Which Investors Fear Expropriation?
Evidence from Investors' Portfolio Choices

Finance Working Paper N°. 54/2004
October 2004

Mariassunta Giannetti
Stockholm School of Economics, CEPR and ECGI

Andrei Simonov
Stockholm School of Economics

ECGI Working Paper Series in Finance

Which Investors Fear Expropriation?
Evidence from Investors' Portfolio Choices

Working Paper N°. 54/2004

October 2004

Mariassunta Giannetti
Andrei Simonov

We are grateful to an anonymous referee, Rob Stambaugh, George Allayannis, Michael Brennan, Mike Burkart, Magnus Dahlquist, Mara Faccio, Eugene Kandel, Marco Pagano, Raghu Rau, Göran Robertsson, René Stulz, Patrik Säfvenblad, Paul Söderlind, Ingrid Werner, Avi Wohl, Luigi Zingales, and seminar participants at the 2004 WFA meetings, the NBER Conference on Corporate Governance, Chicago Fed Conference on Banking Structure, Stockholm School of Economics, the 2003 EFA meetings, the 2nd Asian Corporate Governance Conference in Seoul, the CEPR European Summer Symposium in Financial Markets in Gerzensee, the ECB Conference on Financial Integration, Georgia Tech International Finance Conference, the 2003 EEA meetings, IIES, London Business School, the Norwegian School of Management, HEC Paris, Copenhagen Business School, University of Padua, and CEFIR Moscow for comments. We are also grateful to Sven-Ivan Sundqvist for providing us with the data on shareholdings and Mattias Nilsson for the data on control instruments. The authors acknowledge financial support from the Bank of Sweden Tercentenary Foundation, the Jan Wallander and Tom Hedelius Foundation, and the Stockholm Institute for Financial Research. Of course, errors or shortcomings remain our own.

Abstract

Using a data set that provides unprecedented detail on investors' stockholdings, we analyze whether investors take the quality of corporate governance into account when selecting stocks. We find that all categories of investors (domestic and foreign, institutional and small individual investors) who generally enjoy only security benefits are reluctant to invest in companies with weak corporate governance. In contrast, individuals who are connected with company insiders behave differently. They seem not to care about the expected extraction of private benefits and, if anything, are more likely to invest in companies where there is more scope for it. These findings shed new light on the determinants of investor behavior and portfolio choice, and suggest that it is important to distinguish between investors who enjoy private benefits or access private information and investors who enjoy only security benefits.

Keywords: Investor behavior, shareholder base, security benefits, private benefits, portfolio selection, corporate governance

JEL Classifications: G11, G32, F21

Mariassunta Giannetti
Department of Finance and SITE - Stockholm School of Economics
Sveavägen 65, Box 6501
SE-113 83, Stockholm
Sweden
e-mail: mariassunta.giannetti@hhs.se

Andrei Simonov
Department of Finance - Stockholm School of Economics
Sveavägen 65, Box 6501
SE-113 83, Stockholm
Sweden
e-mail: andrei.simonov@hhs.se

"*Our investment group would never approve an investment in a company with bad corporate governance.*"
U.S. investment manager,
USD 20 billion equity fund
(quoted by McKinsey&Company, 2003a)

Extraction of private benefits by company insiders is a well-known source of distortion in corporate finance. A large body of theoretical and empirical literature has shown that the quality of corporate governance, to the extent that it affects the ease of extraction of private benefits, has real effects on corporate investment, cost of funds, stock returns, and company growth (see Becht, Bolton and Röell, 2003).

So far, the effects of weak corporate governance on investor behavior and the shareholder bases of companies remain unexplored. There are, however, several reasons why corporate governance may matter for investors' security selection. First, corporate governance affects how a firm's value is divided between security benefits, which accrue to all shareholders pro-rata, and private benefits, which only a subset of shareholders with large participations or connections with the management can enjoy. Some investors may also expect to appropriate a larger part of the cash flows – thus enjoying private benefits – by trading at more favorable prices because they have access to private information, especially for companies with weak corporate governance.[1] If different categories of investors expect different returns depending on the quality of corporate governance, they should exhibit different preferences for this firm factor. Not surprisingly, anecdotal evidence shows that the quality of corporate governance concerns foreign and domestic investors alike, and affects their decisions about whether or not to buy stocks in certain companies (McKinsey&Company, 2003 a and b).[2] Yet a systematic empirical investigation is missing.

Second, it is recognized that investors select stocks not only on the basis of corporate risk and return, but they also take into account other characteristics of firms – which may or may not be related to returns – such as growth prospects, and their familiarity with the nature of the business (Grinblatt and Keloharju, 2001; Huberman, 2001; Kang and Stulz, 1997; Falkenstein, 1996). Once again, corporate governance may matter as well, but so far its role has been neglected.

In this paper, we show that investors who enjoy only security benefits are reluctant to hold stocks of companies where the extraction of private benefits is expected to be large. As a

[1] Ghirishenko, Lutov and Mei (2003) show that trading based on private information happens to a larger extent in weak corporate governance companies.
[2] In particular, 63 per cent of the investors surveyed by McKinsey (2003 a and b) assert that they avoid buying stocks of companies with poor corporate governance in emerging markets and developed economies alike.

consequence, companies have a narrower shareholder base when outside investors feel less protected. This has important implications. First, as pointed out by Merton (1987), their stocks may be undervalued because of the lack of risk sharing (and not only because outside shareholders anticipate expropriation and discount this). Second, it can explain why the liquidity of shares is positively related to the protection offered to outside investors (Brockman and Chung, 2003). Finally, and most importantly, the significant cross-country differences in the quality of corporate governance may help explain the large cross-country dispersion in the propensity of households to hold stocks (Guiso, Haliassos and Jappelli, 2003).

We explore the effects of corporate governance on investors' decisions to hold individual stocks and the resulting shareholder bases using a comprehensive data set that provides information on almost all stockholders of companies listed on the Swedish stock market. We investigate which investors, if any, are less likely to invest in companies where the controlling shareholders are not expected to maximize security benefits. To identify the companies where the interests of insiders and outsiders are more misaligned, we use three alternative proxies for corporate governance. First, following La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998) and Bebchuk, Kraakman and Triantis (1999), we use the ratio of control to cash flow rights of the principal shareholder; this is expected to be positively correlated with the extraction of private benefits in a company and, more generally, with lack of monetary incentives, if the principal shareholder is directly involved in management or can influence managers' policies.[3] Second, we use the control premium, defined as the difference between the price per share paid for a control block and the price quoted in the market after the sale announcement, which directly measures private benefits of control (Dyck and Zingales, 2004). Finally, we use a dummy variable proxying for the level of control entrenchment in the spirit of Gompers, Ishii and Metrick (2003).

Controlling for other possible determinants of portfolio choice and for the supply of freely tradable shares in a company, we find that the quality of corporate governance indeed affects the probability of investors holding shares in a company. When corporate governance is weak, investors who enjoy only security benefits (small domestic individual investors, institutional investors, and foreign investors) are less likely to hold shares in a company.

Interestingly, the portfolio selection of investors who are supposedly connected to company insiders – defined as both large domestic individual investors who hold a significant share of the control rights of at least one listed company (without actually controlling it) and

[3] Faccio and Lang (2002) find that this is the case in at least 70 per cent of Swedish companies.

board members – is driven by other motives. These investors do not avoid companies with weak corporate governance, and, if anything, they are more likely to hold their stocks.

Not only are investors who enjoy only security benefits less likely to hold stocks in companies with weak corporate governance, they also invest, on average, a *smaller portfolio share* in these companies than do investors connected with company insiders. The reason for this may be that, in contrast to small investors, individuals connected with company insiders are able to extract private benefits or access private information. Investors who have access to private information or can participate in the extraction of private benefits earn higher returns from companies with weak corporate governance. Hence, it is optimal for these investors to invest more in firms with poor corporate governance, and it is also rational for investors who enjoy only security benefits to hold less of these stocks (see Giannetti and Koskinen, 2003, for a model).

The empirical evidence we report suggests that different categories of investors indeed have a rational reason for choosing different stocks. Investors connected with company insiders appear to know better than other investors which weak corporate governance companies to invest in and thereby earn higher returns. They do not appear to have an informational advantage for strong corporate governance companies. Our results are also consistent with the findings of Gompers et al. (2003), Cremers and Vinay (2004) and Yermark (2004) who show that weak corporate governance companies have lower security returns than strong corporate governance companies.[4] This may explain why investors who enjoy only security benefits are less prone to invest in weak corporate governance companies.

Although there is clear evidence that outside investors hold less stock in weak corporate governance companies and may have rational reasons for doing so, we acknowledge that we cannot make a full statistical demonstration of causality as our proxies for corporate governance may be endogenous. We present rich empirical evidence that supports the causal interpretation and demonstrate statistically that our results are not due to reverse causality. The correlation between corporate governance and investor shareholdings observed in the data could be due to outside investors having pressured for improvements in corporate governance. However, we find that corporate governance affects not just the stocks *held* in investors' portfolios, but also the probability of *new* investors *buying* stocks in a company. Since only earlier shareholders may have had a chance to affect corporate policies, this allows us to conclude that, although some institutional investors may solicit improvements in corporate

[4] Our results are also consistent with Core, Guay and Rusticus (2004) who find that investors expect lower returns from weak corporate governance companies.

governance, investors who supposedly enjoy only security benefits indeed avoid firms with weak corporate governance.

A second concern, common to all studies analyzing the effects of corporate governance and ownership structure on a firm's performance, is that both corporate governance and shareholding decisions may be determined by a third omitted factor. Although we cannot rule out this possibility, we attempt to mitigate these concerns by controlling for a set of company and investor characteristics that is at least as extensive as in previous studies. Additionally, we use several proxies for corporate governance and analyze their effects on individual and aggregate investor shareholdings. More importantly, we provide several tests of the mechanism through which corporate governance is expected to affect investor behavior. The results are always supportive of the causal interpretation. Hence we conclude that it is unlikely that our results are due to an omitted variable and, with these caveats in mind, we use the causal language from the onset of the paper.

This paper also contributes to the literature showing that investors' preferences for stocks are not driven only by conventional proxies for risk. Our results confirm the findings of the previous literature. Investors are more inclined to invest in stocks of large companies and companies whose plants are located nearby (Grinblatt and Keloharju, 2001; Gompers and Metrick, 2000; and Kang and Stulz, 1997). Further, we suggest that investors also care about corporate governance. Our findings also shed new light on the interpretation of Kang and Stulz (1997) and Dahlquist and Robertsson (2001), who show that foreign investors, like domestic institutional investors (Falkenstein, 1996), hold disproportionately more shares in firms with large market capitalizations. Because foreign investors are generally institutional investors, Kang and Stulz identify an institutional investor bias in stockholdings. Although their explanation may be complementary to ours, our results suggest that the key difference in investment behavior seems to be between investors who enjoy only security benefits and those who – thanks to their connections – can also enjoy private benefits, rather than between institutional and individual investors.

The remainder of the paper is organized as follows. Section I describes the data and the stockholdings of different categories of investors. Section II describes the methodology. Sections III and IV present the basic results and further supportive empirical evidence. Section V concludes.

I. Background of the study and data

A. The Swedish environment

The Swedish stock market represents a unique opportunity to analyze issues related to investor behavior and corporate governance, and allows conclusions to be drawn that go well beyond the Swedish context. In fact, information is available on almost all shareholders of listed companies. While this kind of shareholder data is also available for other Scandinavian countries and is similar, for instance, to the Finnish data used by Grinblatt and Keloharju (2000 and 2001), Sweden offers a better opportunity to identify the effects of corporate governance because Swedish companies have a wider variation in ownership structure. According to Faccio and Lang (2002), Sweden not only has the highest percentage of widely held firms in continental Europe, but is also the country that makes the highest use of dual class shares, together with pyramiding and cross-holdings. Consequently, in a large number of listed companies, there is a discrepancy between the principal shareholder's cash flow and control rights, and the incentives of insiders and outsiders are misaligned.

Although cross-sectional variation in the quality of corporate governance is quite large, Sweden has high standards of investor protection (La Porta et al., 1998) and, by continental European standards, has a highly capitalized stock market (the stock market capitalization to GDP in 2002 was 85 per cent versus 110 per cent in the U.S. and 37 per cent in Germany). Thanks to laws that guarantee relatively high investor protection, good law enforcement, and wide variation in ownership structure, expropriation is *on average* quite limited (see Nenova, 2003, and Dyck and Zingales, 2003).[5] Moreover – and we would argue consequently – the involvement of domestic and foreign investors is high:[6] The percentage of market capitalization held by foreign investors is comparable to the U.K. and significantly larger than in the U.S. (International Federation of Stock Exchanges, 2000). Institutional investor and household involvement is among the highest in Europe and comparable to the U.S., with almost 50 per cent of the stock market capitalization held by institutional investors and 27 per cent of the households participating directly in the stock market (Guiso et al., 2003).

Although investor protection is quite strong on average, the distortions due to weak corporate governance, and, in particular, to the separation between control and cash flow rights appear to provoke significant agency problems. Cronqvist and Nilsson (2003) show that the

[5] The estimates of control benefits in these studies most likely provide only a lower bound. In particular, Nenova's (2003) sample includes only 43 Swedish companies, reported in Datastream, which is well known to be biased towards widely held companies. This can explain why she finds that the average control premium is only 1 per cent in Sweden. The estimate of the control premium is 6.4 per cent in Dyck and Zingales (2003), who use a subsample of block transactions. Rydqvist (1992) estimates a larger control premium for dual class shares in Sweden, using the whole population of listed companies. This is 15 per cent on average and significantly larger during takeover contests, when it can reach 98 per cent.

agency costs of the separation between control and cash flow rights are sizable and may reach 25 per cent of the company's value. These findings are not surprising given the anecdotal evidence. *Investor*, the holding company of the Wallenberg family, has a market valuation that is more than 30 per cent lower than the market valuation of the equity of the companies (mostly publicly traded) that it holds.

In this context, where fear of expropriation is not so extreme as to hinder stock market participation, we can analyze whether different categories of investors take corporate governance characteristics into account when they select stocks. Most likely, our estimates provide only a lower bound for the importance of corporate governance on shareholding decisions. The fear of expropriation may have much worse consequences in an environment with lower investor protection and poorer law enforcement.

B. Data

Under Swedish law, *Värdepapperscentralen AB* (VPC), the Central Security Registry, is required to publish two lists per year of all stockholders owning more than 500 shares of Swedish listed companies.[7] The VPC has also published records for smaller stockholdings. Using their records, we obtain information on most of the shareholders of the 354 Swedish listed companies at June 29, 2001.[8] Overall, the records provide information on the owners of 98 per cent of the market capitalization of Swedish publicly traded companies. For the median company, we have information about 97.9 per cent of the equity, and in all companies we have at least 81.6 per cent of the market capitalization. The data set contains both holdings held directly by the owner and indirectly via brokerage houses, custodian banks, etc. Moreover, we have information on foreign shareholders of Swedish companies, including holders of American Depository Receipts (ADRs).

Using VPC data, we can reconstruct the stocks controlled by a single investor that are held directly and indirectly through other listed companies. We obtain information on the stockholdings of an investor via trusts, foreign holding companies or private companies from *SIS Ägarservice AB*, a Swedish company that collects information on the ultimate owners of Swedish listed companies. *SIS Ägarservice* not only identifies indirect holdings through trusts,

[6] There are neither foreign equity restrictions nor limitations on the stocks that domestic financial institutions can hold.

[7] These lists are published only with a time lag and are not easily accessible by the public. Hence they do not allow market participants to replicate the positions of other investors.

[8] We have VPC records from 1995 to 2001. Although our main analysis focuses on the June 2001 sample, we use the time-series variation of the observations to check the robustness of our results in subsection IV.

holding companies and custodian banks but also allows the shares held by family members and other closely related owners to be grouped in a single record.[9] This enables the identification of controlling groups and the relation of family members to the family head. We cannot determine, however, whether shareholders are connected by voting pacts. Nevertheless, we have an unprecedented level of detail in determining who controls listed companies (see Claessens, Djankov and Lang, 2000 and 2002, and Faccio and Lang, 2002, for a comparison).

Finally, we complement the information on individual stockholdings with data on corporate return and risk characteristics from *SIX Trust*, which provides information on the closing prices and dividend yields of the companies listed on the Stockholm Stock Exchange, and with accounting variables from *Market Manager*. This data set also provides information on the individuals who sit on the boards of Swedish listed companies or the most important limited liability companies. We use this information to evaluate investors' connections with company insiders.

C. Control structure

To proxy for the quality of corporate governance, we need a measure of insiders' ease to extract private benefits and incentives to pursue objectives that conflict with the company's maximization of future cash flows. We use three alternative proxies for corporate governance. To define our main proxy, we follow the existing literature (Bebchuk et al., 1999, La Porta et al., 1999) and assume that the quality of corporate governance correlates negatively with the ratio of control to cash flow rights of the principal shareholder; that is, the less the controlling shareholder is driven by monetary incentives, the more likely it is that he will pursue interests other than maximizing shareholders' value. There is rich empirical evidence supporting this assumption: Claessens et al. (2002), Volpin (2002), Lemmon and Lins (2003) and Gompers, Ishii and Metrick (2004) show that firm valuation and returns are lower in companies where the controlling shareholder has more control than cash flow rights. Cronqvist and Nilsson (2003) show that these problems are significant in Sweden as well.

The most common mechanism to enhance control rights in Sweden involves the use of dual class shares, which deviate from the one-share-one-vote rule and allow owners to have a larger share of control than cash flow rights. Pyramiding and cross-holdings are also widely used, especially in medium-sized companies. We take them into account to determine the

[9] See Sundin and Sundqvist (1985-2001) for a detailed description of the methodology.

separation between ownership and control, as is now common in the literature (see, for instance, Claessens et al., 2002, and Faccio and Lang, 2002).

We set the ratio of control to cash flow rights (henceforth, C/CF) equal to one if all the shareholders have less than 20 per cent of the votes. This cut-off is in line with the earlier studies that assume that 20 per cent of the votes suffices to ensure control, and consider the company to be "widely held" otherwise (see, for instance, Faccio and Lang, 2002) because no one can seriously influence decisions without facing the opposition of other stockholders. The value of C/CF, however, is not sensitive to the choice of cut-off we use.

We identify 71 controlling shareholders. C/CF is larger than 1 for 40 per cent of the companies. On average, it is equal to 1.88, but there is high variation and it can be larger than 60. To avoid overemphasizing firms with extreme separation between ownership and control, in the empirical analysis we check whether our results hold when we use a dummy equal to 1 when C/CF is larger than 1 and equal to zero otherwise.

Our second proxy for corporate governance is the control premium, defined as the difference between the price per share paid for a control block and the price quoted in the market after the sale announcement, divided by the price quoted in the market after the sale announcement. As suggested by Dyck and Zingales (2004), this proxy for corporate governance may be considered preferable to the ratio of control to cash flow rights because it is a direct measure of the extraction of private benefits. Unfortunately, though, we could identify block transactions for only 23 of the 354 Swedish listed companies in the 1990s. Nonetheless, we check how robust our results are to the use of this alternative proxy.

Finally, in the spirit of Gompers et al. (2003), we use information on the extent to which controlling shareholders use corporate control instruments to limit takeovers. Using data collected by Cronqvist and Nilsson (2003), we construct a dummy variable equal to 1 if there are trading restrictions on high-voting shares (such as rights of preemption, which give the owners the option to buy back voting shares sold by an owner to a third party), voting restrictions (which do not allow any shareholder to vote for more than 20 per cent of the shares represented at the general meeting and hinder takeovers) or shareholder agreements that strictly regulate how to vote. The dummy is set equal to zero otherwise.

Table I summarizes several firm characteristics and relates them to our main proxy for corporate governance. Not surprisingly, the value of control is larger and provisions to entrench control are more likely to be adopted in companies where C/CF is larger. Most importantly, excluding the top decile of companies for market capitalization, we find that companies with C/CF strictly larger than 1 have, on average, a smaller shareholder base than

other companies. Moreover, the median number of investors in companies with worse corporate governance is always lower. This suggests that fewer investors share the idiosyncratic risk in companies where agency problems are perceived to be more severe, especially if the very largest companies are not taken into account. Large companies appear to have fewer problems in attracting investors even when they have weak corporate governance.

A main objection to this argument is that C/CF is correlated with other firm characteristics that affect stockholding decisions and that we are not considering. To address this criticism, in Panel B of Table I we sort companies into two groups using C/CF, and analyze differences for a number of characteristics including growth opportunities, proxied by the market to book ratio; market capitalization, which proxies for firm visibility; free float, which proxies for the supply of shares to portfolio investors; leverage; dividend yield; the bid-ask spread as a fraction of the stock price, which proxies for liquidity; and whether firms belong to the high-tech sector, which might have become particularly popular during the high-tech bubble. The only significant differences we detect concern dividend payouts: firms with a high C/CF seem to pay higher dividends. For tax reasons, financial institutions and foreigners are expected to be more inclined to hold stocks of firms paying high dividends (see, for instance, Allen, Bernardo and Welch, 2000). Hence, if anything, this should bias the results against finding an effect of corporate governance on stockholding decisions.

In the econometric analysis, we control for these and other firm characteristics. This reduces the risk of drawing misleading conclusions resulting from an omitted factor correlation with corporate governance.

D. Investors' portfolios

In order to identify the effect of corporate governance on investor behavior, we need to distinguish those investors who can enjoy private benefits from those who cannot. Small domestic individual investors, domestic financial institutions and foreign investors are generally believed to enjoy only security benefits. Large individual investors, by contrast, may potentially extract private benefits and thus have higher returns from weak corporate governance stocks. We focus on four groups of investors: domestic individual investors, domestic financial institutions, foreign individual investors, and foreign financial institutions.[10]

[10] The original data set also includes domestic and foreign non-financial companies, domestic and foreign governments, and Swedish individuals residing abroad, which we exclude from our analysis for brevity and because they cannot be easily classified as insiders or outsiders. Government and non-financial companies would also provide less interesting insights as they often invest for reasons different from security or private benefits.

Additionally, we separate domestic individual investors into small and large domestic individual investors. Large investors include domestic individual investors with more than 10 per cent of the control rights of at least one listed company. We exclude controlling shareholders from the analysis.

The final data set includes 621,764 investors and contains information on investor type (individual or financial institution), birth date of the individual investors, company name, share class, number of shares held by each investor, number of votes per share, three-digit zip code of the residential address for Swedish individuals, and country of residence for foreign investors.

Table II provides summary statistics of investors' portfolios. There is immediate evidence that investors who are expected to enjoy only security benefits hold more stocks of companies with stronger corporate governance than do large domestic individual investors. The median company held by large investors has a higher value of C/CF and higher control premium. Furthermore, even if the median of the control entrenchment dummy is equal to zero for all categories of investors, the Kolmogorov-Smirnov test allows the rejection of the null hypothesis that the distribution of this variable is equal for investors who enjoy only security benefits and large investors with a confidence level of 1 per cent. This suggests that investors do take corporate governance into account when they select stocks.

It is worth noting that the median number of positions in the portfolio of small domestic individual investors is only 1. The underdiversification of individual investors' portfolios may be surprising at first sight, but this well-known puzzle is certainly not a peculiarity of Swedish investors. Blume and Friend (1975), and more recently Kelly (1995) and Goetzmann and Kumar (2001) have documented this puzzle looking at portfolios of U.S. investors. We cannot make any conclusive claims on the extent of portfolio diversification using our data because we do not have information on their indirect shareholdings and other assets. Moreover, this is beyond the scope of our paper. Our aim is to analyze whether any categories of investors, and in particular individual investors, avoid companies where agency problems are more severe. If financial institutions also avoid these stocks, we can conclude that individual investors are indeed less likely to hold stocks of companies with weak corporate governance. If this is not true, we can only infer that individual investors hold stocks of firms with weak corporate governance through intermediaries, which may be more sophisticated monitors.

II. Methodology and specification

According to the capital asset pricing model, all investors should hold the market portfolio. However, as we have already noted, investors tend to underdiversify their portfolios and hold stocks of very few firms. In our sample, as in other samples of U.S. investors, the portfolios of most investors consist of shares in one company only and therefore most of the portfolio shares are equal to 1. This implies that it is not a good strategy to use the portfolio share of individual i in firm *f* to exploit individual variability in portfolio choices. Instead, it is more informative to analyze how investors select the few companies in which to invest. Moreover, we believe it is important to investigate the determinants of a company's shareholder base because it influences stock liquidity. Also, the cost of a given amount of equity depends on the number of shareholders who share firm risk: the larger a firm's shareholder base, the higher its stock valuation (Merton, 1987).[11] Given these considerations, we design a methodology to study how shareholders select the firms in which to invest.[12]

Investor i's choice can be modeled by using a binary variable, $Y_{i,f}$ that equals 1 if investor i hold shares in firm *f* and equals zero otherwise. We estimate the probability that investor i holds shares in firm *f* $\left(\Pr\left(Y_{i,f}=1\right)\right)$ using a probit model.

Modeling the choice of whether to hold shares in firm *f* with a probit model involves some assumptions on the error term structure. An investor's decisions to hold shares in firm *f* and *f'* are not likely to be independent, but are influenced by the return structure of the whole portfolio. To address this issue, we control for variables that summarize the return structure of individual portfolios, and allow error terms to be correlated for the observations referring to the same investor. The standard errors we present are White-corrected standard errors that allow inference in the presence of clustering and heteroskedasticity.

Within this framework we investigate whether investors randomly choose a subset of firms in which to invest, given the supply of shares, or whether they prefer to hold stocks of firms with certain characteristics. In particular, we want to test if investor i avoids firms with weak corporate governance.

The cross-sectional variation of the observations allows us to test whether some categories of investors are more likely to hold stocks of companies with better corporate governance, provided that we control for other firm characteristics potentially correlated with our proxies for corporate governance (Demsetz and Lehn, 1985). This does not necessarily imply that these investors avoid companies with weak corporate governance. It is also

[11] See Amihud, Mendelson and Uno (1999) and Kadlec and McConnell (1994) for empirical evidence.
[12] In subsection IV.B, we also check whether our results hold when we look at the ownership shares of different categories of investors. This is more common in the literature, which so far has lacked access to individual data.

compatible with the fact that outside investors exercise pressure to improve corporate governance. In either case, investors would show a preference for firms with better corporate governance, which is an informative finding in itself. Because of the nature of our data set, we believe that our findings are most likely due to investors avoiding firms with weak corporate governance. First, corporate governance can certainly be considered exogenous with respect to small individual investors, who are unlikely to be able to affect corporate decisions. Second, although it is possible that some institutional investors lobby to obtain an improvement in corporate governance, not all institutional investors holding stocks in a firm do so. Since our methodology weights all observations referring to an investor–firm pair equally, our results are unlikely to be due to a few institutional investors influencing corporate governance as long as most investors remain passive.[13] In section IV.C, we exploit the time-series variation of the observations, and present further tests that support our interpretation of the results.

To avoid an omitted variable bias, we control for several other firm characteristics that may be correlated with the proxies for corporate governance. Table III provides summary statistics for all the control variables included in the econometric analysis. The set of control variables is at least as extensive as in analogous studies of the effects of corporate governance and ownership structure on company performance (see, for instance, Claessens et al., 2002; Mitton, 2002; Lemmon and Lins, 2003; and Gompers et al., 2004). We also control for investor characteristics that could affect stockholding decisions. Our control variables include:

1. The logarithm of the firm's stock market capitalization (MKT_CAP). This is a proxy for firm size and visibility and takes into account that investors are more likely to hold shares in companies whose supply of shares is larger.

2. The ratio of the stock market capitalization of the firm to its free float (DIST_FLOAT). To obtain free float, we subtract from a company's market capitalization the participations of all investors who control (directly or indirectly) more than 5 per cent of the votes in the spirit of Morgan Stanley free float indexes (Morgan Stanley, 2001). This variable helps to take into account that shares may be unavailable to portfolio investors because of the presence of large shareholders, as Dahlquist, Pinkowitz, Stulz and Williamson (2003) show for foreign investors.

3. The market-to-book ratio of firm f (MKT_BK). This variable takes into account that investors may prefer to invest in shares of firms with high growth prospects.

[13] Note that if institutional investors had a significant impact in changing corporate governance, we would observe that at least some of them buy and hold stocks of firms with weak corporate governance at a certain point in time. Therefore, it should be more difficult to find a significant effect of our proxy for corporate governance on the probability that institutional investors hold stocks of a company.

4. The current dividend yield of firm *f* (DIVY). This takes into account that firms paying high dividends may be more attractive to investors, as this is a way to limit cash flow diversion. Moreover, according to theories of tax clienteles (Allen, Bernardo and Welch, 2000), institutional investors and foreigners should hold more stocks in companies paying high dividends.

5. A dummy variable equal to 1 for firms that are in the primary listing of the Stockholm Stock Exchange, and equal to zero otherwise (PRIM_LIST). This takes into account that the stocks of firms on the secondary listing of the Stockholm Stock Exchange, which was originally reserved for relatively small firms, are exempt from wealth tax (with very few exceptions). Although the different listings are almost identical today, small investors may still consider firms on the secondary listing to be less visible or reputable. As a consequence, investors may avoid them despite the tax advantage.

6. A dummy for firms based in Stockholm (STOCKHOLMF). Ceteris paribus, firms based in the capital may be more visible to investors than firms based elsewhere. This dummy has also been interacted with a dummy equal to 1 for individual investors based in Stockholm (STOCKHOLM). This accounts for the fact that individuals who are from different parts of the country may reside in Stockholm and still be familiar with firms from their area of origin.

7. The bid-ask spread of firm *f* (BASPREAD). This variable has been calculated as the volume-weighted average of the daily closing bid-ask spread for the period January–June 2001. It measures the liquidity of the shares of firm *f* and is important because previous studies find that investors, especially institutional investors, are reluctant to hold shares in illiquid companies.

8. The leverage of firm *f* (LEVERAGE), calculated as the ratio of financial liabilities to financial liabilities plus the book value of shareholders' funds. This variable is a measure of long-term financial distress, which is expected to discourage investors.

9. The beta coefficient of the market model estimated using weekly returns and the *SIX Trust* return index as the return of the market portfolio (BETA). This variable measures systematic risk and has also been included in previous studies (see, for instance, Kang and Stulz, 1997), because investors, who face high participation costs, especially foreigners, are expected to hold high beta stocks to be exposed to market risk.

10. Firm age, measured as the logarithm of the number of months from the IPO (AGE). This proxy for firm age is included because the ownership structure could be influenced by the firm life-cycle, and this could have an independent effect on investor portfolio decisions.

11. Firm operating performance, measured by the return on assets (ROA). The ROA has been defined as earnings before interest, taxes, depreciation, and amortization over total assets.

12. The logarithm of the distance between the investor's place of residence and the closest establishment of the company (MINDIST). This can be calculated for domestic individual investors only, and is done using the zip codes of the location of the company's establishments and the investor's residence. This is an important control variable because it has been extensively shown that investors prefer to hold stocks of firms located near where they live (Grinblatt and Keloharju, 2001; Huberman, 2001). Moreover, the distance between investor residence and the company's closest establishment can also control for employees' stockholdings.

13. The number of shares in the portfolio of each investor (NP). This variable controls for the level of sophistication of the investor. Moreover, investors with more positions are more likely to hold shares in any firm *f*.

14. The correlation between the monthly returns of firm *f* with the value-weighted monthly return of investor *i*'s remaining holdings of Swedish stocks (RHO_P_S). The correlation has been computed using the returns of the previous 36 months if available, and a shorter time period otherwise. This variable measures the fit of the stocks of firm *f* to the portfolio of investor *i*.

In addition, when we use C/CF as a proxy for corporate governance, we include a few interaction variables: the interaction of the ratio of control to cash flow rights with the ratio of market capitalization to free-float or with the share of cash flow rights of the principal shareholder. These interaction variables take into account that the level of private benefit extraction depends not only on C/CF, but also on the overall ownership structure. That is, if the principal shareholder has a large part of the cash flow rights or there are other large blockholders, the extraction of private benefits may be limited either because the incentives of the principal shareholder are relatively more aligned with the outside shareholders (Claessens et al., 2002) or because other large shareholders can monitor the principal shareholder. Furthermore, the variable of interest has been interacted with the firm market capitalization and a dummy equal to 1 for firms in the primary listing. Both variables control for the fact that the effect of corporate governance may be more pronounced for small firms, which are considered riskier and less visible.

In the next section, we estimate the determinants of the decision on whether to invest in firm *f*, grouping investors by type. Since the data set contains more than two hundred million observations of the dichotomic variable for small domestic individual investors, we cannot estimate the parameters of the maximum likelihood function pooling all observations. Instead, we estimate the equation of interest for random subsamples of small domestic individual investors. We construct random subsamples using the day of the month in which investors were born. We present summary statistics of the estimated parameters for all the random subsamples.

III. Results

A. Small domestic individual investors

Table IV presents regression results that link the shareholdings of small domestic individual investors to our proxies for corporate governance. Panel A presents detailed results for small domestic individual investors born on the third day of the month. Summary statistics of the estimates obtained using the other random subsamples and our main proxy for corporate governance are presented in Panel B of Table IV. Since results are qualitatively invariant across different random subsamples, we base our discussion on Panel A of Table IV.

According to all three proxies, a marginal improvement in a firm's corporate governance always increases the probability that small domestic individual investors hold stocks of that company. A marginal increase of C/CF, calculated setting all the explanatory variables equal to their mean, decreases the probability of a small individual investor holding stocks of a firm by approximately 9 percentage points (regression 1). However, this is only a partial effect as we have included C/CF in several interaction terms. These interaction terms suggest that the negative effect of C/CF on the probability of holding shares in a company is more pronounced for smaller companies, companies in the primary listing, and companies with more concentrated ownership, measured alternatively by the equity share of the principal shareholder (not reported) or the share of company equity which is not part of the free float. Since by using the share of company equity that is part of the free float and the firm market capitalization we control for the supply of shares, this suggests that small investors do not perceive that the incentives of large shareholders with a large share of cash flow rights are aligned with theirs.

The summary marginal effect of C/CF (i.e., the derivative of the probability with respect to our main proxy for corporate governance) on the probability of investing in a firm is only -0.59 percentage points when all the independent variables are set equal to their mean

value (the median level of the summary marginal effects for the different random subsamples, however, is larger and equal to -0.66 percentage points). Still, the effect on the shareholder base is sizable: a marginal decrease in C/CF would bring to the average company more than 3000 new small domestic individual investors, under the conservative assumption that no new individual investor participates in the stock market. When we exclude the companies in the top decile of market capitalization (regression 2), the effect of corporate governance becomes more pronounced: A marginal increase in C/CF decreases the probability of investing in a firm by 6 percentage points. This is consistent with the positive sign of the interaction between market capitalization and C/CF and confirms that weak corporate governance affects the shareholder base, especially in small and medium-sized companies.

Results are qualitatively similar when we use our alternative proxies for corporate governance. Both an increase in the control premium and the presence of charter provisions aimed to entrench control (regressions 3 and 4) reduce the probability that an investor holds stocks in a company.

We also consider different subsamples of small individual investors. Individuals who hold less diversified stock portfolios (regression 5) appear more reluctant to hold weak corporate governance stocks than diversified investors (regression 6). When we consider only individual investors with stocks of more than four companies, the estimates are qualitatively similar, but the effect of corporate governance appears weaker. The results we present in section IV.A suggest that this is partly due to the fact that individuals connected with company insiders – who, as we show below, are more likely to hold weak corporate governance stocks – are a larger proportion of the sample when we consider diversified investors only.

The sign and significance of the control variables confirm that firm characteristics other than risk and return are important to explain portfolio selection. Small domestic individual investors prefer companies that are located nearby or located in Stockholm most probably because they are more familiar with them. Domestic individual investors also hold stocks whose returns are highly correlated with their other stocks. This may suggest that individuals invest in stocks of a certain sector or region with which they are more familiar (Huberman, 2001). All estimates, however, remain qualitatively invariant and the effect of our corporate governance proxies becomes even stronger when we exclude this variable (regression 7). This suggests that our findings on the importance of corporate governance do not depend on the extent of diversification.

B. Foreign investors and domestic financial institutions

Table V indicates that the impact of corporate governance might be even larger for foreign individuals and financial institutions. A marginal increase in C/CF decreases the probability of investing in a firm by 1.37 percentage points for foreign individual investors (regression 1). The effect is comparable for foreign financial institutions (regression 4). Results are similar for the alternative measures of corporate governance (regressions 2, 3, 5, and 6). Foreign investors appear even more reluctant than domestic individual investors to hold weak corporate governance stocks when C/CF or the entrenchment of control dummy are used as proxies for corporate governance. The result is, however, reversed when we use the control premium.

Regarding the interaction terms in the specification using C/CF as a proxy for corporate governance, it is worth noting that, contrary to individuals, foreign financial institutions are less inclined to hold large firms with a high C/CF. This is very likely due to the fact that otherwise foreign financial institutions exhibit a strong preference for large firms, as first pointed out by Kang and Stulz (1997). In accordance with the findings of previous studies showing that foreign investors want to be exposed to the local market index, we also find that foreign investors select high beta stocks.

Table VI (regressions 1, 2, and 3) links corporate governance and shareholdings of domestic financial institutions. Not only do domestic financial institutions behave similarly to foreign financial institutions, as we would expect, but they also appear to avoid weak corporate governance companies to a significantly larger extent than individual investors (domestic and foreign). Domestic financial institutions, although not always foreign financial institutions, appear more concerned about corporate governance than individual investors. Alternatively, domestic financial institutions may be more successful than individual investors at avoiding companies with weak corporate governance because, being more sophisticated, they are better at acquiring information on companies' ownership structure. Interestingly, small domestic individual investors and especially domestic financial institutions avoid companies with high control premiums to a significantly larger extent than foreign investors. This may depend on the fact that information on control block transactions is less readily available than information on ownership structure. Therefore, foreign investors may incorporate it to a lesser extent in their shareholding decisions.

Overall, these results suggest that investors who are likely to only enjoy security benefits show a preference for companies with better corporate governance. We now turn to

analyze the portfolio choices of investors who are more likely to be connected with company insiders, and to enjoy private benefits.

C. Large domestic individual investors

We define large domestic individual investors as investors who have at least 10 per cent of the control rights of a company listed on the Stockholm Stock Exchange, but we exclude the observations relating to the controlling shareholder. Table VI (regressions 4, 5, and 6) shows that large domestic individual investors are the only category of investors for which C/CF marginally *increases* the probability of investing in a firm. This result is robust to the use of alternative proxies for corporate governance. It is also robust to controlling for the fact that these investors may be board members of the companies in which they invest, as in this case shareholdings may not depend on portfolio considerations. Additionally, the estimates do not depend on the cutoff we use to define large investors. The results (not reported) are invariant if we consider as large investors those with more than 5 per cent of the votes of a company. Most likely, large investors do not fear expropriation because they are able to protect or monitor their own interests. Alternatively, they may be able to concur in the extraction of private benefits. We will explore this possibility in the next section.

Large individual investors are exceptional in other respects: they are the only type of investors who are not attracted to the more liquid stocks, and companies with large market capitalizations. To this extent, it appears that the main differences in investor behavior are between investors who can enjoy only security benefits and investors who, thanks to their connections, can protect their own interests or participate in the extraction of private benefits of control. The findings we report in the next section confirm this conjecture.

D. Robustness

To check the robustness of our results, we estimate a number of different specifications that we do not report for the sake of brevity. Our findings are not in any way the result of the fact that we interact C/CF with other firm characteristics. If anything, the effect of corporate governance is stronger if we include only C/CF and its interaction with the share of market capitalization that is not part of the free float – measuring the incentive effect of ownership concentration like in Claessens et al. (2002).

Additionally, in order not to overemphasize extreme values of C/CF, we use a dummy equal to 1 when C/CF is strictly larger than 1, and equal to zero otherwise, to identify firms with weak and strong corporate governance, respectively. All the results are again qualitatively similar.

The results are also invariant to the inclusions of eleven sectoral dummies, which help to control for the fact that ownership structure and the quality of corporate governance may be industry-dependent. Adding a variable measuring company returns in the preceding six months does not affect our results, and the coefficient is generally not significant.

Finally, we explore the importance of firm size for our results. We run all regressions without including the top decile of companies for market capitalization. Again, the results are similar, and the effect of the ratio of control to cash flow rights on the probability of not investing is larger for all categories of investors. Conversely, if we run all regressions in a subsample of companies with market capitalization larger than the median, we still find that investors who are likely to only enjoy security benefits show a preference for companies with better corporate governance. The effect is however smaller. This also suggests that the problems deriving from weak corporate governance are more pronounced for smaller firms.

IV. Interpretation of the results and further empirical evidence

A. Investors without fear of expropriation

So far we have shown that shareholders who are more likely to enjoy only security benefits avoid the stocks of companies with weak corporate governance, while large domestic individual investors do not. Why do these categories of investors behave differently?

We argue that, thanks to their closer connections with company insiders, large domestic individual investors are advantaged when they invest in weak corporate governance companies. In a small country like Sweden, controlling shareholders and directors of different companies are likely to have close interactions that enable them to share information. These connections may benefit them in several ways. First, weak corporate governance firms may necessitate more intensive monitoring. Connected investors may be able to monitor more efficiently if they have a comparative advantage in information acquisition. Second, large investors may be able to participate in the extraction of private benefits. Finally, connected investors, having access to more timely information, may be able to protect their interests by trading before the public announcement of new information. The possibility to trade upon private information may be relatively more valuable – or more frequent – for *weak* corporate governance

companies. This interpretation would be consistent with rich empirical evidence showing that even in the U.S. – arguably the country where the enforcement of insider trading laws is strongest – insiders are able to trade upon private information (see, for instance, Seyun, 1992 and Ke, Huddart and Proni, 2003).[14]

In all cases mentioned above, the returns from investing in firms with *weak* corporate governance would be higher for large domestic individual investors because they are close to company insiders.

Alternative explanations have difficulty in *jointly* explaining the behavior of individual investors, foreign investors, and financial institutions. For instance, the return characteristics of stocks cannot explain our findings. According to previous studies, the stocks of companies with weak corporate governance are expected to drop more if there is a contraction in the economy because the extraction of private benefits may be larger during recessions, when the expected rate of return on investment falls (Johnson, Boone, Breach and Friedman, 2000, Mitton 2002, and Lemmon and Lins, 2003). Poorly diversified investors may avoid stocks whose returns are lower during recessions because their other sources of income are also affected negatively by downturns (Cochrane, 1999).[15] Our corporate governance proxy could capture the skewness of returns. This explanation could be compatible with the behavior of large individual investors and the diversified small individual investors – who appear to care less about corporate governance than do undiversified investors. Being better diversified, they might be less averse to downside risk and more inclined than other small individual investors to hold stocks of companies with weak corporate governance.[16] However, foreign investors are not exposed to the risk of a Swedish recession, and for this reason should not avoid investing in weak corporate governance companies to a larger extent than small individual investors. In particular, although the behavior of financial institutions may reflect the limits imposed by their corporate charter, the behavior of foreign individuals cannot easily be explained by the characteristics of stock returns.

Second, behavioral theories, such as the fear of regret (Odean, 1998) and concern over fairness (Fehr and Gächter, 2000), could explain the behavior of small domestic individual investors, but not the shareholding decisions of domestic and foreign financial institutions.

[14] From a legal point of view a lot of the information insiders can acquire does not fall under the definition of legally material information (Seyhun, 1992). This implies that a lot of insider trades cannot be prosecuted.

[15] This may happen even if distortions due to weak corporate governance are correctly priced, if marginal investors in these companies are wealthy and well diversified.

[16] The returns of weak corporate governance stocks could also be less procyclical for large investors who might be able to extract more private benefits during recessions.

Finally, it is hard to believe that the informational advantage of large domestic individual investors derives from their being more *sophisticated* monitors (meaning that they have better skills) of companies where the incentives of insiders and outsiders are misaligned.[17] Their informational advantage – if any – is more likely to derive from their being connected with company insiders.

To lend further support to our explanation that *connections* matter in portfolio selection, we use data from Market Manager to identify small domestic individual investors who belong to boards of Swedish listed companies and other limited liability companies with more than SEK 10,000,000 (equivalent to approximately USD 1,500,000) in sales. In a small country like Sweden, board members are likely to have connections with company insiders and are, in this respect, very similar to large domestic individual investors. For this reason, they may have more timely access to private information about business plans than other market participants. This could limit the extent to which they are subject to expropriation in weak corporate governance companies.

To test whether they behave differently from the other small investors, we define a dummy variable equal to 1 for board members and equal to zero otherwise. We interact this dummy variable with C/CF to see whether these individuals behave differently from other small individual investors. We re-estimate the probability that individual i invests in firm f using the random sample of individuals born on the third day of the month. In this random subsample, 1,270 individuals – approximately 5 per cent of the sample – are board members. We exclude the observations relating to the holdings of an individual in the company where he or she is a board member. As expected, we find that the board members behave in the same manner as the other domestic individuals with strong connections. As Table VII shows, not only do they not fear expropriation, they are more likely to invest in companies where the extraction of private benefits is larger. Furthermore, C/CF has an even stronger negative impact on the investment probability of individuals who are not board members, once the different behavior of board members is taken into account.

Table VII also shows that the behavior of board members is not different because they are better diversified than other individual investors. Besides controlling for the number of

[17] Using Finnish data, Grinblatt and Keloharju (2000) find that foreign investors are more sophisticated than domestic investors.

[19] The estimated effect is still smaller for diversified investors, but this is probably due to the fact that diversified investors who hold more stocks are more likely to invest in *any* firm. This does not imply that they care about corporate governance to a lesser extent than other small domestic individual investors. Compared to non-diversified investors, diversified investors invest *10 per cent more* of their stock portfolio in *strong* corporate governance companies. Hence they may be more likely to hold stocks in weak corporate governance companies, but they invest less of their portfolios in these companies than non-diversified investors.

positions in an investor's portfolio, we run a horse race including a dummy variable for individuals who hold stocks of five or more companies. Then, we look at the effect of our main proxy for corporate governance distinguishing between board members and diversified investors. It emerges clearly that board members are more likely to hold weak corporate governance stocks regardless of the number of positions in their portfolio. Similarly, diversified investors who are not board members are less likely to hold weak corporate governance companies, and the effect is larger than the one estimated in Table IV. This suggests that the smaller effect of corporate governance for diversified investors in Table IV is partly due to the fact that a large proportion of them being connected to company insiders does not avoid stocks of companies with weak corporate governance.[19]

Board members who are small investors are unlikely to participate directly in the extraction of private benefits. Supposedly, they are more likely than other investors to hold weak corporate governance because they are able to benefit from inside information when investing in this category of companies. Although it is difficult to establish this without transaction data, support for this explanation does exist. We define companies as having weak corporate governance if C/CF is larger than one. Companies are classified as strong corporate governance otherwise. Board members always have higher turnover than other small domestic individual investors, but the difference is particularly pronounced for *weak* corporate governance companies: board members change 22 (19) per cent of their positions in weak (strong) corporate governance companies, while the other individual investors change only 16 (17) per cent of their positions in weak (strong) corporate governance companies. Although board members always trade more, suggesting that they have more information, they appear to have a relatively stronger informational advantage for companies with weak corporate governance. The contrary is true for small individual investors, who trade less in weak corporate governance companies. Not only are differences in turnover statistically significant, but they also persist after the number of positions in the portfolio and the amount of wealth invested in stocks are controlled for.

Further evidence can be found by looking at the stocks investors keep in their portfolios for at least six months between 1995 and 2001. It appears that board members know which weak corporate governance firms to keep in their portfolios. As the empirical evidence on portfolio turnover suggests, their private information appears to be valuable, especially for weak corporate governance companies. On average, board members have a 3 per cent higher return than other small domestic individual investors on weak corporate governance stocks they hold for a six-month period. Differences are statistically significant and, most importantly, they do not seem to be due to board members having better skills. Board members perform more poorly than the other small individual investors when investing in strong corporate governance companies. In fact, board members have a 0.5 per cent lower average return than other small investors in the strong corporate governance companies they keep over the same period.[20] Additionally, both domestic and foreign financial institutions do worse than board members in weak corporate governance companies. In particular, domestic financial institutions have a 2 per cent lower average return than board members in weak corporate governance companies over the same period. Hence, financial institutions are also outperformed by board members in weak corporate governance companies (even though, as we would expect, they do better than the other small individual investors). Financial institutions, however, outperform board members in strong corporate governance companies by making on average 1.6 per cent higher return. This also suggests that board members do not have access to private information when investor rights are better protected.

Our results suggest that trading based on private information may be an important channel through which individuals connected with company insiders earn a higher return on equity than other shareholders. Most importantly, this possibility appears to be confined to shares in companies with weak corporate governance. This is consistent with the findings of Grishchenko et al. (2003) and Durnev and Nain (2004), who show that insider trading is more likely in companies that do not offer strong investor protection.

[20] If we look separately at the returns of board members and other small individual investors for each of the twelve six-month periods in our sample, the broad patterns are largely confirmed. Individual investors underperform board members in selecting weak corporate governance companies, but not necessarily when investing in strong corporate governance companies. Only during part of the high-tech boom (three out of the twelve six month periods we observe) – when the stock market was booming and weak corporate governance companies, like Erickson, were doing particularly well – individual investors did not underperform board members in weak corporate governance companies. This is consistent with the empirical evidence suggesting that private information helps insiders – and their friends – to bail out before bad news (Seyun, 1992).

Our results are also consistent with the implications of Fishman and Hagerty (1992) who predict that financial institutions find it less profitable to acquire information on companies in which the insiders – and their friends – are able to trade upon private information. As a consequence, financial institutions invest to a lesser extent in this category of companies, which our results confirm.

The evidence on investors' returns also sheds light on the reasons why weak corporate governance may affect the shareholder base of large firms to a lesser extent. The incidence of insider trading is lower in large companies (Llorente, Michaely, Saar and Wang, 2002), which for this reason may offer relatively higher returns to uninformed investors.

B. Evidence from investors' portfolio shares

Our results have shown that investors who enjoy only security benefits are, ceteris paribus, less likely to hold stocks of companies where extraction of private benefits is expected to be large. Of course, some investors who presumably enjoy only security benefits end up holding stocks of companies with weak corporate governance, but they are fewer than in similar companies with strong corporate governance.

Besides analyzing *how many* investors hold stocks of companies with weak corporate governance, it is interesting to know *how much* they invest in these companies. This is important for several reasons. First, if companies with weak corporate governance attracted fewer investors who are willing to invest a larger portion of their wealth (or, at least, of their equity investment), our findings would not have strong implications for the ability of firms to raise capital. Second, in a study that uses foreign investors' equity positions *aggregated* by country of origin, company, and share-type, Dahlquist et al. (2003) find that foreign investors' holdings of Swedish stocks depend on a company's free float, which proxy for the supply of shares to small investors. Yet, there seems to be no extra effect deriving from a proxy for the separation of ownership and control. Their dataset includes only larger companies, and this may explain the different results. Nevertheless, it is important to check whether foreign investors indeed invest less in companies where the controlling shareholders have weaker monetary incentives. Finally, the analysis of this other dimension of investor portfolios further tests the validity of the interpretation of our results.

For all these reasons, in Panel A of Table VIII, we create portfolios of firms in different size quintiles for the different categories of investors we have analyzed so far. We measure size by market capitalization. Given the holdings of a category of investors in firms of a certain size

group, we determine what share of their holdings goes to firms with weak (and strong) corporate governance, respectively. We then *compare* portfolio shares with the share of market capitalization (free float) that firms with weak corporate governance represent in that size group, and, more importantly, across different categories of investors. Strikingly, relative to other market participants, large domestic individual investors and especially board members almost always overweight firms with C/CF larger than one with respect to both the share of market capitalization and free float.

Conversely, with the exception of the portfolio of the largest companies, foreign individuals and foreign financial institutions always underweight companies with C/CF larger than one in comparison to the percentage of their market capitalization (free float). This is untrue only for the portfolio of the companies in the largest quintile because foreign individual investors overweight the ten largest companies. Since the largest companies are a larger proportion of the sample of Dahlquist et al. (2003), this can explain why they find that the difference between control and cash flow rights does not seem to affect the holdings of foreign investors.[21]

Domestic financial institutions generally, but not always, underweight companies with C/CF larger than one compared to their weight in the country's market capitalization (free float).

Most importantly, it emerges that investors who are supposedly connected with company insiders (i.e., large investors and board members) are not only relatively more often shareholders of companies with weak corporate governance; they also invest a larger part of their wealth in these companies than do all other categories of investors. In line with our previous findings, the companies that appear to have more difficulty attracting institutional investors and, in general, investors who enjoy only security benefits seem to be the small and medium-sized companies with weak corporate governance.

Panel B of Table VIII confirms that our interpretation of the descriptive statistics is robust to the inclusion of control variables.[22] It shows that all categories of investors who enjoy only security benefits hold a smaller share of weak corporate governance stocks (only estimates based on the main proxy for corporate governance are reported) in comparison to board members even after controlling for firm characteristics. Only large domestic investors

[21] The result that foreign investors underweight companies with a high ratio of control to cash flow rights is confirmed by more rigorous statistical testing. In particular, after having controlled for company market capitalization and the ratio of market capitalization to free float, we find that the ratio of control to cash flow rights significantly reduces the ownership share of foreign investors.

[22] Here also the results are qualitatively similar if the interaction variables are omitted.

appear to invest a larger share of their stock portfolio in weak corporate governance stocks than do board members.

Among the investors who enjoy only security benefits, domestic financial institutions, arguably the most sophisticated, avoid companies with weak corporate governance to a greater extent (meaning that they hold lower portfolio shares). Again, this is in line with our previous findings showing that the quality of corporate governance has a more pronounced effect on the probability of domestic financial institutions holding shares in a company.

C. Endogeneity problems

So far, we have shown that investors who are not connected with company insiders hold fewer stocks of companies with weak corporate governance. As always with non-experimental data, it is problematic to interpret this finding as evidence of causality for two reasons. First, there may be reverse causality as active investors may affect corporate governance, instead of avoiding weak corporate governance. Second, corporate governance may be correlated with an omitted factor that affects investor behavior. In this section, we address these two problems in turn.

Investors who enjoy only security benefits could put pressure for improvements in corporate governance. If so, we would observe a negative correlation between their shareholdings and the quality of corporate governance proxies even if they do not avoid stocks of companies with weak corporate governance. If these investors indeed avoid weak corporate governance companies, we should also observe that new investors into a firm are more likely to *buy* stocks of firms with strong corporate governance as new shareholders cannot have affected past corporate policies. Since VPC data is available from 1995, we exploit the time series variation of the observations to test this implication of the causal interpretation of our results.

We examine whether the ex ante quality of corporate governance affects the decision to *buy* stocks of a firm. We look at new positions acquired between January and June 2001. Table IX shows that a marginal improvement in C/CF affects positively the probability of investors who do not enjoy private benefits buying stocks in a company. The effect is significant, both statistically and economically, for all our proxies for corporate governance.[23] For sake of brevity, we report only the estimates for our main proxy. Since new shareholders cannot have

[23] The effect of corporate governance does not appear to depend on the sample period, as the results are qualitatively invariant if we re-estimate the equation for new positions acquired between January and June 1999 (results omitted for brevity). This suggests that our results are not determined by business cycle considerations, as the stock market was booming in 1999 and falling down in 2001.

affected past corporate policies, this provides clear evidence that some categories of investors avoid companies with weak corporate governance.

Unfortunately, it is not possible to have an analogous demonstration that there is no omitted variable bias. However, we can provide supportive empirical evidence to mitigate concerns about this problem. First, we look at companies that abandoned or reduced the voting rights of dual class shares. We identify only 11 companies for which C/CF decreases during the sample period. According to the causal hypothesis, the shareholder base of the firms whose corporate governance improves should increase more than for similar companies that did not see an improvement in governance. If we found that at the same time no other characteristics of these firms changed, we would have evidence that the effect of corporate governance we detect is indeed exogenous. Given the small number of firms for which we observe a change in corporate governance, unfortunately, we cannot make a fully-fledged econometric analysis. Still, we can attempt some statistical tests as follows. We look for companies that match the companies whose control to cash flow rights ratio decreased by using the sector and the market-to-book ratio. Then, we define a variable equal to the ratio of the number of investors two years after the change in corporate governance to the number of investors six months before and compare it for the company of interest and its matching company. We do the same for stock price, bid-ask spread and free float. We find that the number of shareholders always increases more for companies in which insiders' and outsiders' incentives become more aligned than for the comparable companies – with a 5 per cent confidence level. Further, we cannot reject the null hypothesis that stock price, bid ask spread and free float vary in the same way as for the comparable companies for which corporate governance did not improve (we also cannot detect any particular change in any of these characteristics). Hence, corporate governance does not seem to affect the shareholder base because it changes these other firm characteristics that investors care for.

Second, we try to test the mechanism of why corporate governance affects investor behavior. Non-connected investors would avoid companies with weak corporate governance because extraction of private benefits is larger. Previous studies (see, for instance, Barclay and Holderness, 1989, and Claessens, Fan and Lang, 2002) suggest that these problems are more severe for family controlled companies. If our proxies for corporate governance matter because they capture expected extraction of private benefits, the effect should be stronger for family-controlled firms. If this were not the case, we should worry that corporate governance indeed picks up some other company characteristics. Results reported in Table IX suggest that weaker corporate governance (only estimates for C/CF are reported) reduces the holdings of non-

connected investors only in family controlled companies, supporting the mechanism behind the causal interpretation of the results.

This empirical evidence is difficult to reconcile with other hypotheses, different from the causal interpretation, especially considering that we control for at least as many firm characteristics as in the previous literature, that we use several proxies for corporate governance, and that we find that these have similar effects on different functional specifications (namely, the portfolio shares and the probability of holding stocks in one company). Additionally, in all the specifications we estimate, our main results are not sensitive to the exclusion of any of the control variables suggesting that no omitted factor is correlated with observable firm characteristics.[24] Therefore, we believe that it is highly unlikely that an omitted factor – which is equally correlated with our different proxies for corporate governance in a way to support the mechanisms of the causal interpretation, which affects similarly the decision to buy shares in a company and the portfolio shares of investors, and which is not correlated with the firm characteristics we control for – actually exists.

V. Conclusions

This paper argues that the choices of market participants are driven, among other reasons, by fear of expropriation. Small domestic individual investors, as well as foreign and domestic financial institutions who most likely enjoy only security benefits of their equity participation, are reluctant to hold shares in companies where extraction of private benefits is expected to be large. Interestingly, large domestic individual investors and individuals who are board members behave differently. They do not appear concerned about weak corporate governance, and are more likely to invest in companies where the controlling shareholder has strong incentives to extract private benefits.

Our findings suggest that investors who enjoy only security benefits expect lower returns from companies with weak corporate governance relative to the risk they involve, as Gompers et al. (2003) find. For this reason, they underweight the stocks of these companies. Also, returns may differ across investors because some of them, those better connected with company insiders, appear to know which weak corporate governance companies to pick.

[24] If unobservable firm characteristics correlated with our measures of corporate governance drove our results, one would expect that increasing the set of unobservable characteristics by treating observable characteristics as unobservable would have a large impact on the estimate of our variable of interest. In fact, the estimates are almost invariant.

Information appears more likely to trickle down to the insiders and their friends in weak corporate governance companies.

While the previous literature, following Kang and Stulz (1997), has highlighted the difference in investment behavior between individual and institutional investors, our results suggest that the key difference may be between investors who, thanks to their connections, have private information on companies' future plans and can thus enjoy private benefits, and investors who do not.

Our results point to a clear relation between quality of corporate governance and shareholder base and indicate the path a company should pursue if it wishes to expand its shareholder base and raise new capital. Firms can use corporate governance to attract shareholders in the same way as they use dividends to attract certain categories of investors that are relatively less taxed, as in Allen et al. (2000).

Since investor protection in Sweden is on the whole relatively strong and the level of law enforcement quite high, our estimates likely provide only a lower bound for the influence of corporate governance on shareholding decisions. The fear of expropriation may have much larger consequences in environments with lower investor protection and poorer law enforcement.

References

Allen, Franklin, Antonio E. Bernardo and Ivo Welch (2000), A theory of dividends based on tax clienteles, *Journal of Finance*, 25, 2499-2536.

Barclay, Michael J. and Clifford G. Holderness (1989), Private benefits from control of public corporations, *Journal of Financial Economics*, 25, 371-395.

Becht, Marco, Patrick Bolton, and Ailsa Röell (2003), Corporate governance and control, in Handbook of the Economics of Finance, Edited by George M. Constantinides, Milton Harris, and René M. Stulz, Elsevier, North Holland.

Amihud, Yakov, Haim Mendelson and Jun Uno (1999), Number of shareholders and stock prices: Evidence from Japan, *Journal of Finance*, 54, 1169-1184.

Bebchuk, Lucian, Reinier Kraakman and George Triantis (1999), Stock pyramids and dual class equity: The creation and agency costs of separating control from cash flow rights, NBER Working Paper No. 6951.

Blume, Marshall E., and Irwin Friend (1975), The asset structure of individual portfolios and some implications for utility functions, *Journal of Finance*, 30, 585-603.

Brockman, Paul and Dennis Y. Chung (2003), Investor protection and firm liquidity, *Journal of Finance*, 58, 921-937.

Claessens, Stijn, Simeon Djankov and Larry H.P. Lang (2000), The separation of ownership and control in East Asian corporations, *Journal of Financial Economics*, 58, 81-112.

Claessens, Stijn, Simeon Djankov and Larry H.P. Lang (2002), Disentangling the incentive and entrenchment effects of large shareholdings, *Journal of Finance*, 55, 2741-2772.

Claessens, Stijn, Joseph P. H. Fan and Larry H. P. Lang (2002), The Benefits and Costs of Group Affiliation: Evidence from East Asia, CEPR Discussion Papers: 3364.

Cochrane, John H. (1999), New facts in finance, *Economic Perspectives Federal Reserve Bank of Chicago,* 23 (3) 36-58..

Core, John, Wayne Guay and Tjomme Rusticus (2004), Does weak corporate governance cause stock returns? An examination of firm operating performance and analysts' expectations, mimeo, Tha Wharton School, University of Pennsylvania.

Cremers, Martijn and Vinay B. Nair (2004) Governance Mechanisms and Equity Prices, forthcoming *Journal of Finance.*

Cronqvist, Henrik and Mattias Nilsson (2003), Agency costs of controlling minority shareholders, *Journal of Financial and Quantitative Analysis,* 38, 695-719.

Dahlquist, Magnus and Göran Robertsson (2001), Direct foreign ownership, institutional investors, and firm characteristics, *Journal of Financial Economics*, 59, 413-440.

Dahlquist, Magnus, Lee Pinkowitz, René Stulz, and Rohan Williamson (2003), Corporate governance and the home bias, *Journal of Financial and Quantitative Analysis*, 38, 87-110.

Demsetz, Harold and Kenneth Lehn (1985), The structure of corporate ownership: Causes and consequences, *Journal of Political Economy*, 93, 1155-1177.

Dyck, Alexander and Luigi Zingales (2004), Private benefits of control: An international comparison, *Journal of Finance*, 59, 537-600.

Durvev, Art, and Amrita Nain (2004), The Unanticipated Effect of Insider Trading Regulations, William Davidson Institute Working Paper No. 695.

Faccio, Mara and Larry H. P. Lang (2002), The ultimate ownership of Western European corporations, *Journal of Financial Economics*, 65, 365-395.

Falkenstein, Eric G. (1996), Preferences for stock characteristics as revealed by mutual fund portfolio holdings, *Journal of Finance,* 51, 111-135.

Fehr, Ernst and Simon Gächter (2000), Fairness and retaliation: The economics of reciprocity, *Journal of Economic Perspectives*, 14, 159-181.

Fishman, Michael J. and Kathleen M. Hagerty (1992), Insider Trading and the Efficiency of Stock Prices, *Rand Journal of Economics*, 23, 106-122.

Giannetti, Mariassunta and Yrjö Koskinen (2003), Investor protection and the demand for equity, mimeo Stockholm School of Economics.

Goetzmann, William N. and Alok A. Kumar (2001), Equity portfolio diversification, Yale ICF Working Paper No. 00-59

Gompers, Paul A. and Andrew Metrick (2000), Institutional investors and equity prices, *Quarterly Journal of Economics*, 116, 229-259.

Gompers, Paul A., Joy L. Ishii and Andrew Metrick (2003), Corporate Governance and Equity Prices, *Quarterly Journal of Economics*, 118, 107-155.

Gompers, Paul A., Joy L. Ishii, and Andrew Metrick (2004), Incentives vs. control: An analysis of U.S. dual-class companies, NBER Working Paper No. 10240.

Grinblatt, Mark and Matti Keloharju (2000), The investment behavior and performance of various investor types: A study of Finland's unique data set, *Journal of Financial Economics*, 55, 43-67.

Grinblatt, Mark and Matti Keloharju (2001), How distance, language and culture influence stockholdings and trades, *Journal of Finance*, 56, 1053-1073.

Grishchenko, Olesya, Lubomir P. Litov and Jianping Mei (2003), Private information trading and corporate governance in emerging markets, mimeo, New York University.

Guiso, Luigi, Michael Haliassos and Tullio Jappelli (2003), Equity Culture: Theory and Cross-Country Evidence, *Economic Policy*, 18, 123-170.

International Federation of Stock Exchanges, (2000), 1999 Share Ownership Survey.

Huberman, Gur (2001), Familiarity breeds investment, *Review of Financial Studies*, 14, 659-680.

Johnson, Simon, Peter Boone, Alasdair Breach and Eric Friedman (2000), Corporate governance in the Asian financial crisis, *Journal of Financial Economics*, 58, 141-186.

Kadlec, Gregory B. and John McConnell (1994), The effects of market segmentation and illiquidity on asset prices: Evidence from exchange listings, *Journal of Finance*, 49, 11-636.

Kang, Jun-Koo and René M. Stulz (1997), Why is there a Home Bias? An analysis of foreign portfolio equity ownership in Japan, *Journal of Financial Economics*, 46 3-28.

Ke, Bin, Steven Huddart and Kathy Peroni (2003), What insiders know about future earnings and how they use it: Evidence from insider trades, *Journal of Accounting and Economics*, 35, 315-346.

Kelly, Morgan (1995), All their eggs in one basket: Portfolio diversification of US households, *Journal of Economic Behavior and Organization*, 27, 87-96.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert W. Vishny (1998), Law and finance, *Journal of Political Economy*, 106, 1113-1155.

Lemmon, Michael L. and Karl V. Lins (2003), Ownership structure, and firm value: Evidence from the East Asian financial crisis, *Journal of Finance*, 58, 1445-1468.

Llorente, Guillermo, Rony Michaely, Gideon Saar and Jiang Wang (2002), Dynamic volume-return relation of individual stocks, *Review of Financial Studies*, 15, 1005-1047.

McKinsey&Company (2003a), Global investor opinion survey: Key findings, available at http://www.mckinsey.com/practices/corporategovernance/PDF/GlobalInvestorOpinion Survey2002.pdf.

McKinsey&Company (2003b), McKinsey/KIOD survey on corporate governance, http://www.mckinsey.com/practices/corporategovernance/PDF/cg_survey.pdf.

Merton, Robert C. (1987), A simple model of capital market equilibrium with incomplete information, *Journal of Finance*, 42, 483-51.

Mitton, Todd (2002), A cross-firm analysis of the impact of corporate governance on the East Asian financial crisis, *Journal of Financial Economics*, 64, 215-241.

Morgan Stanley (2001) MSCI Provisional Index Series, May 19, 2001.

Nenova, Tatiana (2003), The value of corporate votes and control benefits: A cross-country analysis, *Journal of Financial Economics*, 68, 325-351.

Odean, Terrance (1998), Are investors reluctant to realize their losses?, *Journal of Finance*, 53, 1775-1998.

Rydqvist, Kristian (1992), Dual-Class Shares: A Review, *Oxford Review of Economic Policy*, 8, 45-57.

Seyhun, H. Nejat (1992), The Effectiveness of the Insider-Trading Sanctions, *Journal of Law and Economics*, 35, 149-182.

Sundin, Anneli and Sven-Ivan Sundqvist, Owners and powers in Swedish listed companies, Stockholm, Dagens Nyheter, Various issues 1986-2003.

Yermack, David (2004), Flights of Fancy: Corporate Jets, CEO Perquisites and Inferior Shareholder Returns, mimeo New York University.

Volpin, Paolo (2002), Governance with poor investor protection: Evidence from top executive turnover in Italy, *Journal of Financial Economics*, 64, 61-90.

Table I

Corporate governance and firm characteristics

Companies have been classified according to the ratio of control to cash flow rights of the principal shareholder (C/CF). The companies with C/CF=1 are the ones for which the principal shareholder's ratio of control rights to cash flow rights is equal to 1. The companies with C/CF>1 are the ones for which the ratio is larger than 1. The Control Premium is defined as the difference between the price per share paid for a control block and the price quoted in the market after the sale announcement divided by the price quoted in the market after the sale announcement. Entrenchment of control is a dummy variable equal to 1 if there are trading restrictions on high voting shares, such as rights of preemption, which give the owners the option to buy back voting shares sold by an owner to a third party, or voting restrictions, which do not allow any shareholder to vote for more than 20 per cent of the shares represented at the general meeting, or shareholders agreements that strictly regulate how to vote, and equal to zero otherwise. The shareholder base is the average (median) number of investors in each category of firms. We report the result of the Wilcoxon test for the difference of median between the two groups. The number of companies included is 354. The control premium is available only for 23 companies. Panel B reports characteristics of the median company with C/CF=1 and C/CF>1. The results of the Wilcoxon test for the difference of median are reported. FREEFLOAT is the logarithm of the firm's free float; MKT_CAP is the logarithm of the firm's market capitalization; MKT_BK is the market to book ratio; BASPREAD is the bid-ask spread as a percentage of price; DIVY is company *f*'s dividend yield; % HITECH FIRMS is the percentage of high-tech firms. High-tech sector includes hardware/software consultancy, software supply, data processing, database activities, maintenance and repair of office, accounting and computer machinery, and other computer related activities.

Panel A: Corporate governance and shareholder base

Variable	C/CF=1	C/CF>1	Wilcoxon test	p-value
Percentage of firms	60	40		
Percentage of total market capitalization	41	59		
Percentage of total market capitalization (outside top decile)	58	42		
Control premium	0.35	7.63		
Entrenchment of control	0.20	0.40		
Median % of the votes by top shareholder	17.29	29.22	11.82	<0.001
Shareholder base				
Mean	4116	6260		
Median	1476	1102	1.66	0.048
Shareholder base outside top decile				
Mean	2768	1887		
Median	1297	908	2.53	0.006

Panel B: Corporate governance and other firm characteristics

	C/CF=1		C/CF>1			
Variables	Median	Interquantile range	Median	Interquantile range	Wilcoxon test	p-value
FREEFLOAT	8.80	1.20	8.78	1.25	0.55	0.58
MKT_CAP	8.70	1.13	8.59	1.14	0.10	0.92
MKT_BK	1.51	2.07	1.52	1.26	0.84	0.40
DIVY	0.00	0.03	0.02	0.05	2.54	0.01
LEVERAGE	0.04	0.44	0.14	0.57	1.37	0.17
BASPREAD	0.03	0.06	0.04	0.06	0.09	0.93
% HITECH FIRMS	19.5		10.1			

Table II

Descriptive statistics of investors' portfolios

We present some portfolio characteristics for domestic and foreign individual investors and financial institutions. The large domestic investors are individual investors with more than 10 per cent of the votes in a company, excluding the controlling shareholders. Individual investors with less than 10 per cent of the votes are classified as small domestic individual investors. Financial institutions include banks, mutual funds, other asset management companies, insurance companies, and brokerages. Domestic financial institutions include foreign financial institutions with branches in Sweden. The sample refers to holdings at June 29, 2001. Panel A presents the median of our three proxies for corporate governance in the stockholdings of different categories of investors. All three proxies for corporate governance are defined in Table I. Panel B presents mean, median (and in parentheses standard deviation and interquantile range (I.Q.R.), respectively) of some characteristics of investors' portfolios. Position refers to an investor's stockholding in a given firm. Portfolio refers to an investor's total stockholdings in the Swedish market.

Panel A: Investors' portfolios and corporate governance

Variable	Small domestic individual investors	Foreign individual investors	Foreign financial institutions	Domestic financial institutions	Large domestic individual investors
No. of investors	606692	12496	1911	572	93
Number of positions	1358222	27163	20262	20442	767
% of market capitalization	9.17	1.44	18.36	48.64	0.21
Median C/CF	1.00	1.00	1.00	1.00	1.01
Median Control premium	0.07	0.07	0.07	0.07	0.08
Median Entrenchment of control	0.00	0.00	0.00	0.00	0.00

Panel B: Other characteristics of investors' portfolios

	Small domestic individual investors		Foreign individual investors		Foreign financial institutions		Domestic financial institutions		Large domestic individual investors	
	Mean (Std.Dev.)	Median (I.Q.R.)	Mean (Std. Dev.)	Median (I.Q.R.)	Mean (Std.Dev.)	Median (I.Q.R.)	Mean (Std.Dev.)	Median (I.Q.R.)	Mean (Std.Dev.)	Median (I.Q.R.)
Value of position (SEK 000s)	265 (39675)	57 (126)	2087 (48429)	99.75 (233)	35698 (1028638)	176 (512)	93734 (1931883)	2607 (13752)	7893 (45943)	212 (812)
Value of the portfolio (SEK 000s)	645 (85702)	69 (199)	4555 (88379)	114 (335)	84153 (1601595)	259 (919)	3328563 (37315571)	65707 (391773)	65090 (142319)	9490 (44716)
Number of positions in portfolio	2.23 (3.16)	1 (2)	2.18 (4.24)	1 (1)	2.33 (2.99)	1 (1)	35.16 (72)	20 (30)	8.24 (9.12)	5 (11)

Table III

We report descriptive statistics for the main variables. C/CF is the ratio of cash flow to control rights of the principal shareholder; the Control Premium is defined as the difference between the price per share paid for a control block and the price quoted in the market after the sale announcement divided by the price quoted in the market after the sale announcement; Entrenchment of Control is a dummy variable equal to 1 if there are trading restrictions on high voting shares, such as rights of preemption, which give the owners the option to buy back voting shares sold by an owner to a third party, or voting restrictions, which do not allow any shareholder to vote for more than 20 per cent of the shares represented at the general meeting, or shareholders agreements that strictly regulate how to vote, and equal to zero otherwise. EQSH1 is the equity share of the first shareholder; MKT_CAP is the logarithm of the firm's market capitalization; DIST_FLOAT is the ratio of firm market capitalization to free float; RHO_P_S is the coefficient of correlation between the stock return of firm *f* and the weighted return of the other stocks in the portfolio of investor *i* ; NP is the number of positions in the portfolio of investor *i* ; PRIM_LIST is a dummy equal to 1 for companies in the primary listing, and equal to zero otherwise; MINDIST is the distance between the place of residence of investor *i* and the closest establishment of company *f*; MKT_BK is the market to book ratio; leverage is the ratio of financial liabilities to the sum of shareholders' funds plus financial liabilities; BASPREAD is the bid-ask spread; DIVY is company *f*'s dividend yield; BETA is the beta coefficient of company *f*; STOCKHOLMF is a dummy equal to 1 for firms located in Stockholm, and equal to zero otherwise; STOCKHOLM is a dummy equal to 1 for investors residing in Stockholm, and equal to zero otherwise; AGE is the logarithm of the number of months since the firm's IPO date; ROA is earnings before interest, taxes, depreciation, and amortization over total assets. All firm-investor observations are included. Panel B describes the coefficients of correlation of the main variables.

Panel A: Descriptive statistics

Variable	Mean	StdDev	Minimum	Maximum
C/CF	1.88	3.94	1.00	61.06
Control Premium	0.02	0.11	-0.04	0.45
Entrenchment of Control	0.20	0.40	0.00	1.00
EQSH1	0.18	0.12	0.01	0.64
MKT_CAP	8.91	0.96	6.32	11.92
DIST_FLOAT	1.60	1.76	1.00	27.16
RHO_P_S	0.15	0.20	-1.00	1.00
NP	2.26	2.88	1.00	67.00
PRIM_LIST	0.18	0.38	0.00	1.00
MINDIST	5.03	0.86	1.00	6.17
MKT_BK	2.30	2.89	-7.90	23.60
LEVERAGE	0.42	0.93	0.00	10.95
BASPREAD	1.51	2.01	0.01	18.11
BETA	0.84	0.74	-1.25	3.07
DIVY	0.04	0.14	0.00	2.07
STOCKHOLMF	0.53	0.50	0.00	1.00
STOCKHOLM	0.28	0.45	0.00	1.00
AGE	1.97	0.57	1.08	2.83
ROA	0.01	0.16	-0.38	0.79

Panel B: Correlation Matrix

	C/CF	Control Premium	Entrenchment of Control	EQSH1	MKT_CAP	DIST_FLOAT	RHO_P_S	NP	PRIM_LIST	MINDIST	MKT_BK	LEVERAGE	BA SPREAD	BETA	DIVY	STOCK HOLMF	STOCK HOLM	AGE	ROA
C/CF	1.00	0.33	0.21	-0.21	0.12	0.03	-0.05	0.00	0.15	0.00	-0.08	0.03	0.01	-0.07	0.23	0.04	0.00	0.17	-0.07
Control Premium	0.33	1.00	0.20	-0.14	0.40	0.00	-0.02	0.00	0.41	0.03	-0.03	0.16	0.04	-0.34	-0.14	0.22	0.00	0.19	0.09
Entrenchment of Control	0.21	0.20	1.00	-0.13	0.28	0.06	0.01	0.00	0.24	0.02	-0.11	0.02	0.18	-0.19	0.09	-0.06	0.00	0.37	0.08
EQSH1	-0.21	-0.14	-0.13	1.00	0.17	0.58	-0.02	0.00	0.04	-0.07	0.13	0.02	0.25	-0.23	-0.08	0.01	0.00	0.12	0.05
MKT_CAP	0.12	0.40	0.28	0.17	1.00	0.12	0.21	0.00	0.59	-0.17	0.24	0.00	0.17	-0.19	-0.06	0.13	0.00	0.39	0.32
DIST_FLOAT	0.03	0.00	0.06	0.58	0.12	1.00	-0.04	0.00	0.17	-0.04	0.01	-0.03	0.14	-0.12	-0.01	-0.09	0.00	0.10	0.15
RHO_P_S	-0.05	-0.02	0.01	-0.02	0.21	-0.04	1.00	0.08	0.16	-0.05	0.00	-0.07	-0.13	0.23	-0.04	0.05	0.01	0.09	0.04
NP	0.00	0.00	0.00	0.00	0.00	0.00	0.08	1.00	0.00	-0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00
PRIM_LIST	0.15	0.41	0.24	0.04	0.59	0.17	0.16	0.00	1.00	-0.14	0.00	0.02	0.07	-0.27	0.02	0.09	0.00	0.36	0.17
MINDIST	0.00	0.03	0.02	-0.07	-0.17	-0.04	-0.05	-0.02	-0.14	1.00	-0.04	0.02	0.00	0.02	0.02	-0.19	-0.40	-0.03	-0.02
MKT_BK	-0.08	-0.03	-0.11	0.13	0.24	0.01	0.00	0.00	0.00	-0.04	1.00	-0.11	0.03	-0.03	-0.09	0.02	0.00	-0.01	0.11
LEVERAGE	0.03	0.16	0.02	0.02	0.00	-0.03	-0.07	0.00	0.02	0.02	-0.11	1.00	-0.04	-0.11	0.08	0.03	0.00	-0.01	0.01
BASPREAD	0.01	0.04	0.18	0.25	0.17	0.14	-0.13	0.00	0.07	0.00	0.03	-0.04	1.00	-0.26	-0.06	0.02	0.00	0.17	0.16
BETA	-0.07	-0.34	-0.19	-0.23	-0.19	-0.12	0.23	0.00	-0.27	0.02	-0.03	-0.11	-0.26	1.00	0.01	0.11	0.00	-0.18	-0.25
DIVY	0.23	-0.14	0.09	-0.08	-0.06	-0.01	-0.04	0.00	0.02	0.02	-0.09	0.08	-0.06	0.01	1.00	-0.04	0.00	0.13	-0.10
STOCKHOLMF	0.04	0.22	-0.06	0.01	0.13	-0.09	0.05	0.00	0.09	-0.19	0.02	0.03	0.02	0.11	-0.04	1.00	0.00	-0.02	-0.05
STOCKHOLM	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.00	-0.40	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
AGE	0.17	0.19	0.37	0.12	0.39	0.10	0.09	0.00	0.36	-0.03	-0.01	-0.01	0.17	-0.18	0.13	-0.02	0.00	1.00	0.11
ROA	-0.07	0.09	0.08	0.05	0.32	0.15	0.04	0.00	0.17	-0.02	0.11	0.01	0.16	-0.25	-0.10	-0.05	0.00	0.11	1.00

Table IV
Probit regression for small domestic individual investors

The dependent variable is $Y_{i,f} = 0$ if investor i does not invest in firm f and $Y_{i,f} = 1$ otherwise. We use three alternative proxies for corporate governance. C/CF is the ratio of control rights to cash flow rights of the principal shareholder; the Control Premium is defined as the difference between the price per share paid for a control block and the price quoted in the market after the sale announcement divided by the price quoted in the market after the sale announcement; Entrenchment of Control is a dummy variable equal to 1 if there are trading restrictions on high voting shares, such as rights of preemption, which give the owners the option to buy back voting shares sold by an owner to a third party, or voting restrictions, which do not allow any shareholder to vote for more than 20 per cent of the shares represented at the general meeting, or shareholders agreements that strictly regulate how to vote, and equal to zero otherwise. The remaining independent variables are: MKT_CAP is the logarithm of firm market capitalization; DIST_FLOAT is the ratio of firm market capitalization to free float; RHO_P_S is the coefficient of correlation between the stock return of firm *f* and the weighted return of the other stocks in the portfolio of investor i; NP is the number of positions in the portfolio of investor i; PRIM_LIST is a dummy equal to 1 for companies in the primary listing, and equal to zero otherwise; MINDIST is the distance between the place of residence of investor i and the closest establishment of company *f*; MKT_BK is the market to book ratio; LEVERAGE is the ratio of financial liabilities to the sum of shareholders' funds plus financial liabilities; BASPREAD is the bid-ask spread; DIVY is company *f*'s dividend yield; STOCKHOLMF is a dummy equal to 1 for firms located in Stockholm, and equal to zero otherwise; STOCKHOLM is a dummy equal to 1 for investors who reside in Stockholm, and equal to zero otherwise; AGE is the logarithm of the number of months since the firm's IPO date. Estimates have been obtained using a probit model; ROA is earnings before interest, taxes, depreciation, and amortization over total assets. The t-statistics have been calculated using White-corrected standard errors. The standard errors have been corrected to consider the possible correlation of errors for the observations that refer to a given investor. The marginal effect of corporate governance when our variable of interest (say, x_1) is interacted with other firm characteristics (say, $x_2, ..., x_n$) has been calculated as follows: $\frac{dP\{Y_{i,f}=1\}}{dx_1} = \frac{\partial P\{Y_{i,f}=1\}}{\partial x_1} + \sum_{k=1}^{n} \frac{\partial P\{Y_{i,f}=1\}}{\partial (x_1 x_k)} x_k$. The marginal effect of a dummy variable refers to the change of the variable from 0 to 1. All marginal effects have been calculated taking the mean value of the independent variables and are multiplied by 100.

Panel A: Estimates for a random subsample of investors

Panel A reports parameters' estimates for the investors born on the third day of the month. The number of investors included is 19,980. The proxy for corporate governance used in different regressions is indicated in each column.

	Whole Sample, C/CF		Without top decile of market capitalization companies, C/CF		Control Premium		Entrenchment of Control		Individuals with N=1, C/CF		Individuals with N>4, C/CF		Whole Sample, C/CF	
	(1)		(2)		(3)		(4)		(5)		(6)		(7)	
Variable	Marginal effect	T-stat	Marginal effect	T-stat	Marginal effect	T-stat	Marginal effect	T-stat	Marginal effect	T-stat	Marginal effect	T-stat	Marginal effect	T-stat
Corporate Governance	-8.61	-68.73	-3.00	-16.56	-7.23	-4.18	-2.08	-12.46	-15.44	-68.27	-2.60	-6.02	-7.94	-39.63
MKT_CAP	3.88	53.57	4.58	43.11	5.28	14.29	11.99	115.20	3.19	23.42	10.01	41.64	9.05	97.50
Corporate Governance*MKT_CAP	1.11	94.50	-0.41	-23.67					1.96	93.40	0.29	5.50	1.03	46.89
DIST_FLOAT	-6.25	-9.73	-40.57	-43.32	-9.02	-6.91	-42.15	-59.57	16.54	14.74	-51.42	-26.21	-6.28	-8.38
Corporate Governance*DIST_FLOAT	-10.13	-40.78	-4.67	-13.45					-26.85	-66.77	1.02	1.29	-14.89	-59.80
RHO_P_S	42.41	238.14	59.96	231.88	28.17	50.00	60.69	214.89	42.66	81.79	72.56	102.07		
NP	0.83	141.33	1.25	145.33	0.69	41.93	1.25	140.33			1.07	64.80	1.42	193.33
PRIM_LIST	-0.89	-5.18	-10.70	-42.80	-11.24	-14.61	-2.41	-11.41	0.02	0.05	-4.22	-7.82	-0.19	-0.96
Corporate Governance*PRIM_LIST	-2.09	-44.58	1.11	16.78					-2.11	-23.98	-2.12	-12.13	-1.24	-21.08
MINDIST	-2.04	-49.71	-2.40	-39.71	-1.51	-10.69	-2.39	-38.29	-2.46	-35.64	-2.76	-19.95	-2.53	-54.53
MKT_BK	-0.18	-11.50	0.00	0.13	5.50	11.67	-0.53	-22.13	-0.65	-19.25	0.31	6.71	-0.72	-37.00
LEVERAGE	0.29	6.52	-0.52	-7.83	3.48	14.50	0.15	2.26	0.98	14.56	-0.24	-1.54	0.19	3.21
BASPREAD	-2.41	-58.62	-2.66	-46.30	-0.53	-3.54	-3.75	-60.05	-5.52	-219.75	-1.99	-22.44	-3.25	-66.60
BETA	0.23	3.61	-0.90	-9.48	-17.47	-23.39	0.70	7.55	-0.70	-5.96	0.27	1.27	2.80	36.97
DIVY	2.65	6.99	5.04	9.08	-270.88	-20.73	5.31	11.30	0.93	1.32	8.10	7.76	1.13	2.52
STOCKHOLMF	4.21	41.40	5.62	37.60	4.96	8.55	6.22	40.21	5.79	29.41	4.80	15.86	3.26	27.83
STOCKHOLMF*STOCKHOLM	-1.97	-17.10	-2.57	-15.19	-0.49	-1.42	-2.16	-12.34	-2.46	-12.51	-2.28	-5.97	-1.67	-12.42
AGE	5.34	60.67	7.14	55.24	1.62	3.60	-1.01	-5.33	5.80	36.46	7.61	28.56	5.55	55.44
ROA	-1.53	-31.36	-1.51	-15.00	14.26	8.87	-1.93	-25.00	-1.16	-12.31	-2.67	-15.62	-1.75	-31.17
Summary effect of Corporate Governance	-0.59		-6.97		-7.23		-2.08		-2.36		-0.24		-1.18	
Log likelihood	-183723		-127871		-9302		-188377		-59837		-58890		-208813	

Panel B: Summary statistics of the estimates for different random subsamples

Panel B reports the descriptive statistics for marginal effects of the main corporate governance proxy for subsamples of investors born on all the days of the month using the whole sample of Swedish listed companies. All control variables included in the equation in Panel A were included in the equation (estimates not reported). For all variables (except LEVERAGE) all 31 subsamples produce estimates that have the same sign and are significant at the 5 per cent level. For LEVERAGE only 11 estimates are significant at the 5 per cent level.

Variable	Mean	Median	Std.Dev.	Max	Min
C/CF	-11.18	-11.19	0.51	-10.28	-12.29
C/CF*MKT_CAP	1.48	1.47	0.06	1.61	1.39
C/CF*DIST_FLOAT	-14.57	-14.36	1.54	-11.84	-19.07
C/CF*PRIM_LIST	2.87	2.89	0.10	2.67	3.11
Summary effect of C/CF	-0.69	-0.66	0.16	-0.40	-1.05

Table V
Probit regression for foreign investors

The dependent variable is $Y_{i,f} = 0$ if investor i does not invest in firm f and $Y_{i,f} = 1$ otherwise. We use three alternative proxies for corporate governance. C/CF is the ratio of control rights to cash flow rights of the principal shareholder; the Control Premium is defined as the difference between the price per share paid for a control block and the price quoted in the market after the sale announcement divided by the price quoted in the market after the sale announcement; Entrenchment of Control is a dummy variable equal to 1 if there are trading restrictions on high voting shares, such as rights of preemption, which give the owners the option to buy back voting shares sold by an owner to a third party, or voting restrictions, which do not allow any shareholder to vote for more than 20 per cent of the shares represented at the general meeting, or shareholders agreements that strictly regulate how to vote, and equal to zero otherwise. The proxy for corporate governance used in different regressions is indicated in each column. The remaining independent variables are: MKT_CAP is the logarithm of firm market capitalization; DIST_FLOAT is the ratio of firm market capitalization to free float; NP is the number of positions in the portfolio of investor i; PRIM_LIST is a dummy equal to 1 for companies in the primary listing, and equal to zero otherwise; MKT_BK is the market to book ratio; LEVERAGE is the ratio of financial liabilities to the sum of shareholders' funds plus financial liabilities; BASPREAD is the bid-ask spread; DIVY is company *f*'s dividend yield; STOCKHOLMF is a dummy equal to 1 for firms located in Stockholm, and equal to zero otherwise; AGE is the logarithm of the number of months since the firm's IPO date; ROA is earnings before interest, taxes, depreciation, and amortization over total assets. Observations include 12,496 foreign individual investors and 1,911 foreign financial institutions. Estimates have been obtained using a probit model. The t-statistics have been calculated using White-corrected standard errors. The standard errors have been corrected to consider the possible correlation of errors for the observations that refer to a given investor. The marginal effect of corporate governance when our variable of interest (say, x_1) is interacted with other firm characteristics (say, $x_2, ..., x_n$) has been calculated as follows: $\frac{dP\{Y_{i,f}=1\}}{dx_1} = \frac{\partial P\{Y_{i,f}=1\}}{\partial x_1} + \sum_{k=1}^{n} \frac{\partial P\{Y_{i,f}=1\}}{\partial (x_1 x_k)} x_k$. The marginal effect of a dummy variable refers to the change of the variable from 0 to 1. All marginal effects have been calculated taking the mean value of the independent variables and are multiplied by 100.

	Foreign individual investors						Foreign financial institutions					
	C/CF (1)		Control Premium (2)		Entrenchment (3)		C/CF (4)		Control Premium (5)		Entrenchment (6)	
Variable	Marginal effect	T-Stat	Marginal effect	T-Stat	Marginal effect	T-Stat	Marginal effect	T-Stat	Marginal effect	T-Stat	Marginal effect	T-Stat
Corporate Governance	-7.80	-49.80	-4.49	-3.22	-1.93	-11.11	0.70	1.39	-3.78	-3.25	-4.27	-9.71
MKT_CAP	7.17	90.61	3.64	11.74	13.86	143.50	23.68	94.24	3.17	12.70	29.57	109.88
Corporate Governance*MKT_CAP	0.83	46.91					-0.14	-2.56				
DIST_FLOAT	-1.61	-1.96	-10.77	-7.00	-12.40	-18.61	-25.62	-13.46	-10.47	-11.76	-29.23	-19.54
Corporate Governance*DIST_FLOAT	-5.91	-10.77					1.88	2.15				
NP	0.43	134.00	0.16	31.40	0.65	135.00	0.52	169.00	0.08	48.75	0.66	168.00
PRIM_LIST	2.39	12.66	-0.32	-0.73	2.48	10.70	6.37	11.80	2.20	5.57	7.39	13.06
Corporate Governance*PRIM_LIST	-0.67	-10.89					-0.57	-3.28				
MKT_BK	-0.20	-14.00	0.10	0.32	-0.35	-14.30	-0.15	-3.27	0.19	0.59	-0.17	-2.80
LEVERAGE	-1.11	-14.57	-0.39	-2.19	-1.68	-14.18	-1.08	-5.50	0.19	0.96	-1.84	-7.15
BASPREAD	-1.92	-39.63	-0.62	-4.69	-2.92	-4.04	-2.31	-26.96	-0.28	-2.49	-2.80	-25.25
BETA	5.09	75.02	0.74	1.57	9.29	96.20	8.96	41.74	2.79	6.58	10.72	41.05
DIVY	-5.88	-10.80	-52.91	-6.49	-9.79	-11.62	-2.57	-1.79	-13.87	-2.10	-3.23	-1.84
STOCKHOLMF	1.69	16.92	0.13	0.30	2.32	15.24	1.92	6.44	0.34	0.75	1.82	4.73
AGE	0.88	9.51	-0.73	-2.23	1.83	13.33	-0.73	-2.59	0.63	1.83	-0.94	-2.56
ROA	-1.23	-28.19	-2.78	-3.01	-1.91	-29.37	-3.65	-22.88	-2.71	-3.03	-4.67	-23.14
Summary effect of Corporate Governance	-1.37		-4.49		-1.93		-1.10		-3.78		-4.27	
Log likelihood	-115269		-4812		-116484		-48107		-2652		-48388	

Table VI
Probit regression for domestic financial institutions and large domestic individual investors

Large domestic individual investors are investors who hold more than 10 per cent of the control rights in at least one company listed on the Stockholm Stock Exchange, excluding the principal shareholder of each company. The dependent variable is $Y_{i,f} = 0$ if investor i does not invest in firm f and $Y_{i,f} = 1$ otherwise. We use three alternative proxies for corporate governance. C/CF is the ratio of control rights to cash flow rights of the principal shareholder; the Control Premium is defined as the difference between the price per share paid for a control block and the price quoted in the market after the sale announcement divided by the price quoted in the market after the sale announcement; Entrenchment of Control is a dummy variable equal to 1 if there are trading restrictions on high voting shares, such as rights of preemption, which give the owners the option to buy back voting shares sold by an owner to a third party, or voting restrictions, which do not allow any shareholder to vote for more than 20 per cent of the shares represented at the general meeting, or shareholders agreements that strictly regulate how to vote, and equal to zero otherwise. The proxy for corporate governance used in different regressions is indicated in each column. The remaining independent variables are: MKT_CAP is the logarithm of firm market capitalization; DIST_FLOAT is the ratio of firm market capitalization to free float; NP is the number of positions in the portfolio of investor i; PRIM_LIST is a dummy equal to 1 for companies in the primary listing; MINDIST is the distance between the place of residence of investor i and the closest establishment of company f; MKT_BK is the market to book ratio; LEVERAGE is the ratio of financial liabilities to the sum of shareholders' funds plus financial liabilities; BASPREAD is the bid-ask spread; DIVY is company f's dividend yield; STOCKHOLMF is a dummy equal to 1 for firms located in Stockholm, and equal to zero otherwise; STOCKHOLM is a dummy equal to 1 for investors who reside in Stockholm, and equal to zero otherwise; AGE is the logarithm of the number of months since the firm's IPO date; ROA is earnings before interest, taxes, depreciation, and amortization over total assets. The observations refer to 572 domestic financial institutions and 94 large domestic individual investors, respectively. Controlling shareholders are excluded from the large domestic individual investors. Estimates have been obtained using a probit model. The t-statistics have been calculated using White-corrected standard errors. The standard errors have been corrected to consider the possible correlation of errors for the observations that refer to a given investor. The marginal effect of corporate governance when our variable of interest (say, x_1) is interacted with other firm characteristics (say, $x_2, ..., x_n$) has been calculated as follows: $\frac{dP\{Y_{i,f}=1\}}{dx_1} = \frac{\partial P\{Y_{i,f}=1\}}{\partial x_1} + \sum_{k=1}^{n} \frac{\partial P\{Y_{i,f}=1\}}{\partial (x_1 x_k)} x_k$. The marginal effect of a dummy variable refers to the change of the variable from 0 to 1. All marginal effects have been calculated taking the mean value of the independent variables and are multiplied by 100.

	Domestic financial institutions						Large domestic individual investors					
	C/CF (1)		Control Premium (2)		Entrenchment (3)		C/CF (4)		Control Premium (5)		Entrenchment (6)	
	Marginal effect	T-Stat	Marginal Effect	T-Stat	Marginal effect	T-Stat	Marginal effect	T-Stat	Marginal effect	T-Stat	Marginal effect	T-Stat
Corporate Governance	0.62	4.33	-17.66	-4.16	-2.75	-5.52	0.59	0.66	0.29	0.98	0.14	2.46
MKT_CAP	38.00	93.15	16.12	14.80	33.67	101.54	-1.35	-3.85	0.13	1.27	-0.18	-5.29
Corporate Governance*MKT_CAP	-0.60	-7.27					-0.03	-0.28				
DIST_FLOAT	-35.07	-11.45	-31.96	-9.01	-39.10	-23.04	-1.37	-0.59	-0.13	-0.74	-0.21	-1.41
Corporate Governance*DIST_FLOAT	-4.34	-2.64					-0.42	-0.30				
RHO_P_S							9.54	3.81	-0.14	-0.37	1.08	3.67
NP	0.46	122.00	0.22	27.20	0.43	121.00	0.04	3.88	0.00	1.12	0.01	3.88
PRIM_LIST	5.32	6.34	-4.37	-2.58	4.40	7.05	-1.65	-1.56	-0.25	-1.01	-0.21	-2.25
Corporate Governance*PRIM_LIST	-0.33	-1.22					-0.19	-0.55				
MINDIST							-2.13	-14.69	-0.03	-2.93	-0.25	-14.76
MKT_BK	-0.18	-2.40	10.84	8.18	-0.14	-2.05	0.07	0.96	-0.01	-0.88	0.01	1.28
LEVERAGE	0.59	2.15	6.56	8.92	0.23	0.86	-0.05	-0.18	-0.05	-1.11	-0.01	-0.49
BASPREAD	-1.07	-10.85	-2.29	-4.23	-0.81	-8.85	0.10	0.99	-0.04	-1.54	0.01	0.74
BETA	9.47	27.56	2.35	1.30	7.94	25.28	-0.39	-1.30	0.04	1.14	-0.05	-1.41
DIVY	-0.48	-0.22	-81.95	-2.82	4.14	2.30	-1.13	-0.58	-0.11	-0.35	0.17	1.34
STOCKHOLMF	3.53	7.48	11.49	5.94	2.62	6.00	-2.64	-4.20	-0.03	-0.39	-0.29	-3.97
STOCKHOLM*STOCKHOLMF							1.21	0.94	1.38	1.34	0.00	0.11
AGE	-0.88	-1.97	3.27	2.70	-0.92	-2.15	0.61	1.80	0.07	1.71	0.05	1.30
ROA	-2.32	-5.89	-1.34	-0.34	-2.49	-1.00	1.77	3.37	0.44	1.22	0.17	2.94
Summary effect of Corporate Governance	-5.47		-17.66		-2.75		0.22		0.29		0.14	
Log likelihood	-28853		-2133		-29030		-1068		-58		-1068	

Table VII
The shareholdings of board members

The dependent variable is $Y_{i,f} = 0$ if investor i does not invest in firm f and $Y_{i,f} = 1$ otherwise. C/CF is the ratio of control rights to cash flow rights of the principal shareholder. We present summary results of two separate regressions. In the first regression, we interact C/CF and all interaction terms in which C/CF appears in Table 4 with a dummy variable equal to 1 if individual i is a board member and equal to zero otherwise (Board Dummy). In the second regression, we interact C/CF and all interaction terms in which C/CF appears in Table 4 with the Board Dummy, a dummy variable equal to 1 if individual i holds position in 5 or more firms and equal to zero otherwise (Diversified Dummy), and the product of Board Dummy and Diversified Dummy. Both regressions include all control variables included in Table 4. The regressions refer to 19,980 investors, out of whom 1,270 are board members. Estimates have been obtained using a probit model. The t-statistics have been calculated using White-corrected standard errors. The standard errors have been corrected to consider the possible correlation of errors for the observations that refer to a given investor. We report the estimates of the summary effects of C/CF for individuals who are board members and individuals who are not board members in the first regression (column 1) and distinguish board members (non-board members) among diversified and non diversified investors in the second regression (columns 2 and 3). The marginal effect of corporate governance when our variable of interest (say, x_1) is interacted with other firm characteristics (say, $x_2,...,x_n$) has been calculated as follows: $\frac{dP\{Y_{i,f}=1\}}{dx_1} = \frac{\partial P\{Y_{i,f}=1\}}{\partial x_1} + \sum_{k=1}^{n} \frac{\partial P\{Y_{i,f}=1\}}{\partial (x_1 x_k)} x_k$. All marginal effects have been calculated taking the mean value of the independent variables and are multiplied by 100. All variables are statistically significant at least at the 5 per cent level.

Summary effect of C/CF

	All domestic individual investors	Undiversified domestic individual investors only	Diversified domestic individual investors only
Non-board member	-4.83	-2.89	-0.45
Board member	2.14	1.85	1.81

Table VIII

Portfolio shares of different classes of investors.

Panel A: Portfolio shares in weak corporate governance companies

We create portfolios of firms in different size quintiles for different categories of investors. We measure size by market capitalization. Given the holdings of a category of investors in firms of a certain size group, we determine what share of their holdings goes to firms with C/CF larger than and equal to 1. As within each size quintile the portfolio shares of a given category of investors add up to one, we report only the portfolio shares of companies with C/CF larger than 1. For comparison, we also report shares in the corresponding market and free float portfolios. Large domestic individual investors do not include controlling shareholders.

	Small domestic individual investors								
	All	Board members	Non – board members	Foreign individual investors	Foreign financial institutions	Domestic financial institutions	Large domestic Individual investors	Market Portfolio	Free float Portfolio
Smallest Q1	42.32	44.38	42.14	29.24	33.41	42.35	56.59	41.70	40.96
Q2	29.81	35.01	29.50	31.00	30.52	30.83	54.03	32.77	32.62
Q3	42.44	44.18	37.19	24.78	22.95	35.89	69.75	33.22	28.69
Q4	29.25	30.84	28.37	27.97	26.63	28.79	29.48	35.15	31.53
Largest Q5	77.31	81.91	71.11	72.94	65.25	61.63	45.67	68.03	67.15
Top quintile excluding largest ten companies	64.48	69.43	57.53	56.03	57.46	55.55	31.09	59.50	55.03
Largest ten companies	76.04	87.44	76.76	76.35	63.41	64.72	55.12	72.65	74.15

Panel B: Regression analysis

The dependent variable is the difference between the ownership share of a given class of investors in firm *i* and the ownership share of board members in firm *i*. C/CF is the ratio of control rights to cash flow rights of the principal shareholder. MKT_CAP is the logarithm of firm market capitalization; DIST_FLOAT is the ratio of firm market capitalization to free float; NP is the number of positions in the portfolio of investor *i* ; PRIM_LIST is a dummy equal to 1 for companies in the primary listing, and equal to zero otherwise; MKT_BK is the market to book ratio; LEVERAGE is the ratio of financial liabilities to the sum of shareholders' funds plus financial liabilities; BASPREAD is the bid-ask spread; DIVY is company *f*'s dividend yield; STOCKHOLMF is a dummy equal to 1 for firms located in Stockholm, and equal to zero otherwise; AGE is the logarithm of the number of months since the firm's IPO date; LARGEST 10 DUMMY is a variable equal to 1 for the ten largest companies and equal to zero otherwise; ROA is earnings before interest, taxes, depreciation, and amortization over total assets. The observations refer to the portfolio shares of different categories of investors in the 354 Swedish listed companies. Large domestic individual investors do not include controlling shareholders. The equation is estimated by ordinary least squares. The t-statistics have been calculated using White-corrected standard errors. All estimates are multiplied by 100.

	Small domestic individual investors		Foreign individual Investors		Foreign financial institutions		Domestic financial institutions		Large domestic individual investors	
Variable	Estimate	T-stat.	Estimate	T-stat.	Estimate	T-stat.	Estimate	T-stat.	Estimate	T-stat.
Intercept	0.53	1.74	0.34	0.68	-0.03	-0.08	0.04	0.11	-1.30	-1.57
C/CF	-0.29	-3.82	-0.38	-3.11	-0.26	-2.97	-0.42	-4.35	0.66	3.23
MKT_CAP	-0.04	-1.15	-0.05	-0.95	0.01	0.26	-0.04	-0.89	0.19	2.01
C/CF*MKT_CAP	0.04	3.77	0.05	3.19	0.03	3.07	0.06	4.60	-0.09	-3.38
DIST_FLOAT	0.01	0.41	0.04	0.84	0.05	1.55	0.05	1.38	-0.02	-0.24
C/CF*DIST_FLOAT	0.04	0.28	-0.07	-0.32	-0.10	-0.65	-0.17	-1.04	0.39	1.10
PRIM_LIST	0.25	2.76	0.34	2.24	0.30	2.85	0.37	3.09	-0.24	-0.96
C/CF*PRIM_LIST	-0.13	-3.55	-0.14	-2.32	-0.08	-1.97	-0.15	-3.38	0.20	2.07
MKT_BK	-0.02	-2.53	0.00	-0.05	0.01	0.61	0.00	-0.45	0.03	1.27
LEVERAGE	-0.02	-0.81	0.04	1.11	-0.01	-0.43	0.00	-0.15	-0.01	-0.19
BASPREAD	-0.03	-3.88	-0.04	-3.00	-0.03	-3.84	-0.02	-1.97	-0.01	-0.35
BETA	0.02	0.53	0.04	0.88	-0.02	-0.65	0.07	1.73	-0.21	-2.49
DIVY	-0.31	-0.92	-0.84	-1.52	-0.55	-1.42	-0.60	-1.41	0.13	0.14
STOCKHOLMF	0.01	0.19	0.00	0.01	0.04	0.77	0.00	0.04	0.12	0.98
AGE	-0.10	-4.80	-0.02	-0.52	-0.09	-3.66	0.03	1.24	-0.07	-1.35
LARGEST 10 DUMMY	2.17	12.19	2.17	7.38	0.94	4.62	2.07	9.04	-0.47	-0.98
ROA	-0.01	-0.21	-0.01	-0.28	-0.02	-0.68	-0.02	-0.57	-0.02	-0.29
Adj R2	0.44		0.28		0.27		0.29		0.10	
Summary effect of C/CF at the mean	-0.09		-0.09		-0.06		-0.11		0.18	

Table IX
Tackling endogeneity problems

In the new positions regression, the dependent variable is equal to 1 if investor *i* acquires a *new* position in firm *f* between January and June 2001 and it is equal to zero if investor *i* does not hold a position in firm *f* in this period. Observations relative to positions held by investor *i* in January 2001 have been excluded. In the holdings regression, the dependent variable is $Y_{i,f} = 0$ if investor i does not invest in firm *f* and $Y_{i,f} = 1$ otherwise. C/CF is the ratio of control to cash flow rights of the principal shareholder. The regressions for new positions include control variables and interactions variables used in Tables IV-VI (estimates not reported). The regressions for holdings include all control variables included in Tables IV-VI, but C/CF has been interacted only with FAMILY. FAMILY is a dummy variable equal to 1 if the ultimate shareholder is a family and C/CF is larger than 1 and equal to zero otherwise. In our sample, 75 per cent of the companies with C/CF>1 are family firms. In the equation for new positions, domestic small individual investors only include individuals born between the 1st and the 5th day of the month. In the holdings regression, domestic small investors only include individuals born on the 3rd of the month. Estimates have been obtained using a probit model. The t-statistics have been calculated using White-corrected standard errors. The standard errors have been corrected to consider the possible correlation of errors for the observations that refer to a given investor. The marginal effect of corporate governance when our variable of interest (say, x_1) is interacted with other firm characteristics (say, $x_2,...,x_n$) has been calculated as follows: $\frac{dP\{Y_{i,f}=1\}}{dx_1} = \frac{\partial P\{Y_{i,f}=1\}}{\partial x_1} + \sum_{k=1}^{n} \frac{\partial P\{Y_{i,f}=1\}}{\partial (x_1 x_k)} x_k$. All marginal effects have been calculated taking the mean value of the independent variables and are multiplied by 100. All variables are statistically significant at least at the 5 per cent level.

	Small domestic individual investors	Foreign individual investors	Foreign financial institutions	Domestic financial institutions
		New Positions		
New positions	7554	7860	5461	2696
Summary effect of C/CF	-2.24	-5.88	-2.06	-1.27
		Holdings		
Marginal Effect:				
C/CF	1.34	0.42	-0.02	0.47
C/CF*FAMILY	-2.08	-1.56	-2.38	-1.06

about ECGI

The European Corporate Governance Institute has been established to improve *corporate governance through fostering independent scientific research and related activities.*

The ECGI will produce and disseminate high quality research while remaining close to the concerns and interests of corporate, financial and public policy makers. It will draw on the expertise of scholars from numerous countries and bring together a critical mass of expertise and interest to bear on this important subject.

The views expressed in this working paper are those of the authors, not those of the ECGI or its members.

ECGI Working Paper Series in Finance

Financial assistance for the services of the editorial assistant of these series is provided by the European Commission through its RTN Programme on Understanding Financial Architecture: Legal and Political Frameworks and Economic Efficiency (Contract no. HPRN-CT-2000-00064).

Electronic Access to the Working Paper Series

The full set of ECGI working papers can be accessed through the Institute's Web-site (www.ecgi.org/wp) or SSRN:

Finance Paper Series	http://www.ssrn.com/link/ECGI-Fin.html
Law Paper Series	http://www.ssrn.com/link/ECGI-Law.html