Financial Globalization, Governance, and the Evolution of the Home Bias[*]

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Abstract

Standard portfolio theories of the home bias are disconnected from corporate finance theories of insider ownership. We merge the two into what we call the optimal ownership theory of the home bias. The theory has the following components. In countries with poor governance, it is optimal for insiders to own large stakes in corporations and for large shareholders to monitor insiders. Foreign portfolio investors will exhibit a large home bias against such countries because their investment is limited by the shares held by insiders (the 'direct effect' of poor governance) and domestic monitoring shareholders ('the indirect effect'). Foreigners can also enter as foreign direct investors; if they are from countries with poor governance, so that the relative importance of foreign direct investment in total foreign

equity investment is negatively related to the quality of governance. Using two datasets, we find strong evidence that the theory can help explain the evolution of the home bias. Using country-level U.S. data, we find that on average the home bias of U.S. investors towards the 46 countries with the largest equity markets did not fall over the past decade, but it decreased the most towards countries in which the ownership by corporate insiders decreased, and the importance of foreign good governance, they have a comparative advantage as insider monitors in countries with direct investment fell in countries in which ownership by corporate insiders fell. Using firm-level data for Korea, we find evidence of the additional indirect effect of poor governance on portfolio equity investment by foreign investors.

JEL codes: G15, G30, F36

1. Introduction

Since the early 1990s, after a wave of liberalizations in emerging markets, stock markets from developed countries as well as from a large number of emerging countries have been open to foreign investors. Yet, the home bias is still with us, even though what used to be the main argument for the existence of such a bias, formal barriers to international investment, has ceased to be important for most countries with functioning stock markets.

While there have recently been many important contributions to our understanding of the home bias—see the reviews by Lewis (1999) and Karolyi and Stulz (2003) and references therein—we argue in this paper that one factor must be present in any discussion of the *evolution* of home bias over time.[1] Specifically, we merge the portfolio approach to the home bias with the corporate finance literature on insider ownership to form what we call the optimal ownership theory of the home bias. We then use two distinct datasets—one on U.S. investors' home bias toward a wide range of countries, the other on foreigners' positions in Korean equities—to show that the evolution of the home bias is consistent with the theory.[2]

The optimal ownership theory of the home bias is straightforward. The traditional portfolio approach makes the critical assumption that there is no optimal ownership structure for firms; in its simplest version, the portfolio approach predicts that if there are no barriers to international investment all investors hold the world market portfolio. With this simple model, it would never be optimal for an individual to hold more equity in a firm in his portfolio than the firm's proportional share in the world market portfolio. Yet, everywhere in the world, corporate insiders overweight the firm they control in their portfolio. Though the portfolio model cannot explain this concentration, the corporate finance literature emphasizes that there exists a level of insider

ownership that maximizes firm value.[3] That literature predicts that insider ownership should be more concentrated when agency problems between those who control corporations and outside investors are stronger (see, for instance, Demsetz and Lehn, 1985). These agency problems are stronger when the institutions that protect investors in a country are poorer.[4] Moreover, agency problems of controlling shareholders can be reduced by having investors who actively monitor the controlling shareholders (Shleifer and Vishny, 1986). The existence of an optimal level of insider ownership and an important role for monitors forms the basis for the optimal ownership theory of the home bias.

With our theory, the upper bound on foreign ownership through portfolio equity holdings is determined by the optimal size of insider ownership because, as pointed out by Dahlquist, Pinkowitz, Stulz, and Williamson (2003), foreign portfolio investors can only hold shares not held by insiders. Hence, foreign portfolio investors cannot hold the world market portfolio, but only the world market portfolio of shares not held by insiders (the float-adjusted world market portfolio). In addition, two types of investors can have a comparative advantage in monitoring. Local investors—who, because of proximity, have access to more information, some of it costless—have a comparative advantage in monitoring compared to foreign portfolio investors (Giannetti and Simonov, 2006). Foreign investors from countries with better institutions, if they become part of the controlling block, can be valuable inside monitors because the laws of their home countries limit their ability to consume private benefits and hence make it optimal for them to limit the consumption of private benefits by other insiders. As a result of these forces, we expect that local investors with monitoring ability would overweight domestic securities (thereby further limiting the holdings of atomistic foreign portfolio investors) and foreigners who become part of the controlling coalition (foreign direct investors) would be valuable as monitors.

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[3] See Helwege, Pirinsky and Stulz (2006) for a detailed review of the corporate finance approach to firm ownership and references.
[4] See Stulz (2005) for references.

Governance, thus, has two effects on the home bias. The first is what we call the direct effect of governance on the home bias: Poorer governance leads to a higher level of insider ownership, which limits portfolio holdings by foreign investors. The second effect we call the indirect effect of governance on the home bias: Poorer governance can also lead to a higher level of holdings by domestic monitoring shareholders and, as these holdings increase, domestic investors (in aggregate) become more overweight in domestic stocks, further limiting the portfolio investment of foreigners.[5]

Governance also impacts the composition of foreign investment. FDI investors from countries with better governance—to the extent they become insiders and are limited in their consumption of private benefits by the governance of their home country—have a comparative advantage in monitoring controlling shareholders and strong incentives to use their information as insiders to limit the consumption of private benefits by other insiders. As governance improves, the benefits of monitoring fall and FDI becomes less advantageous relative to portfolio investment. Consequently, the forces that make high insider ownership optimal also increase the reward to FDI compared to the reward to portfolio investment. We therefore expect portfolio investment to be more important compared to FDI for countries with better governance and the relative importance of portfolio investment to increase as governance improves.

We use data from 1994 to 2004 to investigate the evolution of the home bias. Our sample period starts after a period of liberalization of equity markets in emerging countries, so that we can consider a large number of countries whose equity markets are reasonably open to foreign

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[5] If domestic investors do not have a comparative advantage in monitoring, all investors hold the float-adjusted world market portfolio and there is a mechanical relation between insider holdings and foreign ownership: as insider holdings fall, foreign investors would buy a fraction of the shares sold by insiders equal to the weight of the country in the float-adjusted world market portfolio. But if some outside investors have an advantage in monitoring, atomistic foreign investors do not hold the float-adjusted world market portfolio and there is no necessary relation between a change in insider ownership and a change in shares held by foreign investors. In either case, our theory implies that there is a lower bound on the home bias that depends on insider ownership. For many countries, this lower bound is high enough that there would be a large home bias towards these countries even if the lower bound were binding. But the forces that lead insider ownership concentration to be high also prompt those domestic investors with a comparative advantage in monitoring controlling shareholders to overweight the domestic stocks they monitor (and, hence, foreign portfolio investors to underweight those stocks).

investors.[6] We first show that there is no evidence of a systematic decrease in ownership concentration across the world. Consequently, the upper bound on risk-sharing has not increased systematically. We then investigate how the holdings of U.S. investors in foreign countries changed from 1994 to 2004, the first and latest years of the U.S. Treasury's comprehensive and high quality benchmark surveys of ownership of foreign securities by U.S. residents. Using this dataset, we find that for a sample of 46 countries with the largest stock markets, the percentage of stock market wealth invested in these countries by U.S. residents increased from 9.8% in 1994 to 13.4% by 2004. However, it would be wrong to infer from this that over time there is a systematic increase in portfolio investment across countries towards the investment level that would prevail without a home bias. In fact, the percentage of U.S. stock market wealth invested in 13 countries decreased over that period of time, and in 6 other countries the increase in U.S. investment did not match the growth in the market. Further, the average change in the home bias per country from 1994 to 2004 is not significantly different from zero. Strikingly, we find that the home bias decreases from 1994 to 2004 in countries where insiders had smaller stakes in firms in 1994 and where the stake of insiders fell from 1994 to 2004. This result is robust when taking into account the endogeneity of insider holdings predicted by our theory. A complementary prediction of our theory is that the ratio of FDI to total foreign investment should fall as ownership by insiders falls. We test this prediction as well using U.S. FDI data and find support for it.

The U.S. dataset has two main advantages. First, it is high quality, as the U.S. government constructs it from comprehensive security-level benchmark surveys. Second, it represents the international positions of the largest group of foreign equity investors in the world. The disadvantage of the U.S. dataset is that it provides data only for U.S. investors.[7] Further, the

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[6] Henry (2000), Bekaert and Harvey (2000), Levine and Zervos (1998) and Kim and Singal (2000) provide equity market liberalization dates for emerging markets. The only emerging markets with liberalization dates after 1992 are Jordan (1995), Nigeria (1993) and Zimbabwe (1993); these countries are not included in this study.

[7] Another country-level data set, the IMF's Coordinated Portfolio Investment Survey (CPIS), started too late for our study (in 1997), is complete starting only in 2001 and, most importantly, is on average of relatively poor quality as the vast majority of countries do not conduct careful security-level surveys. For example, CPIS data for 2004 suggest that other euro area residents hold 1189 percent of the Luxembourg equity market. Clearly the vast majority of those

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insider ownership dataset we use allows us to neither identify the residence of insiders nor identify blockholders who may not be insiders. We therefore use a second, firm-level dataset that has ownership data for foreign investors, includes as insiders only the controlling shareholder and affiliated shareholders, provides the residence of insiders, and allows us to identify domestic monitoring shareholders. Very few countries have such data available over an extended time period. Korea does, and our firm-level Korean dataset reinforces and extends our U.S. results. Specifically, we find that the foreign ownership of Korean firms grew in firms in which insider ownership fell and also grew in firms for which holdings by domestic monitoring shareholders fell. While neither of our datasets is perfect—the U.S. dataset is coarse but with it we are able to identify good instruments for insider ownership, while the Korean dataset is much finer but is only available for a somewhat shorter time period—each provides results entirely consistent with our theory.

The paper proceeds as follows. In Section 2, we review portfolio theories of the home bias. In Section 3, we develop the implications of insider ownership concentration for the home bias. In Section 4, we show that there is no evidence that insider ownership fell across the world from 1994 to 2004. In Section 5, we document the evolution of the home bias of U.S. investors from 1994 to 2004, investigate the extent to which the evolution of the home bias for U.S. investors is consistent with the various theories of the home bias, and show that the evolution of FDI as a component of total foreign investment is consistent with our predictions. In Section 6, we investigate whether the evolution of the home bias at the firm level for Korean firms is consistent with the various theories of the home bias. We conclude in Section 7.

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positions are held with Luxembourg custodians, not in Luxembourg equities, but this raises serious questions about the geographic accuracy of much of the CPIS data.

2. Portfolio models of the home bias

The models that use the portfolio approach to explain the home bias all proceed similarly. They posit an indirect utility function which depends on wealth and state variables. The investor maximizes the expected indirect utility function based on his expectation of the joint distribution of asset returns and state variables. Investors differ across countries because the indirect utility function and/or expectations of the joint distribution of returns and state variables differ across countries. These differences lead to a home bias.

Most of the early literature on the home bias was focused on the role of barriers to international investment (see, for instance, Black, 1974, Stulz, 1981a, and Errunza and Losq, 1985). In testing these models, the literature looked at the cross-section of stock returns. If there are barriers to international investment, the international capital asset pricing model does not hold. The evidence shows that there are departures from the international capital asset pricing model for countries with capital markets that are not completely open to foreign investors and that departures from the international capital asset pricing model vary with the degree of segmentation of markets (see, for instance, Bekaert and Harvey, 1995).

As barriers to international investment became less important but the home bias persisted, authors focused more on alternative explanations for the home bias. If there is no inflation, so that exchange rate risks are real exchange rate risks, investors can hedge foreign exchange risks through money market positions, so that in principle foreign exchange risks do not affect equity portfolios (see Solnik, 1974, Adler and Dumas, 1983). The fact is that investors in different countries consume different goods and hence are exposed to different inflation risks which can lead them to hold different portfolios of equities if portfolios that hedge these relative price risks include stocks (Stulz, 1981b). The literature on hedging focuses either on inflation risk directly or on the role of non-traded goods in consumption baskets. Cooper and Kaplanis (1994) examine the role of inflation and conclude that the home bias cannot be explained by inflation hedging. Evidence on the role of relative price risks in explaining the home bias seems also to suggest that

these risks are too small to explain the home bias (see, for instance, Pesenti and van Wincoop, 2002, and van Wincoop and Warnock, 2006). Finally, investors are subject to various risks that they might want to hedge also, such as risks to their human capital. Human capital risks may lead investors to short domestic stocks (Baxter and Jermann, 1997), so that these risks can make the home bias even more puzzling.

Investors may have different expectations about stock returns, volatilities, and covariances. If investors are more uncertain about the expected returns for foreign stocks, these stocks will appear more risky to them and they will overweight their portfolio with domestic stocks (see Gehrig, 1993). This kind of argument has some empirical support, but it has an important weakness. If information asymmetry is the only reason that the portfolios of foreign and resident investors differ, we would expect that local investors will at times have bad signals justifying a low allocation to their home market, yet allocations to home countries always exhibit a home bias and change little (see Jeske, 2001).

A possible explanation for the home bias is simply that investors exaggerate the risks of investing abroad or hold biased estimates of expected returns for stocks from their own country. There is survey evidence that is consistent with behavioral explanations of the home bias. For instance, Shiller, Kon-Ya and Tsutsui (1996) show that investors are more optimistic about their home equity markets than about foreign markets using survey data from the U.S. and Japan.[8] Graham, Harvey, and Huang (2005) show that investors who believe they have greater competence in their understanding of financial markets are substantially more likely to own foreign stocks.

3. Firm value, ownership structure, and governance

The simplest version of the portfolio models discussed in the previous section predicts that if there are no barriers to international investment all investors hold the world market portfolio and

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[8] See also Kilka and Weber (2000) and Strong and Xu (2003).

it would never be optimal for an individual to hold more equity in a firm in his portfolio than the firm's proportional share in the world market portfolio. Yet, everywhere in the world, corporate insiders overweight the firm they control in their portfolio. Though the portfolio model cannot explain this concentration, the corporate finance literature emphasizes that there exists a level of insider ownership that maximizes firm value.[9] We first briefly review the determinants of the optimal stake of the insiders. We consider then the implications of poor institutions and high optimal insider ownership for "outsiders", portfolio investors who are not insiders (such as large monitors and more dispersed atomistic investors). Finally, we show that our approach implies that, everything else equal, foreign direct investment as a fraction of total foreign investment and insider ownership are correlated.

3.1. The optimal insider ownership

If a country's institutions that protect investors are poor, insiders who control corporations can extract large private benefits.[10] However, insiders incur deadweight costs for the extraction of these private benefits, and the deadweight costs are higher in countries that protect investors better: Laws and regulations that protect outside investors from expropriation by insiders increase the costs of extracting private benefits of control. The laws include laws that make it harder for insiders to expropriate resources by allowing a greater say for outside shareholders, laws that make it easier for outside shareholders to recover damages from insiders, as well as laws that require more disclosure from the firm.[11]

In countries with poor institutions, if insiders do not take steps to commit to consume fewer private benefits their firms will not be able to access the equity markets on acceptable terms. Portfolio investors will only buy equity from such firms at a discount that reflects the anticipated

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[9] See Helwege, Pirinsky and Stulz (2006) for a detailed review of the corporate finance approach to firm ownership and references.

[10] See Johnson, La Porta, Lopez-de-Silanes and Shleifer (2000). Note that there can be other reasons for concentrated insider ownership because control may have non-pecuniary benefits (see Gilson, 2006). These nonpecuniary benefits would seem to be largely unrelated to the quality of institutions, so that they cannot explain the cross-sectional variation in insider ownership across the world.

[11] On the role of disclosure laws, see Stulz (2008) and references therein.

consumption of private benefits. For a given level of investor protection, extraction of private benefits is inversely related to the level of insider ownership.[12] If the individuals who control corporations hold a large stake in the firm, the consumption of private benefits is more at their expense since it reduces the value of their stake; the lower the ownership of the insiders, the less they pay for their private benefits out of their own pocket. Irrespective of the country in which a firm is located, insider ownership has a cost in that it reduces the diversification of the portfolio of the insiders.

As investor protection improves, the benefit of insider ownership (the ability to raise capital on better terms because of the lower consumption of private benefits) falls but the cost (the underdiversification of insiders) does not, so that insider ownership falls.

3.2. The direct and indirect effects of governance on foreign ownership

Consider a world in which dispersed portfolio investors are price takers and face the same opportunity sets if they are residents or foreigners. Suppose now that the optimal insider ownership for a firm is α^*. As pointed out by Dahlquist, Pinkowitz, Stulz and Williamson (2003), it immediately follows that all portfolio investors can only hold $(1 - \alpha^*)$ of the firm. Assume now that foreign portfolio investors represent a fraction b of the equity market wealth of portfolio investors. In this case, foreign portfolio investors own a fraction $b(1 - \alpha^*)$ of the firm if they have no home bias. For a given weight of the firm in the world market portfolio, the weight of the firm in the portfolio of foreign portfolio investors falls as insider ownership of the firm increases. This is the direct effect of poor governance on foreign ownership.

Another important group of investors includes the monitoring shareholders. Insider ownership in a country is high if the extraction of private benefits is cheap. Because insider ownership is costly, we would therefore expect consumption of private benefits to be high when equilibrium insider ownership is high. Consequently, monitoring of, and private information about, that consumption can be more valuable when ownership by insiders is higher. While

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[12] See, for instance, Shleifer and Wolfenzon (2002).

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atomistic shareholders have no reason to monitor since they can free-ride on the monitoring of other shareholders, [13] monitoring is worthwhile for some shareholders—those who are large enough to be able to gain enough on their shares through monitoring actions to pay for their costs. Likely monitors are large resident shareholders, who typically will have lower monitoring costs because of proximity and may also be able to influence controlling shareholders through social networks. Moreover, some corporate policies, such as payout policies, may be designed to attract such large resident shareholders since firm value benefits from having such shareholders.

The indirect effect of governance on foreign investment is that poor governance, in addition to increasing the optimal level of insider ownership, also impacts holdings by monitoring shareholders. As noted above, everything else equal, we expect control rights held by insiders to be higher in countries in which private benefits are more valuable. In an efficient market, higher expected consumption of private benefits simply lowers firm value and, as long as firm value is properly discounted for the consumption of private benefits and this consumption is exogenous, should have no impact on the investment decision of portfolio investors. But portfolio decisions will be affected by the consumption of private benefits if either (1) some investors have better information about that consumption or (2) some investors have a comparative advantage in monitoring that consumption. Consider the (likely) scenario in which resident investors have more precise information about private benefits. Foreign investors, who would be at an information disadvantage, would be reluctant to trade with the informed residents and, if trade takes place, will be at a price that protects foreign investors from being taken advantage of. At that price, it may be too expensive for residents to trade with foreign investors. If only some resident investors have valuable information, then trade will take place as long as these investors can hide their trades among liquidity traders.

If some domestic residents have a comparative advantage at monitoring the consumption of private benefits by insiders, we would expect, as argued by Giannetti and Simonov (2006), that

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[13] See Shleifer and Vishny (1986) and Admati, Pfleiderer, and Zechner (1994).

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these residents will build positions large enough to take advantage of their monitoring advantage.[14] Their compensation for monitoring might arise from corporate policies, such as dividend policies, designed to benefit them. The existence of monitoring shareholders means that the fraction of shares not available to foreign investors is higher than α^* since the shares are more valuable for these shareholders than they would be for foreign investors. This is the indirect effect of poor governance on foreign ownership.[15]

To summarize, we hypothesize that an improvement in governance has a direct effect on the home bias as it reduces insider ownership and makes more shares available to foreign portfolio investors. In addition, such an improvement can have an indirect effect as it affects the fraction of shares held by domestic monitoring shareholders. While the direct effect necessarily reduces the home bias, the indirect effect does not since it could be that an improvement in governance reduces monitoring costs at least over some range. Some existing empirical evidence is consistent with the existence of an indirect effect which decreases the home bias. Leuz, Lins, and Warnock (2008) show that in countries with poor disclosure U.S. investors hold less of the float in firms in which the controlling shareholder holds more control rights. Giannetti and Simonov (2006) show that this result holds for foreign investors and small investors in Sweden.

3.3. Optimal insider ownership and the composition of foreign investment

Poor institutions should lead to higher insider ownership concentration. In the above discussion, foreigners were mentioned only in the context of dispersed, atomistic investors. But some foreigners can also become large blockholders who, to the extent that they are subject to regulations and laws from their country of origin that are stronger than the laws and regulations

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[14] See also the Giannetti and Koskinen (2005) model in which wealthy investors bid up share prices in countries with poor investor protection because they can obtain benefits from control by holding a large stake in a corporation, so that small investors find equity investment less profitable because share prices are not fully discounted to reflect the consumption of private benefits by insiders.

[15] However, the fraction of shares held by monitoring shareholders does not necessarily increase with α^*. Though minority shareholders can make large gains by taking actions that reduce the consumption of private benefits when that consumption is large, such actions may be more costly in countries in which optimal insider ownership is high because some monitoring technologies may not be available or may be inefficient in such countries – for instance, the legal system may not work well for private enforcement. For the argument that poor governance leads to less monitoring, see Li, Moshirian, Pham and Zein (2006).

from the host country, may be more limited in their consumption of private benefits from the corporation. If they cannot share in the consumption of private benefits equally, it is in their interest to monitor and limit that consumption.[16] Consequently, firms that attract foreigners as large blockholders can increase their value by doing so because they signal a commitment to consume fewer private benefits. Since the foreign investors incur fewer deadweight costs from the consumption of private benefits, they can offer higher prices to acquire companies and hence may have an advantage in the market for corporate control. Finally, to the extent that information asymmetries result from poor institutions and that such asymmetries make it more valuable for investors to expend resources in monitoring and enforcement, poor institutions imply that large shareholders earn a higher expected return than atomistic shareholders (because monitoring and enforcement are not worthwhile for dispersed atomistic shareholders).

We would therefore expect foreign investors to be more likely to be large inside or outside shareholders in countries with poor institutions than to be atomistic portfolio investors. In practice, large foreign blockholders will be classified as foreign direct investors. While in general we will not be able to determine if foreign direct investors are insiders or monitors, with either role we would expect the ratio of foreign direct investment to total foreign investment to be inversely related to the quality of institutions and positively related to the fraction of shares held by insiders.

4. Financial globalization and the evolution of the upper bound on international risk sharing through portfolio equity ownership

For investors to hold the world market portfolio, corporate ownership has to be highly dispersed, so that all shares could potentially be acquired by foreign investors. In most countries,

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[16] Antras, Desai, and Foley (2007) give such a monitoring role to multinational companies. Hausmann and Fernández-Arias (2000) also point out that "the fact that international firms have access to better foreign institutions and markets may be a source of value that can be extracted by purchasing firms in the local market."

however, insiders own large stakes in most corporations.[17] If the benefits that insiders derive from controlling the corporation are maximized when they own such stakes, they will not sell their shares to atomistic foreign investors. Consequently, the shares held by insiders place an upper bound on the share ownership by foreign investors. Though in many countries insiders control more votes than cash flow rights, the cash flow rights held by insiders are relevant for evaluating the upper bound on risk sharing, since the risks of cash flows are shared.

We discussed in section 3 how insider ownership is determined. In this section, we examine whether it evolved across countries from 1994 through 2004 in a way to make it possible for foreign portfolio investors to hold much larger stakes in corporations. We report data for 1994, 2004, and the change from 1994 through 2004. The problem with estimating insider ownership is that, in many countries, the reporting requirements are weak or non-existent. Further, the cash flow rights of insiders result from their direct ownership of shares as well as from indirect ownership. For instance, the controlling shareholder could own 40% of the shares of the firm directly, but a different firm that he controls also could own 10% of the shares in addition. Direct insider ownership can therefore understate the extent to which insiders own cash flow rights in the firm if the 10% owned through a different firm are not taken into account. Various authors have painstakingly identified the direct and indirect ownership of cash flows of controlling shareholders for subsets of firms to estimate the ultimate ownership of these shareholders.[18] In this paper, because we focus on aggregate insider ownership, knowledge of the ultimate ownership of the controlling shareholders is not necessary to estimate the number of shares held by insiders as long as all shares held by insiders at the firm level are taken into account.[19] To obtain country-level aggregate insider ownership, we aggregate firm-level block holdings

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[17] See La Porta, Lopez-de-Silanes and Shleifer (1999).

[18] Claessens, Djankov, and Lang (2000), Faccio and Lang (2002), Lins (2003), and La Porta, Lopez-de-Silanes, Shleifer (1999).

[19] We thank Daniel Wolfenzon for his insights on this issue.

reported by Worldscope. We include only firms for which insider ownership is available, does not exceed 100%, and is not equal to zero.

The Worldscope data has strengths and weaknesses. First, the approach we use makes it feasible to estimate insider ownership for two different years for a large number of countries. Though some papers have estimated insider ownership over time, they have done so for individual countries.[20] Here, we want to compare insider ownership in two different years across a broad range of countries. Second, the approach of focusing on the controlling shareholder alone assumes that blocks are independent from the controlling shareholder, but this is in many cases unlikely. Our approach may therefore capture better the shares that are part of a controlling coalition. Third, we are not able to identify whether a block is aligned with the controlling shareholder or not. Consequently, some of the blocks may not be part of the controlling coalition and we will overstate the holdings of the controlling coalition. Fourth, some equity stakes that are indirect equity stakes from the controlling shareholder or stakes from allies of the controlling shareholder may be too small to be counted as blocks, so that we would understate the holdings of the controlling coalition. Fifth, reporting requirements and the enforcement of reporting requirements varies across the world. Sixth, Worldscope at times includes shares held by depository banks in the insider category. This problem is more severe in 1994 than in 2004. Though we attempted to correct for this problem, the correction is imperfect since shares held by these banks may actually be held by insiders. Our results are not sensitive to this correction. Seventh, the firms included in Worldscope vary over time. In particular the coverage of Worldscope has improved over time. It is well-known that insider ownership is negatively related to the size of a firm.[21] It could therefore be that as firms are added to Worldscope average insider ownership increases because the new firms are smaller. This is less of a problem with a value-weighted measure of insider ownership.

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[20] See, for instance, Franks, Mayer and Rossi (2005).
[21] See, for instance, Demsetz and Lehn (1985).

To check the Worldscope data, we compared insider ownership computed from Worldscope with insider ownership computed from the Korean dataset we use in Section 7 of this paper for 2004. Our Korea dataset has 571 observations with equally-weighted average insider ownership of 39.38%, while Worldscope has 564 observations with average insider ownership of 39.8%. We looked at a sample of individual firms. For some, the insider ownership data is exactly the same in both databases. However, for others it is not. On average, though, the difference is trivial. The problem with this comparison is that Korea has excellent insider ownership data, so that the task of Worldscope is straightforward there. In another check, we estimated insider ownership using the median of the year before, the year after, and the year considered (though we did not have 2005 available for all firms). Doing so did not change our results meaningfully.

Table 1 reports insider ownership for 1994 and 2004 for 42 countries as well as the change in insider ownership in these countries between 1994 and 2004. We report two measures of insider ownership for each country. The first measure is the equally-weighted average of insider ownership for the firms for which data is available. The second measure is the value-weighted average of insider ownership. If we had insider ownership for all firms in a country, one minus the value-weighted average of insider ownership would be the upper bound for foreign ownership in that country if insiders are resident investors.

In 1994, the average of the equally-weighted averages of insider ownership across 42 countries is 49.0%. In contrast, the average of the value-weighted averages of insider ownership is 43.4%. The distribution of the insider ownership measures across countries conforms to the results obtained in other studies.[22] In particular, the U.S. has the lowest value-weighted insider ownership at 12.5%. Further, as expected, the U.K. has a low value-weighted insider ownership. Turkey has the highest value-weighted insider ownership at 72.5%. When we turn to 2004, we find no evidence of a decrease in ownership concentration. The average of the equally-weighted averages of insider ownership is 50.9% and the average of the value-weighted averages is 45.7%.

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[22] See La Porta, Lopez-de-Silanes and Shleifer (1999).

Argentina experiences a dramatic increase in ownership concentration over the period. However, both measures of insider ownership are higher in 2004 than in 1994 even when we exclude Argentina. In 2004 Ireland has the most diffuse ownership followed by the U.S. and the U.K., and Argentina replaces Turkey as the country with the most concentrated ownership. The average change in insider ownership is not significantly different from zero for either of our measures.

5. The evolution of the home bias of U.S. investors

In this section we illustrate the main points of our theory using a country-level dataset of U.S. investment abroad.

5.1 Holdings Data

The data on holdings of U.S. investors in foreign countries are collected through comprehensive surveys conducted by the Treasury Department, the Federal Reserve Bank of New York, and the Federal Reserve Board in 1994 and 2004.[23] These so-called benchmark surveys provide the most reliable data on the holdings of U.S. investors, the largest group of foreign investors in the world. We first document holdings by U.S. investors across countries in 1994 and in 2004. We start from the 47 countries that have the highest market capitalization in 1997. Because the U.S. data reports investments in Belgium and Luxembourg together for 1994, we combine these two countries for 2004 as well and thus have 46 countries.

Table 2 reports the weight of each of these 46 countries in the portfolio of stocks of U.S. investors. The sum of the weights increased from 9.8% in 1994 to 13.4% to 2004.[24] With the portfolio model, in the absence of a home bias the sum of the weights of these countries in the

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[23] The holdings data are as of March 31, 1994 and December 31, 2004, as reported in Table 18 of Department of Treasury et al. (2005). For a primer on the surveys, see Griever, Lee and Warnock (2001).

[24] In Table 2, the fraction of foreign stocks in the equity portfolio of U.S. investors increases from 10.25% to 15.27% when we consider all foreign countries. Consequently, it appears that the fraction of the portfolio of U.S. investors invested in countries other than the 46 we focus on increased from 0.48% to 1.83%. However, this increase is misleading. It is almost entirely due to U.S. companies that re-incorporated or created special-purpose vehicles (or corporations) in tax havens. Indeed, the countries we include constitute 100% of U.S. holdings in countries other than Caribbean financial centers in 1994 and 99% in 2004.

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stock portfolio of U.S. investors should be 62.3% in 1994 and 54.5% in 2004.[25] A simple way to evaluate the extent of home bias U.S. investors exhibit toward a foreign country i is to compute the ratio of the portfolio weight of country i in the portfolio of U.S. investors (w_i^{US}) relative to the portfolio weight of that country in the world market portfolio (w_i^{world}). In 1994, the allocation to these 46 countries from U.S. investors represented 15.7% of what it would have been had they held the world market portfolio. In 2004, that allocation was 24.6% of the portfolio share of these countries in the world market portfolio. Home bias is often measured as one minus the decimal value of that percentage or, specifically:

$$BIAS_i = 1 - w_i^{US}/w_i^{world}$$

The home bias is zero when investors hold the world portfolio and one if they hold no equities in country i. Measured this way, the aggregate U.S. home bias is far from zero but did fall from 0.84 to 0.75 from 1994 to 2004.

If what happened over these 10 years had been a systematic reduction in the home bias across countries, we should observe a reduction in the home bias measure for each country. Table 2 shows the home bias measures for each country in 1994 and 2004. It also shows the change in the home bias measure for each country. As illustrated in Figure 1, the home bias did not decrease systematically across countries. In fact, it did not decrease systematically even within regions, decreasing in seven euro area countries (but increasing in four), five of nine other developed

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[25] We require market capitalization data expressed in U.S. dollars for year-ends of 1993 and 2004 as well as March 1994 and various months in 2004. For year-end data we rely on Standard & Poors (2005, 2003), which is the best source of year-end market capitalization expressed in U.S. dollars. For months that are not year-end, for emerging markets we use the *Emerging Markets Database*. For industrial countries and the rest of the world aggregate, market capitalizations for March 1994 are December 1993 amounts (from *EMDB*) plus country-specific MSCI price changes. For industrial countries for months in 2004 (explained below), data are from www.fibv.com. Exceptions are the following, for which December 2004 and MSCI price returns were used: France (no entry in FIBV), Netherlands (no entry in FIBV), and Singapore (for December 2004, FIBV data do not match S&P (2005) data). For Israel, as of December 2004 and March 1994 there were $9.2 billion and $1.9 billion, respectively, in Israeli stocks listed on Nasdaq but not the TASE. These are omitted from typical market capitalization data; we add them to the end-2004 and end-1994 amounts from Standard & Poors.

countries, and eight of 17 Latin American and Emerging Asian countries. In all, out of 46 countries with complete data, the home bias increased for 19 countries and decreased for 27 countries, increasing the most for Argentina and decreasing the most for Korea. The average reduction in the home bias is 0.027 (p-value=0.155). Consequently, one cannot reject the hypothesis that there was no change in the average home bias between 1994 and 2004. The home bias measured using the aggregate portfolio share of the 46 countries in the portfolio of stocks of U.S. investors decreased more (by 0.09) because the home bias of U.S. investors decreased towards each of the four largest foreign countries from 1994 to 2004.

5.2 Description of Variables

In Table 3, for the 40 countries for which we have complete insider ownership and home bias data for both 1994 and 2004, we report correlations for the variables we use in our regressions to explain the change in the home bias from 1994 to 2004. We measure the home bias in two ways. One way is the traditional approach of computing the world market portfolio including all outstanding shares. The second way, which we call the float-adjusted home bias, uses the float-adjusted world market portfolio to compute the home bias. The correlation between the changes in the two measures is 0.72. The first column shows the correlations of the change in home bias (measured the traditional way) with the variables of interest in our analysis. We see that the change in the home bias is negatively correlated with the bias in 1994, which is consistent with a catching up effect.

The main variable predicted by our theory is insider ownership. As expected, there is a strong positive correlation between the change in insider ownership (Δio) and the change in the home bias. We also consider other variables included in home bias studies (although not necessarily related to our theory). Not surprisingly in light of the earlier results of Ahearne, Griever and Warnock (2004), Edison and Warnock (2004), and Ammer, Holland, Smith and Warnock (2006), we find that an increase in the fraction of a market's capitalization that is available in the U.S. through a cross-listing (Δxlist) is associated with a decrease in the home bias. We use next the

Edison and Warnock (2003) measure of the change of the fraction of a market's capitalization unavailable for investment by foreign investors (Δfor). The change in the home bias does not have a significant correlation with the change in that measure. We next examine whether changes in home bias are related to changes in relative market capitalizations (Δwgtw). They are not. We then consider six governance measures from Kaufmann, Kraay, and Mastruzzi (2005). A higher value for these measures corresponds to a better governance outcome. We find that the home bias is significantly negatively correlated with three measures: governance effectiveness (Δge), regulatory quality (Δrq), and rule of law (Δrl). The other three measures do not have a significant correlation with the change in the home bias. Next, we use the Bekaert, Harvey, and Lundblad (2007) measure of illiquidity; changes in illiquidity (Δilliq) are highly correlated with changes in the home bias. Finally, if foreign investors trade on momentum, their holdings would be heavily determined by recent returns. Using the return for the three years ending in 2004 as a proxy for recent returns, country-level returns do not have a significant correlation with the change in the home bias.

The float-adjusted measure of the change in the home bias has an insignificant correlation with the change in insider ownership. This is consistent with the hypothesis that insider ownership affects the home bias across countries primarily through its impact on the fraction of a market's capitalization available to foreign investors. We also see that the change in the float-adjusted home bias is not significantly correlated with the change in governance measures, except for the (marginally significant at the 10% level) negative correlation with government effectiveness. In contrast, however, the correlation of the change in the float-adjusted home bias with the change in the fraction of the stock market cross-listed is quite strong.

5.3 Regressions of U.S. Home Bias

The correlation table shows that the change in the home bias is strongly negatively correlated with the change in several governance variables and with the change in cross-listing, and is positively correlated with the change in insider ownership. Following our discussion of Section 3,

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we would expect improvements in governance to bring about a decrease in insider ownership. But it could also be the case that increases in foreign interest led to decreases in insider ownership, as an exogenous shock to foreign demand would increase the price at which insiders could sell shares. To disentangle these effects, we estimate regressions of the change in the home bias on the level of the home bias in 1994, the level of insider ownership in 1994, the change in insider ownership, and various other control variables. To account for the possible endogeneity of the change in insider ownership, we instrument for the change in insider ownership using changes in the six governance variables.[26]

We estimate all regressions twice. In the left sides of Table 4, we use the world market portfolio to calculate the home bias; in the right sides we use the float-adjusted world market portfolio. Evidence of the direct effect of governance (through insider ownership) on foreign investment would come through a positive relationship between the change in insider ownership (instrumented using changes in the governance variables) and the home bias in the left sides of the table. Though our data provides us with a measure of insider ownership, it does not give us a direct measure of the holdings of domestic monitoring shareholders (except that those monitoring shareholders who are blockholders are included as insiders). Thus, given the data limitations, evidence of the indirect effect of governance on foreign ownership brought about by a reduction in the fraction of shares held by domestic monitoring shareholders would come through either (i) in Panel A, a positive relationship between the change in insider ownership (instrumented) and the float-adjusted home bias in the right sides of the table or (ii) in Panel B, a negative relationship between the governance variables and the home bias measures (that is, an impact above and beyond the effect through insider ownership). Throughout the country-level

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[26] The governance variables explain close to 40% of the variation in the change in insider ownership but are not correlated with changes in foreign ownership once we account for changes in insider ownership. We could include as an additional instrument the Pagano and Volpin (2004) measure of the evolution of shareholder protection, which is available through only 2002 and for a slightly smaller set of countries. As it does not change any of our main results, we omit it and thus maintain our sample of 40 countries.

regressions in Table 4, we find strong evidence of the direct effect of governance (through insider ownership) on foreign investment, but no evidence supporting the indirect effect.[27]

In Panel A regressions (1) – (6), the change in insider ownership (instrumented using changes in governance variables) is always positively related to the change in the home bias. Control variables included in regressions (2) – (6) generally are not significant, with some exceptions discussed below. In Panel B, the change in insider ownership is again strongly positively related to changes in the home bias in regressions (1) – (6), while the governance variables are not. In fact, in all of the regressions shown in Table 4 that use the conventional measure of the home bias, insider ownership in 1994 and the change in insider ownership are significant. That the change in insider ownership (instrumented using the change in governance variables) is strongly related to the change in the market-capitalization-weighted home bias is strong evidence of the direct effect.

We do not, however, find evidence of the indirect effect in the country-level regressions. In regressions that use the float-adjusted home bias (the right side columns of Table 4), in no case is the change in insider ownership significant. As noted above, evidence of the indirect effect could also come through the governance variables themselves (after controlling for insider ownership). These variables are shown in Panel B; none are significant. Moreover, if we include all changes in each of the governance measures—which together explain nearly 40 percent of the variation in insider ownership—in a regression (not shown) with changes in insider ownership, insider ownership remains highly significant while none of the governance variables are significant either alone or jointly. Thus, our evidence indicates that *at the country level* governance affects the home bias through its impact on insider ownership and thus the fraction of shares available for portfolio investment rather than for other reasons. These results are consistent with the prediction

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[27] The lack of evidence of the indirect effect in country-level regressions is not surprising given the Leuz, Lins, and Warnock (2008) findings that it is the firms with poor expected governance who are also in poor governance environments that U.S. investors avoid.

of the analysis of Section 3 that foreign equity portfolio investment is naturally limited by the extent of insider holdings.[28]

Some control variables are significant, especially in the float-adjusted regressions. [29] Focusing on the "changes" variables in Panel A regressions (8), (9), and (11), we see that all else equal U.S. investors' holdings as a share of countries' free float increased more in countries whose firms cross-listed on U.S. exchanges, countries that relaxed capital controls, or countries whose liquidity increased. A U.S. cross-listing is associated with improved information flow (Lang, Lins, and Miller (2003)) and the cross-listing-associated increase in U.S. holdings is greatest in firms that had poor accounting standards prior to the cross-listing (Ammer et al. (2008)), so at least part of the evolution of U.S. investors' holdings of the rest of the world free float owes to improved disclosure or information flow. To the extent that liquidity also improves information flow, the results in regression (11) reinforce this notion.

Our regressions have three important limitations that should be emphasized. We find that changes in insider ownership play a critical role in explaining changes in foreign ownership. Of all the variables we consider, it is the most important. The first limitation is that we have only 40 countries in our regressions, so that the power of our tests is limited. Adding additional countries, if the required data were available, would not necessarily help because the stock market would be unimportant in these countries. Second, time-series data on governance measures is sparse. It would be especially helpful to have data on corporate disclosure; we know it often improves with a cross-listing, but a direct measure of the evolution of country-level disclosure would be worthwhile. Third, our regressions test for a relation between changes in the home bias and changes in insider ownership, but they do not test whether differences in insider ownership result from differences in investor protection across countries. Our regression results could hold even if

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[28] Argentina experienced a large increase in insider ownership in our dataset. We re-estimated our regressions without Argentina and found that our results hold. Our results hold also if we estimate our regressions without Japan and also without the U.K.

[29] In unreported results, we also tried the Sarkissian and Schill (2004) measures of geographic, cultural, economic, and industrial proximity. None were significant.

the theory advanced in Section 3 does not explain insider ownership at all. Though there is evidence that is supportive of our theory, there is other evidence showing that at least in a country like the U.S. proxies for agency problems have limited explanatory power for managerial ownership (see, e.g., Hellwege, Pirinsky, and Stulz (2007)).

5.4 The composition of U.S. investment abroad

Our prediction is that the importance of foreign direct investment relative to foreign portfolio investment should fall as institutions improve and as insider ownership falls. To investigate this possibility, we use the data on U.S. foreign direct investment of the Bureau of Economic Analysis (BEA) for 1994 and 2004. Definitions of foreign direct investment vary around the world but an important component everywhere is that FDI investors have intentions of participating in the management of the firm. In practice, many countries use a 10 percent cut-off to capture this intention. For example, the U.S. BEA states that FDI is "the ownership or control, directly or indirectly, by one U.S. person of 10 percent or more of the voting securities of an incorporated foreign business enterprise or an equivalent interest in an unincorporated foreign business enterprise. (…) Direct investment refers to ownership by a single person, not to the combined ownership of all persons in a country."[30] While 10 percent is a rule of thumb, the intention of participating in management is the guiding principle behind the FDI classification. Note that our portfolio investment benchmark survey data used in the previous section explicitly omits FDI.

Using the reported data on foreign direct investment, we construct a variable that captures for each country the importance of U.S. residents' foreign portfolio investment, FPI, relative to their FDI. Specifically, the variable is the ratio of FPI to the sum of FDI and FPI. Difficulties with the data are that FDI is reported at historical cost while FPI is reported at market value and that BEA's disclosure rules limit the sample size to only 34 observations. Table 5 is tailored after Table 4 but with FPI/(FDI + FPI) as the dependent variable and controlling for the 1994 level of

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[30] USDIA: 1999 Benchmark Survey, M-4.

that variable. We find a strong negative relation between the change in insider ownership and the change in FPI/(FDI + FPI); as predicted, a decrease in insider ownership is associated with an increase in the importance of FPI relative to FDI. The coefficient on the change in insider ownership is negative in all the regressions and is significant at the 5% level or better in all regressions but one. Two control variables are significant: Countries with higher recent returns or with more liquid markets have more U.S. FPI relative to U.S. FDI.

6. Understanding the evolution of the home bias towards Korea

In this section we test many of our predictions on firm-level data from Korea. Foreign ownership increased dramatically in Korea from 1998 to 2004; Table 6 documents this evolution using end-year foreign ownership data from the FnGuide. Over this time period foreign ownership in Korean firms has roughly doubled in both equally-weighted terms (from 5.8% in 1998 to 11.3% by 2004) and as a value-weighted average (21.0% to 41.3%). At the same time insider ownership decreased from 35% to 26%. For the firm-level analysis, we focus on firms that do not receive FDI ("non-FDI firms") by separating them from the firms that do receive FDI investment ("FDI firms").[31] While it is true that firms that receive FDI have more foreign investment, other Korean firms also receive substantial foreign investment (value-weighted average of 19.5% in 1998 increasing to 37.9% by 2004). To be sure, the average Korean firm does not receive quite as much foreign investment – as is true all over the world, foreigners tend to focus more on the larger firms – but even on an equally-weighted basis foreign investment in non-FDI firms has surged.[32]

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[31] The list of firms that receive FDI is from the Ministry of Commerce, Industry and Energy, which administers the reporting requirement of a firm's foreign investor pursuant to the Foreign Investment Promotion Act of September 16, 1998 which defines foreign direct investment in Korean firms. The main criterion for foreign direct investment is that it involves the purchase of stock for "the purpose of establishing a continuous relationship with and participating in the management of said Korean corporation or company". The list includes all firms that have a record as an FDI as of 2005 year-end, among which we identify 102 KSE listed-firms included in our sample as of 2004 year-end.

[32] We note that limits on foreign investment were removed by the beginning of our sample for most companies and that in 2000 and 2001 foreign ownership limits on some privatized companies were increased substantially. The evidence seems to indicate that limits were binding for some companies, so that the relaxation of the limits explains some of the

We showed in Section 3 that 100% minus the percentage insider ownership constitutes an upper bound for foreign ownership. With the Korean data, we can verify that 100% minus the percentage insider ownership is indeed an upper bound for the fractional ownership of foreign portfolio investors.[33] First, we checked this for firms with no FDI. All Korean firms with no FDI have a fractional ownership by foreign investors lower than this bound. Second, not surprisingly, because some foreigners become insiders there are some FDI firms (in 2004, 17 out of 102) for which foreign ownership is greater than 100% minus the percentage of insider ownership.

We next explore the direct and indirect effects of governance on foreign portfolio investment. Because our predictions for FDI are at the country level and not at the firm level, we omit FDI firms and focus on all non-FDI firms listed on the main exchange. Throughout we control for firm size because it is well-known from the literature that foreign investors overweight large firms.[34] Further, because institutional investors are typically reluctant to invest in small firms and most foreign investors are institutional investors, we use two samples: one with all non-FDI firms and another with non-FDI firms with capitalization in excess of $100 million (large firms in what follows).

We are hindered in this sample because we do not have good instruments for the evolution of insider ownership, as we do not have a firm-level measure of governance that is available for a reasonably long time period.[35] That said, with the Korean data we can directly identify both insiders and, importantly, domestic monitoring shareholders. Domestic monitoring shareholders are identified in the following way. According to the Securities and Exchange Act in Korea,

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increase in foreign ownership. For instance, for Korea Telecom, the limit was 20% in 2000 and foreign ownership was 19.43%. The limit was increased to 49% in 2001 and foreign ownership jumped that year to 37.22%.

[33] We obtain insider ownership data from the TS2000 database maintained by the Korea Listed Companies Association.

[34] See Kang and Stulz (1997), Dahlquist and Robertsson (2001), Ammer, Holland, Smith, and Warnock (2006), and Leuz, Lins, and Warnock (2008).

[35] Firm-level governance data from the Korea Corporate Governance Service (KCGS), which was established in June 2002 as an independent, nonprofit organization under the joint sponsorship of six member firms, including the Korea Stock Exchange and Kosdaq Stock Market, begins only in 2002. At a point in time, foreign investment in Korean firms is positively related to firm-level governance, even after controlling for insider ownership, but data limitations preclude us from using the governance indicator in our longer-term regressions.

any investors who purchase 5% or more (called "major shareholders") are required to report it within 5 days after the purchase, and are also required to report any subsequent changes of their shareholdings by more than 1%. These reports are disclosed immediately to the public, and their holdings information at the fiscal year-end is contained in the firm's annual report. These major shareholders are those without any affiliation with insiders (defined as the largest insider owners and their affiliates), and thus, are regarded as non-insider monitoring shareholders who are further divided into local MSH and foreign MSH based on their names shown on the annual report.

We investigate in Table 7 whether changes in insider ownership, monitoring shareholders' ownership, and other firm characteristics can help explain the change in the home bias in Korea. We add two firm characteristics that have been shown to help explain foreign ownership, namely Tobin's q and the ratio of cash flow to assets (see Kang and Stulz (1997) and Dahlquist and Robertsson (2001)), as well as size and a measure of recent returns (to allow for a possible effect of momentum trading).

We first estimate fixed-effect panel regressions using annual data from 1998 to 2004. We include a full set of year dummies. The fixed effects should capture unobserved firm heterogeneity and therefore help with potential endogeneity problems (see Himmelberg, Hubbard and Palia (1999)). We see in the panel regressions that insider ownership has a significant negative coefficient when foreign ownership is measured relative to market capitalization (regressions (1) and (3)) but not when measured relative to float (regressions (2) and (4)). This is consistent with the direct effect. We also see that throughout the panel regressions—whether scaled by market capitalization or float—greater monitoring ownership is associated with less foreign investment, consistent with the indirect effect. Throughout, the coefficients on insider and monitor ownership are larger in absolute value in the samples of large firms (regressions (3) and (4)). [36]

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[36] Regarding the control variables, the only one that is consistently significant across specifications is size.

We then run "changes" regressions that parallel the U.S. regressions from Table 4. That is, we regress the change in foreign ownership from 1998 to 2004 on changes in firm characteristics as well as the initial (1998) values of each firm characteristic and foreign ownership.[37] The results for these longer-term changes are similar to those in the panel regressions. The change in insider ownership has a significant negative effect on foreign ownership scaled by market capitalization but not when scaled by float, while monitoring shareholders limit foreign investment however defined. The coefficients are strikingly large for the large firms. For these firms, a decrease in insider ownership of 10% corresponds to an increase in foreign ownership of 3.6%, while a decrease in monitor ownership of 10% corresponds to an increase in foreign ownership of 3.0%.

Overall, the results in Table 7 support and extend the U.S. results from Table 4. Taking into account the coefficients on initial values (not shown), the changes regressions indicate that over this period foreign ownership increased in firms that had less insider ownership in 1998 and that reduced insider ownership between 1998 and 2004. The U.S. results are extended because using the firm-level data we are able to identify monitor shareholders and thus find evidence of the indirect effect of governance.

7. Conclusion

In this paper, we investigate the evolution of the home bias in the age of financial globalization. We document that the average bias of U.S. investors towards the countries that have the largest capital markets in the world did not fall significantly from 1994 to 2004. However, if the home bias is estimated from aggregate data of U.S. investment to the rest of the world, the home bias fell.

The explanation for these findings is that foreign investment in a country depends crucially on the extent to which the institutions of that country support diffuse ownership of corporations. If the institutions of a country are extremely poor, a country has no publicly traded equity and

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[37] We show in the right half of Table 7 only the estimates for the changes variables.

there will be no foreign portfolio equity investment. In most countries, insider ownership is concentrated because the institutions of the country do not support diffuse ownership. This high insider ownership is an obstacle to international risk-sharing. We develop a theory of the home bias based on the existence of an optimal ownership for corporations that differs across countries and call it the optimal ownership theory of the home bias. We show that the home bias towards many countries can fall substantially only if the optimal insider ownership level of these countries were to fall substantially. Our theory implies the existence of domestic monitoring shareholders, so that an improvement in governance has an indirect effect on the home bias through its impact on the fraction of shares held by domestic monitoring shareholders. We find evidence of this indirect effect in Korean firms but not in our cross-country regressions. Foreigners can also be monitors – FDI has an advantage over portfolio investment when private benefits from control are significant, because the presence of FDI investors can limit the consumption of private benefits from control – so our theory also predicts that the change in the fraction of FDI in total foreign equity investment should be positively related to the change in insider ownership. We find evidence supporting this prediction as well.

The road towards greater risk-sharing therefore goes through an improvement in institutions that make diffuse ownership of firms possible in the countries where it is not. We provide evidence at the firm level for Korea showing that foreign investors invest more in firms with lower insider and monitor ownership. The experience of the large Korean firms with diffuse ownership shows that when such firms exist, foreign portfolio investors can end up owning a large portion of the firms' shares.

For the potential for risk-sharing through portfolio equity holdings to improve, institutions have to improve so that decentralized ownership becomes optimal. For the home bias to have a chance to become small, institutions that support decentralized ownership have to become prevalent across the world.

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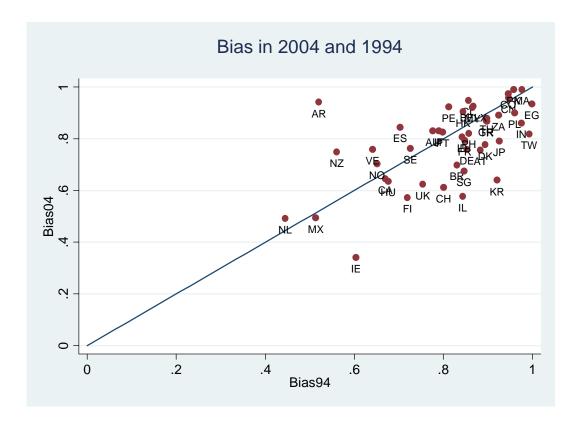
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Figure 1. The Evolution of U.S. Home Bias

Bias in 2004 and 1994

Along the 45° line, home bias is unchanged between 1994 and 2004. For any country, the change in U.S investors' home bias toward it can be read from the vertical distance from the 45° line to its point. The home bias has declined for the 27 countries below the 45° line and increased for the 19 countries above it.

Table 1. Insider ownership and changes in insider ownership

The table uses the information reported by Worldscope on the firms for which Worldscope has information in a given year. We exclude firms with no insider ownership data and with insider ownership exceeding 100% or equal to 0%.

Country	1994				2004				Diff (8)-(4)	Diff (9)-(5)
	# Firms in Worldscope [a]	# Firms with insider ownership[b]	Insider ownership(%) [c] Equally-weighted	Value-weighted	# Firms in Worldscope [a]	# Firms with insider ownership[b]	Insider ownership(%) [c] Equally-weighted	Value-weighted		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		
Argentina	31	9	57.1	55.7	80	9	71.7	93.9	14.6	38.2
Australia	238	220	36.8	27.7	1571	1209	40.8	31.6	4.1	3.8
Austria	85	36	57.9	55.1	101	53	62.4	55.8	4.6	0.7
Belgium	108	97	57.5	51.1	144	90	52.5	45.8	-5.1	-5.4
Brazil	110	69	46.3	57.4	344	139	64.5	52.2	18.3	-5.1
Canada	439	150	33.0	31.8	1482	453	24.8	18.2	-8.2	-13.6
Chile	69	53	58.5	51.9	197	98	67.1	63.7	8.6	11.8
China	37	9	56.7	59.1	1554	433	61.5	72.5	4.8	13.4
Denmark	168	94	25.6	28.0	178	105	43.8	40.8	18.1	12.7
Finland	94	84	43.3	24.1	145	102	36.1	17.9	-7.2	-6.1
France	557	502	61.7	41.2	834	486	58.1	33.1	-3.6	-8.1
Germany	599	459	68.2	54.5	910	461	59.2	44.3	-9.0	-10.2
Greece	122	38	65.7	70.8	315	55	54.7	44.7	-11.0	-26.1
Hong Kong	180	167	54.6	45.5	1026	837	59.3	46.6	4.7	1.1
India	204	13	52.7	57.0	527	304	55.5	60.5	2.8	3.5
Indonesia	98	83	65.5	66.3	339	279	65.7	63.8	0.2	-2.5
Ireland	55	52	35.9	19.8	77	55	28.9	10.3	-7.0	-9.5
Israel	35	7	56.3	55.6	185	98	57.1	43.6	0.8	-11.9
Italy	207	96	57.2	49.5	273	225	46.9	33.7	-10.3	-15.8
Japan	2429	2202	47.6	37.2	3959	1730	42.1	34.0	-5.4	-3.2
Korea	241	227	27.9	36.1	891	564	39.8	34.5	11.8	-1.7
Luxembourg	18	6	65.7	66.4	46	8	50.4	68.7	-15.3	2.3
Malaysia	238	221	52.0	52.7	1033	770	49.1	49.7	-2.9	-2.9

Table 1. continued

Country	1994				2004				Diff (8)-(4)	Diff (9)-(5)
	# Firms in Worldscope [a]	# Firms with insider ownership[b]	Insider ownership(%) [c]		# Firms in Worldscope [a]	# Firms with insider ownership[b]	Insider ownership(%) [c]			
			Equally-weighted	Value-weighted			Equally-weighted	Value-weighted		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		
Mexico	79	9	60.1	30.5	138	24	73.9	66.4	13.7	36.0
Netherlands	184	138	51.0	42.5	211	126	42.0	29.2	-8.9	-13.2
New Zealand	48	46	51.6	54.2	119	78	49.6	53.5	-2.0	-0.7
Norway	114	102	44.9	43.7	175	105	43.3	51.1	-1.7	7.4
Pakistan	75	18	58.3	57.6	122	58	54.7	76.3	-3.6	18.7
Peru	25	6	66.9	47.3	77	12	77.5	82.3	10.6	34.9
Poland	15	5	39.9	45.6	111	74	59.3	53.9	19.4	8.3
Portugal	73	48	50.4	56.3	65	36	61.7	38.6	11.3	-17.6
Singapore	135	133	54.8	57.4	620	461	54.8	57.9	0.0	0.5
South Africa	193	172	51.1	43.5	355	169	45.6	42.5	-5.5	-1.0
Spain	140	107	53.9	47.7	159	111	49.7	37.6	-4.1	-10.1
Sri Lanka	17	11	19.8	21.6	31	13	50.1	53.2	30.3	31.6
Sweden	164	152	39.3	22.0	326	159	32.5	21.5	-6.8	-0.5
Switzerland	190	128	46.7	23.6	282	225	43.5	23.9	-3.2	0.3
Taiwan	113	20	18.1	15.0	1455	567	25.7	28.8	7.6	13.9
Thailand	245	35	36.7	21.8	519	313	57.0	53.6	20.2	31.8
Turkey	47	24	71.7	72.5	216	195	62.0	66.3	-9.7	-6.2
U.K.	1588	1538	30.6	13.0	2354	1997	32.4	12.3	1.8	-0.7
U.S.	2541	2323	29.7	12.5	8927	6075	31.6	12.2	1.9	-0.2
Average			49.0	43.4			50.9	45.7	1.9	2.3
t-stat for difference									0.24	0.32

Note: (a) A firm is covered by Worldscope if it has either shares outstanding or December stock price.

(b) Ownership data is set missing if it exceeds 100%. A firm is included in the analysis if it has both ownership data and Dec. market value.

(c) Assuming ownership is 0 if Worldscope reports 0.

Table 2. The Evolution of the Home Bias

Table shows the home bias in U.S. investors' equity portfolios as of 1994 and 2004. Weight in world market portfolio is calculated from market capitalization as given in Standard & Poors (2003, 2005). U.S. portfolio is calculated as U.S. market capitalization plus U.S. holdings of foreign equities less foreign holdings of U.S. equities (which is from Thomas et al. (2004)). Country-level holdings data are as of December 31, 2004 and March 31, 1994, as reported in Table 18 of Department of Treasury et al. (2005). Bias is calculated as one minus the ratio of the weights of the country in U.S. equity portfolios and in the world market portfolio; that is, (col. 5) = 1 – (col.3) / (col. 1). Excluding holdings of companies that are incorporated in the Caribbean, the listed countries represent 100% of U.S. investors' foreign holdings in 1994 and 99% in 2004. Equally weighted averages, and t-statistics testing the difference from zero, are provided in parentheses at the bottom of the table.

	Weight in World Market Portfolio		Weight in U.S. Equity Portfolio		Bias		
	2004	1994	2004	1994	2004	1994	Change
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Developed Countries	**0.419**	**0.491**	**0.113**	**0.078**	**0.73**	**0.84**	**-0.11**
Euro Area	**0.162**	**0.108**	**0.039**	**0.024**	**0.76**	**0.78**	**-0.02**
Austria	0.002	0.002	0.001	0.000	0.76	0.88	-0.13
Belgium-Luxembourg	0.008	0.007	0.002	0.001	0.82	0.87	-0.05
Finland	0.005	0.002	0.002	0.001	0.57	0.72	-0.15
France	0.048	0.031	0.010	0.005	0.79	0.85	-0.05
Germany	0.031	0.031	0.007	0.005	0.76	0.85	-0.09
Greece	0.003	0.001	0.000	0.000	0.87	0.90	-0.03
Ireland	0.003	0.001	0.002	0.000	0.34	0.60	-0.26
Italy	0.020	0.012	0.003	0.002	0.83	0.79	0.04
Netherlands	0.016	0.012	0.008	0.007	0.49	0.44	0.05
Portugal	0.002	0.001	0.000	0.000	0.83	0.80	0.03
Spain	0.024	0.008	0.004	0.002	0.84	0.70	0.14
Other Europe	**0.111**	**0.105**	**0.040**	**0.025**	**0.64**	**0.76**	**-0.12**
Denmark	0.004	0.003	0.001	0.000	0.78	0.89	-0.12
Norway	0.004	0.002	0.001	0.001	0.70	0.65	0.05
Sweden	0.010	0.008	0.002	0.002	0.76	0.73	0.04
Switzerland	0.021	0.019	0.008	0.004	0.61	0.80	-0.19
United Kingdom	0.072	0.073	0.027	0.018	0.62	0.75	-0.13
Other Developed	**0.146**	**0.278**	**0.034**	**0.029**	**0.77**	**0.90**	**-0.13**
Australia	0.020	0.014	0.003	0.003	0.83	0.78	0.05
Canada	0.030	0.022	0.011	0.007	0.64	0.67	-0.03
Japan	0.095	0.240	0.020	0.018	0.79	0.93	-0.13
New Zealand	0.001	0.002	0.000	0.001	0.75	0.56	0.19

Table 2. continued

	Weight in World Market Portfolio		Weight in U.S. Equity Portfolio		Bias		
	2004	1994	2004	1994	2004	1994	Change
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Emerging Markets	**0.126**	**0.132**	**0.021**	**0.020**	**0.83**	**0.85**	**-0.02**
Latin America	**0.018**	**0.030**	**0.005**	**0.010**	**0.72**	**0.67**	**0.06**
Argentina	0.001	0.003	0.000	0.001	0.94	0.52	0.42
Brazil	0.008	0.009	0.003	0.002	0.70	0.83	-0.13
Chile	0.003	0.003	0.000	0.000	0.95	0.86	0.09
Colombia	0.001	0.001	0.000	0.000	0.98	0.95	0.03
Mexico	0.004	0.013	0.002	0.006	0.49	0.51	-0.02
Peru	0.001	0.000	0.000	0.000	0.92	0.81	0.11
Venezuela	0.000	0.000	0.000	0.000	0.76	0.64	0.12
Emerging Asia	**0.060**	**0.058**	**0.009**	**0.004**	**0.84**	**0.92**	**-0.08**
China	0.016	0.003	0.001	0.000	0.96	0.95	0.01
India	0.010	0.008	0.001	0.000	0.86	0.97	-0.11
Indonesia	0.002	0.002	0.000	0.000	0.81	0.84	-0.04
Korea	0.011	0.010	0.004	0.001	0.64	0.92	-0.28
Malaysia	0.005	0.012	0.000	0.002	0.92	0.87	0.06
Pakistan	0.001	0.001	0.000	0.000	0.99	0.96	0.03
Philippines	0.001	0.002	0.000	0.000	0.82	0.86	-0.04
Sri Lanka	0.000	0.000	0.000	0.000	0.98	0.93	0.05
Thailand	0.003	0.007	0.000	0.001	0.88	0.90	-0.02
Taiwan	0.011	0.012	0.002	0.000	0.82	0.99	-0.17
Financial Centers	**0.027**	**0.028**	**0.004**	**0.004**	**0.87**	**0.84**	**0.02**
Hong Kong	0.022	0.020	0.002	0.003	0.90	0.84	0.06
Singapore	0.004	0.008	0.001	0.001	0.68	0.85	-0.17
Emerging Europe	**0.005**	**0.002**	**0.001**	**0.000**	**0.85**	**0.90**	**-0.05**
Hungary	0.001	0.000	0.000	0.000	0.64	0.68	-0.04
Poland	0.002	0.000	0.000	0.000	0.90	0.96	-0.06
Turkey	0.003	0.001	0.000	0.000	0.87	0.90	-0.03
Other Emerging	**0.016**	**0.014**	**0.003**	**0.001**	**0.84**	**0.91**	**-0.06**
Egypt	0.001	0.000	0.000	0.000	0.93	1.00	-0.06
Israel	0.003	0.003	0.001	0.000	0.58	0.85	-0.27
Morocco	0.001	0.000	0.000	0.000	0.99	0.98	0.02
South Africa	0.012	0.011	0.001	0.001	0.89	0.92	-0.03
Total (above listed)	**0.545**	**0.623**	**0.134**	**0.098**	**0.75**	**0.84**	**-0.09**
Total Rest of World	**0.580**	**0.631**	**0.153**	**0.102**	**0.74**	**0.84**	**-0.10**
Equally Weighted Average	**0.012**	**0.014**	**0.003**	**0.0021**	**0.787**	**0.814**	**-0.027**
	(4.31)	**(2.52)**	**(3.78)**	**(3.69)**	**(36.0)**	**(40.3)**	**(1.45)**

Table 3. Correlations

Table shows correlations of changes, calculated from 1994 to 2004 (except for Governance Indicators, which are from 1996 to 2004), as well as of the 1994 levels of home bias calculated using market capitalization data (*bias*) and using float data (*biasF*). Home bias measures are from Table 2. Insider Ownership (*io*) is described in Table 1. Cross-list (*xl*) is the share (decimal from zero to one) of the foreign market that is available on the NYSE or Nasdaq. Foreign Ownership Restrictions (*for*) is the fraction of the market capitalization that is unavailable to foreigners. Weight in World Market (*wgtw*) is from Table 2. The six governance indicators – Voice and Accountability (*va*), Political Stability (*ps*), Government Effectiveness (*ge*), Regulatory Quality (*rq*), Rule of Law (*rl*), and Control of Corruption (*cc*) – are measured in units ranging from about -2.5 to 2.5, with higher values corresponding to better governance outcomes (Kaufmann et al 2005). Illiquidity (*illiq*) is from Bekaert, Harvey, and Lundblad (2007). Recent returns (*ret*) are computed using three years of monthly MSCI returns. There are 40 observations; thus, correlations greater in absolute value than 0.4, 0.3, and 0.27 are significantly different from zero at the 1%, 5%, and 10% levels.

```
          | Δbias  ΔbiasF  bias94  biasF94  Δio    Δxlist  Δfor    Δwgtw   Δva     Δps     Δge     Δrq     Δrl     Δcc     Δilliq
----------+--------------------------------------------------------------------------------------------------------------------------
          |
  ΔbiasF  |  0.720
          |
  bias94  | -0.390  -0.206
          |
 biasF94  | -0.543  -0.356   0.915
          |
     Δio  |  0.360  -0.215   0.002   0.045
          |
  Δxlist  | -0.346  -0.446  -0.072   0.008  -0.077
          |
    Δfor  |  0.243   0.219  -0.236  -0.195   0.010  -0.200
          |
   Δwgtw  |  0.139   0.168  -0.132  -0.143  -0.021   0.032  -0.050
          |
     Δva  |  0.112  -0.162   0.053   0.028   0.380   0.125  -0.338  -0.016
          |
     Δps  | -0.025  -0.039   0.063   0.129   0.062  -0.126   0.133  -0.004   0.032
          |
     Δge  | -0.338  -0.275   0.309   0.442  -0.048   0.094  -0.228  -0.006   0.079   0.562
          |
     Δrq  | -0.434  -0.118   0.111   0.344  -0.368   0.070  -0.044  -0.116  -0.033   0.342   0.566
          |
     Δrl  | -0.363  -0.087   0.190   0.296  -0.417   0.094  -0.108   0.062   0.028   0.445   0.644   0.762
          |
     Δcc  |  0.134   0.201  -0.104  -0.042  -0.121  -0.134   0.267   0.046  -0.151   0.163   0.087   0.388   0.213
          |
  Δilliq  |  0.358   0.043   0.226  -0.068   0.292  -0.049  -0.015  -0.040  -0.019   0.006  -0.363  -0.364  -0.402  -0.195
          |
     ret  |  0.133   0.031   0.281   0.169   0.292  -0.372   0.060   0.059   0.401  -0.016   0.073  -0.190  -0.098  -0.024  -0.291
```

Table 4. Regressions of U.S. Home Bias

In Panel A, models 1-6 are instrumental variables regressions of the change in bias from 1994 to 2004 (column 7 of Table 2) on the 1994 levels in, and changes from 1994 to 2004 of, several variables. Models 7-12 are identical to 1-6 except that home bias is calculated using float data. Insider Ownership, described in Table 1 (but expressed in decimal form here), is instrumented for using the six governance variables from Kaufmann et al (2005), which are described in Table 3. Other variables are also described in Table 3. The models in Panel B are similar in structure except that they show simple OLS rather than instrumental variable regressions. In both panels, all regressions have 40 observations and reported in parentheses are t-statistics computed using heteroskedasticity-consistent standard errors.

Panel A

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Bias 1994 (market capitalization)	-0.460	-0.105	-0.440	-0.458	-0.464	-0.455						
	(-3.40)	(-0.67)	(-3.14)	(-3.38)	(-3.86)	(-3.32)						
Bias 1994 (float)							-0.300	0.073	-0.456	-0.292	-0.293	-0.327
							(-1.79)	(0.23)	(-2.97)	(-1.67)	(-1.82)	(-1.96)
Insider Ownership (1994)	0.394	0.401	0.392	0.458	0.348	0.392	0.183	0.364	0.070	0.246	0.095	0.118
	(3.95)	(3.98)	(3.79)	(3.83)	(3.63)	(3.25)	(1.16)	(1.43)	(0.44)	(1.33)	(0.66)	(0.65)
ΔInsider Ownership	0.440	0.494	0.445	0.494	0.325	0.420	-0.227	-0.088	-0.557	-0.161	-0.451	-0.273
	(3.03)	(3.62)	(2.44)	(3.13)	(2.02)	(2.85)	(-0.90)	(-0.37)	(-1.63)	(-0.65)	(-1.50)	(-0.90)
Cross-Listing (1994)		0.361						0.564				
		(1.88)						(1.59)				
ΔCross-Listing		-0.094						-0.307				
		(-0.84)						(-1.95)				
Restrictions (1994)			0.015						0.387			
			(0.20)						(2.81)			
ΔRestrictions			0.078						0.411			
			(1.07)						(3.08)			
Illiquidity (1994)					0.046						0.169	
					(0.31)						(0.74)	
ΔIlliquidity					0.193						0.418	
					(1.42)						(1.64)	
Weight in World Market (1994)				1.813						1.782		
				(1.58)						(1.04)		
ΔWeight in World Market				2.967						3.521		
				(1.71)						(1.29)		
Momentum (3 year)						-0.004						0.042
						(-0.13)						(0.74)
Adj. R^2	0.471	0.606	0.488	0.508	0.445	0.411	0.186	0.429	0.309	0.215	0.143	0.105

Table 4 continued, Panel B

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Bias 1994 (market capitalization)	-0.405	-0.426	-0.421	-0.451	-0.425	-0.468						
	(-2.80)	(-2.77)	(-2.65)	(-2.37)	(-2.71)	(-2.59)						
Bias 1994 (float)							-0.287	-0.284	-0.242	-0.305	-0.262	-0.308
							(-1.54)	(-1.40)	(-0.99)	(-1.05)	(-1.06)	(-1.37)
Insider Ownership (1994)	0.463	0.427	0.368	0.394	0.406	0.383	0.224	0.230	0.169	0.180	0.237	0.183
	(3.68)	(3.26)	(2.40)	(2.70)	(2.86)	(2.72)	(0.94)	(0.89)	(0.58)	(0.72)	(0.80)	(0.58)
ΔInsider Ownership	0.510	0.464	0.410	0.423	0.419	0.400	-0.133	-0.169	-0.222	-0.217	-0.194	-0.225
	(3.61)	(3.00)	(2.40)	(2.30)	(2.34)	(2.69)	(-0.63)	(-0.61)	(-0.76)	(-0.51)	(-0.56)	(-0.91)
Voice and Accountability (1996)	0.030						0.009					
	(1.15)						(0.19)					
ΔVoice and Accountability	0.010						-0.061					
	(0.14)						(-0.40)					
Political Stability (1996)		0.018						0.015				
		(0.59)						(0.26)				
ΔPolitical Stability		0.015						0.021				
		(0.33)						(0.27)				
Government Effectiveness (1996)			0.002						0.002			
			(0.05)						(0.03)			
ΔGovernment Effectiveness			-0.057						-0.121			
			(-0.64)						(-0.69)			
Regulatory Quality (1996)				0.004						-0.004		
				(0.12)						(-0.05)		
ΔRegulatory Quality				0.001						0.000		
				(0.01)						(0.00)		
Rule of Law (1996)					0.011						0.018	
					(0.36)						(0.29)	
ΔRule of Law					-0.056						-0.075	
					(0.51)						(-0.30)	
Control of Corruption (1996)						-0.013						-0.016
						(-0.44)						(-0.26)
ΔControl of Corruption						0.116						0.157
						(1.70)						(1.27)
Adj. R^2	0.411	0.403	0.404	0.394	0.403	0.449	0.077	0.070	0.086	0.067	0.075	0.113

Table 5. Regressions of the Ratio of FPI to Total Foreign Investment

Each panel shows instrumental variables regressions of the change in FPI (foreign portfolio investment) as a share of total foreign investment (FPI + FDI) from 1994 to 2004 on the 1994 levels in, and changes from 1994 to 2004 of, several variables. Throughout, the change in Insider Ownership, described in Table 1 (but expressed in decimal form here), is instrumented for using changes in the six governance variables from Kaufmann et al (2005), which are described in Table 3. Other variables are also described in Table 3. Reported in parentheses are t-statistics computed using heteroskedasticity-consistent standard errors. All regressions have 34 observations.

	(1)	(2)	(3)	(4)	(5)	(6)
FPI/(FPI+FDI) 1994	-0.441	-0.391	-0.406	-0.405	-0.482	-0.458
	(-2.22)	(-2.05)	(-1.95)	(-2.08)	(-2.57)	(-2.10)
Insider Ownership (1994)	-0.096	-0.129	-0.171	-0.193	0.02	-0.059
	(-0.48)	(-0.77)	(-0.84)	(-0.99)	(0.09)	(-0.23)
ΔInsider Ownership	-0.763	-0.771	-0.964	-0.947	-0.504	-0.742
	(-3.28)	(-5.17)	(-4.37)	(-5.95)	(-1.65)	(-2.74)
Cross-Listing (1994)		-0.350				
		(-1.90)				
ΔCross-Listing		0.113				
		(0.75)				
Restrictions (1994)			0.374			
			(1.65)			
ΔRestrictions			0.30			
			(0.88)			
Momentum (3 year)				0.122		
				(2.80)		
Illiquidity (1994)					-0.286	
					(-1.11)	
ΔIlliquidity					-0.417	
					(-2.03)	
Weight in World Market (1994)						0.732
						(0.42)
ΔWeight in World Market						0.466
						(0.18)
Adj. R^2	0.375	0.475	0.378	0.423	0.386	0.341

Table 6. Foreign ownership for all KSE common stocks

Table shows summary statistics of foreign ownership observed at year-end 1998 and 2004 for all KSE common stocks. FDI firms are identified from the year when their reports of foreign investments are made to the Ministry of Commerce, Industry and Energy in accordance with the Foreign Investment Promotion Act. "EW" denotes equal-weighted and "VW" denotes value-weighted.

	1998			2004		
	All KSE	**FDI Firms**	**Non-FDI Firms**	**All KSE**	**FDI Firms**	**Non-FDI Firms**
Number of firms	729	74	655	666	102	564
Market cap ($bil)	91.3	14.1	77.2	381.0	121.1	259.9
Foreign Ownership						
EW mean (%)	5.8	23.2	3.8	11.3	32.4	7.4
VW mean (%)	21.0	29.4	19.5	41.3	48.8	37.9

Table 7. Regressions of foreign portfolio ownership on firm characteristic variables

Table shows regression estimates of the foreign portfolio ownership on firm characteristics, using the sample stocks of all KSE-listed firms with no FDI over the sample period from 1998 to 2004. The regressions are estimated using two datasets: balanced panels using data from 1998 to 2004 and a cross-section of longer-term changes from 1998 to 2004. We also report results for samples restricted to larger firms with 2004 market capitalization greater than US$100 million. All explanatory variables are measured at the end of each fiscal year: "Insider ownership" is the percentage share ownership of common stocks by the largest shareholder, families, and all affiliated shareholders at fiscal year-end. "Monitor ownership" is the percentage share ownership of common stocks by domestic major shareholders who have no affiliation with the firm's insiders. "Log size" is log of market value of common stocks in million dollars; "Tobin's q" is the market value of assets (= book value of total liabilities + market value of preferred stock + market value of common stock) divided by the book value of total assets; and "Cash flow/assets" is the operating cash flows divided by total assets. "Momentum" is one-year return measured at the end of the fiscal year (for the panel regressions) or three-year returns measured from 2002 to 2004 (for the "Changes" regression). Fixed-effect panel regressions include a full set of year dummies (not reported). In parallel to Table 4, the "Changes" regressions also include (but do not report) initial (1998) values of each explanatory variable and of the dependent variable. Reported in parentheses are t-statistics computed using heteroskedasticity-consistent standard errors; for the panel estimations, the standard errors are also adjusted for within-firm correlation.

	Panel (1998~2004)				Changes (1998~2004)			
	All non-FDI firms		Large non-FDI firms		All non-FDI firms		Large non-FDI firms	
		Float-adjusted		Float-adjusted		Float-adjusted		Float-adjusted
Insider ownership	-0.091	-0.002	-0.181	0.001	-0.139	-0.022	-0.360	-0.148
	(-4.49)	(-0.06)	(-3.72)	(0.02)	(-4.11)	(-0.48)	(-4.03)	(-1.09)
Monitor ownership	-0.064	-0.064	-0.114	-0.118	-0.186	-0.144	-0.304	-0.249
	(-4.20)	(-4.26)	(-3.05)	(-3.42)	(-3.80)	(-3.00)	(-2.37)	(-1.86)
Log size	2.992	4.770	4.846	8.183	5.982	8.925	8.187	11.988
	(8.65)	(8.62)	(5.31)	(5.28)	(11.08)	(11.12)	(5.60)	(5.52)
Tobin's q	2.892	4.968	2.080	5.093	0.159	1.999	-3.530	-3.778
	(4.33)	(4.78)	(1.58)	(2.00)	(0.14)	(1.11)	(-0.94)	(-0.64)
Cash flow/assets	0.036	0.042	0.098	0.023	-0.016	0.013	0.062	0.263
	(3.00)	(1.59)	(1.42)	(0.12)	(-0.46)	(0.23)	(0.33)	(0.90)
Momentum	-0.003	-0.006	-0.004	-0.009	0.007	0.012	0.010	0.015
	(-2.52)	(-2.75)	(-1.33)	(-2.02)	(1.39)	(1.58)	(1.22)	(1.22)
Adj. R^2					0.505	0.481	0.422	0.351
Within R^2	0.211	0.189	0.387	0.359				
Nobs	2,899	2,899	854	854	543	543	170	170