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

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ABSTRACT

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

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1. INTRODUCTION

A major hazard for international portfolio investors is that of losing money to the expropriation of assets by a firm's controlling shareholders or management. This risk is particularly acute when those in control own a relatively small share of the firm. In this case, the incentive for controlling shareholders to tunnel out firm assets for private benefit is especially strong. Divergence in ownership and control rights can be achieved through a pyramid shareholding structure, cross-shareholding, or the issuance of dual class shares (Bebchuk, Kraakman, and Triants 2000). Korean *chaebol* firms provide examples of control-ownership disparity through both pyramid and cross shareholding. For example, Dacom, a telecommunications firm traded on the Korean stock exchange (KRX), is a member of the LG business group controlled by the Koo family. The Koo family owns only 2% of Dacom's shares but, through a string of other firms, controls about 55% of the firm's voting rights. Daihan City Gas, also listed in Korea, is a member of the SK business group controlled by the Chey family. The Chey family owns a mere 0.04% of Daihan City Gas' shares, but controls 59% of the firm's voting rights. This type of control-ownership disparity is no less prevalent in Thailand, Indonesia, and Philippines than in Korea. In fact, most emerging markets and some developed countries have firms characterized by a divergence between ownership and control rights (La Porta, Lopez-de-Silanes, and Shleifer 1999; Claessens, Djankov, and Lang, 2000; Faccio and Lang 2002).

It is important to note that the degree of control-ownership disparity varies widely across major source countries of international portfolio investors. For example, according to La Porta, Lopez-de-Silanes, Shleifer, and Vishny (2002), the median value of control-ownership disparity across major OECD countries is 0.10. Relatively low disparity countries include the United States (with a mean disparity of 0.01 across listed companies), Japan (0.01) and Australia (0.05). Relatively high disparity countries include France (0.13), Italy (0.16), and Sweden (0.19). A key research question posed by this paper is whether the degree of control-ownership disparity in investors' home countries affects their portfolio choice abroad. This research may be considered a first step in a broader inquiry into the effect of home-country corporate governance on patterns of foreign investment. To our knowledge, such questions have not yet been investigated in the

literature.

Existing studies, however, have looked into the *average* behavior of international investors with regard to corporate governance problems in destination countries. Some have found that international portfolio investors prefer to hold shares in firms with ADR issuance, which could proxy for a stronger investor protection or a reduction in information asymmetry (Kang and Stulz 1997; Edison and Warnock 2004; Ahearne, Griever, and Warnock 2004). Others have found that international investors hold fewer shares in firms with a dominant owner (see Dahlquist and Robertsson 2001 on Sweden), high inside ownership (Kho, Stulz, and Warnock 2006; Ferreira and Matos 2007), weaker internal governance (Ferreira and Matos 2007), lower transparency (Bradshaw, Bushee, and Miller 2004; Gelos and Wei, 2005; Aggarwal, Klapper, and Wysocki 2005), lower accounting standards, weaker shareholder rights, or a weaker legal framework (Aggarwal et al. 2005). Recent papers have investigated interactions between firm-level attributes (cross-listing, managerial and family control, or earnings management) and country-level governance quality (such as accounting standards, disclosure requirements, securities regulations, or outside shareholder rights) using data on American investors' positions in foreign firms (Ammer et al. 2006; Leuz, Lins, and Warnock 2006).

In a related body of literature, researchers have documented the effects of control-ownership disparity in destination countries on foreign investment. Johnson et al. (2000) argue that the risk of expropriation is higher during recessions. Mitton (2002), Lemmon and Lins (2003), and Baek, Kang, and Park (2004) offer evidence that Asian firms with high control-ownership disparity experienced a sharper drop in share prices during the Asian crisis. Other papers have studied the effect of control-ownership disparity on firm accounting performance and stock market valuation, generally finding a negative effect (La Porta et al. 2002; Claessens, Djankov, Fan, and Lang 2002; Joh 2003; Lins 2003).

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

investors.[1]

Before investigating differences in the portfolio choices of investors from different source countries, it will be useful to document their *average* behavior. With this in mind, this paper investigates three related questions. First, is the average international investor averse to ownership-control disparity in emerging markets? Second, and more importantly for this paper, does investors' aversion to disparity in emerging markets depend on the quality of corporate governance (especially the control-ownership disparity) in their home countries?[2] Third, did investors' attitudes toward control-ownership disparity change after the Asian financial crisis (a 'wake-up call' effect)? Focusing on high economic growth rates, investors may not have been attentive to corporate governance risk prior to the crisis. However, the crisis, may suddenly have made them aware of the risk of weak corporate governance, as phrases like "crony capitalism" became common in everyday speech.[3] We answer the above questions by analyzing two unique data sets, the first on portfolio investments made by investors from around the world in Korea at the investor-stock level, and the second on control and ownership patterns in Korean companies belonging to *chaebol* (large business groups).

Our second and third questions have not been answered in the literature, and will be our main contributions. Although the first question was answered in part by Giannetti and Simonov (2006) with reference to Swedish data, our Korean study adds useful insights. First, we have information on ownership structure and cross-shareholding for *non-listed* firms—in addition to listed firms—within a given business group. Control over listed firms can be exercised through non-listed firms, and we will determine whether disparity can accurately be measured without recourse to information on non-listed firms. As the existing literature (e.g. Giannetti and Simonov 2006) does not account for the potential influence of non-listed firms, our calculations of control-ownership disparity will be more accurate than those previously made in the literature. Second, while Sweden is generally regarded as a country with a good quality of corporate governance and government regulation of firms at the national level, Korea is a more typical

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[1] Giannetti and Simonov (2006) also link foreign investor holdings to control premiums and control entrenchment.
[2] Giannetti and Koskinen (2007) provide a theoretical model that points to this possibility. Portfolio investors from countries with a weak investor protection prefer to hold more foreign equity. These investors may consequently be more tolerant of high-disparity foreign stocks than investors from countries with good corporate governance.
[3] According to the FACTIVA electronic news database, there were few news stories in English-language newspapers and magazines that contained the phrase "crony capitalism" prior to mid-1997." After this date, the onset of the Asian financial crisis, there was an explosion of news stories using this phrase.

emerging market country. To illustrate, the Global Competitiveness Report (2002) covers over one hundred countries and finds that the quality of corporate governance is substantially above the median in Sweden, but below the median in Korea. Thus, the Korean example offers us a chance to discover whether international investors' behavior is particularly sensitive to control-ownership disparity in emerging markets with a high risk of tunneling.[4]

As a preview of the key findings, we report evidence that foreign institutional investors, *on average*, are averse to those Korean stocks that are characterized by a significant control-ownership disparity. However, what is behind the average is even more interesting. First, only investors from countries whose own stock markets are characterized by a low control-ownership disparity tend to avoid high disparity Korean stocks.[5] Second, even among these investors, the sensitivity to disparity shows up only after the onset of the financial crisis in Korea, toward the end of 1997. To put it concretely, American investors—investors from an environment with low control-ownership disparity—prefer to hold fewer shares in Korean companies with a larger disparity. A reduction in the disparity in a Korean stock by one standard deviation (15.4%) tends to increase American investors' holding of that stock by 10%, *holding other things constant*. However, this preference for low-disparity stocks is a relatively recent phenomenon. The Asian financial crisis has served as a wake-up call that draws investors' attention to potential corporate governance risks. In comparison, Italian investors—investors whose home stock exchange is populated with companies characterized by a relatively large control-ownership disparity—do not display an aversion to Korean firms with a large disparity except at the end of the sample. To our knowledge, these patterns of foreign investment in emerging markets have not previously been documented in the literature[6].

These results are robust to the use of a variety of statistical specifications, including a panel regression that accounts for fixed effects, a *Tobit* that accounts for the fact that stockholdings are

[4] Giannetti and Simonov (2006) also made the interesting finding that individual investors with strong connections to company insiders tend to overweigh companies with weak corporate governance. We do not have the relevant information to make a judgment on the degree of individual investors' connection to corporate insiders, and therefore exclude individual investors from our sample.

[5] Kang and Kim (2006) investigate a different but somewhat related question. They examine how differences in the protection of minority shareholders in the home countries of foreign investors affect their "governance activities" after they acquire significant shares in American companies.

[6] If foreign investors dislike high-disparity Korean stocks, why don't their prices immediately adjust? Giannetti and Koskinen (2007) propose a model which gives an answer: if controlling families are willing to pay a premium for the tunneling opportunities embedded in these stocks, their demand will partly offset downward price pressures. So, the prices may not fully adjust downward, and high-disparity stocks may have lower expected returns.

non-negative, and a *probit* regression that codes investment in a stock as a zero-one dummy. In recognition of the possibility that control-ownership disparity may be endogenous, an instrumental variable approach—using initial disparity values as an instrument—suggests that a high disparity in Korean firms causally reduces investment by investors from low-disparity countries.

The rest of the paper is organized as follows: Section 2 discusses our approach to the measurement of control-ownership disparity, explains the features of the data sets used in the paper, and highlights the unique features that make our exercise feasible. Section 3 presents the main statistical analysis, together with many extensions and robustness checks. Finally, Section 4 concludes.

2. DATA, METHODOLOGY, AND MEASUREMENTS

A. *Data*

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

Our information on foreign investor holdings comes from a proprietary data set that provides detailed information on the monthly positions of every foreign investor on every stock listed on the Korea Stock Exchange from December 1996 to December 1999. All foreign investors in Korea have been required to register their real names with the Korean Securities Supervisory Board (KSSB).[7] These data were made available to us only for this period and on a strict confidentiality agreement[8]. At the end of 1999, there were 9,954 registered foreign investors from 67 countries; these investors collectively owned 20 percent of all shares listed in the Korea Stock Exchange.[9] In this paper, we focus on foreign institutional investors.

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

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

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

It is worth stressing that the first data set, on portfolio holdings at the individual stock-investor level and on foreign investors' countries of origin, will be essential to our purpose. This data permits us to un-bundle foreign investors by the governance attributes (particularly control-ownership disparity) of their home countries, and to examine whether these home-country attributes affect their investment patterns abroad. None of the papers in the existing literature have done both of these things. Indeed, in the existing literature, only Aggarwal et al. (2005) and Giannetti and Simonov (2006) have disaggregated foreign investments. This paper additionally provides a check on whether the results of Ammer et al. (2006) and Leuz et al. (2006), found using data on American investors, are unique to American investors.

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

As we will show, there is sizable variation in firms' control-ownership disparity, ranging from zero to 76%, with a mean of 16.7% and a median of 13.6%. This variation will allow us to observe foreign investors' sensitivity to different levels of disparity. However, varying degrees of disparity would not be sufficient to make our analysis possible. If all firms were to 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 foreign investors' equity holdings. It is therefore important

that Korea's corporate governance is not ranked highly in the existing literature (LLSV 1997 and 1998; Nenova 2003; Dyck and Zingales 2004; and Djankov et al. 2005). This is particularly true during our sample period, which ends before any major corporate governance reform took place.[10]

B. Empirical Methodology

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

First, the number of data points (detailing the activity of 190 *chaebol* firms and 1,700 foreign portfolio investors over 37 months) totals about 12 million, and overwhelms computer memory for certain specifications. Thus, we break up the data into subsamples and run separate regressions. This approach reduces efficiency but may be considered more flexible than pooling all observations together, since we don't have to impose the restriction that the coefficients on all control variables be the same for different subsamples.[11] In any case, the size of each subsample is still large enough to ensure a sufficient power of statistical tests; we can afford to lose some efficiency.

Second, our data shows that foreign portfolio investors have only long positions. This is because short selling was not allowed during the sample period. Thus, any stock on which investors wished to have a short position shows up as a zero holding: therefore our dependent variable (holding weight by investor i in firm j at month t) is left censored at zero percent. Because an *OLS* specification may generate downward bias (in absolute terms), we use *Tobit* as our main regression specification.[12] Since holdings of different stocks by a common investor are

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[10] A major corporate governance reform in Korea required that boards of companies listed with a book asset value in excess of 2 trillion *won* (approximately 2 billion US dollars) consist of at least 50% independent outside directors, and that the companies concerned establish an audit committee. This reform was announced in the second half of 1999 and adopted by the National Assembly in December 1999, but did not take full effect until the spring of 2001 (see Black, Jang, and Kim (2006).

[11] In response to the same challenge, Giannetti and Simonov (2006) choose to work with a random subsample of their Swedish data.

[12] In principle, our dependent variable, holding weight, is also right censored at the 100% percent. With leverage, holding weight in firm j can in principle go above 100%, but we do not have information on leverage. In practice, only small investors who hold only a single stock would have 100% weight on that stock. In our benchmark tables,

unlikely to be independent, we cluster standard errors at the investor level (which is more conservative than clustering at the investor-stock level).

Third, most investors do not hold shares in all *chaebol* firms. In fact, many own only a limited number of stocks, a fact which generates a large number of zero values on our dependent variable. In addition, for a significant number of investors who hold only one stock, the portfolio weights are either "1" (for the one stock held) or "0" (for all remaining stocks). To account for this factor, we perform two robustness checks: first, using a *Probit* specification (as opposed to *Tobit* or *OLS* specification) we investigate the binary decision of a zero or positive stock holding,[13] second, we carry out a *Tobit* regression on a restricted sample that excludes investors who hold only one stock. None of these robustness checks challenges our basic findings.

Fourth, we look into the possibility that our key regressor—disparity between control and ownership of Korean firms—is endogenous. For example, if a large foreign ownership of a firm leads to its reform and a reduction in its disparity, then there might be a negative association between the two. In this case, the direction of causality would be the opposite of that which we have hypothesized and intend to test. We doubt this story because controlling shareholders acquire or dispose of shares only slowly; furthermore, in much of the sample, foreign ownership restrictions have prevented foreign investors from acquiring controlling shares. Nonetheless, we use an instrumental variable approach (using initial values of disparity in our sample of firms as an instrument) to formally address the possibility of reverse causality; this test suggests that endogeneity has not invalidated our findings.

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

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we exclude these investors from the estimation. As a robustness check, we report a two-way *Tobit* estimation that includes these investors. *Tobit* regressions are used in Leuz et al. (2006).

[13] Giannetti and Simonov (2006) and Aggarwal et al. (2005) use *Probit* and *Logit*, respectively, but not *Tobit*. We use both *Probit* and *Tobit*.

C. Control-ownership Disparity

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

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

For example, consider a business group that is controlled by Mr. K and consists of two firms (*A* and *B*). Let Mr. K own 50 percent of firm *A*, and 10 percent of firm B. Furthermore, let firm *A* own 40 percent of firm *B*. For firm *B*, Mr. K's total voting right is 50 percent (=10%+40%). But his combined ownership of firm *B* is only 30 percent (=10%+50%x40%). Therefore, the control-ownership disparity for firm *B* is 20 percent (=50%–30%). This disparity is has been called a "wedge" by La Porta et al. (2002).

D. Foreign Institutional Investors' Holdings

The dependent variable in most of our regressions is foreign institutional investors' holdings of Korean stocks. When estimating a *Tobit* regression, we use the **holding weight** of investor i in firm j at month t (HW_{itj}), which is defined as the market value of the shares that investor i holds in firm j at month t, as a fraction of investor i's total holdings in that month. When estimating a *Probit* model, we define a **holding dummy** (HD_{ijt}) that takes the value of one if investor i's holding of firm j is positive in month t, and otherwise takes the value of zero.

Because we have highly disaggregated investor-stock-level data, we can use portfolio weight put on each stock by each investor as our dependent variable. This is very useful since a portfolio

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[14] Other studies have used variations of this measure of disparity, for example, the ratio of the two, or the difference scaled by voting rights: LLSV (1999) and Joh (2003) use [voting rights – cash-flow rights]; Claessens 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].

weight in a firm is the key decision variable of an institutional investor. Most papers in the existing literature, with no access to investor-stock-level disaggregated data, have had to make do with information on foreign investors' collective holdings in a firm relative to the firm's total outstanding shares; this is not the decision variable for a typical portfolio manager. If all foreign investors had acted in unison, that measure would be a fine one. A key finding of this paper is that this is not the case.

E. Control Variables

On the right-hand side of the equation, we include as many control variables as possible; these have been suggested by the literature as determinants of foreign investors' equity holdings (mostly at firm-level, but some at investor-level).

First, we include log of **firm size** adjusted for free-float. Size not only captures the supply of shares, but also familiarity, liquidity, analysts' coverage and other factors. Note that we measure firm size in market value. This in effect accounts for any change in the holding weight caused by a change in share prices. The existing literature shows that foreign investors hold disproportionately more shares of large firms (Kang and Stulz 1997; Dahlquist and Robertsson 2001; and others). Since a significant fraction of *chaebol* firm shares do not trade on the market, we compute a firm's **free-float** by subtracting the fraction of market capitalization that is controlled by the group-controlling shareholder. The float adjustment is consistent with Dahlquist et al. (2003), who show that the portfolio holdings of foreign stocks by American investors are better explained by the world market portfolio with a float adjustment than without it.

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

Third, we include **dividend yield,** measured by dividend per share and scaled by year-end share price. Dahlquist and Robertsson (2001) and Giannetti and Simonov (2006) report that foreign investors in Sweden prefer firms that pay low dividends.

Fourth, we include **market-to-book ratio** to account for investors' preference toward growth

or value firms. The existing evidence is ambiguous. On the one hand, Edison and Warnock (2004), Giannetti and Simonov (2006), and Leuz et al. (2006) report that, on average, the investors in their samples appear to prefer value stocks. On the other hand, Kang and Stulz (1997), Dahlquist and Robertsson (2001), and Aggarwal et al. (2005) have found that the investors in their samples preferred growth stocks instead.

Fifth, we include a number of variables that may capture growth opportunities: **R&D/sales**, **advertising/sales**, and **sales growth** (measured over the previous three years)**.** Sales growth, however, may also capture the degree of over-investment.

Sixth, we add a number of control variables to capture a firm's outward orientation,: **export/sales**, a dummy for the presence of **foreign directors**, a dummy for **Level 2 or 3 ADR**, and a separate dummy for either **Level 1 ADR or Rule 144A offering**. Many existing papers have shown that firms with ADR issuance are favored by foreign investors (Kang and Stulz 1997; Edison and Warnock 2004; Ahearne et al. 2004; and others). Aggarwal et al. (2005) show that foreign investors favor both listed and unlisted ADRs.

Seventh, we include two risk measures: return volatility and log leverage. **Leverage** is measured by book value of debt over book value of assets and winsorized at the 1st and the 99th percentile values. Kang and Stulz (1997), Aggarwal et al. (2005), Giannetti and Simonov (2006), and Leuz et al. (2006) find evidence that foreign investors stay way from firms with high leverage, but Dahlquist and Robertsson (2001) do not. **Return volatility** is measured by the standard deviation of weekly returns (adjusted for stock-splits and dividends) over the previous 4 years. Kang and Stulz (1997) and Dahlquist and Robertsson (2001), using beta as measure of risk, do not find evidence that foreign investors avoid volatile stocks. Giannetti and Simonov (2006) even find evidence that foreign investors prefer stocks with high volatility.

Eighth, we also include a firm's **years of operation** (logged). Young firms may have more growth opportunities (but also more risks).

Ninth, to capture liquidity of a stock, we include **share turnover**, measured by the number of shares traded during a year scaled by the number of (freely floating) shares outstanding. Edison and Warnock (2004) show that American investors favor emerging market stocks with high turnover.

Tenth, we include the **number of holdings** of Korean stocks by an investor, a proxy for how

much he values portfolio diversification, as a control.

Eleventh, we include **direct ownership** in a firm by the controlling shareholder and a firm's **contribution to group control** as control variables. With a high direct ownership, controlling shareholders may have more incentive to maximize firm value and less incentive to tunnel out firm assets. Following Morck, Shleifer, and Vishny (1988), we consider the possibility that, beyond a certain level, higher direct ownership would entrench the incumbents and decrease the incentive to maximize firm value. To capture this nonlinearity, we add a **squared term of direct ownership**. Direct ownership in firm j is defined as the sum of the shares owned by the group-controlling shareholder and his relatives. Notice that direct ownership is always equal to or smaller than the total cash flow right, including both *direct* and *indirect* cash flow rights. In our earlier numerical example, the group-controlling shareholder's direct ownership in firm B was 10 percent, while his total cash flow right was 30 percent.

Following Kim et al. (2007), we define a particular firm's contribution to group control as the amount of additional cash flow rights a group-controlling shareholder can gain in other firms by controlling this first firm, as a fraction of this first firm's book equity value. It is a measure that quantifies how important a firm is in the group in terms of its control over others. According to Kim et al.(2007), those firms with high contribution to group control are the group's *de facto* holding companies. If a company is perceived as a vehicle to control other firms, not as a profit-making institution, foreign investors may prefer to stay away from it, all other things being equal. This measure is winsorized at the 1st and the 99th percentile values.

F. Basic Statistics

Table 1 reports the number of foreign institutional investors and the average number of stocks they hold at four different times: the Decembers of 1996, 1997, 1998 and 1999, respectively. We exclude foreign direct investors and individual investors from our analysis. Since our *Tobit* regressions focus on a sample in which investors hold at least two stocks in the sample, this table summarizes the information for these investors. As background information, about 30% of foreign investors hold only one *chaebol* stock in the sample. As a robustness check, we will also report a two-limit *Tobit* regression that includes these investors in the sample.

At the beginning of the sample (December 1996), there were 1,182 foreign institutional

investors who held at least two *chaebol* firms. Out of this total, 593 investors (50%) came from countries whose home stock markets were characterized by relatively low control-ownership disparity (i.e., home country disparity ≤ 0.10, equal to or below the median across all home countries, as reported in La Porta et al. 2002). 405 investors (34%) came from countries with a relatively high disparity. 184 investors (16%) came from countries whose degree of control-ownership disparity could not be determined.

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

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

3. Empirical Evidence

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

A. A Preliminary Look at the Data: on average, are foreign investors averse to control-ownership disparity?

To answer this question, we implement a sequence of *Tobit* regressions on a sample that includes the Decembers of 1996, 1997, 1998, and 1999. The dependent variable is the market value of investor i's holdings in firm j in month t, as a fraction of his total holdings in Korea at that time (*holding weight*, *HW*ijt). The results are reported in *Table* 3. In *Column* (1) of *Table* 3, when firm size is the only control variable, the coefficient on disparity is -0.145 and significant at the one percent level, indicating that foreign investors tend to dislike high-disparity Korean stocks, holding firm size constant. The positive coefficient on firm size indicates unsurprisingly that foreign investors hold more large stocks. Note that the standard errors in this table (and subsequent tables) are clustered at the investor level (which is more conservative than clustering at the investor-stock level).

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

The results show consistently that the coefficients on control-ownership disparity are negative and statistically significant at the 1 percent level. To work out the corresponding economic significance, we compute the marginal effect on the unconditional expected value of the dependent variable[15]. The coefficient in *Column* (5) (-0.0624 for the disparity variable) indicates that a one-standard-deviation (15.4%) reduction in disparity is associated with an increase of 10% in the investors' holdings of the stock, when all other regressors are held constant at their mean values. If one uses the point estimate for disparity in *Column* (6) (-0.132) which comes from the two-limit *Tobit* model, one gets a somewhat larger effect: the same reduction in the disparity (15.4%) is now associated with an increase of 14% in the investors' holdings.

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[15] This is implemented in STATA by the command "mfx."

Most of the control variables in *Table* 3 are statistically significant and have sensible signs. In particular, holding weight increases in tandem with (float-adjusted) firm size and accounting profit. For example, a one-standard deviation increase in profit is associated with an increase of 16% in holding weight, when all other regressors are held constant at their mean values.

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

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

As a check for the robustness of the main relationship between a firm's control-ownership disparity and a foreign investor's holding weight, we include a firm's leverage, years of operation, share turnover, return volatility, and the controlling shareholder's direct ownership as additional control variables in our regression. Not all of these regressors' coefficients have an intuitive sign, partly because some of the above control variables are collinear. For example, according to *Table* 2C, a firm's leverage ratio is significantly correlated with firm size, profitability and dividend yield. Export orientation is correlated with size and advertising intensity. Therefore, individual point estimates on these control variables are not always reliable. However, from the point of view of investigating this paper's key concern, the effect of a firm's

control-ownership disparity on foreign institutional investors' portfolio choice, these coefficients are nuisance parameters. As noted before, the coefficients on control-ownership disparity are consistently negative and statistically significant across the five specifications.[16]

In *Column* (6), we expand the sample to include foreign investors who hold only one *chaebol* company, and employ a two-limit *Tobit* specification that accounts for the restriction that holding weights must be between zero and one. The list of control variables is the same as in *Column* (5). Again, the coefficient on control-ownership disparity is negative and statistically significant, but the point estimate is substantially larger. With nearly a million observations and a long list of control variables, the two-limit *Tobit* specification takes much longer to complete and may run into convergence problem. We therefore have chosen to make the one-limit *Tobit* our benchmark specification (and to exclude foreign investors who hold stocks in only one company of the sample).

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

To move on from statistical significance to consider economic significance, we evaluate the marginal effect of a change in disparity on the probability of holding a stock, holding all other regressors constant at their mean values. Given the point estimate (-0.016) on the disparity, a reduction in the disparity by one standard deviation (15.4%) is associated with an increase of 22% in the probability of holding the given stock. Similar to *Table* 3, control variables from our list are added sequentially; most have intuitive signs and are statistically significant. Most importantly for our findings, the coefficients on control-ownership disparity are consistently negative and statistically significant as the list of control variables is expanded. This means that investors' aversion to high control-ownership disparity is a robust feature of the data.

Since the unconditional probability that a foreign investor will have a positive holding of a

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[16] As an additional control, we have also included the total value of investor's holdings in Korea, which could proxy for investor sophistication. Its coefficient was never significant.

stock (across all foreign investors and stocks) is as low as 4%, we conduct a robustness check by limiting the sample to those investors holding at least 10 stocks. This filter rule excludes approximately 80% of the original sample, generating a subsample of 122,241 observations. In this subsample, the probability that a given foreign investor will have a positive holding of a stock (without conditioning on other variables) goes up to almost 11%. *Column* (6) of Table 4 shows the results of a *Probit* regression which uses this subsample. One can see that the coefficient on disparity is still negative and statistically significant at the 1% level. Moreover, the coefficient increases by almost tenfold, from -0.0043 to -0.0411.

Index funds, by definition, cannot take disparity into account when deciding their portfolio weights. Since we do not know which funds are index funds, we make an assumption that an index fund has to hold at least 30 stocks[17]. Of course, non-index funds may hold more than 30 stocks as well. We divide the sample into a subsample of investors who hold less than 30 stocks, and another subsample of investors with 30 or more stocks, and repeat the key regressions in *Table* 3. The aversion to disparity now becomes somewhat stronger for the subsample of investors holding less than 30 stocks, but weaker for the other subsample of investors holding 30 or more stocks. This is consistent with the interpretation that those investors holding 30 or more stocks include many index funds. The results of this regression are not reported to save space.

We have also implemented a linear panel fixed effects regression. This specification allows us easily to handle time and investor fixed effects—nearly 2000 of them—and *chaebol* group fixed effects, in addition to the long list of control variables in *Table* 3. The disadvantage is that it does not account for the restriction that the holding weights be non-negative. Regardless, in the panel regression taking all of these fixed effects into account, the coefficient on control-ownership disparity is still negative and statistically significant at the five percent level. These results are not reported to save space.[18]

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

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[17] As is common in the industry, a typical index fund may hold less than the number of stocks in the corresponding index, since it may mimic the index through statistical sampling.

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

instances in which the control-ownership disparity computed with and without using ownership information related to non-listed firms could make a significant difference. Since no paper in the literature has yet been written with access to information on non-listed firms, it is useful for us to investigate whether omitting this information from calculations of disparity generates an economically significant bias in the estimates. To do this, we compute an intentionally inaccurate measure of control-ownership disparity based only on listed firms within a business group. Not surprisingly, the inaccurate measure of disparity is downward biased. Its average value across all firms in the sample is 13.8%, about 20% lower than the true mean of 16.9% found when non-listed firms within a business group are accounted for. When we replicate the specifications in *Table* 3 with the intentionally inaccurate measure of disparity, foreign investors' responsiveness to disparity drops by 25% relative to the corresponding numbers in *Tables* 3 and 4 (the results are not reported to save space).[19] This is a useful exercise. If one could extrapolate the inferences from Korea, one might conclude that earlier papers in the literature, based on incomplete or inaccurate measures of control-ownership disparity, have underestimated investors' aversion to control-ownership disparity.

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

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

The results (from both *Tobit* and *Probit* regressions, twelve in total) are reported in *Table* 5. Control variables identical to those in *Column* (5) of *Table* 3 are included but not reported to avoid crowding the table. The most important pattern can be summarized as follows: there is striking heterogeneity across investors. Those investors whose home markets are characterized

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[19] The coefficient on disparity in *column* (5) of *Table* 3 drops from -0.0624 to -0.0474 (with *t*-value = 3.44). The coefficient on disparity in *column* (5) of *Table* 4 drops from -0.0043 to -0.0027 (with *t*-value = 4.02).

by a high control-ownership disparity do not appear to care about large disparity in Korean stocks. In contrast, investors from countries with a low disparity at home are averse to large disparity in Korean stocks. Moreover, even for the investors in the latter group, the aversion to disparity is a relatively recent phenomenon, occurring only after the Korean financial crisis.

We now provide more detail on the findings. First, the attitude toward control-ownership disparity evolves over time. Before the Korean financial crisis (which started at the end of 1997), foreign investors were not sensitive to the disparity. Indeed, the *Tobit* regressions might suggest that foreign investors actually preferred high-disparity firms (*Columns* (1)-(2) of *Table* 5, top panel for the pre-crisis period). However, things changed after the onset of the crisis. Investors from low-disparity countries started to display an aversion toward high control-ownership disparity (middle and lower panels of *Table* 5).

Second, only investors from low-disparity countries display an aversion to large disparities in Korean companies. To put it more concretely, investors from Italy—a source country characterized by high control-ownership disparity at home—do not appear to avoid high disparity firms on the Korean market. Things might have changed after the crisis, when both investor groups exhibited a negative coefficient on the disparity variable. However, only the coefficient for investors from low-disparity countries is statistically significant. The coefficients on disparity show statistically significant differences between the two groups during and after the crisis, but not before.[20]

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

Our evidence of a larger negative coefficient during the crisis period is consistent with the possibility that expropriation risk is higher during recessions (Johnson et al. 2000; Mitton 2002;

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[20] We interact all the right-hand-side variables (including year dummies) with an indicator variable that takes a value of 1 if investors are from low-disparity countries and 0 otherwise. The coefficient on the interaction term between the disparity for Korean firms and the dummy for investors from low-disparity countries is negative and statistically significant at the 1% level during and after the crisis, regardless of the regression model we use (*Tobit* or *Probit*).

Lemmon and Lins 2003; and Baek et al. 2004). Our evidence is also consistent with the evidence reported in Gelos and Wei (2005), who report that, during a crisis, international mutual funds are more likely to exit from nontransparent countries than from other countries.

The last two columns of *Table* 5 reports results from a *Probit* specification. A few features are especially worth commenting on. First, the coefficients on disparity in the pre-crisis period are now not different from zero: Investors neither prefer nor dislike high-disparity stocks. In other words, the pattern of an apparent preference for high-disparity firms in the first two columns of *Table* 5 is not robust to a *Probit* specification. Second, investors from low-disparity countries still exhibit a change in attitude, from indifference to high disparity before the financial crisis to a significant aversion to high disparity after the crisis broke out. This change in attitude is consistent with the idea that the Asian financial crisis has called attention to corporate governance risk in emerging markets. Third, for investors from high-disparity home countries, the coefficients on disparity (of Korean firms) are not different from zero statistically in all three subperiods. Thus, investors from high-disparity countries do not seem concerned by high disparity in Korea, even after the financial crisis. This suggests that attitudes toward control-ownership disparity in emerging markets vary across investors depending on the pattern of corporate governance in their home countries.

At this point, one might ask how we can be sure that the switch in attitude toward disparity observed in investors from low-disparity countries actually took place at the beginning of the Korean financial crisis. One might also ask, if we use a finer differentiation of control-ownership disparity in investors' home countries, whether we would still find a relation between this variable and investors' attitude toward control-ownership disparity in Korea.

Since we have monthly data on international investors's positions on Korean stocks, we can trace the evolution of their attitudes toward disparity month by month. Rather than producing 36 new tables on regressions with 36 months of data, *Figure* 1 plots the coefficients on disparity from a set of monthly regressions that resemble those in *Columns* (1) and (2) in *Table* 5. The figure shows clearly that the change in attitude from indifference to aversion occurred in December 1998, the first month after the Korean financial crisis broke out. It also shows that while there was no difference between investors from low- and high-disparity countries before the crisis, the two groups diverged during the crisis.

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

Let us now turn to the relationship between control-ownership disparity in the investors' home market and their attitude to high disparity in the Korean market. For 16 source countries, we have both a measure of control-ownership disparity (from LLSV 2002) and at least 5 institutional investors in Korea from each country, whose attitudes toward disparity in their portfolio choice of Korean companies may meaningfully be estimated. For each such source country, we estimate the *Tobit* regressions in *Table* 5.[21] That is, for each source country, we perform three regressions (corresponding to our three time periods) from which we obtain the coefficients on disparity. To efficiently summarize the results of a large number of regressions, several scatter plots are presented in *Figure* 2. Each data point in the plots represents the the investors' aversion to disparity (the coefficient on disparity) and the level of disparity of each source country. Of course, American investors now become just one observation (representing one country) among 16. The first set of scatter plots shows fitted lines estimated by *OLS*. The second set shows fitted lines estimated by weighted least squares (*WLS*), computing weights by the number of investors from each source country (represented by the size of each corresponding bubble in the graph).

These scatter plots reveal that, before the crisis, foreign investors' attitudes toward disparity in Korea were not associated with the level of disparity in their home countries (the *t*-value reported in our *WLS* regression is 0.43). However, once the crisis broke out, attitudes toward

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[21] American investors make up 70 percent of all foreign investors during our sample period. We exclude two obvious outliers (Finland and Austria) from the subsequent graphs.

control-ownership disparity in Korea became systematically related to the degree of control-ownership disparity in the investors' home countries (with the *t*-value from *WLS* reported at 2.49). In general, the lower the disparity in their home countries, the more likely foreign investors were to disfavor high disparity firms in the Korean market. The same pattern carries over to the post-crisis period, though the slope is somewhat smaller (with the *t*-value from *WLS* at 2.19).

We now consider some robustness checks. We would like to ensure that the pattern reported in *Table* 5 at least partly reflects investors shifting portfolio weights across different firms, rather than simply showing that investors from certain countries dropped out of the Korean market. If foreign institutional investors from low disparity countries (the United States in particular) were to exit the Korean market because of regulatory constraints (adhering to the "prudent man rule") one might see the pattern we observe in *Table* 5. To show that our result is not solely driven by investors dropping out of the market, we replicate *Table* 5 by limiting the sample to those foreign investors who never exited from Korea throughout the sample period. With this subsample, we observe a very similar pattern to that shown in *Table* 5 (results not reported to save space).

To summarize the findings in this subsection, there is evidence that aversion to high disparity firms in Korea is primarily a characteristic of investors from low-disparity countries. In fact, there is a strong association at the level of the investors' source country, between control-ownership disparity in the investors' home country and their aversion to disparity in Korea after December 1998. The Asian financial crisis may have acted as a wake-up call to induce these investors from low-disparity countries to treat high-disparity as an extra source of risk.

C. Do Investors from High-disparity Countries Have an Edge in Holding High-disparity Stocks?

While investors from high-disparity countries do not appear to be bothered by high disparity in Korean stocks, they may even be benefiting if they have an edge in identifying relatively well-performing high-disparity stocks or working with high-disparity companies. In this subsection, we investigate two related questions. First, do high-disparity stocks have better *ex post* performance on average? Second, does the portfolio of high-disparity (Korean) stocks held by investors from high-disparity countries perform better than the portfolio of high-disparity stocks held by those from low-disparity countries?

To examine the first question, we classify all stocks into four approximately equal-sized

baskets according to their disparity features (low, moderately low, moderately high, and high disparity) in three time periods (the Januaries of 1997, 1998, and 1999). We then form a portfolio of equally-weighted stocks in these four disparity baskets in each of the three time periods. Next, we compute realized returns for a buy-and-hold strategy over 6-month, 12-month, and 24-month horizons. The results are reported in the upper panel of *Table* 6. *Column* (5) conducts a difference-in-means test for the returns on the lowest disparity quartile relative to those in the highest disparity quartile. There is no evidence that the raw returns on high-disparity stocks were any different from those on low-disparity stocks before and during the Korean crisis. Since January 1999, the portfolio of high-disparity stocks actually performs worse than that of low-disparity stocks. Therefore, unconditionally, the high-disparity stocks do not have better returns than the low-disparity ones in the sample.

High-disparity stocks could happen to have lower risks than low-disparity stocks. (Alternatively, they may exhibit characteristics known to accompany lower stock returns.) For example, the set of high-disparity stocks may contain more large firms or more firms with relatively low book-to-market values than does the set of low-disparity stocks. Therefore, it is at least theoretically possible that, after adjusting for risks (or stock characteristics), the high-disparity stocks may perform better than the low-disparity stocks. To adjust for risks, we follow a standard procedure in the literature that forms benchmark portfolios based on firm size and book-to-market ratio.[22] Specifically, we first sort all stocks into quintiles by size (market capitalization). For each size group, we sort the stocks into five subgroups by their book-to-market ratio. This procedure generates a total of 25 subgroups, each corresponding to a particular combination of firm size and book-to-market ratio. We compute a benchmark return for a given holding period for each of the 25 combinations of size and book-to-market ratio by equally weighting the returns within each subgroup. For each stock in a particular basket, we determine its benchmark return according to its size and book-to-market ratio, and then subtract the raw return from the corresponding benchmark return to arrive at the stock's risk-adjusted return. Finally, we compute the returns on the four baskets of different degrees of disparity by equally weighting the risk-adjusted returns of the individual stocks within a basket. The results are presented in the lower panel of *Table* 6. *Column* (5) reports a difference-in-means test for the risk-adjusted returns in the

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[22] We refer to size and book-to-market ratio as risk factors for ease of description. Strictly speaking, however, they might not constitute non-diversifiable factor risks.

lowest disparity quartile relative to those in the highest disparity quartile. As with the raw returns, there is no evidence that risk-adjusted returns on the high-disparity stocks are any different from those on the low-disparity stocks before and during the Korean crisis. In the last subperiod, on the 6-month horizon, the high-disparity stocks performed worse than the low-disparity stocks. Therefore, even after adjusting for risks, there is no evidence that the high-disparity stocks deliver superior realized returns.

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

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

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

In *Table* 8, we classify investors with reference to two different dimensions of home country governance: legal origin, and the control-ownership disparity in their home country. *Columns* (1) and (2) split the set of investors from home countries with a common law legal tradition into those from a low-disparity country, and those from a high-disparity country. Similarly, *Columns* (3) and 4 look at investors from civil law countries, split into sets from countries with low

disparity (*Column* (3)) and with high disparity (*Column* (4)). The results show that both present disparity in the home country, and the historic origin of the legal system, matter. On one hand, investors from low-disparity countries have tended to display an aversion toward high-disparity Korean stocks (since the Asian crisis) regardless of their home countries' legal traditions. On the other hand, investors from common law countries with high disparity also display an aversion to high disparity during and after the crisis. Only investors from those high-disparity countries with a civil law tradition are indifferent to control-ownership disparity in Korea.

E. Do the Key Results Reflect Causality?

We would like to argue that the negative association between control-ownership disparity and foreign portfolio investors' holding weight reflects a causal relationship. Without further evidence, however, this could reflect coincidental correlation or even reverse causality. For example, greater foreign ownership could cause the controlling shareholder to reduce control-ownership disparity, generating a negative association observed in the previous tables, but the direction of causality would operate in the opposite direction to that discussed so far.

A number of observations suggest that reverse causality is not likely. First, during much of our sample period, the Korean government maintained strict restrictions on foreign ownership and, until the end of our sample the fraction of foreign ownership was not high enough to influence the controlling shareholders. Even by combining voting rights, foreign investors collectively could equal or surpass those of the controlling shareholders in only 41 firms by December 1999. For each of the 41 firms, there were on average 279 foreign investors. Coordination costs and free riding would make it unlikely that foreign investors could strongly influence the controlling shareholders' behavior. Second, control-ownership disparities have evolved very slowly over time. The standard deviation of disparity over the 36-month period, averaged across all 189 *chaebol* firms, was only 3 percent. Third, as mentioned earlier, our dependent variable, holding weight, is constructed in a way that is not likely to capture foreign investors' influence over the firm's management.

Nonetheless, we now consider an instrumental variable strategy to address any endogeneity in our model. Specifically, we take advantage of the slow-moving nature of the disparity measure, and use the beginning-of-sample value (from December 1996) as an instrument for subsequent

values of the disparity. In December 1996, foreign investors could not have much influence on the controlling shareholder's control-ownership disparity due to the government's (low) ceiling on foreign ownership. Also subsequent changes in foreign ownership in 1998 and 1999 could not have affected the degree of disparity observed in December 1996.

The first stage regressions are summarized in *Table* 9A. Clearly, the initial value of the disparity is highly correlated with the subsequent values, though the mapping becomes progressively weaker over time. The second-stage regressions are reported in *Table* 9A. We see qualitatively similar patterns to those identified before. First, there is a difference between investors from low-disparity countries and investors from high-disparity countries. Aversion to high-disparity stocks is a unique characteristic of investors from low-disparity countries. Second, even among investors from low-disparity countries, aversion came only after the Korean financial crisis that started in November/December of 1997. These results suggest that the key conclusions reached before do indeed reflect causality (from control-ownership disparity of Korean firms, to foreign investors' behavior).

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

Detailed information on the ownership structure of *chaebol* groups, including that of non-listed firms, began to be released by the Korean government only in 2005. This means that during our sample period (December 1996 to December 1999) investors could not compute control-ownership disparity the way we do in this paper. For investors who wished to compute disparity presumably used available information on publicly listed companies in addition to whatever other information they could gather. In this subsection, we make an attempt to investigate whether and how a lack of transparency may affect foreign investors' attitude to control-ownership disparity[23].

We hypothesize that the presence of non-publicly listed companies may help the controlling family arrange transactions to hide tunneling activities. That is, the more non-listed companies a *chaebol* group includes, the less transparent the business transactions of the group's member firms become. Given this assessment, we compute a straightforward measure of the opacity of a *chaebol* group by the ratio of the assets of all non-listed companies in the group to the group's

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[23] Leuz et al. (2006) show that American investors tend to hold fewer shares in firms under strong family or management control, especially in countries with a weak disclosure requirement.

total assets. We revise the regressions in *Table 5* by adding an interaction term of the opacity measure of a *chaebol* group and the control-ownership disparity of a given firm within the group. Under the null hypothesis that opacity does not affect investors' attitudes, the coefficient on the interaction term would be zero. Under the alternative hypothesis that foreign investors' aversion to large disparity is accentuated by a *chaebol* group's opacity, the coefficient on the interaction term would be negative.

The new regression results (both *Tobit* and *Probit* specifications) are reported in *Table 10*. We note first that the estimates of the coefficient on the interaction term are generally negative (in 9 out of 12 cases). In the *Tobit* specification, during the in-crisis and post-crisis periods, the coefficients are negative and statistically significant. These patterns are consistent with the idea that foreign investors are particularly averse to companies with a large control-ownership disparity which are members of a *chaebol* group with many non-listed companies. In the *Probit* specification, some of the coefficients lose statistical significance. This suggests that the result is not always robust.

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

4. CONCLUSION

A large control-ownership disparity is a potential channel through which controlling shareholders may expropriate minority shareholder assets. Since this disparity is common in most developing and several developed countries, it is a source of risk for foreign investors. This paper examines the issue of disparity and international investment by combining two uncommon data sets on foreign investment and corporate ownership in Korea. It finds that international investors, on average, display a strong aversion to high-disparity firms in Korea, holding firm size, accounting profitability, and other features constant.

What lies behind investors' average behavior is even more interesting. First, only investors from home countries characterized by low control-ownership disparity (e.g. American investors) appear to dislike high-disparity firms in Korea. Investors from high-disparity countries (e.g.

Italian investors) appear unconcerned. Second, even among investors from low-disparity countries, aversion to high-disparity firms is a relatively recent phenomenon. The Asian financial crisis in late 1997 appears to have served as a wake-up call, sharpening their alertness to corporate governance problems in emerging markets. In other words, all investors, including those from low-disparity countries, did not appear to dislike high-disparity firms in Korea before the Asian financial crisis. After crisis struck Korea at the end of 1997, investors from low-disparity countries displayed a new aversion to high-disparity Korean firms. Third, if one further classifies the investors by the legal origin of their home countries, one sees that both legal origin and home country control-ownership disparity matter. Specifically, investors from low-disparity countries, regardless of legal tradition, display an aversion to high disparity in Korean firms after the Asian crisis. Investors from high-disparity, common-law origin countries also displayed aversion to high disparity in Korean firms once the financial crisis broke out. Only investors from high-disparity civil-law origin countries do not appear to be bothered by high disparity in Korean firms.

At first glance, it seems possible that investors from high-disparity countries may have an edge in selecting better-performing high-disparity stocks than other investors. To the extent that investors from low- and high-disparity countries hold different high-disparity stocks, a further analysis indicates no difference in the *ex post* returns of these two portfolios of high-disparity stocks. This suggests that the comparative advantage hypothesis is unlikely to be true.

We have also considered the reverse causality possibility—that those stocks bought heavily by foreign investors may introduce relatively more corporate governance reforms, including reforms to reduce their control-ownership disparity. This is not very likely in the sample, as controlling families tend to change their equity stakes very slowly. Indeed, when we use the initial value of control-disparity (i.e. at the beginning of the sample, in December 1996) as an instrumental variable for subsequent disparity, we obtain the same qualitative results.

There are a number of areas in which additional research could be useful. First, control-ownership disparity is not the only channel through which corporate governance risk could arise. One could investigate foreign investors' sensitivity to other dimensions of corporate governance in an emerging market and investigate its relation to the characteristics of the investors' home countries. Second, this paper makes a passing reference to the interplay between national level

legal frameworks and firm-level corporate governance. We are not able to conduct a systematic analysis as we do not have a sufficient number of observations after a tightening of national corporate governance regulation occurred at the end of our sample. When suitable data becomes available, this could turn out to be an important topic. We leave these for future research.

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

The figure plots the coefficients on control-ownership disparity from a *Tobit* specification (with the same controls as in *Column* (6) in *Table* 3) estimated month by month during December 1996-December 1999. Separate regressions are done for investors from low versus high disparity countries.
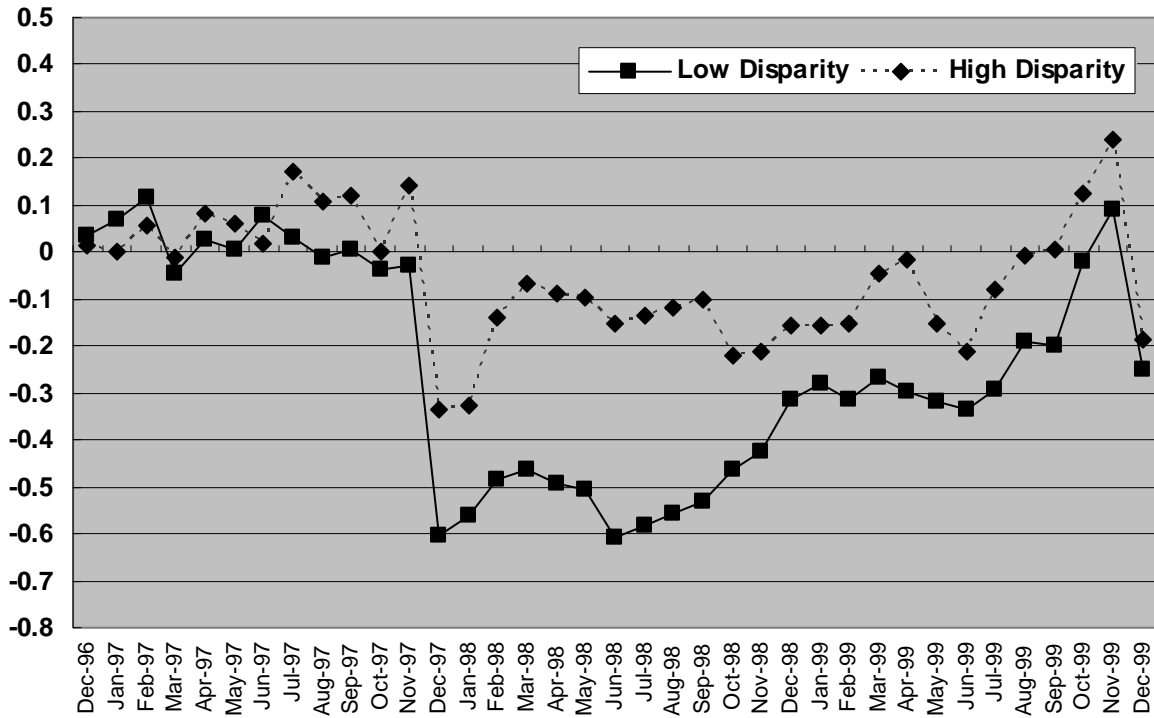
Figure 2: Scatter Plots of Investors' Aversion to Disparity, Against Their Home-country Disparity

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

Pre-Crisis Period	In-Crisis Period	Post-Crisis Period

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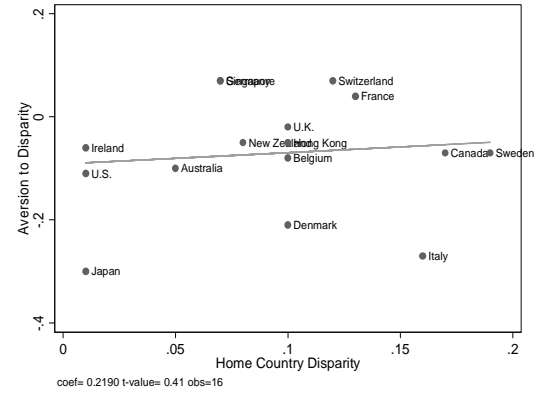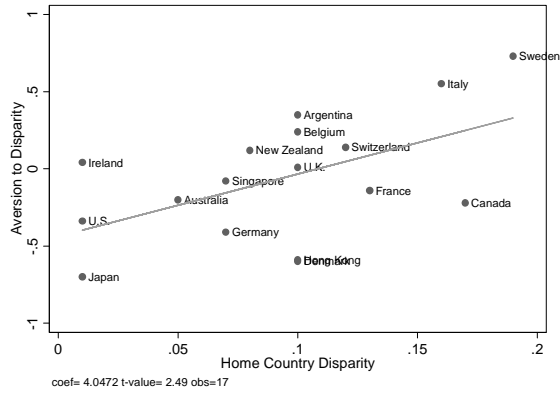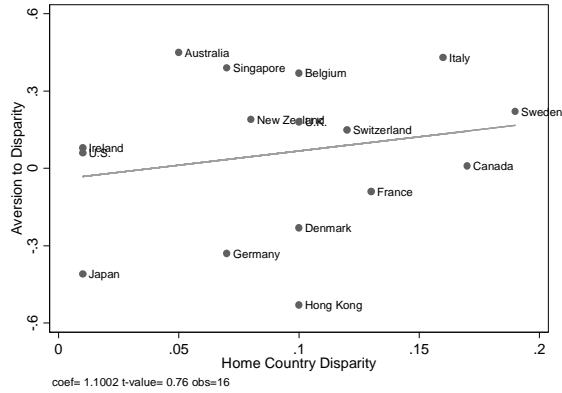
Weighted Least Squares
(equal weight for all investors, and hence more weight for countries with more investors)

-34-
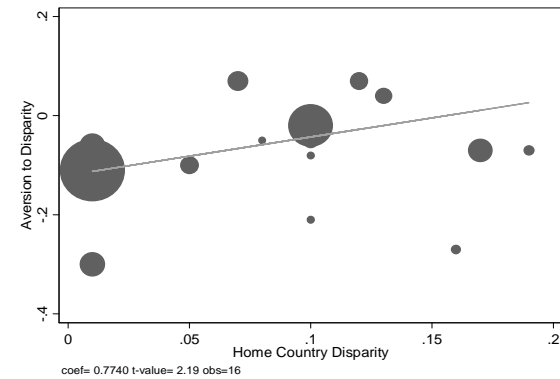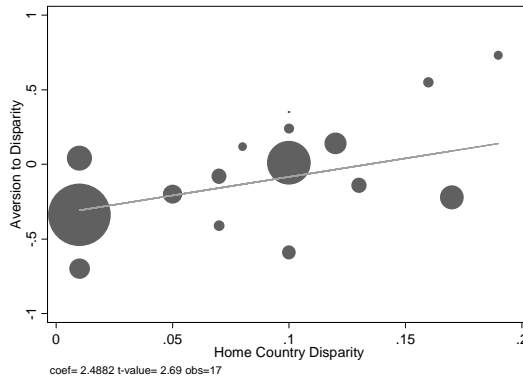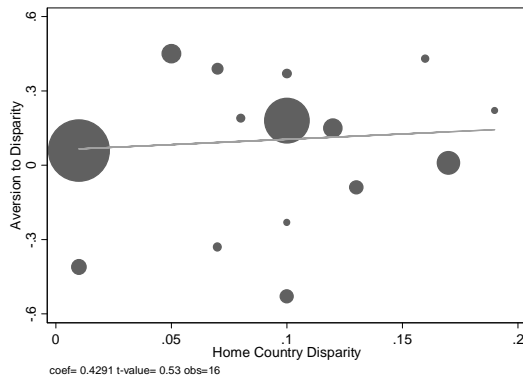
Table 1: Basic Information on International Investors and Their Holdings

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

Home Country Disparity	Dec. 1996		Dec. 1997		Dec. 1998		Dec. 1999	
	No. of Investors	Average No. of Holdings	No. of Investors	Average No. of Holdings	No. of Investors	Average No. of Holdings	No. of Investors	Average No. of Holdings
Low Disparity	593 (862)	6.95	417 (729)	6.89	615 (981)	6.51	980 (1,455)	6.88
High Disparity	405 (572)	5.96	257 (427)	6.33	403 (563)	5.84	517 (698)	7.69
Not Classified	184 (255)	7.50	131 (227)	6.62	187 (262)	6.74	229 (313)	9.78
All Investors	1,182 (1,689)	6.70	805 (1,383)	6.67	1,205 (1,806)	6.32	1,726 (2,466)	7.51

Table 2A: Variable Definitions

Variable Name	Definitions
Dependent Variables	
Holding Weight HW_{ijk}	Market value of investor i's holding of firm j as a fraction of his total holdings in month t
Holding Dummy	Dummy = 1 if $HW_{ijk} > 0$, and 0 otherwise
Firm-level Variables (Regressors)	
Disparity	The difference between controlling shareholder's voting rights and ownership (cash flow rights) in firm j
Firm Size	Free-float adjusted market capitalization, logged (in Billions of *won*). More specifically, ln[(share price)(number of shares outstanding)(1 – voting rights)]
Profitability	EBIT/book value of assets (end of previous fiscal year), first winsorized across firms at the 1st and the 99th percentiles, then averaged over previous 3 years
Dividend Yield	Dividend per share / year-end share price
Market-to-Book	Market value / book value of equity
R&D/Sales	R&D expenditure / sales
Advertisement/Sales	Advertising expenditure / sales
Sales Growth	Sales growth, averaged over previous 3 years
Export/Sales	Export revenue / total sales
Foreign Director Dummy	1 if at least one foreigner sits at the board; 0 otherwise
Leverage	[Book value of debt / book value of assets], winsorized at the 1st and the 99th percentile values, logged. More specifically, we take the log of [(debt/assets)+1] to avoid dropping observations with a value of zero
Years of Operation	Years of operation, logged
Share Turnover	Free-float adjusted share turnover, or [number of shares traded during year / (number of shares outstanding)(1 – voting rights)]
Level 2 or 3 ADR	1 if firm issued level-2 or 3 ADR; 0 otherwise
Level 1 or Rule144 ADR	1 if firm issued level-1 or Rule144 ADR; 0 otherwise
Return Volatility	Standard deviation of weekly returns (adjusted for stock-splits and dividends) over previous 48 months
Direct Ownership	Number of shares held by the group-controlling shareholder and his relatives in firm j / total outstanding shares
Group Control	Amount of additional cash flow rights a group-controlling shareholder can gain in other firms by having firm j under his control, as a fraction of firm j's book equity value, winsorized at the 1st and the 99th percentile values
Investor-level Variables (Regressors)	
Number of Holdings	Number of firms investor i holds in his portfolio at month t, logged
High-disparity home	Home country's disparity > 0.10 (the median across all home countries)
Low-disparity home	Home country's disparity ≤ 0.10

Table 2B: Summary Statistics (Decembers of 1996-1999)

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

Table 2C: Correlation Matrix (Decembers of 1996-1999)

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

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

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

	(1)	(2)	(3)	(4)	(5)	(6)
Disparity	-0.1453***	-0.1355***	-0.0640***	-0.0395***	-0.0624***	-0.1321***
	(0.0102)	(0.0101)	(0.0110)	(0.0111)	(0.0141)	(0.0230)
Log Firm Size	0.1367***	0.1341***	0.1376***	0.1281***	0.1409***	0.2150***
	(0.0046)	(0.0044)	(0.0045)	(0.0044)	(0.0039)	(0.0065)
Profitability		0.2139***	0.2665***	0.2153***	0.2186***	0.3162***
		(0.0187)	(0.0216)	(0.0207)	(0.0236)	(0.0366)
Dividend Yield			0.1663***	0.2424***	0.1761***	0.0776
			(0.0521)	(0.0522)	(0.0602)	(0.0939)
Market-to-Book			-0.0122***	-0.0075***	-0.0024	-0.0045*
			(0.0010)	(0.0010)	(0.0015)	(0.0024)
R&D/Sales			1.4205***	1.2422***	0.5847***	0.0329
			(0.1618)	(0.1613)	(0.2007)	(0.3204)
Advertisement/Sales			1.2806***	1.1121***	1.6054***	2.4157***
			(0.1046)	(0.1078)	(0.1394)	(0.2263)
Sales Growth			-0.0296***	-0.0201***	-0.0161***	-0.0278***
			(0.0050)	(0.0044)	(0.0053)	(0.0087)
Export/Sales				-0.0119***	0.0020	0.0067
				(0.0046)	(0.0052)	(0.0083)
Foreign Direct Dummy				0.0304***	0.0191***	0.0245***
				(0.0026)	(0.0033)	(0.0055)
Level 2 or 3 ADR				-0.0276**	-0.1122***	-0.1735***
				(0.0120)	(0.0154)	(0.0242)
Level 1 or Rule144A ADR				0.0575***	0.0701***	0.1097***
				(0.0040)	(0.0046)	(0.0078)
Leverage					-0.1102***	-0.1329***
					(0.0206)	(0.0341)
Years of Operation					-0.0296***	-0.0515***
					(0.0049)	(0.0084)
Share Turnover					-0.0029***	-0.0040***
					(0.0007)	(0.0012)
Return Volatility					-0.2651***	-0.3696***
					(0.0511)	(0.0790)
Number of Holdings					0.1514***	0.2298***
					(0.0032)	(0.0054)
Direct Ownership					-0.0568	-0.0731
					(0.0390)	(0.0637)
Direct Ownership Squared					0.2959***	0.3499**
					(0.1061)	(0.1712)
Group Control					-0.0152**	-0.0320***
					(0.0068)	(0.0111)
Constant	Y	Y	Y	Y	Y	Y
Year Dummies	Y	Y	Y	Y	Y	Y
Clustered SE (investor-level)	Y	Y	Y	Y	Y	Y
Uncensored Observations	28,528	28,202	23,567	23,560	23,417	23,409
Left Censored Observations	811,532	791,573	659,147	655,041	626,527	944,472
Right Censored Observations	-	-	-	-	-	1,463
Pseudo R-squared	0.32	0.33	0.34	0.34	0.46	0.40

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

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

	(1)	(2)	(3)	(4)	(5)	(6)
Disparity	-0.0164***	-0.0159***	-0.0081***	-0.0065***	-0.0043***	-0.0411***
	(0.0014)	(0.0014)	(0.0014)	(0.0015)	(0.0007)	(0.0065)
Log Firm Size	0.0142***	0.0141***	0.0150***	0.0149***	0.0065***	0.0430***
	(0.0007)	(0.0007)	(0.0008)	(0.0007)	(0.0002)	(0.0009)
Profitability		0.0115***	0.0171***	0.0146***	0.0058***	-0.0048
		(0.0017)	(0.0020)	(0.0021)	(0.0010)	(0.0084)
Dividend Yield			0.0193***	0.0255***	0.0065**	0.0861***
			(0.0058)	(0.0061)	(0.0027)	(0.0225)
Market-to-Book			-0.0015***	-0.0013***	-0.0002***	-0.0027***
			(0.0001)	(0.0002)	(0.0001)	(0.0008)
R&D/Sales			-0.0000	-0.0152	-0.0421***	-0.5135***
			(0.0188)	(0.0193)	(0.0090)	(0.0825)
Advertisement/Sales			0.1322***	0.1196***	0.0673***	0.2783***
			(0.0113)	(0.0123)	(0.0067)	(0.0521)
Sales Growth			-0.0033***	-0.0025***	-0.0008***	-0.0044**
			(0.0006)	(0.0005)	(0.0002)	(0.0018)
Exports/Sales				-0.0011**	0.0001	-0.0006
				(0.0005)	(0.0002)	(0.0019)
Foreign Director Dummy				0.0030***	0.0006***	0.0018
				(0.0004)	(0.0002)	(0.0015)
Level 2 or 3 ADR				0.0010	-0.0024***	-0.0024
				(0.0015)	(0.0003)	(0.0077)
Level 1 ADR				0.0067***	0.0035***	0.0199***
				(0.0007)	(0.0004)	(0.0031)
Leverage					-0.0040***	-0.0189**
					(0.0009)	(0.0088)
Years of Operation					-0.0008***	-0.0009
					(0.0002)	(0.0019)
Share Turnover					-0.0002***	-0.0011***
					(0.0000)	(0.0003)
Return Volatility					-0.0060***	-0.0262*
					(0.0018)	(0.0155)
Number of Holdings					0.0204***	0.1068***
					(0.0049)	(0.0404)
Direct Ownership					-0.0008**	-0.0029
					(0.0003)	(0.0029)
Direct Ownership Squared					-0.0040***	-0.0189**
					(0.0009)	(0.0088)
Group Control					-0.0008***	-0.0009
					(0.0002)	(0.0019)
Constant	Y	Y	Y	Y	Y	Y
Year Dummies	Y	Y	Y	Y	Y	Y
Clustered SE (investor-level)	Y	Y	Y	Y	Y	Y
Prob (HD = 1)	3.39%	3.44%	3.45%	3.47%	3.60%	10.57%
Total Observations	840,060	819,775	682,714	677,796	649,944	122,241
Pseudo R-squared	0.23	0.23	0.24	0.24	0.39	0.37

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

Investors are separated into two groups based on whether the level of home-country disparity is below or above the median computed across all home countries in the sample (10%). The same set of control variables that appears in *Column* 5 of *Table 3* is used in each regression, but not reported. ***, **, and * indicate statistical significance at 1, 5, and 10 percent levels, respectively. Robust standard errors, clustered at the investor-level, are reported in parenthesis.

		(1)	(2)	(3)	(4)
		Tobit		*Probit*	
		Home country Disparity =< 10%	Home country Disparity > 10%	Home country Disparity =< 10%	Home country Disparity > 10%
Pre-Crisis (Dec. 96 – Nov. 97)	Firm Disparity	0.0239*	0.0532*	0.0114	0.0258
		(0.0141)	(0.0310)	(0.0102)	(0.0197)
	Log Firm Size	**0.0550***	**0.0584***	**0.0408***	**0.0417***
		(0.0035)	**(0.0084)**	**(0.0012)**	**(0.0035)**
	Other Controls	yes	yes	yes	yes
	Observations	287,311	46,077	287,311	46,077
In-Crisis (Dec. 97 – Dec. 98)	Firm Disparity	**-0.0745***	0.0258	**-0.0564***	0.0121
		(0.0171)	(0.0255)	**(0.0106)**	(0.0124)
	Log Firm Size	**0.0629***	**0.0732***	**0.0380***	**0.0297***
		(0.0041)	**(0.0064)**	**(0.0013)**	**(0.0022)**
	Other Controls	yes	yes	yes	yes
	Observations	268,494	51,925	268,494	51,925
Post-Crisis (Jan. 99 – Dec. 99)	Firm Disparity	**-0.0355***	-0.0007	**-0.0337***	-0.0073
		(0.0089)	(0.0165)	**(0.0046)**	(0.0072)
	Log Firm Size	**0.0585***	**0.0595***	**0.0300***	**0.0251***
		(0.0026)	**(0.0042)**	**(0.0013)**	**(0.0018)**
	Other Controls	yes	yes	yes	yes
	Observations	445,653	79,107	445,653	79,107

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

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

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

Table 7: Do Investors from High-disparity Countries Have an Edge in High-disparity Korean Stocks? *Ex-Post* Performance

This table compares buy-and-hold returns on high-disparity stocks (75th percentile in disparity) by investors from high and low disparity countries, respectively. *Columns* (1) and (2) report value-weighted averages of these returns, and *Columns* (3) and (4) report equally-weighted averages. Difference-in-means tests are reported in *Column* (5). Numbers of observations are reported in square brackets and *p*-values are reported in parentheses.

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

Table 8: Home Country Disparity vs. Legal Origin

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

		(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	**0.0302****	0.0396	-0.0688	0.0588
		(0.0143)	(0.0441)	(0.0748)	(0.0393)
	Firm Size	**0.0541***	**0.0615***	**0.0748***	**0.0582***
		(0.0036)	**(0.0131)**	**(0.0077)**	**(0.0106)**
	Other Controls	yes	yes	yes	yes
	Observations	268,235	12,725	19,076	33,352
In-Crisis (Dec. 97 – Dec. 98)	Disparity	**-0.0691***	-0.0839*	-0.1578*	0.0476*
		(0.0172)	(0.0493)	(0.0844)	(0.0281)
	Firm Size	**0.0608***	**0.0951***	**0.0988***	**0.0688***
		(0.0041)	**(0.0110)**	**(0.0156)**	**(0.0072)**
	Other Controls	yes	yes	yes	yes
	Observations	246,324	12,900	22,170	39,025
Post-Crisis (Jan. 99 – Dec. 99)	Disparity	**-0.0301***	-0.0958*	**-0.1089***	0.0126
		(0.0090)	(0.0553)	**(0.0352)**	(0.0159)
	Firm Size	**0.0579***	**0.0830***	**0.0670***	**0.0558***
		(0.0026)	**(0.0074)**	**(0.0087)**	**(0.0045)**
	Other Controls	yes	yes	yes	yes
	Observations	404,929	16,221	40,724	62,886

Table 9: **Two-Stage Least Squares**

Separate two-stage least square (2*SLS*) regressions are run for investors from low- and high-disparity countries. The initial value of disparity (as of December 1996) is used as an instrument for control-ownership disparity. The first stage regressions, with an *OLS* specification, are reported in *Panel 9A*, while the second stage regressions, with a *Tobit* specification, are reported in *Panel 9B*. Given that our instrument is a firm-level variable, we use firm-months as an observation unit in *Panel 9A*, while we use firm-investor-months as an observation unit in *Panel 9B*. All control variables in *Column* (5) of *Table 3* are included in both stages but not reported. *, **, and *** indicate statistical significance at 1, 5, and 10 percent levels, respectively. Robust standard errors, clustered at the investor-level, are reported in parentheses.

Panel 9A: 1st Stage Regressions

Dependent Variable		Disparity
Pre-Crisis (Dec. 96 – Nov. 97)	Initial Disparity (*IV*)	**1.0003*****
		(0.0004)
	Other Controls	yes
	No. of Observations	1,539
	Adjusted R-Squared	0.99
In-Crisis (Dec. 97 – Dec. 98)	Initial Disparity (*IV*)	**0.8202*****
		(0.0169)
	Other Controls	yes
	No. of Observations	1,644
	Adjusted R-Squared	0.86
Post-Crisis (Jan. 99 – Dec. 99)	Initial Disparity (*IV*)	**0.7738*****
		(0.0201)
	Other Controls	yes
	No. of Observations	1,455
	Adjusted R-Squared	0.76

Panel 9B: 2nd Stage Regressions

Dependent Variable		Holding Weight	
		(1) Home Country Disparity <= 10%	(2) Home Country Disparity > 10%
Pre-Crisis (Dec. 96 – Nov. 97)	Disparity (instrumented)	**0.0780*****	0.0808
		(0.0298)	(0.0687)
	Other Controls	yes	yes
	No. of Observations	1,250,500	189,164
	Pseudo R-Squared	0.3476	0.3608
In-Crisis (Dec. 97 – Dec. 98)	Disparity (instrumented)	-0.0287	**0.2565*****
		(0.0369)	(0.0902)
	Other Controls	yes	yes
	No. of Observations	1,227,865	213,097
	Pseudo R-Squared	0.4647	0.4658
Post-Crisis (Jan. 99 – Dec. 99)	Disparity (instrumented)	**--0.0948*****	-0.0199
		(0.0250)	(0.0526)
	Other Controls	yes	yes
	No. of Observations	1,606,859	248,259
	Pseudo R-Squared	0.5115	0.5358

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

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

		(1)	(2)	(3)	(4)
		Tobit		*Pobit*	
		Home country Disparity =< 10%	Home country Disparity > 10%	Home country Disparity =< 10%	Home country Disparity > 10%
Pre-Crisis (Dec. 96 – Nov. 97)	Firm Disparity	0.0288*	0.0566*	0.0105	0.0242
		(0.0163)	(0.0342)	(0.0120)	(0.0226)
	Disparity x Opacity	-0.0149	-0.0106	0.0028	0.0052
		(0.0328)	(0.0617)	(0.0237)	(0.0432)
	Log Firm Size	**0.0551*****	**0.0585*****	**0.0408*****	**0.0416*****
		(0.0035)	**(0.0085)**	**(0.0012)**	**(0.0035)**
	Other Controls	yes	yes	yes	yes
	Observations	287,311	46,077	287,311	46,077
In-Crisis (Dec. 97 – Dec. 98)	Firm Disparity	-0.0135	0.0741	-0.0192	0.0334
		(0.0219)	(0.0513)	(0.0131)	(0.0226)
	Disparity x Opacity	**-0.2260*****	-0.1836	**-0.1371*****	-0.0812
		(0.0482)	(0.1346)	**(0.0298)**	(0.0541)
	Log Firm Size	**0.0642*****	**0.0742*****	**0.0386*****	**0.0301*****
		(0.0042)	**(0.0064)**	**(0.0014)**	**(0.0022)**
	Other Controls	yes	yes	yes	yes
	Observations	268,494	51,925	268,494	51,925
Post-Crisis (Jan. 99 – Dec. 99)	Firm Disparity	0.0049	**0.0920*****	**-0.0418*****	0.0117
		(0.0162)	**(0.0268)**	**(0.0082)**	(0.0122)
	Disparity x Opacity	**-0.1362*****	**-0.3093*****	0.0282	-0.0643*
		(0.0449)	**(0.0846)**	(0.0228)	(0.0360)
	Log Firm Size	**0.0584*****	**0.0595*****	**0.0299*****	**0.0253*****
		(0.0025)	**(0.0042)**	**(0.0013)**	**(0.0018)**
	Other Controls	yes	yes	yes	yes
	Observations	445,653	79,107	445,653	79,107

Appendix 1: Source Country Disparity and Legal Origin

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

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