

NBER WORKING PAPER SERIES

HOW DOES CORPORATE GOVERNANCE RISK AT HOME AFFECT INVESTMENT
CHOICES ABROAD?

Woochan Kim
Taeyoon Sung
Shang-Jin Wei

Working Paper 13721
<http://www.nber.org/papers/w13721>

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
January 2008

We thank Marianne Bertrand, Bernard Black, Bernado Bortolotti, Stijn Claessens, Mara Faccio, John Griffin, Simon Johnson, Kate Litvak, seminar participants at Harvard Business School, Columbia Business School, University of Texas, Austin, Seoul National University, Korea University, KDI School of Public Policy and Management, IMF, Brookings Institution, and the International Research Conference on Corporate Governance in Emerging Market Economies for helpful comments, and John Klopfer for able editorial assistance. We also thank the KDI School of Public Policy and Management for financial support. The views expressed herein are those of the author(s) and do not necessarily reflect the views of the National Bureau of Economic Research.

NBER working papers are circulated for discussion and comment purposes. They have not been peer-reviewed or been subject to the review by the NBER Board of Directors that accompanies official NBER publications.

© 2008 by Woochan Kim, Taeyoon Sung, and Shang-Jin Wei. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that full credit, including © notice, is given to the source.

How Does Corporate Governance Risk at Home Affect Investment Choices Abroad?

Woochan Kim, Taeyoon Sung, and Shang-Jin Wei

NBER Working Paper No. 13721

January 2008, Revised 2011

JEL No. F3,G1,G3

ABSTRACT

Disparity between control and ownership rights gives rise to the risk of tunneling by the controlling shareholder, and is prevalent in many emerging market economies and present in some developed countries. At the same time, international investors come from different countries whose home markets are characterized by varying degrees of control-ownership disparity. This paper studies whether this difference in investors' home countries affects their portfolio choice in an emerging market. It combines two unique data sets on ownership and control in business groups, and investor-stock level foreign investment in Korea. A key finding is that, investors from low-disparity countries disfavor high-disparity stocks in Korea, but investors from high-disparity countries are indifferent. Moreover, investors from low-disparity countries became averse to disparity only after the Asian financial crisis. These results suggest that the nature of corporate governance in international investors' home countries affects their portfolio choice abroad, and therefore that these investors should not be lumped together in the analyses of their portfolio choice.

Woochan Kim
KDI School of Public Policy and Management
Chungrangri-Dong Dongdaemun-Ku
Seoul Korea 130-868
wc_kim@kdischool.ac.kr

Taeyoon Sung
School of Economics, Yonsei University,
Shinchon-Dong 134, Seodaemun-Ku,
Seoul, Korea 120-749
tsung@yonsei.ac.kr

Shang-Jin Wei
Graduate School of Business
Columbia University
Uris Hall 619
3022 Broadway
New York, NY 10027-6902
and NBER
shangjin.wei@columbia.edu

1. INTRODUCTION

In the literature on cross-border portfolio investment flows, it is customary to treat international investors as homogenous. To be sure, some have emphasized the differences between local versus foreign investors (e.g., Choe, Kho, and Stulz, 2005), U.S. versus non-U.S. investors (e.g., Ferreira and Matos, 2008), or by institutional types (e.g., Li, Moshirian, Pham and Zein, 2006; and Ferreira and Matos, 2008). To our knowledge, however, no paper has investigated if differences across investors in terms of their home-country corporate governance features affect their investment patterns abroad.¹ This perhaps was not a serious omission before, since foreign portfolio investment was not a major part of most host countries' market, and in any case, an overwhelming share of international portfolio investment came from a small number of high-income countries. In recent years, however, cross-border portfolio investment flows, especially from institutional investors, have been growing at a rate faster than world GDP. The list of source countries has also become much more diversified with the addition of several non-traditional source countries. The objective of the paper is to investigate whether the diversity of institutional investors' home countries affects the patterns of international portfolio investment.

A major hazard for international portfolio investors is that of losing money to the expropriation of assets by a firm's controlling shareholders or management. This risk is particularly acute when those in control own a relatively small share of the firm. In this case, the incentive for controlling shareholders to tunnel out firm assets for private benefit is especially strong. Divergence in ownership and control rights can be achieved through a pyramid shareholding structure, cross-shareholding, or the issuance of dual class shares (Bebchuk, Kraakman, and Triants 2000). Korean *chaebol* firms provide examples of control-ownership disparity through both pyramid and cross-shareholdings. For example, Dacom, a telecommunications firm traded on the Korean stock exchange (KRX), is a member of the LG business group controlled by the Koo family. The Koo family owns only 2% of Dacom's shares but, through a string of other firms, controls about 55% of the firm's voting rights (as of Dec. 1999). This type of control-ownership disparity is no less prevalent in Thailand, Indonesia, and Philippines. In

¹ Two exceptions are Kang and Kim (2006) and Aggarwal, Erel, Ferreira, and Matos (2010). They ask a related but nonetheless distinct question from the current paper, namely, whether the propensity for international investors to engage in governance activities depends on their home countries.

fact, most emerging markets and some developed countries have firms characterized by a divergence between ownership and control rights (La Porta, Lopez-de-Silanes, and Shleifer 1999; Claessens, Djankov, and Lang, 2000; Faccio and Lang 2002).

It is also important to note that the degree of control-ownership disparity varies widely across major source countries of international portfolio investors. For example, according to La Porta, Lopez-de-Silanes, Shleifer, and Vishny (2002) (hereafter LLSV (2002)), the median value of control-ownership disparity across major OECD countries is 0.10. Relatively low disparity countries include the United States (with a mean disparity of 0.01 across listed companies), Japan (0.01) and Australia (0.05). Relatively high disparity countries include France (0.13), Italy (0.16), and Sweden (0.19).

Would the nature of corporate governance in an investor's home country affect patterns of international portfolio investment? There are two divergent views. On the one hand, if bad corporate governance carries a risk that is not fully reflected in the share price, then investors should prefer well-governed companies in well-governed countries. We may call this a "preference for good governance."² A long list of papers in the literature that study how investors react to different quality of governance in host countries often find that investors do invest more in better governed countries (e.g., Gelos and Wei, 2005, and Aggarwarl, Klapper, and Wyszocki, 2005) or better governed companies in a given country (Ahearne, Grierer, and Warnock, 2004, Leuz, Lins, and Warnock, 2009). The preference for good governance should be found among investors, regardless of their source countries. Investors from poorly-governed countries disfavor lower expected return just as much as investors from well-governed countries.

On the other hand, the possibility of being expropriated may be fully discounted in the stock price. In this case, risk and return concerns alone cannot justify the "preference for good governance" often documented in the literature. This calls for an alternative explanation. One possibility is the familiarity bias, which usually refers to investors favoring companies in geographically or culturally close countries (Coval and Moskowitz, 1999,

² Giannetti and Koskinen (2010) justify a lower expected return on poorly-governed firms by the high demand from controlling shareholders. According to their model, if investor protection is weak, wealthy investors have an incentive to become controlling shareholders. Due to the high demand from controlling shareholders, the prices of weak governance stocks are not low enough to fully compensate for the extraction of private benefits.

Huberman, 2001, Grinblatt and Keloharju, 2001, Chan, Covrig, and Ng, 2005, and many others). There is some evidence that physical distance, linguistic similarity, and volume of bilateral phone calls appear to be determinants of bilateral FDI and bilateral equity capital flows (Wei, 2000; Portes and Rey, 2005). This might be extended to characteristics of corporate governance. Under this view, the “preference for good governance” may be weaker for investors from less well-governed countries. Thus, the nature of corporate governance in an investor’s home country can affect the patterns of international portfolio investment.

Against this backdrop, this paper asks whether the degree of control-ownership disparity in investors’ home countries affects their portfolio choice abroad. This research may be considered a first step in a broader inquiry into the effect of home-country corporate governance on patterns of foreign investment. Such questions are just beginning to be addressed in the literature.³

Existing studies, however, have looked into the *average* behavior of international investors with regard to corporate governance problems in destination countries. Some have found that international portfolio investors prefer to hold shares in firms with ADR issuance, which could proxy for a stronger investor protection or a reduction in information asymmetry (Kang and Stulz, 1997, Edison and Warnock, 2004, Ahearne, Grier, and Warnock, 2004, Ferreira and Matos, 2008). Others have found that international investors hold fewer shares in firms with a dominant owner (see Dahlquist and Robertsson, 2001 on Sweden), high inside ownership (Kho, Stulz, and Warnock, 2009), or high control-ownership disparity (Giannetti and Simonov, 2006). Another set of papers document international investors’ aversion to hold shares in countries with lower transparency (Bradshaw, Bushee, and Miller, 2004, Gelos and Wei, 2005) or lower accounting standards (Aggarwal, Klapper, and Wyszowski, 2005). In addition, some argue that weak corporate governance at the firm-level reduces institutional investors’ incentives to hold stocks (Leuz, Lins, and Warnock, 2009).

These studies have improved our understanding of the determinants of foreign portfolio investment. However, almost none have directly examined the effect of local firms’ control-ownership disparity on the stock holdings of foreign investors. An important exception is the work of Giannetti and Simonov (2006), who calculate the control-ownership disparity of firms listed on the Swedish stock exchange and examine its impact

³ Kang and Kim (2006), Aggarwal, Erel, Ferreira, and Matos (2010), Giannetti and Koskinen (2010), and Forbes (2010) are such examples.

on the positions of foreign investors.⁴ They do not, however, examine whether/how corporate governance features in the home countries of investors affect their portfolio choices abroad.

Before investigating differences in the portfolio choices of investors from different source countries, it is useful to document their *average* behavior. With this in mind, this paper investigates three related questions. First, is an average international investor averse to ownership-control disparity in emerging markets? Second, and more importantly for this paper, does investors' aversion to disparity in emerging markets depend on the quality of corporate governance (especially the control-ownership disparity) in their home countries? Third, did investors' attitudes toward control-ownership disparity change after the Asian financial crisis (a 'wake-up call' effect)? Focusing on high economic growth rates, investors may not have been attentive to corporate governance risk prior to the crisis. However, the crisis may suddenly have made them aware of the risk of weak corporate governance, as phrases like "crony capitalism" became more common in everyday speech.⁵ We answer the above questions by analyzing two unique data sets, the first on portfolio investments in Korea made by investors from around the world at the investor-stock level, and the second on control and ownership patterns in Korean companies belonging to *chaebol* (large business groups controlled by a family).

As a preview of the key findings, we report evidence that foreign institutional investors, *on average*, are averse to those Korean stocks that are characterized by a significant control-ownership disparity. However, what is behind the average is even more interesting. Only investors from countries with low control-ownership disparity display an aversion to high disparity Korean stocks. Second, even among these investors, the sensitivity to disparity shows up only after the onset of the financial crisis in Korea, (end of 1997). To put it concretely, U.S. investors – investors from an environment with low control-ownership disparity – prefer to hold fewer shares in Korean companies with a larger disparity. A reduction in the disparity of a Korean stock by one standard deviation (15.4%) tends to increase U.S. investors' holding weight of that stock by 2.9%, *holding other things constant*. Given the average holding weight of 0.4%, this is not a trivial increase. However, this pattern is a relatively recent phenomenon. The Asian financial crisis has served as a wake-up call that draws investors'

⁴ Giannetti and Simonov (2006) also link foreign investor holdings to control premiums and control entrenchment.

⁵ According to the Factiva electronic news database, there were few news stories in English-language newspapers and magazines that contained the phrase "crony capitalism" prior to mid-1997." After this date, the onset of the Asian financial crisis, there was an explosion of news stories using this phrase.

attention to potential corporate governance risks. In comparison, Italian investors – investors whose home stock exchange is populated with companies characterized by a relatively large control-ownership disparity – do not display an aversion to Korean firms with a large disparity. To our knowledge, these patterns of foreign investment in emerging markets have not previously been documented in the literature.

The primary goal of the paper is to answer the question of *whether* investors from different countries behave systematically differently with regard to their attitude toward control-ownership disparity in an emerging market. As such, the paper does not provide a water-tight explanation for *why* these investors exhibit different investment patterns, which could be an important topic for future research. Furthermore, we acknowledge that we only use a single country data (Korea), with a limited time-period (37 months), using a subset of firms (*Chaebol* firms). Our conclusions need to be corroborated by evidence from more countries over a longer period of time. Nonetheless, this research may be considered a first step in a broader inquiry into the effect of home-country corporate governance on patterns of foreign investment.

The rest of the paper is organized as follows: Section 2 discusses the data, methodology, and measurement of our key variables. In particular, we highlight the unique features of our data set that make our exercise feasible. Section 3 presents the main statistical analysis, together with many extensions and robustness checks. Finally, Section 4 concludes.

2. DATA, METHODOLOGY, AND MEASUREMENTS

A. Data

To address the research questions posed in the paper, two sets of data are crucial: (1) information on foreign investors' holdings of Korean stocks at the investor-stock level, including the identity of investors' home countries; and (2) information on the ownership structure of individual companies, which permits a reliable computation of control-ownership disparity.

Our information on foreign investor holdings comes from a proprietary data set that provides detailed information on the monthly positions of every foreign investor on every stock listed on the Korea Stock

Exchange from December 1996 to December 1999.⁶ All foreign investors in Korea have been required to register their real names with the Korean Securities Supervisory Board (KSSB).⁷ These data were made available to us only for this period and with a strict confidentiality agreement⁸. At the end of 1999, there were 9,954 registered foreign investors from 67 countries; these investors collectively owned 20 percent of all shares listed in the Korea Stock Exchange.⁹ In this paper, we focus on foreign institutional investors.

The first data set on portfolio holdings at the stock-investor level is essential for our purpose. This data permits us to un-bundle foreign investors by governance attributes (particularly control-ownership disparity) of their home countries, and to examine whether these home-country attributes affect their investment patterns abroad. None of the papers in the existing literature has done both at the same time.

The second data set contains detailed ownership information for member firms of *chaebol* groups; this data was originally compiled by the Korean Fair Trade Commission (KFTC) to monitor and enforce the regulatory compliance of *chaebol* member firms. More specifically, it provides the number of shares held – directly, or indirectly through control of other firms – by each *chaebol* member firm’s controlling shareholder and all *related parties*; this data was collected annually over a ten-year period (1996-2005). *Related parties* – as defined and judged by the KFTC after its investigations – may be relatives, but also senior managers, not-for-profit organizations, and for-profit firms under the control of the dominant shareholder. Importantly, information on the ownership of unlisted firms in a given business group is included in the data set, permitting much more accurate calculations of firms’ control-ownership disparity than has been possible in the literature. Kim and Sung (2005) and Kim, Lim, and Sung (2007) have already used the KFTC data to provide the first calculation in the literature

⁶ Investment management companies do not register under their own name. It is under the name of the funds they manage. For example, it is registered under Fidelity Diversified International Fund, not under Fidelity itself. Also, the country of origin depends on the country the fund is registered. If Fidelity Diversified International Fund is an SEC registered fund, it is a US fund. On the other hand, if Pacific Fund is registered at Hong Kong’s Securities and Futures Commission, it is a HK fund. If a fund is registered in a tax-haven territory, it is classified as offshore. If an individual invests in Korean stocks based on his/her own calculation, in principle, he/she must register under his/her own name. However, if a brokerage firm makes investment decisions on behalf of a class of its clients (individuals), it must be registered under the brokerage firm’s name.

⁷ Mis-reporting of foreign investments was punishable by law.

⁸ See Kim and Wei (2002a) for additional information on this data set.

⁹ This number excludes foreign direct investors. By the end of 2004 (outside our sample), collective foreign ownership reached 40 percent of all shares.

of the control-ownership disparity for these firms.¹⁰ Because we lack ownership information on non-*chaebol* firms, this paper focuses on foreign investors' holdings of stocks in *chaebol* firms.

There is a sizable variation in firms' control-ownership disparity, ranging from zero to 76%, with a mean of 16.7% and a median of 13.6%. This variation will allow us to observe foreign investors' sensitivity to different levels of disparity. However, varying disparity would not be sufficient to make our analysis possible. If all firms were to practice high standards of corporate governance, a larger control-ownership disparity would not necessarily imply a higher risk of expropriation. It is therefore important to note that Korea's corporate governance is not ranked highly in the existing literature (LLSV 1997 and 1998; Nenova 2003; Dyck and Zingales 2004; and Djankov et al. 2008). This is particularly true during our sample period, which ends before any major corporate governance reform took place.¹¹ Of course, we only have a proxy for one specific dimension of corporate governance – control-ownership disparity, we cannot say much about other firm-level corporate governance practices.

B. Empirical Methodology

Our empirical strategy is to link foreign institutional investors' holdings of a Korean stock with the firm's control-ownership disparity, and a set of control variables. In carrying out the estimation, we take steps to confront a number of empirical challenges.

First, the number of data points (for about 170 *chaebol* firms with approximately 1,000 foreign portfolio investors over 37 months) totals about 6 million, which overwhelms computer memory for certain specifications using maximum likelihood estimations. Thus, we break up the data into subsamples and run separate regressions. This approach reduces efficiency but is more flexible than pooling all observations together, since we don't have to impose the restriction that the coefficients on all control variables be the same for different subsamples.¹² The

¹⁰ Almeida, Park, Subrahmanyam, and Wolfenzon (2010) recently used the same source when investigating the ownership structure of Korean *Chaebol* firms.

¹¹ A major reform required that companies with a book asset value in excess of 2 trillion *wons* (approximately 2 billion US dollars) should have at least 50% independent outside directors on their boards, and an audit committee. This reform was announced in the second half of 1999 and adopted by the National Assembly in December 1999, but did not take full effect until the spring of 2001 (see Black, Jang, and Kim (2006)).

¹² In response to the same challenge, Giannetti and Simonov (2006) choose to work with a random subsample of their

size of each subsample is still large enough to sufficiently ensure the power of our statistical tests; we can afford to lose some efficiency.

Second, our data shows that foreign portfolio investors have only long positions. This is because short selling was not allowed during the sample period. Thus, any stock on which investors wished to have a short position shows up as a zero holding: therefore our dependent variable (holding weight by investor i in firm j at month t) is left censored at zero percent. Because an *OLS* specification may generate downward bias (in absolute terms), we use *Tobit* as our main regression specification.¹³ Since holdings of different stocks by a common investor are unlikely to be independent, we cluster standard errors at the investor level (which is more conservative than clustering at the investor-stock level).

Third, most investors do not hold shares in all *chaebol* firms. In fact, many own only a limited number of stocks, leading to a large number of zero values on our dependent variable. In addition, for a significant number of investors who hold only one stock, the portfolio weights are either “1” (for the one stock held) or “0” (for all remaining stocks). To account for this factor, we perform several checks: in *Tobit* regressions, we look at both the full sample that includes investors who hold only one stock, and a restricted sample that excludes those investors. Separately, using a *Probit* specification, we investigate the binary decision of a zero or positive stock holding. None of these robustness checks challenges our basic findings.

Fourth, we look into the possibility that our key regressor – disparity between control and ownership of Korean firms – is endogenous. For example, if a large foreign ownership of a firm leads to its reform and a reduction in its disparity, then there might be a negative association between the two. In this case, the direction of causality would be the opposite of that which we have hypothesized and intend to test. We doubt this story because controlling shareholders acquire or dispose of shares only slowly; furthermore, in much of the sample, foreign ownership restrictions have prevented foreign investors from acquiring controlling shares. Nonetheless, we use an instrumental variable approach (using initial values of disparity and sum of direct ownerships held by

Swedish data.

¹³ In principle, our dependent variable, holding weight, is also right censored at the 100% percent. With leverage, holding weight in firm j can in principle go above 100%, but we do not have information on leverage. In practice, only small investors who hold only a single stock would have 100% weight on that stock. In our benchmark tables, we exclude these investors from the estimation. As a robustness check, we report a two-way *Tobit* estimation that includes these investors. *Tobit* regressions are also used in Leuz et al. (2009) when investigating U.S. investors' portfolio choices abroad.

the controlling shareholder) and sub-sample regressions (limiting to samples with no change in disparity over time) to formally address the possibility of reverse causality; these tests suggest that endogeneity does not invalidate our findings.

Finally, the Korean government maintained a ceiling on foreign ownership at the beginning of our sample and relaxed it in steps: to 20 percent in April 1996, 23 percent in May 1997, 55 percent in December 1997, and finally lifting the ceiling in May 1998. If the ceiling was more binding for high-disparity stocks than for low-disparity ones, then a negative association might have been generated mechanically between foreign holdings and firm-level disparity. Therefore, we drop all stock-months for which a ceiling was binding. This produces almost identical results.

C. Control-ownership Disparity

The key variable of interest in this study is control-ownership disparity, defined as the difference between the group-controlling shareholder's total voting rights in given firm, and his combined ownership (or cash flow rights) in that firm.¹⁴ His total voting rights is the sum of all voting rights controlled by him and all *related parties*, including relatives, senior managers, not-for-profit organizations, and for-profit corporations under his *de facto* control. The Korean Fair Trade Commission undertakes investigation and applies a rule to identify *related parties* that are under the group-controlling shareholder's *de facto* control.

The combined ownership (or cash flow right) of the controlling shareholder, on the other hand, is defined as the sum of the ownership stakes held by the group-controlling shareholder and by his relatives. Indirect ownership stakes along the chain of voting rights are included.

For example, consider a business group that is controlled by Mr. K and consisted of two firms (*A* and *B*). Let Mr. K own 50 percent of firm *A*, and 10 percent of firm *B*. Furthermore, let firm *A* own 40 percent of firm *B*. For firm *B*, Mr. K's total voting right is 50 percent (= 10% + 40%). But his combined ownership of firm *B* is only 30 percent (= 10% + 50% x 40%). Therefore, the control-ownership disparity for firm *B* is 20 percent (= 50% –

¹⁴ Other studies have used variations of this measure of disparity, for example, the ratio of the two, or the difference scaled by voting rights: LLSV (1999) and Joh (2003) use [voting rights – cash-flow rights]; Claessens, Djankov, and Lang (2000) and Mitton (2002) use [cash-flow rights / voting rights]; Lins (2003) uses [voting rights / cash-flow rights]; and Fan and Wong (2002) and Haw et al. (2003) use [voting rights – cash-flow rights]/[voting rights].

30%). This disparity is has been called a “wedge” by La Porta et al. (2002).

The disparity between a controlling family’s voting rights in a firm and its cash flow rights may not be the only firm-level corporate governance dimension that matters for international investment patterns. However, common measures of corporate governance such as anti-director rights tend to vary little across firms within a country. Also, a mandatory outside directors’ ratio, which may vary across firms, was not introduced during our sample period.¹⁵ Another popular measure of the value of control – block premium - is computed from share prices when a controlling block of shares changes hands. Computing this in the Korean context is impractical as there were very few transactions involving a transfer of control rights. On the other hand, control-ownership disparity varies across firms within Korea. The measure is also available for significant number of firms. Moreover, in a country with weak investor protection, firm-level control-ownership disparity provides a good proxy for the vulnerability of minority shareholders to possible expropriation by controlling families.

D. Foreign Institutional Investors’ Holdings

We conduct our analysis at two levels: (a) from a typical institutional investor’s view point, and (b) from a source country’s view point (which aggregates all institutional investors from a given source country). The dependent variable in most of our regressions is foreign institutional investors’ holdings of Korean *Chaebol* stocks.¹⁶ When estimating a *Tobit* regression, we use the holding weight of investor i in firm j at month t (HW_{ijt}), which is defined as the market value of the shares that investor i holds in firm j at month t , as a fraction of his total holdings of Korean stocks in that month. When estimating a *Probit* model, we define a holding dummy (HD_{ijt}) that takes a value of one if investor i ’s holding of firm j is positive in month t , and zero otherwise.

Because we have a highly disaggregated investor-stock-level data, we can use portfolio weight put on each stock by each investor as our dependent variable. From a typical institutional investor’s point of view, this is exactly the right decision variable. Most papers in the existing literature, with no access to investor-stock-level disaggregated data, use information on foreign investors’ collective holdings in a firm relative to the firm’s total outstanding shares; this is not the decision variable for a typical portfolio manager. If all foreign investors acted

¹⁵ The related law passed the National Assembly in December 1999.

¹⁶ We restrict our analyses to *Chaebol* firms where we have complete information to compute the precise level of disparity.

in unison, that measure could have been fine, but this is not the case as we will show. Moreover, the holding weight is a measure of foreign ownership that does not capture their influence over the management. A foreign investor with only 0.01% ownership in company A cannot influence the management even if company A takes up 100% of his portfolio. By using this measure, one can circumvent the reverse causality story that foreign ownership is the variable that influences governance and not vice versa.

As a robustness check, we also aggregate all investors from a given source country and examine at the source country level. This allows us to check how investment patterns are affected by source country corporate governance features, with a much smaller sample size, and assigns equal weights to each source country rather than equal weight to each investor. However, this specification would not allow us to check the influence of investor-level characteristics such as the history or the size of an investor's presence in Korea on its investment patterns. Therefore, we regard these two approaches as complementary.

E. Control Variables

We wish to include as many control variables suggested by the literature as possible. We have control variables at three different levels: firm-, investor-, and country-levels. *Table 2*, Panel A gives detailed definition of each variable.

One variable worth noting here is firm size. Since we measure this variable by market capitalization, in effect, it accounts for any change in the holding weight caused by a change in share prices. Also, our measure of firm size is adjusted for free-float to account for the fact that a significant fraction of *Chaebol* firm shares do not trade on the market. We adjust market capitalization by subtracting the fraction that is controlled by the controlling family.

F. Basic Statistics

Table 1 reports the number of foreign institutional investors and the average number of stocks they hold at four different times: the Decembers of 1996, 1997, 1998 and 1999, respectively. We exclude foreign direct investors and individual investors from our analysis. Since our *Tobit* regressions focus on a sample in which

investors hold at least two stocks in the sample, this table summarizes the information for these investors. As background information, about 30% of foreign investors hold only one *chaebol* stock in the sample. As a robustness check, we will also report a two-limit *Tobit* regression that includes these investors in the sample.

At the beginning of the sample (December 1996), the collective holding of foreign institutional investors was 12.3 trillion Korean won, or 10.5% of the market capitalization. The relatively low market share reflected the restrictions on foreign ownership imposed by the Korean government. As a byproduct of the Asian financial crisis and the conditionality attached to the IMF loans, the restrictions were relaxed in phases. The foreign holding of Korean stocks went up to 22.5 trillion won in December 1998, or 16.3% of the market capitalization, and to 70.7 trillion Korean won by December, 1999, or 20.2% of the total market capitalization. In summary, in much of the sample, foreign investors were not a block holder of any Korean company's stock due to the government restrictions. This began to change toward the end of the sample.

Since we study the investment patterns by foreign institutional investors who held at least two *chaebol* firms, let us also trace out their evolutions. In December 1996, there were 1109 such investors. Out of this total, 541 investors (50%) came from countries whose home stock markets were characterized by relatively low control-ownership disparity (i.e., home country disparity ≤ 0.10 , the median across all home countries, as reported in LLSV, 2002). 396 investors (34%) came from countries with a relatively high disparity. 184 investors (16%) came from countries whose degree of control-ownership disparity could not be determined.

The total number of foreign institutional investors (by the definition given above) dropped to 805 at the height of the Korean financial crisis (December 1997) but recovered to 1,205 a year later. By the end of the sample (in December 1999) the number of foreign institutional investors increased to 1,726, or 46% more than in 1996. Out of the total, 980 investors (57%) came from countries with a low control-ownership disparity, 517 (30%) came from countries with a high degree of disparity, and the remaining 229 (13%) came from countries whose control-ownership disparity could not be ascertained.

For a feel of the disparity at the firm level, we pick two firms from each of the top three *chaebols*, based on their ranks in December 2006, compute their disparities and follow them throughout the sample (Table 1b). The top three *chaebols* are Hyundai, Samsung, and Lucky Goldstar (LG) groups, respectively. For Hyundai group,

Hyundai Flange had perfectly aligned control and cash flow rights at the end of 1996, and stayed that way in the entire sample. Hyundai Information Technology had the greatest disparity at the end of 1996 (at 65.8%) which increased slowly to 72.4% by the end of 1999. By looking at all six examples, we can already see a pattern which we will verify more formally later: the firm-level disparity does not change dramatically within our sample. This is important to keep in mind, because it suggests that the degree of control-ownership disparity is unlikely to be an endogenous outcome of foreign investment itself.

The summary statistics of the key variables and their pairwise correlation coefficients are reported in *Tables 2B and 2C*, respectively. The holding weight on any given stock, averaged across all foreign investors and stocks, is only 0.4%. This reflects the fact that most foreign investors hold only a small number of Korean stocks. Out of the 682 firm-months in the sample, the mean and the median values of control-ownership disparity are 16.7% and 13.6%, respectively. The minimum value is zero, implying that there are firms that have no control-ownership disparity. The maximum value is 76%. The big variation in the control-ownership disparity will help us to identify its effect on foreign investor's holdings.

3. EMPIRICAL EVIDENCE

We first examine the average attitude of international investors toward control-ownership disparity in Korean firms. We then disaggregate the sample in a number of ways with a view to uncover possible heterogeneity among investors and across different time periods. Finally, we consider the possibility that control-ownership disparity in Korean firms may be endogenous to the presence of foreign investors and address the possible bias this may generate in our inference.

A. A Preliminary Look: On Average, Are Foreign Investors Averse to Control-Ownership Disparity?

Tobit Specifications

To answer this question, we implement a sequence of *Tobit* regressions on a sample that includes the

Decembers of 1996, 1997, 1998, and 1999. The dependent variable is the market value of investor i 's holdings in firm j in month t , as a fraction of his total holdings in Korea at that time (*holding weight*, HW_{ijt}). The results are reported in *Table 3*. In *Column (1)* of *Table 3*, when firm size is the only control variable, the coefficient on disparity is -0.143 and significant at the one percent level, indicating that foreign investors tend to dislike high-disparity Korean stocks, holding firm size constant. The positive coefficient on firm size indicates unsurprisingly that foreign investors hold more large stocks.¹⁷ Note that the standard errors in this table (and subsequent tables) are clustered at the investor level (which is more conservative than clustering at the investor-stock level).

In *Columns (1)-(5)* of *Table 3*, we exclude investors that hold only a single firm in the portfolio and implement a standard *Tobit* regression that accounts for the constraint that the holding weight has to be non-negative. In *Column (6)*, we reintegrate those investors with a single stock, and estimate a *Two-Limit Tobit* model, which takes into account the restriction that holding weights have to be between zero and 100% (i.e., censored on both ends). All regressions include year dummies to control for market-wide shocks common to all investors or to all firms. From *Column (1)* to *Column (5)*, we progressively add control variables.

The results show consistently that the coefficients on control-ownership disparity are negative and statistically significant at the 1 percent level. Making use of the point estimates, which capture the effects on the unobserved latent variable, we can work out the corresponding economic significance. The coefficient in *Column (5)* (-0.059 for the disparity variable) indicates that a one-standard-deviation (15.4%) reduction in disparity is associated with an increase of 0.9% in the investors' holdings of the stock, when all other regressors are held constant at their mean values. Given that the average holding weight is only 0.4%, this is a non-trivial increase. If one uses the point estimate for disparity in *Column (6)* (-0.112) which comes from a two-limit *Tobit* model, one obtains an even larger effect: the same reduction in the disparity is now associated with an increase of 1.7% in the investors' holdings.

Most of the control variables in *Table 3* are statistically significant and have sensible signs. In particular, holding weight increases in tandem with accounting profit. This is consistent with Kang and Stulz (1997) that

¹⁷ This is consistent with Kang and Stulz (1997), Dahlquist and Robertsson (2001), and others. As a robustness check, we also tried a version where we control for firm size and free float separately. That is, controlling log of market capitalization and (1 – controlling shareholder's voting right) simultaneously. The coefficient on disparity remains positive and statistically significant. The coefficient on free float is also positive and statistically significant.

show foreign investors in Japan hold more shares in firms with good accounting performance.

Dividend yield, the market to book ratio, research and development (R&D) expenditure as a share of sales, advertising expenditure as a share of sales, and growth rate of sales are added as controls in *Column (3)*. The holding weight is found to increase with dividend yield, R&D expenditure, and advertising expenditure, but decreases with market-to-book ratio and, somewhat surprisingly, with sales growth. It could be that sales growth is capturing the extent of over-investment.

Several variables intended to capture a firm's outward orientation are added as controls in *Columns (4) and (5)*. They include the share of exports in total revenue, an indicator variable for the presence of a foreign director on the company's board, and two indicator variables for whether the firm has level-1 ADR or Rule 144A offerings, and whether it has levels-2 or 3 ADR offerings, respectively. In *Column (5)*, the presence of a foreign director and the existence of either a level-1 ADR or Rule 144A offerings are associated with an increase in holding weight. But, export orientation is not statistically significant and level-2 or 3 ADR offering has a negative coefficient. However, we caution against putting too much meaning into this negative coefficient, given the small number of level-2 or 3 ADR offerings by Korean firms. During the sample period, only one firm had a level-2 or 3 ADR offering, and eight others had level-1 or Rule 144A offerings.

As a check for the robustness of the main relationship between a firm's control-ownership disparity and a foreign investors' holding weight, we include a firm's leverage, years of operation, share turnover, return volatility, direct ownership held by the controlling shareholder, and group control as additional control variables. Not all of these regressors' coefficients have an intuitive sign, partly because some of the above control variables are collinear. For example, according to *Table 2C*, a firm's leverage ratio is significantly correlated with firm size, profitability and dividend yield. Export orientation is correlated with size and advertising intensity. Therefore, individual point estimates on these control variables are not always reliable. However, from the point of view of investigating this the effect of a firm's control-ownership disparity on foreign institutional investors' portfolio choice, these coefficients are nuisance parameters. As noted before, the coefficients on control-ownership disparity are consistently negative and statistically significant across all five specifications.

In *Column (6)*, we expand the sample to include foreign investors who hold only one *chaebol* company, and

employ a two-limit *Tobit* specification that accounts for the restriction that holding weights must be between zero and one. The list of control variables is the same as in *Column (5)*. Again, the coefficient on control-ownership disparity is negative and statistically significant, but the point estimate is substantially larger. With nearly a million observations and a long list of control variables, the two-limit *Tobit* specification takes much longer computing time and may not converge. We therefore choose to make the one-limit *Tobit* our benchmark specification (and to exclude foreign investors who hold stocks in only one company).

Probit Specification

As a simple way to see if the results reported so far are robust to possible presence of outliers, we now switch from a *Tobit* to a *Probit* specification. More precisely, we re-code the holding weight by a dummy that takes the value of zero (no holding) or one (positive holding). Standard errors are clustered at the investor level. *Table 4* reports the results. The point estimates are the marginal effects on probability. As *Column (1)* shows, the coefficient on disparity is negative and that on firm size is positive, meaning that the probability of a positive holding weight decreases with control-ownership disparity but increases with firm size.

Similar to *Table 3*, control variables from our list are added sequentially; most have intuitive signs and are statistically significant. Most importantly, the coefficients on control-ownership disparity are consistently negative and statistically significant even when the list of control variables is expanded. This means that investors' aversion to high control-ownership disparity is a robust feature of the data. The extent of aversion is also economically significant. Given the point estimate of -0.011 on the disparity in *Column (5)*, a reduction in the disparity by one standard deviation (15.4%) is associated with an increase of 17% in the probability that a foreign investor would own the stock. Since the unconditional probability that a foreign investor will have a positive holding of a stock (across all foreign investors and stocks) is as low as 4%, we conduct a robustness check by limiting the sample to those investors holding at least 10 stocks. This filter rule excludes approximately 80% of the original sample, generating a subsample of 120,789 observations. *Column (6)* of *Table 4* shows the results of a *Probit* regression which uses this subsample. One can see that the coefficient on disparity is still negative and statistically significant at the 1% level. Moreover, the coefficient increases by four times, from -0.011 to -0.049.

What if Investors Do Not Observe the Precise Level of Disparity?

Detailed information on the ownership structure of *chaebol* groups, especially that of non-listed firms in *chaebol* groups, began to be released by the Korean government only in 2005. This means that during our sample period (December 1996 to December 1999) investors could not compute control-ownership disparity the way we do in this paper. Those who wished to compute disparity presumably had to use available information on publicly listed companies in addition to whatever other information they could gather. Here we make an attempt to investigate whether and how a lack of transparency may affect foreign investors' attitude to control-ownership disparity.

We hypothesize that the presence of non-publicly listed companies may help the controlling family arrange transactions to hide tunneling activities. That is, the more non-listed companies a *chaebol* group includes, the less transparent the business transactions of the group's member firms become. Given this assessment, we compute a straightforward measure of the opacity of a *chaebol* group by the ratio of the assets of all its non-listed companies to the group's total assets. In an unreported table, we revise the regressions in *Tables 3* and *4* by adding an interaction term between group opacity and the control-ownership disparity of a given firm within the group. The results show that the estimates of the coefficient on the interaction term are generally negative. In the *Tobit* specification, during the in-crisis and post-crisis periods, the coefficients on the interaction terms are negative and statistically significant. These patterns are consistent with the idea that foreign investors are particularly averse to a large control-ownership disparity in firms that belong to less transparent *chaebol* groups. In the *Probit* specification, some coefficients lose statistical significance, suggesting that the result is not always robust.

B. Does Home Country Disparity Matter? Is There a Wake-up Call Effect?

More novel results of this paper concern different investment patterns observed in investors from different countries. We now disaggregate our sample along two dimensions. First, we sort foreign investors into two groups: those whose home countries are characterized by a relatively high control-ownership disparity (disparity exceeding the median value of 0.10) and those whose home countries have a relatively low disparity. Second, we

examine three subperiods: before the Asian financial crisis (December 1996-November 1997), during the crisis (December 1997-December 1998), and after the crisis (January-December 1999).

The results (from both *Tobit* and *Probit* regressions, twelve in total) are reported in *Table 5*. Control variables similar to those in *Column (5)* of *Table 3* are included in the regressions but not reported to save space.¹⁸ The most important pattern can be summarized as follows: there is striking heterogeneity across investors. Those investors whose home markets are characterized by a high control-ownership disparity do not appear to care about the large disparity in Korean stocks. In contrast, investors from countries with a low disparity at home are averse to large disparity in Korea. Moreover, even for the investors in the latter group, the aversion to disparity is a relatively recent phenomenon, occurring only after the Korean financial crisis.

We now provide more details on the findings. First, the attitude toward control-ownership disparity evolves over time. Before the Korean financial crisis (which started at the end of 1997), foreign investors were not sensitive to disparity. Indeed, the regressions might suggest that foreign investors actually preferred high-disparity firms (*Table 5*, top panel for the pre-crisis period). However, things changed after the onset of the crisis. Investors from low-disparity countries started to display aversion to high control-ownership disparity (middle and lower panels of *Table 5*).

Second, only investors from low-disparity countries display an aversion to large disparities in Korean companies. That is, only the coefficient for investors from low-disparity countries is negative and statistically significant. To put it in another way, investors from Italy – a source country characterized by high control-ownership disparity at home (16%) – do not appear to avoid high disparity firms on the Korean market. On the other hand, investors from U.S. – a source country characterized by low control-ownership disparity at home (1%) – do display aversion to disparity. Between the two groups, the coefficients on disparity show statistically significant differences during and after the crisis, but not before (see *Columns (3)* and *(6)*).¹⁹

¹⁸ Year dummies are substituted with month dummies.

¹⁹ We interact all the right-hand-side variables (including year dummies) with an indicator variable that takes a value of 1 if investors are from low-disparity countries. The coefficient on the interaction term between this indicator variable and disparity is negative and statistically significant at the 1% level during and after the crisis, regardless of the regression model we use (*Tobit* or *Probit*). Since the magnitude of the interaction effect in a nonlinear model like *Probit* does not equal the marginal effect of the interaction term, we follow Ai and Norton (2003) when computing for the interaction effects in *Column (6)*. As for *Tobit*, we do not have this problem since the point estimates are marginal effects on the latent variable,

It may seem somewhat puzzling that investors would prefer high-disparity firms before the crisis. A possible explanation is that the controlling shareholders of these high-disparity firms were thought to have particularly good political connections that might help them to extract favors from bureaucrats. The Asian crisis, however, led many large conglomerates to collapse. It may have served as a wake-up call to investors, showing that the value of political connections is limited for minority shareholders and is unlikely to offset the risks associated with corporate governance problems.

Our evidence of a larger negative coefficient during the crisis period is consistent with the possibility that expropriation risk is higher during recessions (Johnson et al. 2000; Mitton 2002; Lemmon and Lins 2003; and Baek, Kang, and Park, 2004). Our evidence is also consistent with the evidence reported in Gelos and Wei (2005) that, during a crisis, international mutual funds are more likely to exit from nontransparent countries than from other countries.

If our interpretation is correct, we should also expect some heterogeneity among investors from low-disparity countries. In particular, passive investors (such as index funds) should exhibit less aversion to high-disparity stocks than more active investors. To test this, we identify two subsets of investors from low-disparity countries (more active investors vs. less active investors). We follow Cremers and Petajisto (2009) and compute investors' activeness based on the extent they have actively traded shares in their portfolio.²⁰ *More active investors* are defined as those with active share accounting for more than 60% of the portfolio and hold shares in less than 30 firms, on average. On the other hand, *less active investors* (as a proxy for index funds) are defined as those with active share accounting for less than 60% of the portfolio, and at the same time hold shares in at least 30 firms. Active shares and the number of holdings are computed as averages over the entire sample period. When measuring active shares, benchmark weights are computed by free-float adjusted market capitalization of each stock on the Korea Stock Exchange (not limited to *Chaebol* firms). We drop firms for which the foreign ownership hits the legal limit. Note that the two groups are only particular subsets of foreign investors from low-

which makes the model linear.

²⁰ Active Share = $\frac{1}{2} \sum_{i=1}^N |w_{fund,i} - w_{index,i}|$ where $w_{fund,i}$ and $w_{index,i}$ are the portfolio weights of assets i in the fund and in the index.

disparity countries. Many investors do not fall into either group, which we ignore for this exercise. *Table 6* reports the results. There is a clear difference between *more active* and *less active investors* in terms of their aversion to high-disparity stocks during and after the crisis. *More active investors* exhibit a greater degree of aversion to high-disparity stocks. Furthermore, they also display greater aversion than than foreign investors as a whole. These patterns suggest that aversion to high-disparity stocks is a matter of choice by active investors from low-disparity countries.

One of our key findings is that investors from high-disparity countries do not mind investing in high-disparity firms during the crisis periods. This can be somewhat puzzling if one expects a lower stock return from these firms. But, such assumption may be correct. Instead, the possibility of being expropriated can be compensated by a discount in the stock price. If so, there is no reason for any investor to show aversion to high-disparity stocks. This calls for an alternative explanation. One possibility is the familiarity bias. That is, investors showing bias toward firm which they are familiar with. At the outset of the crisis, in the midst of heightened awareness of expropriation risk, investors from low-disparity countries may have shifted their portfolio toward firms with low-disparity firms, while investors from high-disparity countries may have decided to keep in their portfolio high-disparity firms which they are familiar with.

To see if this story makes sense, we study *ex post* stock returns on high- and low- disparity stocks. In an unreported table, we show that high-disparity stocks do not systematically have lower realized returns (with or without adjusting for risks). This may be viewed as supportive of the familiarity bias story.

Robustness Checks

At this point, one might ask how we can be sure that a switch in attitude from being indifferent to aversion toward disparity by investors from low-disparity countries actually took place at the beginning of the Korean financial crisis. Since we have monthly data on international investors' positions on Korean stocks, we can trace the evolution of their attitudes toward disparity month by month. Rather than producing 36 new tables on regressions with 36 months of data, *Figure 1* plots the coefficients on disparity from a set of monthly regressions

that resemble those in *Columns* (1) and (2) in *Table 5*.²¹ The figure shows clearly that the change in attitude from indifference to aversion occurred in December 1998, the first month after the Korean financial crisis broke out. It also shows that while there was no difference between investors from low- and high-disparity countries before the crisis, the two groups diverged during the crisis.

There is an anomaly toward the end of our sample. In particular, for two months (October and November of 1999), investors from low-disparity countries did not appear to dislike high-disparity stocks. One possible explanation could be the introduction of *Chaebol*-focused corporate governance reform measures announced and finalized during the second half of 1999.²² This may have reduced the perceived risk of tunneling. In other words, with a better legal framework at the national level, the same control-ownership disparity at the corporate level no longer represents the same level of expropriation risk to outside investors as before.²³ We note, however, that this inference is based on a very small number of observations. Additionally, the coefficient on disparity turns negative again in the last month of the sample for investors from high disparity countries (December 1999). Therefore, we must be careful not to overemphasize the findings that aversion to large disparity has disappeared. Unfortunately, we are not able to extend the sample.

The exercises reported so far are conducted based on the investment patterns of individual institutional investors. As a robustness check, we also aggregate holdings of all investors from a given source country (i.e., treating a given source country as a single investor). This has the advantage of not overweighting source countries with a large number of investors (such as the United States).²⁴ The country-level regressions are reported in *Table 7*. The patterns are broadly similar to the previous exercise. In particular, investor's aversion to high-disparity Korean stocks only began after the onset of the Korean crisis. Among different foreign source

²¹ Regressions include exactly the same set of controls, except for month dummies.

²² Major *Chaebol* reform measures include: (i) a cap on equity investment by *Chaebol*-affiliated non-financial firms into their affiliates; (ii) mandating a consolidated financial statements for *Chaebol* affiliated firms, and exclude circular shareholdings from shareholders' equity; (iii) requiring board approval and disclosure for related-party transactions among *Chaebol* related parties; and (iv) lowering the cap on credits and investments *Chaebol*-affiliated financial institutions can provide to their affiliates. Corporate board reform targeted listed firms with total assets above 2 trillion and included measures such as (i) a 50% outside director ratio; (ii) a minimum of three outside directors; (iii) establishing an audit committee composed of at least 2/3 outside directors; (iv) establishing an outside director nomination committee composed of at least 50% outside directors. Large firms (total assets above 2 trillion won) in Korea were mostly *Chaebol* firms.

²³ Black and Kim (2007) conducts a series of event studies during this period and show that firms subject to the reforms (*Chaebol* and corporate board reforms) experienced a favorable market reaction compared to those not subject to them.

²⁴ U.S. investors make up 70 percent of all foreign investors during our sample period.

countries, only those with a relatively low disparity exhibit a statistically significant aversion.

In *Figure 2*, we go one step further and show the coefficients on disparity for each country and relate them with their respective home country disparity levels. We present the scatter plots and the fitted line between the two during three time periods (pre-, in-, and post-crisis periods). U.S. investors now show up as just one observation (representing one country). In the scatter plots, we do not show countries with less than five institutional investors.²⁵ The first set of scatter plots shows fitted lines estimated by *OLS*. The second set shows fitted lines estimated by weighted least squares (*WLS*), computing weights by the number of investors from each source country (represented by the size of each bubble).

These scatter plots reveal that, before the crisis, foreign investors' attitudes toward disparity in Korea were not associated with the level of disparity in their home countries (the *t*-value in the *WLS* regression is 1.13). However, once the crisis broke out, attitudes toward control-ownership disparity in Korea became systematically related to the degree of control-ownership disparity in the investors' home countries (with the *t*-value from *WLS* at 2.85). In general, the lower the disparity in their home countries, the more likely foreign investors were to disfavor high disparity firms in Korea. The same pattern carries over to the post-crisis period, though the slope is somewhat smaller (with the *t*-value from *WLS* at 1.93).

Note that the slope becomes flattened during the post-crisis period when we run *OLS* instead of *WLS* (weights being the number of investors from each source country). One may take this as evidence that aversion to high disparity during post-crisis period is mainly driven by U.S. investors. But, this interpretation is not consistent with our country-firm-level regression results reported in *Table 7*. Even when we aggregate holdings of all investors from a given source country (i.e., treating a given source country as a single investor), we still find aversion to high-disparity stocks by investors from low-disparity countries during the post-crisis period.

We would also like to ensure that the patterns reported in *Table 5* at least partly reflects investors shifting portfolio weights across different firms, rather than simply resulting from investors from certain countries dropped out of the Korean market. If foreign institutional investors from low disparity countries (the United States in particular) were to exit the Korean market because of regulatory constraints (adhering to the "prudent

²⁵ Among the countries in Appendix 1, four countries (Austria, Finland, Philippines, and Norway) drop out throughout the sample period. Denmark drops out of the sample during the pre- and in-crisis periods.

man rule") one might see the pattern we observe in *Table 5*. This, however, is not likely when using investor's holding weight as dependent variable. Investors that completely pull out from the market drops out of the sample and the aversion to disparity coefficient is estimated using the investors that remain in the market. Just to be sure, however, in *Table 8* we replicate *Table 5* by limiting the sample to those who stay in the Korean market throughout the same sub-sample period ("continuing investors"). With this sub-sample, we observe a very similar pattern.

C. Do Other Home-Country Governance Measures Matter? If So, Which One is the Driving Force?

We have established that investors from different home countries behave differently and suggested that the varying degree of control-ownership disparity in their home countries may be a predictor for their investment patterns abroad. The next obvious question to ask is whether other measures of home-country governance also matter. In *Table 9*, we test if three other widely used country-level governance measures also predict investment patterns abroad: legal origin, anti-director rights, and anti-self dealing. Legal origin is from La Porta et al (1997), and takes a value of 1 if the source country has a common law tradition and 0 otherwise. The anti-director right index (0~6) captures the level of minority shareholders' rights, and anti-self dealing index (0~1) measures the level of controls over self-dealing by majority shareholders or company management. Both measures are from Djankov et al. (2008). The regressions in *Table 9* replace home-country disparity with the other three measures, and estimate a *Probit* model. We do not report the results during the pre-crisis period to save space. The coefficients on the interaction term between firm-level disparity and home-country legal origin or anti-self dealing index are negative and statistically significant. The coefficients on the interaction term between firm-level disparity and home-country anti-direct right index, however, are not. These results indicate that investors from countries either with a common law origin or with a high anti-self dealing index show investment patterns similar to those from countries with low control-ownership disparity. That is, they show aversion to high-disparity stocks in Korea during the in- and post-crisis periods. In short, legal origin and anti-self dealing index also seems to matter in addition to control-ownership disparity when explaining investment patterns abroad.

If so, which one is driving the result? To answer this, one might put all three measures in a single regression

with their interaction terms with firm-level disparity.. This turns out to be problematic. High correlation among the three governance measures often wipes out their individual significance, although they are jointly significant. To circumvent this problem, we conduct tests on various subsamples that allow for a comparison between a pair of governance attributes. Panel A of Table 10 presents a horse race between control-ownership disparity and legal origin, while Panel B is a horse race between control-ownership and anti-self dealing index. If home-country disparity is the sole driving force, the coefficients in Column (3) should be insignificant (subsample from high disparity countries with either common law origin or high anti-self dealing index). On the contrary, if other measures are driving the result, it should be the coefficients in Column (2) that are insignificant (subsample from low disparity countries with either civil law origin or low anti-self dealing index). Given the high correlation between our home-country governance measures, the sample sizes in Columns (2) and (3) are relatively small.

Our best inference is that all three dimensions matter. In Panel A, investors from low disparity countries show aversion to high disparity stocks even when the country has a civil law origin (Column (2)). Also, investors from common law origin countries show aversion to high disparity stocks even when the country is characterized by high control-ownership disparity during the post-crisis period (Column (3)). In Panel B, investors from low disparity countries show aversion to high disparity stocks even when the country has a low anti-self dealing index (Column (2)). On the other hand, investors from countries with high anti-self dealing index show aversion to high disparity stocks even when the country is characterized by high control-ownership disparity during the post-crisis period (Column (3)).

D. Home Country Governance vs. Investor Sophistication

A possible alternative interpretation of the data patterns is that investors from different source countries could also have different information sets or information processing capabilities. For example, investors from low-disparity countries such as the United States may, on average, be larger and more sophisticated, and have more experience with international investment.²⁶ Precisely because the true degree of disparity of Korean companies was not transparent,, those investors that have an informational advantage may know better which

²⁶ Khorama, Servaes, and Tufano (2005) provide evidence that the size of mutual funds industry around the world is related to investor protection.

stocks to avoid.

To compare the two interpretations, we construct two proxies for informational advantages or investor sophistication. The first is the size of an investor's total holdings in the Korean market (we do not observe a fund's total global holdings). The second proxy is the number of years that an investor has invested in Korea.²⁷ We now incorporate both measures and their interactions with Korean stocks' disparity into the pooled *Probit* regressions, and report the results in *Table 11*. There is no evidence that funds with either a larger overall investment value or a longer investment history in Korea per se display a stronger aversion to high-disparity Korean stocks. The interaction terms between firm-level disparity and proxies for investor sophistication are almost always insignificant. On the other hand, home-country disparity continues to influence its investment pattern in Korea as described earlier. This evidence suggests that it is not the differences in information access or processing capacity, but rather the differences in home-country governance features, that drive investor's investment patterns abroad.

E. Do the Key Results Reflect Causality?

We now investigate if the data patterns reflect causality. For example, greater foreign ownership could cause the controlling shareholder to reduce control-ownership disparity, generating a negative association observed in the previous tables, but the direction of causality would operate in the opposite direction to that discussed so far.

A number of observations suggest that reverse causality is not likely. First, during much of our sample period, the Korean government maintained strict restrictions on foreign ownership and until the end of our sample the fraction of foreign ownership was not high enough to influence the controlling shareholders. Even by combining voting rights, foreign investors collectively could equal or surpass those of the controlling shareholders in only 41 firms by December 1999. For each of the 41 firms, there were on average 279 foreign investors. Coordination costs and free riding would make it unlikely that foreign investors could strongly influence the controlling shareholders' behavior. Second, control-ownership disparities have evolved very slowly over time. The standard

²⁷ This is inferred from an investor's registration serial number: 1992 (1-1572), 1993 (1573-2745), 1994 (2746-3427), 1995 (3428-4286), 1996 (4287-5294), 1997 (5295-6514), 1998 (6515-8480), 1999 (8481-9954). 1992 was the first year that the KSE was open to foreign investors.

deviation of disparity over a three-year period (using December figures in 1996, 1997, 1998, and 1999), averaged across all *Chaebol* firms, was only 3 percent. This within-firm standard deviation falls far short of the overall standard deviation reported in *Table 2 Panel B* (15.4%). *Figure 3* shows the histograms of individual firm's coefficients of variation on our two key variables: disparity and holding weight. One can easily observe that the within-firm variation of disparity is significantly smaller than that of holding weights. Third, as mentioned earlier, our dependent variable, holding weight, is constructed in a way that is not likely to capture foreign investors' influence over the firm's management.

Nonetheless, we now consider three different approaches of addressing the endogeneity possibility (two using *2SLS* estimation). First, we take advantage of the slow-moving nature of the disparity measure, and use the beginning-of-sample value (from December 1996) as an instrument for subsequent values of the disparity. In December 1996, with the government's (low) ceiling on foreign ownership, foreign investors could not have much influence over control-ownership disparity. Also subsequent changes in foreign ownership in 1998 and 1999 could not have affected the degree of disparity observed in December 1996.

The first stage regressions are summarized in *Table 13A*. Clearly, the initial value of the disparity is highly correlated with the subsequent values, though the mapping becomes progressively weaker over time. The second-stage regressions are reported in *Table 13B*. We see qualitatively similar patterns to those identified before. First, there is a difference between investors from low-disparity countries and investors from high-disparity countries. Aversion to high-disparity stocks is a unique characteristic of investors from low-disparity countries. Second, even among investors from low-disparity countries, aversion came only after the Korean financial crisis that started in November/December of 1997. These results suggest that the key conclusions reached before are likely to reflect causality (from control-ownership disparity of Korean firms, to foreign investors' behavior).²⁸

In our second *2SLS* estimation, we use the sum of controlling shareholder's direct ownerships in a given conglomerate, defined as the log of the sum of (book equity x direct ownership) across all firms in a given

²⁸ We have also conducted an exercise in which we limit the sample to "new" investors - those who entered the Korean market after the Asian financial crisis. By construction, these investors could not have affected the control-ownership disparity in 1996. There were 149 such new entrants from low disparity countries, and 25 such new entrants from high disparity countries. The results show that investors from low disparity countries exhibit a strong aversion to high disparity stocks, while investors from high disparity countries don't.

Chaebol, as an alternative *IV* for disparity.²⁹ This *IV* makes use of a unique regulatory environment in Korea. During 1987-1998, member firms of *Chaebols* were subject to a regulation that limits the amount of equity investment they can make in other domestic member firms. More specifically, an individual firm could make equity investments in other member firms by only up to 25% (40% during 1987-1994) of its “net assets” (= total assets – debt – book equity invested by other affiliates). Thus, a higher total direct ownership by the controlling shareholder means a greater ability to construct a series of pyramidal structures to control firms. This in turn may increase the level of each member firm’s disparity.³⁰ Thus, this logic predicts a positive relationship between disparity and the new *IV*. A nice point about this new *IV* is that it is a rule-driven *IV* that is exogenous to our sample firms. That is, no *Chaebol* firm can self-select to be or not to be subject to the rule.

Table 14 presents the results. The first stage regressions, reported in Panel A, indicate that indeed, the disparity tends to be higher in *Chaebols* whose controlling shareholder also has a greater value of wealth in the conglomerate. With this *IV*, the second stage regressions, reported in Panel B, reveal similar patterns as before. In particular, while investors from low-disparity home countries did not mind about high-disparity Korean stocks before the crisis, they displayed a significant aversion to such stocks since the crisis. When it comes to investors from high-disparity home countries, there are similarities but also interesting differences from the earlier patterns. While these investors exhibit some preference for high-disparity stocks before the crisis, they became indifferent to disparity in Korean stocks during the crisis, and also weakly averse to high disparity stocks in the post-crisis period.

Between the two *IV* approaches, we favor the first approach. We have argued that, due to the slow-moving nature of disparity in Korean stocks, and the fact that foreign investors almost never gain enough shares to assert controls, the reverse causality story seem unlikely. To put a golden nail into the coffin, we now implement a third approach that restricts the sample to a subset of Korean firms whose disparity value did not change over a given sub-period (pre-, in-, and post-crisis periods). That is, the controlling shareholders never bought, sold or changed

²⁹ By construction, this *IV* does not vary between firms within the same *Chaebol* in a given year. It varies across different *Chaebols* and over time,

³⁰ Of course, this logic holds only if the upper ceiling on equity investment is binding. If not, the increase of controlling shareholder’s direct ownership in the group may not show up as an increase in disparity. The first stage regression effectively checks for this.

his holdings over the months in a given sub-period in a way that would change the value of disparity. By construction, we are limiting our sample to firms, whose disparity levels were *ex post* not affected by the presence of foreign investors. The regressions are reported in the top panel of *Table 15*. For investors from low-disparity countries, they appear to change from a preference for high-disparity Korean stocks before the crisis to an aversion to such stocks since the outbreak of the crisis. For investors from high-disparity countries, they appear to change from a weak preference for high-disparity Korean stocks before the crisis to being indifference to such stocks since the outbreak of the crisis.

4. CONCLUSION

A large control-ownership disparity gives the incentive (by low cash flow rights) and the power (by high control rights) to the controlling shareholders to expropriate minority shareholders. Since this disparity is common in most developing and several developed countries, it is interesting to examine whether this is regarded as a source of risk by foreign investors. Furthermore, given that international investors come from different home countries with varying degrees of control-ownership disparity, it is interesting to investigate whether their investment patterns also differ systematically when investing in an emerging market.

This paper examines the issue of disparity and international investment by combining two uncommon data sets on foreign investment and corporate ownership in Korea. It finds that international investors, on average, display a strong aversion to high-disparity firms in Korea, holding firm size, accounting profitability, and other features constant.

What lies behind investors' average behavior is even more interesting. First, only investors from countries characterized by low control-ownership disparity (e.g. U.S. investors) appear to dislike high-disparity firms in Korea. Investors from high-disparity countries (e.g. Italian investors) appear unconcerned. Second, even among investors from low-disparity countries, aversion to high-disparity firms is a relatively recent phenomenon. The Asian financial crisis in late 1997 appears to have served as a wake-up call, sharpening their alertness to corporate governance problems in emerging markets. In other words, all investors, including those from low-

disparity countries, did not appear to dislike high-disparity firms in Korea before the Asian financial crisis. It was only after the outbreak of the crisis in Korea at the end of 1997, when investors from low-disparity countries started to display aversion to high-disparity Korean firms.

Third, we find that other country-level governance measures – legal origin and anti-self dealing index – also predict a similar investment pattern abroad. Specifically, investors from common law origin countries or from countries with high anti-self dealing index show aversion to high disparity stocks during the post-crisis period. Also, a series of horse races between disparity and other country-level governance measures shows that no one measure is dominant over the other. Specifically, investors from low-disparity countries, regardless of legal tradition and control over self-dealing, display an aversion to high disparity in Korean firms after the Asian crisis. Investors from high-disparity, common-law origin countries or high-disparity, low anti-self dealing index countries also displayed aversion. Only investors from high-disparity civil-law origin countries or high-disparity low anti-self dealing index countries do not appear to be bothered by high disparity in Korean firms.

We have also considered the reverse causality possibility – that those stocks bought heavily by foreign investors may introduce relatively more corporate governance reforms, including reforms to reduce their control-ownership disparity. This is not very likely in our sample, as controlling families tend to change their equity stakes very slowly. Indeed, when we use the initial value of control-ownership disparity (i.e. at the beginning of the sample, in December 1996) or controlling shareholder's sum of direct ownerships as instrumental variables, we obtain the same qualitative results. Also, when we restrict the sample to a subset of Korean firms that were *ex post* not affected by the presence of foreign investors – whose disparity value did not change over a given sub-period – we obtain the same qualitative results.

The primary goal of the paper is to answer the question of *whether* investors from different countries behave systematically differently with regard to their attitude toward control-ownership disparity in an emerging market. As such, the paper has not provided a water-tight explanation for *why* these investors exhibit different investment patterns, which could be an important topic for future research. Furthermore, we acknowledge that we only use a single country data (Korea), with a limited time-period (37 months), using a subset of firms (*Chaebol* firms). Our conclusions need to be corroborated by evidence from more countries over a longer period of time.

In addition, our research suggests a number of areas that could benefit from further research. For example, it would be interesting to investigate the real effects of home-country governance differences. That is, one could ask if firms heavily held by investors from good (bad) governance countries have higher (lower) firm value or experience smaller (greater) share price declines during crisis periods. Another interesting question is to ask whether home-country governance can explain different degrees of international capital flow reversals. Our research may be considered a first step in a broader inquiry into the effect of home-country corporate governance on patterns of foreign investment.

REFERENCES

- Aggarwal, Reena, Isil Erel, Miguel Ferreira, Pedro Matos (2010), "Does Governance Travel around the World? Evidence from Institutional Investors," ECGI Finance Working Paper No.267/2010
- Aggarwal, Reena, Leora Klapper, and Peter D. Wysocki (2005), "Portfolio Preferences of Foreign Institutional Investors," *Journal of Banking and Finance*, vol. 29, pp. 2919-2949.
- Ahearne, Alan, William Grier, and Francis Warnock (2004), "Information Costs and Home Bias: An Analysis of U.S. Holdings of Foreign Equities," *Journal of International Economics*, vol.62, pp.313-336.
- Ai, Chunrong and Edward Norton (2003), "Interaction Terms in Logit and Probit Models," *Economics Letters* Vol.80, pp.123-129
- Almeida, Heitor, Sang Yong Park, Marti Subrahmanyam, and Daneil Wolfenzon (2010), "The Structure and Formation of Business Groups: Evidence from Korean Chaebols," *Journal of Financial Economics*, forthcoming
- Ammer, John, Sara Holland, David Smith, and Francis Warnock (2006), "Look at Me Now: What Attracts U.S. Shareholders?" NBER Working Paper 12500
- Bebchuk, Lucian Aye, Reinier Kraakman, and George Triants (2000), "Stock Pyramids, Cross-Ownership and Dual Class Equity: The Mechanisms and Agency Costs of Separating Control From Cash-Flow Rights," in Randall K. Morck, ed., *Concentrated Corporate Ownership*, pp. 295-318.
- Baek, Jae-Seung, Jun-Koo Kang, and Kyung Suh Park (2004), "Corporate Governance and Firm Value: Evidence from the Korean Financial Crisis," *Journal of Financial Economics*, vol. 71, pp. 265-313.
- Black, Bernard, Hasung Jang, and Woochan Kim (2006), "Does Corporate Governance Affect Firms' Market Values? Evidence from Korea," *Journal of Law, Economics and Organization*, vol. 22, pp. 366-413.
- Black, Bernard and Woochan Kim (2007), "The Effect of Board Structure on Firm Value: A Multiple Identification Strategies Approach Using Korean Data," European Corporate Governance Institute Finance, Working Paper No. 179/2007
- Bradshaw, Mark, Brian Bushee, and Gregory Miller (2004), "Accounting Choice, Home-Bias, and US Investment in Non-US Firms," *Journal of Accounting Research* Vol.42, pp.795-841.
- Chan, Kalok, Vicentiu M. Covrig, and Lilian K. Ng (2005), "What Determines the Domestic Bias and Foreign Bias?: Evidence from Mutual Fund Equity Allocations Worldwide," *The Journal of Finance*, vol.60, pp.1495-1534
- Choe, Hyuk, Bong-Chan Kho and René Stulz (2005), "Do Domestic Investors Have an Edge? The Trading Experience of Foreign Investors in Korea," *Review of Financial Studies* Vol.18, No.3, pp.795-829
- Claessens, Stijn, Simeon Djankov, and Larry H. P. Lang (2000), "The Separation of Ownership and Control in East Asian Corporations," *Journal of Financial Economics*, vol. 58, pp. 81-112.
- Claessens, Stijn, Simeon Djankov, Joseph P. H. Fan, and Larry H. P. Lang (2002), "Disentangling the Incentive and Entrenchment Effects of Large Shareholdings," *The Journal of Finance*, vol. 57, pp. 2741-2771.
- Coval, Joshua and Tobias Moskowitz (1999), "Home Bias at Home: Local Equity Preference in Domestic Portfolios," *The Journal of Finance* Vol.54, No.6, pp.2045-2073

- Cremers, Martijn and Antti Petajisto (2009), "How Active is Your Fund Manager? A New Measure that Predicts Performance," *Review of Financial Studies* Vol.22, No.9, pp.3329-3365
- Dahlquist, Magnus and Goran Robertsson (2001), "Direct Foreign Ownership, Institutional Investors, and Firm Characteristics," *Journal of Financial Economics*, vol. 59, pp. 413-440.
- Dahlquist, Magnus, Lee Pinkowitz, René M. Stulz, and Rohan Williamson (2003), "Corporate Governance and the Home Bias," *Journal of Financial and Quantitative Analysis*, vol. 38, pp. 87-110.
- Djankov, Simeon, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer (2005), "The Law and Economics of Self-Dealing," *Journal of Financial Economics* Vol.88, pp.430-465
- Dyck, Alexander and Luigi Zingales (2004), "Private Benefits of Control: An International Comparison," *The Journal of Finance*, vol.59, pp.537-600.
- Edison, Hali J. and Francis E. Warnock (2004), "U.S. Investors' Emerging Market Equity Portfolios: A Security-level Analysis," *Review of Economics and Statistics*, vol. 86, pp. 691-704.
- Faccio, Mara and Larry Lang (2002), "The Ultimate Ownership of Western European Corporations," *Journal of Financial Economics*, vol.65, pp.365-395.
- Ferreira, Miguel and Pedro Matos (2008), "The Colors of Investors' Money: The Role of Institutional Investors Around the World," *Journal of Financial Economics* Vol.88 No.3, pp.499-533
- Forbes, Kristin (2010), "Why Do Foreigners Invest in the United States?" *Journal of International Economics*, Vol.80 pp.3-21.
- Gelos, R. Gaston and Shang-Jin Wei (2005), "Transparency and International Portfolio Holdings," *The Journal of Finance*, vol. 60, pp. 2987-3020.
- Giannetti, Mariassunta and Andrei Simonov (2006), "Which Investors Fear Expropriation? Evidence from Investors' Portfolio Choices," *The Journal of Finance*, vol.61, pp.1507-1548.
- Giannetti, Mariassunta and Yrjö Koskinen (2010), "Investor Protection, Equity Returns, and Financial Globalization," *Journal of Financial and Quantitative Analysis*, Vol.45 No.1, pp.135-168
- Grinblatt, Mark, and Matti Keloharju (2001), "How Distance, Language, and Culture Influence Stockholdings and Trades," *The Journal of Finance* Vol.56, No.3, pp.1053-1073
- Haw, In-Mu, Bingbing Hu, Lee-Seok Hwang and Woody Wu (2004), "Ultimate Ownership, Income Management, and Legal and Extra-Legal Institutions," *Journal of Accounting Research*, vol. 42, pp. 423-462.
- Huberman, Gur (2001), "Familiarity Breeds Investment," *Review of Financial Studies* Vol. 14 No.3, pp.659-680
- Jensen, Michael C. and William H. Meckling, (1976), "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure," *Journal of Financial Economics*, vol. 3, pp. 305-360.
- Joh, Sung Wook (2003), "Corporate Governance and Firm Profitability," *Journal of Financial Economics*, vol. 68, pp. 287-322.
- Johnson, Simon, Peter Boone, Alasdair Breach, and Eric Friedman (2000), "Corporate Governance in the Asian Financial Crisis," *Journal of Financial Economics*, vol.58, pp.141-186.
- Kang, Jun-Koo and René M. Stulz (1997), "Why Is There a Home Bias? An Analysis of Foreign Portfolio Equity Ownership in Japan," *Journal of Financial Economics*, vol. 46, pp. 3-28.

- Kang, Jun-Koo and Jin-Mo Kim (2006), "Foreign Blockholders, Shareholder Rights, and Corporate Governance: Evidence from Partial Acquisitions of U.S Firms by Foreign Investors," mimeo.
- Kho, Bong-Chan, René Stulz, and Francis Warnock (2009), "Financial Globalization, Governance, and the Evolution of the Home Bias," *Journal of Accounting Research* Vol.47, pp.597-635
- Khoranma, Ajay, Henri Servaes, and Peter Tufano (2005), "Explaining the Size of the Mutual Fund Industry Around the World," *Journal of Financial Economics* Vol.78, pp.145-185
- Kim, Woochan, Youngjae Lim, and Taeyoon Sung (2007), "Group Control Motive as a Determinant of Ownership Structure in Business Conglomerates: Evidence from Korea's *Chaebols*," *Pacific-Basin Finance Journal*, vol.15, pp. 213-252.
- Kim, Woochan and Taeyoon Sung (2005), "What Makes Group-Affiliated Firms to Go Public?" KDI School Working Paper No. 05-12.
- Kim, Woochan and Shang-Jin Wei (2002a), "Foreign Portfolio Investors Before and During a Crisis," *Journal of International Economics*, vol. 56, pp. 77-96.
- Kim, Woochan and Shang-Jin Wei (2002b), "Offshore Investment Funds: Monsters in Emerging Markets?" *Journal of Development Economics*, vol. 68, pp. 205-224.
- La Porta, Rafael, Florencio Lopez-de-Silanes, and Andrei Shleifer (1999), "Corporate Ownership around the World," *The Journal of Finance*, vol. 54, pp. 471-518.
- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny (1997), "Legal Determinants of External Finance," *The Journal of Finance*, vol. 52, pp. 1131-1150.
- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny (1998), "Law and Finance," *Journal of Political Economy*, Vol.106 No.6, pp.1113-1155
- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny (2002), "Investor Protection and Corporate Valuation," *The Journal of Finance*, vol. 57, pp. 1147-1170.
- Lemmon, Michael L. and Karl V. Lins (2003), "Ownership Structure, Corporate Governance, and Firm Value: Evidence from the East Asian Financial Crisis," *The Journal of Finance*, vol. 58, pp. 1445-1468.
- Li, Donghui, Fariborz Moshirian, Peter Pham, and Jason Zein, 2006, When financial institutions are large shareholders: The role of macro corporate governance environments, *The Journal of Finance* 61, 2975—3007.
- Lins, Karl (2003), "Equity Ownership and Firm Value in Emerging Markets," *Journal of Financial and Quantitative Analysis*, vol. 38, pp.159-184.
- Leuz, Christian, Karl Lins, and Francis Warnock (2009), "Do Foreigners Invest Less in Poorly Governed Firms?" *Review of Financial Studies* Vol.22 No.8, pp.3245-3285
- McDonald, John F., and Robert A. Moffitt. 1980. "The Uses of Tobit Analysis," *The Review of Economics and Statistics*, 62:318-21.
- Mitton, Tod (2002), "A Cross-Firm Analysis of the Impact of Corporate Governance on the East Asian Financial Crisis," *Journal of Financial Economics*, vol. 64, pp. 215-241.
- Morck, Randall, Andrei Shleifer, and Robert Vishny (1988), "Management Ownership and Market Valuation: An Empirical Analysis," *Journal of Financial Economics*, vol. 20, pp. 293-315.

Nenova, Tatiana (2003), "The Value of Corporate Votes and Control Benefits: A Cross-Country Analysis," *Journal of Financial Economics*, vol.68, pp.325-351.

Portes, Richards and Hélène Rey (2005), "The Determinants of Cross-Border Equity Flows," *Journal of International Economics* Vol.65, pp.269-296

Subramanian, Arvind. and Shang-Jin Wei (2007), "The WTO Promotes Trade, Strongly but Unevenly," *Journal of International Economics* Vol.72 No.1, pp.151-175

Figure 1: Does Home-country Disparity Matter, and is There a Wake-up Call Effect?
 (Monthly Tobit regression coefficients)

The figure plots the coefficients on control-ownership disparity from a Tobit specification same as *Column (5)* in Table 3, estimated month by month during December 1996-December 1999. Separate regressions are done for investors from low versus high disparity countries.

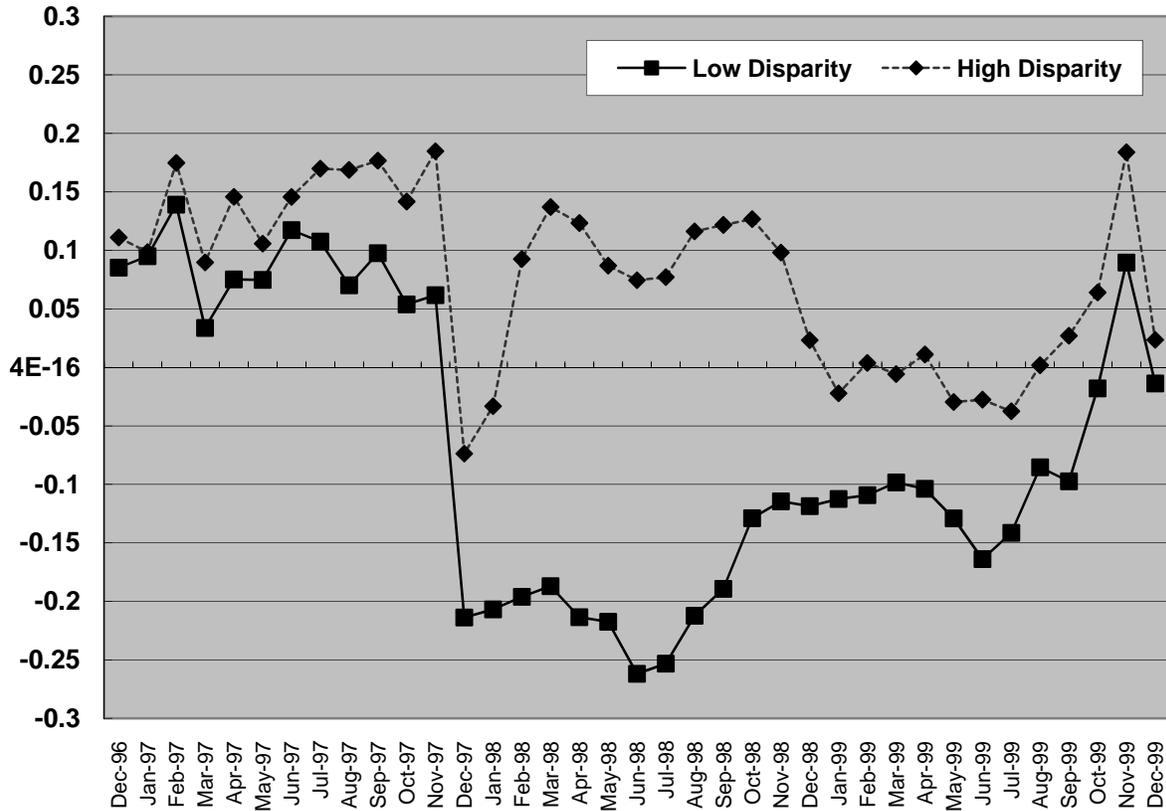


Figure 2: Scatter Plots of Investors' Aversion to Disparity, Against Their Home-country Disparity

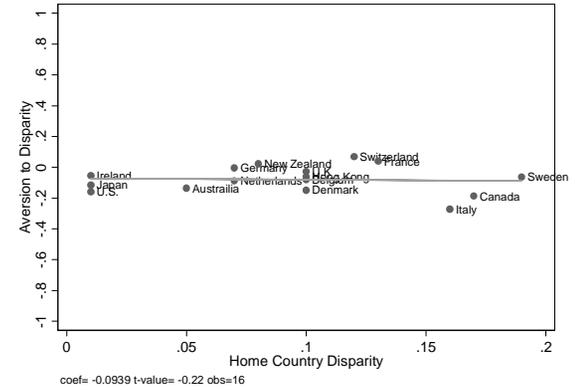
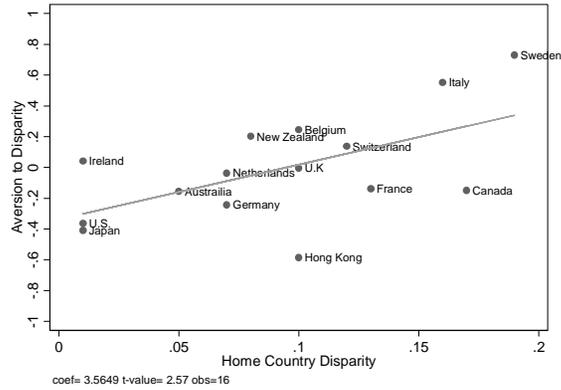
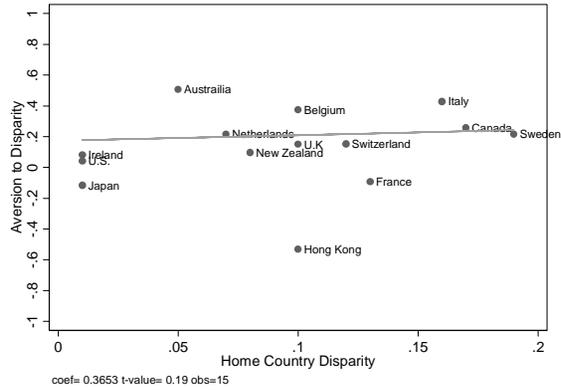
Country-level aversion to disparity is measured by a coefficient estimated by running separate regressions same as those in *Columns (1)-(2) of Table 5* for each source country. For each source country, we perform three regressions, corresponding to the three time periods in our data set. In the first set of plots, we include a fitted line from *OLS* (equal weight for countries). In the second set of plots, we include a fitted line estimated by weighted least squares (which gives equal weight to investors or more weight to countries with more investors).

Pre-Crisis Period

In-Crisis Period

Post-Crisis Period

Ordinary Least Squares (equal weight for all countries)



Weighted Least Squares (equal weight for all investors, and hence more weight for countries with more investors)

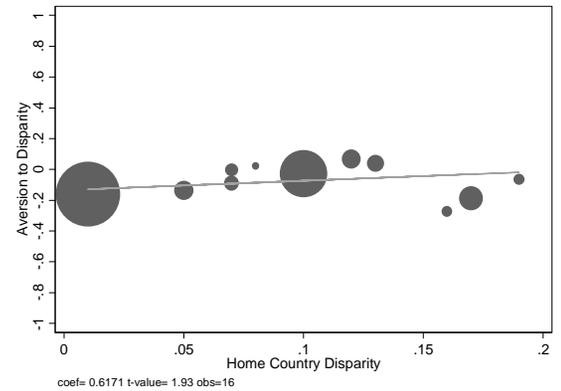
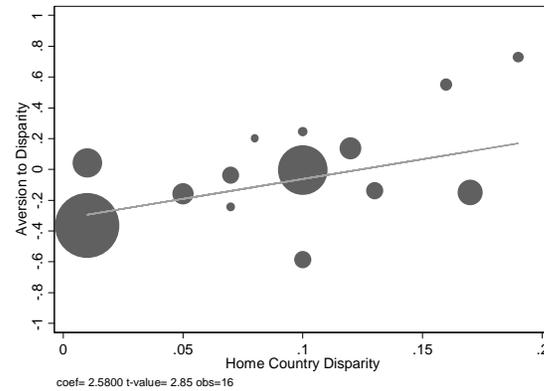
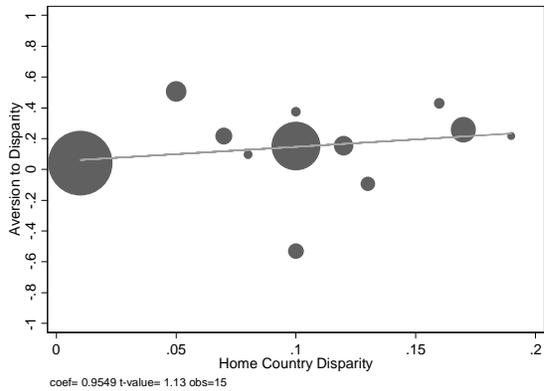


Figure 3: Time-Variation of Disparity and Holding Weight

The graphs show the distribution of coefficients of variation of our two key variables: disparity and holding weight. In the first graph, firm i 's coefficient of variation on disparity is computed by the standard deviation of disparity over a three year period (using December figures in 1996, 1997, 1998, and 1999) divided by the mean of disparity over the same time period. In the second graph, firm i 's coefficient of variation on holding weight is computed by the standard deviation of holding weight across all investors over a 37-months period divided by the mean of holding weight across all investors over the same time period.

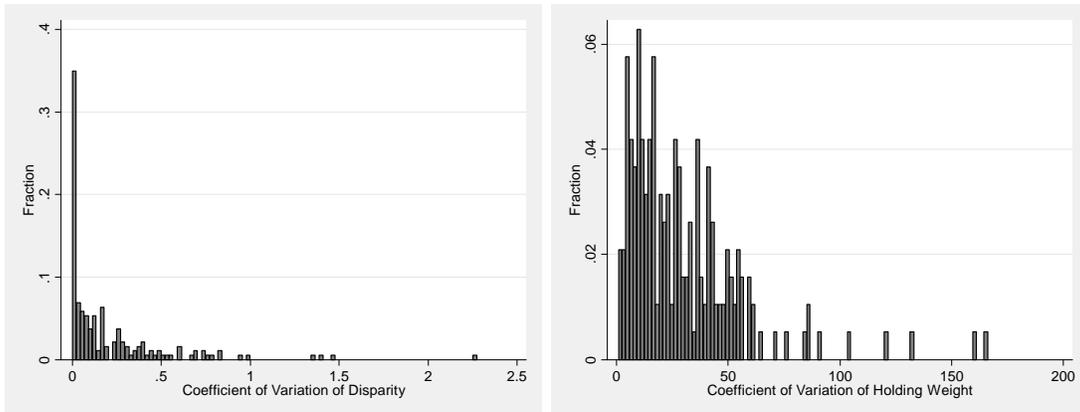


Table 1: Basic Information on Investors, Their Holdings, and Disparity

Panel A reports the number of foreign institutional investors holding shares in at least two *chaebol* firms and their average holdings. We report snapshots at four different times (the Decembers of 1996, 1997, 1998, and 1999, respectively) for different subgroups categorized by home country disparity. We exclude foreign direct investors, offshore investors, foreign individual investors, and foreign resident investors from our analyses. We also exclude investors that invest only in firms that have reached the foreign ownership ceiling. In parentheses, we report the numbers of foreign institutional investors including those who hold shares in only one *chaebol* firm. Panel B reports foreign investors' ownership in aggregate as a percentage of total market capitalization of Korea Stock Exchange (KSE) and in Korean won amount (from various press releases from Financial Supervisory Service). Here, foreign investors do not include foreign direct investors, but include foreign individual investors, foreign resident investors, and offshore investors. Panel B also reports equally-weighted averages of control-ownership disparity of all the *chaebol*-affiliated listed firms and separately for those affiliated to the top three *chaebol* groups ranked as of December 1996. When calculating the average, we include *chaebol*-affiliated listed firms that are not invested by foreign investors, in addition to those that are invested. The panel also reports the disparities of two firms in each *chaebol*: one with the lowest and the other with the highest disparity as of December 1996.

Panel A: Investors and Their Holdings

Home Country Disparity	Dec. 1996		Dec. 1997		Dec. 1998		Dec. 1999	
	No. of Investors	Average No. of Holdings	No. of Investors	Average No. of Holdings	No. of Investors	Average No. of Holdings	No. of Investors	Average No. of Holdings
Low Disparity	541 (758)	7.22 (5.44)	372 (627)	7.24 (4.70)	522 (803)	7.04 (4.92)	789 (1,105)	7.68 (5.77)
High Disparity	396 (555)	6.02 (4.58)	250 (407)	6.43 (4.34)	391 (534)	5.93 (4.61)	488 (647)	7.94 (6.23)
Not Classified	172 (228)	7.77 (6.11)	120 (200)	6.94 (4.57)	171 (239)	6.85 (5.19)	204 (273)	10.14 (7.83)
All Sample Investors	1,109 (1,541)	6.88 (5.23)	742 (1,234)	6.92 (4.56)	1,084 (1,576)	6.61 (4.86)	1,481 (2,025)	8.10 (6.19)

Panel B: Foreign Aggregate Ownership and Average Disparity for All Firms in the Sample

	Dec. 1996	Dec. 1997	Dec. 1998	Dec. 1999
Foreign Investors' Ownership				
Amount in trillion Korean won	12.3	8.7	22.5	70.7
% of KSE market capitalization	10.5	12.3	16.3	20.2
Disparity (%), Equally-Weighted				
<i>All Firms in the Sample</i>	23.1	22.1	21.5	20.9
<u>Some Examples</u>				
Hyundai Group	18.9	20.6	31.8	27.6
Hyundai Flange	0.0	0.0	0.0	0.0
Hyundai Information Technology	65.8	67.9	87.2	72.4
Samsung Group	28.5	23.3	23.7	22.4
Cheil Industry.	8.6	5.3	5.4	5.0
Jung Ang Design	61.0	62.4	62.4	62.4
LG Group	31.9	30.9	32.4	26.1
LG Ad	0.1	0.1	0.0	0.0
Dacom Corporation	54.2	54.2	54.2	54.2

Table 2: Definition and Summary Statistics of Key Variables

Panel A provides the definition of each variable used in this paper, Panel B shows their summary statistics, and Panel C gives the correlation coefficients of each pairs.

Panel A: Definitions

Variable Name	Definitions
Dependent Variables	
Holding Weight HW_{ijk}	Market value of investor i 's holding of firm j as a fraction of his total holdings in month t
Holding Dummy	Dummy = 1 if $HW_{ijk} > 0$, and 0 otherwise
Firm-level Variables (Regressors)	
Firm Disparity	The difference between controlling shareholder's voting rights and ownership (cash flow rights) in firm j
Initial Disparity	Firm disparity as of December 1996
Firm Size	Free-float adjusted market capitalization, logged (in Billions of <i>won</i>). More specifically, $\ln[(\text{share price})(\text{number of shares outstanding})(1 - \text{voting rights})]$
Profitability	EBIT/book value of assets (end of previous fiscal year), first winsorized across firms at the 1 st and the 99 th percentiles, then averaged over previous 3 years
Dividend Yield	Dividend per share / year-end share price
Market-to-Book	Market value / book value of equity
R&D/Sales	R&D expenditure / sales
Advertisement/Sales	Advertising expenditure / sales
Sales Growth	Sales growth, averaged over previous 3 years
Export/Sales	Export revenue / total sales
Foreign Director Dummy	1 if at least one foreigner sits at the board; 0 otherwise
Leverage	[Book value of debt / book value of assets], winsorized at the 1 st and the 99 th percentile values, logged. More specifically, we take the log of [(debt/assets)+1] to avoid dropping observations with a value of zero
Years of Operation	Years of operation, logged
Share Turnover	Free-float adjusted share turnover, or [number of shares traded during year / (number of shares outstanding)(1 - voting rights)]
Level 2 or 3 ADR	1 if firm issued level-2 or 3 ADR; 0 otherwise
Level 1 or Rule144 ADR	1 if firm issued level-1 or Rule144 ADR; 0 otherwise
Return Volatility	Standard deviation of weekly returns (adjusted for stock-splits and dividends) over previous 48 months
Direct Ownership	Number of shares held by the group-controlling shareholder and his relatives in firm j / total outstanding shares
Group Control	Amount of additional cash flow rights a group-controlling shareholder can gain in other firms by having firm j under his control, as a fraction of firm j 's book equity value, winsorized at the 1 st and the 99 th percentile values
Sum of Direct Ownerships	Sum of controlling shareholder's direct ownership in each member firm within a group, in logs
Market beta	Coefficient on KOSPI index return in an regression where weekly firm return is regressed on weekly KOSPI index return and weekly Korean Won currency return (positive return corresponds to Korean Won's depreciation) during the past 12 months
Currency beta	Coefficient on Korean Won's currency return in an regression where weekly firm return is regressed on weekly KOSPI index return and weekly Korean Won currency return (positive return corresponds to Korean Won's depreciation) during the past 12 months
Investor-level Variables (Regressors)	
Number of Holdings	Number of firms (in logs) a given investor is holding in her portfolio in a given month
Investment Size	Aggregate value of equity holding (in logs) in the Korean Stock Exchange by a given investor in a given month
Investment History	Number of years a given investor was present in the Korean Stock Exchange in a given

Variable Name	Definitions
	year
Country-level Variables (Regressors)	
Home Disparity	Source country disparity of a given country from LLSV (2002)
Legal Origin	Country of legal origin of a given country from LLSV (1997)
Anti-Self Dealing	Anti-self dealing index of a given country from Djankov et al. (2008)
Physical Distance	Physical distance between Korea and a given country from Subramanian and Wei (2007)
Financial Distance	Difference in the log of (stock market capitalization/GDP) as of 1996 in absolute terms between Korea and a given country
Income Distance	Difference in the log of per capital GDP as of 1996 (in 2000 dollar value) in absolute terms between Korean and a given country
Number of Investors	Aggregate number of investors (in logs) in the Korea Stock Exchange from a given country in a given month

Panel B: Summary Statistics (Decembers of 1996-1999)

	# Obs	Mean	Std Dev	Min	50th	Max
Holding Weight (%)	957,012	0.4	4.3	0.0	0.0	100.0
Disparity (%)	682	16.7	15.4	0.0	13.6	76.0
Log Firm Size	682	4.198	1.566	-0.318	4.176	10.438
Profitability (%)	666	5.1	6.9	-30.9	5.4	52.9
Dividend Yield (%)	682	1.8	2.4	0.0	1.0	20.2
Market-to-Book (%)	656	98.7	249.6	1.3	52.0	4177.8
R&D/Sale (%)	668	0.2	0.5	0.0	0.0	4.9
Advertising/Sale (%)	586	0.8	1.4	0.0	0.2	11.4
Sales Growth (%)	656	18.4	37.3	-32.1	13.6	527.9
Export/Sale (%)	674	27.4	29.7	0.0	17.1	100
Foreign Director Dummy	682	0.091	0.288	0.000	0.000	1.000
Leverage	668	0.547	0.125	0.197	0.550	1.211
Years of Operation	682	3.524	0.354	1.099	3.526	4.382
Share Turnover	682	3.857	4.133	0.000	2.741	62.103
Level 2 or 3 ADR	682	0.001	0.038	0.000	0.000	1.000
Level 1 or Rule144 ADR	682	0.040	0.195	0.000	0.000	1.000
Return Volatility (%)	680	11.0	4.6	3.1	10.3	31.1
Direct Ownership	682	0.109	0.126	0.000	0.050	0.485
Group Control	661	0.102	0.328	0.000	0.020	3.959

Panel C: Correlation Matrix (Decembers of 1996-1999)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]
[1] Disparity	1.00																
[2] Firm Size	0.00	1.00															
[3] Profitability	-0.03	0.29	1.00														
[4] Dividend Yield	-0.07	0.07	0.16	1.00													
[5] Market-to-Book	0.09	0.10	-0.02	-0.14	1.00												
[6] R&D	-0.11	0.10	0.04	0.07	0.00	1.00											
[7] Advertising	-0.13	0.03	-0.03	-0.11	0.16	0.00	1.00										
[8] Sales Growth	-0.01	0.14	0.16	0.00	0.04	-0.06	0.06	1.00									
[9] Export	-0.04	0.20	0.11	0.06	-0.05	0.15	-0.24	-0.08	1.00								
[10] Foreign Director Dummy	0.00	0.22	0.18	0.02	0.01	0.06	0.04	0.01	0.16	1.00							
[11] Leverage	-0.07	-0.40	-0.38	-0.19	0.04	-0.11	0.14	-0.10	-0.06	-0.10	1.00						
[12] Years of Operation	-0.22	0.04	-0.09	0.02	-0.07	-0.03	0.11	-0.06	0.05	-0.06	0.15	1.00					
[13] Share Turnover	0.00	-0.21	-0.10	-0.07	-0.05	0.00	0.07	-0.07	-0.02	-0.11	0.02	-0.01	1.00				
[14] Level 2 or 3 ADR	0.05	0.16	0.01	-0.03	0.15	0.11	0.11	0.00	-0.04	-0.01	-0.07	-0.08	-0.03	1.00			
[15] Level 1 or Rule144 ADR	-0.10	0.32	0.08	-0.01	-0.02	0.05	0.04	-0.02	0.14	0.02	0.01	0.13	-0.07	-0.01	1.00		
[16] Return Volatility	0.00	-0.25	-0.29	-0.22	0.03	-0.04	0.00	-0.06	-0.01	-0.10	0.27	0.02	0.46	0.00	-0.05	1.00	
[17] Direct Ownership	-0.47	-0.14	0.00	0.08	-0.04	0.15	0.15	-0.11	-0.07	-0.08	0.02	0.17	-0.06	-0.04	-0.09	-0.05	1.00
[18] Group Control	-0.15	-0.08	-0.05	0.00	0.41	0.00	0.18	-0.04	-0.07	-0.08	0.15	0.05	-0.04	-0.01	-0.04	-0.03	0.34

Table 3: Tobit Regressions (Decembers of 1996-1999)

The dependent variable is the market value of investor i 's holding of firm j 's shares as a fraction of his total holdings in month t (holding weight, HW_{ijt}). Columns (1)-(5) estimate a one-limit *Tobit* model accounting for the constraint that the holding weights have to be non-negative. Column (6) estimates a two-limit *Tobit* model accounting for the constraint that the holding weights have to be not only non-negative, but also 100% and below. The point estimates are marginal effects on the latent variable. ** and * indicate statistical significance at 5 and 10 percent levels, respectively. Robust standard errors, clustered at the investor-level, are reported in parenthesis.

	(1)	(2)	(3)	(4)	(5)	(6)
Disparity	-0.143** (0.010)	-0.132** (0.010)	-0.065** (0.011)	-0.043** (0.011)	-0.059** (0.012)	-0.112** (0.018)
Log Firm Size	0.131** (0.005)	0.128** (0.004)	0.130** (0.004)	0.121** (0.004)	0.118** (0.004)	0.171** (0.007)
Profitability		0.229** (0.018)	0.282** (0.02)	0.235** (0.012)	0.196** (0.019)	0.259** (0.027)
Dividend Yield			0.209** (0.048)	0.281** (0.048)	0.194** (0.047)	0.199** (0.068)
Market-to-Book			-0.01** (0.001)	-0.007** (0.001)	-0.003* (0.001)	-0.005** (0.002)
R&D/Sales			1.595** (0.146)	1.439** (0.146)	0.864** (0.174)	0.423 (0.268)
Advertisement/Sales			1.291** (0.10)	1.024** (0.101)	1.245** (0.121)	1.829** (0.182)
Sales Growth			-0.039** (0.005)	-0.028** (0.004)	-0.019** (0.004)	-0.027** (0.007)
Export/Sales				-0.020** (0.004)	-0.005 (0.004)	-0.004 (0.006)
Foreign Direct Dummy				0.033** (0.002)	0.021** (0.003)	0.027** (0.004)
Level 2 or 3 ADR				-0.019 (0.012)	-0.072** (0.015)	-0.111** (0.021)
Level 1 or Rule144A ADR				0.058** (0.004)	0.066** (0.004)	0.094** (0.006)
Leverage					-0.107** (0.018)	-0.149** (0.027)
Years of Operation					-0.025** (0.004)	-0.042** (0.006)
Share Turnover					-0.004** (0.001)	-0.005** (0.001)
Return Volatility					-0.304** (0.043)	-0.409** (0.062)
Direct Ownership					0.023 (0.032)	0.059 (0.047)
Direct Ownership Squared					0.104 (0.086)	0.079 (0.127)
Group Control					-0.007 (0.005)	-0.016** (0.008)
Constant	Y	Y	Y	Y	Y	Y
Year Dummies	Y	Y	Y	Y	Y	Y
Clustered SE (investor-level)	Y	Y	Y	Y	Y	Y
Uncensored Observations	761,728	743,545	619,454	615,739	589,673	849,559
Left Censored Observations	734,782	716,894	597,139	593,431	567,491	826,263
Right Censored Observations	-	-	-	-	-	2,2178
Pseudo R-squared	0.351	0.356	0.372	0.375	0.377	0.302

Table 4: Probit Regressions (Decembers of 1996-1999)

The table reports *Probit* regressions, where the dependent variable $HD = 1$ if $HW_{ijt} > 0$ and 0 otherwise. The point estimates the marginal effect on probability. Columns (1)-(5) use a sample that includes institutional investors holding at least two *chaebol* firms. Column (6) uses a sample that includes investors holding at least 10 *chaebol* firms. ** and * indicate statistical significance at 5 and 10 percent levels, respectively. Standard errors are clustered at the investor level and are reported in parenthesis.

	(1)	(2)	(3)	(4)	(5)	(6)
Disparity	-0.017** (0.002)	-0.017** (0.002)	-0.009** (0.002)	-0.007** (0.002)	-0.011** (0.002)	-0.049** (0.009)
Log Firm Size	0.015** (0.001)	0.015** (0.001)	0.016** (0.001)	0.016** (0.001)	0.015** (0.001)	0.055** (0.003)
Profitability		0.014** (0.002)	0.200** (0.002)	0.018** (0.002)	0.014** (0.002)	-0.006 (0.011)
Dividend Yield			0.025** (0.006)	0.032** (0.006)	0.022** (0.007)	0.112** (0.030)
Market-to-Book			-0.001** (<0.001)	-0.001** (<0.001)	-0.001** (<0.001)	-0.004** (0.001)
R&D/Sales			0.021 (0.020)	0.009 (0.020)	-0.059** (0.022)	-0.538** (0.099)
Advertisement/Sales			0.142** (0.012)	0.118** (0.013)	0.142** (0.015)	0.342** (0.067)
Sales Growth			-0.004** (0.001)	-0.003** (0.001)	-0.002** (0.001)	-0.006** (0.003)
Exports/Sales				-0.002** (0.001)	-0.001 (0.001)	-0.001 (0.003)
Foreign Director Dummy				0.004** (<0.001)	0.002** (<0.001)	0.004* (0.002)
Level 2 or 3 ADR				0.003 (0.002)	-0.004** (0.001)	0.010 (0.014)
Level 1 ADR				0.007** (0.001)	0.008** (0.001)	0.027** (0.004)
Leverage					-0.011** (0.002)	-0.020* (0.012)
Years of Operation					-0.002** (0.001)	<0.001 (0.002)
Share Turnover					-0.001** (<0.001)	-0.001** (<0.001)
Return Volatility					-0.053** (0.007)	-0.293** (0.033)
Direct Ownership					-0.006 (0.004)	-0.023 (0.019)
Direct Ownership Squared					0.032** (0.011)	0.112** (0.050)
Group Control					-0.001 (0.001)	-0.002 (0.004)
Constant	Y	Y	Y	Y	Y	Y
Year Dummies	Y	Y	Y	Y	Y	Y
Clustered SE (investor-level)	Y	Y	Y	Y	Y	Y
<i>Prob</i> (HD = 1)	0.035	0.036	0.036	0.036	0.038	0.106
Total Observations	761,728	743,545	619,454	615,739	589,673	120,789
Pseudo R-squared	0.239	0.242	0.251	0.252	0.253	0.261

Table 5: Separating Investors by Home-Country Disparity and by Subperiods
(Tobit and Probit specifications)

Investors are separated into two groups based on whether the level of home-country disparity is below or above the median computed across all home countries in the sample (10%). Similar set of control variables that appears in *Column (5) of Table 3* is used in each regression, but not reported (year dummies are substituted with month dummies). Columns (1) and (2) report Tobit results, while columns (4) and (5) report Probit results. The point estimates in Tobit are marginal effects on the latent variable, while those in Probit are marginal effects on probability. Column (3) and (6) reports the interaction effect of firm disparity and high disparity investor dummy (1 if greater than 10%) in a pooled regression, where all other right-hand side variables are also interacted with the high disparity investor dummy. In case of column (6), we report the mean interaction effect and the mean z-value of this interaction effect following the method of Ai and Norton (2003). ** and * indicate statistical significance at 5 and 10 percent levels, respectively. Robust standard errors, clustered at the investor-level, are reported in parenthesis.

		<i>Tobit</i>			<i>Probit</i>		
		Home Country Disparity		Diff	Home Country Disparity		Diff
		≤ 10%	> 10%		≤ 10%	> 10%	
		(1)	(2)	(3)	(4)	(5)	(6)
				= (2)-(1)			= (5)-(4)
Pre-Crisis (Dec. 96 – Nov. 97)	Firm Disparity	0.063** (0.025)	0.109** (0.054)	0.048 (0.83)	0.006** (0.003)	0.010* (0.006)	<0.000 [0.13]
	Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
	No. of Investors	1,044	158	1,202	1,044	158	1,202
	Observations	1,178,201	184,343	1,362,544	1,178,201	184,343	1,362,544
In-Crisis (Dec. 97 – Dec. 98)	Firm Disparity	-0.191** (0.026)	0.055 (0.064)	0.244** (3.68)	-0.020** (0.004)	0.003 (0.004)	0.047** [5.73]
	Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
	No. of Investors	1,015	172	1,187	1,015	172	1,187
	Observations	1,156,223	216,812	1,373,035	1,156,223	216,812	1,373,035
Post-Crisis (Jan. 99 – Dec. 99)	Firm Disparity	-0.078** (0.014)	-0.005 (0.029)	0.072** (2.20)	-0.015** (0.002)	-0.003 (0.003)	0.025** [4.01]
	Other Controls	yes	Yes	Yes	Yes	Yes	Yes
	No. of Investors	1,288	195	1,483	1,288	195	1,483
	Observations	1,488,864	240,474	1,729,338	1,488,864	240,474	1,729,338

Table 6: More Active vs. Less Active Funds
(Tobit specification)

Regressions are run for two groups of investors identified as more active and less active. More active investors are those with average active share (following Cremers and Petajisto (2009)) more than 60% and hold shares in no more than 30 firms, on average. Less active investors are identified as those with average active share less than 60% and hold shares in at least 30 firms, on average. Average active share and average number of holdings are computed over the entire sample period. When measuring active share, benchmark weights are computed by free-float adjusted market capitalization of each stock in the Korea Stock Exchange (not limited to *Chaebol* firms). We also drop firms where foreign ownership is hitting the upper ceiling during our sample period. We also limit our analyses to investments by those from low-disparity countries. The same set of control variables that appears in *Columns* (1) (2) of *Table 5* is used in each regression, but not reported. ** and * indicate statistical significance at 5 and 10 percent levels, respectively. Robust standard errors, clustered at the investor-level, are reported in parenthesis.

		All (Disparity \leq 10%)	More Active (1)	Less Active (2)
Pre-Crisis (Dec. 96 – Nov. 97)	Firm Disparity	0.063** (0.025)	0.147*** (0.047)	-0.005 (0.010)
	Other Controls	Yes	Yes	Yes
	No. of Investors	1,044	828	21
	Observations	1,178,201	911,505	28,300
In-Crisis (Dec. 97 – Dec. 98)	Firm Disparity	-0.191** (0.026)	-0.284*** (0.055)	-0.055*** (0.013)
	Other Controls	Yes	Yes	Yes
	No. of Investors	1,015	815	22
	Observations	1,156,223	859,778	36,806
Post-Crisis (Jan. 99 – Dec. 99)	Firm Disparity	-0.078** (0.014)	-0.107*** (0.025)	-0.018* (0.010)
	Other Controls	yes	yes	yes
	No. of Investors	1,288	1,073	25
	Observations	1,488,864	1,195,782	35,779

Table 7: Country-Level Regressions
(Tobit specification)

Percentage of free-float firm shares is computed for each firm-country pair in each month and regressed on firm disparity and other firm-specific control variables that appear in *Columns* (1) and (2) of *Table 5*. Number of holdings, which is investor-specific, is dropped from the right-hand side. Since the dependent variable is adjusted for free float, we do not adjust the firm size variable that appears on the right hand side. When aggregating the data, we include investors regardless of the number of their holdings. Investors are separated into two groups based on whether the level of home-country disparity is below or above the median computed across all home countries in the sample (10%). The point estimates are marginal effects on the latent variable. ** and * indicate statistical significance at 5 and 10 percent levels, respectively. Robust standard errors, clustered at the firm-level, are reported in parenthesis.

		Dependent Variable: Percentage of Free-Float Firm Shares	
		Home country Disparity	
		≤ 10%	> 10%
		(1)	(2)
Pre-Crisis (Dec. 96 – Nov. 97)	Firm Disparity	0.004 (0.013)	-0.001 (0.004)
	Other Controls	Yes	Yes
	No. of Firms	141	141
	Observations	18,759	8,658
In-Crisis (Dec. 97 – Dec. 98)	Firm Disparity	-0.048** (0.024)	0.004 (0.006)
	Other Controls	Yes	Yes
	No. of Firms	143	143
	Observations	18,900	9,450
Post-Crisis (Jan. 99 – Dec. 99)	Firm Disparity	-0.042** (0.018)	-0.006 (0.004)
	Other Controls	yes	yes
	No. of Firms	151	151
	Observations	19,291	8,544

Table 8: Continuing Investors
(Tobit specification)

Home disparity is from LLSV (2002). Continuing investors during a certain sub-sample period are defined as those that hold at least one stock in the Korean market throughout the same sub-sample period. The same set of control variables that appears in *Columns* (1) and (2) of *Table 5* is used in each regression, but not reported. The point estimates are marginal effects on the latent variable. ** and * indicate statistical significance at 5 and 10 percent levels, respectively. Robust standard errors, clustered at the investor-level, are reported in parenthesis.

			All	Home country Disparity	
			(1)	≤ 10% (2)	> 10% (3)
Continuing Investors	Pre-Crisis (Dec. 96 – Nov. 97)	Firm Disparity	0.037 (0.024)	0.039 (0.029)	0.049 (0.060)
		Other Controls	Yes	Yes	Yes
		No. of Investors	477	349	64
		Observations	674,020	492,406	93,407
	In-Crisis (Dec. 97 – Dec. 98)	Firm Disparity	-0.145** (0.030)	-0.175** (0.034)	0.059 (0.092)
		Other Controls	Yes	Yes	Yes
		No. of Investors	431	309	62
		Observations	630,849	452,248	90,540
	Post-Crisis (Jan. 99 – Dec. 99)	Firm Disparity	-0.065** (0.017)	-0.087** (0.022)	0.016 (0.036)
		Other Controls	Yes	Yes	Yes
		No. of Investors	430	313	57
		Observations	603,359	437,348	75,176

Table 9: Pooled Probit Regression with Extra Controls

The table reports *Probit* regressions, where the dependent variable $HD = 1$ if $HW_{ijt} > 0$ and 0 otherwise. The point estimates are the marginal effects on probability. Columns (1)-(6) use a sample that includes institutional investors holding at least two *chaebol* firms. Home disparity is from LLSV (2002) and physical distance is from Subramanian and Wei (2007). Financial distance is measured by the difference in log of (stock market capitalization / GDP) as of 1996 in absolute terms. Income distance is measured by the difference in log of per capita GDP as of 1996 (2000 dollars) in absolute terms. We also include number of holdings, number of investors, market beta and currency betas as additional controls. ** and * indicate statistical significance at 5 and 10 percent levels, respectively. Robust standard errors, clustered at the investor-level, are reported in parenthesis.

	Pre-Crisis	In-Crisis	Post-Crisis
	(1)	(2)	(3)
Firm Disparity	0.009 (0.016)	-0.002 (0.015)	-0.003 (0.008)
x Home Disparity	0.004 (0.015)	0.030** (0.011)	0.037** (0.009)
x Distance (physical)	<0.001 (0.002)	<0.001 (0.002)	<-0.001 (<0.001)
x Distance (financial)	0.003* (0.002)	<-0.001 (0.002)	-0.001 (0.001)
x Distance (income)	-0.013** (0.004)	-0.008** (0.003)	0.002 (0.002)
Home Disparity	-0.003 (0.003)	-0.004* (0.002)	-0.006** (0.002)
Distance (physical)	<0.001 (<0.001)	<-0.001 (<0.001)	<0.001 (<0.001)
Distance (financial)	-0.001** (<0.001)	<-0.001 (<0.001)	<0.001 (<0.001)
Distance (income)	0.002** (0.001)	0.001* (0.001)	-0.001* (0.001)
Firm Size	0.007** (<0.001)	0.005** (<0.001)	0.005** (<0.001)
Profitability	0.032** (0.003)	<-0.001 (0.001)	-0.001 (0.001)
Dividend Yield	-0.028** (0.006)	0.006** (0.003)	-0.014** (0.003)
Market-to-Book	-0.001** (<0.001)	-0.002** (<0.001)	-0.001** (<0.001)
R&D/Sales	-0.027 (0.020)	-0.020 (0.015)	-0.073** (0.012)
Advertisement/Sales	0.031** (0.008)	0.062** (0.008)	0.152** (0.013)
Sales Growth	0.001* (<0.001)	-0.001** (<0.001)	-0.002** (<0.001)
Export/Sales	0.001 (<0.001)	0.002** (<0.001)	<0.001* (<0.001)
Foreign Director	<-0.001 (<0.001)	<0.001 (<0.001)	-0.001** (<0.001)
Leverage	-0.004** (0.002)	-0.005** (0.001)	-0.002 (<0.001)
Years of Operation	0.001** (<0.001)	-0.002** (<0.001)	<-0.002** (<0.001)
Share Turnover	<-0.001** (<0.001)	<-0.001** (<0.001)	<-0.001** (<0.001)
Level 2 or 3			-0.002** (<0.001)
Level 1 or Rule 144A	0.004** (0.001)	<-0.001 (<0.001)	0.001** (<0.001)
Return Volatility	-0.036** (0.008)	-0.022** (0.003)	0.001 (0.002)
Direct Ownership	0.006** (0.003)	-0.007** (0.002)	-0.009** (0.002)
Direct Ownership Squared	0.006 (0.007)	0.004 (0.006)	0.021** (0.006)
Group Control	0.001 (0.001)	0.003** (0.001)	-0.003** (0.001)
Number of Holdings	0.009**	0.006**	0.007**

	(0.001)	(<0.001)	(0.001)
Number of Investors	<0.001	0.0001**	<0.001**
	(<0.001)	(<0.001)	(<0.001)
Beta (Market)	-0.002**	-0.003**	-0.001**
	(<0.001)	(<0.001)	(<0.001)
Beta (Currency)	<0.001	<0.001**	<-0.001**
	(<0.001)	(<0.001)	(<0.001)
Observations	1,362,544	1,373,034	1,729,338
Pseudo R-squared	0.340	0.442	0.461

Table 10: Alternative Measures of Source Country Governance
(*Probit* specification)

Legal origin is from LLSV (1997) and takes a value of 1 if from a common law country and 0 if from a civil law country. Anti-director right is from Djankov et al. (2008) and takes a value between 0 and 6. Anti-self dealing is also from Djankov et al. (2008) and takes a value between 0 and 1. Physical distance is from Subramanian and Wei (2007). Financial distance is measured by the difference in log of (stock market capitalization / GDP) as of 1996 in absolute terms. Income distance is measured by the difference in log of per capita GDP as of 1996 (2000 dollars) in absolute terms. The same set of control variables that appears in *Column* (1) of *Table 7* is used in each regression, but not reported. ** and * indicate statistical significance at 5 and 10 percent levels, respectively. Robust standard errors, clustered at the investor-level, are reported in parenthesis.

	In-Crisis			Post-Crisis		
	(1)	(2)	(3)	(4)	(5)	(6)
Firm Disparity	-0.134 (0.486)	0.424 (0.672)	0.306 (0.496)	0.032 (0.179)	0.180 (0.290)	0.256 (0.193)
x Legal Origin	-0.148** (0.049)			-0.074** (0.028)		
x Anti-Director Rights		-0.030 (0.033)			-0.006 (0.017)	
x Anti-Self Dealing			-0.239** (0.106)			-0.125* (0.064)
x Distance (physical)	0.050 (0.057)	-0.012 (0.063)	0.008 (0.055)	0.004 (0.020)	-0.018 (0.024)	-0.017 (0.019)
x Distance (financial)	0.063 (0.048)	0.031 (0.049)	0.072 (0.053)	0.020 (0.023)	-0.003 (0.022)	0.026 (0.026)
x Distance (income)	-0.446** (0.098)	-0.435** (0.148)	-0.497** (0.114)	-0.117** (0.048)	-0.081 (0.072)	-0.146** (0.061)
Legal Origin	0.037** (0.010)			0.024** (0.006)		
Anti-Director Rights		0.011* (0.006)			0.008** (0.004)	
Anti-Self Dealing			0.072** (0.020)			0.050** (0.014)
Distance (physical)	-0.014 (0.009)	0.005 (0.011)	-0.003 (0.009)	0.001 (0.004)	0.013** (0.005)	0.008** (0.004)
Distance (financial)	-0.007 (0.009)	-0.002 (0.009)	-0.013 (0.010)	-0.004 (0.005)	<-0.001 (0.005)	-0.009 (0.006)
Distance (income)	0.075** (0.018)	0.085** (0.026)	0.096** (0.021)	0.021** (0.010)	0.029* (0.015)	0.038** (0.014)
Firm Size	0.174** (0.007)	0.174** (0.007)	0.174** (0.007)	0.128** (0.004)	0.128** (0.004)	0.128** (0.004)
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,616,836	1,616,836	1,616,836	2,012,368	2,012,368	2,012,368

Table 11: Horse Race between Source Country Governance Measures
(Tobit specification)

In Panel A, investors are separated into four groups based on source country disparity (below or above 10%) and legal origin (common law vs. civil law). In Panel B, investors are split into four groups according to source country disparity (below or above 10%) and anti-self dealing index (above or below 0.5). The same set of control variables that appears in *Column (5)* of *Table 3* is used in each regression, but not reported. ** and * indicate statistical significance at 5 and 10 percent levels, respectively. Robust standard errors, clustered at the investor-level, are reported in parenthesis.

Panel A: Disparity vs. Legal Origin

		Disparity $\leq 10\%$		Disparity $> 10\%$	
		Common Law	Civil Law	Common Law	Civil Law
		(1)	(2)	(3)	(4)
In-Crisis (Dec. 97 – Dec. 98)	Disparity	-0.189** (0.026)	-0.219** (0.100)	-0.154 (0.171)	0.104 (0.067)
	Other Controls	yes	yes	yes	yes
	No. of Investors	951	64	68	104
	Observations	1,088,547	67,676	83,383	133,429
Post-Crisis (Jan. 99 – Dec. 99)	Disparity	-0.078** (0.015)	-0.078* (0.045)	-0.182** (0.090)	0.024 (0.028)
	Other Controls	yes	yes	yes	yes
	No. of Investors	1,178	110	76	119
	Observations	1,358,725	130,139	89,973	150,501

Panel B: Disparity vs. Anti-Self Dealing

		Disparity $\leq 10\%$		Disparity $> 10\%$	
		Anti-Self Dealing ≥ 0.5	Anti-Self Dealing < 0.5	Anti-Self Dealing ≥ 0.5	Anti-Self Dealing < 0.5
		(1)	(2)	(3)	(4)
In-Crisis (Dec. 97 – Dec. 98)	Disparity	-0.187** (0.026)	-0.351** (0.153)	-0.154 (0.171)	0.104 (0.067)
	Other Controls	yes	yes	yes	yes
	No. of Investors	999	16	68	104
	Observations	1,135,118	21,105	83,383	133,429
Post-Crisis (Jan. 99 – Dec. 99)	Disparity	-0.080** (0.015)	0.019 (0.094)	-0.182** (0.090)	0.024 (0.028)
	Other Controls	yes	yes	yes	yes
	No. of Investors	1,253	35	76	119
	Observations	1,451,893	36,971	89,973	150,501

Table 12: Home Country Disparity vs. Investor Sophistication
(*Probit* specification)

Home disparity is from LLSV (2002) and physical distance is from Subramanian and Wei (2007). Investment size is the aggregate value of equity holding in the Korea Stock Exchange (in logs) by a given investor in a given month. Investment history is the number of years a given investor was present in the Korea Stock Exchange in a given year. Financial distance is measured by the difference in log of (stock market capitalization / GDP) as of 1996 in absolute terms. Income distance is measured by the difference in log of per capita GDP as of 1996 (2000 dollars) in absolute terms. The same set of control variables that appears in *Column* (1) of *Table 7* is used in each regression, but not reported. ** and * indicate statistical significance at 5 and 10 percent levels, respectively. Robust standard errors, clustered at the investor-level, are reported in parenthesis.

	Pre-Crisis		In-Crisis		Post-Crisis	
	(1)	(2)	(3)	(4)	(5)	(6)
Firm Disparity	0.455 (0.386)	0.208 (0.367)	0.016 (0.655)	-0.077 (0.585)	0.028 (0.244)	-0.019 (0.201)
x Home Disparity	-0.002 (0.325)	0.020 (0.332)	1.032** (0.410)	1.053** (0.405)	0.861** (0.213)	0.850** (0.214)
x Investment Size	-0.017* (0.010)		-0.004 (0.016)		-0.003 (0.008)	
x Investment History		0.004 (0.009)		-0.005 (0.012)		0.002 (0.005)
x Distance (physical)	0.018 (0.040)	0.001 (0.041)	0.015 (0.064)	0.018 (0.067)	-0.007 (0.021)	-0.011 (0.022)
x Distance (financial)	0.053 (0.035)	0.047 (0.036)	-0.011 (0.061)	-0.010 (0.060)	-0.030 (0.023)	-0.031 (0.023)
x Distance (income)	-0.224** (0.077)	-0.220** (0.077)	-0.291** (0.115)	-0.291** (0.117)	0.023 (0.054)	0.020 (0.056)
Home Disparity	-0.088 (0.067)	-0.086 (0.068)	-0.229** (0.078)	-0.219** (0.079)	-0.196** (0.047)	-0.190** (0.048)
Investment Size	-0.001 (0.002)		-0.003 (0.003)		-0.004** (0.002)	
Investment History		-0.001 (0.002)		-0.001 (0.003)		-0.002 (0.001)
Distance (physical)	0.002 (0.007)	0.003 (0.007)	0.002 (0.010)	0.001 (0.011)	0.011** (0.004)	0.010** (0.005)
Distance (financial)	-0.015* (0.008)	-0.015* (0.008)	0.004 (0.012)	0.003 (0.012)	0.007 (0.005)	0.007 (0.005)
Distance (income)	0.019 (0.016)	0.019 (0.016)	0.042** (0.021)	0.042* (0.022)	-0.007 (0.012)	-0.008 (0.012)
Firm Size	0.149** (0.008)	0.149** (0.008)	0.177** (0.008)	0.177** (0.008)	0.132** (0.004)	0.132** (0.004)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,362,544	1,362,544	1,373,035	1,373,035	1,729,338	1,729,338

Table 13: 2SLS - Initial Disparity as IV

Separate two-stage least square (2SLS) regressions are run for investors from low- and high-disparity countries. The initial value of disparity (as of December 1996) is used as the instrument for control-ownership disparity. The first stage regressions, with an OLS specification, are reported in Panel A, while the second stage regressions, with a Tobit specification, are reported in Panel B. Given that our instrument is a firm-level variable, we use firm-months as an observation unit in Panel A, while we use firm-investor-months as an observation unit in Panel B. All control variables in Column (5) of Table 3 are included in both stages, but not reported. Durbin-Wu-Hausman (DWH) test is conducted using OLS. ** and * indicate statistical significance at 5 and 10 percent levels, respectively. Robust standard errors, clustered at the investor-level, are reported in parentheses.

Panel A: 1st Stage Regressions

Dependent Variable		Disparity
Pre-Crisis (Dec. 96 – Nov. 97)	Initial Disparity (IV)	1.000** (<0.001)
	Other Controls	Yes
	No. of Observations	1,539
	Adjusted R-Squared	0.99
In-Crisis (Dec. 97 – Dec. 98)	Initial Disparity (IV)	0.820** (0.017)
	Other Controls	Yes
	No. of Observations	1,644
	Adjusted R-Squared	0.86
Post-Crisis (Jan. 99 – Dec. 99)	Initial Disparity (IV)	0.774** (0.020)
	Other Controls	yes
	No. of Observations	1,455
	Adjusted R-Squared	0.76

Panel B: 2nd Stage Regressions

Dependent Variable		Holding Weight	
		Home Country Disparity ≤10% (1)	Home Country Disparity > 10% (2)
Pre-Crisis (Dec. 96 – Nov. 97)	Disparity (instrumented)	0.063** (0.025)	0.109** (0.054)
	Other Controls	Yes	Yes
	No. of Observations [No. of Investors]	1,165,599 [1,044]	182,364 [158]
	DWH Test (<i>p</i> -value)	0.000	0.972
In-Crisis (Dec. 97 – Dec. 98)	Disparity (instrumented)	-0.047 (0.029)	0.255** (0.083)
	Other Controls	Yes	Yes
	No. of Observations [No. of Investors]	1,099,753 [1,015]	206,219 [172]
	DWH Test (<i>p</i> -value)	0.000	0.000
Post-Crisis (Jan. 99 – Dec. 99)	Disparity (instrumented)	-0.079** (0.019)	-0.008 (0.047)
	Other Controls	Yes	Yes
	No. of Observations [No. of Investors]	1,392,844 [1,288]	224,963 [195]
	DWH Test (<i>p</i> -value)	0.000	0.000

Table 14: 2SLS – Sum of Direct Ownerships as IV

Separate two-stage least square (2SLS) regressions are run for investors from low- and high-disparity countries. The sum of direct ownerships held by the controlling shareholder, [$\ln(\text{sum of (book equity} \times \text{direct ownership)})$ across all member firms], is used as an instrument for control-ownership disparity. The first stage regressions, with an OLS specification, are reported in Panel A, while the second stage regressions, with a Tobit specification, are reported in Panel B. Given that our instrument is a firm-level variable, we use firm-months as an observation unit in Panel A, while we use firm-investor-months as an observation unit in Panel B. All control variables in Column (5) of Table 3 are included in both stages, but not reported. Durbin-Wu-Hausman (DWH) test is conducted using OLS. ** and * indicate statistical significance at 5 and 10 percent levels, respectively. Robust standard errors, clustered at the investor-level, are reported in parentheses.

Panel A: 1st Stage Regressions

Dependent Variable		Disparity
Pre-Crisis (Dec. 96 – Nov. 97)	Sum of Direct Ownerships (IV)	0.013** (0.003)
	Other Controls	Yes
	No. of Observations	1,555
	Adjusted R-Squared	0.452
In-Crisis (Dec. 97 – Dec. 98)	Sum of Direct Ownerships (IV)	0.028** (0.003)
	Other Controls	Yes
	No. of Observations	1,728
	Adjusted R-Squared	0.414
Post-Crisis (Jan. 99 – Dec. 99)	Sum of Direct Ownerships (IV)	0.029** (0.003)
	Other Controls	Yes
	No. of Observations	1,555
	Adjusted R-Squared	0.4658

Panel B: 2nd Stage Regressions

Dependent Variable		Holding Weight	
		Home Country Disparity ≤ 10% (1)	Home Country Disparity > 10% (2)
Pre-Crisis (Dec. 96 – Nov. 97)	Disparity (instrumented)	-0.044 (0.148)	0.682** (0.315)
	Other Controls	Yes	Yes
	No. of Observations [No. of Investors]	1,178,201 [1,044]	184,343 [158]
	DWH Test (<i>p</i> -value)	0.303	0.360
In-Crisis (Dec. 97 – Dec. 98)	Disparity (instrumented)	-0.915** (0.089)	-0.263 (0.218)
	Other Controls	Yes	Yes
	No. of Observations [No. of Investors]	1,156,223 [1015]	216,812 [172]
	DWH Test (<i>p</i> -value)	0.000	0.001
Post-Crisis (Jan. 99 – Dec. 99)	Disparity (instrumented)	-0.563** (0.056)	-0.219* (0.132)
	Other Controls	Yes	Yes
	No. of Observations [No. of Investors]	1,488,864 [1288]	240,474 [195]
	DWH Test (<i>p</i> -value)	0.000	0.000

Table 15: 2SLS – Sample with No Change in Disparity
(Tobit specification)

The table replicates the *Tobit* regressions in *Table 5* using a subset of samples where firm disparity does not change over the respective sub-periods. Investors are separated into two groups based on whether the level of home-country disparity is below or above the median computed across all home countries in the sample (10%). The same set of control variables that appears in *Column (5)* of *Table 3* is used in each regression, but not reported. ** and * indicate statistical significance at 5 and 10 percent levels, respectively. Robust standard errors, clustered at the investor-level, are reported in parenthesis.

		Home Country Disparity	
		≤ 10%	> 10%
		(1)	(2)
Pre-Crisis (Dec. 96 – Nov. 97)	Firm Disparity	0.062** (0.025)	0.105* (0.054)
	Other Controls	yes	yes
	No. of Investors	1,044	158
	Observations	1,169,123	1,82,923
In-Crisis (Dec. 97 – Dec. 98)	Firm Disparity	-0.212** (0.034)	-0.021 (0.065)
	Other Controls	yes	yes
	No. of Investors	1,015	172
	Observations	388,934	72,865
Post-Crisis (Jan. 99 – Dec. 99)	Firm Disparity	-0.179** (0.029)	-0.083 (0.054)
	Other Controls	yes	yes
	No. of Investors	1,288	195
	Observations	592,430	95,737

Appendix 1: Source Country Disparity and Legal Origin

The table lists source countries where we have information on their source country disparity level. For each of these countries, we report their respective legal origin, anti-self dealing index, and number of investors in the Decembers of 1996, 1997, 1998, and 1999. When reporting the number of investors, we restrict the sample to those reported in *Table 1* Panel A.

Source Country	Source Country Disparity	Legal Origin	Anti-Self Dealing Index	Number of Investors			
				Dec. 1996	Dec. 1997	Dec. 1998	Dec. 1999
Australia	0.05	English	0.76	37	32	34	41
Canada	0.17	English	0.64	53	36	55	66
Hong Kong	0.10	English	0.96	18	12	23	32
Ireland	0.01	English	0.79	84	51	71	83
New Zealand	0.08	English	0.95	7	4	4	6
Netherlands	0.07	English	1.00	13	7	37	60
U.K.	0.10	English	0.95	242	127	210	263
U.S.	0.01	English	0.65	387	265	344	514
Belgium	0.10	French	0.54	9	8	7	6
France	0.13	French	0.38	19	16	25	38
Italy	0.16	French	0.42	5	4	9	14
Philippines	0.37	French	0.22	1	1	1	1
Austria	0.10	German	0.21	2	2	4	5
Germany	0.07	German	0.28	4	3	6	19
Japan	0.01	German	0.50	8	10	26	62
Switzerland	0.12	German	0.27	39	37	43	43
Denmark	0.10	Scandinavian	0.46	4	4	4	6
Finland	0.08	Scandinavian	0.38	-	-	-	2
Norway	0.07	Scandinavian	0.42	1	-	-	2
Sweden	0.19	Scandinavian	0.33	4	3	10	14
				937	622	913	1,277