Private benefits of control, ownership, and the cross-listing decision

by

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Abstract

This paper investigates how a foreign firm's decision to cross-list on a U.S. stock exchange is related to the consumption of private benefits of control by its controlling shareholders. Theory has proposed that when private benefits are high, controlling shareholders are less likely to choose to list their firm's shares in the U.S. because the higher standards for transparency and disclosure, as well as the increased monitoring associated with such listings, limit their ability to extract private benefits. Using ownership of control rights by the firm's controlling shareholder as a proxy for private benefits, we offer evidence that confirms this hypothesis with a sample of more than 4,000 firms from 31 countries. In particular, the probability that a firm will cross-list on a U.S. exchange is inversely related to the control rights held by the controlling shareholder and to the difference between the control rights and the cash flow rights owned by the controlling shareholder.

JEL: G15, G34, K00, P51.
Key words: Private benefits of control; corporate governance; cross-listing; corporate ownership.

1. Introduction.

Academics and practitioners have proposed many reasons why foreign firms choose to list their shares for trading in the U.S. Benefits of access to U.S. markets that have been discussed include the increased ability to raise equity, growth of the firm's shareholder base, increased liquidity, lower cost of capital, and greater visibility and prestige.[1] Recently, however, much attention has been paid to the corporate governance implications of U.S. cross-listings, i.e., how U.S. listings limit the ability of controlling shareholders to extract private benefits from the companies they control.

Controlling shareholders of foreign firms listed on a U.S. stock exchange face more constraints and have more obligations than controlling shareholders of firms not listed in the U.S.[2] For instance, a U.S. cross-listing typically improves transparency by imposing disclosure requirements on firms that are more stringent than the disclosure requirements they face in their home country. Additionally, by choosing to list on a U.S. exchange, controlling shareholders accept the consequence of being subject to an additional layer of monitoring by a variety of U.S. market intermediaries. For example, cross-listing subjects them to enforcement actions initiated by the U.S. Securities and Exchange Commission (SEC), to class action lawsuits filed in U.S. courts, and to scrutiny from U.S. analysts and media. Further, if they raise funds in the U.S., these firms are subjected to monitoring by underwriters. This commitment to improve governance through greater transparency and monitoring is consistent with the existing evidence that firms experience positive abnormal returns when they announce their intention to list in the U.S. (Foerster and Karolyi, 1999; Miller, 1999), that they subsequently raise more capital after listing (Reese and Weisbach, 2002; Lins, Strickland, and Zenner, 2005), that their cost of capital is lower (Hail and Leuz, 2004), that estimates of private benefits of control are lower (Doidge, 2004a), and that foreign firms listed in

[1] Surveys by Karolyi (1998, 2006), Claessens, Klingebiel, and Schmukler (2002), and Benos and Weisbach (2004) evaluate over 150 different published studies that examine the decision to cross-list shares on foreign markets

[2] Non-U.S. firms are typically controlled by large shareholders (see La Porta, Lopez-de-Silanes, and Shleifer, 1999). We therefore use the term controlling shareholders to denote the group which controls the firm (which can include managers and/or large blockholders).

the U.S. are valued more highly than firms that do not list in the U.S. (Doidge, Karolyi, and Stulz, 2004).

In this paper, we use ownership of control rights as a proxy for private benefits of control to investigate the role that such private benefits play in the listing decision. When private benefits of control are more valuable, it is optimal for controlling shareholders to hold more control rights and exert tighter control on the firm.[3] Therefore, we would expect firms in which controlling shareholders have greater ownership of voting rights, and, consequently, tighter control of the firm, to be less likely to choose to list on a U.S. stock exchange because the controlling shareholders would have to give up more private benefits of control if these firms were to list (see Coffee, 2002 and Doidge et al., 2004 for related arguments). We investigate this proposition using comprehensive ownership and control data on more than 4,000 firms from 31 countries in Asia, Europe, Latin America, and elsewhere. The data include the control rights for controlling shareholders, such as top managers and their family members, governments, other corporations, and financial institutions. Using logistic regression analysis, we find strong evidence that when controlling shareholders have high levels of control, their firms are less likely to be listed on a U.S. exchange. Similarly, we find that firms controlled by their top managers and their families are less likely to have a U.S. exchange listing. We also employ duration analysis using a Cox proportional-hazard model to show that the probability of listing on an exchange in a given year over the 1995 to 2001 period, conditional on not yet having listed, is significantly lower when controlling shareholders have high levels of control and when firms are controlled by their top managers.

The corporate governance literature makes an important distinction between ownership of voting rights and ownership of cash flow rights. If controlling shareholders have a majority of voting rights but own negligible cash flow rights, they have little incentive to take steps to increase the value of the firm's equity. However, as controlling shareholders' ownership of cash flow rights

[3] Private benefits cannot usually be measured directly at the firm level. Though control premia for block transactions (Dyck and Zingales, 2004) and the value of voting rights (Nenova, 2003) provide estimates of private benefits, these estimates can only be constructed for firms where information about large block transactions is available and for firms with prices available for different share classes.

increases, any action they take to benefit themselves at the expense of other equity holders has a cost in that it decreases the value of the shares controlling shareholders own. If controlling shareholders own almost all of the cash flow rights, it makes little sense for them to expend resources to extract private benefits at the expense of minority shareholders. This reasoning suggests that, for a given level of cash flow rights, controlling shareholders are less likely to seek a listing for their firm as their holdings of control rights exceed their holdings of cash flow rights. In both our logistic regression and Cox proportional hazard analysis, we find that this is the case.

The relationship between the listing decision and cash flow rights ownership is complex. If controlling shareholders own shares to control the firm and want to keep control to extract private benefits, they have little to gain through a cross-listing. In such a situation, cross-listing makes control less valuable by reducing private benefits and controlling shareholders cannot realize the share-price benefit from the reduced value of control by selling shares since by doing so they would diminish their ability to extract private benefits. At the same time, if controlling shareholders own shares for the purpose of aligning incentives with shareholders, incentives are better aligned when controlling shareholders own a large stake; the benefit of cross-listing of limiting the consumption of private benefits is smaller as long as controlling shareholders keep their current stake. If, however, the large stake controlling shareholders hold is costly for them – for instance, by forcing them to bear firm risk – and they want to reduce it without losing control, they can do so on better terms by cross-listing since controlling shareholders of a cross-listed firm are more constrained in their consumption of private benefits. With this view, it is possible that high cash flow ownership when the firm does not yet have a cross-listing makes a future cross-listing more likely. We investigate this hypothesis explicitly with our Cox proportional-hazard model, but find no evidence that greater holdings of cash flow rights make it more likely for controlling shareholders to choose a cross-listing. Thus, the large equity stakes of controlling shareholders we observe in our sample firms are consistent with the view that control is an important motivation for holding these shares.

With our theory, firms in which controlling shareholders have more control rights and, in particular, firms in which controlling shareholders have more control rights than cash flow rights, which we call "wedge" firms, are less likely to list on a U.S. exchange because private benefits of control are high in these firms and a listing reduces these benefits. We find that, as predicted, when controlling shareholders have more control rights and when controlling shareholders have more control rights than cash flow rights, firms are less likely to list. However, an important concern with our interpretation of these results as supportive of our theory is that it depends crucially on the assumption that the controlling shareholders hold more control rights and are more likely to hold more control rights than cash flow rights when private benefits of control are greater. If controlling shareholders hold more control rights for a reason unrelated to private benefits and if that reason to hold more control rights also makes a listing less valuable, our interpretation would be incorrect because, in this case, some reason other than private benefits would explain our results.

To make it less likely that our interpretation of our empirical results is erroneous, we investigate additional predictions of our theory. To the extent that listing enables firms to raise funds at lower cost, we would expect, everything else equal, to see firms with better investment opportunities pursue listings and firms that have not yet listed to become more likely to do so following an improvement in their expected investment opportunities. We find strong support for these predictions. Also, controlling shareholders receive fewer private benefits in countries with better protection of investor rights (Nenova, 2003; Dyck and Zingales, 2004). This suggests that, everything else equal, firms in countries with better investor protection would be more willing to cross-list. We also find that this is the case.

To provide further support for our interpretation of the results, we also investigate three additional ancillary predictions of our theory. First, our theory predicts that firms with concentrated control and wedge firms that wish to undertake a cross-listing of some type are more likely to choose a listing that imposes fewer constraints on insiders. Second, it implies that a U.S. listing increases constraints that limit the controlling shareholders' ability to take advantage of minority shareholders. Third, wedge firms that list on a U.S. exchange should be worth more for their minority shareholders than other wedge firms.

Our empirical analysis finds support for each of these additional predictions. We show that more concentrated control and a larger wedge make it less likely that a firm will have a U.S. exchange listing, but not less likely that it will have other U.S. listings such as a Rule 144a private placement or a Level 1 over-the-counter (OTC) listing, or a listing on the London Stock Exchange. Since there is a debate in the literature about the extent of the constraints imposed on cross-listed firms by laws and regulations (see Coffee, 1999 and 2002, and Stulz, 1999, for arguments in favor of this hypothesis, and Siegel, 2005, for arguments against), we investigate whether a U.S. listing leads to more monitoring by "gatekeepers" or informational intermediaries (Baker, Nofsinger, and Weaver, 2002; Lang, Lins, and Miller, 2003; Al-Nasser, 2005). We find that analyst following is higher for cross-listed firms, even for wedge firms, for firms with family control, and for firms with a more concentrated ownership structure. Therefore, to the extent that more analyst coverage represents additional scrutiny, such firms will experience greater analyst monitoring by listing in the U.S. Perhaps most importantly, we also find that the negative valuation impact of a wedge between control and cash flow rights observed in the literature (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 2002; Claessens, Djankov, Fan, and Lang, 2002; Lins, 2003) is mitigated by a U.S. exchange listing. That is, cross-listing firms, with or without a wedge between control and cash flow rights, have a higher Tobin's q ratio than equivalent domestic firms. This result is consistent with our theory which predicts that consumption of private benefits is more expensive for controlling shareholders when a firm has a U.S. exchange listing. Overall, our investigation of these additional predictions provides evidence that fully supports the importance of private benefits of control as a determinant of the probability that a firm will acquire a U.S. exchange listing.

The paper proceeds as follows. In Section 2, we present our data. In Section 3, we investigate whether the controlling shareholders' control (i.e., voting) rights, as well as the difference between their control rights and cash flow rights help further our understanding of which firms are cross-listed among the population of firms. In Section 4, we estimate a Cox proportional-hazard model that allows us to relate the listing decision to changing firm attributes and to ownership. In Section 5, we show that the relation between concentrated control and the likelihood of a U.S. exchange listing does not hold for less constraining forms of listings. In Section 6, we investigate the relation between control concentration and the change in analyst following around the U.S. listing. Section 7 discusses tests showing that firms with a higher wedge which also have a U.S. exchange listing are valued more highly than wedge firms without an exchange listing. Conclusions follow in Section 8.

2. Data.

2.1. Sample description

To examine whether a firm's decision to cross-list on a U.S. exchange is negatively related to private benefits of control, we use measures of ownership and control to proxy for the private benefits of control. We construct two separate datasets, each of which contains different measures of ownership and control for a broad sample of firms from a large number of countries around the world. Our datasets are compiled from the raw ownership and control data available for Western European firms from Faccio and Lang (2002); for emerging market firms from Lins (2003); and for East Asian firms from Claessens, Djankov, and Lang (2000).[4] Ownership and control data for East Asian and emerging market firms are from the 1995 and 1996 period and those from Western Europe range from 1996 to 1999, with the majority of sample observations occurring in 1996. We confine our analysis to non-financial firms to maintain consistency across the three ownership and control-structure datasets. Because we need a variety of firm-level financial data, we use only firms

[4] Claessens et al. (2002) examine the impact of ownership structure on firm value in East Asia. Fan and Wong (2002) examine the effect of ownership structure on earnings informativeness. Both studies exclude Japan from their tests based on the argument that Japan has a unique *keiretsu* governance system that features very little individual ownership or control and instead is dominated by widely held financial institutions that control a web of group-linked companies. Our empirical tests comprise a broader range of countries. While some countries arguably have unique characteristics, it is difficult for us to apply a consistent screening principle indicating uniqueness in country-level governance. Thus, we are reluctant to exclude any one country. None of our inferences are weakened by removing Japan and some are strengthened.

covered by the Worldscope database. Also, to make firms across countries more comparable, we limit our sample to firms with total assets of at least $10 million.

Claessens et al. (2000), Faccio and Lang (2002), and Lins (2003) report ownership and control statistics that could proxy for a firm's internal corporate governance environment. For instance, they compute the percentage of total ultimate control rights held by the following types of blockholders: Family/Management, Government, Widely-Held Corporations, Widely-Held Financials, and Miscellaneous (which includes ownership by Trusts, Cooperatives, Foundations, Employees, etc.). From these data it is possible to identify the largest blockholder of a firm's control rights. Unfortunately, the ownership data presented in Claessens et al. (2000), Faccio and Lang (2002), and Lins (2003) are categorized using different algorithms. Faccio and Lang and Claessens et al. report the separation of ownership and control only for the largest blockholder of their sample firms (which may not be the family/management group), while Lins reports this measure for all holdings of the family/management group (which may not be the largest blockholder). Given these difficulties, we conduct our tests on two firm-level governance datasets, both of which measure in different ways the likelihood that controlling shareholders will consume private control benefits.

The first dataset is called the "Controlling Blockholder" dataset and it uses data for the ultimate control rights and cash flow rights held by the largest blockholder as detailed in Claessens et al. (2000) and Faccio and Lang (2002). Our classification of the largest blockholder as the controlling shareholder follows much of the literature on international corporate governance (La Porta, Lopez-de-Silanes, and Shleifer, 1999; Claessens et al., 2002). To make it clear that the largest blockholder is assumed to be the controlling shareholder in this dataset, we will call the controlling shareholder the controlling blockholder when this dataset is used. The primary benefit of this dataset is that we can conduct tests using the control rights held by the controlling blockholder as well as the difference between this entity's control and cash flow rights. This allows us to focus on both the controlling blockholder's capability to pursue its own agenda as well as its incentives to refrain from consumption of private benefits. One drawback of this dataset is that the largest blockholder can sometimes be an outside entity, such as a multinational corporation, which might be associated with a lower likelihood of consuming private control benefits compared to a large management or family blockholding. One other drawback of this dataset is that it has relatively few firms from emerging market countries. In particular, this dataset has no countries from Latin America. At the end of 1997, this dataset contains 4,280 firms across 22 countries with complete firm-level data.

Our second dataset is called the "Family/Management Control" dataset. In this dataset, we compile the ultimate control rights held by a firm's officers, directors, top-level managers, and their family members. Since it is the management group that actually administers a firm, the private benefits of control may be especially pronounced when we observe high levels of control held by top managers and their families. Ultimate family/management control rights can consistently be identified across the datasets of Faccio and Lang (2002), Lins (2003), and Claessens et al. (2000). An advantage of this dataset is that we can include more firms from emerging market countries; the disadvantage is that we cannot consistently identify family/management cash flow rights. At the end of 1997, there are 4,516 firms from 31 countries in the Family/Management Control dataset.

In compiling the Family/Management Control dataset, we seek to construct measures that indicate that a firm's managers are, in effect, in full control of a firm because, all else equal, the capability to expropriate minority shareholders will be highest when managers' control of a firm cannot be challenged internally. Because effective managerial control depends on the control rights held by management, as well as the control rights held by outside blockholders, we use both a nominal and a relative measure of effective managerial control in our analysis. The nominal measure is the percentage of control rights held by the management group and its family. We expect that higher levels of managerial control rights correspond to more effective control of a firm. Our relative measure is an indicator variable set equal to one if the control rights held by a firm's family/management group exceed those held by any other blockholding entity. The relative measure corresponds to the idea that high raw levels of control may not always be necessary to establish effective managerial control; rather, managers need only to obtain sufficient control rights so that they can avoid being influenced by other blockholders.[5]

We acknowledge that the Family/Management Control dataset allows us to focus only on the capability for expropriation and not on the incentives to expropriate. To measure such incentives, we would need data for the ultimate cash flow ownership stakes held by the management group and its family for all of our firms, which we do not have.[6] However, it is possible that this limitation will not materially affect our inferences. To the extent that effective managerial control can be established at some level below 100 percent, control and cash flow rights will inherently be separated. Generally, managerial control of 51 percent of the shares will confer unequivocal control rights. In such a case, controlling managers that divert one dollar from the firm for personal gain will bear at most 51 cents of the cost. Any further separation of control from cash flow rights via pyramids and superior voting shares may be a second-order effect.

2.2. Variable definitions

In each dataset, we compile a complete list of firms listed on a U.S. stock exchange at the end of each year from 1995 to 2001. Firms can list their shares on the Nasdaq, American Stock Exchange (Amex), or New York Stock Exchange (NYSE) via a direct listing, New York Registered Shares, or via Level 2 or Level 3 ADRs. To determine whether a firm is listed on a U.S. exchange, we use information obtained from the Bank of New York, Citibank, the NYSE, and Nasdaq. Listing dates are verified using Lexis-Nexis searches and by examining firms' annual reports as well as 20-F's filed with the SEC. The primary focus of our analysis is on firms with a U.S. exchange listing. The SEC imposes the most requirements on these firms and previous research shows that both the costs and the benefits are largest for exchange listings (see, e.g., Miller, 1999, Reese and Weisbach, 2002, Doidge et al., 2004, Hail and Leuz, 2004, and Lins et al., 2005). However, later in the paper

[5] Results using the nominal and relative measures are similar. We focus our presentation of results on the nominal family/management control rights measure because it corresponds more closely to the control rights variable used in the Controlling Blockholder dataset.

[6] While we do not have data to separate the effect of managerial cash flow rights from control rights, the analysis in Faccio and Lang (2002) and Lins (2003) suggests that, for our sample, ultimate managerial control rights often exceed cash flow rights because of pyramid ownership structures and superior voting shares.

we also include firms with other types of U.S. listings such as firms which issue private placements via SEC Rule 144a and firms that list via Level 1 OTC ADR programs. We group together the firms with non-exchange listings since the SEC imposes few, but similar, requirements on these firms.

In our analysis, we include a number of firm- and country-level control variables.[7] At the firm level, we include an indicator variable that denotes the presence of an additional blockholder with at least 10 percent of the voting rights ("2nd blockholder"). An additional large blockholder may serve to mitigate the actions of the controlling blockholder that are not in the interests of minority shareholders. However, it is also possible that the second blockholder's non-trivial control stake could allow it to share some private benefits of control with the controlling blockholder.[8] We control for growth opportunities using two proxies: sales growth over the last two years ("Sales growth") and the median *q* of the global industry that a firm belongs to ("Global industry *q*"). We expect that controlling shareholders will be more likely to forgo private benefits of control if the need for external financing to fund growth opportunities is greater. Our sales growth proxy is a two-year geometric average of annual inflation-adjusted growth in sales. Because Worldscope data for many countries is relatively sparse prior to 1994, this reduces our sample size by about 250 firms compared to using a one-year sales growth measure. For robustness, we re-estimate all of our models using a one-year sales growth measure and find results that are virtually identical in magnitude and significance.

The existing literature suggests that a benefit for firms that list in the U.S. is access to deep capital markets, so that firms that access U.S. markets can relax financial constraints that arise because of imperfections in their home capital markets. For example, Lins et al. (2005) provide

[7] We use the same set of control variables in both the Controlling Blockholder dataset and the Family/Management Control dataset, with two exceptions. We do not have data for the 2nd blockholder dummy or the Government owned dummy in the Family/Management Control dataset.

[8] One concern is that the listing decision may have taken place prior to the arrival of the second blockholder. This makes it difficult to interpret any such causal relation. Later, in our Cox proportional hazard analysis, we are able to mitigate this concern to the extent that the existence of the second blockholder is known to be present before any listing decision takes place. However, again, caution must be applied as we do not have evidence that the blockholder is still present at the time of the listing.

evidence that the capital expenditures of firms depend less on their cash flow after listing. This benefit of a listing would not be important for firms with financial flexibility. We therefore use in our models an index of financial flexibility. Firms with high financial constraints have low financial flexibility. Kaplan and Zingales (1997) have constructed a firm-level index of financial constraints (the KZ index). However, the ordered logit coefficients that are used to construct the KZ index are estimated from a sample of 49 low-dividend-paying U.S. manufacturing firms. We are not aware of any research showing that the ordered logit coefficients would be similar for samples of non-U.S. firms. Instead of using these coefficients, we construct a simple index of financial flexibility ("Financial flexibility index"). The financial flexibility index is constructed as a count variable by adding one point for a firm with high cash and liquid assets, one point for high dividends, and one more point for low capital expenditures. For each firm, we identify whether their cash and liquid asset holdings are high or not depending on whether they are greater than the 75th percentile among firms within their country. We apply a similar rule based on whether a firm's dividends and capital expenditures are greater than the 75th percentile or below the 25th percentile among firms within their country.

In addition to proxies for growth opportunities and financial flexibility, we include "Leverage", which is total debt divided by the total assets of the firm. Firms that have higher leverage (prior to listing) might be more likely to pursue a U.S. listing to raise new equity capital. Firm size, as proxied by the natural logarithm of total assets in U.S. dollars ("Log assets"), is included to control for cross-listing economies of scale. These economies of scale reflect the lower proportional fixed costs and potential benefits that increase with firm size. Firm profitability, as proxied by the return on assets ("ROA"), is included to control for the possibility that higher quality firms may be more likely to cross-list in order to signal their quality. Also, we would expect firms with international activities to be more subject to the discipline resulting from cross-listing their shares in the U.S. For instance, it would be easier for minority shareholders to recover damages from a non-U.S. firm with U.S. assets than from one that has only domestic assets. Further, firms with a larger presence in foreign product markets may be expected to pursue cross-listings as a complement to an overall strategy of internationalization (Pagano, Roell, and Zechner, 2002). As an indicator for the degree of international orientation, we include the ratio of foreign sales to total sales ("Foreign sales").[9] Finally, we include an indicator variable that equals one if the state is a firm's largest shareholder ("Government owned") under the premise that governments might take into account different tradeoffs than private controlling shareholders. For instance, the government might be privatizing to raise funds, in which case it might choose to cross-list in more liquid markets in order to increase the proceeds from the sale of shares.

We also employ a number of country-level control variables. As noted earlier, controlling shareholders receive fewer private benefits in countries with better protection of investor rights. Therefore, we include a proxy for investor protection in a firm's home country. We estimate models with a number of different proxies such as the anti-director rights index, the index of judicial efficiency, and legal origin from La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998). Following La Porta et al., we create a dummy variable, "Civil law", which equals one for firms from countries with a civil law tradition and equals zero for firms from countries with a common law tradition. We also estimate models featuring three indices from La Porta, Lopez-de-Silanes, and Shleifer (2006). Their disclosure index measures the quality of disclosure requirements; their burden of proof index measures liability standards; and finally, their investor protection index is the principal component of disclosure, liability standards, and anti-director rights. While each of these investor protection variables has its own merits, we find that the specific choice of proxy makes little difference to our results. For brevity, we report only the results using the legal origin of the firm's home country as indicated by the Civil law dummy variable.

[9] Similar to Pagano et al. (2002), we find that foreign sales data is missing for a significant fraction of the sample firms. Therefore, we follow the procedure they outline to impute missing values via regressions that generate predicted values of foreign sales – see footnote 22 on page 2678 in Pagano et al. for further details. For robustness, we repeat all of our regressions using the actual foreign sales data on a necessarily smaller sample. None of the results reported in the paper are affected.

Recent research by Sarkissian and Schill (2004) shows that if a firm decides to cross-list, it is more likely to cross-list in a country that has more ties with the firm's home country. We therefore include a country characteristic that measures the extent to which the country interacts economically with the U.S. This variable, which we call "Economic proximity," is from the 1996 International Trade Statistics Yearbook. It is the percentage of a given country's exports going to the U.S. We also estimate our models using the historical three-year stock market correlation (weekly dollar-denominated returns) with the U.S. market index as a proxy for familiarity. Finally, we control for overall economic development with the log of GNP per capita. As a final alternative, rather than using specific country characteristics as control variables, we include country dummies. This approach has the advantage of allowing us to control for all country effects.

2.3. Summary statistics

We summarize basic firm-level governance statistics for each dataset in Table 1 and break these out into three groups: firms without a U.S. listing as of year-end 1997, firms with a Rule 144a/Level 1 OTC listing, and firms with a U.S. exchange listing.[10] Our focus in the first sets of tests we conduct is the comparison between firms with an exchange listing and firms that do not have any type of U.S. listing. Panel A shows that in the Controlling Blockholder dataset, 130 firms are listed on a U.S. exchange, while 3,932 firms do not have a U.S. listing. Overall, we find that firms listed in the U.S. are significantly larger, as measured by total assets (in $ billions), than firms that are not listed (*p*-value of the t-test of equality of means across the two sub-samples is less than 0.01). Panel A also shows that mean control rights held by the controlling blockholder are higher for firms that are not listed on a U.S. exchange (*p*-value equals 0.04), consistent with the idea that

[10] In terms of coverage, the ownership datasets that we use are very comprehensive when compared to datasets used in other studies. However, we recognize that we do not have complete coverage for all firms that have financial data available in Worldscope, which leads to two potential concerns. First, in terms of firm characteristics, the firms for which we have ownership data may be different from firms for which we do not have ownership data. Lins (2003) addresses this issue and finds no significant differences between the two groups of firms. Second, requiring ownership data may have an impact on the fraction of firms that have a U.S. exchange listing in our study. To address this concern, we compare the dataset that is constrained to include ownership data to one that is not constrained. The mean (median) fraction of firms listed in the U.S. is similar in both samples and the differences across countries are not significant.

higher private benefits of control are associated with a lower likelihood of listing on an exchange that requires more disclosure and subjects firms to greater potential monitoring. At the same time, mean cash flow rights held by the controlling blockholder are not significantly higher for the firms that are not cross-listed (*p*-value equals 0.11). Tests on differences between the medians of these variables for listed and non-listed sub-samples show virtually identical significance levels.

Another primary variable of interest in the Controlling Blockholder dataset is the separation of control and cash flow rights held by the largest blockholder. Theoretically, Bebchuk, Kraakman, and Triantis (2000) show that agency costs of controlling shareholders are higher when there is a separation of control rights and cash flow rights. Empirically, Claessens et al. (2002) find that separation of control rights and cash flow rights is associated with higher expected minority shareholder expropriation. To measure the control wedge – the difference between control rights and cash flow rights – we use the percentage point difference in the control rights and cash flow rights held by the largest blockholder (see Claessens et al., 2002). Such a measure directly assesses the percentage of control rights held for which there are no corresponding cash flow consequences of exercising the control.

In Panel A, we report the frequency with which the controlling blockholder's control rights exceed its cash flow rights (for the sake of brevity, we do not report mean percentage point values for this separation, conditional upon such a separation being present). We find that a separation between control and cash flow rights occurs with greater frequency in firms that are not listed in the U.S. (*p*-value equals 0.05). To the extent that this separation proxies for an enhanced potential to consume private benefits of control, it is consistent with the idea that a significant number of controlling shareholders do not want to reduce their ability to extract private benefits of control by listing in the U.S. Finally, although it is not reported in the table, we note that there is no statistically significant difference in the frequency of the presence of a secondary blockholder between firms that have exchange listings and those that do not (*p*-value equals 0.46).

There are many more firms with a Rule 144a or Level 1 OTC listing (218) than an exchange listing (130). Firms with a primary listing in Hong Kong (42) have almost as many Rule 144a/Level 1 OTC listings as U.K. firms (47). As we would expect, firms that have a Rule 144a/Level 1 OTC listing are smaller, have more concentrated control rights ownership, have more concentrated cash flow ownership, and are more likely to have a wedge than firms that have an exchange listing. Along these dimensions, firms with a Rule 144a/Level 1 OTC listing are between exchange-listed firms and firms that do not have a U.S. listing. This evidence is consistent with controlling shareholders concluding that a Rule 144a/Level 1 OTC listing increases the cost of consuming private benefits of control less than an exchange listing.

In Panel B of Table 1, we report summary statistics for the Family/Management Control dataset. Similar to the Controlling Blockholder dataset, relatively few firms have a U.S. exchange listing (154 firms have a listing compared to 4,118 firms that do not have a U.S. listing), and those that are listed are much larger in size than those that are not (*p*-value less than 0.01). The panel also shows that mean levels of family/management control rights are significantly higher for firms that are not listed in the U.S. (30 percent versus 12 percent, p-value of difference is 0.00). Similarly, the frequency with which the family/management group holds the most control rights is significantly higher for firms that are not listed in the U.S. (*p*-value less than 0.01). As with Panel A of Table 1, the size and ownership characteristics of firms with a Rule 144a/Level 1 OTC listing are between those of firms that do not list and those of firms that have an exchange listing.

Taken together, the summary statistics reported in Table 1 are consistent with our hypotheses that when controlling shareholders have more control rights and when there is a separation between control rights and cash flow rights, they are reluctant to subject themselves to the higher levels of disclosure and monitoring associated with a U.S. exchange listing. In the next section, we examine these hypotheses in more detail.

3. The effect of ownership and control on the decision to cross-list on a U.S. exchange.

In this section, we examine whether ownership of cash flow rights and control rights is related to firms' decisions to list on a U.S. exchange, after controlling for other firm-level variables as well as country-level variables. We first analyze the role of control rights held by the controlling blockholder or the top managers and their families in Table 2.

To determine the relation between the control rights of blockholders and the probability of having a U.S. exchange listing, we estimate cross-sectional logistic regressions where the dependent variable, "Exchange", is an indicator variable that equals one if a firm is cross-listed on the Amex, Nasdaq, or the NYSE. To ensure that we compare the exchange-listed firms to benchmark firms that do not have any type of U.S. cross-listing, we exclude firms with Rule 144a or Level 1 OTC ADRs from this part of the analysis. The firm and country characteristics are measured as of the end of 1997. As a robustness check, we repeat all of the regressions using data for 1996, and find similar results. In all models, we report marginal effects evaluated at the means of the independent variables (marginal effects for the intercept are not computed or reported). Marginal effects for dummy variables are calculated as the discrete change in the expected value of the dependent variable as the dummy variable changes from a value of zero to one. The standard errors are computed assuming that observations are independent across countries, but not within countries, so that the standard errors are clustered at the country-level.

Our prediction is that the probability that a firm is listed on a U.S. exchange is negatively related to the control rights held by the controlling blockholder. Since we estimate a cross-sectional regression in 1997, we do not consider the listing decision directly. The control rights held by the controlling blockholder we observe for listed firms are measured when the firm is already listed. For example, in the Controlling Blockholder dataset, 48 firms listed before 1989, 26 firms listed from 1990 to 1993, and 56 firms listed from 1994 to 1997. In the Family/Management Control dataset, 49 firms listed before 1989, 32 firms listed from 1990 to 1993, and 73 firms listed from 1994 to 1997. Consequently, it is possible that holdings of control rights of controlling blockholders decreased after the listing.[11] It is also possible that a second large blockholder emerged after a firm listed. The benefit of estimating cross-sectional regressions is that we can use all listed firms to estimate the relation between control rights of controlling blockholders and the listing status of a firm. In contrast, in regressions that examine the listing decision directly, we can use only firms that list after we observe ownership of control rights, which restricts the number of listed firms that we can include.

In Panel A of Table 2, we use the Controlling Blockholder dataset. In model (1), we regress the dummy variable, Exchange, on the percentage of voting rights held by the controlling blockholder ("Control rights"), a dummy variable for whether the firm has a second blockholder that holds at least 10 percent of control rights, firm characteristics, and country characteristics. The marginal effect for the control rights of the largest blockholder is negative and significant (-0.0078 with a *t*-statistic of -2.73). This coefficient corresponds to a 0.78 percent lower probability of a listing for a one percent increase in control rights. This represents a sizeable decline in probability given that the unconditional likelihood of a listing is 3.3% (130 listings out of 4,062 firms) and an economically important one given that a one percent increase in control rights is not that large compared to the cross-sectional dispersion in control rights of 20 to 30 percent across firms. The marginal effect on the dummy variable for the second blockholder is positive, but not significant. In addition, we find that many of the firm-level characteristics are important in explaining whether a firm has a listing in the U.S. For example, both Sales growth and Global industry q are positive and statistically significant. Although sales growth is statistically significant, its economic importance is smaller than that of the control rights variable: a one percent increase in sales growth is associated with a

[11] To assess the importance of this issue, we use the sample of exchange listed firms and estimate the following cross-sectional regression: Control rights = $\alpha + \beta \times$ Years listed, where "Years listed" is equal to number of years a firm has been listed on a U.S. exchange, as of year end, 1997. The idea is to test whether or not firms that have been listed longer have lower control rights. The estimated coefficients are: $\alpha = 0.248$ (*t*-statistic=12.30) and $\beta = -0.009$ (*t*-statistic=-8.88). The estimate of β is negative and is statistically significant, implying that, on average, controlling blockholders of firms that have been listed longer do have lower control rights. However, the estimate of β is very small in magnitude compared to the average control rights. When we add control variables to the regression, the estimate of β retains its statistical significance in some specifications.

0.31 percent increase in the probability of listing.[12] The marginal effect of firm size (Log assets) is also positive and statistically significant, which is consistent with the hypothesis that larger firms are more likely to find the costs of cross-listing lower and the benefits larger. Finally, firms with a more international orientation, as proxied by Foreign sales, are more likely to have a cross-listing; the economic importance of this relationship is strong with a one percent increase in foreign sales associated with approximately a 0.74 percent increase in the probability of listing.[13] Leverage, ROA, the Financial flexibility index, and the dummy variable for Government ownership are not significant. Consistent with our predictions, firms from civil law countries are less likely to list in the U.S. (Doidge et al., 2004). The log of GNP per capita does not have a significant coefficient. Finally, our economic proximity measure has a negative and significant coefficient, which is surprising in light of the finding of Sarkissian and Schill (2004) that conditional on the decision to list, firms are more likely to list in an economically proximate country. In model (2), we omit the country characteristics and use country dummy variables instead. With this model, the coefficient on the control rights of the largest blockholder is still negative and significant. We find that the second blockholder dummy variable is now significant and positive. The other variables that were significant in model (1) are still significant.

We also estimate, but do not tabulate, regressions without control variables and with different country characteristics. For example, instead of the Civil law dummy, we use the Anti-director index, the Efficiency of the judicial system, the Disclosure index, the Burden of proof index, and the Investor protection index. The coefficients on the Anti-director index and the Investor protection index have a significant positive value as expected, while the Efficiency of the judicial system, the Disclosure index, and the Burden of proof index have positive, but insignificant

[12] It is difficult to compare the economic significance directly from the marginal effects without some sense of the unconditional distribution of the control variable. The median sales growth for the firms in our sample is 4.09 percent with an interquartile range of -1.7 percent to 12.5 percent. A one-percent change in sales growth is an economically large change spanning a difference of over 250 firms in our sample of 4,062 firms.

[13] The median level of foreign sales is 10.7 percent with an interquartile range of 0 percent to 40.8 percent, so a one-percent change in foreign sales is a smaller economic event that is much more likely to occur than a similar change in sales growth.

coefficients. In all the regressions, the coefficient on Control rights is significant and negative. We also use a different proximity variable: the correlation of the return on the country's market with the U.S. market. Stocks from countries that have a low correlation with the U.S. would offer greater diversification benefits to U.S. investors, so that a firm might benefit more from listing such a stock. We find that the coefficient on this variable is positive and significant, which is inconsistent with this view. This result, in contrast to the one using the other measure of proximity, is consistent with the results Sarkissian and Schill (2004) who find that diversification benefits do not make firms more likely to list. Though our two measures of proximity have opposite signs, the coefficient on control rights is negative and significant, irrespective of the proximity variable we use. For the sake of brevity, we tabulate only the models with the economic proximity variable.

As mentioned previously, one drawback of the Controlling Blockholder dataset is that the largest blockholder is not always directly associated with the firm's top management group or its controlling family. In Panel B, we use the Family/Management Control dataset to examine the effect of the management group and its family on the incidence of cross-listing. This dataset also allows us to examine a broader set of firms from both emerging and developed markets. The models estimated in Panel B are the same as those reported in Panel A except that the variable of interest is now the percentage of voting rights held by the management group or controlling family ("Family/Mgmt control rights"). Overall, the results in Panel B show that the higher the control rights held by the management group and its family, the less likely it is that the firm is listed. In model (3), the coefficient on Family/Mgmt control rights is negative and significant. The economic magnitudes associated with this coefficient are comparable to that in Panel A. Again, we find that firms from countries with weak investor protection are less likely to list. When we replace country-level characteristics with individual country indicator variables in model (4), the marginal effect for Family/Mgmt control rights is negative and significant (-0.0046, *t*-statistic = -1.75). We also investigate the robustness of the results reported in Panel B in the same way that we investigate the robustness of the results reported in Panel A. We find that the coefficient on Family/Mgmt control rights is negative and significant with these specifications as well.

The results contained in Panels A and B are supportive of our hypothesis that when the control rights held by blockholders expected to be in control of the firm – whether measured as control held by the largest blockholding entity or control held by the management group and its family – are higher, firms are less likely to list in the U.S. We next turn to tests that use the Controlling Blockholder dataset to capture both the capability for expropriation as well as the incentives to expropriate.

Panel C of Table 2 reports tests in which we examine the incidence of cross-listing as a function of the cash flow rights and of the control wedge – the difference between the control rights and cash flow rights ("Control – Cash") of the controlling blockholder. Model (5) has the same control variables as models (1) and (3) except that the variables of interest are the cash flow rights held by the controlling shareholder and the control wedge. We find that the two variables of interest have negative and significant coefficients. The economic interpretations are even more dramatic: a one percent increase in the control wedge is associated with a two percent decline in the probability of listing, although it should be noted that a one percent increase in the control wedge is a much larger economic change, given that the unconditional average control wedge is about five percent. In model (6), we control for country characteristics using country dummies. We perform the same battery of robustness tests and find the variables of interest to always have negative and significant coefficients.

A concern is that our results might be driven by the U.K. and Japan. These two countries have a large number of firms compared to other countries in our sample. When we re-estimate the regressions in Table 2 without the firms from these two countries, we find that our results are not driven by firms from these countries. We also re-estimate Table 2 on a sub-sample which excludes government-owned and privatized firms. For the Family/Management Control dataset, we do not have government ownership data. For that sample, we therefore remove only the privatized firms.

With these sub-samples, all the conclusions we reach from Table 2 hold. We also estimate the regressions for the sub-samples using different country-level control variables. All our conclusions hold up through these robustness tests except that the coefficient on the control wedge is negative but not significant when we remove government-owned firms and control for the anti-director index or the investor protection index. However, it is significant when we control for country characteristics using country dummies.

We consider, but ultimately rule out, including interaction effects in our logit models. A difficulty with interaction effects in logit and probit models that has only recently been recognized in the literature is that both the implementation and interpretation of interactions in non-linear models is not straightforward (see Ai and Norton, 2003). For example, the interaction effect cannot be evaluated by looking at the sign, magnitude, or statistical significance of the coefficient on the interaction term reported by most statistics packages when the model is non-linear. It is also important to note that the interaction effect is conditional on the independent variables. Therefore, the magnitude and statistical significance of the interaction effect can vary over different observations – in fact, the interaction effect will be positive for some observations and negative for others, which makes summary measures of the interaction effect difficult.

To summarize the results from Table 2, we find that when the control rights held by controlling shareholders are higher, firms are less likely to have a cross-listing on a U.S. exchange. This finding is robust to alternative definitions of the controlling shareholders and to firm and country-level controls. In addition to the results with control rights, we find that when there is a larger separation of control rights and cash flow rights, firms are less likely to be listed. Further, we consistently find that firms with better growth opportunities, larger firms, firms with more international activity, and firms from countries with better investor protection are more likely to be listed on a U.S. exchange. Overall, the results are consistent with the hypothesis that firms in which controlling shareholders have the capability and the incentives to expropriate minority shareholders are less likely to subject themselves to the increased transparency and monitoring of a U.S. listing.

We also note that the economic magnitudes of the marginal effects are sizeable. In the next section, we estimate Cox models to investigate which characteristics help to predict firms' exchange listing decisions.

4. Predicting firms' exchange listing decisions using Cox proportional hazard models.

A drawback of the data used in the previous section is that for a large number of firms in our sample, we observe ownership after a firm listed in the U.S. To the extent that ownership is stable, this does not pose a significant problem: for instance, La Porta et al. (1999) state that "ownership patterns tend to be relatively stable" (p. 475). However, Doidge (2004b) shows that some controlling shareholders significantly decrease their ownership stakes after listing. This creates the problem that ownership could be affected by listing. There is no good way to address this problem econometrically with the logit regressions of the previous section. To address this problem, we employ duration analysis and use only ownership data that predates the cross-listing. If the potential endogeneity problem explains our results in the previous section, we would not find results supportive of our theory when we use only ownership data that predates the cross-listing.

Specifically, we model the probability of listing in year t, given that the firm has not yet listed, as a function of firm-level and country-level variables using Cox (1972) proportional-hazard models. The logistic regressions in Section 3 are estimated for 1997. These previous models allow us to study differences in the characteristics of firms that are listed on a U.S. exchange and those that are not listed in the U.S., at a particular point in time. The Cox models that we employ in this section allow us to predict firms' listing decisions in a panel setting, while allowing the independent variables to change over time. Similar approaches are used in Pagano et al. (2002) and Claessens et al. (2003). As discussed earlier, the cost of this approach is a reduction in power since the number of firms in our sample that list on a U.S. exchange over the relevant period is 58 (from 14 different countries) in the Controlling Blockholder dataset and 67 (from 18 different countries) in the Family/Management Control dataset.

The Cox proportional-hazard model estimates the probability that a firm that has not yet listed on a U.S. exchange will list in a given year. The hazard rate in the model is the instantaneous rate of listing for firms that have not yet listed. The model assumes that the hazard rate for firm j, $h(t|\mathbf{x}_j)$, is a function of the independent variables, $\mathbf{x}_j$, and is written as,

$$h\left(t\left|\mathbf{x}_j\right.\right)=h_0\left(t\right)\exp\left(\mathbf{x}_j\boldsymbol{\beta}_x\right),$$

where $\boldsymbol{\beta}_x$, is a vector of coefficients to be estimated. The hazard function is composed of two separate parts. The first part, $h_0(t)$, is called the baseline hazard. It is obtained by setting $\mathbf{x}$ equal to zero so that the baseline hazard for firm j corresponds to the hazard rate with $\mathbf{x}_j$ set to zero. The Cox model is a semi-parametric model in that $\boldsymbol{\beta}_x$ is estimated without specifying the baseline hazard; that is, the model makes no assumptions about the nature or shape of the hazard function.[14] The second part, $exp(\mathbf{x}_j\,\boldsymbol{\beta}_x)$ is called the relative hazard, and is a function of explanatory variables. The model is proportional in that the hazard is obtained by shifting the baseline hazard as the explanatory variables change. For example, firm j's hazard is a multiplicative transformation of firm i's hazard. Therefore, the model assumes that, whatever the shape of the baseline hazard, it is the same for all firms.

In this "event time" experiment, we consider firms over the period from 1995 to 2001. In the Controlling Blockholder dataset, there are 4,589 firms with complete data. Of these firms, 58 list on a U.S. exchange during this period. In the Family/Management Control dataset, there are 4,731 firms, of which 67 list during this period. Once a firm lists in the U.S., it is no longer used in the model estimation. For example, if a firm lists in 1998, then it is included in the sample from 1995 through 1998 and is excluded in subsequent years. Although our ownership data are observed at only one point in time, usually in 1995 or 1996, all other firm level variables are allowed to change each year. As such, we are assuming that firms' ownership structures are constant, at least until they

[14] The baseline hazard cancels out of the partial likelihood function. Note also that the intercept is subsumed into the baseline hazard. Because the baseline hazard drops out, the Cox model has no intercept. If one knows, or is willing, to make assumptions about the form of the baseline hazard, parametric hazard models can be estimated. As a robustness check, we re-estimate all hazard models assuming an exponential distribution, i.e., the baseline hazard is constant. None of the results we report are affected.

list in the U.S. We use the same set of firm-level and country-level variables that we used in Section 3. The difference in this section is that all firm-level variables are lagged by one year since we are trying to explain why a firm with specific characteristics at the end of one year chooses to list in the next year. For example, in 1996 we use 1995 values for sales growth, global industry *q*, total assets, foreign sales, leverage, the flexibility index, and ROA. The Cox model is estimated by maximizing the 'partial' likelihood function. We report the coefficients in exponentiated form. These coefficients thus represent relative (to the base) hazard ratios. The advantage of exponentiated coefficients is that they can be interpreted as the effect of a unit change in the explanatory variable on the hazard. For example, an exponentiated coefficient of 1.2 (0.8) implies that a one unit increase (decrease) in the explanatory variable increases (decreases) the hazard by 20 percent. The standard errors are adjusted for clustering across firms, so that we assume errors are independent across firms, but not across time.

We begin by investigating the role of control rights on the listing decision. In Table 3, Panel A, we report results using the control rights of the controlling blockholder as an explanatory variable in our model of the probability that a firm will list in the U.S. in a given year (the Controlling Blockholder dataset). We report a regression model with the same explanatory variables as in model (1) of Table 2. The hazard ratio on the controlling blockholder's control rights is 0.22. This hazard ratio is statistically different from one (*t*-statistic = -2.01).[15] A one unit increase in Control rights therefore decreases the relative hazard by 78 percent. Although statistically significant, the economic effect is relatively modest given that 58 firms in the Controlling Blockholder sample list from 1995 to 2001 and, in any given year, the number of firms that list is small. The hazard ratio for the second large blockholder dummy variable is greater than one and is significant. This is consistent with the idea that the value of control is lower when there is a second large shareholder to monitor the actions of the controlling blockholder. When control is less valuable, the cost to the controlling shareholders of listing is lower and firms are more likely to list.

[15] The null hypothesis is written as H_0: $exp(\boldsymbol{\beta}_x) = 1$ since hazard ratios equal one when the coefficients equal zero.

Our first proxy for growth opportunities, Sales growth, has a hazard ratio greater than one (1.21), but is not significant. This weak finding may stem from its close correlation with other growth proxies. If we exclude Global industry *q* and ROA – both of which are significant in all models – then Sales growth becomes statistically significant, and this is true for all models in this table. The hazard ratio for our second proxy for growth opportunities, Global industry *q*, is greater than one (5.16) and is significant. Therefore, the evidence is consistent with the argument that higher growth opportunities increase the probability of listing. Large firms, those with more international activity in terms of foreign sales, and more profitable firms are also more likely to list: the hazard ratios for Log assets (2.39), Foreign sales (6.50), and ROA (1.02) are all greater than one and are statistically significant. Contrary to what we might expect, but consistent with our logistic regression analysis in Table 2, firms with higher leverage are not more likely to list. Finally, financially flexible firms are less likely to list, which is consistent with the view that access to the liquid U.S. markets is valuable for financially constrained firms. The flexibility index has a hazard ratio of 0.71 and is significantly different from one (*t*-statistic of -1.84). Finally, whether or not a firm is controlled by the state does not have a material impact on the listing decision.

We now turn to the country-level variables.[16] Firms from civil law countries are less likely to list. The hazard ratio on the Civil law dummy variable is 0.33 and is significantly different from one (*t*-statistic = 2.57). The log of GNP per capita is not significant. As before, firms with high economic proximity to the U.S. are less likely to list.

In Panel B, we report the results using the control rights of the Family/Management group. As noted earlier, a potential advantage of this analysis is that the effect of control rights on cross-listing may be sharpest in firms for which we can be certain the controlling shareholder is part of the

[16] We cannot control for country effects using country dummies in these models. Suppose that from 1995 to 1997, there are no cross-listed firms from a given country. The dummy variable for that country then perfectly predicts the exchange listed dummy variable for those years. In 1998, if one firm lists, then the dummy variable no longer perfectly predicts the exchange listed dummy and we could use the country dummy. However, it does not make sense to estimate the model with no country dummy from 1995 to 1997 and then add one for 1998 to 2001. The other possibility is to estimate the model excluding the country dummy for the entire sample period. The problem with such an approach is that we do not control for country effects for that country.

management group or its family. The hazard ratio for the Family/Management group's control rights is 0.17 and is significant (*t*-statistic = -2.61). As we would expect, an increase in control rights decreases the probability of listing. In addition, the hazard ratios for Sales growth, Global industry *q*, Log assets, Foreign sales, and ROA are all greater than one, as expected, and except for Sales growth, are all statistically significant. As in Table 2 with the Family/Management dataset, the coefficients on Leverage and the Financial flexibility index are insignificant.

Surprisingly, the Civil law dummy variable is not significant. However, the hazard ratio is less than one, so that the estimate is consistent with firms from civil law countries being less likely to list as expected. The hazard ratio for the log of GNP per capita is significantly less than one. Finally, the hazard ratio for the economic proximity variable is significantly less than one, so that firms from more proximate countries are less likely to list in the U.S.

We now turn to the model reported in the last panel where we include both the cash flow rights of the controlling blockholder and the control wedge. As expected, we find that higher cash flow rights and a higher control wedge make it less likely that a firm will list. As in Panel A, firms in an industry with a higher *q*, larger firms, firms with more foreign sales, and more profitable firms are more likely to cross-list. In contrast, financially flexible firms are less likely to list. Finally, firms from countries with civil law and firms from more proximate countries are less likely to list.

Similar to the logits in Table 2, we investigate the robustness of the results of Table 3 extensively. First, we re-estimate each regression substituting for the Civil law dummy the Anti-director index, the Efficiency of the judicial system, the Disclosure index, the Burden of proof index, or the Investor protection index. All the results of Table 3 hold with these changes in the investor rights variable. With the Controlling Blockholder sample, firms are more likely to list if the investor rights are better. With the Family/Management sample, the hazard ratios on investor rights variables are not always significant. We then re-estimate the Cox models excluding firms from the U.K. and Japan. Our results hold up for the resulting sub-sample. Finally, we exclude the government-owned firms and the privatized firms (except for the Family/Management sample where we only exclude the privatized firms). Again, our results hold up.

In regressions not tabulated, we explore the possibility of a nonlinear impact of the control wedge on the listing decision. For example, small differences may not have a major impact on incentives to cross-list in the U.S., but a larger difference might. One simple nonlinear specification that we considered is the squared control wedge. However, for many firms the difference is zero, so that the squared term is highly correlated with the linear term. Therefore, we estimate a model that is piecewise linear in the control wedge, allowing for one change in the slope. Because choosing a point at which the slopes change is fairly arbitrary, we try a number of different cutoff points. For example, when we use a cutoff at 5 percent with the full set of control variables, the hazard ratio for Cash flow rights is 0.40, but is not significant.[17] The hazard ratio for the control wedge from 0 to 5 percent is 0.04 and is also insignificant. The hazard ratio for the control wedge greater than 5 percent declines to 0.01 and is significant at the 10 percent level. When we use a 10 percent cutoff, the hazard ratio for the control wedge from zero to 10 percent is 0.42 and is not significant. The hazard ratio for the control wedge greater than 10 percent is 0.001 and is significant at the 10 percent level. Overall, the evidence suggests that the control wedge has a nonlinear impact on firms' exchange listing decisions, but the exact form of this nonlinear relationship is somewhat unclear.

5. The choice of cross-listing.

So far, we have focused on whether a firm lists on a U.S. exchange. From a legal and regulatory perspective, a U.S. exchange listing offers stricter monitoring and more restrictions on the consumption of private benefits by the controlling shareholder than a Rule 144a private placement or a Level 1 OTC or a London Stock Exchange listing. In particular, firms that choose London listings, Rule 144a private placements, or Level 1 OTC cross-listings are not subject to SEC

[17] Recall from Table 1 that the control wedge is zero for the majority of the firms and that a 5 percent cutoff is almost associated with the 75th quantile of our sample of firms and it rises to a maximum value of 34 percent.

registration and monitoring – or in the case of a London listing, to an equivalent mechanism.[18] We therefore expect that firms where private benefits are more valuable will be less likely to acquire a U.S. exchange listing. However, we do not expect these firms to be as reticent to acquire other types of listings, although it is an empirical matter as to whether proxies for private benefits affect the probability that a firm will acquire a listing that is not a U.S. exchange listing. We do note though, that theories of listing that focus on market segmentation would imply that corporations should be largely indifferent between listing in the U.S. and in London since the capital markets of the U.S. and of the U.K. are equally integrated in world markets.

We investigate first whether the relation between the choice of listing and ownership characteristics can be estimated using an ordered logit regression. However, the proportionate odds assumption, which is required for the ordered logit model, is rejected. We therefore use a less efficient model, the multinomial logit model, to estimate the relation.

Table 4 reports the estimates for a multinomial logit model where firms can have a London listing, a Rule 144a private placement or Level 1 OTC listing, or a U.S. exchange listing.[19] In the Controlling Blockholder dataset, there are 85 firms with London listings that meet our data requirements. Firms from 13 different countries have a London listing, with the most listings by firms from Ireland, Japan, Sweden, Germany, and South Korea (recall from Table 1 that there are 218 firms with a Rule 144a or Level 1 OTC listing, and 130 firms with a U.S. exchange listing). In the Family/Management Control dataset, there are 108 firms with London listings that meet our data requirements. Firms from 15 different countries have a London listing, with the most listings by firms from Ireland, South Africa, Japan, Sweden, Germany, and South Korea (Table 1 shows

[18] See Baker, Nofsinger, and Weaver (2002) for a description of the listing requirements for foreign firms at the London Stock Exchange.

[19] We group the Rule 144a private placements and Level 1 OTC listings together for two reasons. First, they both constitute a U.S. market presence but in a form that affords relatively less liquid trading than on major exchanges and that represents easier access in terms of registration and disclosure requirements. Second, by grouping them together, we alleviate concerns that we may not find a significant effect due to a small sample size.

that there are 244 firms with a Rule 144a or Level 1 OTC listing, and 154 firms with a U.S. exchange listing).

Some firms have a London listing as well as some type of U.S. listing. We always classify a firm by its most restrictive listing. Consequently, a firm with a London listing and a U.S. exchange listing is classified as having a U.S. listing. We estimate multinomial logistic regressions corresponding to the odd-numbered models of Table 2.[20]

The first result to notice in Table 4 is that the ownership variables reduce the probability of having a U.S. exchange listing significantly, but the coefficients on the ownership variables are not significant for other types of listings. This result is supportive of the view that U.S. exchange listings have a more constraining impact on the consumption of private benefits for controlling blockholders than other types of listings. With the exception of Sales growth, the firm characteristics have a similar impact for U.S. exchange listings and Rule 144a private placements/Level 1 OTC listings. The Civil law dummy variable is significant for both U.S. exchange listings and Rule 144a private placements/Level 1 OTC listings, suggesting that both of these listings have an impact on the consumption of private benefits. However, in all regressions, there is no evidence that firm characteristics or country characteristics affect the probability of a London listing. While this result suggests that a London listing does not have much of an impact on the consumption of private benefits, it could also be explained by a lack of power since there are few firms listed only in London in our sample.[21] We estimate (but do not tabulate) the regressions using the Anti-director index and the Investor protection index instead of the Civil law dummy variable and find similar results.

[20] We cannot include country dummies in these models because of thinness of the sample that results from its stratification across countries by type of listing. The model uses three different listing types. If there is not at least one firm from each country of each listing type, as is the case for several countries, the country dummy perfectly predicts the listing.

[21] We also estimated binomial logistic regression models of the decision to list in London relative to the decision to remain in the home market. This approach has two main advantages. First, we note that in the multinomial logits reported in Table 4 we include firms from the U.K., even though cross-listing in London is not a choice for these firms (cross-listing in the U.S. is though). By estimating a binomial logit that excludes U.K. firms we eliminate this problem. Second, in the binomial logit, we can use the full sample of London listings. The results for London listings in the binomial logits are similarly weak.

Though we do not tabulate the results, we also estimate multinomial logistic regressions where firms have the choice of not being listed in the U.S., of having a Rule 144a private placement/Level 1 OTC listing, and of having a U.S. exchange listing. The results are similar to those of Table 4, in that the ownership variables significantly affect the probability of an exchange listing, but do not significantly affect the probability of a Rule 144a private placement/Level 1 OTC listing. The Civil law dummy variable has a significant coefficient for both types of listings, but surprisingly the coefficient is larger for Rule144a private placement/Level 1 OTC listings. In all of these sensitivity checks, the results for the U.S. exchange listings remain significant and negative.

The evidence from Table 4 is consistent with the theory summarized in the introduction that listings on U.S. exchanges constrain the consumption of private benefits by the controlling shareholder. We find that the probability of seeking a non-exchange listing is, for instance, not related to the control wedge, while the probability of seeking a U.S. exchange listing falls as the control wedge increases.

6. Cross-listing and analyst following.

The literature has debated the extent to which U.S. securities laws and registration and disclosure requirements mandated by the SEC play a role in constraining controlling shareholders' ability to consume private benefits. Coffee (1999, 2002) and Stulz (1999) argue in favor of the efficacy of these mechanisms for "bonding" controlling shareholders to U.S. capital markets, while Siegel (2005) argues against. Stulz (1999) proposes a number of alternative mechanisms that relate to monitoring functions of capital markets and their intermediaries, which he refers to as "gatekeepers." He includes, as candidates, investment bankers and monitoring through their underwriter role, large shareholders, the market for corporate control, and informational intermediaries, like analysts.

In this section, we examine whether analyst following is higher for listed firms with controlling shareholders that own more control rights than cash flow rights, for firms with greater family/management control, and for firms with more concentrated ownership, relative to comparable firms that are not listed. A key building block of the theory outlined in the introduction is that consumption of private benefits is more difficult for U.S. exchange-listed firms, even for those with greater ownership concentration. We investigate this key building block by focusing on monitoring by analysts because 1) we can obtain analyst coverage data for a large number of firms in our sample and 2) previous research suggests that more analyst following brings about more scrutiny and monitoring and is indicative of a better information environment. In particular, there are two key results in the literature that guide our analysis. First, Lang et al. (2003) and Bailey, Karolyi, and Salva (2006) focus on the role of analysts and show that analyst following is significantly higher for firms that cross-list on U.S. exchanges, that their forecasts are significantly more accurate, and that resulting forecast errors have larger capital market consequences. Second, Lang et al. (2004) show that firms with more concentrated control have less analyst following and conclude that analysts are less likely to follow firms with weak internal governance.

To perform this analysis, we collect information on analyst coverage for our sample firms from the I/B/E/S International Summary file. Using the I/B/E/S ticker to match firms, we extract information as of the annual earnings announcement in each year from 1997 through 2001. We construct three variables including: (a) the number of analysts, (b) the earnings surprise (computed as the absolute value of the difference between actual earnings and the prevailing consensus (mean) forecast, scaled by the absolute value of the mean consensus forecast), and (c) the forecast dispersion across analysts (reported standard deviation of the forecasts that comprise the consensus forecast). We require that each firm must have at least one analyst per reporting year but require that it have two analysts to compute dispersion. The intersection of the samples are larger for this experiment than for those in previous sections as we do not impose as many constraints from Worldscope with fundamental data on ROA, sales growth, leverage, and other variables. The final sample for the Control Blockholder (Family/Management) dataset includes 17,311 (17,765) firm-years and includes as many as 176 (200) exchange-listed and another 260 (278) Rule 144a/Level 1 OTC listings.

Table 5 presents the results. For each of the three panels (which correspond to the three panels in Table 2), we report regressions of analyst coverage on ownership variables alone and on ownership variables and control variables (Log assets, Earnings surprise, and Dispersion).[22] These specifications are similar to those in Lang et al. (2003). We also include country dummies, industry dummies, and year dummies in all regressions. The *t*-statistics are adjusted for clustering on firms – they are computed assuming observations are independent across firms, but not across time.

In Panel A, firms are covered by 5.39 analysts on average when the ownership variables are set equal to zero. The coefficient on Control rights is negative and statistically significant. For firms with a typical holding of control rights of 34 percent (Table 1), this implies 2.09 fewer analysts (-6.159×0.34). By contrast, both coefficients on Rule 144a/Level 1 OTC and Exchange are positive and significant and economically large (7 to 8 more analysts per firm), which confirms the results of prior studies. We also find in model (1) that the interaction of Exchange × Control rights is positive and significant, while that of Rule 144a/Level 1 OTC × Control rights is not. That is, those firms that cross-list on an exchange with controlling shareholders with large control rights stakes have higher analyst coverage than those firms that do not cross-list on an exchange or firms that have a Rule 144a/Level 1 listing. Model (2) shows some attenuation in these effects when control variables are included, but they are all still statistically significant.

Panel B uses the Family/Management dataset. The impact of control rights and of cross-listing via Rule 144a/Level 1 OTC listings and exchange listings are the same as in Panel A; however, the interactions of Family/Mgmt control rights with the listing dummy variables are much weaker. In this case, we can state that firms with larger control rights stakes for the family/management group

[22] We also evaluate all of the specifications in Table 5 using Tobit (censored regression) models. Our concern stems from the fact that our sample is left-censored by a minimum number of analysts of one per firm-year to qualify and by a minimum number of two for the analyst dispersion as control variable. For models with country, firm, and year fixed effects, we are able to discern no significant differences in the key inferences.

have significantly higher analyst coverage, on a par with those of other cross-listed firms. This inference applies whether or not control variables are included in the specification (Model 4).

Finally, Panel C evaluates the impact of cash flow rights and, incrementally, the control wedge from the Controlling Blockholder dataset. Models (5) and (6) show that firms with high cash flow rights have significantly fewer analysts and the number of analysts falls with the control wedge. These two distinct effects are statistically significant and large (-6.44 analysts and -2.98 analysts, respectively, when evaluated at the average of the explanatory variables). In these models, cross-listings have significant positive effects, as before, and the adverse impact of cash flow rights and of the control wedge on analyst following is attenuated, though more so for cash flow rights than for the control wedge.

These results support our predictions. Of course, there are other mechanisms that could impose constraints on cross-listed firms with controlling shareholders besides those that stem from analyst coverage. However, our results offer evidence of one mechanism that provides additional monitoring: we see statistically robust and economically large increases in analyst coverage for firms that seek U.S. listings, which is consistent with the building block of our theory that controlling shareholders of firms that list in the U.S. find it more expensive to consume private benefits from control.

7. Firm value, the control wedge, and cross-listing.

It is known from the literature (see, for instance, Claessens et al., 2002, Lemmon and Lins, 2003, and Lins, 2003) that there is a negative relation between firm value and the control wedge. Such a negative relation is consistent with the view that controlling shareholders of firms where the control wedge is higher consume more private benefits. To the extent that consumption of private benefits is more expensive for firms listed in the U.S., we would expect this negative relation to be alleviated for firms that list on a U.S. exchange. We investigate this hypothesis in this section.

To perform this analysis, we follow Claessens et al. (2002), Lins (2003), and Doidge et al. (2004) and use Tobin's *q* as our valuation measure. We use their procedures to compute Tobin's *q* ratios for our sample firms as of year-end 1997 from Worldscope. For the numerator, we take the book value of total assets, subtract the book value of equity and add the market value of equity. For the denominator, we use the book value of total assets. All variables are in local currency. There are, of course, a number of cautions about this valuation ratio proxy, including the fact that we do not attempt to compute replacement cost in the denominator and that we do not use a market value of debt in the numerator. But these simplifications are necessary in a dataset that spans so many countries and for which only standard financial accounting data are consistently available. We focus our analysis on the Controlling Blockholder dataset as our interest is on the valuation impact of the control wedge. This results in 4,275 non-financial firms (with assets above $10 million) in 1997, of which 218 are listed via Rule 144a or Level 1 OTC ADRs and another 130 are exchange listed (the sample is similar to the sample used in Table 4 with a small difference in sample size because we use different variables).

Table 6 presents the valuation regression results. As is standard (see e.g., La Porta et al., 2002 and Claessens et al., 2002), we estimate the regressions with country random effects.[23] The control variables are similar to those in Doidge et al. (2004). In all regressions, firms that have a U.S. exchange listing have a higher Tobin's *q*. On average, these coefficients range from 0.31 to 0.40 which constitutes a premium of 23 to 30 percent of the average Tobin's *q* ratio of about 1.33. Though firms with a Rule 144a private placement/Level 1 OTC listing have a higher Tobin's *q* than firms that do not have a U.S. listing, these firms have lower Tobin's *q* ratios than firms with an exchange listing, as expected. In Panel A, we report the results for three specifications using the control wedge variable. In model (1) we verify the result from the previous literature that firm value falls with the size of the control wedge. The wedge coefficient is -0.49, which implies a Tobin's *q*

[23] The Breusch-Pagan Lagrange multiplier test rejects the hypothesis that the residuals are independent within countries. We also checked the assumptions of the random effects model with a Hausman test: random effects models assume that the random effects are uncorrelated with the other regressors. Hausman tests show that this assumption is not rejected.

discount of -0.025 (-0.49 × 0.05) for a firm with a mean control wedge of about five percent. In model (2), we add the listing dummies, which confirms previous research that finds cross-listed firms are worth more. In model (3), we find that the negative relation between the control wedge and firm value is attenuated by an exchange listing. The coefficient on the interaction between the control wedge and the exchange listing is positive and significant as predicted by our theory (the coefficient equals 3.56 and has a *t*-statistic of 2.57).

In Panel B, we report another three specifications with a simple dummy variable for firms that have a positive control wedge ("Control – cash dummy"). In models (4) and (5), the coefficient on this dummy variable is significantly negative as expected, but it is larger in magnitude than the implied Tobin's *q* discount from Panel A. In model (6), the coefficients on the interactions of the dummy variable with the exchange listing and the Rule 144a private placement/Level 1 OTC listing dummy variables are insignificant, but they are positive, so that for firms with such listings the total impact of the control wedge becomes insignificant. It follows that the results in Table 6 are consistent with our predictions: the value of private benefits of control is lower for firms with a U.S. listing, so that for a given level of control wedge, firm value is greater when the firm is listed in the U.S.[24]

8. Conclusions.

Recent research has shown that the private benefits of control are especially valuable in countries with weak investor protection. A related stream of research finds that the decision to cross-list in the U.S. is value enhancing because it commits firms to improved disclosure and better corporate governance, as well as to additional scrutiny by various capital market intermediaries ("gatekeepers"). However, despite the existence of benefits from cross-listing, it is well-known that

[24] We estimate, but do not report, regressions that account for self-selection (see Doidge et al., 2004). In these regressions, the first stage model (exchange listing decision) is a binary probit model – therefore, we do not consider Rule 144a/Level 1 OTC listings in these regressions. We tried a number of different specifications in both the listing and valuation equations. In some specifications, the magnitude of the premium for exchange listings is reduced, but it is remains statistically and economically significant. None of our inferences are affected when we account for self-selection.

many non-U.S. firms do not cross-list their shares in the U.S. One explanation is that the controlling shareholders of firms that choose not to list have valuable private benefits that they do not want to give up. We investigate and find evidence in support of this hypothesis in this paper.

We posit that private benefits of control are more valuable when controlling shareholders own more control rights and when their control rights exceed their cash flow rights. Using two separate databases of ownership structure for over 4,000 firms from 31 countries around the world, we construct proxy measures of private benefits of control and find that, when controlling shareholders have high levels of control and when their control rights exceed their cash flow rights, their firms are less likely to list their shares in the U.S. Similarly, we find that firms controlled by their top managers and their families are less likely to have a U.S. listing. In modeling the costs and benefits of listing, we also find an important role for other firm-level variables, such as growth opportunities and size, as well country-level variables, such as home country investor protection. We employ duration analysis using a Cox proportional-hazard model to show that the probability of listing in a given year over the 1995 to 2001 period, conditional on not yet having listed, is significantly lower when controlling shareholders have higher levels of control, when their control rights exceed their cash flow rights, and when firms are controlled by their top managers.

We offer additional evidence that is consistent with our conclusions. While we find that our proxies for private benefits lower the probability of a U.S. exchange listing, they do not have a significant impact on other types of less constraining cross-listings. Moreover, we find that the outcomes of an exchange listing for firms with a control wedge support our conclusions. As firms with a control wedge list in the U.S., they are followed by more analysts, so that their controlling shareholders face greater monitoring. Further, as evidence of a decrease in consumption of private benefits, we find that the known negative relation between Tobin's *q* and the control wedge is sharply attenuated when firms list in the U.S. Taken together, our results support the view that a desire to either consume private benefits of control, or to retain the option to consume such benefits, deters the controlling shareholders of many non-U.S. firms from listing in the U.S.

References

Ai, C., and E. Norton, 2003, Interaction terms in logit and probit models, Economic Letters 80, 123-129.

Al-Nasser, A, 2005, Cross-listing, investor protection, and disclosure: does it make a difference? The case of cross-listed versus non-cross-listed firms, working paper, University of Bath.

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

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

Bebchuk, L., R. Kraakman, and G. Triantis, 2000, Stock pyramids, cross-ownership, and dual class equity, in R. Morck, ed., Concentrated Corporate Ownership (University of Chicago Press, Chicago, Ill.).

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

Claessens, S., S. Djankov, and L. Lang, 2000, The separation of ownership and control in East Asian corporations, Journal of Financial Economics 58, 81-112.

Claessens, S., S. Djankov, J. Fan, and L. Lang, 2002, Disentangling the incentive and entrenchment effects of large shareholdings, Journal of Finance 57, 2741-2771.

Claessens, S., D. Klingebiel and S. Schmukler, 2002, The future of stock exchanges in emerging economies: Evolution and prospects, in eds: R. Litan and R. Herring, Brookings-Wharton Papers on Financial Services.

Claessens, S., D. Klingebiel and S. Schmukler, 2003, Accessing international equity markets: what firms from which countries go abroad?, working paper, World Bank.

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

Coffee, J., 2002, Racing towards the top?: the impact of cross-listings and stock market competition on international corporate governance, Columbia Law Review 102, 1757-1831.

Cox, D., 1972, Regression models and life-tables (with discussion), Journal of the Royal Statistical Society 34B, 187-220.

Doidge, C., 2004a, U.S. cross-listings and the private benefits of control: evidence from dual-class firms, Journal of Financial Economics 72, 519-553.

Doidge, C., 2004b, Do changes in laws matter for ownership and control? Evidence from emerging markets firms that list in the U.S., working paper, University of Toronto.

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

Dyck, A., and L. Zingales, 2004, Private benefits of control: an international comparison, Journal of Finance 59, 537-600.

Faccio, M., and L. Lang, 2002, The ultimate ownership of western European corporations, Journal of Financial Economics 65, 365-395.

Foerster S., and G. A. Karolyi, 1999, The effects of market segmentation and investor recognition on asset prices: evidence from foreign stocks listing in the U.S., Journal of Finance 54, 981-1014.

Fan, J., and T. Wong, 2002, Corporate ownership structure and the informativeness of accounting earnings in East Asia, Journal of Accounting and Economics 33, 401-425.

Hail, L., and C. Leuz, 2004, Cost of capital and cash flow effects of U.S. cross-listings, working paper, University of Pennsylvania.

Kaplan, S., and L. Zingales, 1997, Do investment-cash flow sensitivities provide useful measures of financing constraints?, Quarterly Journal of Economics 107, 16-215.

Karolyi, G. A., 1998, Why do companies list abroad? A survey of the evidence and its managerial implications, Financial Markets, Institutions, and Instruments Vol. 7, Blackwell Publishers, Boston.

Karolyi, G. A., 2006, The world of cross-listings and cross-listings of the world: challenging conventional wisdom, Review of Finance 10, 1-54.

La Porta, R., F. Lopez-de-Silanes, A. Shleifer, 1999, Corporate ownership around the world, Journal of Finance 54, 471-517.

La Porta, R., F. Lopez-de-Silanes, A. Shleifer, 2006, What works in securities laws, Journal of Finance 61, 1-33.

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

La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. Vishny, 2002, Investor protection and corporate valuation, Journal of Finance 57, 1147-1170.

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

Lang, M., K. Lins, and D. Miller, 2004, Concentrated control, analyst following, and valuation: do analysts matter most when investors are protected least?, Journal of Accounting Research 42, 589-623.

Lemmon, M., and K Lins, 2003, Ownership structure, corporate governance, and firm value: Evidence from the East Asian financial crisis, Journal of Finance 58, 1445-1468

Lins, K., 2003, Equity ownership and firm value in emerging markets, Journal of Financial and Quantitative Analysis, 38, 159-184.

Lins, K., D. Strickland, and M. Zenner, 2005, Do non-U.S. firms issue equity on U.S. exchanges to relax capital constraints?, Journal of Financial and Quantitative Analysis 40, 109-133.

Miller, D., 1999, The market reaction to international cross-listing: evidence from depositary receipts, Journal of Financial Economics 51, 103-123.

Nenova, T., 2003, The value of corporate voting rights and control: a cross-country analysis, Journal of Financial Economics 68, 325-351.

Pagano, M., A. Roell, and J. Zechner, 2002, The geography of equity listing: why do companies list abroad?, Journal of Finance, 2651-2694.

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

Sarkissian, S., and M. Schill, 2004, The overseas listing decision: new evidence of proximity preference, Review of Financial Studies 17, 769-809.

Siegel, J., 2005, Can foreign firms bond themselves effectively by renting U.S. securities laws?, Journal of Financial Economics 75, 319-359.

Stulz, R., 1999, Globalization of equity markets and the cost of capital, Journal of Applied Corporate Finance 12, 8-25.

Table 1. Summary statistics for 1997.

Summary statistics are computed as of December 31, 1997 for firms that are not cross-listed, for firms that are cross-listed via Rule 144a or Level 1 OTC ADRs, and for firms cross-listed on a U.S. exchange via a direct listing or via Level 2 or 3 ADRs. Data sources for information on U.S. listings and ownership is described in Section 2. Financial firms and firms with assets less than $10 million are excluded. N denotes the number of firms. Total assets ($ billions), from Worldscope, is the average total assets of sample firms in a country. Panel A presents results using the Controlling Blockholder Dataset. Control rights (CF rights) is equal to the average voting rights (cash flow rights) held by the controlling blockholder. CR>CF is the frequency with which control rights exceeds cash flow rights. Panel B presents results for the Family/Management Control Dataset. F/M control rights are the voting rights held by the management group or controlling family. F/M largest BH is the frequency with which the management group or controlling family is the largest blockholder.

Panel A — Controlling Blockholder Dataset

	Not cross-listed					Rule 144a / Level 1 OTC ADRs					Exchange listed				
Country	N	Total assets	Control rights	CF rights	CR>CF	N	Total assets	Control rights	CF rights	CR>CF	N	Total assets	Control rights	CF rights	CR>CF
Austria	43	0.45	0.56	0.48	0.47	9	2.87	0.46	0.44	0.11	0	.	.	.	.
Belgium	62	1.78	0.38	0.35	0.24	1	8.51	0.29	0.29	0.00	1	10.87	0.31	0.15	1.00
Finland	55	0.71	0.31	0.26	0.47	4	1.28	0.47	0.44	0.25	2	4.08	0.00	0.00	0.00
France	334	1.07	0.50	0.49	0.10	14	10.58	0.21	0.17	0.29	15	16.03	0.24	0.21	0.33
Germany	398	1.10	0.55	0.49	0.33	11	18.23	0.24	0.21	0.36	6	40.70	0.24	0.22	0.17
Hong Kong	98	0.56	0.35	0.30	0.24	42	1.91	0.30	0.26	0.33	1	6.15	0.18	0.18	0.00
Indonesia	89	0.44	0.37	0.30	0.53	1	0.58	0.42	0.34	1.00	2	2.53	0.56	0.56	0.00
Ireland	28	0.22	0.21	0.17	0.43	0	.	.	.	.	4	2.90	0.10	0.09	0.25
Italy	90	2.39	0.48	0.38	0.62	5	1.94	0.45	0.42	0.20	5	27.72	0.43	0.33	0.60
Japan	848	1.92	0.10	0.07	0.42	13	13.67	0.04	0.02	0.31	13	33.70	0.08	0.06	0.23
Malaysia	107	0.45	0.34	0.27	0.44	5	1.60	0.25	0.22	0.20	0	.	.	.	.
Norway	65	0.34	0.31	0.25	0.35	10	2.01	0.24	0.17	0.80	5	4.69	0.25	0.23	0.40
Philippines	41	0.19	0.29	0.26	0.34	9	1.23	0.27	0.24	0.44	1	4.86	0.33	0.33	0.00
Portugal	39	0.38	0.41	0.40	0.13	1	1.54	0.00	0.00	0.00	2	9.11	0.41	0.41	0.00
Singapore	119	0.34	0.31	0.24	0.66	8	3.72	0.26	0.14	0.75	1	0.63	0.41	0.41	0.00
South Korea	183	0.91	0.20	0.17	0.25	11	6.62	0.08	0.07	0.18	3	13.65	0.32	0.32	0.00
Spain	82	1.16	0.35	0.32	0.23	1	4.31	0.42	0.31	1.00	3	28.38	0.14	0.14	0.00
Sweden	97	0.77	0.26	0.20	0.32	6	2.97	0.25	0.18	0.67	8	8.13	0.12	0.05	0.38
Switzerland	103	0.83	0.42	0.30	0.54	4	28.96	0.29	0.16	0.50	3	2.95	0.20	0.20	0.33
Taiwan	86	0.53	0.23	0.18	0.56	11	1.74	0.25	0.23	0.27	0	.	.	.	.
Thailand	76	0.37	0.39	0.37	0.13	5	1.10	0.30	0.30	0.00	0	.	.	.	.
U.K.	889	0.32	0.20	0.18	0.28	47	3.69	0.11	0.10	0.11	55	8.94	0.16	0.15	0.24
Total	3932					218					130				
Mean		0.78	0.34	0.29	0.37		5.67	0.27	0.22	0.37		12.56	0.25	0.22	0.22
Median		0.55	0.35	0.29	0.35		2.87	0.26	0.22	0.29		8.54	0.24	0.21	0.20

Table 1, continued.

Panel B	Family / Management Control Dataset											
	Not cross-listed				Rule 144a / Level 1 OTC ADRs				Exchange listed			
Country	N	Total assets	F/M control rights	F/M largest BH	N	Total assets	F/M control rights	F/M largest BH	N	Total assets	F/M control rights	F/M largest BH
Argentina	2	1.21	0.00	0.00	9	2.87	0.25	0.44	4	6.69	0.00	0.00
Austria	43	0.45	0.44	0.65	0	.	.	.	0	.	.	.
Belgium	62	1.78	0.37	0.74	1	8.51	0.29	1.00	1	10.87	0.00	0.00
Brazil	17	1.43	0.14	0.29	10	2.02	0.22	0.30	1	7.82	0.00	0.00
Chile	9	1.17	0.50	0.89	0	.	.	.	5	6.17	0.20	0.60
Czech	7	0.14	0.28	0.71	0	.	.	.	0	.	.	.
Finland	55	0.71	0.33	0.65	4	1.28	0.04	0.25	2	4.08	0.00	0.00
France	335	1.07	0.50	0.82	14	10.58	0.18	0.57	15	16.03	0.18	0.53
Germany	402	1.10	0.54	0.82	11	18.23	0.24	0.55	6	40.70	0.03	0.17
Hong Kong	114	0.53	0.41	0.81	43	1.92	0.39	0.79	2	3.21	0.20	0.50
Indonesia	46	0.28	0.38	0.65	0	.	.	.	2	2.53	0.00	0.00
Ireland	28	0.22	0.12	0.25	0	.	.	.	4	2.90	0.05	0.25
Israel	4	1.65	0.26	0.50	0	.	.	.	6	1.05	0.35	0.67
Italy	90	2.39	0.46	0.80	5	1.94	0.45	1.00	5	27.72	0.28	0.60
Japan	848	1.92	0.03	0.15	13	13.67	0.00	0.00	13	33.70	0.02	0.15
Malaysia	199	0.39	0.30	0.70	7	1.37	0.33	0.86	0	.	.	.
Norway	68	0.33	0.25	0.59	10	2.01	0.22	0.50	5	4.69	0.22	0.60
Peru	2	0.32	0.25	0.50	1	0.21	0.25	1.00	2	1.82	0.00	0.00
Philippines	22	0.17	0.48	0.82	9	1.27	0.31	0.67	1	4.86	0.23	0.00
Portugal	40	0.38	0.39	0.80	2	1.17	0.28	0.50	2	9.11	0.00	0.00
Singapore	111	0.31	0.34	0.67	7	4.19	0.04	0.14	1	0.63	0.58	1.00
South Africa	55	0.59	0.45	0.73	13	1.75	0.25	0.46	4	1.65	0.00	0.00
South Korea	141	1.01	0.17	0.76	10	7.23	0.04	0.30	3	13.65	0.06	0.33
Spain	82	1.16	0.32	0.57	1	4.31	0.00	0.00	2	22.47	0.00	0.00
Sri Lanka	5	0.07	0.18	0.80	0	.	.	.	0	.	.	.
Sweden	97	0.77	0.25	0.59	7	3.27	0.22	0.57	8	8.13	0.03	0.13
Switzerland	103	0.83	0.40	0.70	4	28.96	0.37	0.75	3	2.95	0.36	0.67
Taiwan	101	0.42	0.18	0.83	10	0.78	0.18	0.80	2	2.26	0.08	0.50
Thailand	125	0.25	0.21	0.54	6	0.98	0.19	0.50	0	.	.	.
Turkey	16	0.23	0.20	0.31	0	.	.	.	0	.	.	.
U.K.	889	0.32	0.16	0.47	47	3.69	0.10	0.40	55	8.94	0.14	0.35
Total	4118				244				154			
Mean		0.76	0.30	0.62		5.31	0.21	0.54		9.79	0.12	0.28
Median		0.53	0.30	0.67		2.02	0.22	0.50		6.17	0.05	0.17

Table 2. Cross-sectional logistic regressions: listing on a U.S. exchange.

The logistic regressions estimate the probability that a firm is cross-listed on a U.S. exchange as of December 31, 1997. The table reports marginal effects evaluated at the means of the independent variables. Data sources for information on U.S. listings and ownership are described in Section 2. Financial firms, firms that list via Rule 144a and Level 1 OTC ADRs, and firms with assets less than $10 million are excluded. Panel A shows results using the controlling blockholder's control rights (voting rights held by the controlling blockholder); Panel B shows results using family/management control rights (fraction of voting rights held by the family/management group); Panel C shows results using the controlling blockholder's cash flow rights and the difference between his control rights and cash flow rights. Second blockholder (Panels A and C) equals one if there is another blockholder with at least 10% of the voting rights. Government owned (Panels A and C) equals one if the state is the controlling shareholder. All accounting data are from Worldscope. Sales growth is inflation adjusted two-year sales growth. Global industry *q* is the firm's median global industry *q*. Total assets are in $ thousands. Foreign sales is the percentage of foreign sales to total sales. Leverage is total debt divided by total assets. The Financial flexibility index ranges from 0-3, where higher values indicate that firms have more flexibility. Civil law is a dummy variable that equals one if the country's legal origin is based on civil law (from La Porta et al., 1998). Log of GNP per capita ($) is from the World Bank WDI Database. Economic proximity, from the 1996 International Trade Statistics Yearbook, is the percentage of country i's exports going to the U.S. Pseudo-R^2 is a goodness-of-fit measure based on the difference between unrestricted and restricted likelihood functions. The *t*-statistics reported in parentheses are adjusted for clustering on countries – they are computed assuming observations are independent across countries, but not within countries. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

	Panel A		Panel B		Panel C	
	(1)	(2)	(3)	(4)	(5)	(6)
Control rights	-0.0078	-0.0041				
	-(2.73)***	-(2.20)**				
Cash flow rights					-0.0067	-0.0035
					-(2.18)**	-(1.73)*
Control – cash					-0.0209	-0.0127
					-(3.04)***	-(2.43)**
2nd blockholder	0.0007	0.0011			0.0009	0.0012
	(0.73)	(2.23)**			(0.87)	(2.31)**
Family/Mgmt control rights			-0.0082	-0.0046		
			-(2.49)**	-(1.75)*		
Sales growth	0.0031	0.0023	0.0043	0.0036	0.0030	0.0022
	(2.26)**	(2.13)**	(1.52)	(2.36)**	(2.25)**	(1.95)*
Global industry *q*	0.0090	0.0062	0.0137	0.0084	0.0085	0.0060
	(5.46)***	(4.00)***	(3.64)***	(4.18)***	(4.73)***	(3.75)***
Log assets	0.0041	0.0032	0.0061	0.0042	0.0041	0.0032
	(7.88)***	(7.18)***	(4.47)***	(6.92)***	(7.38)***	(6.75)***
Foreign sales	0.0074	0.0055	0.0126	0.0073	0.0075	0.0054
	(4.85)***	(4.09)***	(3.32)***	(3.61)***	(5.00)***	(4.02)***
Leverage	-0.0007	-0.0023	-0.0047	-0.0034	-0.0010	-0.0023
	-(0.13)	-(0.50)	-(0.70)	-(0.60)	-(0.19)	-(0.51)
Financial flexibility index	0.0007	0.0004	0.0003	0.0005	0.0006	0.0004
	(1.02)	(0.85)	(0.33)	(0.68)	(0.87)	(0.79)
ROA	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000
	(0.04)	(0.18)	(0.53)	(0.00)	(0.09)	(0.16)
Government owned	0.0008	0.0013			0.0006	0.0011
	(0.46)	(1.14)			(0.33)	(0.85)
Civil law	-0.0058		-0.0069		-0.0054	
	-(2.18)**		-(1.78)*		-(2.14)**	
Log of GNP per capita	-0.0013		-0.0038		-0.0014	
	-(0.90)		-(2.10)**		-(1.04)	
Economic proximity	-0.0002		-0.0001		-0.0002	
	-(2.33)**		-(0.81)		-(2.16)**	
Country dummies	no	yes	no	yes	no	yes
Number of observations	4062	4062	4272	4272	4062	4062
Pseudo R^2	0.4485	0.4834	0.4033	0.4711	0.4528	0.4862

Table 3. Cox models: estimating the probability of cross-listing on a U.S. exchange in event time.

The Cox models estimate the probability of listing in year t, given that the firm has not listed yet. The sample includes observations on the dependent variable from 1995 to 2001. Data sources for information on U.S. listings and ownership are described in Section 2. Financial firms, firms that list via Rule 144a and Level 1 OTC ADRs, and firms with assets less than $10 million are excluded. Panel A shows results using the controlling blockholder's control rights (voting rights held by the controlling blockholder); Panel B shows results using family/management control rights (fraction of voting rights held by the family/management group); Panel C shows results using the controlling blockholder's cash flow rights and the difference between his control rights and cash flow rights. Second blockholder (Panels A and C) equals one if there is another blockholder with at least 10% of the voting rights. Government owned (Panels A and C) equals one if the state is the controlling shareholder. All accounting data are from Worldscope. Sales growth is inflation adjusted two-year sales growth. Global industry *q* is the firm's median global industry *q*. Total assets are in $ millions. Foreign sales is the percentage of sales that are foreign. Leverage is total debt divided by total assets. The Financial flexibility index ranges from 0-3, where higher values indicate that firms have more flexibility. Civil law is a dummy variable that equals one if the country's legal origin is based on civil law (from La Porta et al., 1998). Log of GNP per capita ($) is from the World Bank WDI Database. Economic proximity, from the 1996 International Trade Statistics Yearbook, is the percentage of country i's exports going to the U.S. The table reports hazard ratios (i.e., *exp*($\boldsymbol{\beta}_x$), not $\boldsymbol{\beta}_x$). The model does not estimate a constant. The *t*-statistics reported in parentheses are for the null hypothesis that the coefficient is equal to one. The *t*-statistics are adjusted for clustering on firms – they are computed assuming observations are independent across firms, but not across time. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

	Panel A	Panel B	Panel C
	# of subjects: 4,589 # of failures: 58	# of subjects: 4,731 # of failures: 67	# of subjects: 4,589 # of failures: 58
Control rights	0.22		
	-(2.01)**		
Cash flow rights			0.28
			-(1.65)*
Control – cash			0.02
			-(2.31)**
2nd blockholder	1.80		1.95
	(1.89)*		(2.17)**
Family/Mgmt control rights		0.17	
		-(2.61)***	
Sales growth	1.21	2.06	1.37
	(0.27)	(1.62)	(0.44)
Global industry *q*	5.16	4.11	4.91
	(3.34)***	(3.32)***	(3.20)***
Log assets	2.39	2.26	2.42
	(10.66)***	(11.63)***	(10.88)***
Foreign sales	6.50	6.06	6.97
	(3.78)***	(3.87)***	(3.97)***
Leverage	0.58	0.45	0.54
	-(0.43)	-(0.71)	-(0.50)
Financial flexibility index	0.71	0.78	0.72
	-(1.84)*	-(1.41)	-(1.81)*
ROA	1.02	1.01	1.02
	(2.49)**	(2.74)***	(2.47)**
Government owned	1.05		1.02
	(0.13)		(0.04)
Civil law	0.33	0.54	0.34
	-(2.57)**	-(1.57)	-(2.56)**
Log of GNP per capita	1.26	0.61	1.24
	(0.59)	-(2.24)**	(0.56)
Economic proximity	0.92	0.95	0.93
	-(3.06)***	-(2.31)**	-(3.00)***
Log likelihood	-372.71	-445.61	-371.72
χ^2	207.81	241.33	250.69
Prob > χ^2	0.0000	0.0000	0.0000

Table 4. Cross-sectional multinomial logits: the choice of listing type.

The mulitnomial logit regressions estimate the probability that a firm is cross-listed as of December 31, 1997. The table reports marginal effects evaluated at the means of the independent variables. Data sources for information on U.S. listings, London listings, and ownership are described in Section 2. There are four categories: not cross-listed (base category), London, Rule 144a or Level 1 OTC listings, and U.S. exchange listings (via a direct listing or via Level 2 or 3 ADRs). Financial firms and firms with assets less than $10 million are excluded. Panel A shows results using the controlling blockholder's control rights (voting rights held by the controlling blockholder); Panel B shows results using family/management control rights (fraction of voting rights held by the family/management group); Panel C shows results using the controlling blockholder's cash flow rights and the difference between his control rights and cash flow rights. Second blockholder (Panels A and C) equals one if there is another blockholder with at least 10% of the voting rights. Government owned (Panels A and C) equals one if the state is the controlling shareholder. All accounting data are from Worldscope. Sales growth is inflation adjusted two-year sales growth. Global industry *q* is the firm's median global industry *q*. Total assets are in $ thousands. Foreign sales is the percentage of foreign sales to total sales. Leverage is total debt divided by total assets. The Financial flexibility index ranges from 0-3, where higher values indicate that firms have more flexibility. Civil law is a dummy variable that equals one if the country's legal origin is based on civil law (from La Porta et al., 1998). Log of GNP per capita ($) is from the World Bank WDI Database. Economic proximity, from the 1996 International Trade Statistics Yearbook, is the percentage of country i's exports going to the U.S. (to the U.K. for London listings). Pseudo-R^2 is a goodness-of-fit measure based on the difference between unrestricted and restricted likelihood functions. The *t*-statistics reported in parentheses are adjusted for clustering on countries – they are computed assuming observations are independent across countries, but not within countries. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

	Panel A			Panel B			Panel C		
	London	144a/Level 1	Exchange	London	144a/Level 1	Exchange	London	144a/Level 1	Exchange
Control rights	-0.0014	-0.0210	-0.0074						
	-(0.27)	-(1.48)	-(2.72)***						
Cash flow rights							-0.0015	-0.0183	-0.0063
							-(0.26)	-(1.25)	-(2.13)**
Control – cash							0.0022	-0.0517	-0.0208
							(0.45)	-(1.51)	-(2.86)***
2^{nd} blockholder	0.0004	0.0117	0.0006				0.0003	0.0121	0.0007
	(0.30)	(1.68)*	(0.57)				(0.27)	(1.78)*	(0.74)
Family/Mgmt control rights				-0.0030	0.0011	-0.0082			
				-(1.12)	(0.09)	-(2.54)**			
Sales growth	0.0010	-0.0116	0.0033	0.0026	-0.0125	0.0044	0.0009	-0.0116	0.0033
	(0.30)	-(1.32)	(1.76)*	(1.35)	-(1.07)	(1.35)	(0.28)	-(1.32)	(1.85)*

Table 4 is continued on the next page.

Table 4, continued.

	Panel A			Panel B			Panel C		
	London	144a/Level 1	Exchange	London	144a/Level 1	Exchange	London	144a/Level 1	Exchange
Global industry *q*	0.0002	0.0265	0.0102	0.0020	0.0302	0.0147	0.0003	0.0261	0.0098
	(0.16)	(2.47)**	(5.42)***	(0.49)	(2.76)***	(3.66)***	(0.19)	(2.49)**	(4.81)***
Log assets	0.0004	0.0167	0.0046	0.0008	0.0193	0.0063	0.0003	0.0167	0.0046
	(0.26)	(4.30)***	(7.08)***	(0.65)	(4.49)***	(4.15)***	(0.24)	(4.25)***	(6.73)***
Foreign sales	0.0028	0.0418	0.0091	0.0062	0.0471	0.0140	0.0023	0.0421	0.0091
	(0.32)	(3.21)***	(5.51)***	(1.43)	(3.70)***	(3.50)***	(0.29)	(3.22)***	(5.60)***
Leverage	0.0010	0.0002	-0.0012	0.0018	-0.0017	-0.0049	0.0009	-0.0004	-0.0016
	(0.43)	(0.01)	-(0.24)	(0.57)	-(0.11)	-(0.85)	(0.37)	-(0.03)	-(0.32)
Financial flexibility index	0.0001	-0.0005	0.0007	-0.0001	-0.0007	0.0004	0.0001	-0.0006	0.0007
	(0.24)	-(0.20)	(0.89)	-(0.38)	-(0.29)	(0.38)	(0.24)	-(0.26)	(0.81)
ROA	0.0000	0.0005	0.0000	0.0000	0.0003	0.0001	0.0000	0.0005	0.0000
	(0.29)	(1.00)	(0.27)	(0.57)	(0.94)	(0.67)	(0.27)	(1.01)	(0.30)
Government owned	-0.0006	0.0026	0.0006				-0.0005	0.0028	0.0005
	-(0.25)	(0.36)	(0.31)				-(0.24)	(0.36)	(0.27)
Civil	-0.0065	-0.0285	-0.0086	-0.0077	-0.0284	-0.0081	-0.0068	-0.0279	-0.0081
	-(0.84)	-(1.77)*	-(2.14)**	-(0.88)	-(1.79)*	-(1.78)*	-(0.48)	-(1.72)*	-(2.12)**
Economic proximity	-0.0003	0.0004	-0.0002	-0.0006	-0.0157	-0.0041	-0.0002	0.0004	-0.0002
	-(0.89)	(0.47)	-(1.88)*	-(0.37)	-(2.84)***	-(2.39)**	-(0.71)	(0.48)	-(1.79)*
Log of GNP per capita	-0.0008	-0.0111	-0.0019	-0.0003	0.0004	-0.0001	-0.0007	-0.0111	-0.0019
	-(0.54)	-(2.23)**	-(1.31)	-(1.08)	-(0.54)	-(0.56)	-(0.48)	-(2.26)**	-(1.39)
# of observations		4280			4516			4280	
Pseudo R^2		0.3010			0.2787			0.3038	

Table 5. Analyst coverage regressions.

This table presents results from regressions that estimate the impact of cross-listing in the U.S. on analyst coverage. The sample period goes from 1997-2001. Data sources for information on U.S. listings and ownership are described in Section 2. Financial firms and firms with assets less than $10 million are excluded. The dependent variable in each regression is the number of analysts. Analyst data are from the I/B/E/S International Summary File. Firms in our sample with at least one analyst in a given year are included. Panel A shows results using the controlling blockholder's control rights (voting rights held by the controlling blockholder); Panel B shows results using family/management control rights (fraction of voting rights held by the family/management group); Panel C shows results using the controlling blockholder's cash flow rights and the difference between his control rights and cash flow rights. 144a/Level 1 and Exchange are dummy variables that equal one if a firm cross-lists its shares in the U.S., respectively, via a Rule 144a or Level 1 OTC ADR or on a U.S. exchange (via a direct listing or via Level 2 or 3 ADRs). Earnings surprise is computed as the absolute value of the difference between actual earnings and the last consensus (mean) forecast, scaled by the absolute value of the mean forecast. Dispersion is the reported standard deviation of the forecasts that make up the consensus forecast, scaled by the absolute value of the consensus forecast (defined only if there are at least two analysts in any given year). All accounting data are from Worldscope. Total assets are in $ thousands. All models include year, industry, and country dummies. The *t*-statistics reported in parentheses are adjusted for clustering on firms – they are computed assuming observations are independent across firms, but not across time.*, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

	Panel A		Panel B		Panel C	
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	5.394	-25.895	5.188	-24.440	5.373	-25.899
	(2.67)***	-(17.66)***	(2.21)**	-(15.02)***	(2.62)***	-(17.71)***
Control rights	-6.159	-3.520				
	-(10.25)***	-(6.62)***				
Cash flow rights					-6.443	-3.509
					-(10.50)***	-(6.46)***
Control – cash					-2.981	-3.600
					-(2.01)**	-(2.55)**
Family/Mgmt control rights			-5.738	-2.864		
			-(12.17)***	-(6.54)***		
144a/Level 1	7.032	1.526	7.001	2.094	7.019	1.553
	(9.33)***	(2.75)***	(12.23)***	(4.86)***	(9.36)***	(2.83)***
Exchange	8.350	0.990	9.095	1.996	8.358	0.955
	(11.13)***	(1.86)*	(15.07)***	(4.32)***	(10.91)***	(1.77)*
144a/Level 1 × Control rights	0.730	4.212				
	(0.27)	(2.18)**				
Exchange × Control rights	7.880	8.114				
	(2.87)***	(3.52)***				
144a/Level 1 × Cash flow rights					0.704	4.366
					(0.25)	(2.15)**
Exchange × Cash flow rights					8.116	7.958
					(2.91)***	(3.40)***
144a/Level 1 × Control – cash					2.315	2.161
					(0.34)	(0.33)
Exchange × Control – cash					6.239	10.310
					(0.62)	(1.42)
144a/Level 1 × Family/Mgmt control rights			-1.181	1.789		
			-(0.57)	(1.18)		
Exchange × Family/Mgmt control rights			-0.280	2.880		
			-(0.11)	(1.34)		
Log assets		2.707		2.683		2.708
		(39.84)***		(39.44)***		(39.91)***
Earnings surprise		-0.169		-0.198		-0.169
		-(5.04)***		-(5.46)***		-(5.04)***
Dispersion		-0.536		-0.592		-0.536
		-(6.72)***		-(6.81)***		-(6.72)***
Number of observations	17311	12055	17765	12556	17311	12055
Adjusted R^2	0.2911	0.5539	0.2962	0.5497	0.2923	0.5540

Table 6. Valuation regressions.

This table presents results from (country) random effects regressions that estimate the valuation impact of cross-listing in the U.S., as of December 31, 1997. Data sources for information on U.S. listings and ownership are described in Section 2. Financial firms and firms with assets less than $10 million are excluded. The dependent variable in each regression is Tobin's *q*, computed as ((Total Assets – Book Equity) + Market Value of Equity) / Total Assets (all variables are in local currency) on December 31, 1997. Panel A shows results using Control-cash, the difference between the controlling blockholder's control rights and cash flow rights. Panel B shows results using a dummy variable that equals one if Control-cash is greater than zero. Second blockholder equals one if there is another blockholder with at least 10% of the voting rights. 144a/Level 1 and Exchange are dummy variables that equal one if a firm cross-lists its shares in the U.S., respectively, via a Rule 144a or Level 1 OTC ADR or on a U.S. exchange (via a direct listing or via Level 2 or 3 ADRs). Government owned equals one if the state is the controlling shareholder. All accounting data are from Worldscope. Sales growth is inflation-adjusted two-year sales growth. Global industry *q* is the firm's median global industry *q*. Sales are in $ millions. Civil law is a dummy variable that equals one if the country's legal origin is based on civil law (from La Porta et al., 1998). Log of GNP per capita ($) is from the World Bank WDI Database. *t*-statistics are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

	Panel A			Panel B		
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	-0.90	-0.75	-0.74	-0.88	-0.73	-0.73
	-(1.79)*	-(1.44)	-(1.32)	-(1.77)*	-(1.42)	-(1.38)
Cash flow rights	-0.01	0.01	0.01	-0.02	0.00	0.00
	-(0.20)	(0.11)	(0.12)	-(0.27)	(0.02)	(0.01)
Control – cash	-0.49	-0.43	-0.51			
	-(2.64)***	-(2.31)**	-(2.73)***			
Control – cash dummy				-0.09	-0.08	-0.09
				-(3.17)***	-(2.87)***	-(3.12)***
144a/Level 1		0.15	0.12		0.15	0.11
		(2.35)**	(1.67)*		(2.34)**	(1.45)
Exchange		0.40	0.31		0.40	0.36
		(5.05)***	(3.70)***		(5.03)***	(3.97)***
144a/Level 1 × Control-cash			0.93			
			(1.00)			
Exchange × Control-cash			3.56			
			(2.57)**			
144a/Level 1 × Control-cash dummy						0.13
						(1.03)
Exchange × Control-cash dummy						0.15
						(0.85)
2nd blockholder	-0.04	-0.04	-0.05	-0.04	-0.04	-0.04
	-(1.49)	-(1.48)	-(1.55)	-(1.33)	(1.33)	-(1.35)
Sales growth	0.76	0.77	0.76	0.76	0.76	0.76
	(12.30)***	(12.40)***	(12.38)***	(12.23)***	(12.34)***	(12.33)***
Global industry *q*	1.15	1.12	1.12	1.15	1.12	1.12
	(16.35)***	(15.91)***	(15.94)***	(16.27)***	(15.84)***	(15.86)***
Log sales	-0.02	-0.03	-0.03	-0.02	-0.03	-0.03
	-(1.98)**	-(3.66)***	-(3.62)***	-(1.90)*	-(3.58)***	-(3.56)***
Government owned	0.04	0.03	0.04	0.04	0.04	0.04
	(0.81)	(0.66)	(0.76)	(0.84)	(0.69)	(0.69)
Civil law	-0.04	-0.03	-0.03	-0.04	-0.03	-0.03
	-(0.37)	-(0.27)	-(0.26)	-(0.39)	-(0.29)	-(0.29)
Log of GNP per capita	0.11	0.12	0.11	0.11	0.11	0.11
	(2.19)**	(2.19)**	(2.00)**	(2.20)**	(2.20)**	(2.14)**
Number of observations	4275	4275	4275	4275	4275	4275
Overall R^2	0.1195	0.1284	0.1295	0.1208	0.1293	0.1295