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Home-country Ownership Structure of Foreign Institutional Investors and Control-Ownership Disparity in Emerging Markets

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Abstract

Disparity between control and ownership rights is common in emerging markets. This paper studies three related questions regarding its effect on the positions of international institutional investors. First, are international investors averse to holding those stocks with a large disparity? Second, does the attitude toward the disparity depend on the quality of corporate governance of the investors' home country? Third, was the Asian financial crisis a wake-up call that induced international investors to attach more weight to corporate governance problems in emerging markets? By employing two unique datasets on foreign investment and corporate governance in Korea, the paper finds that the answers are affirmative to all three questions but with interesting nuances.

Key words: corporate governance, foreign portfolio investment, Asian financial crisis

JEL classification: F21, F3, G11, G15, G32, G34

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1. INTRODUCTION

Family-controlled firms are common outside the United States, especially in emerging markets. A major hazard for international portfolio investment is the possibility of losing money to expropriation by firms' controlling shareholders or management. Such risk is particularly acute when the person who controls the firm owns a relatively small share of the firm. The incentive for the controlling shareholder to tunnel out firm assets for private benefits is especially strong in this case as recognized more than three decades ago by Jensen and Meckling (1976). Divergence in ownership and control rights can be achieved through a pyramid shareholding structure, cross-shareholding or dual class shares (Bebchuk, Kraakman, and Triants, 2000). For example, Dacom is a telecommunication firm traded on the Korean stock exchange (KRX). In 1999, the controlling family (the Koo family) owns about 2% of the firm but controls about 55% of the voting rights. Daihan City Gas is another listed company in Korea. The controlling family (the Chey family) owns 4% of the shares but controls 59% of the voting rights. This type of control-ownership disparity is no less prevalent in Thailand, Indonesia, and Philippines than in Korea. In fact, most emerging markets and some developed countries have firms that are characterized by a divergence between ownership and control rights (La Porta, Lopez-de-Silanes and Shleifer, 1999; Claessens, Djankov and Lang, 2000; and Faccio and Lang, 2002).

A growing literature has looked into some aspects of corporate governance and foreign portfolio investment. For example, Kang and Stulz (1997) looked at foreign portfolio investors in Japan with special attention to attributes of the Japanese firms (e.g., size, leverage, accounting performance, export orientation, and ADR issuance) that appear to attract foreign investors. Dahlquist and Robertsson (2001) examined similar questions using Swedish data. Edison and Warnock (2004) and Aggarwal, Klapper and Wysocki (2005) studied US investors' portfolio holdings abroad with attention to firm attributes such as size, restrictions on foreign ownership, cross-listing on a US exchange. Gelos and Wei (2005) investigated international mutual fund's degree of aversion to lack of transparency at both corporate and government levels. Kho, Stulz, and Warnock (2006) studied the effect of ownership by corporate insiders in foreign countries on US investors' holdings of these countries' stocks.

In a related body of literature, Johnson et al (2000) argued that the risk of expropriation is

higher during recessions. Mitton (2002), Lemmon and Lins (2003), and Baek, Kang, and Park (2004) offered evidence that Asian firms with high control-ownership disparity experienced a sharper drop in share prices during the Asian crisis. Other papers have also studied the effect of control-ownership disparity on firm performance or valuation and generally found a negative effect (La Porta, Lopez-de-Silanes and Shleifer, 2002; Claessens, Djankov, Fan, and Lang, 2002; Joh, 2003; and Lins 2003). While valuable insights have been gained from the literature, none of the paper except one was able to examine directly the effect of local firm's control-ownership disparity on the stock holdings of foreign investors. The important exception is Giannetti and Simonov (2006) who calculated the control-ownership disparity for firms listed on the Swedish stock exchange and examine its impact on the positions of foreign investors.¹

In this paper, we aim to investigate three related questions by making use of some unique data sets on Korea. First, are international investors averse to ownership-control disparity in emerging markets on average? Second, and more importantly, does the aversion to disparity in emerging markets depend on the quality of corporate governance (especially the control-ownership disparity) in the home countries of the investors?² Third, has there been a change in the investors' attitude toward control-ownership disparity after the Asian financial crisis (a "wake-up call" effect)? By focusing on the high economic growth rates, investors before the crisis perhaps were not attentive to the corporate governance risk. However, the crisis might suddenly make them aware of the risk of weak corporate governance by the Asian financial crisis as phrases like "crony capitalism" started to become part of the standard vocabulary³?

The last two topics have not been examined in the literature, and hence are our main contributions. While the first topic was examined by Giannetti and Simonov (2006), our Korean data add useful insight to their study based on Swedish data. First, we have information on ownership structure and cross-shareholding for *non-listed* as well as listed firms within a given business group. Some of the control of the listed firms is exercised through non-listed firms, and

¹ Another related paper is Kang and Kim (2006), which examines how differences in the protection of minority shareholders in the home countries of foreign investors in the United States affect their "governance activities" after they acquire significant shares in US companies.

² Giannetti and Koskinen (2007) provide a theoretical model that points to this possibility. First, portfolio investors from countries with a weak investor protection prefer to hold more foreign equity. As a result, these investors may be more tolerant of high-disparity foreign stocks than investors from countries with good corporate governance.

³ According to an electronic news database (FACTIVA), there were few news stories in English-language newspapers and magazines that contained the phrase "crony capitalism" prior to mid-1997. But there was an explosion of news stories using this phrase since the onset of the Asian financial crisis.

we will check if the errors in measuring the disparity are large without using the information on non-listed firms. As the existing literature including Giannetti and Simonov does not have (or does not take into account) information on non-listed firms, our calculation of control-ownership disparity is more accurate than it has been possible in the literature. Second, while Sweden is generally regarded as a country with a good quality of corporate governance and government regulation of firms, Korea is a more typical emerging market. For example, among one hundred countries covered in the Global Competitiveness Report (2002), the quality of corporate governance is substantially above the median for Sweden but below the median for Korea. Thus, Korean data offers us a chance to check if international investors' behavior is particularly sensitive to control-ownership disparity in an emerging market with a high risk of tunneling.⁴

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. First, only investors from countries whose own stock markets are characterized by a low control-ownership disparity tend to avoid high disparity Korean stocks. Second, even for them, the sensitivity to the disparity only shows up after the onset of the financial crisis in Korea toward the end of 1997. To put it concretely, American investors – as an example of investors coming from an environment with low control-ownership disparity – prefer to hold fewer shares in Korean companies with a larger disparity. An increase in the disparity in a Korean firm from zero to 15.4% (which is equal to one standard deviation of the disparity in the sample) tends to reduce their stock holding by 0.4 percentage points, holding other things constant. This is a quantitatively large effect since the average stock holding of a foreign investor, across all stocks, is only 0.4% in the sample. However, this preference for low-disparity stocks is a relatively recent phenomenon. The Asian financial crisis may have served as a wake-up call that draws these investors' attention to potential corporate governance risks. In comparison, Italian investors – as an example of investors whose home stock exchange is populated with companies with a large control-ownership disparity – do not display an aversion to Korea firms with a large disparity except at the end of the sample. As far as we know, these patterns about foreign investors in an emerging

⁴ Giannetti and Simonov (2006) also examined whether individual investors with a good connection with company insiders tend to overweigh companies with weak corporate governance. This is an interesting finding. We do not have the relevant information to make a judgment on the degree of connection of a given individual investor with corporate insiders, and therefore exclude individual investors from our sample.

market are documented in this paper for the first time in the literature⁵.

These results are robust to the use of a variety of statistical specifications, including a panel fixed effects regression, a *Tobit* that recognizes that stockholdings are non-negative, and a *probit* regression that codes investment in a stock as a zero-one dummy. In recognition of the possibility that control-ownership disparity may be endogenous, an instrumental variable approach – using initial disparity values as an instrument – suggests that a high disparity in Korean firms causally reduces investment by investors from low-disparity countries.

The rest of the paper is organized as follows. Section 2 discusses the measurement of control-ownership disparity, and explains the data sets used in the paper, highlighting some of their unique features that make our exercise feasible. Section 3 presents the main statistical analysis. Finally, Section 4 concludes.

2. DATA, METHODOLOGY, AND MEASUREMENT

A. Data

To address the research questions posed in the paper, two sets of data are crucial: (1) Holding of Korean stocks, company by company, by each foreign institutional investor, including information on its home country, and (2) Information on the ownership structure of individual Korea *Chaebol* companies and its relationship to the affiliates, including those that are not listed on the stock exchange.

The information on foreign investor holdings come from a proprietary data set which 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. All foreign investors were required to register in their real names with the Korean Securities Supervisory Board (KSSB). The data were made available to us only for this period and on a strict confidentiality agreement⁶. At the end of 1999, there were 9954 registered foreign investors from

5 If foreign investors dislike high-disparity Korean stocks, why don't their prices adjust? Giannetti and Koskinnen (2007) provide a model that suggests an answer: the controlling family is willing to pay a premium for the tunneling possibility embedded in these stocks, which offsets the downward price pressure from other investors who dislike large disparity.

⁶ See Kim and Wei (2002a) for additional explanation on this data set.

67 countries, collectively owning 20 percent of all shares listed in the Korea Stock Exchange.⁷ This data set allows us to un-bundle foreign investors by home country and to identify which foreign investors care about control-ownership disparity.

The second key data set contains detailed ownership information for member firms of *Chaebol* groups originally compiled by the Korean Fair Trade Commission (KFTC) to monitor and enforce regulatory compliance of *Chaebol* firms. More specifically, the data set provides the number of shares held by the controlling shareholder and his *related parties*, either directly or indirectly through control of other firms, for each of the *Chaebol*-affiliated firms annually over a ten-year period (1996-2005). *Related parties* include not only relatives, but also senior managers, not-for-profit organizations, and for-profit firms, who are under the control of the dominant shareholder. The judgment on who constitutes a related party is made by the KFTC after its investigation rather than by us. Importantly, ownership information of non-listed firms in the same business group is included in the data set, permitting much more accurate calculation of the control-ownership disparity than it has been possible in the literature. Based on this source, Kim and Sung (2005) and Kim, Lim, and Sung (2007) provided the first calculation in the literature of the control-ownership disparity for these firms. Because we lack ownership information on non-*Chaebol* firms, this paper focuses on foreign investors' holdings of stocks in *Chaebol* firms. As we will show, there is a sizable variation in the extent of the control-ownership disparity, ranging from zero to 76%, with a mean of 16.7% and a median of 13.6%. This variation helps us to identify foreign investors' sensitivity toward disparity.

Varying degrees of disparity alone, however, would not be sufficient. If most of the firms practice high standards of corporate governance, different levels of control-ownership disparity would not strongly predict the risk of expropriation, and thus would not be helpful to uncover the negative relationship between disparity and equity holdings of foreign investors. Korea, however, does not rank high in terms of corporate governance in any of the existing studies (LLSV (1997, 1998), Nenova (2003), Dyck and Zingales (2004), and Djankov et al. (2005)). This must be particularly true during our sample period that ends before any major corporate governance reform took place.⁸

⁷ This number excludes foreign direct investors. By end of 2004 (outside our sample), collective foreign ownership reached 40 percent of the shares.

⁸ A major corporate governance reform is a mandatory requirement to have at least 50% independent outside

B. Empirical Challenges and Methodology

Our empirical strategy is to link foreign institutional investors' holdings of a Korean stock with the company's control-ownership disparity, other characteristics of the firm, and other control variables. In carrying out the estimation, we take steps to confront a number of empirical challenges. First, the total size of data points (the product of 190 *Chaebol* firms, 1,700 foreign portfolio investors, and 37 months) is about 12 million, which overwhelms computer memory for certain specifications. Thus, we break up the data into sub-samples and run separate regressions. While losing some efficiency, this approach may be considered more flexible than pooling all observations together since we don't have to impose the restriction that the coefficients on all control variables are the same for different subsamples.

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 that investors wish to have a short position shows up as a zero holding, which means that our dependent variable is left censored at the zero percent. As *OLS* technique may generate a downward bias (in absolute terms), we use *Tobit* as our main regression specification.⁹

Third, many investors do not hold shares in all *Chaebol* firms. In fact, many own only a limited number of stocks, which makes our dependent variable to take a large number of zero values. In addition, for a significant number of investors, who hold only one stock, the portfolio weights are either "1" (for the one stock she holds) or "0" (for all remaining stocks). As a robustness check, we also investigate the binary decision of holding or not holding a particular stock, using a *Probit* specification (as opposed to *Tobit* or *OLS*).

Fourth, we look into the possibility that our key regressor – disparity between control and ownership of Korean firms – is endogenous. For example, if large foreign ownership of a firm leads to that firm's reform in a way that reduces the disparity, then there might be a negative

directors and an audit committee for listed companies with book asset value above 2 trillion won (approximately 2 billion US dollars). The requirement was announced in the second half of 1999, and adopted by the National Assembly in December 1999, but did not take effect fully until the spring of 2001. See Black, Jang, and Kim (2006) for details.

⁹ In principle, our dependent variable is also right censored at the 100% percent since no one can hold more than 100% of a company's stocks. In practice, only small investors that hold only a single stock would have 100% weight on a 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.

association between the two but the direction of causality is the opposite from the key hypothesis that we are testing. We consider this reverse causality story as unlikely since controlling shareholders acquire or dispose shares only slowly, and in much of the sample, foreigners are not able to acquire controlling shares due to foreign ownership restrictions. Nonetheless, we provide an instrumental variable approach to address the reverse causality possibility formally and conclude that endogeneity is not a major issue for our inference.

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 to no ceiling by May 1998. If the ceiling was often more binding for high-disparity stocks than for low-disparity ones, it may mechanically generate a negative association between foreign holding and firm-level disparity. As a robustness check, we drop all stocks in periods for which the ceiling was binding. This produces almost identical results.

C. Control-ownership Disparity

The key variable of interest is **control-ownership disparity**, defined as the difference between the total voting right of a group-controlling shareholder in a firm and his combined ownership (or cash flow rights) in that firm.¹⁰ The total voting right is the sum of the voting rights controlled by him and his *related parties*, which include 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 himself and his relatives including indirect ownership along the voting right chain. For example, consider a business group that is controlled by Mr. K and consists 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

¹⁰ 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 et al. (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].

total voting right is 50% (=10%+40%). But his combined ownership is only 30% (=10%+50% \times 40%). Therefore, the control-ownership disparity for firm B is 20% (=50%-30%). This disparity is also called a “wedge” by La Porta et al (2002).

D. Foreign Institutional Investors’ Holdings

The dependent variable in most of our regressions is foreign institutional investors’ holding of Korean stocks. 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 investor i ’s total holdings in that month. When estimating a *Probit* model, we define a **holding dummy** (HD_{ijt}) that takes the value of one if investor i holding of firm j is positive in that month t , and zero otherwise.

E. Control Variables

On the right-hand side of the equation, we try to include as many firm-level control variables as possible that have been suggested by the literature as determinants of foreign investors’ equity holding. First, we include log of **firm size** adjusted for free-float. Size not only captures the supply of shares, but also familiarity, liquidity, analysts’ coverage and other factors. The float adjustment is consistent with Dahlquist et al. (2003), which shows that the U.S. investors portfolio holding of foreign stocks is better explained by the world market portfolio with a float adjustment than without it. The existing literature documents that foreign investors hold disproportionately more shares of large firms (Kang and Stulz (1997), Dahlquist and Robertsson (2001), and Giannetti and Simonov (2006)). Since a significant fraction of *Chaebol* firm shares do not trade on the market, we compute a firm’s **free-float** by subtracting the fraction of market capitalization that is controlled by the group-controlling shareholder before. Note that we measure firm size in market value. This in effect accounts for any change in the holding weight that is caused by a change in share prices.

Second, we include a firm’s **years of operation** (in logarithm). Young firms may have more growth opportunities (though also more risks). Third, to capture market liquidity of a stock, we include **share turnover**, measured by the number of shares traded during a year scaled by the number of (freely floating) shares outstanding. Forth, we include accounting **profitability**,

measured by EBIT/book value of assets (at previous fiscal year end), winsorized at the 1st and the 99th percentile values and averaged over previous three years. Kang and Stulz (1997) find that foreign investors in Japan hold more shares of firms with good accounting performance.

Fifth, we include **dividend yield**, measured by dividend per share scaled by year-end share price. Dahlquist and Robertsson (2001) and Giannetti and Simonov (2006) report that foreign investors in Sweden prefer firms that pay low dividends. Sixth, we include **market-to-book ratio** to account for investors' preference toward growth or value firms. The existing evidence is diverse: While Giannetti and Simonov (2006) report that foreign investors in their sample prefer value stocks on average, Kang and Stulz (1997) and Dahlquist and Robertsson (2001) document that the investors in their samples prefer growth stocks instead.

Seventh, we include a number of variables that may capture growth opportunities: **R&D/sales**, **advertising/sales**, and **sales growth** (measured over previous three years). Sales growth, however, may also capture the degree of over-investment. Eighth, we include two risk measures: return volatility and log of leverage. **Return volatility** is measured by the standard deviation of weekly returns (adjusted for stock-splits and dividends) over the previous 4 years. Kang and Stulz (1997) and Dahlquist and Robertsson (2001), using beta as measure of risk, do not find evidence that foreign investors shun away from volatile stocks. Giannetti and Simonov (2006), on the other hand, find evidence that foreign investors prefer stocks with high volatility. **Leverage** is measured by book value of debt over book value of assets and winsorized at the 1st and the 99th percentile values. Kang and Stulz (1997) and Giannetti and Simonov (2006), find evidence that foreign investors stay away from firms with high leverage, but Dahlquist and Robertsson (2001) do not. Last, as a proxy for how much an investor values portfolio diversification, we include **number of holdings** of Korean stocks by an investor as a control.

In some specifications, we include direct ownership in a firm by the controlling shareholder and a firm's contribution to group control as control variables. With high direct ownership by the controlling shareholder, he may have more incentive to maximize firm value and less incentive to tunnel out firm assets. Following Morck, Shleifer, and Vishny (1988), we consider the possibility that, beyond a certain level, a higher direct ownership would only entrench the incumbents and would thus decrease the incentive to maximize firm value. To capture this nonlinearity, we also add a squared term of direct ownership. Direct ownership in firm j is

defined as the sum of the shares owned by the group-controlling shareholder and his relatives. Notice that the direct ownership is always equal to or smaller than the total cash flow right, which includes both *direct* and *indirect* cash flow rights. In our earlier numerical example, the group-controlling shareholder's direct ownership in firm *B* is 10 percent, while his total cash flow right is 30 percent.

Following Kim, Lim, and Sung (2007), we define a particular firm's *contribution to group control* as the amount of additional control right a group-controlling shareholder can gain in other firms by controlling this firm, as a fraction of this firm's book equity value. It is a measure that quantifies how important a firm is in the group in terms of its control over others. According to Kim, Lim, and Sung (2007), those firms with high contribution to group control are the group's *de facto* holding companies. If a firm's high marginal contribution to group control makes it less likely to be expropriated by the controlling shareholder, foreign investors may like such a company. On the other hand, if the company is perceived to be actively used by the controlling shareholder for purposes other than profit maximization, foreign investors may prefer to stay away from it, other things equal. This measure is winsorized at the 1st and the 99th percentile values.

F. Basic Statistics

Table 1 reports the number of foreign institutional investors and the average number of stocks they hold at four different points in time: 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), there were 1,182 foreign institutional investors who held at least two *Chaebol* firms. Out of this total, 593 of them (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, according to La Porta, et al, 2002), and 405 (34%) came from countries with a relatively high disparity. 184

(16%) came from countries for which we do not have information to determine their home countries' degree of control-ownership disparity.

The total number of foreign institutional investors (by the same definition as 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 (December 1999), the number of foreign institutional investors increased to 1,726, or 46% more than in 1996. Out of the total, 980 (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 for which we cannot ascertain their home countries' control-ownership disparity.

The definitions of the key variables are summarized in *Table 2A*. The summary statistics of these 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 investors hold only a small number of stocks. For the 682 firm-months in our 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 examine first 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 the possible bias this may generate in our inference.

A. Are International Investors Averse to Control-Ownership Disparity on Average?

To answer this question, we implement a sequence of *Tobit* regressions on a sample that includes Decembers of 1996, 1997, 1998, and 1999. The dependent variable is the market value

of investor i 's holding 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 -0.145 and significant at the one percent level, indicating that foreign investors tend to dislike high-disparity Korean stocks holding constant firm size. The positive coefficient on firm size indicates (unsurprisingly) that foreign investors hold more of large stocks.

In *Columns 1-6* of *Table 3*, we exclude investors that hold only a single firm in the portfolio. In *Column 7*, we reintegrate investors who hold only one 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 at both ends). All regressions include year dummies to control for market-wide shocks common to all investors and firms. From *Column 1* to 6, 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. For example, the coefficient in *Column 6* (-0.0264 for the disparity variable) indicates that a one-standard-deviation increase in the disparity (15.4%) is associated with a lower investor weight by 0.4 percentage point ($= -0.0264 \times 0.154$). This is economically significant since the average weight on a stock across all investors is only 0.4 percent. If one uses the point estimate for disparity in *Column 7* (-0.132) that comes from a two-limit *Tobit* model and a sample that includes investors holding a single stock, the effect is much larger: A one-standard-deviation increase in the disparity (15.4%) is now associated with a reduction in the investor weight by 2 percentage points ($= -0.132 \times 0.154$).

Most of the control variables in *Table 3* are statistically significant and have sensible signs. In particular, the holding weight increases with (float-adjusted) firm size. A 10% increase in firm size tends to be associated with an increase in the holding weight by 1.4 percentage points. As *Column 2* shows, the holding weight also tends to rise as a firm's accounting profit increases. A 10% increase in profit is associated with an increase in the holding weight by 2.1 percentage point.

Dividend yield, ratio of market to book values, research and development (R&D) expenditure as a share of sales, advertising expenditure as a share of sales, growth rate of sales are added as controls in *Column 3*. The holding weight is found to increase with dividend yield,

R&D and advertising expenditures, but decreases with market-to-book ratio and, somewhat surprisingly, with sales growth.

Several variables that are meant 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 listing, or levels-2 or 3 ADR listing in an overseas stock exchange. In *Column* 5, the presence of a foreign director and a level-1 ADR listing are associated with an increase in the holding weight. The export orientation is not statistically significant, but level 2 or 3 ADR listing has a negative coefficient. As a check for the robustness of the main relationship between a firm's control-ownership disparity and a foreign investor's holding weight, in the same regression, a firm's leverage, years of operation, liquidity, return volatility, the controlling shareholder's direct ownership, are included as additional control variables. Not all the coefficients have an intuitive sign, partly because some of these 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. So the individual point estimates on these control variables are not always reliable. However, from the point of view of investigating the key question in the paper, the effect of a firm's disparity on foreign portfolio investment, these coefficients are nuisance parameters. As noted before, the coefficients on control-ownership disparity are consistently negative and statistically significant across the five specifications.

In *Column* 7, we expand the sample to include foreign investors who hold only one *Chaebol* company and employ a two-limit *Tobit* specification that takes into account of the restrictions that the holding weights have to 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. The point estimate is substantially bigger. With nearly a million observations and a long list of control variables, the two-limit *Tobit* specification takes substantially longer to complete and may run into convergence issue. We choose to make the standard one-limit *Tobit* as our benchmark specification (and to exclude foreign investors who hold stocks in only a single company in the sample).

As a simple way to see if the results reported so far are robust to the possible presence of a

few 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). The *Probit* specification allows us to easily cluster all standard errors at the investor level. *Table 4* reports the results of the *Probit* regressions (the marginal effects of the regressors on probability of a positive holding weight). As *Column 1* shows, the probability of a positive holding weight decreases with control-ownership disparity but increases with firm size. Given the point estimate (-0.016) on the disparity, a one-standard-deviation increase (15.4%) is associated with a reduction in the probability of holding the stock by 0.25% ($=-0.016 \times 0.154$). This is not a trivial magnitude since the unconditional probability of having a positive holding of a stock is only 4%. Similar to *Table 3*, a list of control variables are added sequentially, and many of them have intuitive signs and are statistically significant. Most important for the current paper, the coefficients on control-ownership disparity are consistently negative and statistically significant. This means that investors' aversion to high control-ownership disparity is a robust feature of the data.

We have also implemented a linear panel fixed effects regression. This specification allows us to easily handle time and investor fixed effects – there are close to 2000 of them - and *Chaebol* group fixed effects, in addition to the long list of control variables in *Table 3*. The disadvantage is that it does not take into account the restriction that the holding weights are non-negative. In any case, in the panel regression, the coefficient on control-ownership disparity is still negative and statistically significant at the five percent level. These results are not reported to save space.¹¹

This finding is consistent with Giannetti and Simonov (2006) and the report commissioned by the European Union (2007) that surveyed 386 institutional investors with a total of more than €4.9 trillion in assets under management. According to this survey, control-ownership disparity and other control-enhancing mechanisms are viewed negatively by investors.

As described in the data section, our data on cross-firm shareholding structure includes non-listed firms that are members of the same business group. We have described instances in which

¹¹ We have also experimented with a multinomial conditional *Logit* regression. Similar to a *Probit*, this specification recognizes the non-negativity constraint on the holding weight. In addition, it permits the inclusion of investor fixed effects and clustering of the errors. Unfortunately, the estimation fails to converge, possibly due to the large sample size.

the control-ownership disparity computed with and without using ownership information related to non-listed firms could make a big difference. Since no paper in the literature has had access to information on non-listed firms so far, it is useful for us to check if its omission generates an economically significant bias in the estimates. To do this, we compute a knowingly inaccurate measure of control-ownership disparity based only on listed firms within a business group. Not surprisingly, the inaccurate measure of disparity is downward biased. Its average value across all firms in the sample is 13.8%, about 20% lower than the true mean of 16.9% when non-listed firms within a business group is accounted for. However, when we replicate the specifications in *Table 3* with the knowingly inaccurate measure of disparity, foreign investors' responsiveness to disparity does not appear to be significantly different from the corresponding numbers in *Table 3* (the results are not reported to save space). Even though no significant statistical bias is discovered between the two measures, this is still a useful exercise. If one could extrapolate the inferences from Korea to other cases that have been studied in the literature, one may conclude that the inferences in the earlier papers based on an incomplete/inaccurate measure of control-ownership disparity are likely to be broadly correct.

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

We now disaggregate our sample along two dimensions. First, we put foreign investors into two groups: those whose native countries are characterized by a relatively high control-ownership disparity (defined as the disparity exceeding the median value (0.10) across all source countries of the investors), and those whose native countries have a relatively low disparity. Second, we examine three subperiods: before the crisis (December 1996-November 1997), during the crisis (December 1997-December 1998), and after the crisis (January-December 1999).

The results (by both *Tobit* and *Probit* regressions, 12 regressions in total) are reported in *Table 5*. Control variables identical to those in *Column 6* of *Table 3* are included but not reported to avoid crowding the table. A number of interesting patterns emerge.

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 the disparity. Indeed, the *Tobit* regressions might suggest that foreign investors actually preferred high-disparity firms (*Columns 1-2* of *Table 5*, top panel for the pre-crisis period). However,

things changed after the onset of the crisis. Investors from low-disparity firms started to display an aversion toward high control-ownership disparity (middle and lower panels of *Table 5*).

It may seem somewhat puzzling that investors would prefer high-disparity firms before the crisis. One 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 for these investors to realize that the value of these connections is limited for minority shareholders and is unlikely to offset the risks associated corporate governance problems.

The second noteworthy pattern has to do with heterogeneity across investors. In particular, the aversion toward high-disparity in Korean firms after the crisis is only a feature for investors from countries whose companies at home are characterized by a low disparity (e.g., the United States). To put it more concretely, investors from Italy – a source country characterized by high control-ownership disparity at home – do not appear to avoid high disparity firms in the Korea market. Things might have changed after the crisis when both investor groups exhibit a negative coefficient on the disparity variable. However, only the coefficient for investors from the low-disparity countries is significant statistically.

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

The last two columns of *Table 5* reports results from a *Probit* specification. There are a few features that are especially worth commenting on. First, the coefficients on disparity in the pre-crisis period are now not different from zero: Investors neither prefer nor dislike high-disparity stocks. In other words, the pattern of an apparent preference for high-disparity firms in the first two columns of *Table 5* is not robust to using a *Probit* specification. Second, the investors from low-disparity countries still exhibit a change in attitude, from indifference to high disparity before the financial crisis to a significant aversion to high disparity since the crisis broke out. This change in attitude is consistent with the idea that the Asian financial crisis has called

attention to the corporate governance risk in emerging markets. Third, for the investors from high-disparity home countries, the coefficients on disparity (of Korean firms) are insignificantly different from zero in all three sub-periods. So, the investors from high-disparity countries do not appear to be concerned with high disparity in Korea even after the financial crisis. This suggests that the attitude toward control-ownership disparity in emerging markets varies across investors depending on the pattern of corporate governance in their home countries.

Figure 1 plots the coefficients on disparity from a set of monthly regressions that resemble those in *Columns 1 and 2* in *Table 5*. 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 some anomaly toward the end of the 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 explanation could be the introduction of a major corporate governance reform (mandatory requirements for firms to have an audit committee and independent outside directors), announced toward the end of 1999, that 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. We note, however, that this inference is based on a very small number of observations. In any case, the coefficient on disparity turns negative again in the last month of the sample (December 1999). Therefore, we would not wish to overemphasize the point that the aversion to large disparity has disappeared.

To gather additional evidence that the degree of control-ownership disparity in the home country of international investors does affect their attitude toward the control-ownership disparity in Korea, we also implement separate regressions in *Columns 1-2* of *Table 5* by investors' source country. That is, for investors from each source country, we perform three regressions (corresponding to the three time periods). As an efficient way to summarize the results from a large number of regressions, several scatter plots of foreign investors' attitude toward disparity in Korea against the degree of disparity in the investors' source country are presented in *Figure 2*. Every data point in the graphs represents one source country. These plots

exclude two obvious outliers (Finland and Austria).

As these scatter plots reveal, before the crisis, the attitude toward disparity in Korea is not much different across investor groups. However, during the crisis, the attitude diverges dramatically across investors groups. In particular, the middle panel reveals that the attitude toward control-ownership disparity in Korea becomes systematically related to the degree of control-ownership disparity in the investors' home countries. In general, the lower the disparity at home, the more likely foreign investors dislike high disparity in the Korean market. The same pattern carries over to the post-crisis period, though the slope is somewhat smaller.

To summarize the findings in this subsection, there is evidence that the aversion to high disparity firms in Korea is primarily a characteristic of investors from low-disparity countries. Moreover, the Asian financial crisis may have served as a wake-up call that has induced these investors to treat high-disparity as an extra source of risk.

C. Do Investors from High-disparity Countries Have a Comparative Advantage in Holding High-disparity Stocks?

While investors from high-disparity countries do not appear to mind about high-disparity stocks in Korea, they could be right after all if they have a comparative advantage in identifying relatively good performing high-disparity stocks or working with such companies. In this subsection, we investigate two related questions. First, do high-disparity stocks have better *ex post* performance on average? Second, does the portfolio of high-disparity (Korean) stocks held by investors from high-disparity countries perform better than the portfolio of high-disparity stocks held by those from low-disparity countries?

To examine the first question, we classify all stocks into four approximately equal-sized baskets according to their disparity features (low disparity, moderately low, moderately high, and high disparity) in three time periods (January 1997, 1998, and 1999). We then form a portfolio of equally-weighted stocks in these four disparity baskets in each of the three time periods. We then compute realized returns for a buy-and-hold strategy over a 6-month, 12-month, and 24-month horizons. The results are reported in the upper panel of *Table 6. Column 5* conducts a difference-in-mean test for the returns in the lowest disparity quartile relative to those in the highest disparity quartile. There is no evidence that the raw returns on the high-disparity stocks are any

different from those on the low-disparity stocks before and during the Korean crisis. Since January 1999, the portfolio of high-disparity stocks actually does worse than that of low-disparity stocks. Therefore, unconditionally, the high-disparity stocks do not have better returns than the low-disparity ones in the sample.

The high-disparity stocks could happen to have lower risks than low-disparity stocks. (Or they may have stock characteristics that are known to have lower stock returns.) For example, the set of high-disparity stocks may have more large firms or more firms with relatively low book-to-market values than the set of low-disparity stocks. Therefore, it is at least theoretically possible that after adjusting for risks (or stock characteristics), the high-disparity stocks may turn out to perform better than the low-disparity stocks. To adjust for risks, we follow a standard procedure in the literature that forms benchmark portfolios based on size and book-to-market ratio.¹² Specifically, we first sort all stocks by size (market capitalization) into quintiles. For each size group, we sort the stocks into five sub-groups by their book-to-market ratio. This procedure results in a total of 25 sub-groups, each corresponding to a particular combination of firm size and book-to-market ratio. We compute a risk premium for a given holding period for each of the 25 combinations of size and book-to-market ratio by equally weighting the returns within each sub-group. For each stock in a particular basket, we find out its risk premium according to its size and book-to-market ratio, and then subtract the raw return by the corresponding risk premium to arrive at its risk-adjusted return. Finally, we compute the returns for the four baskets of different degrees of disparity by equally weighting the risk-adjusted returns of the individual stocks within a basket. The results are presented in the lower panel of *Table 6*. *Column 5* reports a difference-in-mean test for the risk-adjusted returns in the lowest disparity quartile relative to those in the highest disparity quartile. As with the raw returns, there is no evidence that the risk-adjusted returns on the high-disparity stocks are any different from those on the low-disparity stocks before and during the Korean crisis. In the last subperiod, the high-disparity stocks did worse than the low-disparity stocks for the 6-month horizon. Therefore, even after adjusting for risks, there is no evidence that the high-disparity stocks deliver superior realized returns.

Investors from low-disparity and high-disparity countries may not hold the same set of

¹² We refer to size and book-to-market ratio as risk factors for ease of description. Strictly speaking, however, they may not be non-diversifiable factor risk.

high-disparity Korean stocks. If the Italians and other investors from the high-disparity countries have a comparative advantage in picking the right subset of the high-disparity stocks or are better at working with these companies, one might see these investors to reap better returns on their investment than other investors. To check this, we focus on the high-disparity stocks that appear in the top quartile of stocks in terms of the degree of control-ownership disparity that appear in *Column 4* of *Table 6*. We compute buy-and-hold returns (both equally-weighted and value-weighted) on the portfolios of the high-disparity stocks held by investors from low-disparity and high-disparity countries, respectively. The results are reported in *Table 7*. The table shows that there is no statistically significant difference in the *ex post* performance of the portfolios of the high-disparity stocks held by these two groups of investors. We therefore conclude that it is not very likely that the investors from high-disparity countries truly have a comparative advantage in dealing with high-disparity Korean stocks.

D. Sources of the Home Country Effect: Disparity or Legal Origin?

We can disaggregate further the universe of foreign investors along the dimension of legal origin of their home countries. This is a nod to an influential view in the recent literature that the legal origin of a country is a primary determinant of a country's nature of corporate governance (La Porta et al, 1997, and other papers by the same set of authors).

In *Table 8*, we classify investors using two different dimensions of home country governance: legal origin and the disparity of control and ownership in the home country. *Columns (1) and (2)* split the set of investors from home countries with a common law legal tradition into those with a low disparity, and those with a high disparity. Similarly, *Columns 3 and 4* look at investors from civil law countries, split into those with a low disparity (*Column 3*), and those with a high disparity (*Column 4*). The results show that both today's actual disparity pattern in the home country and the historic origin of the legal system matter. On the one hand, the investors from low-disparity countries tend to display an aversion toward high disparity Korean stocks (since the Asian crisis), regardless of their home countries' legal tradition. On the other hand, the investors from a common law country that may have high disparity at home also display an aversion to high disparity during and after the crisis. Only the investors from high-disparity countries with a civil law tradition do not seem to care about control-ownership

disparity in Korea.

E. Do the Key Results Reflect Causality?

We would like to argue that the negative association between control-ownership disparity and foreign portfolio investors' holding weight reflects a causal relationship. Without further evidence, however, this could be coincidental correlation or even reverse causality. For example, greater foreign ownership could cause the controlling shareholder to reduce control-ownership disparity, generating a negative association between the two, and the direction of causality would have gone in the opposite direction from our discussion so far.

A number of reasons 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 is not high enough to influence the controlling shareholders. Even by combining all foreign investors, their voting rights could be equal to or greater than the controlling shareholders in only 41 firms by December 1999. For each of the 41 firms, there were on average 279 foreign investors. Free riding problem and coordination cost would make it unlikely for foreign investors to strongly influence the controlling shareholder's behavior. Second, the control-ownership disparities evolve very slowly over time. The standard deviation of disparity over the 36-month period, averaged across all 189 *Chaebol* firms, is only 3 percent.

Nonetheless, we now consider an instrumental variable strategy to address this possible endogeneity issue. Specifically, we take advantage of the slow-moving nature of the disparity measure, and use the beginning-of-sample value (December, 1996) as an instrument for subsequent values of the disparity. In December 1996, foreign investors could not have much influence on the controlling shareholder's control-ownership disparity due to government's (low) ceiling on foreign ownership. By construction, subsequent changes in foreign ownership in 1998 and 1999 could not have affected the initial degree of disparity in December 1996.

The first stage regressions are summarized in *Table 9a*. Clearly, the initial value of the disparity is highly correlated with the subsequent values, though the mapping gets weaker over time (at a very slow pace). The second-stage regressions are reported in *Table 9b*. We see qualitatively similar patterns as before. First, there is a difference between investors from low-

disparity countries and those from high-disparity countries. The aversion to high-disparity stocks is entirely a characteristic of investors from low-disparity countries. Second, even for investors from low-disparity countries, their aversion came only after the Korean financial crisis that started in November/December of 1997. These results suggest that the key conclusions reached before do indeed reflect causality (from control-ownership disparity of Korean firms to foreign investors' behavior).

F. Does Lack of Transparency Affect Investors' Aversion to Control-Ownership Disparity?

The information on the ownership structure of the Chaebol groups began to be released by the Korean government only in 2005. This means that during the sample period, investors could not compute the control-ownership disparity in the same way as we do in this paper. For those investors who wish to compute the disparity, they presumably would use the information on publicly listed companies plus whatever other information they could gather. Not all business groups are equally transparent. In this subsection, we make an attempt to investigate whether and how 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 to arrange transactions that hide tunneling activities in the listed companies in the same business group. That is, the more non-listed companies a *Chaebol* group has, the less transparent the business transactions of the member firms of the group become. Given this motivation, we compute a straightforward measure of the opacity of a *Chaebol* group by the ratio of the assets of all non-listed companies in the group to the group's total assets. We re-do the regressions in *Table 5* by adding an interaction term between the opacity measure of a *Chaebol* group and the control-ownership disparity of a firm. Under the null hypothesis that opacity does not affect investors' attitude, the coefficient on the interaction term would be zero. Under the alternative hypothesis that foreign investors' aversion to large disparity is accentuated by a *Chaebol* group's opacity, the coefficient on the interaction term would be negative.

The new regression results (both *Tobit* and *Probit* specifications) are reported in *Table 10*. We note first that the estimates of the coefficient on the interaction term are mostly negative (9 out of 12 cases). In the *Tobit* specification, during the in-crisis and post-crisis periods, the coefficients are negative and statistically significant. These patterns are consistent with the idea

that foreign investors are particularly averse to companies with a large control-ownership disparity from a *Chaebol* group with a lot of non-listed companies. In the *Probit* specification, some of the coefficients lose statistical significance. This suggests that the result is not always robust.

To summarize, there is some support in the data for the notion that the degree of opacity of a business group makes foreign investors more nervous about holding stocks with a given control-ownership disparity.

4. CONCLUSION

A large control-ownership disparity is a potential channel through which controlling shareholders expropriate minority shareholders. Since such disparity is common in developing countries, it is a source of risk for international investors. This paper examines this issue by combining two unique 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 the average behavior is even more interesting. First, only investors from home countries that are 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) do not appear to care as much. Second, even for investors from low-disparity countries, the 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. After the crisis swiped Korea at the end of 1997, investors from low-disparity countries began to display an aversion to high disparity Korean firms. Third, if one further decomposes the investors by the legal origin of their home countries, one sees that both legal origin and contemporaneous home country control-ownership disparity matter. Specifically, investors from low-disparity countries, regardless of legal tradition, display an aversion to high disparity in Korean firms after the Asian crisis. Investors from high-disparity but common-law countries also display an aversion to high disparity in Korean firms once the financial crisis

broke out. It is only those investors from high-disparity and civil-law countries who do not appear to be bothered by high disparity in Korean firms.

A key contribution of this paper is to connect investors' behavior in an emerging market with their home-country pattern of control-ownership disparity. There are a number of areas in which additional research could be useful. First, control-ownership disparity is not the only channel through which corporate governance risk could erupt. One could investigate foreign investors' sensitivity to other dimensions of corporate governance issue in an emerging market and check if it is related to the characteristics of the investors' home countries. Second, the paper makes a passing reference to the interplay between a national level legal framework and firm-level corporate governance. When suitable data becomes available, this could turn out to be an important topic. We leave these for future research.

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

The figure plots the coefficients on control-ownership disparity from a *Tobit* specification (with similar controls as in *Column 6* in *Table 3*) estimated month by month during December 96-December 1999. Separate regressions are done for investors from low versus high disparity countries.

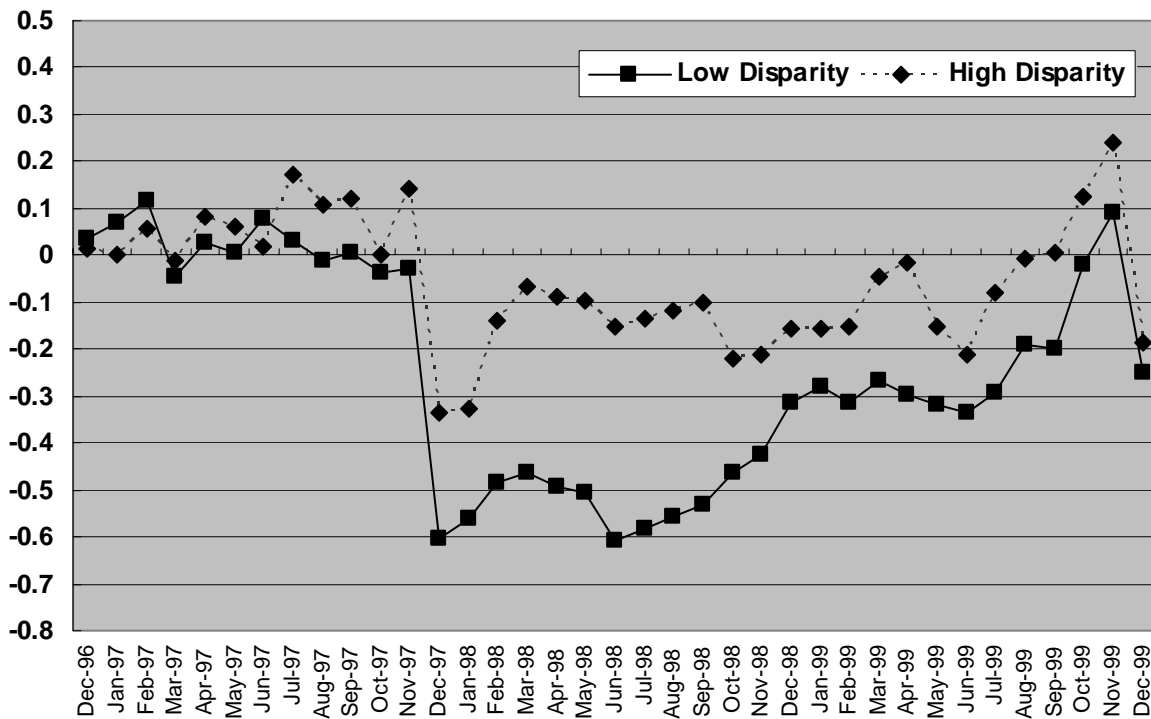


Figure 2: Scatter Plots of Investors' Aversion to Disparity against Their Home-country Disparity

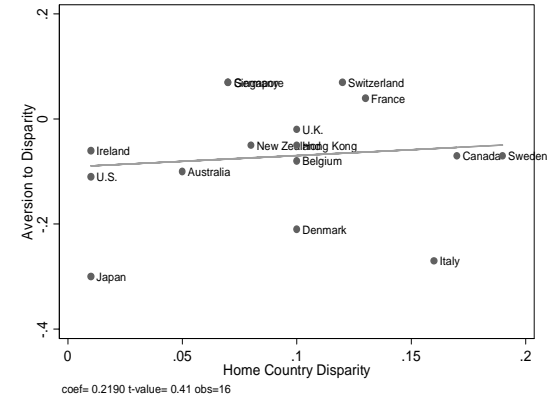
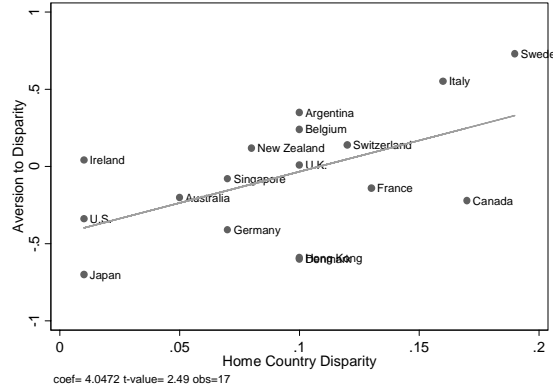
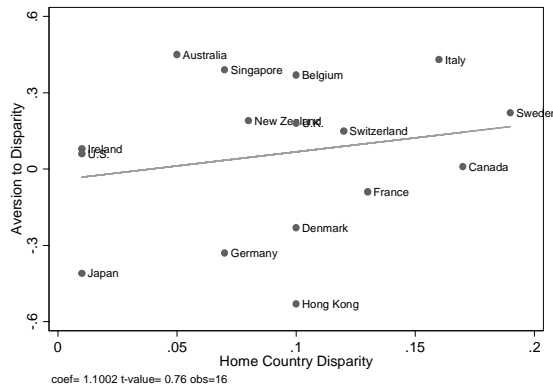
Country-level aversion to disparity is measured by the coefficient estimated by running separate regressions similar to Columns 1-2 of Table 5 for each source country. For each source country, we perform three regressions, corresponding to the three time periods. In the first set of plots, we include a fitted line from OLS (equal weight for countries). In the second set of plots, we include a fitted line by weighted least squares (equal weight for 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)

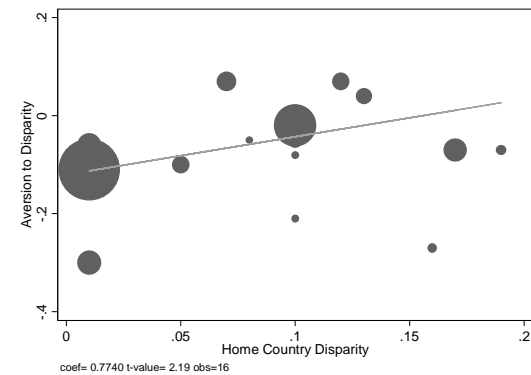
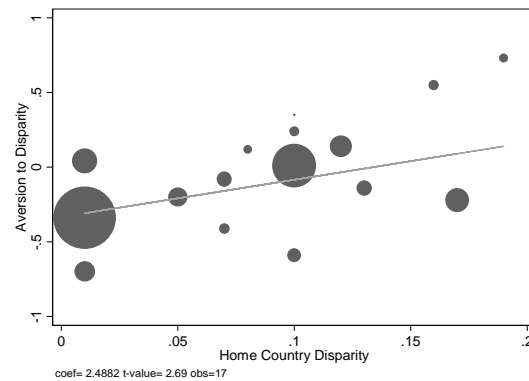
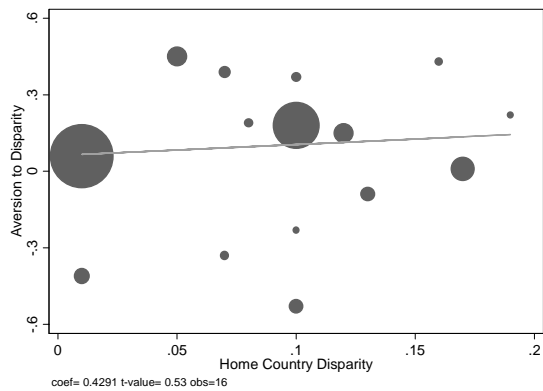


Table 1: Basic Information on International Investors and Their Holdings

This table reports the number of foreign institutional investors holding shares in at least two *Chaebol* firms and their average holdings. We report snap shots at four different points of time (Decembers of 1996, 1997, 1998, and 1999, respectively) for different subgroups categorized by home country disparity. We exclude foreign direct investors, offshore investors, and resident foreign investors from our analyses. In the parentheses, we report the numbers of foreign institutional investors including those who hold shares in only one *Chaebol* firm.

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	593 (862)	6.95	417 (729)	6.89	615 (981)	6.51	980 (1,455)	6.88
High Disparity	405 (572)	5.96	257 (427)	6.33	403 (563)	5.84	517 (698)	7.69
Not Classified	184 (255)	7.50	131 (227)	6.62	187 (262)	6.74	229 (313)	9.78
All Investors	1,182 (1,689)	6.70	805 (1,383)	6.67	1,205 (1,806)	6.32	1,726 (2,466)	7.51

Table 2A: Variable Definitions

Variable Name	Definitions
Dependent Variables	
Holding Weight HW(k, j, t)	Market value of investor k 's holding of firm j as a fraction of his total holdings in month t
Holding Dummy	Dummy = 1 if HW(k, j, t) > 0, and 0 otherwise
Firm Features (regressors)	
Disparity	The Gap between Controlling shareholder's voting rights and ownership (cash flow rights) in firm j
Direct Ownership	# 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
Firm Size	Free-float adjusted market capitalization, in logs (unit: Billion won). More specifically, $\ln[(\text{share price})(\text{number of shares outstanding})(1 - \text{voting rights})]$
Accounting Profitability	EBIT/book value of assets (end of previous fiscal year end), first winsorized across firms at the 1 st and the 99 th percentile values, then averaged over previous 3 years
Dividend Yield	Per share dividend / year-end share price
Market-to-Book	Market value / book value of equity
R&D	R&D expenditure / sales
Advertising	Advertising expenditure / sales
Sales Growth	Sales growth, averaged over previous 3 years
Export	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, in logs. More specifically, we take log of [(debt/assets)+1] to prevent the observations with "0" value from dropping out
Years of Operation	Years of operation, in logs
Liquidity	Free-float adjusted share turnover, or [# shares traded during year / (# 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
Investor Feature	
No. of Holdings	Number of firms investor i holds in her portfolio at month t , in logs
High-disparity home	Home country's disparity > 0.10 (median across all home countries)
Low-disparity home	Home country's disparity <= 0.10

Table 2B: Summary Statistics (Based on Data in Decembers of 1996, 1997, 1998, and 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
Liquidity	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

Table 2C: 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] Liquidity	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)-(6) estimate a Tobit model accounting for the constraint that the holdings have to be non-negative; investors holding only a single stock are excluded. Column (6) includes group dummies. Column (7) includes all foreign institutional investors and estimates a Two-Limit Tobit accounting for the restrictions that the holding weights have to be between 0 and 100%. *, **, and *** indicate statistical significance at 1, 5, and 10 percent levels, respectively. Standard errors are in parenthesis.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Disparity	-0.1453*** (0.0067)	-0.1355*** (0.0067)	-0.0640*** (0.0080)	-0.0726*** (0.0081)	-0.0624*** (0.0111)	-0.0264* (0.0139)	-0.132*** (0.018)
Log Firm Size	0.1367*** (0.0008)	0.1341*** (0.0008)	0.1376*** (0.0010)	0.1376*** (0.0010)	0.1409*** (0.0013)	0.1441*** (0.0016)	0.215*** (0.002)
Profitability		0.2139*** (0.0134)	0.2665*** (0.0164)	0.2291*** (0.0170)	0.2186*** (0.0196)	0.2390*** (0.0213)	0.316*** (0.031)
Dividend Yield			0.1663*** (0.0453)	0.1640*** (0.0456)	0.1761*** (0.0530)	0.0505 (0.0609)	0.078 (0.084)
Market-to-Book			-0.0122*** (0.0008)	-0.0135*** (0.0008)	-0.0024* (0.0012)	-0.0040*** (0.0014)	-0.005** (0.002)
R&D/Sales			1.4205*** (0.1439)	1.1932*** (0.1468)	0.5847*** (0.1671)	0.3382* (0.2037)	0.033 (0.261)
Advertisement/Sales			1.2806*** (0.0796)	1.2036*** (0.0873)	1.6054*** (0.1035)	0.8623*** (0.1287)	2.416*** (0.162)
Sales Growth			-0.0296*** (0.0037)	-0.0272*** (0.0037)	-0.0161*** (0.0041)	-0.0100** (0.0042)	-0.028*** (0.006)
Export/Sales				-0.0137*** (0.0036)	0.0020 (0.0041)	0.0301*** (0.0052)	0.007 (0.007)
Foreign Direct Dummy				0.0237*** (0.0027)	0.0191*** (0.0031)	0.0222*** (0.0035)	0.025*** (0.005)
Leverage				-0.0886*** (0.0130)	-0.1102*** (0.0151)	0.0017 (0.0186)	-0.133*** (0.024)
Years of Operation					-0.0296*** (0.0039)	-0.0222*** (0.0051)	-0.052*** (0.006)
Liquidity					-0.0029*** (0.0006)	-0.0047*** (0.0007)	-0.004*** (0.001)
Level 2 or 3 ADR					-0.1122*** (0.0123)	-0.0412*** (0.0144)	-0.174*** (0.019)
Level 1 or Rule144A ADR					0.0701*** (0.0036)	0.0915*** (0.0046)	0.110*** (0.006)
Return Volatility					-0.2651*** (0.0516)	-0.2350*** (0.0575)	-0.370*** (0.081)
Number of Holdings					0.1514*** (0.0015)	0.1500*** (0.0015)	0.229*** (0.002)
Direct Ownership					-0.0568* (0.0332)	0.0147 (0.0446)	-0.073 (0.052)
Direct Ownership Squared					0.2959*** (0.0905)	-0.0351 (0.1248)	0.350** (0.143)
Group Control					-0.0152** (0.0070)	-0.0299*** (0.0103)	-0.032*** (0.011)
Constant	Y	Y	Y	Y	Y	Y	Y
Year Dummies	Y	Y	Y	Y	Y	Y	Y
Group Dummies	N	N	N	N	N	Y	N
Uncensored Observations	28,528	28,202	23,567	23,521	23,417	23,417	23,409
Left Censored Observations	811,532	791,573	659,147	654,275	626,527	626,527	944,472
Right Censored Observations	-	-	-	-	-	-	1,463
Pseudo R-squared	0.32	0.33	0.34	0.34	0.46	0.47	0.40

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

This table reports *Probit* regressions, where the dependent variable HD = 1 if HW(k,j,t)>0 and 0 otherwise. The point estimates refer to marginal effect on probability. Columns (1)-(6) use a sample that includes institutional investors holding at least two *Chaebol* firms. Column (7), on the other hand, uses a sample that includes all institutional investors with any positive holding of the firms in the sample. Column (6) includes group dummies. *, **, and *** indicate statistical significance at 1, 5, and 10 percent levels, respectively. Standard errors are clustered at the investor level and are in the parenthesis.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Disparity	-0.0164*** (0.0014)	-0.0159*** (0.0014)	-0.0081*** (0.0014)	-0.0089*** (0.0014)	-0.0043*** (0.0007)	-0.0027*** (0.0007)	-0.0023*** (0.0003)
Log Firm Size	0.0142*** (0.0007)	0.0141*** (0.0007)	0.0150*** (0.0008)	0.0151*** (0.0008)	0.0065*** (0.0002)	0.0061*** (0.0002)	0.0031*** (0.0001)
Profitability		0.0115*** (0.0017)	0.0171*** (0.0020)	0.0140*** (0.0019)	0.0058*** (0.0010)	0.0068*** (0.0010)	0.0030*** (0.0005)
Dividend Yield			0.0193*** (0.0058)	0.0188*** (0.0059)	0.0065** (0.0027)	-0.0006 (0.0028)	0.0015 (0.0013)
Market-to-Book			-0.0015*** (0.0001)	-0.0016*** (0.0002)	-0.0002*** (0.0001)	-0.0003*** (0.0001)	-0.0001*** (0.0000)
R&D/Sales			-0.0000 (0.0188)	-0.0177 (0.0195)	-0.0421*** (0.0090)	-0.0631*** (0.0103)	-0.0181*** (0.0042)
Advertisement/Sales			0.1322*** (0.0113)	0.1268*** (0.0120)	0.0673*** (0.0067)	0.0261*** (0.0065)	0.0316*** (0.0033)
Sales Growth			-0.0033*** (0.0006)	-0.0032*** (0.0006)	-0.0008*** (0.0002)	-0.0004** (0.0002)	-0.0004*** (0.0001)
Exports/Sales				-0.0012** (0.0005)	0.0001 (0.0002)	0.0014*** (0.0003)	0.0001 (0.0001)
Foreign Director Dummy				0.0020*** (0.0004)	0.0006*** (0.0002)	0.0009*** (0.0002)	0.0003*** (0.0001)
Leverage				-0.0084*** (0.0023)	-0.0040*** (0.0009)	0.0004 (0.0010)	-0.0016*** (0.0005)
Years of Operation					-0.0008*** (0.0002)	-0.0006** (0.0003)	-0.0005*** (0.0001)
Liquidity					-0.0002*** (0.0000)	-0.0002*** (0.0000)	-0.0001*** (0.0000)
Level 2 or 3 ADR					-0.0024*** (0.0003)	-0.0003 (0.0007)	-0.0012*** (0.0001)
Level 1 ADR					0.0035*** (0.0004)	0.0049*** (0.0006)	0.0018*** (0.0002)
Return Volatility					-0.0183*** (0.0024)	-0.0145*** (0.0023)	-0.0079*** (0.0011)
Number of Holdings					0.0093*** (0.0004)	0.0085*** (0.0004)	0.0042*** (0.0002)
Direct Ownership					-0.0060*** (0.0018)	-0.0030 (0.0023)	-0.0026*** (0.0009)
Direct Ownership Squared					0.0204*** (0.0049)	0.0027 (0.0067)	0.0082*** (0.0024)
Group Control					-0.0008** (0.0003)	-0.0011** (0.0005)	-0.0005*** (0.0002)
Constant	Y	Y	Y	Y	Y	Y	Y
Year Dummies	Y	Y	Y	Y	Y	Y	Y
Group Dummies	N	N	N	N	N	Y	N
Total Observations	840,060	819,775	682,714	677,796	649,944	649,139	969,344
Pseudo R-squared	0.23	0.23	0.24	0.24	0.39	0.40	0.41

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 across all the home countries in the sample (10%). The same set of control variables that appear in Column 5 of Table 3 is used in each regression but not reported. ***, **, and * indicate statistical significance at 1, 5, and 10 percent levels, respectively. Standard errors are in the parentheses. In the case of the *Probit* regressions, standard errors are clustered at the investor level.

		(1)	(2)	(3)	(4)
		<i>Tobit</i>		<i>Probit</i>	
		Home country Disparity =< 10%	Home country Disparity > 10%	Home country Disparity =< 10%	Home country Disparity > 10%
Pre-Crisis (Dec. 96 – Nov. 97)	Firm Disparity	0.0239*** (0.0041)	0.0532*** (0.0111)	0.0114 (0.0102)	0.0258 (0.0197)
	Log Firm Size	0.0550*** (0.0006)	0.0584*** (0.0017)	0.0408*** (0.0012)	0.0417*** (0.0035)
	Other Controls	yes	yes	yes	Yes
	Observations	287,311	46,077	287,311	46,077
	Pseudo R ²	0.57	0.54	0.29	0.27
In-Crisis (Dec. 97 – Dec. 98)	Firm Disparity	-0.0745*** (0.0043)	0.0258** (0.0104)	-0.0564*** (0.0106)	0.0121 (0.0124)
	Log Firm Size	0.0629*** (0.0005)	0.0732*** (0.0015)	0.0380*** (0.0013)	0.0297*** (0.0022)
	Other Controls	yes	yes	yes	Yes
	Observations	268,494	51,925	268,494	51,925
	Pseudo R ²	0.75	0.70	0.37	0.34
Post-Crisis (Jan. 99 – Dec. 99)	Firm Disparity	-0.0355*** (0.0031)	-0.0007 (0.0072)	-0.0337*** (0.0046)	-0.0073 (0.0072)
	Log Firm Size	0.0585*** (0.0004)	0.0595*** (0.0010)	0.0300*** (0.0013)	0.0251*** (0.0018)
	Other Controls	yes	yes	yes	Yes
	Observations	445,653	79,107	445,653	79,107
	Pseudo R ²	0.89	0.90	0.43	0.42

Table 6: Do High-disparity Stocks Do Better Ex-Post?

This table reports buy-and-hold returns on portfolios with different disparity features. The portfolios are formed in Jan. 1997, Jan. 1998 and Jan. 1999, respectively, and held for 6, 12, and 24 months, respectively. The first panel reports raw returns and the second panel reports risk-adjusted returns (based on size and book-to-market ratio). To form the benchmark portfolios, size (market capitalization) is used first to classify firms into quintiles. Then, for each size group, firms are grouped by book-to-market ratio. This procedure results in a total of 25 groups. Benchmark return is computed by equally-weighting the returns in each group. Column (5) conducts a difference-in-mean test between the 1st and the 4th disparity quartiles. ** indicates statistical significance at the 5 percent level. Numbers of observations appear in the square brackets and *p*-values appear in the parentheses.

		(1)	(2)	(3)	(4)	(5) = (1) - (4)	
	Date of portfolio formation/holding period	Quartile 1 Low Disparity	Quartile 2	Quartile 3	Quartile 4 High Disparity	(<i>p</i> -values)	
Raw Return	Jan 97 (6 months)	0.0057 [38]	0.0239 [36]	0.0216 [30]	-0.0011 [36]	0.0068 (0.5528)	
	Jan 97 (12 months)	-0.0912 [38]	-0.0682 [36]	-0.0666 [30]	-0.0771 [36]	-0.0140 (0.1486)	
	Jan 97 (24 months)	-0.0344 [37]	-0.0220 [36]	-0.0140 [30]	-0.0283 [36]	-0.0061 (0.4403)	
	Jan 98 (6 months)	-0.0800 [44]	-0.0790 [43]	-0.0605 [44]	-0.0813 [43]	0.0013 (0.9440)	
	Jan 98 (12 months)	0.0337 [43]	0.0266 [43]	0.0601 [44]	0.0332 [42]	0.0006 (0.9565)	
	Jan 98 (24 months)	0.0307 [37]	0.0184 [41]	0.0254 [42]	0.0174 [39]	0.0132 (0.1204)	
	Jan 99 (6 months)	0.1149 [39]	0.0918 [40]	0.0806 [44]	0.0644 [37]	0.0505 ** (0.0157)	
	Jan 99 (12 months)	0.0240 [37]	0.0076 [39]	-0.0039 [43]	-0.0018 [37]	0.0258 (0.0985)	
	Jan 99 (24 months)	-0.0131 [32]	-0.0327 [37]	-0.0338 [42]	-0.0261 [34]	0.0130 (0.0845)	
	Risk-adjusted Excess Return	Jan 97 (6 months)	-0.0133 [38]	-0.0003 [36]	0.0017 [30]	-0.0160 [36]	0.0026 (0.8080)
		Jan 97 (12 months)	-0.0155 [38]	-0.0021 [36]	0.0071 [30]	-0.0066 [36]	-0.0088 (0.3341)
		Jan 97 (24 months)	-0.0063 [37]	0.0007 [36]	0.0134 [30]	-0.0008 [36]	-0.0055 (0.4631)
Jan 98 (6 months)		-0.0057 [44]	-0.0037 [43]	0.0094 [44]	-0.0126 [43]	0.0069 (0.7056)	
Jan 98 (12 months)		0.0003 [43]	-0.0036 [43]	0.0304 [44]	0.0071 [42]	-0.0069 (0.4732)	
Jan 98 (24 months)		0.0123 [37]	0.0031 [41]	0.0105 [42]	0.0045 [39]	0.0078 (0.3617)	
Jan 99 (6 months)		0.0460 [39]	0.0196 [40]	0.0159 [44]	-0.0010 [37]	0.0471 ** (0.0184)	
Jan 99 (12 months)		0.0294 [37]	0.0079 [39]	0.0004 [43]	0.0017 [37]	0.0277 (0.0687)	
Jan 99 (24 months)		0.0118 [32]	-0.0084 [37]	-0.0056 [42]	0.0027 [34]	0.0091 (0.1877)	

Table 7: Do Investors from High-disparity Countries Have a Comparative Advantage in High-disparity Korean Stocks? *Ex-Post* Performance

This table compares buy-and-hold returns on high-disparity stocks (top 25 percentile in disparity) between investors from high and low disparity countries, respectively. *Columns* (1) and (2) report value weighted average of such returns, and *Columns* (3) and (4) report equally-weighted averages. Difference-in-mean tests are reported in *Column* (5). Numbers of observations appear in the brackets and *p*-values appear in the parentheses.

	Date of portfolio formation/holding period	Value-Weighted Average		Equally-Weighted Average		(5) = (4) - (3) (<i>p</i> -value)
		(1) Low-disparity home	(2) High-disparity home	(3) Low-disparity home	(4) High-disparity home	
Raw Return	Jan 97 (6 months)	-0.0003	0.0018	0.0002 [33]	-0.0085 [18]	-0.0086 (0.6475)
	Jan 97 (12 months)	-0.0618	-0.0606	-0.0763 [33]	-0.0844 [18]	-0.0080 (0.4937)
	Jan 97 (24 months)	-0.0073	-0.0134	-0.0287 [33]	-0.0217 [18]	0.0071 (0.4107)
	Jan 98 (6 months)	-0.0065	0.0256	-0.0817 [39]	-0.0694 [20]	0.0123 (0.0251)
	Jan 98 (12 months)	0.0320	0.0319	0.0327 [38]	0.0410 [20]	0.0083 (0.0171)
	Jan 98 (24 months)	0.0194	0.0194	0.0183 [35]	0.0225 [19]	0.0042 (0.0114)
	Jan 99 (6 months)	0.1092	0.0806	0.0612 [34]	0.0288 [19]	-0.0323 (0.0276)
	Jan 99 (12 months)	0.1022	0.0628	0.0023 [34]	0.0045 [19]	0.0021 (0.0208)
	Jan 99 (24 months)	-0.0271	-0.0242	-0.0239 [31]	-0.0315 [18]	-0.0076 (0.0083)
Risk-adjusted Excess Return	Jan 97 (6 months)	-0.0077	-0.0083	-0.0116 [33]	-0.0163 [18]	-0.0047 (0.7825)
	Jan 97 (12 months)	-0.0050	-0.0097	-0.0053 [33]	-0.0182 [18]	-0.0128 (0.2684)
	Jan 97 (24 months)	0.0123	0.0011	-0.0008 [33]	0.0029 [18]	0.0037 (0.6440)
	Jan 98 (6 months)	0.0426	0.0684	-0.0126 [39]	-0.0057 [20]	0.0069 (0.0242)
	Jan 98 (12 months)	0.0057	0.0027	0.0065 [38]	0.0138 [20]	0.0073 (0.0147)
	Jan 98 (24 months)	0.0048	0.0031	0.0056 [35]	0.0099 [19]	0.0042 (0.0113)
	Jan 99 (6 months)	0.0576	0.0273	-0.0055 [34]	-0.0368 [19]	-0.0313 (0.0246)
	Jan 99 (12 months)	0.1065	0.0643	0.0043 [34]	0.0055 [19]	0.0013 (0.0211)
	Jan 99 (24 months)	0.0083	0.0084	0.0040 [31]	-0.0027 [18]	-0.0067 (0.0078)

Table 8: Home Country Disparity vs. Legal Origin

Investors are separated into four groups based on two dimensions: (a) whether the level of home-country disparity is below or above the median value across all the home countries in the sample (10%), and (b) whether the legal tradition of the home country is common law or civil law. ***, **, and * indicate statistical significance at 1, 5, and 10 percent levels, respectively. Standard errors are in the parentheses.

		(1)	(2)	(3)	(4)
		Common Law & Disparity ≤10%	Common Law & Disparity > 10%	Civil Law & Disparity ≤10%	Civil Law & Disparity > 10%
Pre-Crisis (Dec. 96 - Nov. 97)	Disparity	0.0302*** (0.0042)	0.0396* (0.0228)	-0.0688*** (0.0207)	0.0588*** (0.0129)
	Firm Size	0.0541*** (0.0006)	0.0615*** (0.0035)	0.0748*** (0.0032)	0.0582*** (0.0019)
	Other Controls	yes	yes	yes	yes
	Observations	268,235	12,725	19,076	33,352
	Pseudo R ²	0.57	0.64	0.67	0.52
In-Crisis (Dec. 97 - Dec. 98)	Disparity	-0.0691*** (0.0044)	-0.0839*** (0.0262)	-0.1578*** (0.0211)	0.0476*** (0.0115)
	Firm Size	0.0608*** (0.0006)	0.0951*** (0.0039)	0.0988*** (0.0029)	0.0688*** (0.0016)
	Other Controls	yes	yes	yes	yes
	Observations	246,324	12,900	22,170	39,025
	Pseudo R ²	0.76	0.73	0.75	0.72
Post-Crisis (Jan. 99 - Dec. 99)	Disparity	-0.0301*** (0.0032)	-0.0958*** (0.0232)	-0.1089*** (0.0129)	0.0126* (0.0075)
	Firm Size	0.0579*** (0.0004)	0.0830*** (0.0033)	0.0670*** (0.0016)	0.0558*** (0.0010)
	Other Controls	yes	yes	yes	yes
	Observations	404,929	16,221	40,724	62,886
	Pseudo R ²	0.90	0.79	0.82	0.94

Table 9: Two-Stage Least Squares

Separate two-stage least square (2SLS) regressions are run for investors from low and high-disparity countries. The initial value of disparity (in December 1996) 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-month as an observation unit in *Panel A*, while we use firm-investor-month as an observation unit in *Panel B*. All control variables in *Column 6* of *Table 3* are included in both stages but not reported. *, **, and *** indicate statistical significance at 1, 5, and 10 percent levels, respectively. Standard errors are in parentheses.

Panel 9A: 1st Stage Regressions

Dependent Variable		Disparity
Pre-Crisis (Dec. 96 - Nov. 97)	Initial Disparity (IV)	1.0003*** (0.0004)
	Other Controls	yes
	No. of Observations	1,539
	Adjusted R-Squared	0.99
	In-Crisis (Dec. 97 - Dec. 98)	Initial Disparity (IV)
Post-Crisis (Jan. 99 - Dec. 99)	Other Controls	Yes
	No. of Observations	1,644
	Adjusted R-Squared	0.86
	Initial Disparity (IV)	0.7738*** (0.0201)
	Other Controls	Yes
	No. of Observations	1,455
	Pseudo R-Squared	0.76

Panel 9B: 2nd Stage Regressions

Dependent Variable		Holding Weight	
		(1) Home Disparity ≤ 10%	(2) Home Disparity > 10%
Pre-Crisis (Dec. 96 - Nov. 97)	Disparity (instrumented)	0.0780*** (0.0096)	0.0808*** (0.0239)
	Other Controls	yes	Yes
	Correlation between <i>IV</i> and Holding Weight Orthogonal	0.0035	0.0054
	No. of Observations	1,250,500	189,164
	Pseudo R-Squared	0.3476	0.3608
	In-Crisis (Dec. 97 - Dec. 98)	Disparity (instrumented)	-0.0287** (0.0119)
Other Controls		yes	Yes
Correlation between <i>IV</i> and Holding Weight Orthogonal		0.0054	0.0138
No. of Observations		1,227,865	213,097
Pseudo R-Squared		0.4647	0.4658
Post-Crisis (Jan. 99 - Dec. 99)		Disparity (instrumented)	-0.0948*** (0.0093)
	Other Controls	yes	Yes
	Correlation between <i>IV</i> and Holding Weight Orthogonal	0.0234	0.0277
	No. of Observations	1,606,859	248,259
	Pseudo R-Squared	0.5115	0.5358

Table 10: Group Opacity and Investors' Attitude toward Control-ownership Disparity

The table examines how the degree of opacity of a Chaebol affects foreign investors' aversion to firm-level control-ownership disparity. Opacity is measured by the fraction of a Chaebol group's total assets that is represented by non-listed companies. Other control variables in *Column 6 of Table 3* are included but not reported. *, **, and *** indicate statistical significance at 1, 5, and 10 percent levels, respectively. Standard errors are in parentheses.

		(1)	(2)	(1)	(2)
		<i>Tobit</i>		<i>Pobit</i>	
		Home country Disparity =< 10%	Home country Disparity > 10%	Home country Disparity =< 10%	Home country Disparity > 10%
Pre-Crisis (Dec. 96 – Nov. 97)	Firm Disparity	0.0288*** (0.0060)	0.0566*** (0.0158)	0.0105 (0.0120)	0.0242 (0.0226)
	Disparity X Opacity	-0.0149 (0.0134)	-0.0106 (0.0355)	0.0028 (0.0237)	0.0052 (0.0432)
	Log Firm Size	0.0551*** (0.0006)	0.0585*** (0.0017)	0.0408*** (0.0012)	0.0416*** (0.0035)
	Other Controls	Yes	yes	Yes	Yes
	Observations	287,311	46,077	287,311	46,077
	Pseudo R ²	0.57	0.54	0.29	0.27
In-Crisis (Dec. 97 – Dec. 98)	Firm Disparity	-0.0135* (0.0070)	0.0741*** (0.0167)	-0.0192 (0.0131)	0.0334 (0.0226)
	Disparity X Opacity	-0.2260*** (0.0209)	-0.1836*** (0.0503)	-0.1371*** (0.0298)	-0.0812 (0.0541)
	Log Firm Size	0.0642*** (0.0006)	0.0742*** (0.0015)	0.0386*** (0.0014)	0.0301*** (0.0022)
	Other Controls	Yes	yes	Yes	Yes
	Observations	268,494	268,494	268,494	51,925
	Pseudo R ²	0.75	0.75	0.37	0.34
Post-Crisis (Jan. 99 – Dec. 99)	Firm Disparity	0.0049 (0.0062)	0.0920*** (0.0145)	-0.0418*** (0.0082)	0.0117 (0.0122)
	Disparity X Opacity	-0.1362*** (0.0183)	-0.3093*** (0.0424)	0.0282 (0.0228)	-0.0643* (0.0360)
	Log Firm Size	0.0584*** (0.0004)	0.0595*** (0.0010)	0.0299*** (0.0013)	0.0253*** (0.0018)
	Other Controls	Yes	yes	Yes	Yes
	Observations	445,653	79,107	445,653	79,107
	Pseudo R ²	0.89	0.90	0.43	0.42

Appendix 1: Source Country Disparity and Legal Origin

The table excludes foreign resident investors, individual investors, investors investing only in firms that have reached foreign ownership limit, and investors holding less than two firms in their portfolio. As a result, investors from Israel, Spain, and Greece are excluded.

Source Country	Disparity	Legal Origin	Number of Investors			
			Dec. 1996	Dec. 1997	Dec. 1998	Dec. 1999
Australia	0.05	English	38	32	35	46
Canada	0.17	English	58	39	62	87
Hong Kong	0.10	English	18	12	23	32
Ireland	0.01	English	84	51	71	83
New Zealand	0.08	English	8	5	5	8
Singapore	0.07	English	13	7	38	60
U.K.	0.10	English	246	130	214	268
U.S.A.	0.01	English	422	292	409	661
Argentina	0.10	French	0	1	0	0
Belgium	0.10	French	9	8	7	6
France	0.13	French	19	16	25	40
Italy	0.16	French	5	4	9	14
Philippines	0.37	French	1	1	1	1
Austria	0.10	German	2	2	4	5
Germany	0.07	German	7	5	10	27
Japan	0.01	German	20	24	45	89
Switzerland	0.12	German	39	37	43	43
Denmark	0.10	Scandinavian	4	4	5	7
Finland	0.08	Scandinavian	0	1	2	4
Norway	0.07	Scandinavian	1	0	0	2
Sweden	0.19	Scandinavian	4	3	10	14