high and low voting shares (for example, Brazil has 1 vote for high voting shares and 0 for low voting shares, while Denmark has 10 votes for high voting shares and 1 vote for low voting shares), the rv term is used to make the voting premium comparable across countries.

A.3. Descriptive Analysis

Table V report the sample distribution and mean firm characteristics across countries. There are 886 dual class firms from 20 countries, which cover most of Western Europe and South America. The only country in East Asia that has dual class shares is South Korea, the remaining countries either does not allow dual class shares (e.g. China and Japan), or pay fix dividends on their shares. The country with the most dual-class shares is Brazil with 235 dual class firms while Australia has the least with 3 firms. Seven countries, Austria, Portugal, South Africa, South Korea, Switzerland, U.K. and Venezuela do not have exchange cross-listed firms; three of them, Austria, Portugal, and Switzerland, do not have cross-listed firms at all. The mean voting premium ranges from 1% to 66%, which is largely consistent with previous literature though slightly higher than what Doidge (2004) finds for couple countries. This difference is expected given the different time period and number of firms covered in the sample.

Figure 1 shows the change in voting premium over time by exchange cross-listed firms, OTC cross-listed firms, and non-cross-listed firms. Consistent with Doidge (2004), exchange cross-listed firms had a much lower voting premium than non-cross-listed firms before 2007. But the figure also shows that exchange cross-listed firms experienced a large increase in voting premium since 2007, while the voting premium for non-cross-listed firms and OTC cross-listed firms has largely remained unchanged. These results confirm our expectation that Rule 12h-6 has a negative impact on the cross-listing benefits that are associated with bonding. Since only the voting premium of exchange cross-listed firms changed, the decrease in voting premium difference is unlikely to be caused by other outside factors like recession, which should impact all types of firms.

B. Change in Voting Premium Difference Before and After 2007

In this section we conduct multivariate regressions to verify the pattern we observed earlier. To estimate the impact of Rule 12h-6 on the voting premium difference between cross-listed and non-cross-listed firms, the following regression model is used:

$$VP = \alpha + \beta_1 Afterevent + \beta_2 Exchange + \beta_3 Afterevent*Exchange + \beta_4 OTC + \beta_5 Afterevent*OTC + \beta_6 144A + \beta_7 Afterevent*144A + \beta X + \delta c + \varepsilon$$

where VP is the voting premium for each firm each year. Afterevent is a dummy variable that equals to 1 for years after Rule 12h-6 and equals to 0 for years before Rule 12h-6. Exchange, OTC, and 144A are dummy variables for the corresponding cross-listed firms. X is a vector of control variables that include both firm and country characteristics. Following Doidge (2004), the firm level variables includes voting power, relative turnover rate, a dividend dummy, and total market capitalization. Voting power is defined as fraction of total votes attached to high voting shares to the fraction of total cash flow rights attached to high voting shares, we expect the higher the voting power the higher the voting premium. Dividend dummy equals to one if the dividend received by low voting shares is higher than high voting shares, many firms pay a higher dividend to low voting shares to compensate for the lack of voting rights and we expect this dummy has a negative impact on voting premium. Total market capitalization is the sum of market capitalization of high class shares and low class shares, since it is more difficult to acquire control position in a firm when the firm's market capitalization is big, we expect total market capitalization to be negatively associate with voting premium. Relative turnover is defined as the log of the ratio of total turnover of low-voting class shares to the total turnover of high-voting class shares. If low-voting shares is more liquid compare to high-voting shares, it is possible that the voting premium is lower. The country level variables are taken from LLSV (1998) and include anti-director index, anti-self-dealing index, efficiency of judicial system, the level of accounting standard, and the country's GNP. We expecting that the private benefits of control should be lower in countries with more stringent investor protection, more efficient judicial system and higher level of accounting disclosure, which should be reflected in a lower voting premium for those countries. In addition to control variables, the model also controls for year fixed effect and is adjusted for firm clustering.

B.1 Change in Voting Premium Difference by Cross-listing Type

Table VI reports the regression results from the panel data regression that estimates the change in voting premium difference between cross-listed and non-cross-listed firms. Model 1 shows the regression results that only include cross-listing dummies and year fixed effects. Model 2 controls for firm level characteristics and fixed country and year effects. Model 3 controls for both firm level variables and country level variables with year fixed effects. The results are consistent with what we expected. The Exchange dummy is negative and significant at 1% level while the interaction term between after 12h-6 dummy and exchange dummy is positive and significant at 5% level, which

indicates that the voting premium difference has reduced since the passage of Rule 12h-6. Voting premium for exchange cross-listed firms is about 30% lower than non-cross-listed firms before 2007. After the passage of Rule 12h-6, the voting premium difference between Exchange cross-listed firms and the non-cross-listed firms have decreased about 20%. In addition, consistent with the idea that Rule 12h-6 only affects exchange cross-listed firms, we observe no significant change in voting premium difference between OTC and 144a cross-listed firms and non-cross-listed firms.

The signs on the control variables are largely as expected. We find that firms with high voting power for its high-voting shares have significantly higher voting premium while firms that pay a higher dividend to its low-voting shares have lower voting premium. The sign on the total market capitalization is negative and consistent with what we expected, however the coefficient is not significant. The sign on the relative turnover ratio is positive and insignificant, though the result is in contrast to the idea that more liquid low-voting shares should related to lower voting premium, it is similar to what Doidge (2004) found and is not a serious concern as there is no strong theoretical prediction on the impact of turnover ratio. The country level variables are very similar to Doidge (2004). We find that firms in high investor-protection countries have lower voting premium and firms in countries with more efficient judicial systems also have lower voting premium.

B.2 Impact of Investor Protection on Change in Voting Premium

In Table VI, we show that exchange cross-listed firms experienced an increase in voting premium since 2007, which reduces the voting premium difference between exchange cross-listed firms and non-cross-listed firms. In this section, we examine whether this change in voting premium difference varies by the level of investor protection of each country. Since Rule 12h-6 reduces the effectiveness of bonding by cross-listing on major U.S. exchanges, we expect the new regulation to have a larger impact on firms from low investor protection countries since they benefit from the bonding effect of cross-listing the most. To test this hypothesis, we modify the model to include double and triple interaction terms between country level investor protection variable, dummy variable for exchange cross-listed firms, and dummy variable for post Rule 12h-6 period to capture the effect of country level investor protection on change in voting premium differences.

Table VII reports the estimates from the panel data regression using the modified regression model. Model 1 uses anti-director index from LLSV (1998) to proxy for the level of investor protection in a country and model 2 uses anti-self-dealing index from Djankov et al. (2006) to proxy for the level of investor protection. Consistent with the idea that Rule 12h-6 affects firms from weak investor protection the most, we find that the decrease in voting premium is lower for firms from strong investor protection countries. A one unit increase in anti-director index (range from 0 to 6) reduces the impact of Rule 12h-6 on voting premium difference by 12.3% and significant at 10% level; similarly, an increase in anti-self-dealing index (range from 0 to 1) decreases the impact of Rule 12h-6 by 90.3%, significant at 5% level. The signs on other control variables are also similar to what we expected, the signs on the interaction terms between exchange cross-listed dummy and variables for country level investor protection and judicial efficiency are positive and significant (unreported), which is consistent with the argument that bonding through cross-listing is less beneficial for firms from strong investor protection countries.

In conclusion, the change in voting premium difference between cross-listed and non-cross-listed firms since the passage of Rule 12h-6 confirms the pattern that we find in the change in cross-listing premium from section IV. The decrease in voting premium difference between exchange cross-listed firms and non-cross-listed firms indicate that the long term benefits of cross-listing due to bonding have significantly declined since 2007.

VI. Impact of Rule 12h-6 on Capital Raising Activities

In this section, we examine another important benefit that cross-listed firms on U.S market enjoyed before 2007—easier access to capital market. Cross-listing allows foreign firms to improve their access to the capital market by either directly allowing the firm to obtain better access to U.S. market or by increasing the reputation (through bonding) of the firm in its domestic (and other) markets. Reese and Weisbach (2002) argues that since protection of minority shareholders is particularly important for firms that want to issue equity, we should observe an increase in equity issuance after firm cross-list. Moreover, since cross-listed firms may raise more capital in U.S. market for other reasons (such as gain access to U.S. investors), the benefits of legal bonding of U.S. market should be more reflected by an increase in equity issuance in non-U.S. market. Consistent

with this view, Reese and Weisbach (2002) finds that cross-listed firms from weak investor protection countries are more likely to raise capital in non-US market after cross-listing.

Following this stream of thought, if SEC rule 12h-6 has indeed weakened the market belief in cross-listed firms' commitment to bonding, we would expect to see a change in the equity issuance pattern for cross-listed firms. More specifically, as the certification effect of listing on U.S. market becomes less effective, we should be able to observe a decrease in the amount of equity issued by cross-listed firms, where the decrease should be particularly evident in non-U.S. market. Thus, to investigate what impact rule 12h-6 has on cross-listed firms' ability to access external capital, we want to compare the amount of proceeds raised per year through SEO by cross-listed firms before and after 2007.

A. Equity Issues Before and After 2007

Table VIII compares the average amount of capital raised each year by cross-listed firms before and after 2007. To adjust for firm and country level effects, for each firm, we also scale the proceeds raised each year by the firm's asset of previous year and by the total proceeds raised in the country.

In terms of the raw amount of capital raised through SEO, the initial story seems to indicate that there are no significant changes in cross-listed firms' ability to access capital market after 2007. During the 1995 to 2006 period, each firm cross-listed on major U.S. exchanges raised on average $102 million each year through SEO, or 3.64% of firm's assets. After 2007, on average, cross-listed firms on major U.S. exchanges raised $108 million proceeds each year, or 4.27% of firm assets. The difference between pre and post 2007 period is not statistically significant. Similar patterns exist when we compare the capital raised in non-U.S. markets before and after 2007. In terms of raw proceeds, exchange listed cross-listed firms actually experience a slight increase (though not significant) in the amount they raised in non-U.S. market through secondary equity offerings, from $91 millions to $97 millions. These results suggest that cross-listed firms' access to capital market was not significantly constrained by the global financial crisis after 2007.

However, compare the amount of proceeds raised by cross-listed firms alone does not tell the whole story. If all other firms in the country are able to raise significantly more capital than before and yet

cross-listed firms cannot, we can argue that cross-listed firm's ability to raise capital relative to its peers is constrained.   Following this insight, in Table VIII we also compare the relative amount of capital raised by exchange cross-listed firms before and after 2007. To our surprise, we find that the story completely changes when it comes to relative amount of capital raised by cross-listed firms. As a fraction of the total capital raised in each country, exchange cross-listed firms experienced a significant decline since 2007. During the 1995 to 2006 period, the annual amount raised by each exchange cross-listed firm accounted for 2.08% of the total proceeds raised in the country, after 2007, the weight declined to 0.88%. When we compare exchange listed firms with OTC listed firms, the pattern is more striking. OTC listed firms also raised significantly more capital since 2007; however they are able to maintain a stable fraction as the total capital raised in the country.

Another interesting trend we observe in Table VIII is the decline of non-U.S. market issuing by exchange cross-listed firms from low investor protection countries. Both as a percentage of firm assets or as the proportion of capital raised by the country, proceeds raised through non-U.S. market issuing experienced a significant decline for exchange cross-listed firms from low investor protection countries. This is in direct contrast to OTC listed firms and exchange listed firms from high investor protection countries, which primarily relied on domestic issuing for capital after 2007. This trend is consistent with the idea that since 12h-6, the certification role of U.S. market is significantly reduced; as a result, easier access to U.S. market becomes the dominate venue for cross-listed firms from weak investor protection countries to raise additional capital.

B. Change in Abnormal Equity Issuance

Table VIII shows that even though the nominal amount of capital raised per year has not changed for cross-listed firms, the relative weight of cross-listed firms in domestic and other non-U.S. market has declined since 2007.

In this section, we investigate whether the change can be explained by the evolution of firm characteristics using models from the recent literature. Previous literature by Reese and Weisbach (2002) and Lins,Strickland and Zenner (2005) has found that cross-listed firms issue abnormally larger quantity of new issues after they cross-list than before they cross-list. In our study, since there are few new cross-listings since 2007, we examine whether cross-listed firms enjoy abnormal equity

issuance over non-cross-listed firms with similar firm characteristics. We then investigate whether this abnormal equity issuance by cross-listed firms have declined after 2007. Since we are interested in the governance impact of Rule 12h-6 on new share issuance of cross-listed firms and because the equity issues in U.S. can be affected by other factors, our approach only compare equity issuance in non-U.S. market by cross-listed and non-cross-listed firms.

To estimate abnormal equity issuance by cross-listed firms, we follow and adept the approach of Fama and French (2008) and Stulz (2010) to the international setting. We estimate the following tobit model with a lower bound of 0 from 1995 to 2009:

$$dS = a + b_1 dA + b_2 OCF + b_3 Cash_{t-1} + b_4 NoD + b_5 D + b_6 L_{t-1}/A_{t-1} + b_7 MC + b_8 NgB + b_9 M/B + b_9 dSTdebt + b_{10} Exchange + b_{11} OTC + b_{12} 144A + c + e$$

where dS is the total proceeds raised in non-U.S. market each year; dA is the change of assets from previous year; OCF is operating cash flow computed as EBITDA less the change in working capital for the period; Cash equals to cash plus cash equivalents; NoD is a dummy variable that equals to one if the firm does not pay dividends; D is the total dividends paid in the year, L_{t-1}/A_{t-1} is the lag leverage ratio; MC is the log of market capitalization; NgB is a dummy variable that equals to one if the firm has negative book equity; M/B is the market to book ratio calculated as book value of assets minus book value of common equity plus the market value of common equity, then divided by assets; $dSTdebt$ is the change in debt in current liability; exchange is a dummy variable equal to one if the firm is cross-listed on major U.S. exchange; OTC equals to one if the firm cross-listed on OTC market; and 144A equals to one if the firm cross-listed through private placement. c controls for country effects. Except for market cap, M/B, L_{t-1}/A_{t-1}, and the dummy variables, the dependent and explanatory variables in are scaled by assets.

Table IX reports regression results over the entire period from 1995 to 2009. The first set of results in Model 1 uses the method following the spirit of Fama and Macbeth (1973). We estimate a tobit regression each year and then average the coefficients over the annual regressions and perform inference tests on the time-series means and standard deviations. For the annual tobit regressions, in addition to firm level variables, we also include four country level variables: anti-director index

from LLSV (1998), stock-market-capitalization-to-GDP ratio, log of GNP per capita, and total proceeds raised in the country each year. Consistent with theory of bonding, we find that firms cross-listed on major U.S. exchanges raise significantly more capital than non-cross-listed firms controlling for firm and country characteristics. However, we do not observe any abnormal equity issuance for OTC and 144A firms.

Estimates on control variables are largely expected. Consistent with pecking order theory, we find that firms with higher OCF and higher dividends raise less external capital than other firms. Similar to Fama and French (2008), we also find that firms pay no dividends are more likely to raise capital. Larger firms, firms with higher leverage, and firms with higher market to book raise more capital through SEO, while firms with higher cash and firms that choose to take on a larger short term debt demand less external capital.

In model 2, we estimate a pooled Tobit regression model with year fixed effects and country variables. The results are very similar to those of Fama-Macbeth regressions in Model 1. In model 3 and 4, we break sample into high investor protection countries and low investor protection countries based on anti-director index from LLSV (1998). Consistent with the idea that bonding is more effective for firms from low investor protection countries, we find that the abnormal equity issuance is larger for Exchange listed cross-listed firms from low investor protection countries than for firms from strong investor protection countries.

Overall the results in Table IX support the argument that listing on major U.S. exchanges increases the attractiveness of foreign firms in their domestic (and other) markets, while cross-listing through other means are not as effective. Next in Table X, we investigate whether cross-listed firms were still able to raise more capital than non-cross-listed firms after the passage of SEC rule 12h-6. If rule 12h-6 indeed reduces the governance benefit of cross-listing by lowering firms' commitments in bonding, we should be able to observe a decline in cross-listed firms' quantity of abnormal equity issues. Alternatively if Rule 12h-6's impact on the effectiveness of bonding is not significant or if bonding has no impact on firm's ability to raise capital, we should observe no change in the abnormal quantity of equity issuance.

Similar to the cross-listing premium regressions, we estimate two independent regressions for the period from 1995 to 2006 and from 2007 to 2009 controlling for firm characteristics and country and year dummies. We then compare the equality of the coefficients on the three cross-listing type dummies in the two regressions. In the first model, we estimate the regression with all non-financial firms with $100 millions of assets or more following Doidge, Karolyi and Stulz (2010). The results are supportive of the idea that Rule 12-6h has a material impact on cross-listed firms' access to non-U.S. capital markets. Before 2007, firms cross-listed on major U.S. exchanges raise 6.6% (as a percentage of previous year assets) more equity than a similar non-cross-listed firms; after 2007, this abnormal amount has largely disappeared. We also compare the amount of capital raised by OTC and 144A firms before and after 2007 to control for the impact of potential time trend variation that are unrelated to governance (e.g. the financial crisis in 2007). We find that firms cross-listed through OTC market or private placement are just likely to raise capital after 2007 as before 2007. Combined this result with the previous findings that the nominal amount of capital raised by cross-listed firms have not declined after 2007, we are able to show that the disappearance of the abnormal equity issuance is not due to firms' inability to access capital market caused by the global financial crisis.

In the next models, we separate our sample to low investor protection countries and high investor protection countries using anti-director-rights index from LLSV (1998) and anti-self-dealing index from Djankov et al. (2006). As expected, we observe a significant decline in the abnormal equity issuance for cross-listed firms from low investor protection countries, while we only observe an insignificant decline for cross-listed firms from high investor protection countries.

In summary, the results in this section support the notion that there is a significant decline in the benefits enjoyed by cross-listed firms, especially for firms cross-listed on major U.S. exchanges. In terms of access to capital markets, even though the nominal amount of capital raised by exchange-listed firms has not changed, there is a significant decline in the abnormal equity issuance that cross-listed firms enjoyed before 2007.

VII. Net Impact of Rule 12h-6 on Cross-listing Decisions

The previous sections have focused on the impact of Rule 12h-6 on the economic benefits of cross-listing. However, when it comes to cross-listing decisions, benefits alone are only one factor in the consideration. With the adoption of Rule 12h-6, foreign firms are no longer bound by cross-listing; instead they now have the option to opt-out when cross-listing becomes unfavorable. As a result of this, the cost of cross-listing has also declined. So if indeed Rule 12h-6 has reduced the benefits of listing on U.S. markets, does this reduction outweigh the decrease in cross-listing cost also associated with Rule 12h-6? In this section, we conduct initial investigation of the net impact of Rule 12h-6 on foreign firms' cross-listing decisions.

Following Doidge, Karolyi and Stulz (2009), we first estimate a logit regression to examine whether the effect of firm characteristics on propensity to cross-list has changed since 2007. The regression results are shown in Table XI. For Listing Stock regressions, the dependent variable equals to one if the firm is cross-listed. This model essentially captures the joint effect of new cross-listing and delisting. Since Lel and Miller (2010) and Doidge, Karolyi and Stulz (2010) have shown that firms with less growth opportunities and from weak investor protection countries are more likely to delist after rule 12h-6, we also estimate a listing flow logit model to separate out listing decisions from delisting decisions. For the Listing Flow model, the dependent variable equals to one if the firm choose to cross-list to U.S. that year. We examine the following firm and country characteristics in the model: firm's sales growth, global industry Tobin's Q, log of assets, leverage, anti-director-index, log (GNP), and stock market cap/GDP ratio.

We find that there is no significant change in most of the variables except anti-director-index. Doidge, Karolyi and Stulz (2004) documented that firms from strong investor protection countries are more likely to list, however, we find that the coefficient on the anti-director-index become smaller in the post 2007 period. We find similar results in the listing flow regression, where coefficient on anti-director-index turns negative after 2007. At first glance, this seems to indicate that firms from weak investor protection countries are more likely to cross-list after 12h-6, maybe because the managers believe that the savings from a lower cross-listing cost surpass the reduction in cross-listing benefits. While this might be true, we also find that the results are primarily driven by a combination of small newly cross-listing sample and a dominance of Chinese firms in the

sample. Since 2007, only 43 non-financial foreign firms in our sample cross-listed on U.S. market, out of them, 26 are Chinese firms. When we exclude Chinese firms from our sample, we find that the change in the coefficients on anti-director-index almost disappeared.

Lastly, using the pre-12h-6 regression from Table XI, we are able to access how many firms would have listed in post-12h-6 period given the same firm characteristics. To estimate this, we use the coefficients from the pre-12h-6 regression to calculate the expected probability that a firm has an existing listing or a new listing for the post-12h-6 period sample. Then for each year, we average the expected probability of the sample firms to get an expected percent of listing and then compare this to the actually percent of listings. The results are reported in Table XII.

We find that for listing stocks, the actual percent of listing is very close to the expected percent for year 2007 and 2008; and for 2009, we actually underestimate the actual percent. However, the estimation for listing flow completely misses the mark. This is not surprising, given the unfavorable U.S. stock market condition; small number of newly listings is expected. Overall, the results seem to indicate that the attractiveness of U.S. market has not been significantly affected by Rule 12h-6. But giving the unusual circumstances surrounding the 2007 to 2009 period, further testing using longer time period will be needed to reach more convincing conclusions.

VIII. Conclusion

The paper examines the long term impact of the first significant deregulation of U.S. disclosure requirements since 1934: the 2007 SEC Rule 12h-6. Consistent with the notion that Rule 12h-6 reduces the effectiveness of bonding and thus decreases the benefits of cross-listing, we find that average premiums for firms cross-listed on major U.S. exchanges significantly declined since 2007 (year of Rule 12h-6) but average premium for firms cross-listed through OTC market or private placement has not. The decline in cross-listing premium is more significant for firms from weak investor protection countries. Similar results are found when we compare the voting premium difference between cross-listed firms and non-cross-listed firms before and after year 2007 to further focus on the impact of Rule 12h-6. Exchange cross-listed firms experienced a significant increase in voting premium that reduces the voting premium difference between exchange cross-listed firms and non-cross-listed firms. We find such change in voting premium to be more

significant for firms from weak investor protection countries and are not significant for OTC or private placement cross-listed firms. We also discover that Rule 12h-6 has significant impact on the capital raising activities of cross-listed firms. We show that exchange listed foreign firms significantly reduced the amount of abnormal capital they raised in non-U.S. market and this reduction is more significant for firms from weak investor protection countries.

Reference

Coffee, John, 2002, Racing towards the top? The impact of cross-listings and stock market competition on international corporate governance, Working paper, Columbia University.

Coffee, John, 1999, The future as history: The prospects for global convergence in corporate governance and its implications, Northwestern University Law Review 93, 641–708.

Djankov, Simeon, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer, 2005, The law and economics of self-dealing, *Journal of Financial Economics*, forthcoming.

Doidge, Craig, 2004, U.S. cross-listings and the private benefits of control: Evidence from dual-class firms, *Journal of Financial Economics* 72, 519–553.

Doidge, Craig, 2005, What is the effect of cross-listing on corporate ownership and control? Working paper, University of Toronto.

Doidge, Craig, Andrew Karolyi, and Rene Stulz, 2004, Why are foreign firms listed in the U.S. worth more? *Journal of Financial Economics* 71, 205–238

Doidge, C., Karolyi, A., Stulz, R., 2009. Has New York become less competitive than London in global markets? Evaluating foreign listing choices over time. *Journal of Financial Economics* 91, 253-277

Doidge, C., Karolyi, A., Stulz, R., 2010. Why do foreign firms leave U.S. equity markets? *Journal of Finance* 65, 1507-1553

Dyck and Luigi Zingales, 2004, Private benefits of control: An international comparison, *The Journal of Finance* 59, 537-600

Fama, Eugene F. and Kenneth R. French, 2008, Opportunistic financing, working paper, University of Chicago.

Fernandes, Nuno G., Ugur Lel, and Darius P. Miller, 2010, Escape from New York: The market impact of loosening disclosure requirements, *Journal of Financial Economics* 95, 129-147

Gozzi, Levine, and Schmukler, 2010, Patterns of international capital raising, *Journal of International Economics* 80, 45-57

Hail, Luzi, and Christian Leuz, 2009, Cost of capital effects and changes in growth expectations around U.S. cross-listings, *Journal of Financial Economics 93*, 428-454

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

Kahle, Kathleen M. and Rene M. Stulz, 2010, Financial policies and the financial crisis: How important was the systematic credit contractions for industry corporations?, NBER working paper

La Porta, Rafael, Florencio Lopez-De-Silanes, Andrei Shleifer, and Robert Vishny, 1998, Law and finance, *Journal of Political Economy* 106, 1113–1155

La Porta, Rafael, Florencio Lopez-De-Silanes, and Andrei Shleifer, 1999, Corporate ownership around the world, *Journal of Finance* 54, 471–518.

La Porta, Rafael, Florencio Lopez-De-Silanes, Andrei Shleifer, and Robert Vishny, 2000, Investor protection and corporate governance, *Journal of Financial Economics* 58, 3–27.

Lel and Miller, 2008, International Cross-Listing, Firm Performance, and Top Management Turnover: A Test of the Bonding Hypothesis*, The Journal of Finance 63,* 1897-1937

Lins, Karl, Deon Strickland, and Marc Zenner, 2005, Do non-U.S. firms issue equity on U.S. stock exchanges to relax capital constraints? *Journal of Financial and Quantitative Analysis* 40, 109–134.

Litvak, Kate, 2008, The long-term effect of the Sarbanes-Oxley act on cross-listing premia, *European Financial Management* 14, 875-920

Reese, William, and Michael Weisbach, 2002, Protection of minority shareholder interests, crosslistings in the United States, and subsequent equity offerings, *Journal of Financial Economics* 66, 65–104.

Stulz, Rene, 1999, Globalization, corporate finance, and the cost of capital, *Journal of Applied Corporate Finance* 26, 3–28.

Figure 1. Change in Voting Premium over Time

Figure 1 shows the change in voting premium of cross-listed and non-cross-listed firms over time from 2000 to 2010. Exchange listed firms are cross-listed firms on major U.S. exchanges and OTC listed firms are cross-listed firms on OTC market
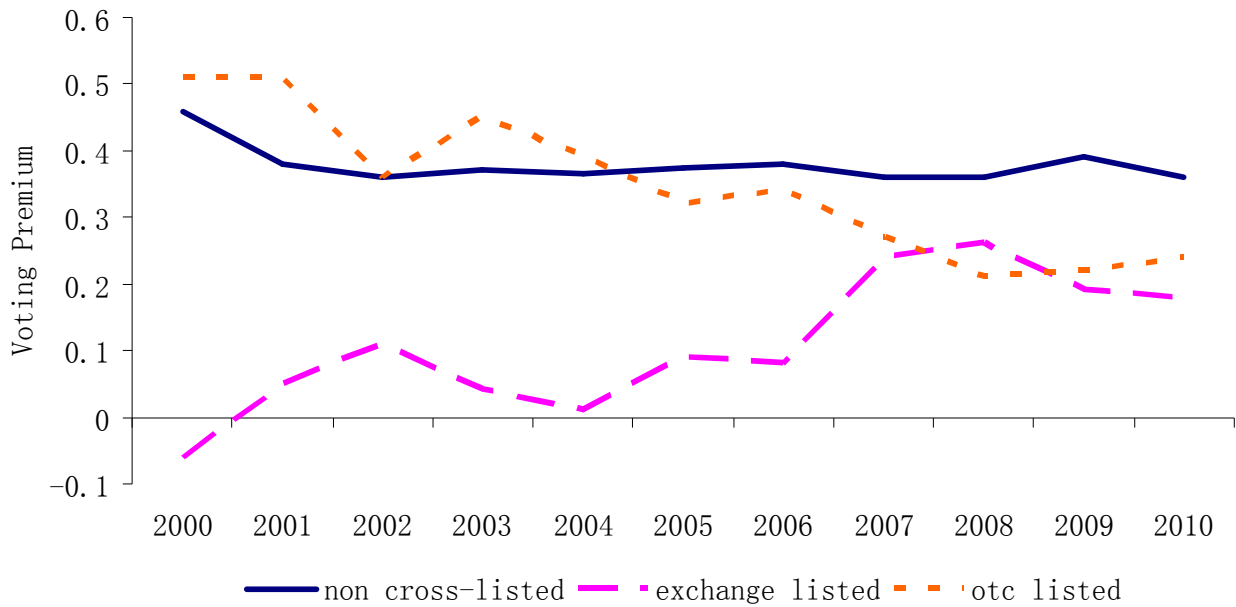
Table I. Summary Statistics
This table shows the summary statistics and the distribution of firms that do or do not cross-list as of Dec 31, 2009. Information on cross-listed firms comes from various sources including Bank of New York, Citibank, JP Morgan, NYSE, and NASDAC. Panel A shows the number of firms by listing types in each country. Panel B compares the firm and country characteristics of cross-listed firms and non-cross-listed firms before and after Rule 12h-6. We further break cross-listed firms into firms listed on major U.S. exchanges and firms that listed on OTC markets. Panel C compares the number of seasoned equity offerings (SEO) before and after 2007. Multiple issues in the same year are counted as one issue regardless of market place when counting total number of issues. When counting number of issues for different market place, each issuance at a different location is counted as a separate issue.

		Panel A: Sample Distribution by Country				
Country	N of Firms	N of Cross-Listed	N of Exchange	N of OTC	N of 144A	Firm Years
Asia Pacific						
Australia	353	181	9	53	3	2036
China	1561	235	60	52	4	8983
Hong Kong	569	172	15	101	3	3579
India	606	69	13	2	38	3084
Indonesia	160	36	2	14	0	1124
Israel	107	178	11	8	1	642
Japan	2737	184	21	136	1	29650
Korea	737	36	9	2	15	5115
Malaysia	360	33	0	10	0	2671
New Zealand	48	34	3	20	0	345
Philippines	76	51	3	6	2	572
Singapore	289	96	1	39	0	1031
Taiwan	708	69	7	4	45	4756
Thailand	177	33	0	12	1	1351
Turkey	140	20	0	13	7	919
Europe						
Austria	61	40	1	19	1	489
Belgium	80	31	3	15	1	650
Denmark	76	34	2	10	0	691
Finland	85	87	4	17	1	744
France	393	127	23	41	1	3489
Germany	442	76	20	42	0	3604
Greece	173	20	4	8	2	1229
Hungary	13	23	1	2	3	111
Ireland	41	52	5	12	0	354
Italy	209	44	8	22	5	1688
Luxembourg	24	46	5	4	0	179
Netherlands	124	57	17	19	1	1138
Norway	127	36	3	17	0	754
Poland	124	32	0	11	5	463
Portugal	44	100	2	13	1	389
Russia	165	111	6	35	43	561
Spain	102	60	3	23	1	1015
Sweden	164	61	6	27	0	1144
Switzerland	157	169	10	18	0	1601
United Kingdom	667	141	40	99	2	5270
North America						
Canada	502	110	94	16	0	3111
South America						
Argentina	43	81	9	1	4	373
Brazil	220	84	30	24	13	1572
Chile	101	18	13	2	2	944
Colombia	19	53	0	1	0	148
Mexico	89	59	28	16	8	858
Peru	39	7	2	3	2	260
Africa						
South Africa	146	1806	7	44	3	1095
Total	13108	1752	500	1033	219	100056

	Panel B: Firm and Country Characteristics Before and After Rule 12h-6					
	Pre-Rule 12h-6 (1995-March 2007)			Post-Rule 12h-6 (April 2007-2009)		
	Exchange	OTC	Non-Cross-Listed	Exchange	OTC	Non-Cross-Listed
Sales Growth	0.153	0.102	0.114	0.161	0.117	0.161
Tobin's Q	1.71	1.47	1.32	1.58	1.44	1.37
Total Assets	10181	6628	1450	12373	7500	1296
Leverage	0.26	0.27	0.27	0.23	0.26	0.25
ROA	0.052	0.046	0.037	0.049	0.049	0.038
Global Industry Q	1.31	1.19	1.18	1.33	1.20	1.21
Cash	0.125	0.125	0.13	0.13	0.13	0.137
Anti-Director	3.88	4.16	3.91	3.56	4.00	3.71
Marketcap/GDP	0.69	0.778	0.734	1.21	1.46	1.325
Log(GNP/capita)	9.51	9.69	9.63	9.74	10.07	9.66
	Panel C: Number of SEO Before and After Rule 12h-6					
	Pre-Rule 12h-6 (1995-March 2007)			Post-Rule 12h-6 (April 2007-2009)		
	Exchange	OTC	Non-Cross-Listed	Exchange	OTC	Non-Cross-Listed
Total Number of Issues	403	277	4532	194	308	2547
Number of Firms Issued SEO	232	175	3074	148	266	2103
Number of Issues in U.S Market	128	24	0	42	0	0
Number of Issues in Home Market	262	198	3926	64	158	1578
Number of Issues in Other Market	90	77	705	100	150	973

Table II. Regression of the Valuation of Cross-listed Firms

This table presents the cross-sectional regression estimates of the valuation differences between various type of cross-listed firms and non-cross-listed firms each year. The sample includes all non-financial, no-U.S firms from Worldscope with assets greater than 100 million. The dependent variable for all models is Tobin's Q, calculated as ((total assets-book equity)+market value of equity)/total assets. Exchange is a dummy variable that takes one if the cross-listed firm is listed on a major US exchange. OTC takes value of one if the firm is listed through over the counter. 144a equals one if the firm is cross-listed through private placement. Salesgr is the geometric average of sales growth rate of in the past three years (winsorized at 1% and 99% tails). Global industry q is the median global industry Tobin's Q, log (sales) is the log of last year sales of the company. All regressions include country dummies. Standard Errors are adjusted for heteroskedasticity and country level clustering. T stats are reported in the parentheses. ***, **,* denotes significance at 1%, 5%, and 10% level

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Exchange	0.219***	0.244***	0.227***	0.289***	0.177***	0.22***	0.164**	0.061	0.064*	0.095**
	[2.72]	[2.85]	[2.74]	[5.23]	[3.25]	[3.66]	[2.52]	[1.15]	[1.71]	[2.39]
OTC	0.134***	0.095***	0.083***	0.119***	0.122***	0.134***	0.120***	0.118***	0.128***	0.134***
	[3.42]	[2.71]	[3.61]	[3.61]	[3.14]	[4.38]	[4.13]	[2.60]	[4.17]	[5.31]
144A	-0.006	-0.026	-0.085	-0.003	-0.007	-0.011	-0.017	0.007	-0.057	0.011
	[-0.50]	[-0.21]	[-0.025]	[-0.47]	[-1.06]	[-1.13]	[-1.03]	[0.08]	[-1.17]	[0.19]
Salesgr	0.383***	0.268***	0.188**	0.367***	0.381***	0.36***	0.26***	0.240***	0.012	0.143***
	[3.75]	[3.05]	[2.66]	[8.00]	[10.13]	[10.03]	[4.65]	[7.04]	[0.59]	[4.88]
Log (Sales)	0.018	0.032**	0.032	0.006	0.005	-0.006	0.003	0.006	0.019***	-0.013**
	[1.07]	[2.61]	[1.56]	[1.05]	[0.97]	[-1.06]	[0.43]	[0.97]	[2.94]	[-2.48]
Global Industry Q	0.357***	0.610***	0.657***	1.067***	0.458***	0.565***	0.85***	0.64***	0.298***	0.853***
	[8.13]	[10.04]	[10.53]	[5.34]	[10.36]	[3.91]	[12.39]	[16.79]	[11.08]	[8.43]
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4753	5261	6383	7098	7885	8553	9490	10582	10894	10973
Adj R^2	0.231	0.199	0.281	0.192	0.177	0.164	0.189	0.218	0.123	0.223

Table III. Changes in Valuation for Cross-Listed Firms

This table presents the results from panel data regressions that estimate the valuation differences between various type of cross-listed firms and non-cross-listed firms before and after 2007,the year Rule 12h-6 took effect. The sample includes all non-financial, no-U.S firms from Worldscope with assets greater than 100 million. The dependent variable for all models is Tobin's Q, calculated as ((total assets-book equity)+market value of equity)/total assets. Exchange is a dummy variable that takes one if the cross-listed firm is listed on a major US exchange. OTC takes value of one if the firm is listed through over the counter. 144a equals one if the firm is cross-listed through private placement. Salesgr is the geometric average of sales growth rate of in the past three years (winsorized at 1% and 99% tails). Global industry q is the median global industry Tobin's Q, log (sales) is the log of last year sales of the company. All regressions include country and year dummies. Standard Errors are adjusted for heteroskedasticity and firm level clustering. T stats for the regression estimates are reported in the parentheses F-tests evaluate whether the coefficients on listing type dummies are equal pre-Rule-12h-6 and post-Rule-12h-6 periods.. ***, **,* denotes significance at 1%, 5%, and 10% level

	Whole Sample		Low Investor		High Investor		Low Anti-Self-dealing		High Anti-Self-dealing	
	Before 2007	After 2007	Before 2007	After 2007	Before 2007	After 2007	Before 2007	After 2007	Before 2007	After 2007
Exchange	0.234***	0.098***	0.278***	0.102	0.205***	0.156***	0.201***	0.08	0.274***	0.198***
	[5.26]	[3.28]	[3.28]	[1.51]	[3.95]	[3.15]	[2.95]	[1.33]	[4.61]	[3.56]
OTC	0.137***	0.144***	0.105*	0.151***	0.143***	0.156***	0.111**	0.122***	0.135***	0.155***
	[4.53]	[6.40]	[1.76]	[3.95]	[4.06]	[5.52]	[2.19]	[3.27]	[3.59]	[5.57]
144A	-0.013	0.061	0.040	-0.010	-0.04	0.1	0.039	0.043	-0.021	-0.035
	[0.40]	[0.71]	[0.49]	[-0.17]	[-0.83]	[0.19]	[0.41]	[0.85]	[-0.34]	[-0.51]
Salesgr	0.299***	0.171***	0.271***	0.259***	0.335***	0.124***	0.251***	0.238***	0.365***	0.114***
	[16.35]	[8.94]	[9.19]	[7.60]	[13.23]	[5.38]	[9.32]	[7.73]	[14.59]	[4.69]
Ln(Sales)	0.021	-0.011***	-0.002	-0.077***	0.031***	0.026***	-0.003	-0.062***	0.037***	0.023***
	[5.40]	[-2.78]	[-0.40]	[-10.22]	[5.33]	[5.28]	[-0.47]	[-9.15]	[7.14]	[4.45]
Globalq	0.615***	0.415***	0.535***	0.443***	0.647***	0.427***	0.556***	0.464***	0.638***	0.416***
	[11.46]	[14.81]	[4.57]	[8.96]	[13.92]	[12.59]	[5.06]	[9.69]	[16.56]	[12.15]
F-Test (p value) Exchange Diff	5.07 (0.02)**		4.39 (0.03)**		0.99 (0.32)		3.13 (0.07)*		2.03(0.17)	
F-Test OTC Diff	0.29 (0.58)		1.17 (0.28)		0.43 (0.52)		0.04 (0.83)		1.47 (0.23)	
F-Test 144A Diff	0.71 (0.41)		0.71 (0.40)		0.54 (0.69)		0.37 (0.44)		0.88 (0.37)	
Year Dummy	Yes		Yes		Yes		Yes		Yes	
Country Dummy	Yes		Yes		Yes		Yes		Yes	
Observations	100056		33505		66551		37477		62579	
Adjusted R2	0.195		0.182		0.201		0.214		0.196	

Table IV. Change in cross-listing premium: A propensity score matching approach
*This table examines the change in valuation difference between exchange cross-listed firms and non-cross-listed firms using propensity score matching approach. Panel A compares the firm level characteristics between cross-listed firms and their matching firms in both pre-Rule-12h-6 and post-Rule-12h-6 periods. Panel B reports results from panel data regressions estimating the change in cross-listing premium for exchange cross-listed firms. The dependent variable is the difference in Tobin's Q between cross-listed firm and its matching firm. Afterevent is a dummy equals to one for the years in the Post-Rule-12h-6 period (2007-2009). Salesgr is the geometric average of sales growth rate of in the past three years (winsorized at 1% and 99% tails). Global industry q is the median global industry Tobin's Q, log (sales) is the log of last year sales of the company. Anti-Self-Dealing index is from Djankov et al. (2006) and Anti-Director index is from LLSV (1998).All regressions include year dummies. Standard Errors are adjusted for heteroskedasticity and firm level clustering. T stats are reported in the parentheses. ***, **, * denotes significance at 1%, 5%, and 10% level*

	Panel A. Compare Exchange Cross-Listed Firms with Matching Firms							
	Pre-Rule-12h-6 (2004-2006)				Post-Rule-12h-6 (2007-2009)			
	Salesgr	Global Q	ROA	Leverage	Salesgr	Global Q	ROA	Leverage
Cross-Listed Firms	0.222	1.394	0.076	0.241	0.187	1.309	0.059	0.244
Matched Firms	0.290	1.416	0.077	0.242	0.226	1.323	0.059	0.261
Difference in Tobin's Q	0.265***				0.123***			
	[5.17]				[2.73]			

	Panel B. Analysis of Change in Cross-Listing Premium			
	(1)	(2)	(3)	(4)
Afterevent	-0.465***	-0.814***	0.032	0.041
	[-3.35]	[-3.20]	[0.17]	[0.14]
Afterevent*Anti-Self-Dealing	0.589**		0.821***	
	[2.53]		[3.47]	
Afterevent*Anti-Director		0.178***		0.166***
		[2.90]		[2.92]
Afterevent*Sales Growth			-0.421**	-0.366*
			[-2.43]	[-1.64]
Afterevent*Global Industry Q			-0.579***	-0.521***
			[-3.73]	[-3.41]
Anti-Self-Dealing	-0.727**		-0.801**	
	[-2.00]		[-2.25]	
Anti-Director		-0.094*		-0.085*
		[-1.72]		[-1.78]
Sales Growth	0.836***	0.824***	0.894***	0.857***
	[5.08]	[5.06]	[4.68]	[4.61]
Log (sales)	-0.061	-0.057	-0.051	-0.047
	[-1.59]	[-1.54]	[-1.51]	[-1.57]
Global Industry Q	0.244*	0.214*	0.704***	0.639**
	[1.83]	[1.65]	[3.55]	[3.28]
Stock market cap/GDP	0.073	0.055	0.07	0.055
	[0.79]	[0.61]	[0.69]	[0.61]
Log (GNP)	0.213**	0.185**	0.153*	0.129
	[2.42]	[2.11]	[1.89]	[1.60]
Year Dummy	Yes	Yes	Yes	Yes
Observations	1129	1129	1129	1129
Adj R^2	0.1	0.108	0.119	0.115

Table V. Dual Class Firms Sample Distribution

This table shows the summary statistics and the distribution of dual-class firms across countries from 1995 to 2010. Information on cross-listed firms comes from various sources including Bank of New York, Citibank, JP Morgan, NYSE, and NASDAC, we separate the cross-listed firms into firms listed on major U.S. exchanges and firms that listed on OTC markets or private placement (144A). For each country, we calculate the average voting premium, the average voting power, and the average market value of the dual class firms. Voting premium is the ratio of value of voting right to the value of cash flow right. Voting power is the ratio of the fraction of total voting rights of high voting class of shares to the fraction of total cash flow rights of high voting class of shares. Market value is the total market value of high voting shares and low voting shares.

Countries	N of Dual-Class Firms	Dual Class Firms Cross-listed on U.S.		Average Firm Characteristics by Country		
		N of Exchange Cross-listed Firms	N of OTC or 144A Cross-Listed Firms	Voting Premium	Voting Power	Market Value
Australia	3	1	1	0.06	1.95	14497
Austria	8	0	0	0.02	1.41	141
Brazil	235	33	18	0.31	2.29	2151
Canada	57	5	0	0.14	4.68	870
Chile	8	2	0	0.04	1.77	1880
Colombia	6	1	0	0.40	1.17	965
Denmark	34	1	2	0.16	2.62	1786
Finland	22	2	4	0.14	2.61	1531
France	7	1	2	0.09	1.12	4786
Germany	74	3	8	0.13	1.68	4040
Italy	83	4	16	0.41	1.24	4317
Mexico	23	10	6	0.11	1.47	350
Norway	14	2	1	0.03	1.66	226
Portugal	5	0	0	0.01	1.47	75
South Africa	26	0	7	0.04	2.88	266
South Korea	175	0	4	0.66	1.15	2474
Sweden	67	8	14	0.10	3.18	1070
Switzerland	13	0	0	0.27	2.69	1000
U.K.	23	0	1	0.22	4.25	678
Venezuela	6	0	3	0.38	2.2	208
Total	886	73	84	-	-	-

Table VI. Change in Voting Premium Difference

This table presents the results from panel data regressions that estimate the change in voting premium differences between various type of cross-listed firms and non-cross-listed firms since 2007, the year Rule 12h-6 took effect. The sample includes all non-US dual class firms from 20 countries listed in Datastream. The dependent variable in each regression is the voting premium as defined in section A.2. The voting premium is calculated using the local market prices of the high- and low-voting shares from Datastream. Exchange is a dummy variable that takes one if the cross-listed firm is listed on a major US exchange. OTC takes value of one if the firm is listed through over the counter. 144a equals one if the firm is cross-listed through private placement. Afterevent is a dummy variable that equals to 1 if the year is in the period from 2007 to 2010. Anti-director, accounting standards, efficiency of judicial, and GNP are from La Porta et al. (1998). Voting premium is the ratio of value of voting right to the value of cash flow right. Voting power is the ratio of the fraction of total voting rights of high voting class of shares to the fraction of total cash flow rights of high voting class of shares. Market value is the total market value of high voting shares and low voting shares. Dividend is a dummy variable that equals to 1 if the dividend for low voting shares is higher than dividend for high voting shares. Relative Turnover is the log of the ratio of the total turnover of the low-voting shares relative to the total turnover of the high voting shares. All firm level variables are annual average using weekly data; firms with less than 20 weekly observations are excluded from the sample. The independent variables are truncated at 1% and 99% tails. All regressions include and year dummies. Standard Errors are adjusted for heteroskedasticity and firm level clustering. T stats for the regression estimates are reported in the parentheses. ***, **,* denotes significance at 1%, 5%, and 10% level

	(1)	(2)	(3)
Afterevent*Exchange	0.174**	0.190**	0.232***
	[2.45]	[2.45]	[2.98]
Afterevent*OTC	-0.030	0.053	0.027
	[-0.15]	[0.28]	[0.14]
Afterevent*Portal	0.025	0.019	0.012
	[0.25]	[0.47]	[0.31]
Exchange	-0.323***	-0.312***	-0.334***
	[-5.64]	[-3.49]	[-4.12]
OTC	-0.117	0.029	-0.090
	[-0.56]	[0.17]	[-0.41]
Portal	-0.09	-0.10	-0.092
	[-0.37]	[-0.43]	[-0.32]
Afterevent	-0.078	-0.017	-0.061
	[-1.03]	[-0.25]	[-0.84]
Anti-Director			-0.140***
			[-4.29]
Accounting			-0.001
			[-0.10]
Judicial Efficiency			-0.066**
			[-1.98]
GNP			0.001**
			[1.98]
Voting Power		0.089***	0.087***
		[3.20]	[2.72]
Dividend		-0.130***	-0.123***
		[-4.55]	[-4.42]
Relative Turnover		0.004	0.002
		[0.94]	[1.06]
Ln(TMV)		-0.013	-0.022
		[-0.62]	[-1.04]
Country Dummy	No	Yes	No
Year Dummy	Yes	Yes	Yes
Observations	12719	12719	12719
Adj R^2	0.0521	0.1136	0.0891

Table VII. Impact of Investor Protection on Change of Voting Premium
This table presents the results from panel data regressions that estimate the impact of country level investor protection on the change in voting premium differences between various type of cross-listed firms and non-cross-listed firms since 2007, the year Rule 12h-6 took effect. The sample includes all non-US dual class firms from 20 countries listed in Datastream. The dependent variable in each regression is the voting premium as defined in section A.2. The voting premium is calculated using the local market prices of the high- and low-voting shares from Datastream. Exchange is a dummy variable that takes one if the cross-listed firm is listed on a major US exchange. OTC takes value of one if the firm is listed through over the counter. 144a equals one if the firm is cross-listed through private placement. Afterevent is a dummy variable that equals to 1 if the year is in the period from 2007 to 2010. Anti-director, accounting standards, efficiency of judicial, and GNP are from La Porta et al. (1998). Anti-self-dealing index is from Djankov et al. (2006). Voting power is the ratio of the fraction of total voting rights of high voting class of shares to the fraction of total cash flow rights of high voting class of shares. LnTMV is log of the total market value of high voting shares and low voting shares. Dividend is a dummy variable that equals to 1 if the dividend for low voting shares is higher than dividend for high voting shares. Relative Turnover is the log of the ratio of the total turnover of the low-voting shares relative to the total turnover of the high voting shares. All firm level variables are annual average using weekly data; firms with less than 20 weekly observations are excluded from the sample. Double interaction terms between afterevent, exchange, and country level variables are included but not reported. All regressions include year dummies. Standard Errors are adjusted for heteroskedasticity and firm level clustering. T stats for the regression estimates are reported in the parentheses. ***, **,* denotes significance at 1%, 5%, and 10%

	(1)	(2)
Afterevent*Exchange*Anti-Director	-0.123*	
	[-1.92]	
Afterevent*Exchange*Anti-Self-Dealing		-0.903**
		[-2.15]
Afterevent*Exchange	0.593**	0.636***
	[2.37]	[2.96]
Afterevent*OTC	0.033	0.026
	[0.14]	[0.14]
Afterevent*Portal	0.015	0.013
	[0.31]	[0.36]
Exchange	-0.708***	-0.768***
	[-3.45]	[-2.95]
OTC	-0.095	-0.089
	[-0.44]	[-0.41]
Portal	-0.121	-0.076
	[-0.41]	[-0.26]
Afterevent	-0.203	-0.187
	[-0.81]	[-0.76]
Anti-Director	-0.165***	
	[-4.37]	
Anti-Self-Dealing		-0.292*
		[-1.67]
Accounting	-0.001	-0.001
	[-0.61]	[-0.51]
Judicial Efficiency	-0.047	-0.037
	[-1.20]	[-0.87]
GNP	-0.001**	-0.001*

	[-1.98]	[-1.64]
Voting Power	0.089***	0.066**
	[2.78]	[2.13]
Dividend	-0.112***	-0.103***
	[-4.37]	[-4.43]
Relative Turnover	0.002	0.009
	[1.04]	[0.65]
Ln(TMV)	-0.024	-0.017
	[-1.08]	[-0.77]
Double Interaction Terms	Yes	Yes
Country Dummy	No	No
Year Dummy	Yes	Yes
Observations	12719	12719
Adj R^2	0.0517	0.0488

Table VIII. Change in Equity Issuance for Cross-listed Firms

This table reports the average annual capital raising activities by each exchange and OTC cross-listed firms from 1995 to 2007 through seasoned equity offerings. Panel A compares the average amount of capital raised by each firm each year in all countries before and after 2007, Panel B looks at firms from low investor protection countries based on anti-director index (LLSV(1998), Panel C looks at firms from high investor protection countries. The first category of each panel gives the average total proceeds each firm raised each year. The second category states the average proceeds raised by each firm in non-U.S. market each year. The third category shows the average proceeds raised by each firm in U.S. each year. In addition to the quantity of proceeds raised (in millions of dollars), the table also reports the proceeds raised a percentage of firm asset and proceeds raised as a percent of total proceeds raised in the country that year.

	Exchange			OTC		
	Before 2007	After 2007	Diff	Before 2007	After 2007	Diff
Panel A: All Countries						
Total Proceeds Raised Per Year	$102.4	$108.5	-$6.07	$24.55	$59.87	-$35.32**
Percent of asset	3.64%	4.27%	-0.62%	1.04%	1.31%	-0.27%
Percent of Total Country Proceeds	2.08%	0.88%	1.2%***	1.12%	0.85%	0.26%
Proceeds Raised in Non-US market	$91.1	$96.98	-$5.88	$23.75	$59.87	-$36.12**
Percent of asset	2.41%	2.60%	-0.19%	0.97%	1.31%	-0.33%
Percent of Total Country Proceeds	1.68%	0.63%	1.04%***	1.05%	0.85%	0.02%
Proceeds Raised in US market	$11.31	$11.50	-$0.19	0.794	0	$0.794
Percent of asset	1.23%	1.67%	-0.44%	0.07%	0.%	0.07%**
Percent of Total Country Proceeds	0.40%	0.25%	0.15%	0.07%	0%	0.07%**
Panel B: Low Investor Protection Countries						
Total Proceeds Raised Per Year	$147.1	$111.2	$36.0	$37.58	$67.46	-$29.88**
Percent of asset	3.05%	4.12%	-0.6%	1.04%	1.31%	-0.27%
Percent of Total Country Proceeds	3.07%	1.18%	2.51%***	1.12%	0.85%	0.26%
Proceeds Raised in Non-US market	$132.1	$88.79	$43.3	$36.52	$67.47	-$30.95**
Percent of asset	2.14%	1.14%	1.00%*	0.97%	1.31%	-0.33%
Percent of Total Country Proceeds	3.28%	0.96%	2.31%***	1.05%	0.85%	0.02%
Proceeds Raised in US market	$15.02	$22.44	-$7.42	$1.06	0	$1.06*
Percent of asset	1.00%	3.66%	-2.66%**	0.07%	0.%	0.07%**
Percent of Total Country Proceeds	0.57%	0.48%	0.1%	0.07%	0%	0.07%**
Panel C: High Investor Protection Countries						
Total Proceeds Raised	$89.21	$106.5	$16.9	$19.72	$56.26	-$36.53**
Percent of asset	3.9%	3.9%	0.00%	1.54%	2.69%	-1.15%***
Percent of Total Country Proceeds	1.48%	0.51%	0.96%***	0.49%	0.42%	0.07%
Proceeds Raised in Non-US market	$79.82	$102.8	-$23.0	$19.02	$56.26	-$37.23**
Percent of asset	2.56%	3.67%	-1.1%**	1.51%	2.69%	-1.18%**
Percent of Total Country Proceeds	1.1%	0.45%	0.72%***	0.46%	0.42%	0.04%
Proceeds Raised in US market	$9.39	$3.71	$5.68	$0.699	0	0.699*
Percent of asset	1.35%	0.24%	1.1%**	0.03%	0.00%	0.07%***
Percent of Total Country Proceeds	0.32%	0.08%	0.24%**	0.03%	0%	0.02%**

Table IX. Abnormal Equity Issuance by Cross-Listed Firms

This table presents the results from tobit regressions that estimate of the abnormal equity issuance by cross-listed firms. The dependent variable in all models is the total proceeds raised each year in non-U.S. market as a percentage of firm's asset. Exchange is a dummy variable that takes one if the cross-listed firm is listed on a major US exchange. OTC takes value of one if the firm is listed through over the counter. 144a equals one if the firm is cross-listed through private placement. ΔAsset is the change of assets from previous year; OCF is operating cash flow computed as EBITDA less the change in working capital for the period; Cash equals to cash plus cash equivalents; NoD is a dummy variable that equals to one if the firm does not pay dividends; D is the total dividends paid in the year, lag leverage equals to total debt/total assets; logMC is the log of market capitalization; Negtive_BE is a dummy variable that equals to one if the firm has negative book equity; M/B is the market to book ratio defined as market-to-book calculated as book value of assets minus book value of common equity plus the market value of common equity; ΔSTdebt is the change in debt in current liability. Except for market cap, M/B, leverage, and the dummy variables, all explanatory variables in are scaled by assets. The models also include country level variables (unreported) include anti-director index, log of GNP per capita, stock market cap/GDP ratio, and total country proceeds each year. The first model is estimated using Fama-Macbeth method, the rest are estimated using pooled sample with year dummies. Standard Errors are adjusted for heteroskedasticity and firm level clustering. T stats are reported in the parentheses. ***, **,* denotes significance at 1%, 5%, and 10% level

	Fama Macbeth	Pooled	High Investor Protection	Low Investor Protection
Exchange	0.066***	0.062***	0.035*	0.059**
	[3.21]	[4.01]	[1.90]	[2.16]
OTC	0.004	0.011	0.011	0.010
	[0.29]	[1.21]	[1.36]	[0.47]
144A	0.016	0.015	0.011	0.019
	[0.65]	[0.80]	[0.40]	[0.69]
ΔAsset	0.365***	0.366***	0.326***	0.44***
	[15.90]	[30.94]	[24.64]	[17.74]
Ocf	-0.107**	-0.195***	-0.188***	-0.246**
	[-1.96]	[-8.10]	[-6.80]	[-5.29]
No_Div	0.086***	0.128***	0.138***	0.081***
	[5.68]	[16.19]	[5.51]	[6.00]
Dividends	-0.248	-0.416***	-0.333**	-0.292
	[-1.54]	[-3.01]	[-1.98]	[-1.20]
Negative_BE	-0.02	-0.052**	-0.057**	-0.036
	[-0.64]	[-2.29]	[-2.18]	[-0.63]
logMC	0.022***	0.023***	0.181***	0.053***
	[5.44]	[11.12]	[7.42]	[12.27]
Lagleverage	0.177***	0.193***	0.142***	0.319***
	[5.93]	[10.79]	[5.04]	[8.48]
Tobinsq	0.072***	0.076***	0.094***	0.041***
	[11.32]	[18.12]	[6.02]	[5.55]
Cash	-0.202***	-0.135***	-0.158***	0.019
	[-3.46]	[-4.84]	[-4.84]	[0.37]
ΔSTdebt	-0.221***	-0.167***	-0.099***	-0.261***
	[-2.98]	[-6.01]	[-3.08]	[-4.90]
Year Dummy	No	Yes	Yes	Yes
Country Variables	Yes	Yes	Yes	Yes
Adjusted R^2	0.0673	0.155	0.165	0.162

Table X. Change in Abnormal Equity Issuance by Cross-Listed Firms

This table presents the results from pooled tobit regressions that estimate the differences in proceeds raised each year between various type of cross-listed firms and non-cross-listed firms before and after 2007. The dependent variable in all models is the total proceeds raised each year in non-U.S. market as a percentage of firm's asset. ΔAsset is the change of assets from previous year; OCF is operating cash flow computed as EBITDA less the change in working capital for the period; Cash equals to cash plus cash equivalents; NoD is a dummy variable that equals to one if the firm does not pay dividends; D is the total dividends paid in the year, lag leverage equals to total debt/total assets; logMC is the log of market capitalization; Negtive_BE is a dummy variable that equals to one if the firm has negative book equity; M/B is the market to book ratio defined as market-to-book calculated as book value of assets minus book value of common equity plus the market value of common equity; ΔSTdebt is the change in debt in current liability. Except for market cap, M/B, leverage, and the dummy variables, all explanatory variables in are scaled by assets. The regressions include both country and year dummies. Standard Errors are adjusted for heteroskedasticity and firm level clustering. T stats are reported in the parentheses. ***, **,* denotes significance at 1%, 5%, and 10% level.

	Whole Sample		Low Anti-Self-dealing		High Anti-Self-dealing		Low Anti-Director-rights		High Anti-Director-rights	
	Before 2007	After 2007	Before 2007	After 2007	Before 2007	After 2007	Before 2007	After 2007	Before 2007	After 2007
Exchange	0.062**	-0.022	0.143***	-0.012	0.012	-0.03	0.162***	0.004	0.004	-0.02
	[2.24]	[-0.71]	[3.53]	[-0.35]	[0.35]	[-0.90]	[3.66]	[0.12]	[0.12]	[-0.53]
OTC	-0.02	0.043	0.01	-0.033	-0.033	0.04	0.003	0.04	-0.051	0.047
	[-0.53]	[1.23]	[0.27]	[-0.73]	[-0.73]	[0.73]	[0.08]	[1.22]	[-0.72]	[0.81]
144A	0.029	0.031	0.008	0.03	0.03	0.05	0.028	0.01	0.026	0.012
	[0.35]	[0.71]	[0.51]	[0.64]	[0.64]	[0.88]	[0.96]	[0.62]	[0.94]	[0.92]
ΔAsset	0.532***	0.491***	0.477***	0.55***	0.55***	0.449***	0.542***	0.566***	0.527***	0.435***
	[16.35]	[16.79]	[8.69]	[15.38]	[15.38]	[12.94]	[9.06]	[13.23]	[14.31]	[12.93]
Ocf	-0.144***	-0.522***	-0.156*	-0.146**	-0.146**	-0.505***	-0.152**	-0.574***	-0.153**	-0.522***
	[-2.92]	[-8.49]	[-1.87]	[-2.37]	[-2.37]	[-6.51]	[-1.99]	[-7.32]	[-2.55]	[-7.27]
No_Div	0.084***	0.168***	0.149***	0.060***	0.060***	0.222***	0.126***	0.106***	0.071***	0.227***
	[5.61]	[10.33]	[5.51]	[3.28]	[3.28]	[9.84]	[4.46]	[4.75]	[3.97]	[10.72]
Dividends	-0.533**	-0.423	0.337	-0.847***	-0.847***	-0.691*	0.632	0.329	-0.954***	-0.485
	[-1.99]	[-1.39]	[0.71]	[-2.63]	[-2.63]	[-1.73]	[1.47]	[0.78]	[-2.82]	[-1.24]
Negative_BE	-0.017	-0.169***	-0.107	-0.018	-0.018	-0.175**	0.039	-0.19*	-0.026	-0.189***
	[-0.43]	[-2.90]	[-1.18]	[-0.41]	[-0.41]	[-2.43]	[0.42]	[-1.81]	[-0.61]	[-2.81]
logMC	0.037***	0.022***	0.081***	0.016***	0.016***	0.01*	0.08***	0.038***	0.021***	0.014**
	[9.33]	[4.95]	[9.11]	[3.41]	[3.41]	[1.81]	[8.13]	[5.53]	[4.80]	[2.54]
lagleverage	0.274***	0.323***	0.392***	0.241***	0.241***	0.275***	0.426***	0.411***	0.245***	0.252***
	[8.03]	[8.73]	[5.04]	[6.39]	[6.39]	[5.81]	[5.08]	[6.93]	[6.55]	[5.74]
Tobinsq	0.111***	0.086***	0.084***	0.127***	0.127***	0.12***	0.068***	0.041***	0.129***	0.111***
	[13.85]	[10.12]	[6.02]	[13.31]	[13.31]	[10.19]	[4.82]	[3.57]	[13.57]	[9.99]
Cash	-0.075*	0.036	-0.078	-0.077	-0.077	-0.149**	-0.078	0.272***	-0.075	-0.121*
	[-1.70]	[0.64]	[-0.84]	[-1.23]	[-1.23]	[-2.02]	[-0.83]	[3.21]	[-1.23]	[-1.73]
ΔSTdebt	-0.301***	-0.071	-0.032***	-0.261***	-0.261***	0.03	-0.354***	-0.023**	-0.257***	0.022
	[-5.31]	[-1.12]	[-3.14]	[-3.66]	[-3.66]	[0.35]	[-3.38]	[-2.54]	[-3.65]	[0.28]
Year Dummy	Yes		Yes		Yes		Yes		Yes	
Country Dummy	Yes		Yes		Yes		Yes		Yes	
Adjusted R^2	0.169	0.218	0.176	0.172	0.172	0.253	0.186	0.168	0.168	0.244

Table XI. Logit Regression of Characteristics of Exchange Listed Firms

This table analyzes the characteristics of firms that cross-list on a US stock exchange over the period from 1995 to 2009. The sample includes all non-financial, no-U.S firms from Worldscope with assets greater than 100 million. Firms that cross-listed through OTC market or private placement are excluded from the sample. Salesgr is the geometric average of sales growth rate of in the past three years (winsorized at 1% and 99% tails). Global industry q is the median global industry Tobin's Q, ln(size) is the log of last year assets of the company, leverage equals to total debt over assets. country level variables include anti-director index from LLSV (1998), log of GNP per capita, and stock market cap/GDP ratio. In the columns of "Listing Stock", the dependent variable for the logit regression equals to one if the firm is cross-listed in any year. In the columns of "Listing Flow", the dependent variable for the logit regression equals to one in the year that a firm cross-lists. Standard Errors are adjusted for heteroskedasticity and firm level clustering. T stats for the regression estimates are reported in the parentheses Chi-Sqr-tests evaluate whether the coefficients on firm and country characteristics are equal pre-Rule-12h-6 and post-Rule-12h-6 periods.. ***, **,* denotes significance at 1%, 5%, and 10% level

	Listing Stock		Listing Flows	
	Before 2007	After 2007	Before 2007	After 2007
Salesgr	0.747***	0.541***	0.785***	1.16***
	[6.98]	[4.05]	[7.77]	[7.33]
Ln(Size)	0.835***	0.922***	0.61***	0.51**
	[24.03]	[28.33]	[20.78]	[5.42]
Leverage	-1.64***	-2.10***	-0.65*	-1.12**
	[-5.45]	[-6.31]	[-1.84]	[-2.41]
Global Industry Q	1.01***	0.912***	0.903***	1.31***
	[9.32]	[8.94]	[4.29]	[5.80]
Log (GNP)	-0.305***	-0.011***	-0.124***	-0.36***
	[-7.59]	[-2.78]	[-2.56]	[-0.316]
Anti-Director Index	0.241***	0.116**	0.091*	-0.191**
	[4.41]	[2.51]	[1.70]	[-2.05]
Stock market/GDP	-0.265***	-0.318***	0.041	-0.079
	[-2.12]	[-3.63]	[0.30]	[-2.84]
Chi-Sqr (p value) Anti Director index Diff	7.12 (0.007)***		11.84 (0.00)***	
Chi-Sqr (p value) Salesgr Diff	1.59 (0.21)		3.90 (0.04)**	
Chi-Sqr (p value) Global Industry Q Diff	0.71 (0.41)		2.49 (0.11)	
Pseudo R^2	0.252		0.143	

Table XII. Change in Propensity to Cross-List Based on Pre-2007 Logit Regression

This table examines whether the propensity to cross-list on US stock exchanges change since 2007. and year dummies. The sample includes all non-financial, no-U.S firms from Worldscope with assets greater than 100 million. Firms that cross-listed through OTC market or private placement are excluded from the sample. ''Firms'' is the number of firms in the sample for a given year. For "Listing Stock", the panel estimates the probability a firm is cross-listed in a given year. For "Listing Flow", the panel estimates the probability of new cross-listing in a given year. ''Listed'' is the number of firms with a cross-listing in a given year. ''New listings'' is the number of firms listing in a given year. ''Actual percent'' is the percent of firms with a cross-listing or new listing. ''Expected percent'' is computed by applying the average logit coefficients from the 1995 to 2006 logit regression (Table VII) to the values of the explanatory variables for each firm each year between 2007 and 2009, obtaining the predicted probability that a firm has a listing each year, summing the predicted probabilities over firms each year, dividing by the number of firms, and multiplying by 100.

	Firms	Listed	Actual Percent	Expected Percent	Diff
			Panel A: Listing Stock		
2007	16223	414	2.55%	2.73%	-0.18%
2008	16665	405	2.43%	2.48%	-0.05%
2009	15811	391	2.48%	1.74%	0.74%

	Firms	New Listing	Actual Percent	Expected Percent	Diff
			Panel B: Listing Flow		
2007	15838	29	0.18%	0.67%	-0.5%
2008	16665	8	0.04%	0.65%	-0.61%
2009	15811	6	0.04%	0.45%	-0.41%