Who Cares about Control-Ownership Disparity in Emerging Markets?[†]

- Unbundling Foreign Portfolio Investors -

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ABSTRACT

Using a unique data set that provides detailed information on foreign investors' holdings of Korean *chaebol* firms, we report that foreign investors' home country governance matters when determining the portfolio weights on low and high disparity stocks.   More specifically, we show that foreign investors from countries dominated by firms with high control-ownership disparity, countries with civil law origin, or countries with low anti-director rights, tend to show less aversion against the firms with high control-ownership disparity. This finding is in line with the investor's familiarity story documented in the international finance literature to explain the well-known "home-bias" puzzle.   We also report that foreign portfolio investors' aversion to control-ownership disparity varies over time and, in particular, peaks during economics crisis, which is consistent with the theoretical prediction and the empirical findings of the existing literature.

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1. INTRODUCTION

In recent years, a number of attempts have been made to explain the well-known "home bias puzzle" with familiarity or information asymmetry stories. A number of studies uncovered that domestic equity investors, when making investment decisions, prefer companies they are familiar of, in terms of location, language, and culture (Coval and Moskowitz (1999), Huberman (2001), Grinblatt and Keloharju (2001), and Giannetti and Simonov (2006)). Evidence on the preference for familiar companies also exists in papers that study international portfolio investment (Kang and Stulz (1997), Dahlguist and Robertssen (2001), Edison and Warnock (2004), Ahearne, Griever, and Warnock (2004), Gelos and Wei (2005), Aggarwal, Klapper, and Wysocki (2005), Chan, Covrig, and Ng (2005), and Giannetti and Simonov (2006)). They show that foreign investors hold disproportionately more shares of large firms, firms that export more, firms that have ADRs, or firms that are more transparent.

In this paper, we provide another piece of evidence in support of the familiarity hypothesis, but in a more direct way. In contrast to the existing literature, we do not focus solely on firm characteristics, such as firm size, existence of cross-listing, share of export revenue, or transparency, we associate firm characteristics with those of the investors. More specifically, we investigate if foreign investors from countries with weak corporate governance show less aversion against the firms with high control-ownership disparity.

Using a unique data set that provides detailed information on the composition of each foreign investor in every stock listed on the Korea Stock Exchange, and anther unique data set that gives detailed information on the ownership structure of Korean *chaebol* firms, we document that foreign investors' home country governance do matter when determining the portfolio weights on low and high disparity stocks. More specifically, we show that foreign investors from high disparity countries, countries with civil law origin, or countries with low anti-director rights, tend to show less aversion against the firms with high control-ownership disparity. Our empirical analyses reveal that, in December 1997, a minimum-to-maximum increase in disparity (76%) drops the holding weight of foreign investors from low disparity countries by 22 percentage points, while it has no impact on the holding weights of foreign investors from high disparity countries.

Our finding is robust to different regression models we use (*OLS*, *Tobit*, and *Probit*) and to different types of investors we analyze (mutual funds, unit trusts, and pension funds). Our basic finding also survives even when we control for the endogeneity of control-ownership disparity using a 2*SLS* framework.

In this paper, we also report a number of interesting findings, not directly related to the familiarity hypothesis. First, we show that foreign portfolio investors' aversion to control-ownership disparity varies over time and, in particular, peaks during economic crisis. This is

consistent with the theoretical prediction of Johnson et al. (2000) which argues that the risk of expropriation is higher during recessions. It is also consistent with the empirical findings of Mitton (2002), Lemmon and Lins (2003), and Baek, Kang, and Park (2004), which show that Asian firms with high control-ownership disparity experienced a sharper drop in share price during the Asian crisis.

We also show that foreign portfolio investors actually dump high disparity shares to lower the weights on high disparity stocks, as opposed to making a net purchase of low disparity shares. Our empirical analyses also uncover that there exists a nonlinear relationship between disparity and the equity holdings of foreign portfolio investor.

The rest of this paper is organized as follows. Section 2 briefly discusses the related literature and then develops the main hypotheses of this paper. Section 3 explains the data, discusses some empirical challenges, and gives detailed account on the measurements of our key variables. Section 4 presents the results and Section 5 concludes.

2. HYPOTHESES

A. Brief Discussion of Related Literature

This paper is related to two strands of research. One is the research that documents equity investor's preference for familiar companies, which can be one reason behind the "home bias puzzle."[1] Coval and Moskowitz (1999), for example, show that mutual fund managers prefer to hold locally headquartered firms. Huberman (2001) documents that Regional Bell Operating Companies are more likely to be held by investors who subscribe to their telephone services. Using the Finish data, Grinblatt and Keloharju (2001) document that investors are more likely to hold stocks that are located close to the investors, that communicate in the investors' native tongue, and that have chief executive officers of the same cultural background. Using Swedish data, Giannetti and Simonov (2006) report that small domestic individual investors prefer companies that are located nearby or located in Stockholm. We group this set of studies as *domestic informational asymmetry studies*.

Evidence on the preference for familiar companies also exists in papers that study international portfolio investment. Kang and Stulz (1997), studying foreign portfolio investment in Japan, show that foreign investors hold disproportionately more shares of large firms, firms that export more, and firms that have ADRs. Dahlguist and Robertssen (2001) and Giannetti and Simonov (2006) find similar results when studying foreign portfolio investment in Sweden. Edison and Warnock (2004) show that emerging market equities that are cross-listed on a U.S. exchange receive full

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[1] Merton (1987) provides a model where rational investors prefer firms about which they are better informed.

international CAPM weights.   Ahearne, Griever, and Warnock (2004) report that firms, that do not alleviate information costs by cross-listing, are more severely underweighted in US equity portfolios.   Gelos and Wei (2005) and Aggarwarl, Klapper, and Wysocki (2005) both show that foreign investors systematically invest less in less transparent countries.   Chan, Covrig, and Ng (2005) report that geographical distance, bilateral trade, and language have a significant effect on domestic and foreign biases.   We group this set of studies as *international informational asymmetry studies*.

None of the aforementioned papers, however, study the characteristics shared by both, the investors and the firms being invested, in an international setting.   *Domestic informational asymmetry studies* do investigate shared characteristics, in terms of geographical distance, langue, and culture, but conduct the study in a domestic setting.   *International asymmetry studies*, on the other hand, investigate the issue in an international setting, but investigate only firm characteristics, (not the ones shared between the firm being invested and the country investors are from) or only country-level commonalities (Chan, Covig, and Ng (2005)).

Another strand of related research is the one that studies control-ownership disparity that dates back to Jensen and Meckling (1976).   In relatively recent years, La Porta, Lopez-de-Silanes, Shleifer (1999), Claessens, Djankov, and Lang (2000), and Faccio and Lang (2002) document the pervasiveness of this disparity in corporations outside the U.S. Bebchuk, Kraakman, and Triants (2000) explains in detail the mechanisms and the agency costs of stock pyramids, cross-ownership, and dual-class equity which separates control from cash-flow rights.

Moreover, a series of studies document that control-ownership disparity has an important implication on firm value (Claessens et al. (2002), LLSV (2002), Lins (2003), and Gompers, Ishii, and Metrick (2004)), accounting performance (Joh (2003)), stock return (Mitton (2002) and Lemmon and Lins (2003), Baek, Kang, and Park (2004)), income management (Haw et al. (2003)), sensitivity of turnover to performance (Volpin (2002)) and others.   Mitton (2002), Lemmon and Lins (2003), and Baek, Kang, and Park (2004), in particular, show that Asian firms with high control-ownership disparity experienced a sharper drop in share price during the Asian crisis, supporting the argument that the risk of expropriation increases during recessions.[2]

Some papers link corporate ownership structure with foreign investors' equity holdings. Dahlguist and Robertssen (2001), for example, show that firms tend to underweight firms with a dominant owner.   Giannetti and Simonov (2006) show that foreign investors are reluctant to invest in companies with high control-ownership disparity.

It is worth noting here how this paper differs from the work of Giannetti and Simonov (2006). First, we relate foreign investors' reluctance against high disparity stocks to investors' home country governance and show that such reluctance strengthens if investors are from countries

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[2] Johnson et al. (2000) show a similar result using other measures of corporate governance.

dominated by high disparity corporations, which is not explored in Giannetti and Simonov (2006). Second, we investigate when the aversion against high disparity stocks peaks and show that it peaks during the crisis period when group-controlling shareholders would have the greatest incentive to expropriate minority shareholders. We, in particular, document that foreign investors actually dump high disparity stocks during the crisis period. Giannetti and Simonov (2006) do not fully exploit the time variant nature of investors' reluctance against high disparity stocks.

Third, we conduct an instrumental variable (*IV*) analysis and verify that the causality runs from disparity to foreign investors' equity holdings, which is not conducted in Giannetti and Simonov (2006). Fourth, we document that there exists a nonlinear relationship between control-ownership disparity and foreign investors' equity holdings. More specifically, we show that foreign portfolio investors increase their holding with disparity up to a certain level, but beyond that threshold level, holding drops with disparity. Giannetti and Simonov (2006) do not document such nonlinearity.

B.   Hypotheses

In this paper, we basically test three hypotheses. First, we test if foreign portfolio investors are reluctant to hold firms with high control-ownership disparity (*Aversion against Disparity Hypothesis*). Theoretically, if market is efficient, and thus governance information is fully reflected in share price at all times, one would not gain any excess return by over-weighing firms with strong governance or by under-weighing firms with weak governance. Empirical studies, however, rebuke this prediction. Gompers et al. (2003), Cremers and Nair (2005), Yermack (2006), and Core, Guay, and Rusticus (2006) all document that strong governance leads to a higher stock return. Giannetti and Simonov (2006) actually show that investors trading in the Swedish market take the quality of corporate governance into account when selecting stocks. In this paper, we first attempt to confirm the finding of Giannetti and Simonov (2006), but we do so by studying the decision on portfolio weights in addition to the binary decision to hold or not to hold.

> **Hypothesis 1**: Foreign portfolio investors, when determining portfolio weights, give lower weights on firms with high control-ownership disparity.

Second, we test if foreign portfolio investors' aversion to control-ownership disparity varies over time and, in particular, peaks during the crisis period (*Time Variation Hypothesis*). According to Johnson et al. (2000), a lower return on investment opportunities, due to crisis, means a lower marginal cost to insiders of diverting resources away from profitable investment projects, which would lead to more expropriation in firms with high control-ownership disparity. If this

conjecture is correct, share prices of high disparity stocks should fall more severely than those of low disparity stocks during crisis. In fact, Mitton (2002), Lemmon and Lins (2003), and Baek, Kang, and Park (2004), all show that Asian firms with high control-ownership disparity experienced a sharper drop in share price during the Asian crisis, supporting the argument that the risk of expropriation increases during recessions. Similarly, we can hypothesize that, during crisis, investors would exit firms with high disparity for fear that the share prices of high disparity firms would fall more sharply than those of low disparity firms.

Hypothesis 2: During crisis, foreign portfolio investors' tendency to give lower weights on firms with high control-ownership disparity strengthens.

Third, we test if foreign portfolio investors' tendency to give lower weights on firms with high control-ownership disparity weakens or disappears for investors that are from countries dominated by high disparity firms and thus familiar with such high disparity firms (*Familiarity Hypothesis* or *Home Country Governance Hypothesis*). This hypothesis is in line with a strand of research that document equity investors' strong preference toward familiar companies (see section 2.*A* for a full discussion on this literature). As a robustness check, we investigate other measures of home country governance, besides control-ownership disparity. More specifically, we look at investors' home country legal origin and anti-director rights.

Hypothesis 3: Foreign portfolio investors' tendency to give lower weights on firms with high control-ownership disparity weakens or disappears for investors that are from countries dominated by high disparity firms.

Besides these three main hypotheses, we investigate a number of interesting issues. We investigate if foreign portfolio investors actually dump high disparity shares to lower the weights on high disparity stocks, as opposed to making a net purchase of low disparity shares. We also study the existence of a nonlinear relationship between disparity and foreign portfolio investor's holding.

C.   The Korean Stock Market

There are a number of reasons why we choose the Korean stock market to study the three hypotheses mentioned above. First, to test the hypothesis on disparity aversion, one would want to select a country where the economy is dominated by firms with varying degrees of control-ownership disparity. Korea is a country dominated by family-controlled business conglomerates,

also known as *chaebols*. By the extensive use of inter-company share ownership, a typical group-controlling shareholder can wedge up his voting rights well above his cash flow rights in a significant fraction of member firms. Our analysis in later sections reveals that individual *chaebol* firms that form a *chaebol* group have varying degrees of control-ownership disparity. The levels of disparity can go down to zero and up to 76 percent.

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 the equity holdings of foreign investors. Korea, however, do 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.[3]

Second, to test the hypothesis on the time variation of disparity aversion, one would want to choose a country that has gone through a boom and a bust, preferably that is severe enough to induce foreign investors to change the extent of their aversion against disparity. In this sense, countries that have gone through a major financial or economics crisis would be a perfect setting to test the hypothesis. Before the currency crisis of December 1997, the Korean economy grew at a relatively high rate. But, in 1998, which is the year immediately following the crisis, it experienced an un-presented economic contraction.[4] Mitton (2002), Lemmon and Lins (2003), and Baek, Kang, and Park (2004), all find that Korean firms with high control-ownership disparity experienced a sharper drop in share price during the crisis period, suggesting that foreign investors' aversion against disparity sharply increased during this period.

Third, to test the hypothesis on home country governance, one would want to choose a country with a stock market that is reasonably well developed with a significant presence of foreign portfolio investors. During our sample period, the Korean stock market already had a significant presence of foreign portfolio investors. At the end of our sample period (as of 1999 year-end), the number of registered foreign investors amounts to 9,954 from 67 countries, and they collectively own 20.22 percent of all shares listed in the Korea Stock Exchange.[5] The diversity of foreign investor's home country means that we can un-bundle foreign investors by their country of origin and still have enough sample size in each group to conduct meaningful empirical analyses. Korea Stock Exchange is also reasonably well developed as of 1999. According to the annual report

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[3] The major governance reform is the mandatory introduction of 50% independent outside director ratio and the audit committee in firms with book asset value above 2 trillion won (approximately 2 billion US dollars), which was announced in the second half of 1999, 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.

[4] GDP growth rates were 7.0%, 4.7%, -6.9%, 9.5%, respectively for 1996, 1997, 1998, and 1999.

[5] This figure is excluding foreign director investors. As of 2004 year-end, foreign ownership reaches 40 percent.

published by the World Federation of Exchanges, the total market capitalization (excluding investment funds) of domestic firms listed in Korea Stock Exchange equals 306 billion US dollars. This is a figure that ranks number five among all Asian exchanges and comparable to the size of Stockholm and Helsinki exchanges that have been studied in the existing literature.[6]

3. DATA, METHODOLOGY, AND MEASUREMENTS

A. Data

In this paper we make use of two unique data sets: (1) data on foreign investor's equity holding of Korean *chaebol* firms and (2) data on their ownership structure.

The foreign investor holding data is the one used in Kim and Wei (2002a, 2002b), which provides detailed information on the monthly positions of every foreign investor in every stock listed on the Korea Stock Exchange from December 1996 to December 1999. The data set also provides information on foreign investor's country of residence, country of incorporation, business type, whether it is an individual or an institutional investor, and whether it is a portfolio investment or a direct investment. Business type includes banks, insurance firms, securities firms, mutual funds, unit trusts, and pension funds.

Such information on investor characteristics is what allows us to un-bundle foreign investors and identify which foreign investor actually does care about control-ownership disparity. Two other features of this data set are worth noting. First, the data set contains a universe of all foreign investors, which is made possible because all foreign investors are required to register in their real names with the Korean Securities Supervisory Board (KSSB). Second, each foreign investor is identified by its unique ID, which allows us to identify the exact portfolio and its composition each investor holds. The data set is originally from the Korea Securities Computer Corporation (KOSCOM), an affiliate to the Korea Stock Exchange (KSE). See Kim and Wei (2002a, 2002b) for detailed explanation on this data set.

The *chaebol* ownership data is the one used in Kim, Lim, and Sung (2007) and Kim and Sung (2006), which gives detailed information on the number of shares held by the group-controlling shareholder and his *related parties* for each of the *chaebol*-affiliated firms over a ten-year period (19996-2005). *Related parties* include relatives, senior managers of the firm, affiliated not-for-profit organizations, and affiliated for-profit firms.

Two points are worth noting about this database. First, it gives a complete picture on the chain of ownership among the affiliated firms, which can be effectively presented in a matrix

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[6] As of 1999 year-end, the market capitalization of domestic firms listed in the Stockholm Stock Exchange and the Helsinki Stock Exchange are respectively 373 and 349 billion US dollars. Visit http://www.world-exchanges.org

format.   See Kim, Lim, and Sung (2007) for the details of this matrix format.   Second, the database contains ownership data even for non-listed firms, which enables us to compute the cash flow rights and other ownership variables more precisely.   The dataset is originally from the Korea Fair Trade Commission (KFTC), which compiles such a database to monitor and enforce compliance of its regulations by large business conglomerates.   See Kim, Lim, and Sung (2007) for detailed information on the definitions of a controlling shareholder, related parties, and the regulations KFTC imposes.

B.   Empirical Challenges and Methodology

In testing our hypothesis, we confront a number of empirical challenges.   First, the total sample size is enormous.   We have approximately 190 *chaebol* firms, 2,000 foreign portfolio investors, and 37 months in our data, which makes the total sample size to be around 14 million.   Employing any regression model with investor fixed effects or models that require the estimation of maximum likelihood function easily exhausts the computer memory.   Thus, in this paper, when we actually run regressions, we break up the entire sample into subsamples and run regressions for each and every subsample, the approach of which can be considered to be stricter than pooling all observations.

Second, our data shows that foreign portfolio investors have only long positions.   This is not because we lack data on short positions, but because short selling was simply not allowed during our sample period.   Thus, any stock that investors want to have a short position shows up as a zero holding, which means that our dependent variable is left censored at "0."   Our dependent variable can be also right censored at "1."   An investor that holds only one stock and also uses leverage to amplify her position would have a holding weight above "1" for the stock she holds. But, the lack of data on leverage does not allow us to identify the stocks with a holding weight above "1," which means that our dependent variable is right censored at "1."   Since a simple *OLS* in this situation – dependent variable censored at both ends – would give a coefficient on disparity that is downward biased (in absolute terms), we use *Tobit* as our main regression model in this paper.

Third, a typical foreign portfolio investor in our sample does not hold shares in each and every *chaebol* firm.   In fact, they have holdings only in a limited number of firms, which makes our dependent variable to be zero in most of our observations.   In addition, for a significant number of investors, who hold only one stock, the portfolio weights are either "1" (for the stock she holds) or "0" (for all remaining stocks she does not hold).   Recognizing that such a data structure may not be optimal to study the determinants of portfolio weights, we investigate the binary decision of holding or not holding a stock.   Thus, as an alternative regression model, we use *Probit* in addition

to *Tobit*.

Fourth, we use firm-investor-month as our observation unit, which means that the error term in any regression model we use could be correlated in three ways: across investors and over time for a given firm, across firms and over time for a given investor, or across firms and across investors for a given month. To address this problem of correlated error terms and the possibility of a downward bias in the coefficient standard errors, which results from it, we take the approach of including month and investor fixed effects and including as many firm-level determinants as possible. We drop investor fixed effects when estimating *Tobit* or *Probit* models for fear that investor fixed effects may inflate the coefficient estimates.[7] We do include investor fixed effects whenever estimating the *OLS* model.

Fifth, when studying the relationship between control-ownership disparity and investor holding, an obviously problem is to identify the direction of causality. The negative relationship found between the two may not exits because foreign investors shun away from high disparity stocks, but because greater foreign ownership influences the controlling shareholder to change the corporate ownership structure in a way that is reduces the level of disparity. To address this problem, we first provide a number of reasons why control-ownership disparity is not likely to be influenced by foreign ownership, and then formally test whether our main result survives even when we control for the endogeneity using a two-stage least squares (2*SLS*) framework.

Sixth, during a significant fraction of our sample period, Korean government maintained its regulation on foreign ownership in firm listed in the Korea Stock Exchange. The government relaxed the ceiling on foreign ownership (in aggregate) in steps: 20 percent (April 1996), 23 percent (May 1997), 55 percent (December 1997), and eventually 100 percent (May 1998). If the upper ceiling government imposes is more binding for low disparity stocks than for high disparity stocks, foreign portfolio investors would not be able to hold as many low disparity shares they want, which would lead to a coefficient on disparity that is downward biased (in absolute terms). One way to address this problem is to simply drop the stocks with binding limits. In our base model, however, we do not drop them, but still show that a negative relationship between disparity and foreign investor's holding. Dropping stocks with binding limits would only strengthen our result.

C. Ownership Variables

The key variable of interest in this paper is **control-ownership disparity**, which is also known as the "wedge" in LLSV (2002). We measure disparity and other ownership variables of Korean *chaebol* firms following Kim, Lim, and Sung (2007), using the same data set provided by the Korea Fair Trade Commission. In this section, we provide only a brief definition of these ownership

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[7] See Lancaster (2000) for details about the incidental parameter problem.

variables. We ask the readers to see Kim, Lim, and Sung (2007) for more detailed explanation on how one can construct each ownership variable.

We define control-ownership disparity of firm j as the voting rights a group-controlling shareholder controls in firm j minus the cash flow rights he can claim from firm j.[8] Voting rights is the sum of direct share ownerships in firm j held by the group-controlling shareholder himself and his *related parties*, which in turn include relatives, senior managers, not-for-profit organizations, and for-profit corporations under his *de facto* control. The Korean Fair Trade Commission makes use of an explicit rule to identify *related parties* that are under the group-controlling shareholder's *de factor* control. See Kim, Lim, and Sung (2007) for the details on this rule. Cash flow right from firm i, on the other hand, is defined as the sum of products of ownership stakes held by the group-controlling shareholder himself and his relatives (excluding other *related parties*) along the voting right chain. For example, suppose there is a group composed of two firms (A and B), all of which are *de facto* controlled by a group-controlling shareholder. Further assume that the group-controlling shareholder owns 51percent of firm A, and firm A owns 41 percent of firm B. If the group-controlling shareholder owns 10 percent of firm B, the voting right, the cash flow right and the disparity of firm B can be computed respectively as 51 percent (= 0.10 + 0.41), 26 percent (= 0.05 + 0.51x0.41), and 25 percent (= 0.51 – 0.26).

Control-ownership disparity is well known in the governance literature as a variable that can effectively capture the risk of expropriation or the likelihood of private benefit a controlling shareholder can extract. It is not hard to show this by using the numerical example mentioned earlier. If all the assumptions made earlier hold, the voting rights in firm A and B are both 51 percent, while the cash flow rights are respectively 51 percent and 26 percent. So, when it comes to the power or the ability of extracting private benefits, there is no difference between the two firms. That is, the group-controlling shareholder controls the same level of voting rights in both firms. But, when it comes to the incentive to do so, the two firms are different. The incentive to extract private benefit is much greater in firm B. This is because any dollar extraction from firm A will incur a loss of 51 cents to the group-controlling shareholder, while any dollar extraction from firm B will incur a loss of only 26 cents. So, firm B will is more likely to be extrapolated than firm A.

Besides control-ownership disparity, we use two other group-level ownership variables – direct ownership and contribution to group control – which are used as controls in this paper. **Direct ownership** appears on the right-hand side of the equation because outside investors may consider

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[8] There are studies that use the ratio, instead of the difference between 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].

firms with high direct ownership to be less subject to agency problems.   We hypothesize that group-controlling shareholders would have a greater incentive to maximize firm value in firms where he holds higher direct ownership.   But following Morck, Shleifer, and Vishny (1988), we also hypothesize 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 add the **squared term of direct ownership**.   Direct ownership in firm j is defined as the sum of direct share ownerships held by the group-controlling shareholder himself and his relatives.   Notice that direct ownership is always equal to or smaller than cash flow rights that accrue through other affiliated firms.   This is because cash flow rights do not only include *direct* cash flow rights but also *indirect* cash flow rights.   In our earlier numerical example, the group-controlling shareholder's direct ownership in firm B is 5 percent, while the cash flow right is 26 percent.

Following Kim, Lim, and Sung (2007), we define **contribution to group control** of firm j as the 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.   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), the firms with high contribution to group control are indeed the group's de *facto* holding companies.   Contribution to group control appears on the right-hand side of the equation because outside investors may regard firms with high contribution to group control, not as profit-making institutions, but as vehicles to control other firms.   This measure is winsorized at the 1st and the 99th percentile values.

D.   Other Variables

We use two measures of foreign investor holding, which is the dependent variable in most of our regressions.   When estimating *Tobit* or *OLS* models, we use the **holding weight** of investor i in firm j at month t (HW_{itj}), which is defined as the market value of shares investor i holds in firm j at month t, as a fraction of investor i's total holdings in market value at month t.   It is worth noting here that we do not scale foreign investor's holding in a firm by the firm's total number of outstanding shares.   We do this for two reasons.   First, a measure that computes the holding weight as a fraction of investor's entire portfolio is a measure that is closer to what we want to capture.   Second, it helps the measure not to capture foreign investors' influence over the invested firm.   This feature later helps us to argue that control-ownership disparity is unlikely to be influenced by our measure of foreign investor's holding.   When estimating a *Probit* model, we use the **holding dummy** (HD_{ijt}) that takes a value of 1 if investor i holds a share of firm j at month t, and 0 otherwise.

On the right-hand side of the equation, we try to include as many firm-level control variables as possible that are known to be the determinants of foreign investors' equity holding. First, we include **firm size** adjusted for the firm's free-float. Size not only captures the supply of shares, but also familiarity, liquidity, analysts' coverage and many others. 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 actually do not trade in the market, we adjust firm size by the firm's **free-float**. We do this by subtracting the fraction of market capitalization that is controlled by the group-controlling shareholder before taking logs. It is also worth noting here that we measure firm size in market value. This in effect controls for any change in the holding weight that is caused by share price changes.

Second, we include firm's **years of operation**. We conjecture that investors would hold more shares in relatively younger firms, which may be exposed to high growth opportunities. This measure is in logs. Third, we include **share turnover** to capture market liquidity of a stock. It is measured by the number of shares traded during a year scaled by the number of shares outstanding, adjusted for the firm's free float. Forth, we include accounting **profitability**, measured by EBIT/book value of assets (measured at previous fiscal year end), winsorized at the 1st and the 99th percentile values, averaged over previous 3 years. Kang and Stulz (1997), studying the Japanese market, documents that foreign investors hold more shares of firms with good accounting performance.

Fifth, we include **dividend yield,** measured by per share dividend scaled by year-end share price. Firm paying high dividends may have managers extracting less private benefits. But, firm paying low dividends may be those with high growth opportunities. Dahlquist and Robertsson (2001) and Giannetti and Simonov (2006), studying the Swedish market, both report that foreign investors show preference for firms paying low dividends. Sixth, we include **market-to-book ratio** to account for investors' preference toward growth or value firms. Kang and Stulz (1997) and Dahlquist and Robertsson (2001) document that foreign investors prefer growth stocks, while Giannetti and Simonov (2006) report that they prefer value stocks.

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 leverage. **Return volatility** is measured by the standard deviation of weekly returns (adjusted for stock-splits and dividends) over a prior 48-months period. 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**, which may

capture financial distress, is measured by book value of debt over book value of assets, winsorized at the 1st and the 99th percentile values, in logs.   Kang and Stulz (1997) and Giannetti and Simonov (2006), find evidence that foreign investors stay way from firms with high leverage, but Dahlquist and Robertsson (2001) do not.

Last, but not least, we include **number of holdings** as a control.   We do so to capture how much an investor is enjoying portfolio diversification effect.   Investors with a diversified portfolio would be less concerned with individual firm's expropriation risk.   *Table 2* summarizes the definition of each variable used in this paper.

4.   RESULTS

A.   Summary Statistics

Table 1 reports number of investors and their holdings at four different points of time: December end in 1996, 1997, 1998, and 1999.   *Panel A* of *Table 1* reports number of foreign portfolio investors holding shares of at least two *chaebol* firms for subgroups categorized by residence (resident vs. nonresident), country of incorporation (onshore vs. offshore), level of home country disparity (low vs. high control-ownership disparity), and investors' business type (banks, insurance firms, securities firms, mutual funds, unit trusts, pension funds, and others). We exclude foreign director investors from our analysis.

As of December end 1999, the foreign portfolio investors, holding shares of at least two *chaebol* firms, amount to 1,928 investors.   Out of this total, 1,821 investors (94%) reside overseas.   There are only 107 resident foreign investors, and none of these are institutional investors as of December end 1999.   Out of all nonresident investors, 1,723 investors (95%) are onshore funds and the remaining (5%) are offshore funds.   Out of all onshore nonresident funds, where the information on home country disparity is available, 976 investors (65%) are from countries with low control-ownership disparity, and 517 (35%) are from countries with high control-ownership disparity. 230 investors are not classified.   When we classify investors by the type of their businesses, the largest group is the mutual fund group (43%), followed by unit trusts (20%) and pension funds (10%), which are mostly coming from low disparity countries.   Banks, insurance firms, and securities firms, on the other hand, are mostly coming from high disparity countries.

The four snap shot tables in *Panel A* show how the demography of investors changed over time. Two observations can be made.   First, the number of investors increased over time, but not in a monotonic way.   The number of investors actually drops by 30 percent between December 1996 and December 1997.   The number of investors, however, recovers back by December 1998, and increases even further until December 1999.   This patter suggests that foreign portfolio investors

shunned away from *chaebol* firms during the crisis period, but resumed their holdings of *chaebol* firms during the post crisis period. Second, the number of resident investors does not seem to follow the general pattern. The drop in number of investors took place with a lag and never recovered back to the pre-crisis level. Few resident institutional investors that used to hold *chaebol* firm stocks before and during the crisis completely sold out their holdings by December 1998.

Panel B of *Table 1* reports the frequency (number of investors) of each level of holdings (number of *chaebol* firms) in the portfolio of foreign investors that hold shares of at least one *chaebol* firm. We exclude foreign director investors from our analysis. The panel shows that the frequency distribution is heavily skewed. In case of December 1999, approximately 32 percent of foreign portfolio investors have only one *chaebol* firm in their portfolio. But, at the same time, there is a significant portion (14%) of investors that hold 10 or more *chaebol* firms in their portfolio. Some investors, which must obviously be an index fund, hold up to 100 *chaebol* firms in their portfolio.

Table 2 Panel A gives definition of each variable used in this paper. *Panel B* reports summary statistics of these variables at four different points of time (December end of 1996, 1997, 1998, and 1999). The average holding weight is less than 1 percent at 0.006 (0.6%). This is because of zero holdings in so many *chaebol* firms, which lower the average. The probability to hold a *chaebol* stock is 3.8%. This corresponds to an average holding dummy of 0.038. The average level of control-ownership disparity ranges between 15.6 and 17.3 percents. The average number of holdings ranges between 4.3 (1.45 in logs) and 5 (1.62 in logs) firms. *Panel C* gives correlation coefficients for each variable pairs. The simple correlation coefficient between disparity and holding weight is negative (-0.04) and statistically significant, suggesting that investors have a tendency to tilt their portfolio weights away from high disparity stocks.

B.   Aversion to Disparity Hypothesis

Table 3 reports the result of *Tobit* regressions estimated on a sample that includes Decembers of 1996, 1997, 1998, and 1999, where the dependent variable is the market value of shares investor *i* holds in firm *j* at month *t*, as a fraction of investor *i*'s total holdings in market value at month *t* (*holding weight*, HW_{ijt}). In columns (1)-(4), we estimate the *One-Limit Tobit* model, where "0" *holding weight* is the lower limit that censors the data. When estimating the *One-Limit Tobit model*, we exclude investors that hold only one *chaebol* firm in the portfolio. In column (5), we estimate the *Two-Limit Tobit* model, where "0" and "1" *holding weights* are the lower and the upper limits that censor the data. When estimating the *Two-Limit Tobit model*, we do not exclude investors that hold only one *chaebol* firm in the portfolio. All regressions include year dummies to control for any special correlation between the observations. From column (1) to (4), we progressively add control variables.

Results show that the relationship between control-ownership disparity and investors' holding is negative and statistically significant at the 1 percent level. The coefficient in column (5) indicates that one standard deviation increase in disparity (15.4%) drops investors' holding weight by 2 percentage points (=-0.1321 x 0.154). This is a very large figure given that the sample mean of holding weight is only 0.6 percent. A minimum-to-maximum change in disparity (76.0%) drops investors' holding weight by 10 percentage points (=-0.1321 x 0.760). The negative relationship found between disparity and holding weight, however, does not necessarily mean that investors are holding less number of high disparity shares than they would if they did not take disparity into account in their investment decisions. It could also mean they are holding greater number of low disparity shares. We address this question in section 4.*G.*

The table shows what other determinants also do matter when it comes to foreign portfolio investors' investment decisions. The results show that foreign portfolio investors' holding weight increases with firm size, profitability, R&D and advertising expenditures, but decrease with years of operation, market-to-book ratio, and sales growth. Out of all right-hand side variables, free-float adjusted firm size turns out to be the most important. This is consistent with Dahlquist et al. (2003), which show that the world float portfolio better explains the portfolio weights of U.S. investors than the world market portfolio. A one standard deviation change in firm size explains a change of investors' holding weight by 42 percentage points. In the subsequent tables that use a *Tobit* model, the model in column (4) is assumed if not mentioned otherwise.

Table 4 shows the results of *OLS* and *Probit* regressions using the same sample (Decembers of 1996, 1997, 1998, and 1999). Column (1) and (2) report results of *OLS* regressions with investor fixed effects, where the dependent variable is the market value of shares investor i holds in firm j at month t, as a fraction of investor i's total holdings in market value at month t (*holding weight*, HW_{ijt}). Samples for column (1) include observations with zero holding weights, while samples for column (2) exclude them (that is, drop if $HW_{ijt}=0$). Column (3) reports results of a *Probit* regression, where the dependent variable takes a value 1 if investor i holds firm j at month t, and 0 otherwise (*holding dummy*, HD_{ijt}). Column (4) reports *Probit* coefficients that capture the marginal effect on probability.

A number of observations can be made. First, all three coefficients are negative and statistically significant, which indicates that our finding is robust to different regression models. We also separately estimated *OLS* regressions with industry fixed effects, firm fixed effects, and group fixed effects. We observed no qualitative differences. Second, the *OLS* coefficients are smaller than the *Tobit* coefficients in absolute terms. The *OLS* coefficients rage between -0.0129 and -0.0314, while the *Tobit* coefficients rage between -0.0789 and -0.1321. This suggests that *OLS* coefficients might be biased downward, which supports our use of *Tobit* regressions. *OLS* coefficient without investor fixed effects also turned out to be smaller than the *Tobit* coefficients.

Third, the *OLS* coefficient in column (2), which conditions the sample to include only those firms with positive holding weights, is greater than the one in column (1) which includes even those firms with zero holding weights. This suggests that control-ownership disparity is more important in the second stage decision, where investors have to obtain the weights in each stock comprising the portfolio, than in the first stage, where investors have to decide whether or not to include a particular stock in the portfolio.

C.   Time Variation of Disparity Aversion

Table 5 shows that the coefficient on control-ownership disparity is time-variant.   In column (1), we report monthly *Tobit* coefficients on disparity, over a 37-months sample period (December 1996 – December 1999), when the sample includes all investors, regardless of residence, country of incorporation, level of home country disparity, and investors' business type.   It shows that during the pre-crisis period (December 1996 – November 1997), the coefficients are positive and statistically significant.   The coefficient ranges between 0.067 and 0.189.   This indicates that foreign portfolio investors actually give more weight on high disparity stocks than on low disparity stocks.   On December 1997, however, the coefficient suddenly switches to a negative figure, dropping all the way down to -0.2476.   From January 1998 to September 1999, the size of the coefficient gradually drops over time in absolute terms, but remain to be negative.   The first line chart in *Figure 1* shows this time-series pattern.

Note that the coefficient of -0.2476 in December 1997 is significantly greater that the coefficient found in our panel regressions.   One standard deviation increase in disparity (15.4%), at the peak of the crisis, drops investors' holding weight by 3.8 percentage points (=-0.2476 x 0.154).   A minimum-to-maximum change in disparity (76.0%), at the peak of the crisis, drops investors' holding weight by 19 percentage points (=-0.2476 x 0.760).

It is not hard to explain this U-shaped curve *ex post*.   During the pre-crisis period (December 1996 – November 1997), control-ownership disparity, expropriation, and crony capitalism were not part of everyday vocabulary for international portfolio investors.   To them, Korean firms, regardless of their ownership structure, could do no wrong.   So, the coefficient on disparity is nonnegative.   During the in-crisis period, however, investors became super-sensitive to governance issues, especially when the term "crony capitalism" became popularized.   So, the coefficient on disparity switches to a negative figure.   During the post-crisis period, investors either correct their initial over-reaction or resume their investment in high disparity stocks reassured by the post-crisis governance reform undertaken by the Korean government.

Our evidence of a larger negative coefficient during the in-crisis period is consistent with the argument that the possibility of expropriation is higher during recessions.   Johnson et al. (2000),

Mitton (2002), Lemmon and Lins (2003), and Baek, Kang, and Park (2004) support this argument by showing that firms with weak corporate governance experienced a sharper drop in share price during the Asian crisis.   The evidence of a larger negative coefficient during the in-crisis period is also consistent with Gelos and Wei (2005) that report emerging market funds' greater propensity to exit nontransparent countries during crises.

It is however challenging to understand why investors would prefer high disparity stocks before the crisis.   One possibility is that high disparity firms have certain characteristics that are not fully captured by the control variables in *Table 3*.   Another possibility is that investors are not necessarily holding more shares of high disparity stocks, but holding lesser shares of low disparity stocks than they should.   Section 4.*G* provides supporting evidence on this latter possibility.

D.   Home Country Disparity

Columns (2) and (3) in *Table 5* show monthly *Tobit* coefficients for two groups of investors: one from countries with low level of corporate disparity and another from countries with high level of corporate disparity.   We use the "wedge" measure in LLSV (2002) as our measure of home country disparity.   In our sample, ten countries are classified as low disparity countries (disparity < 10%) and thirteen as high disparity countries (disparity >= 10%).   *Table 6* lists the name of the countries in each group.

From columns (2) and (3) of *Table 5*, one can observe that during the pre-crisis period, both group of investors preferred high disparity stocks over low disparity stocks.   But, the two diverge from each other from December 1997.   Investors from low disparity countries show negative coefficients significantly different from zero almost during the entire in-crisis period, while investors from high disparity countries show coefficients insignificantly different from zero.   The coefficient in December 1997 is -0.2844 for investors from low disparity countries, which is slightly greater in absolute terms than the one estimated for all investors.   One standard deviation increase in disparity (15.4%), at the peak of the crisis, drops the holding weight of investors from low disparity countries by 4.4 percentage points (=-0.2844 x 0.154).   A minimum-to-maximum change in disparity (76.0%) drops investors' holding weight by 22 percentage points (=-0.2844 x 0.760). The second line chart in *Figure 1* shows this time-series patterns of two investor groups.   During the pre-crisis period, the coefficients from low disparity countries mirror those from high disparity countries.   But from December 1997, the two diverge, and the gap does not close until mid-1999.

Investors' familiarity hypothesis can explain the pattern.   During the pre-crisis period, since control-ownership disparity did not enter investors' decision making process, there was nothing unfamiliar about it for both types of investors.   So, the coefficients from each investor group mirror each other.   During the in-crisis period, however, control-ownership disparity suddenly

became a major factor when making investment decisions. Investors from high disparity countries, being familiar with high disparity firms, do not necessarily shift weights away from high disparity stocks. Investors from low disparity countries, on the other hand, being unfamiliar with high disparity firms, shift weights away from high disparity stocks. During the post-crisis period, investors from low disparity countries familiarize themselves with high disparity stocks, correct their initial overreaction, or resume their investment in high disparity stocks reassured by the post-crisis governance reform.

Table 7 report *Probit* coefficients as a robustness check. The coefficients in columns (3) and (4) show that the *Probit* coefficients follow a similar pattern. This *Probit* result is valuable since it confirms that our main result of negative coefficient on disparity is not merely a result of share price changes. Note that, when estimating *Tobit* regressions, our dependent variable, *holding weight* (HW_{ijt}), may fluctuate with share price changes, since it is defined as the market value of shares an investor holds, as a fraction of her total holdings in market value. If the share prices of high disparity stocks drop relative to those of low disparity stocks, during the in-crisis period, which is very likely, the weights on high disparity stocks would fall relative to those of low disparity stocks, even in the absence of any active trading by the investors. But, in our *Probit* regression, our dependent variable, *holding dummy* (HD_{ijt}), do not fluctuate with share price changes.

E.   Other Home Country Governance Measures

In *Table 8*, we classify investors using two different measures of home country governance. In columns (1) and (2), we classify investors by legal origin: common vs. civil law countries. In columns (3) and (4), we classify investors by anti-director rights. Legal origin and anti-director rights are both taken from LLSV (1997). Countries with anti-director rights of 3 or above are classified as countries with high anti-director rights.

The monthly *Tobit* coefficients, reported in *Table 8*, show a pattern similar to those reported in *Table 5*: positive coefficients on disparity before the crisis, a sudden drop in December 1997, and a gradual convergence back to zero coefficient level during the subsequent months. One exception is the behavior of investors from civil law countries during the first three months of the crisis period (December 1997, January 1998, and February 1998). Like the counterparts from common law countries, the coefficients are negative and highly significant. Country-level analyses, the result of which we do not report here, reveal that such negative coefficients are driven by a limited number of countries with low level of disparity. Another deviation from the general patter can be found among investors from countries with low anti-director rights. They show strong preference over high disparity stocks even after the crisis.

In *Table 9*, we investigate which measure of home country governance dominates. We, in particular, compare home country disparity against legal origin. In the table, we report coefficients on control-ownership disparity for four groups of investors. In column (1), we report results for investors from common law countries with disparity less than 10 percent. In column (2), we report results for investors from common law countries with disparity of 10 percent or above. In column (3), we report results for investors from civil law countries with disparity less than 10 percent. In column (4), we report results for investors from civil law countries with disparity of 10 percent or above.

The coefficients on disparity during the in-crisis period show that neither measure dominates. When comparing columns (1) and (2) during the in-crisis period, one can observe negative coefficients regardless of the level of home country disparity, suggesting that legal origin is the dominant factor. But when comparing columns (3) and (4), one can see a negative coefficient only for the investors from countries with low disparity, indicating that home country disparity, rather than legal origin, is the salient determinant.

F. Investor's Business Type

Table 10 investigates whether our main result reported in *Table 6* and *7* (negative coefficients for investors from low disparity countries and nonnegative coefficients for investors from high disparity countries) is robust to different types of foreign portfolio investors. The table reports coefficients on control-ownership disparity for 12 groups of investors, classified by their business type and also by the level of home country disparity (low vs. high). Investors' business type includes banks, insurance firms, securities firms, mutual funds, unit trusts, and pension funds.

A number of observations can be made. First, the main result reported in *Table 6* and *7* is confirmed for mutual funds, unit trusts, and pension funds, which together take up 87 percent of all institutional investors, and also for securities firms. Second, as for banks and insurance firms, we do not find any negative coefficient on disparity throughout the sample period regardless of the level of home country disparity. This finding, however, should be interpreted with caution since we do not have large number of banks and insurance firms in our sample. *Table 1* show that in December 1997 there are only four banks and seven insurance firms from low disparity countries investing in *chaebol* firms. Third, as for securities firms, we find a negative coefficient on disparity even during the pre-crisis period, which we do not find in any other investor group. This again should be interpreted with caution since we have only eight securities firms in our sample as of December 1997 from low disparity countries investing in *chaebol* firms.

G. Do Investors Actually Dump High Disparity Stocks?

In *Table 11*, we show that, during the in-crisis period, foreign portfolio investors do not merely shift weights from high to low disparity stocks, but also actually hold less number of high disparity shares than they would if they did not take disparity into account in their investment decisions. The table reports the difference between the realized probability to hold and the predicted probability to hold (hereafter the "deviation") for each quintile of firms grouped by the level of disparity for each month over a 37-months sample period (December 1996 – December 1999) for investors from low and high disparity countries.

The realized probability to hold is computed by averaging the holding dummy (HD_{ijt}) across all observations in the sample disparity quintile. The predicted probability to hold is computed by averaging the fitted values from a *Probit* regression across all observations in the same disparity quintile. The *Probit* regression to obtain fitted values is estimated every month using the entire sample, but leaving out disparity as a right-hand side variable. Column (6) reports the difference in deviation between low and high disparity firms. Same set of control variables that appear in *Table 3* are used in each regression. *Panel A* reports the result for investors from low disparity countries and Panel B reports the results for investors from high disparity countries.

A number of observations can be made from *Table 11*. First, during the in-crisis period, investors from both types of countries actually hold less number of high disparity shares than they would if they did not take disparity into account in their investment decisions. The deviation of realized probability to hold from the predicted probability turns negative in December 1997 and remains to be negative during the entire in-crisis period. In case of investors from low disparity countries, the realized probability to hold is 1.08 percentage point lower than the predicted probability in December 1997. This is a very high figure given that the sample mean of holding dummy is only 3.8 percent. We can say that investors did indeed dump high disparity stocks in the wake of the crisis and during the whole in-crisis period.

Second, the degree of deviation is greater for investors from low disparity countries than those from high disparity countries throughout the in-crisis period and a significant fraction during the post-crisis period. In case of investors from high disparity countries, the realized probability to hold is 0.78 percentage point lower than the predicted probability in December 1997. Third, the deviation of realized over the predicted probability did not exist during the pre-crisis period for high disparity stocks. Regardless of the level of investors' home country disparity, the deviations are indistinguishable from zero during the pre-crisis period. This suggests that investors did not show preference over high disparity stocks before the crisis, which is the wrong impression one might get from our earlier tables.

Fourth, the deviation of realized over the predicted probability is negative during the pre-crisis period for low disparity stocks. This is so regardless of the level of investors' home country

disparity. Immediately before the crisis, the deviation is 1.32 percentage points for investors from low disparity countries and 0.9 percentage points for investors from high disparity countries. This suggests that investors did not investment enough in low disparity stocks during the pre-crisis period. One possibility is the upper ceiling the Korean government imposed prior to May 1998 on foreign ownership of publicly traded stocks listed in the Korea Stock Exchange. The ceiling on foreign ownership was relaxed in steps: 20 percent (April 1996), 23 percent (May 1997), 55 percent (December 1997), and eventually 100 percent (May 1998). The positive and statistically significant coefficients on disparity, during the pre-crisis period, reported in our earlier tables, halves in size and turn statistically insignificant once we drop from our regression those shares that exhaust the upper ceiling on foreign ownership.

Fifth, the deviation of realized over the predicted probability for low disparity stocks disappear or even turn positive during the in-crisis and the post-crisis period. One possibility is that, after the crisis, investors might be investing in low disparity stocks more than they used as a way of giving a higher weight on low disparity stocks. Yet another possibility is that investors might be investing in low disparity stocks more than they used to because the Korean government made it possible for them to do so by lifting the limits on foreign ownership.

Sixth, we find a nonlinear relationship between disparity and foreign investor's holding weight. One can easily observe from *Table 11* that the deviation of realized over the predicted probability peaks either in the 3rd or in the 4th disparity quintiles, but never in other quintiles. It is also interesting to note that the peak shifts from the 4th quintile (average disparity of 21-23 percent) to the 3rd quintile (average disparity of 12-14 percent) after the crisis. This suggests that the negative relationship between disparity and foreign investor's holding weight kicks in at a lower level of disparity after the crisis.

Figure 2 effectively show how the deviations evolved over time for both low and high disparity stocks for both type of investors (e.g. investors from low and high disparity countries).

H. Test of Endogeneity

So far we argued that control-ownership disparity *caused* foreign portfolio investors to hold lesser shares of high disparity stocks and more shares of low disparity stocks. Without further evidence, however, one can argue that the causality is running in the opposite direction. That is, greater foreign ownership influenced the controlling shareholder to change the corporate ownership structure in a way that is less subject to expropriation.

We can point out a number of reasons why this is not likely. First, during our sample period, which ends in December 1999, the fraction of foreign ownership is not high enough to influence the controlling shareholders. There are only 41 firms in December 1999, where the level of voting

rights, commanded by the controlling shareholder, is less than the level of foreign ownership (in aggregate). This is 22 percent of 189 firms invested by foreign portfolio investors in December 1999. Even in these 41 firms, it is not likely that foreign investors influenced the controlling shareholders. This is because foreign investors are on averaged composed of 279 investors. Free riding problem and coordination cost would prevent any single foreign investor to take the initiative to influence corporate ownership.

Second, control-ownership disparity hardly varies over time. For the causality to run from foreign ownership to disparity, the latter should have changed considerably over time, but it did not. Over a three year period (from 1997 to 1999), the standard deviation of disparity, averaged across all 189 *chaebol* firms, is only 3 percent. Third, the coefficient on disparity suddenly changed from a positive figure in November 1996 to a negative figure in December 1997. It is hard to imagine that this shift that took place over a one-month period is caused by a change in disparity. It is more likely that it is caused by a dramatic change in the investors' perception toward disparity and their subsequent change in investment activities.

Fourth, our measure of foreign investor's holding is not scaled by the total number of outstanding shares of a particular firm, but by the total market value of all shares in her entire portfolio, which makes this measure less likely to capture foreign investors' influence over a particular company. That is, a 30 percent weight on stock A may be taking up only a 0.01 percent stake of company A's total outstanding shares, while a 3 percent weight on stock B may be taking up a 10 percent stake of company B's total outstanding shares.

On top of these, in *Table 12*, we formally test if our main result survives even after controlling for endogeneity. The table reports the results of two-stage least squares (2*SLS*), estimated for two subsample periods: in- and post-crisis periods. Observations are divided further into investors from low and high disparity countries. Following Kim and Sung (2005), we use the size of other affiliated firms (in terms of book equity, scaled by the size of the firm concerned, and in logs) as our instrument (*IV*) for control-ownership disparity. The first stage regressions use the *OLS* model, while the second stage regressions use the *Tobit* model. Same set of control variables that appear in *Table 3* are used in each regression.

We believe this *IV* meets the two conditions to be a reasonable *IV*. First, there is no reason to believe that the size of other affiliated firms can be influenced by the presence of foreign investors. It is hard to imagine that foreign portfolio investors would ask the group-controlling shareholder to change the size of other affiliated firms. In fact, the correlation coefficient of this *IV* with the *holding weight*, orthogonal to all other control variables (all right-hand side variables in the 2nd stage except for the fitted values of disparity), turn out to be very low (between -0.0202 and -0.337), thus supporting the exogenous nature of our *IV*. Second, it can be highly correlated with the level of control-ownership disparity. For a firm to have a high level of disparity there must be either a

large number of affiliated firms or their sizes must be large enough to make significant equity investments into the firm concerned. The coefficients on this *IV* in the first stage regressions, where disparity is the dependent variable, are all positive and highly significant (see columns (1) and (3)), thus supporting the high correlation of our *IV* with the variable modeled to be endogenous.

The results are encouraging. Even when we control for the possibility of endogeneity, the coefficients on disparity (the fitted values of disparity, to be more exact) are negative and high significant for investors from low disparity countries and insignificant for investors from the high disparity countries, during the in-crisis period.

5. CONCLUSION

Using a unique data set that provides detailed information on the composition of each foreign investor in every stock listed on the Korea Stock Exchange, and anther unique data set that gives detailed information on the ownership structure of Korean *chaebol* firms, we document that foreign investors' home country governance do matter when determining the portfolio weights on low and high disparity stocks. More specifically, we show that foreign investors from countries dominated by firms with high control-ownership disparity, countries with civil law origin, or countries with low anti-director rights, tend to show less aversion against the firms with high control-ownership disparity. Our empirical analyses reveal that, in December 1997, a minimum-to-maximum increase in disparity (76%) drops the holding weight of foreign investors from low disparity countries by 22 percentage points, while it has no impact on the holding weights of foreign investors from high disparity countries.

This finding is in line with the investor's familiarity story documented in the international finance literature to explain the well-known "home-bias" puzzle. In contrast to the existing literature on the familiarity story, however, we do not focus solely on firm characteristics, such as firm size, existence of cross-listing, share of export revenue, or transparency, but associate firm characteristics (control-ownership disparity) with those of the investors (home country disparity). Our finding is robust to different regression models we use (*OLS*, *Tobit*, and *Probit*) and to different types of investors we analyze (mutual funds, unit trusts, and pension funds). Our basic finding also survives even when we control for the endogeneity of control-ownership disparity using a 2*SLS* framework.

We also report that foreign portfolio investors' aversion to control-ownership disparity varies over time and, in particular, peaks during economics crisis, which is consistent with the theoretical prediction and the empirical findings of the existing literature. We also show that foreign portfolio investors actually dump high disparity shares to lower the weights on high disparity stocks, as opposed to making a net purchase of low disparity shares. Our empirical analyses also

uncover that there exists a nonlinear relationship between disparity and the equity holdings of foreign portfolio investor.

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Figure 1: Coefficient on Disparity over Time

The figures show monthly *Tobit* coefficients on control-ownership disparity over a 37-months period (corresponds to *Table 4*). The first figure shows coefficients from a sample that includes all investors (corresponds to *Table 4* column (1)). The second figure shows coefficients from two separate subsamples: one includes investors from low disparity countries (corresponds to *Table 4* column (2)) and the other includes investors from high disparity countries (corresponds to *Table 4* column (3)).

A. All Investors
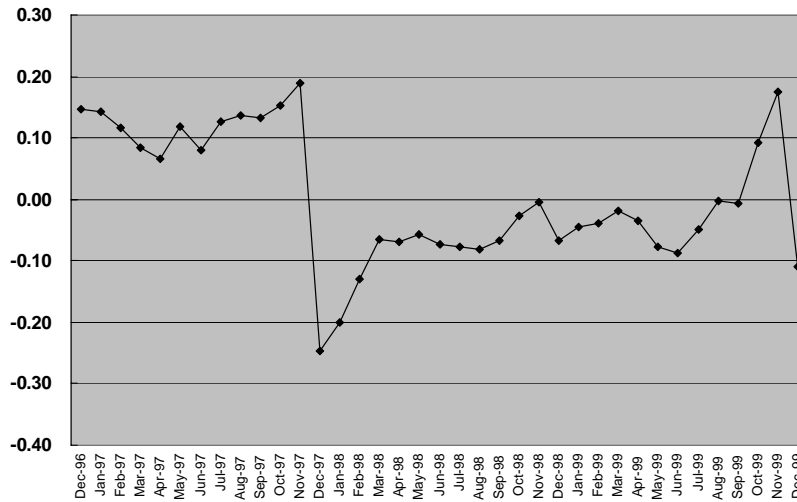
B. Low vs. High Disparity Country Investors
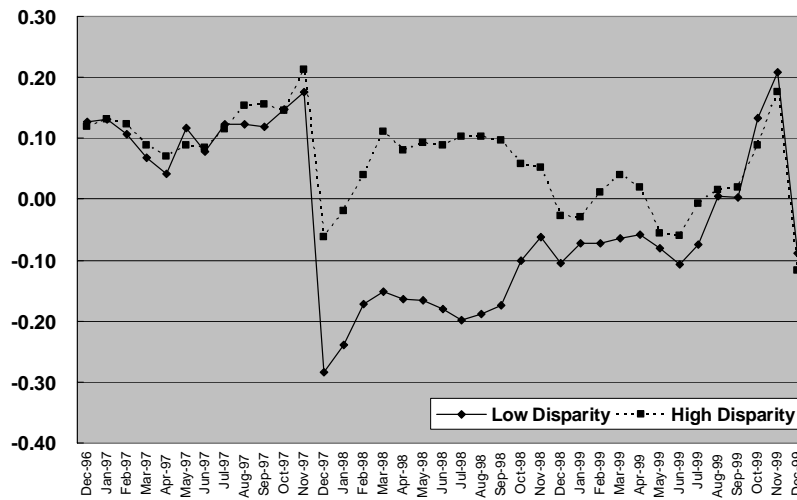
Figure 2: Do Investors Actually Dump High Disparity Stocks?

The figures show monthly deviations from the predicted probability to hold high (or low) disparity stocks over a 37-months period (corresponds to *Table 9,* columns (1) and (5)). The deviations from predicted probability is defined as the difference between the realized probability to hold and the predicted probability to hold (HD_{ijt} averaged cross observations in the same disparity group - PH_{ijt} averaged across observations in the same disparity group). The predicted probability to hold (PH_{ijt}) is the fitted value from a probit regression estimated without the disparity variable over the entire investors at a given month. The solid line indicates the deviations for low disparity countries, while the dashed line indicates for high disparity countries.

A. High Disparity Stocks
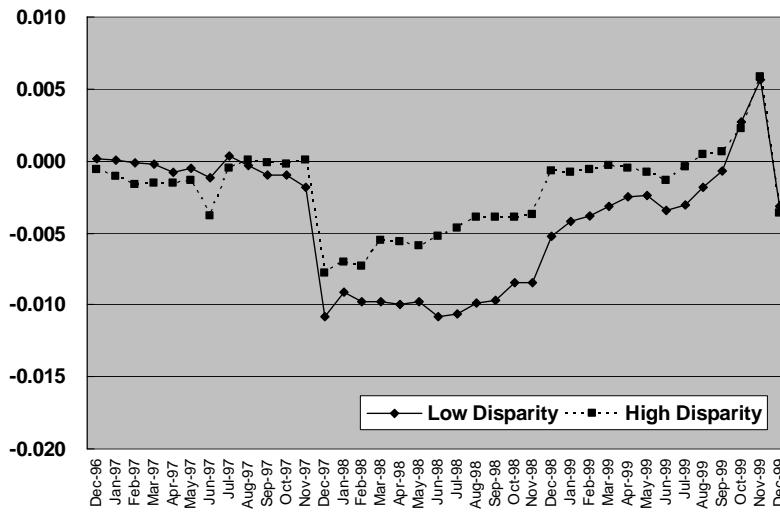
B. Low Disparity Stocks
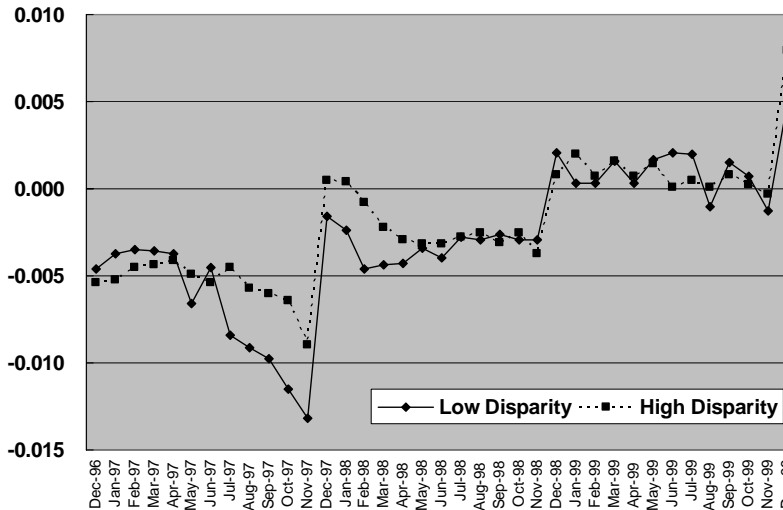
Table 1: Number of Investors and Their Holdings

Panel A reports number of foreign portfolio investors holding shares of at least two *chaebol* firms. We report snap shots at four different points of time (December end in 1996, 1997, 1998, and 1999) for different subgroups categorized by residence, country of incorporation, home country disparity, and investors' business type. *Panel B* reports the frequency (number of investors) for each level of holdings (number of *chaebol* firms) in the portfolio. We exclude foreign direct investors in both panels.

Panel A: Number of Investors

(As of Dec. 1996)

Residence	Incorporation	Disparity	Ind.	Banks	Ins.	Sec.	Mut.	Unit.	Pen.	Other	Total
Non-Resident	Onshore	Low Disparity	52	7	8	13	263	111	128	12	594
		High Disparity	9	52	29	21	118	128	38	9	404
		Others	6	10	1	1	132	16	10	9	185
	Offshore		0	0	0	0	28	12	0	0	40
	Subtotal		67	69	38	35	541	267	176	30	1,223
Resident	Onshore	Low Disparity	61	2	4	1	0	0	0	0	68
		High Disparity	8	0	0	5	0	0	0	0	13
		Others	56	0	3	0	0	0	0	0	59
	Subtotal		125	2	7	6	0	0	0	0	140
Total			192	71	45	41	541	267	176	30	1,363

(As of Dec. 1997)

Residence	Incorporation	Disparity	Ind.	Banks	Ins.	Sec.	Mut.	Unit.	Pen.	Other	Total
Non-Resident	Onshore	Low Disparity	45	4	7	8	172	72	100	10	418
		High Disparity	7	45	19	16	70	66	26	10	259
		Others	5	7	2	2	91	12	7	5	131
	Offshore		0	0	0	0	14	4	1	0	19
	Subtotal		57	56	28	26	347	154	134	25	827
Resident	Onshore	Low Disparity	62	1	4	1	0	0	0	0	68
		High Disparity	5	0	0	9	0	0	0	0	14
		Others	54	0	3	0	0	0	0	0	57
	Subtotal		121	1	7	10	0	0	0	0	139
Total			178	57	35	36	347	154	134	25	966

(As of Dec. 1998)

Residence	Incorporation	Disparity	Ind.	Banks	Ins.	Sec.	Mut.	Unit.	Pen.	Other	Total
Non-Resident	Onshore	Low Disparity	93	6	11	11	250	127	103	13	614
		High Disparity	12	54	33	21	123	108	34	18	403
		Others	2	15	7	4	120	17	13	9	187
	Offshore		0	0	0	0	36	14	1	0	51
	Subtotal		107	75	51	36	529	266	151	40	1,255
Resident	Onshore	Low Disparity	44	0	0	0	0	0	0	0	44
		High Disparity	6	0	0	0	0	0	0	0	6
		Others	36	0	0	0	0	0	0	0	36
	Subtotal		86	0	0	0	0	0	0	0	86
Total			193	75	51	36	529	266	151	40	1,341

(As of Dec. 1999)

Residence	Incorporation	Disparity	Ind.	Banks	Ins.	Sec.	Mut.	Unit.	Pen.	Other	Total
Non-Resident	Onshore	Low Disparity	192	17	16	14	385	185	137	30	976
		High Disparity	30	62	38	28	167	135	36	21	517
		Others	5	17	6	5	154	16	15	12	230
	Offshore		0	0	0	0	77	20	1	0	98
	Subtotal		227	96	60	47	783	356	189	63	1,821
Resident	Onshore	Low Disparity	48	0	0	0	0	0	0	0	48
		High Disparity	8	0	0	0	0	0	0	0	8
		Others	51	0	0	0	0	0	0	0	51
	Subtotal		107	0	0	0	0	0	0	0	107
Total			334	96	60	47	783	356	189	63	1,928

Panel B: Number of Holdings

December 1996			December 1997			December 1998			December 1999		
No.	Freq.	%	No.	Freq.	%	No.	Freq.	%	No.	Freq.	%
1	731	34.89	1	828	46.21	1	769	36.41	1	896	31.67
2	340	16.23	2	293	16.35	2	381	18.04	2	445	15.73
3	243	11.6	3	184	10.27	3	263	12.45	3	305	10.78
4	184	8.78	4	110	6.14	4	194	9.19	4	193	6.82
5	133	6.35	5	65	3.63	5	95	4.50	5	160	5.66
6	82	3.91	6	60	3.35	6	61	2.89	6	144	5.09
7	66	3.15	7	30	1.67	7	58	2.75	7	123	4.35
8	48	2.29	8	31	1.73	8	54	2.56	8	105	3.71
9	36	1.72	9	29	1.62	9	41	1.94	9	71	2.51
10	28	1.34	10	16	0.89	10	30	1.42	10	55	1.94
11	31	1.48	11	16	0.89	11	27	1.28	11	41	1.45
12	25	1.19	12	12	0.67	12	24	1.14	12	39	1.38
13	16	0.76	13	15	0.84	13	9	0.43	13	38	1.34
14	10	0.48	14	6	0.33	14	9	0.43	14	39	1.38
15	10	0.48	15	12	0.67	15	9	0.43	15	21	0.74
16	16	0.76	16	7	0.39	16	12	0.57	16	20	0.71
17	12	0.57	17	6	0.33	17	7	0.33	17	18	0.64
18	9	0.43	18	7	0.39	18	5	0.24	18	8	0.28
19	7	0.33	19	9	0.50	19	6	0.28	19	13	0.46
20	6	0.29	20	8	0.45	20	5	0.24	20	11	0.39
21	5	0.24	21	5	0.28	21	4	0.19	21	8	0.28
22	7	0.33	22	8	0.45	22	5	0.24	22	9	0.32
23	6	0.29	23	6	0.33	23	5	0.24	23	4	0.14
24	4	0.19	24	4	0.22	24	4	0.19	24	2	0.07
25	6	0.29	25	1	0.06	25	2	0.09	25	1	0.04
26	4	0.19	26	1	0.06	26	3	0.14	26	4	0.14
28	4	0.19	27	2	0.11	27	2	0.09	27	3	0.11
29	2	0.10	28	2	0.11	28	2	0.09	28	5	0.18
31	2	0.10	30	1	0.06	29	3	0.14	29	2	0.07
33	6	0.29	32	1	0.06	31	4	0.19	30	1	0.04
36	1	0.05	33	1	0.06	32	2	0.09	32	2	0.07
37	1	0.05	36	2	0.11	37	2	0.09	34	2	0.07
39	1	0.05	37	2	0.11	38	1	0.05	35	1	0.04
40	1	0.05	41	1	0.06	39	1	0.05	36	2	0.07
41	1	0.05	43	2	0.11	44	1	0.05	37	2	0.07
42	1	0.05	50	2	0.11	51	1	0.05	38	3	0.11
44	2	0.10	57	1	0.06	53	2	0.09	40	1	0.04
47	3	0.14	58	1	0.06	57	3	0.14	41	1	0.04
50	1	0.05	60	1	0.06	66	1	0.05	42	2	0.07
52	1	0.05	67	1	0.06	87	1	0.05	43	4	0.14
56	1	0.05	69	1	0.06	89	2	0.09	44	1	0.04
88	1	0.05	75	1	0.06	95	1	0.05	48	3	0.11
97	1	0.05	109	1	0.06	97	1	0.05	49	1	0.04
									50	1	0.04
									51	1	0.04
									52	1	0.04
									53	1	0.04
									56	2	0.07
									57	1	0.04
									62	2	0.07
									68	1	0.04
									69	1	0.04
									74	2	0.07
									80	1	0.04
									83	1	0.04
									87	1	0.04
									91	1	0.04
									95	1	0.04
									96	1	0.04
									104	1	0.04

Table 2: Variable Definitions and Summary Statistics

Panel A gives definition of each variable used in this paper. *Panel B* gives summary statistics of these variables at four different points of time (December 1996, 1997, 1998, and 1999). *Panel C* gives pairwise correlation coefficients among the variables. Statistically significant coefficients at the 5 percent level are in **bold**.

Panel A: Definitions

Variable Name	Definitions
Dependent Variable	
Holding Weight	Market value of shares investor i holds in firm j at month t, as a fraction of investor i's total holdings in market value at month t
Holding Dummy	1 if investor i holds firm j at month t, and 0 otherwise
Group-Level Determinants	
Disparity	Group-controlling shareholder's voting rights minus his cash flow rights in firm j
Size of other affiliated firms	Sum of book equity of other affiliate firms in the same group, scaled by the book value of the firm concerned, in logs. More specifically, we take log of [(sum of book equity/book equity of the firm) + 1] to prevent the observations with "0" value from dropping out
Direct Ownership	Number of shares held by the group-controlling shareholder and his relatives in firm j, as a fraction of 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 1st and the 99th percentile values
Firm-Level Determinants	
Firm Size	Free-float adjusted market capitalization, in logs (unit: Billion Korean won). More specifically, ln[(share price)(number of shares outstanding)(1 – voting rights)]
Years of Operation	Years of operation, in logs
Share Turnover	Free-float adjusted share turnover. More specifically, [number of shares traded during year / (number of shares outstanding)(1 – voting rights)]
Profitability	EBIT/book value of assets (measured at previous fiscal year end), winsorized at the 1st and the 99th percentile values, averaged over previous 3 years
Dividend Yield	Per share dividend / year-end share price
Market-to-Book	Market value of equity / book value of equity
R&D	R&D expenditure / sales
Advertising	Advertising expenditure / sales
Sales Growth	Sales growth, averaged over previous 3 years
Return Volatility	Standard deviation of weekly returns (adjusted for stock-splits and dividends) over previous 48 months
Leverage	[Book value of debt / book value of assets], winsorized at the 1st and the 99th percentile values, in logs. More specifically, we take log of [(debt/assets)+1] to prevent the observations with "0" value from dropping out
Investor-Level Determinants	
No. of Holdings	Number of firms investor i holds in her portfolio at month t, in logs

Panel B: Summary Statistics (Decembers of 1996, 1997, 1998, and 1999)

	No. Obs.	Mean	SD	Min	25th	50th	75th	Max	Dec. 96	Dec. 97	Dec. 98	Dec. 99
Holding Weight	978,563	0.006	0.049	0.000	0.000	0.000	0.000	1.000	0.006	0.006	0.006	0.006
Holding Dummy	978,563	0.038	0.191	0.000	0.000	0.000	0.000	1.000	0.037	0.037	0.035	0.041
Disparity	978,563	0.167	0.154	0.000	0.041	0.136	0.246	0.760	0.156	0.167	0.169	0.173
Direct Ownership	978,563	0.107	0.126	0.000	0.000	0.048	0.202	0.485	0.114	0.111	0.109	0.100
Group Control	948,210	0.098	0.313	0.000	0.003	0.018	0.073	3.959	0.159	0.088	0.083	0.071
Firm Size	978,563	4.342	1.675	-0.318	3.315	4.291	5.355	10.438	4.413	3.703	4.223	4.691
Years of Operation	978,563	3.525	0.360	1.099	3.296	3.526	3.784	4.382	3.483	3.508	3.540	3.551
Share Turnover	978,563	4.179	4.315	0.000	1.447	3.129	5.772	62.103	2.008	2.139	4.483	6.487
Profitability	955,641	0.051	0.069	-0.309	0.022	0.054	0.083	0.529	0.056	0.054	0.041	0.054
Dividend Yield	978,563	0.018	0.023	0.000	0.000	0.011	0.029	0.202	0.018	0.020	0.012	0.022
Market-to-Book	941,410	1.026	2.481	0.013	0.320	0.543	0.942	41.778	1.424	0.714	0.987	0.920
R&D	958,917	0.002	0.006	0.000	0.000	0.000	0.002	0.049	0.002	0.002	0.002	0.003
Advertising	842,792	0.008	0.014	0.000	0.001	0.002	0.008	0.114	0.010	0.009	0.006	0.008
Sales Growth	942,104	0.179	0.357	-0.321	0.054	0.127	0.217	5.279	0.220	0.218	0.171	0.135
Return Volatility	974,471	0.111	0.046	0.031	0.079	0.105	0.133	0.311	0.062	0.100	0.147	0.124
Leverage	959,296	0.541	0.130	0.197	0.470	0.539	0.604	1.211	0.547	0.567	0.564	0.507
No. of Holdings	978,563	1.529	0.764	0.693	0.693	1.386	1.946	4.691	1.521	1.473	1.452	1.615

Panel C: Correlation Matrix (Decembers of 1996, 1997, 1998, and 1999)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]
[1] Holding Weight	1.00															
[2] Disparity	-0.04	1.00														
[3] Direct Ownership	-0.16	-0.34	1.00													
[4] Group Control	-0.06	-0.15	0.39	1.00												
[5] Firm Size	0.36	-0.10	-0.44	-0.21	1.00											
[6] Years of Operation	-0.08	-0.34	0.28	0.12	-0.06	1.00										
[7] Share Turnover	-0.16	0.06	0.04	-0.02	-0.15	0.06	1.00									
[8] Profitability	0.21	0.09	-0.03	-0.05	0.27	0.03	-0.10	1.00								
[9] Dividend Yield	-0.09	-0.11	0.15	0.03	-0.20	0.08	-0.04	0.06	1.00							
[10] Market-to-Book	0.08	0.00	-0.15	0.16	0.21	-0.35	-0.03	-0.35	-0.23	1.00						
[11] R&D	0.25	-0.10	0.07	-0.02	0.41	0.12	-0.10	0.17	-0.11	0.07	1.00					
[12] Advertising	0.07	-0.18	-0.07	-0.05	0.16	-0.18	-0.04	-0.06	-0.17	0.19	0.09	1.00				
[13] Sales Growth	-0.02	0.19	-0.11	-0.06	0.00	-0.52	0.10	0.21	-0.09	0.03	-0.07	0.17	1.00			
[14] Return Volatility	-0.11	0.15	-0.04	-0.05	-0.07	-0.03	0.60	-0.11	-0.11	0.04	-0.08	0.04	0.10	1.00		
[15] Leverage	-0.14	-0.28	0.16	0.16	-0.41	0.14	-0.05	-0.45	0.01	0.15	-0.10	0.06	-0.28	0.01	1.00	
[16] No. of Holdings	-0.60	-0.10	0.15	0.07	-0.29	0.25	0.15	-0.07	0.10	-0.11	0.03	-0.06	-0.07	0.09	0.06	1.00

Table 3: Panel Regressions: *Tobit*

This table shows the results of *Tobit* regression estimated on a sample that includes Decembers of 1996, 1997, 1998, and 1999, where the dependent variable is the market value of shares investor i holds in firm j at month t, as a fraction of investor i's total holdings in market value at month t (*holding weight*, HW_{ijt}).   In columns (1)-(4), we estimate the *One-Limit Tobit* model, where "0" *holding weight* is the lower limit that censors the data. When estimating the *One-Limit Tobit model*, we exclude investors that hold only one *chaebol* firm in the portfolio.   In column (5), we estimate the *Two-Limit Tobit* model, where "0" and "1" *holding weights* are the lower and the upper limits that censor the data.   When estimating the *Two-Limit Tobit model*, we do not exclude investors that hold only one *chaebol* firm in the portfolio.   From column (1) to (4), we progressively add control variables.   *, **, and *** respectively indicate statistical significance levels at 1, 5, and 10 percent levels.   Coefficients statistically significant at the 5 percent level are in **bold**.   *t*-values are in the parenthesis. Robust standard errors are used in *OLS* and *Probit* regressions.

	(1)	(2)	(3)	(4)	(5)
Disparity	-0.2143***	-0.6382***	-0.0804***	-0.0789***	-0.1321***
	(30.25)	(72.82)	(8.25)	(7.32)	(7.53)
Direct Ownership		-1.3679***	-0.0535*	-0.0846**	-0.0810
		(46.56)	(1.80)	(2.54)	(1.48)
Direct Ownership Squared		1.2381***	0.0986	0.1528*	-0.0462
		(14.79)	(1.19)	(1.65)	(0.30)
Group Control		-0.0758***	-0.0073	-0.0097	-0.0183
		(12.38)	(1.13)	(1.35)	(1.53)
Firm Size			0.1418***	0.1563***	0.2495***
			(142.38)	(139.89)	(134.60)
Years of Operation			-0.0065*	-0.0088**	-0.0310***
			(1.93)	(2.34)	(5.07)
Share Turnover			-0.0020***	-0.0021***	-0.0035***
			(3.64)	(3.45)	(3.49)
Profitability			0.2771***	0.3373***	0.5532***
			(16.07)	(17.72)	(17.97)
Dividend Yield			0.0610	0.0322	-0.1129
			(1.26)	(0.59)	(1.26)
Market-to-Book			-0.0122***	-0.0132***	-0.0250***
			(12.57)	(12.57)	(14.54)
R&D			0.6603***	0.6368***	0.7745***
			(4.37)	(3.85)	(2.88)
Adverting			1.7166***	2.0032***	3.5145***
			(22.75)	(24.14)	(26.08)
Sales Growth			-0.0305***	-0.0341***	-0.0497***
			(7.97)	(8.03)	(7.49)
Return Volatility			-0.1594***	-0.1072**	-0.0050
			(3.39)	(2.05)	(0.06)
Leverage			-0.0518***	-0.0491***	0.0172
			(3.80)	(3.24)	(0.70)
No. of Holdings				0.1582***	0.2556***
				(110.90)	(121.24)
Constant	Y	Y	Y	Y	Y
Year Dummies	Y	Y	Y	Y	Y
Total Observations	977,865	947,533	762,500	762,500	1,199,810
Uncensored Observations	369,51	36,843	30,930	30,930	30,919
Left Censored Observations	940,914	910,690	731,570	731,570	1,166,165
Right Censored Observations	-	-	-	-	2,726
Pseudo R-squared	0.00	0.05	0.36	0.45	0.37

Table 4: Panel Regressions: *OLS* and *Probit*

This table shows the results of *OLS* and *Probit* regressions estimated on a sample that includes Decembers of 1996, 1997, 1998, and 1999.   Column (1) and (2) report results of *OLS* regressions with investor fixed effects, where the dependent variable is the market value of shares investor i holds in firm j at month t, as a fraction of investor i's total holdings in market value at month t (*holding weight*, HW_{ijt}).   Samples for column (1) include observations with zero holding weights, while samples for column (2) exclude them (that is, drop if HW_{ijt}=0).   Column (3) reports results of a *Probit* regression, where the dependent variable takes a value 1 if investor i holds firm j at month t, and 0 otherwise (*holding dummy*, HD_{ijt}).   Column (4) reports *Probit* coefficients that capture the marginal effect on probability.   *, **, and *** respectively indicate statistical significance levels at 1, 5, and 10 percent levels.   Coefficients statistically significant at the 5 percent level are in **bold**.   *t*-values are in the parenthesis.   Robust standard errors are used in *OLS* and *Probit* regressions.

	(1)	(2)	(4)	(5)
	OLS with Investor Fixed Effects		*Probit*	
	All Holdings	Exclude Zero Holdings	Marginal Effect on Latent Variable	Marginal Effect on Probability
Dependent Variable	Holding Weight	Holding Weight	1 if hold, 0 otherwise	1 if hold, 0 otherwise
Disparity	**-0.0129***	**-0.0314***	**-0.2916***	**-0.0045***
	(31.12)	**(3.20)**	**(7.94)**	**(7.94)**
Direct Ownership	**-0.0675***	**0.2000***	**-0.3730***	**-0.0058***
	(48.88)	**(7.52)**	**(3.50)**	**(3.50)**
Direct Ownership Squared	**0.1255***	**-0.3671***	**0.7498**	**0.0116**
	(39.50)	**(5.04)**	**(2.53)**	**(2.53)**
Group Control	**-0.0005***	**0.0223***	**-0.0591***	**-0.0009***
	(3.15)	**(2.98)**	**(2.74)**	**(2.74)**
Firm Size	**0.0085***	**0.0386***	**0.5186***	**0.0080***
	(96.02)	**(44.04)**	**(138.48)**	**(138.48)**
Years of Operation	**-0.0013***	0.0011	**-0.0263**	**-0.0004**
	(8.60)	(0.37)	**(2.15)**	**(2.15)**
Share Turnover	**0.0002***	**0.0039***	**-0.0122***	**-0.0002***
	(12.05)	**(7.54)**	**(5.94)**	**(5.94)**
Profitability	**0.0399***	**0.1639***	**0.8311***	**0.0129***
	(29.92)	**(10.44)**	**(12.37)**	**(12.37)**
Dividend Yield	**-0.0798***	**0.1670***	0.1443	0.0022
	(35.40)	**(4.04)**	(0.80)	(0.80)
Market-to-Book	**0.0004***	-0.0015*	**-0.0418***	**-0.0006***
	(9.37)	(1.79)	**(9.69)**	**(9.69)**
R&D	**0.6640***	**1.9823***	**-1.6833***	**-0.0261***
	(30.57)	**(14.15)**	**(2.91)**	**(2.91)**
Adverting	**0.0861***	**-0.1417**	**6.9136***	**0.1070***
	(17.79)	**(2.07)**	**(25.45)**	**(25.45)**
Sales Growth	**-0.0050***	**-0.0158***	**-0.0969***	**-0.0015***
	(44.04)	**(3.87)**	**(7.02)**	**(7.02)**
Return Volatility	**0.0077***	0.0051	**-0.7600***	**-0.0118***
	(4.28)	(0.11)	**(4.49)**	**(4.49)**
Leverage	**0.0106***	**-0.2317***	0.0117	0.0002
	(23.71)	**(17.73)**	(0.21)	(0.21)
No. of Holdings	-0.0002	**-0.1268***	**0.7207***	**0.0112***
	(1.48)	**(36.37)**	**(150.98)**	**(150.98)**
Constant	Y	Y	Y	Y
Year Dummies	Y	Y	Y	Y
Observations	762,500	30,930	762,500	762,500
Number of Investors	2,623	2,614	-	-
Within R-sq	0.09	0.27	-	-
Between R-sq	0.00	0.54	-	-
Overall R-sq	0.09	0.43	-	-
Pseudo R-squared	-	-	0.40	0.40

Table 5: Monthly *Tobit* Regressions and Home Country Disparity

Column (1) reports monthly *Tobit* coefficients on control-ownership disparity, over a 37-months sample period (December 1996 – December 1999) when the sample includes all investors, regardless of residence, country of incorporation, level of home country disparity, and investors' business type.   Column (2) and (3) report results for two different investor groups: investors from low disparity countries and investors from high disparity countries. Same set of control variables that appear in *Table 3* are used in each regression. Coefficients statistically significant at the 5 percent level are in **bold**. Cells, where the coefficient is negative and statistically significant at the same time, are in shades.

		(1)	(2)	(3)
Year	Month	All Investors	Investors from Low Disparity Countries (<10%)	Investors from High Disparity Countries (=10%)
Pre-Crisis	Dec.	**0.1457**	**0.1274**	**0.1192**
(Dec. 97 – Nov. 97)	Jan.	**0.1422**	**0.1303**	**0.1314**
	Feb.	**0.1171**	**0.1067**	**0.1220**
	Mar.	**0.0845**	0.0679	0.0885
	Apr.	**0.0670**	0.0412	0.0708
	May.	**0.1193**	**0.1176**	0.0890
	Jun.	**0.0799**	0.0778	0.0837
	Jul.	**0.1263**	**0.1221**	**0.1139**
	Aug.	**0.1376**	**0.1230**	**0.1539**
	Sep.	**0.1334**	**0.1182**	**0.1550**
	Oct.	**0.1523**	**0.1470**	**0.1451**
	Nov.	**0.1890**	**0.1762**	**0.2126**
In-Crisis	Dec.	**-0.2476**	**-0.2844**	-0.0623
(Dec. 97 – Dec. 98)	Jan.	**-0.1999**	**-0.2387**	-0.0194
	Feb.	**-0.1297**	**-0.1718**	0.0396
	Mar.	**-0.0655**	**-0.1519**	**0.1100**
	Apr.	**-0.0688**	**-0.1649**	0.0800
	May.	**-0.0578**	**-0.1654**	0.0917
	Jun.	**-0.0730**	**-0.1811**	0.0893
	Jul.	**-0.0779**	**-0.1990**	**0.1031**
	Aug.	**-0.0814**	**-0.1891**	**0.1029**
	Sep.	**-0.0676**	**-0.1750**	0.0958
	Oct.	-0.0271	**-0.1015**	0.0588
	Nov.	-0.0043	-0.0622	0.0526
	Dec.	**-0.0674**	**-0.1057**	-0.0282
Post-Crisis	Jan.	**-0.0446**	**-0.0714**	-0.0301
(Jan. 99 – Dec. 99)	Feb.	-0.0381	**-0.0723**	0.0111
	Mar.	-0.0185	**-0.0652**	0.0403
	Apr.	-0.0347	**-0.0580**	0.0189
	May.	**-0.0766**	**-0.0799**	-0.0563
	Jun.	**-0.0880**	**-0.1073**	-0.0601
	Jul.	**-0.0487**	**-0.0736**	-0.0072
	Aug.	-0.0021	0.0056	0.0142
	Sep.	-0.0066	0.0026	0.0183
	Oct.	**0.0923**	0.1328	0.0891
	Nov.	**0.1750**	**0.2091**	**0.1756**
	Dec.	**-0.1092**	**-0.0893**	**-0.1180**

Table 6: Classification by Home Country Disparity and Legal Origin

This table lists the countries of investor residence, classified by home country disparity and legal origin. Information on legal origin is from LLSV (1997) and information on home country disparity is from LLSV (2002). Each country's disparity levels (in fractions) are in the parentheses.

	Disparity < 10%	Disparity >= 10%
Common Law Origin	Ireland (0.01), U.S. (0.01), Australia (0.05), Singapore (0.07), New Zealand (0.08),	Hong Kong (0.1), U.K. (0.1), Israel (0.16), Canada (0.17),
Civil Law Origin	Japan (0.01), Spain (0.07), Norway (0.07), Germany (0.07), Finland (0.08)	Argentina (0.1), Austria (0.1), Belgium (0.1), Denmark (0.1), Switzerland (0.12), France (0.13), Italy (0.16), Sweden (0.19), Netherlands (0.37)

Table 7: *Probit* Regressions

This table reports coefficients on control-ownership disparity from *Tobit* and *Probit* regressions, over three subsample period, for two groups of investors: investors from low disparity countries (columns (1) and (3)) and investors from high disparity countries (columns (2) and (4)). Same set of control variables that appear in *Table 3* are used in each regression. ***, **, and * respectively indicate statistical significance levels at 1, 5, and 10 percent levels. *t*-values are in the parenthesis. Coefficients statistically significant at the 5 percent level are in **bold**.

		(1)	(2)	(3)	(4)
		Tobit		*Probit*	
		Disparity < 10%	Disparity >= 10%	Disparity < 10%	Disparity >= 10%
Pre-Crisis (Dec. 96 – Nov. 97)	Disparity	**0.1117*****	**0.1233*****	**0.0087*****	**0.0059*****
		(10.91)	**(8.86)**	**(14.13)**	**(10.87)**
	Observations	1,051,261	645,046	1,051,261	645,046
	Pseudo R-squared	0.41	0.47	0.37	0.42
In-Crisis (Dec. 97 – Dec. 98)	Disparity	**-0.1746*****	**0.0312****	**-0.0089*****	0.0006
		(16.56)	**(2.42)**	**(19.24)**	(1.46)
	Observations	1,038,015	616,203	1,038,015	616,203
	Pseudo R-squared	0.44	0.50	0.40	0.46
Post-Crisis (Jan. 99 – Dec. 99)	Disparity	-0.0131*	0.0020	**-0.0031*****	**-0.0008*****
		(1.87)	(0.23)	**(8.23)**	**(2.36)**
	Observations	1,339,856	748,384	1,339,856	748,384
	Pseudo R-squared	0.48	0.55	0.42	0.48

Table 8: Other Home Country Governance Measures

This table reports monthly *Tobit* coefficients on control-ownership disparity, over a 37-months sample period (December 1996 – December 1999), for four groups of investors: investors from Common Law countries (column (1)), investors from Civil Law countries (column (2)), investors from countries with strong anti-director rights (> x), and investors from countries with weak anti-director rights (column 4)). Coefficients statistically significant at the 5 percent level are in **bold**. Cells, where the coefficient is negative and statistically significant at the same time, are in shades.

Year	Month	(1) Common Law	(2) Civil Law	(3) Anti-Director Rights (>=3)	(4) Anti-Director Rights (<3)
Pre-Crisis	Dec.	**0.1482**	0.1543	**0.1404**	**0.1899**
(Dec. 97 – Nov. 97)	Jan.	**0.1464**	0.1699	**0.1366**	**0.1883**
	Feb.	**0.1142**	0.1876	**0.1056**	**0.2170**
	Mar.	**0.0880**	0.1238	**0.0741**	**0.1771**
	Apr.	**0.0725**	0.1129	**0.0589**	0.1387
	May.	**0.1226**	0.1193	**0.1169**	**0.1448**
	Jun.	**0.0946**	0.0403	**0.0736**	0.1241
	Jul.	**0.1457**	0.0396	**0.1232**	**0.1547**
	Aug.	**0.1488**	0.0711	**0.1323**	**0.1850**
	Sep.	**0.1530**	0.0622	**0.1299**	**0.1631**
	Oct.	**0.1709**	0.0645	**0.1494**	**0.1775**
	Nov.	**0.2015**	0.1164	**0.1827**	**0.2425**
In-Crisis	Dec.	**-0.2335**	**-0.2948**	**-0.2787**	0.0386
(Dec. 97 – Dec. 98)	Jan.	**-0.1810**	**-0.2134**	**-0.2391**	0.1348
	Feb.	**-0.1277**	**-0.1414**	**-0.1698**	0.2137
	Mar.	**-0.1046**	0.0417	**-0.1077**	0.2536
	Apr.	**-0.1208**	0.0301	**-0.1090**	0.2341
	May.	**-0.1229**	0.0485	**-0.1020**	0.2432
	Jun.	**-0.1237**	0.0350	**-0.1144**	0.2059
	Jul.	**-0.1276**	0.0275	**-0.1193**	0.2297
	Aug.	**-0.1269**	0.0495	**-0.1301**	0.2042
	Sep.	**-0.1221**	0.0514	**-0.1160**	0.1831
	Oct.	-0.0656	0.0085	**-0.0680**	0.1872
	Nov.	-0.0349	0.0274	-0.0393	0.0652
	Dec.	**-0.0838**	-0.0254	**-0.0890**	0.0671
Post-Crisis	Jan.	**-0.0531**	-0.0624	**-0.0610**	**0.0997**
(Jan. 99 – Dec. 99)	Feb.	-0.0440	-0.0360	**-0.0595**	**0.0977**
	Mar.	-0.0204	-0.0230	-0.0381	**0.0938**
	Apr.	-0.0419	-0.0047	**-0.0538**	0.0486
	May.	**-0.0841**	-0.0222	**-0.0953**	0.0056
	Jun.	**-0.1043**	-0.0277	**-0.1006**	0.0458
	Jul.	**-0.0626**	0.0154	**-0.0630**	0.0833
	Aug.	-0.0034	0.0487	-0.0154	0.0878
	Sep.	-0.0021	0.0402	-0.0218	**0.1118**
	Oct.	**0.1150**	**0.0745**	0.0893	**0.2042**
	Nov.	**0.1970**	**0.1529**	0.1701	-0.0434
	Dec.	**-0.1023**	-0.0710	**-0.1196**	**0.1899**

Table 9: Legal Origin vs. Home Country Disparity

This table reports coefficients on control-ownership disparity from *Tobit* regressions for four groups of investors over three subsample periods. Same set of control variables that appear in *Table 3* are used in each regression. In column (1), we reports results from common law countries with disparity less than 10 percent. In column (2), we report results from common law countries with disparity of 10 percent or above. In column (3), we report results from civil law countries with disparity less than 10 percent. In column (4), we report results from civil law countries with disparity of 10 percent or above. ***, **, and * respectively indicate statistical significance levels at 1, 5, and 10 percent levels. *t*-values are in the parenthesis. Coefficients statistically significant at the 5 percent level are in **bold**.

		(1) Common Law & Disparity < 10%	(2) Common Law & Disparity >= 10%	(3) Civil Law & Disparity < 10%	(4) Civil Law & Disparity >= 10%
Pre-Crisis (Dec. 96 – Nov. 97)	Disparity	**0.1275*****	**0.1141*****	-0.1079	**0.1636*****
		(12.24)	**(6.65)**	**(2.12)**	**(7.26)**
	Observations	974,462	506,537	76,799	138,509
	Pseudo R-squared	0.43	0.47	0.30	0.46
In-Crisis (Dec. 97 – Dec. 98)	Disparity	**-0.1653*****	**-0.0485****	**-0.2524*****	**0.1860*****
		(15.27)	**(2.92)**	**(5.85)**	**(9.35)**
	Observations	931,863	451,557	106,152	164,646
	Pseudo R-squared	0.45	0.51	0.37	0.50
Post-Crisis (Jan. 99 – Dec. 99)	Disparity	-0.0011	**-0.0306****	**-0.1206*****	**0.0646*****
		(0.15)	**(2.73)**	**(4.76)**	**(5.30)**
	Observations	117,0923	567,459	168,933	180,925
	Pseudo R-squared	0.48	0.55	0.44	0.58

Table 10: Investors' Business Type

This table report coefficients on control-ownership disparity from *Tobit* regressions estimated for three separate subsample periods, for 12 groups of investors, classified by their business types and also by the level of home country disparity (low vs. high).   Columns (1) and (2) report results for banks.   Columns (3) and (4) report results for insurance firms. Columns (5) and (6) report results for securities firms.   Columns (7) and (8) reports results for mutual funds.   Columns (9) and (10) report results for unit trusts.   Columns (11) and (12) report results for pension funds.   Same set of control variables that appear in *Table 3* are used in each regression.   ***, **, and * respectively indicate statistical significance levels at 1, 5, and 10 percent levels. *t*-values are in the parenthesis.   Coefficients statistically significant at the 5 percent level are in **bold**.

		(1)	(2)	(3)	(4)
		Banks		Insurance	
		Disparity < 10%	Disparity >= 10%	Disparity < 10%	Disparity >= 10%
Pre-Crisis	Disparity	**0.3712****	**0.2453*****	0.1760	**0.2030*****
(Dec. 96 – Nov. 97)		**(2.39)**	**(7.64)**	(1.25)	**(3.45)**
	Observations	10,885	78,317	16,203	46,669
	Pseudo R-squared	0.56	0.50	0.60	0.50
In-Crisis	Disparity	-0.0627	**0.1481*****	**0.5969*****	0.0651
(Dec. 97 – Dec. 98)		(0.45)	**(5.43)**	**(3.69)**	(0.84)
	Observations	9,658	87,379	17,415	46,232
	Pseudo R-squared	0.58	0.50	0.59	0.54
Post-Crisis	Disparity	**0.1801*****	**0.1024*****	0.0371	**-0.0809****
(Jan. 99 – Dec. 99)		**(2.83)**	**(6.08)**	(0.79)	**(2.55)**
	Observations	18,097	87,972	23,329	56,223
	Pseudo R-squared	0.59	0.57	0.59	0.67

		(5)	(6)	(7)	(8)
		Securities		Mutual Funds	
		Disparity < 10%	Disparity >= 10%	Disparity < 10%	Disparity >= 10%
Pre-Crisis	Disparity	**-0.1405*****	-0.0378	**0.1216*****	**0.0985*****
(Dec. 96 – Nov. 97)		**(3.25)**	(0.35)	**(8.20)**	**(4.77)**
	Observations	18,552	31,967	412,371	191,982
	Pseudo R-squared	0.34	0.34	0.44	0.52
In-Crisis	Disparity	**-0.1681*****	-0.1123	**-0.1538*****	**0.0551*****
(Dec. 97 – Dec. 98)		**(3.45)**	(1.56)	**(10.31)**	**(2.84)**
	Observations	16467	33075	386,364	176,936
	Pseudo R-squared	0.43	0.46	0.49	0.55
Post-Crisis	Disparity	**-0.2526*****	**0.0714****	**-0.0201****	-0.0242*
(Jan. 99 – Dec. 99)		**(3.82)**	**(2.41)**	**(2.04)**	(1.68)
	Observations	19,657	38,670	509,956	233,062
	Pseudo R-squared	0.45	0.55	0.53	0.61

		(9)	(10)	(11)	(12)
		Unit Trusts		Pension Funds	
		Disparity < 10%	Disparity >= 10%	Disparity < 10%	Disparity >= 10%
Pre-Crisis	Disparity	**0.0605*****	**0.1558*****	**0.2075*****	**0.3663*****
(Dec. 96 – Nov. 97)		**(3.03)**	**(4.40)**	**(10.71)**	**(7.61)**
	Observations	174,695	184,103	207,057	57,700
	Pseudo R-squared	0.46	0.50	0.62	0.47
In-Crisis	Disparity	**-0.0660*****	**0.1988*****	**-0.1660*****	**0.1471*****
(Dec. 97 – Dec. 98)		**(3.20)**	**(5.11)**	**(8.76)**	**(3.67)**
	Observations	182,102	168,726	187,765	54,301
	Pseudo R-squared	0.49	0.51	0.63	0.60
Post-Crisis	Disparity	**-0.0690*****	0.0192	**-0.0981*****	**-0.0769*****
(Jan. 99 – Dec. 99)		**(5.93)**	(0.91)	**(6.51)**	**(2.66)**
	Observations	260,187	198,880	183,393	57,662
	Pseudo R-squared	0.62	0.56	0.69	0.66

Table 11: Do Investors Actually Dump High Disparity Stocks?

This table reports the difference between the realized probability to hold and the predicted probability to hold (hereafter the "deviation" defined as HD_{ijt} averaged across all observations in the same disparity quintile – fitted value from probit regression P_{ijt} averaged across all observations in the same disparity quintile) for each quintile of firms grouped by the level of disparity for each month over a 37-months sample period (December 1996 – December 1999) for investors from low (*Panel A*) and high disparity countries (*Panel B*). The *Probit* regression to obtain fitted values is estimated every month using the entire investors as a sample, but leaving out disparity as a right-hand side variable. Column (6) reports the difference in deviation between low and high disparity firms. Same set of control variables that appear in *Table 3* are used in each regression. ***, **, and * respectively indicate statistical significance levels at 1, 5, and 10 percent levels. *t*-values are in the parenthesis. Coefficients statistically significant at the 5 percent level are in **bold**.

Panel A: Low Disparity Countries

| | | (1) | | (2) | | (3) | | (4) | | (5) | | (6) | |
| | | 1st Quintile (Low Disparity) | | 2nd Quintile | | 3rd Quintile | | 4th Quintile | | 5th Quintile (High Disparity) | | (5) – (1) | |
		Prob. Dev.	Disp.	Prob. Dev.	Disp.	Prob. Dev.	Disp.	Prob. Dev.	Disp.	Prob. Dev.	Disp.		
Pre-Crisis	Dec.	-0.0046	0.0043	-0.0012	0.0548	0.0035	0.1269	0.0060	0.2118	0.0002	0.3753	**0.0048**	***
	Jan.	-0.0037	0.0048	-0.0020	0.0564	0.0037	0.1269	0.0057	0.2118	0.0001	0.3753	**0.0037**	**
	Feb.	-0.0035	0.0048	-0.0020	0.0564	0.0035	0.1269	0.0065	0.2118	-0.0001	0.3753	**0.0034**	**
	Mar.	-0.0036	0.0056	0.0021	0.0586	0.0006	0.1292	0.0052	0.2156	-0.0002	0.3758	**0.0033**	**
	Apr.	-0.0037	0.0056	0.0016	0.0600	0.0011	0.1313	0.0055	0.2156	-0.0008	0.3758	0.0029	*
	May.	-0.0066	0.0072	0.0006	0.0628	0.0008	0.1318	0.0080	0.2191	-0.0005	0.3796	**0.0062**	***
	Jun.	-0.0045	0.0066	0.0011	0.0573	0.0024	0.1242	0.0083	0.2086	-0.0012	0.3827	0.0034	
	Jul.	-0.0084	0.0062	0.0011	0.0588	0.0031	0.1295	0.0060	0.2172	0.0003	0.3795	**0.0087**	***
	Aug.	-0.0091	0.0062	0.0021	0.0615	0.0019	0.1332	0.0071	0.2227	-0.0003	0.3879	**0.0088**	***
	Sep.	-0.0098	0.0062	0.0031	0.0615	0.0031	0.1346	0.0069	0.2263	-0.0010	0.3925	**0.0088**	***
	Oct.	-0.0115	0.0070	0.0026	0.0642	0.0043	0.1356	0.0079	0.2245	-0.0010	0.3879	**0.0106**	***
	Nov.	-0.0132	0.0076	0.0024	0.0655	0.0066	0.1369	0.0093	0.2264	-0.0018	0.3879	**0.0113**	***
In-Crisis	Dec.	-0.0016	0.0078	0.0016	0.0701	0.0083	0.1371	0.0059	0.2308	-0.0108	0.3692	**-0.0092**	***
	Jan.	-0.0024	0.0070	-0.0003	0.0683	0.0085	0.1349	0.0053	0.2272	-0.0091	0.3710	**-0.0067**	***
	Feb.	-0.0046	0.0078	0.0001	0.0712	0.0092	0.1371	0.0073	0.2308	-0.0098	0.3723	**-0.0052**	***
	Mar.	-0.0044	0.0081	-0.0004	0.0712	0.0066	0.1358	0.0110	0.2272	-0.0098	0.3682	**-0.0053**	***
	Apr.	-0.0043	0.0081	0.0004	0.0684	0.0069	0.1327	0.0100	0.2235	-0.0100	0.3646	**-0.0057**	***
	May.	-0.0034	0.0081	-0.0013	0.0698	0.0068	0.1349	0.0110	0.2256	-0.0098	0.3646	**-0.0064**	***
	Jun.	-0.0040	0.0081	-0.0011	0.0679	0.0088	0.1327	0.0104	0.2219	-0.0108	0.3638	**-0.0069**	***
	Jul.	-0.0028	0.0081	-0.0018	0.0679	0.0078	0.1327	0.0097	0.2219	-0.0106	0.3638	**-0.0077**	***
	Aug.	-0.0029	0.0072	-0.0017	0.0663	0.0091	0.1315	0.0076	0.2198	-0.0099	0.3638	**-0.0071**	***
	Sep.	-0.0026	0.0072	-0.0015	0.0648	0.0072	0.1294	0.0100	0.2150	-0.0097	0.3604	**-0.0071**	***
	Oct.	-0.0029	0.0072	-0.0015	0.0648	0.0067	0.1294	0.0098	0.2150	-0.0085	0.3604	**-0.0057**	***
	Nov.	-0.0029	0.0072	-0.0016	0.0648	0.0076	0.1294	0.0094	0.2141	-0.0085	0.3604	**-0.0056**	***
	Dec.	0.0021	0.0046	-0.0011	0.0683	0.0016	0.1343	0.0040	0.2080	-0.0052	0.4206	**-0.0073**	***
Post-Crisis	Jan.	0.0003	0.0049	-0.0021	0.0666	0.0028	0.1351	0.0032	0.2082	-0.0042	0.4153	**-0.0045**	***
	Feb.	0.0003	0.0049	-0.0013	0.0651	0.0032	0.1332	0.0031	0.2063	-0.0038	0.4098	**-0.0041**	***
	Mar.	0.0016	0.0050	-0.0018	0.0683	0.0010	0.1343	0.0026	0.2079	-0.0032	0.4148	**-0.0048**	***
	Apr.	0.0003	0.0043	0.0010	0.0666	0.0000	0.1343	-0.0005	0.2079	-0.0025	0.4148	**-0.0028**	**
	May.	0.0017	0.0046	0.0033	0.0698	-0.0016	0.1356	-0.0020	0.2113	-0.0024	0.4206	**-0.0041**	***
	Jun.	0.0021	0.0046	0.0036	0.0713	-0.0007	0.1366	-0.0015	0.2115	-0.0034	0.4270	**-0.0054**	***
	Jul.	0.0020	0.0056	0.0043	0.0730	-0.0002	0.1366	-0.0024	0.2115	-0.0031	0.4270	**-0.0051**	***
	Aug.	-0.0010	0.0056	0.0035	0.0730	0.0007	0.1377	-0.0016	0.2132	-0.0018	0.4270	-0.0008	
	Sep.	0.0015	0.0056	0.0040	0.0730	-0.0011	0.1387	-0.0027	0.2168	-0.0007	0.4279	-0.0023	
	Oct.	0.0007	0.0054	0.0022	0.0713	-0.0010	0.1387	-0.0037	0.2168	0.0027	0.4279	0.0020	
	Nov.	-0.0013	0.0058	0.0009	0.0730	0.0016	0.1387	-0.0058	0.2164	0.0056	0.4270	**0.0069**	***
	Dec.	0.0050	0.0059	0.0015	0.0733	-0.0018	0.1503	-0.0015	0.2234	-0.0032	0.4287	**-0.0082**	***

Panel B: His Disparity Countries

		(1)		(2)		(3)		(4)		(5)		(6)	
		1st Quintile (Low Disparity)		2nd Quintile		3rd Quintile		4th Quintile		5th Quintile (High Disparity)		(5) – (1)	
		Prob. Diff.	Disp.	Prob. Diff.	Disp.	Prob. Diff.	Disp.	Prob. Diff.	Disp.	Prob. Diff.	Disp.		
Pre-Crisis	Dec.	-0.0054	0.0043	-0.0050	0.0548	0.0041	0.1269	0.0070	0.2118	-0.0006	0.3753	**0.0048**	**
	Jan.	-0.0052	0.0048	-0.0050	0.0564	0.0046	0.1269	0.0067	0.2118	-0.0011	0.3753	**0.0041**	**
	Feb.	-0.0045	0.0048	-0.0040	0.0564	0.0039	0.1269	0.0060	0.2118	-0.0016	0.3753	0.0029	
	Mar.	-0.0044	0.0056	0.0017	0.0586	-0.0029	0.1292	0.0055	0.2156	-0.0015	0.3758	0.0029	
	Apr.	-0.0041	0.0056	0.0009	0.0600	-0.0018	0.1313	0.0059	0.2156	-0.0015	0.3758	0.0026	
	May.	-0.0049	0.0072	0.0007	0.0628	-0.0002	0.1318	0.0081	0.2191	-0.0014	0.3796	0.0036	*
	Jun.	-0.0054	0.0066	-0.0058	0.0573	0.0022	0.1242	0.0102	0.2086	-0.0038	0.3827	0.0016	
	Jul.	-0.0045	0.0062	-0.0032	0.0588	0.0045	0.1295	0.0069	0.2172	-0.0005	0.3795	**0.0040**	**
	Aug.	-0.0057	0.0062	0.0000	0.0615	0.0008	0.1332	0.0086	0.2227	0.0001	0.3879	**0.0058**	***
	Sep.	-0.0060	0.0062	-0.0011	0.0615	0.0006	0.1346	0.0090	0.2263	-0.0001	0.3925	**0.0059**	***
	Oct.	-0.0064	0.0070	-0.0008	0.0642	0.0010	0.1356	0.0089	0.2245	-0.0002	0.3879	**0.0062**	***
	Nov.	-0.0090	0.0076	-0.0012	0.0655	0.0010	0.1369	0.0124	0.2264	0.0001	0.3879	**0.0092**	***
In-Crisis	Dec.	0.0005	0.0078	-0.0035	0.0701	0.0086	0.1371	0.0059	0.2308	-0.0078	0.3692	**-0.0083**	***
	Jan.	0.0004	0.0070	-0.0042	0.0683	0.0112	0.1349	0.0040	0.2272	-0.0070	0.3710	**-0.0074**	***
	Feb.	-0.0008	0.0078	-0.0029	0.0712	0.0113	0.1371	0.0040	0.2308	-0.0073	0.3723	**-0.0064**	***
	Mar.	-0.0022	0.0081	-0.0037	0.0712	0.0114	0.1358	0.0039	0.2272	-0.0055	0.3682	**-0.0032**	***
	Apr.	-0.0029	0.0081	-0.0038	0.0684	0.0105	0.1327	0.0048	0.2235	-0.0056	0.3646	-0.0027	
	May.	-0.0032	0.0081	-0.0041	0.0698	0.0102	0.1349	0.0054	0.2256	-0.0059	0.3646	-0.0028	
	Jun.	-0.0032	0.0081	-0.0035	0.0679	0.0093	0.1327	0.0051	0.2219	-0.0052	0.3638	-0.0020	
	Jul.	-0.0028	0.0081	-0.0032	0.0679	0.0097	0.1327	0.0043	0.2219	-0.0047	0.3638	-0.0019	
	Aug.	-0.0025	0.0072	-0.0031	0.0663	0.0098	0.1315	0.0031	0.2198	-0.0039	0.3638	-0.0014	
	Sep.	-0.0031	0.0072	-0.0028	0.0648	0.0093	0.1294	0.0029	0.2150	-0.0039	0.3604	-0.0008	
	Oct.	-0.0025	0.0072	-0.0034	0.0648	0.0091	0.1294	0.0039	0.2150	-0.0039	0.3604	-0.0014	
	Nov.	-0.0037	0.0072	-0.0041	0.0648	0.0090	0.1294	0.0048	0.2141	-0.0037	0.3604	0.0000	
	Dec.	0.0008	0.0046	-0.0035	0.0683	0.0066	0.1343	-0.0002	0.2080	-0.0007	0.4206	-0.0016	
Post-Crisis	Jan.	0.0020	0.0049	-0.0016	0.0666	0.0058	0.1351	0.0001	0.2082	-0.0008	0.4153	-0.0028	
	Feb.	0.0007	0.0049	-0.0021	0.0651	0.0044	0.1332	-0.0001	0.2063	-0.0006	0.4098	-0.0013	
	Mar.	0.0016	0.0050	-0.0013	0.0683	0.0043	0.1343	0.0006	0.2079	-0.0003	0.4148	-0.0019	
	Apr.	0.0007	0.0043	0.0019	0.0666	0.0041	0.1343	0.0005	0.2079	-0.0005	0.4148	-0.0011	
	May.	0.0014	0.0046	0.0043	0.0698	0.0014	0.1356	-0.0018	0.2113	-0.0008	0.4206	-0.0022	
	Jun.	0.0001	0.0046	0.0050	0.0713	0.0019	0.1366	-0.0043	0.2115	-0.0014	0.4270	-0.0015	
	Jul.	0.0005	0.0056	0.0057	0.0730	0.0030	0.1366	-0.0054	0.2115	0.0004	0.4270	-0.0010	
	Aug.	0.0001	0.0056	0.0035	0.0730	0.0043	0.1377	-0.0054	0.2132	0.0004	0.4270	0.0003	
	Sep.	0.0008	0.0056	0.0017	0.0730	0.0028	0.1387	-0.0042	0.2168	0.0006	0.4279	-0.0002	
	Oct.	0.0002	0.0054	0.0007	0.0713	0.0033	0.1387	-0.0044	0.2168	0.0022	0.4279	0.0019	
	Nov.	-0.0003	0.0058	0.0017	0.0730	0.0032	0.1387	-0.0073	0.2164	0.0058	0.4270	0.0061	
	Dec.	0.0079	0.0059	0.0053	0.0733	-0.0024	0.1503	-0.0063	0.2234	-0.0036	0.4287	**-0.0115**	***

Table 12: Two-Stage Least Squares

This table reports the results of two-stage least square (2*SLS*) estimated for two subsample periods: in- and post-crisis periods.   Observations are divided further into investors from low and high disparity countries. The size of other affiliated firms (in terms of book equity and scaled by the size of the firm concerned) is used as an instrument (*IV*) for control-ownership disparity.   The first stage regressions use the *OLS* model, while the second stage regressions use the *Tobit* model.   Same set of control variables that appear in *Table 3* are used in each regression.   The table also reports a correlation coefficient between our instrument (size of other affiliated firms) and the variable to be explained (holding weight) orthogonal to all other control variables (all right-hand side variables in the 2nd stage except for the fitted values of disparity).   ***, **, and * respectively indicate statistical significance levels at 1, 5, and 10 percent levels.   *t*-values are in the parenthesis.   Robust standard errors are used to compute *t*-values.   Coefficients statistically significant at the 5 percent level are in **bold**.

		Disparity < 10%		Disparity >= 10%	
		1st Stage	2nd Stage	1st Stage	2nd Stage
		Disparity	Holding Weight	Disparity	Holding Weight
		(1)	(2)	(3)	(4)
In-Crisis (Dec. 97 – Dec. 98)	Fitted Value of Disparity		**-1.4921***		-0.0532
			(19.35)		(0.52)
	Size of Other Affiliated Firms (*IV*)	**0.0132***		**0.0132***	
		(128.76)		**(98.93)**	
	Correlation between *IV* and Holding Weight Orthogonal		-0.0286		-0.0337
	No. of Observations	1,038,015	1,038,015	616,203	616,203
	Pseudo R-Squared	0.3457	0.4370	0.3454	0.5043
Post-Crisis (Jan. 99 – Dec. 99)	Fitted Value of Disparity		**-0.4854***		**-0.5158***
			(11.61)		**(9.81)**
	Size of Other Affiliated Firms (*IV*)	**0.0179***		**0.0179***	
		(189.21)		**(140.63)**	
	Correlation between *IV* and Holding Weight Orthogonal		-0.0202		-0.0254
	No. of Observations	1,339,856	1,339,856	748,384	748,384
	Pseudo R-Squared	0.4162	0.4773	0.4164	0.5505