

Which Investors Fear Expropriation? Evidence from Investors' Portfolio Choices

MARIASSUNTA GIANNETTI and ANDREI SIMONOV*

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) who generally enjoy only security benefits are reluctant to invest in companies with weak corporate governance. In contrast, individuals connected with company insiders are more likely to invest in weak corporate governance companies. These findings suggest that it is important to distinguish between investors who enjoy private benefits or access private information, and investors who enjoy only security benefits.

*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))

The 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

*Giannetti is from the Stockholm School of Economics, CEPR, and ECGI. Simonov is from the Stockholm School of Economics. We are grateful for comments by 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 Western Finance Association meetings, the NBER Conference on Corporate Governance, the Chicago Federal Reserve Bank Conference on Banking Structure, the Stockholm School of Economics, the 2003 European Finance Association meetings, the 2nd Asian Corporate Governance Conference in Seoul, the CEPR European Summer Symposium in Financial Markets in Gerzensee, the European Central Bank Conference on Financial Integration, the Georgia Tech International Finance Conference, the 2003 European Economic Association meetings, the Institute of International Economic Studies in Stockholm, London Business School, the Norwegian School of Management, HEC Paris, Copenhagen Business School, University of Padua, and CEFIR in Moscow. We are also grateful to Mattias Nilsson and especially Sven-Ivan Sundqvist for making available some of the data. 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, any errors or shortcomings remain our own.

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 remain relatively unexplored. There are, however, several reasons why corporate governance may matter for an investor's security selection. First, corporate governance affects how a firm's value is divided between security benefits, which accrue to all shareholders on a pro rata basis, and private benefits, which only a subset of shareholders with large participation or management connections can enjoy. For instance, some investors may expect to appropriate private benefits by trading at more favorable prices because they have access to private information especially from companies with weak corporate governance. If different categories of investors expect different returns depending on the quality of corporate governance, they should exhibit different preferences for this firm characteristic. Not surprisingly, anecdotal evidence shows that the quality of corporate governance affects foreign and domestic investors' decisions about whether or not to buy stocks in certain companies (McKinsey & Company (2003a,b))¹; yet a systematic empirical investigation does not exist.

Second, investors select stocks not only on the basis of corporate risk and return; but they also take into account other company characteristics—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 in this context as well, but so far there has been no study of this relation.

In this paper, we show that investors who enjoy only security benefits are reluctant to hold stocks of companies for which the extraction of private benefits is expected to be large. As a consequence, companies have a narrower shareholder base when outside investors feel less protected. This has important implications. First, as pointed out by Merton (1987), such companies' stocks may be undervalued because of the lack of risk sharing (and not only because outside shareholders anticipate expropriation and discount accordingly). Second, this can explain why share liquidity 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 local 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 firms' 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 for which the controlling shareholders are not expected to maximize security benefits. To identify the companies such that

¹ In particular, 63% of the investors surveyed by McKinsey & Company (2003a,b) assert that they avoid buying stocks of companies with poor corporate governance in emerging markets and developed economies alike.

the interests of insiders and outsiders are misaligned, we use three alternative proxies for corporate governance. First, following La Porta et al. (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 a lack of monetary incentives if the principal shareholder is directly involved in management or can influence managers' policies.² 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 a company's corporate governance affects the probability of investors holding shares in that company. When a company's 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 the company.

Interestingly, the portfolio selection of investors who are supposedly connected to company insiders—defined as both board members and large domestic individual investors who hold a significant share of the control rights of at least one listed company (without actually controlling it)—is driven by other motives. These investors do not avoid companies with weak corporate governance, and, if anything, they are more likely to hold such companies' 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 an 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 who 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 (2004)).

The empirical evidence we report suggests that, indeed, different categories of investors have rational reasons for choosing different stocks. Investors connected with company insiders appear to be better informed than other investors about companies with weak corporate governance in which to invest, and thereby earn higher returns. However, they do not appear to have an informational advantage for companies with strong corporate governance. Our results are also consistent with the findings of Gompers et al. (2003), Cremers and Nair (2005), and Yermack (2004), who show that companies with weak

² Faccio and Lang (2002) find that this is the case in at least 70% of Swedish companies.

corporate governance have lower security returns than companies with strong corporate governance.³ This may explain why investors who enjoy only security benefits are less prone to invest in companies with weak corporate governance.

Although there is clear evidence that outside investors rationally hold fewer stocks in companies with weak corporate governance, we acknowledge that we cannot provide 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 pressed 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 influence corporate policies, this allows us to conclude that, although some institutional investors may solicit improvements in corporate governance, investors who enjoy only security benefits 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 this possibility out, 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 employ several proxies for corporate governance and examine 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, and obtain results that support the causal interpretation. Hence, we conclude that our results are unlikely to be due to an omitted variable and, with these caveats in mind, we use causal language from the outset of the paper.

This paper also contributes to the literature which demonstrates that investors' preferences for stocks are not driven only by conventional proxies for risk. Specifically, our results confirm the findings that investors are more inclined to invest in the stocks of large companies and of companies whose plants are located nearby (Grinblatt and Keloharju (2001), Gompers and Metrick (2000), Kang and Stulz (1997)). Further, we suggest that investors also take into account 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 capitalization. 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, we find that the key difference

³ Our results are also consistent with those of Core, Guay, and Rusticus (2005), who find that investors expect lower returns from companies with weak corporate governance.

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 our basic results and further supportive empirical evidence. Section V concludes.

I. Background to the Study and Data

A. The Swedish Environment

The Swedish stock market offers a unique context in which to analyze issues related to investor behavior and corporate governance, and allows conclusions to be drawn, which go well beyond the Swedish market. 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, 2001), Sweden offers a better opportunity to identify the effects of corporate governance because the ownership structures of Swedish companies vary much more. According to Faccio and Lang (2002), Sweden has not only the highest percentage of widely held firms in continental Europe, but it makes the greatest use of dual class shares, together with pyramiding and cross-holdings. Consequently, for a large number of listed companies, a discrepancy between the principal shareholder's cash flow and control rights exists, 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, a highly capitalized stock market (stock market capitalization to GDP in 2002 was 85% vs. 110% in the United States and 37% in Germany). Thanks to laws that guarantee relatively high investor protection, effective law enforcement, and wide variation in ownership structure, expropriation is on an average quite limited (see Nenova (2003) and Dyck and Zingales (2004)).⁴ Moreover, and—we argue—for this reason, the involvement of domestic and foreign investors in Sweden is high.⁵ The percentage of market capitalization held by foreign investors is comparable to that in the United Kingdom and significantly larger than in the United States

⁴ 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 toward widely held companies. This can explain why she finds that the average control premium is only 1% in Sweden. The estimate of the control premium is 6.4% in Dyck and Zingales (2004), 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% on an average and significantly larger during takeover contests, when it can reach 98%.

⁵ There are neither foreign equity restrictions nor limitations on the stocks that domestic financial institutions can hold.

(International Federation of Stock Exchanges (2000)). Institutional investor and household involvement is among the highest in Europe and is comparable to U.S. levels, with almost 50% of stock market capitalization held by institutional investors and 27% of households investing directly in the stock market (Guiso et al. (2003)).

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

In this context, in which 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 far worse consequences in environments of lower investor protection and less effective law enforcement.

B. Data

Under Swedish law, Värdepapperscentralen AB (VPC), the Central Security Registry, is required to publish two lists each year of all stockholders owning more than 500 shares of Swedish listed companies.⁶ The VPC also publishes records for smaller stockholdings. Using these records, we obtain information on most of the shareholders of the 354 Swedish companies listed as of June 29, 2001.⁷ Overall, the records provide information on the owners of 98% of the market capitalization of Swedish publicly traded companies. For the median company, we have information on 97.9% of the equity, and for all companies we have information on at least 81.6% of the market capitalization. The data set contains holdings held both 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 Depositary Receipts.

Using VPC data, we 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

⁶ These lists are published only with a time lag and are not easily accessible to the public. Hence, they do not allow market participants to replicate the positions of other investors.

⁷ 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 Section IV.

collects information on the ultimate owners of Swedish listed companies. SIS Ägarservice not only identifies indirect holdings through trusts, holding companies, and custodian banks, but also allows the shares held by family members and other closely related owners to be grouped into a single record.⁸ 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 access to an unprecedented level of detail that allows us to determine who controls listed companies (see Claessens, Djankov, and Lang (2000), Claessens et al. (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 an insider's ability 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, Lopez-de-Silanes, and Shleifer (2002)) 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/she will pursue interests other than maximizing shareholder value. There is rich empirical evidence supporting this assumption. For instance, 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 in which 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 those into account to determine the separation between ownership and control, as is now common in the literature (see, for instance, Claessens et al. (2002) and Faccio and Lang (2002)).

⁸ See Sundin and Sundqvist (2001) for a detailed description of the methodology.

We set the ratio of control to cash flow rights (henceforth, C/CF) equal to 1 if all the shareholders have less than 20% of the votes. This cutoff is in line with the earlier studies that assume that 20% of the votes suffices to ensure control. We consider the company to be “widely held” otherwise (see, for instance, Faccio and Lang (2002)) because in this case no one can seriously influence decisions without facing the opposition of other stockholders. Note, however, that the value of C/CF is not sensitive to the choice of cutoff we use.

We identify 71 controlling shareholders. C/CF is larger than 1 for 40% 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 0 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, we identify block transactions for only 23 of our sample of 354 Swedish listed companies in the 1990s. Nonetheless, we verify 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 preemption rights, 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% of the shares represented at the general meeting and thereby hinder takeovers), or shareholder agreements that strictly regulate voting. The dummy is set equal to 0 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 in which C/CF is larger. Most importantly, excluding the top decile of companies by 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 weaker corporate governance is always lower. This suggests that fewer investors share the idiosyncratic risk in companies in which 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 that we do not consider here. To address this criticism, in Panel B of Table I, we sort companies into two

Table I
Corporate Governance and Firm Characteristics

Companies are 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 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 pre-emption rights, voting restrictions, or shareholders' agreements that strictly regulate how to vote, and equal to 0 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; LEVERAGE is the ratio of financial liabilities to the sum of shareholders' funds plus financial liabilities; 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. The 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			
Mean of control premium		0.35	7.63			
Mean of 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	4,116	6,260			
	Median	1,476	1,102	1.66	0.048	
Shareholder base outside top decile						
	Mean	2,768	1,887			
	Median	1,297	908	2.53	0.006	
Panel B: Corporate Governance and Other Firm Characteristics						
Variable	C/CF = 1		C/CF > 1		Wilcoxon Test	p-Value
	Median	Interquantile Range	Median	Interquantile Range		
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			

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 that pay high dividends (see, for instance, Allen, Bernardo, and Welch (2000)), which, if anything, 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

To identify the effect of corporate governance on investor behavior, we need to distinguish between investors who can enjoy private benefits and those who cannot. Small domestic individual investors, domestic financial institutions, and foreign investors are generally believed to enjoy security benefits only. Large individual investors, in contrast, may potentially extract private benefits and thus obtain higher returns from companies with weak corporate governance. We focus on four groups of investors, namely, domestic individual investors, domestic financial institutions, foreign individual investors, and foreign financial institutions.⁹ Additionally, we separate domestic individual investors into small and large domestic individual investors. Large investors include domestic individual investors with more than 10% 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

⁹ The original data set also includes domestic and foreign nonfinancial 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 nonfinancial companies would also provide less interesting insights as they often invest for reasons other than security or private benefits.

Table II
Descriptive Statistics of Investors' Portfolios

We present portfolio characteristics for domestic and foreign individual investors and financial institutions. The large domestic investors are individual investors with more than 10% of the votes in a company, excluding the controlling shareholders. Individual investors with less than 10% 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 as of 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 interquartile 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	
	Mean (SD)	Median (I.Q.R.)	Mean (SD)	Median (I.Q.R.)	Mean (SD)	Median (I.Q.R.)	Mean (SD)	Median (I.Q.R.)	Mean (SD)	Median (I.Q.R.)
No. of investors	265	57	2,087	99.75	35,698	176	93,734	2,607	7,893	212
No. of positions	(39,675)	(126)	(48,429)	(233)	(1,028,638)	(512)	(1,931,883)	(13,752)	(45,943)	(812)
% of market capitalization	645	69	4,555	114	84,153	259	3,328,563	65,707	65,090	9,490
Median C/CF	(85,702)	(199)	(88,379)	(335)	(1,601,595)	(919)	(37,315,571)	(391,773)	(142,319)	(44,716)
Median control premium	2.23	1	2.18	1	2.33	1	35.16	20	8.24	5
Median entrenchment of control	(3.16)	(2)	(4.24)	(1)	(2.99)	(1)	(72)	(30)	(9.12)	(11)

Panel B: Other Characteristics of Investors' Portfolios										
Variable	Small Domestic Individual Investors		Foreign Individual Investors		Foreign Financial Institutions		Domestic Financial Institutions		Large Domestic Individual Investors	
	Mean (SD)	Median (I.Q.R.)	Mean (SD)	Median (I.Q.R.)	Mean (SD)	Median (I.Q.R.)	Mean (SD)	Median (I.Q.R.)	Mean (SD)	Median (I.Q.R.)
Value of position (SEK 000s)	265	57	2,087	99.75	35,698	176	93,734	2,607	7,893	212
Value of portfolio (SEK 000s)	(39,675)	(126)	(48,429)	(233)	(1,028,638)	(512)	(1,931,883)	(13,752)	(45,943)	(812)
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	(3.16)	(2)	(4.24)	(1)	(2.99)	(1)	(72)	(30)	(9.12)	(11)

a higher value of C/CF and a higher control premium. Furthermore, even if the median of the control entrenchment dummy is equal to 0 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%. 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 one. 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 investors' 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 stocks of companies whose 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 already note, investors tend to underdiversify their portfolios and hold the 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 they invest. Moreover, we believe it is important to investigate the determinants of a company's shareholder base because this 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)).¹⁰ Given these considerations, we design a methodology to study how investors select companies in which to invest.¹¹

¹⁰ See Amihud, Mendelson, and Uno (1999), and Kadlec and McConnell (1994) for empirical evidence.

¹¹ In Section 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 not had access to individual data.

Investor i 's choice can be modeled by using a binary variable, $Y_{i,f}$, that equals 1 if investor i holds shares in firm f , and 0 otherwise. We estimate the probability that investor i holds shares in firm f , that is, $\Pr(Y_{i,f} = 1)$ using a probit model.

Modeling the choice of whether to hold shares in firm f with a probit model involves assumptions about the error term structure. An investor's decision to hold shares in firm f and f' are not likely to be independent, but rather to be 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 that pertain 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 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 that hold 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.¹² 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

¹² Note that if institutional investors have a significant impact in changing corporate governance, we would observe at least some of them buying and holding stocks of firms with weak corporate governance at certain points 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.

Table III
Main Variables

We report descriptive statistics for the main variables. C/CF is the ratio of control to cash flow rights of the principal shareholder; 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 preemption rights, voting restrictions, or shareholders agreements that strictly regulate how to vote, and equal to 0 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 with a primary listing and equal to 0 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 0 otherwise; STOCKHOLM is a dummy equal to 1 for investors residing in Stockholm and equal to 0 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	SD	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																		
		Control Premium					Entrenchment of Control											
		C/CF	EQSH1	MKT_CAP	DIST_FLOAT	RHO_P_S	NP	PRIM_LIST	MINDIST	MKT_BK	LEVERAGE	BASPREAD	BETA	DIVY	STOCKHOLMF	STOCKHOLM	AGE	ROA
C/CF	1.00	0.33	0.21	0.21	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	0.40	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	0.28	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	0.33	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	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	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	0.21	-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	0.08	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	0.16	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	-0.05	-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	-0.04	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	0.00	-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	0.14	-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	0.23	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	-0.01	-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	0.09	-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	0.01	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	0.00	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	0.17	-0.02	0.11	0.01	0.16	-0.25	-0.10	-0.05	0.00	0.11	1.00

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 participation of all investors who control (directly or indirectly) more than 5% of the votes. This variable helps take into account the fact that shares may be unavailable to portfolio investors because of the presence of large shareholders, as Dahlquist et al. (2003) show for foreign investors.
3. The market-to-book ratio of firm f , *MKT_BK*. This variable accounts for investors' preference to invest in shares of firms with high growth prospects.
4. The current dividend yield of firm f , *DIVY*. This accounts for the fact 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 et al. (2000)), institutional investors and foreigners should hold more stocks in companies paying high dividends.
5. A dummy variable equal to 1 for firms with a primary listing on the Stockholm Stock Exchange, and equal to 0 otherwise, *PRIM_LIST*. This notes that the stocks of firms on the secondary listing on the Stockholm Stock Exchange, which was originally reserved for relatively small firms, are exempt from wealth taxes (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 their 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 is also 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 is calculated as the volume-weighted average of the daily closing bid-ask spread for the period January to 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, BETA, of the market model estimated using weekly returns and the SIX Trust return index as the return of the market portfolio. This variable measures systematic risk and has been included in previous studies (see, for instance, Kang and Stulz (1997)) because investors who face high participation costs, in particular foreigners, are expected to hold high-beta stocks to be exposed to market risk.
10. Firm age, AGE, measured as the logarithm of the number of months from the IPO. This proxy for firm age is included because 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 return on assets, ROA. The ROA is 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 by 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 an investor's residence and a 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. This correlation is 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, namely, 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 the fact 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 is interacted with the firm's market capitalization and a

dummy equal to 1 for companies with a 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 of whether to invest in firm f , grouping investors by type. Since the data set contains more than 200 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 on 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 of small domestic individual investors holding stocks of that company. A marginal increase in 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 include 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 with a 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 that 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 values (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

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 to cash flow rights of the principal shareholder; 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 preemption rights, voting restrictions, or shareholders' agreements that strictly regulate how to vote, and equal to 0 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 ; PRIMLIST is a dummy equal to 1 for companies with a primary listing and equal to 0 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; STOCKHOLM is a dummy equal to 1 for firms located in Stockholm and equal to 0 otherwise; STOCKHOLM is a dummy equal to 1 for investors who reside in Stockholm and equal to 0 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. Estimates are obtained using a probit model. The t -statistics are calculated using White-corrected standard errors. The standard errors are 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, $x_2, \dots, x_n$) is calculated as follows:

$$\frac{dPY_{i,f}}{dx_1} = \frac{\partial PY_{i,f}}{\partial x_1} + \sum_{k=1}^n \frac{\partial^2 PY_{i,f}}{\partial x_1 \partial x_k} x_k.$$

The marginal effect of a dummy variable refers to the change of the variable from 0 to 1. All marginal effects are calculated taking the mean value of the independent variables and multiplying them by 100. Panel A reports parameter estimates for 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. 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 are 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% level. For LEVERAGE, only 11 estimates are significant at the 5% level.

Panel A: Estimates for a Random Subsample of Investors														
Variable	Without Top Decile of Market Capitalization Companies, C/CF (2)				Control Premium (3)		Entrenchment Control (4)		Individuals with $N = 1$, C/CF (5)		Individuals with $N > 4$, C/CF (6)		Whole Sample, C/CF (7)	
	Whole Sample, C/CF (1)		Marginal Effect		Marginal Effect		Marginal Effect		Marginal Effect		Marginal Effect		Marginal Effect	
	t -Stat.		t -Stat.		t -Stat.		t -Stat.		t -Stat.		t -Stat.		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 $\times$ 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 $\times$ DIST_FLOAT	-10.13	-40.78	-4.67	-13.45					-26.85	-66.77	1.02	1.29	-14.89	-59.80

(continued)

Table IV—Continued

Panel A: Estimates for a Random Subsample of Investors														
Variable	Without Top Decile of Market													
	Whole Sample, C/CF (1)		Capitalization Companies, C/CF (2)		Control Premium (3)		Entrenchment Control (4)		Individuals with N = 1, C/CF (5)		Individuals with N > 4, C/CF (6)		Whole Sample, C/CF (7)	
	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.
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	1.42	193.33
NP	0.83	141.33	1.25	145.33	0.69	41.93	1.25	140.33	0.02	0.05	1.07	64.80	-0.19	-0.96
PRIM.LIST	-0.89	-5.18	-10.70	-42.80	-11.24	-14.61	-2.41	-11.41	-2.11	-23.98	-4.22	-7.82	-1.24	-21.08
Corporate governance × PRIM.LIST	-2.09	-44.58	1.11	16.78							-2.12	-12.13		
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	-183,723		-127,871		-9,302		-188,377		-59,837		-58,890		-208,813	
Panel B: Summary Statistics of the Estimates for Different Random Subsamples														
Variable	Mean		Median		SD		Maximum		Minimum					
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					

sizable: A marginal decrease in C/CF would bring to the average company more than 3,000 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.

The 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 of an investor holding stock in a company.

We also consider different subsamples of small individual investors. Individuals who hold less diversified stock portfolios (regression 5) appear more reluctant than diversified investors to hold stock of companies with weak corporate governance (regression 6). When we consider only individual investors with stock 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 stock of companies with weak corporate governance—make up 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 for explaining portfolio selection. Small domestic individual investors prefer companies that are located nearby or located in Stockholm, most probably because they are more familiar with these companies. Domestic individual investors also hold stocks whose returns are highly correlated with their other stocks. This may suggest that individuals invest in stock 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). The 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

Corporate governance × DIST_FLOAT	−5.91	−10.77	0.16	31.40	0.65	135.00	1.88	2.15				
NNP	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				
MMKT_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	−115,269		−4,812		−116,484		−48,107		−2,652		−48,388	

to hold stock of companies with weak corporate governance when we use C/CF or the entrenchment of control dummy as proxies for corporate governance. However, when we use the control premium, the result is reversed.

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 stock of large firms with a high C/CF. This is very likely due to the fact that foreign financial institutions exhibit a strong preference for large firms, as first pointed out by Kang and Stulz (1997).

In line 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 companies with weak corporate governance 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 structures. 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 be because 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 enjoy security benefits only show a preference for companies with better corporate governance. We now analyze the portfolio choices of investors who are more likely to be connected with company insiders, and thus more likely to enjoy private benefits.

C. Large Domestic Individual Investors

We define large domestic individual investors as investors who have at least 10% of the control rights of a company listed on the Stockholm Stock Exchange, but we exclude 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

Table VI
Probit Regression for Domestic Financial Institutions and Large Domestic Individual Investors

Large domestic individual investors are investors who hold more than 10% 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 to cash flow rights of the principal shareholder; 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 preemption rights, voting restrictions, or shareholders' agreements that strictly regulate how to vote, and equal to 0 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 ; PRIMLIST is a dummy equal to 1 for companies with a primary listing and equal to 0 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 0 otherwise; STOCKHOLM is a dummy equal to 1 for investors who reside in Stockholm and equal to 0 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 are obtained using a probit model. The t -statistics are calculated using White-corrected standard errors. The standard errors are 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, $x_2, \dots, x_n$) is 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 are calculated taking the mean value of the independent variables and multiplying them by 100.

Variable	Domestic Financial Institutions				Large Domestic Individual Investors					
	C/CF (1)		Control		Entrenchment (3)		C/CF (4)		Premium (5)	
	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
MKT.CAP	38.00	93.15	16.12	14.80	33.67	101.54	-1.35	-3.85	0.13	1.27
									0.14	0.18
									-0.18	-5.29

(continued)

with more than 5% of the votes in 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 participate in the extraction of private benefits. We explore this possibility in the next section.

Large individual investors are also exceptional in other respects. In particular, they are the only type of investors who are not attracted to 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 security benefits only and those 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 verify 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 as in Claessens et al. (2002).

Additionally, to not overemphasize extreme values of C/CF, we use a dummy equal to 1 when C/CF is strictly larger than 1, and equal to 0 otherwise, to identify firms with weak and strong corporate governance, respectively. Again, all the results are qualitatively unchanged.

The results are also invariant to the inclusions of 11 sectoral dummies, which help 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 6 months does not affect our results; moreover, 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 on a subsample of companies with market capitalization larger than the median, we still find that investors who are likely to enjoy security benefits only show a preference for companies with better corporate governance. The effect is smaller, however. 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 show that shareholders who are more likely to enjoy security benefits only avoid the stock 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 companies with weak corporate governance. In a small country like Sweden, controlling shareholders and large investors of different companies are likely to have close interaction that enables them to share information. These connections may benefit them in several ways. First, firms with weak corporate governance may require 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 public announcements. The opportunity for insider trading profits seems rather likely given that even in the United States—arguably the country in which the enforcement of insider trading laws is strongest—insiders are able to trade on private information (see, for instance, Seyhun (1992) and Ke, Huddart, and Peroni (2003)).¹³ The opportunity to trade on private information may be relatively more valuable—or more frequent—for companies with weak corporate governance.

In all the 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 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 stock of companies with weak corporate governance is 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 et al. (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 negatively affected by downturns (Cochrane (1999)).¹⁴ Our corporate governance proxy could capture the return skewness. This explanation could be compatible with the behavior of large individual investors and diversified small individual investors, who appear to care less about corporate governance than do undiversified investors. Being better diversified, these investors might be less averse to downside risk and more inclined than other small individual investors to hold stocks of companies with weak corporate governance.¹⁵ However, foreign investors are not exposed to the risk of a Swedish recession,

¹³ From a legal point of view, much 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 trading is not prosecutable.

¹⁴ 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.

¹⁵ Returns on stocks of companies with weak corporate governance could also be less procyclical for large investors who might be able to extract more private benefits during recessions.

and thus should not avoid investing in companies with weak corporate governance more than small individual investors do. 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 the concern for 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.

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 in which the incentives of insiders and outsiders are misaligned.¹⁶ 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 or unlisted 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 of listed and large unlisted companies 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 may thus limit the extent to which they are subject to expropriation in companies with weak corporate governance.

To test whether they behave differently from other small investors, we define a dummy variable equal to 1 for board members and equal to 0 otherwise. We interact this dummy variable with C/CF to see whether these individuals behave differently from other small individual investors. We reestimate 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% of the sample—are board members. We exclude the observations relating to the holdings of an individual in the company in which he/she is a board member. As expected, we find that 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 such that the extraction of private benefits is expected to be larger. Furthermore, C/CF has an even stronger negative impact on the investment probability of individuals who are not board members, once the 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 positions in an investor's portfolio, we run a horse race including a dummy variable for individuals who hold stocks of five or

¹⁶ Using Finnish data, Grinblatt and Keloharju (2000) find that foreign investors are more sophisticated than domestic investors.

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 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 IV with a dummy variable equal to 1 if individual i is a board member and equal to 0 otherwise (Board dummy). In the second regression, we interact C/CF and all interaction terms in which C/CF appears in Table IV with the Board dummy, a dummy variable equal to 1 if individual i holds a position in five or more firms and equal to 0 otherwise (Diversified dummy), and the product of Board dummy and Diversified dummy. Both regressions include all control variables included in Table IV. The regressions refer to 19,980 investors, out of whom 1,270 are board members. Estimates are obtained using a probit model. The t -statistics are calculated using White-corrected standard errors. The standard errors are 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 (nonboard 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, $x_2, \dots, x_n$) is 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 are calculated taking the mean value of the independent variables and multiplying them by 100. All variables are statistically significant at least at the 5% level.

Summary Effect of C/CF			
	All Domestic Individual Investors	Undiversified Domestic Individual Investors Only	Diversified Domestic Individual Investors Only
Nonboard member	-4.83	-2.89	-0.45
Board member	2.14	1.85	1.81

more companies. We then look at the effect of our main proxy for corporate governance, distinguishing between board members and diversified investors. It clearly emerges that board members are more likely to hold stocks of companies with weak corporate governance regardless of the number of positions in their portfolio. Similarly, diversified investors who are not board members are less likely to hold stocks of companies with weak corporate governance, and the effect is larger than 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 many of them, being connected to company insiders, do not avoid stocks of companies with weak corporate governance.¹⁷

¹⁷ 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 nondiversified investors, diversified investors invest 10% more of their stock portfolios in companies with strong corporate governance. Hence, they may be more likely to hold stocks in companies with weak corporate governance, but they invest less of their portfolios in these companies than nondiversified investors.

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 stocks of companies with 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 conjecture without transaction data, support for this explanation does exist. We define companies as having weak corporate governance if C/CF is larger than 1. Companies are classified as having strong corporate governance otherwise. Board members always have higher turnover than other small domestic individual investors, but the difference is particularly pronounced for companies with weak corporate governance: Board members change 22% (19%) of their positions in companies with weak (strong) corporate governance, while the other individual investors change only 16% (17%) of their positions in companies with weak (strong) corporate governance. 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 companies with weak corporate governance. Not only are differences in turnover statistically significant, but they also persist after controlling for the number of positions in the portfolio and the amount of wealth invested in stocks.

Further evidence can be found by looking at the stocks kept for at least 6 months between 1995 and 2001. It appears that board members know which companies with weak corporate governance they need to keep in their portfolios. As the empirical evidence on portfolio turnover suggests, their private information appears to be valuable, especially for companies with weak corporate governance. On average, board members observe a 3% higher return than other small domestic individual investors in stocks of companies with weak corporate governance they hold for a 6-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 companies with strong corporate governance. In fact, board members have a 0.5% lower average return than other small investors in the stock of companies with strong corporate governance that they keep over the same period.¹⁸ Additionally, neither domestic nor foreign financial institutions outperform board members in companies with weak corporate governance. In particular, domestic financial institutions have a 2% lower average return than board members in companies with weak

¹⁸ If we look separately at the returns for board members and other small individual investors for each of the 12 6-month periods in our sample, the broad patterns are largely confirmed. Individual investors underperform board members in selecting companies with weak corporate governance, but not necessarily when investing in companies with strong corporate governance. Only during part of the high-tech boom (3 out of the 12 6-month periods we observe)—when the stock market was booming and companies with weak corporate governance, such as Ericsson, were doing particularly well—did individual investors not underperform board members in companies with weak corporate governance. This is consistent with the empirical evidence suggesting that private information helps insiders—and their friends—get out while the going is good (Seyhun (1992)).

corporate governance over the same period. Hence, financial institutions are also outperformed by board members in companies with weak corporate governance (even though, as we would expect, they do better than the other small individual investors). However, financial institutions outperform board members in companies with strong corporate governance by making on an average a 1.6% higher return. This also suggests that board members do not have access to private information where 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, Litov, and Mei (2003), and Durvev and Nain (2004), who show that insider trading is more likely in companies that do not offer strong investor protection.

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 insiders—and their friends—are able to trade on 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 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 et al. (2002)), which for this reason may offer relatively higher returns to uninformed investors.

B. Evidence from Investors' Portfolio Shares

Our results show that investors who enjoy security benefits only are, *ceteris paribus*, less likely to hold stocks of companies in which 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 by how much they invest in these companies. This is important for several reasons. First, if companies with weak corporate governance attract fewer investors 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 proxies 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 data set includes only larger companies, and this may explain the different results. Nevertheless, it is important to verify whether foreign investors indeed

invest less in companies in which 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 these reasons, in Table VIII, Panel A, we create portfolios of firms in different size quintiles for the different categories of investors that we analyze 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 a C/CF larger than 1 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 1 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 10 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.¹⁹

Domestic financial institutions generally, but not always, underweight companies with a C/CF larger than 1 compared to their weight in the country's market capitalization (free float).

Most importantly, 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 security benefits only seem to be the small and medium-sized companies with weak corporate governance.

Table VIII, Panel B confirms that our interpretation of the descriptive statistics is robust to the inclusion of control variables.²⁰ It shows that all categories of investors who enjoy only security benefits hold a smaller share of stocks of companies with weak corporate governance (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

¹⁹ 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 controlling 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.

²⁰ Here, also, the results are qualitatively similar if the interaction variables are omitted.

Table VIII
Portfolio Shares of Different Classes of Investors

In Panel A, 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 1, 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. In Panel B, 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 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 with a primary listing, and equal to 0 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 i 's dividend yield; STOCKHOLMF is a dummy equal to 1 for firms located in Stockholm and equal to 0 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 10 largest companies and equal to 0 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. The equation is estimated by ordinary least squares. The t -statistics are calculated using White-corrected standard errors. All estimates are multiplied by 100.

Panel A: Portfolio Shares in Companies with Weak Corporate Governance											
	Small Domestic Individual Investors						Large Domestic Individual Investors				
	Board Members		Nonboard Members		Foreign Individual Investors		Foreign Financial Institutions		Domestic Financial Institutions		Free Float Portfolio
	All										
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 10 companies	64.48	69.43	57.53	56.03	57.46	55.55	31.09	59.50	55.03		
Largest 10 companies	76.04	87.44	76.76	76.35	63.41	64.72	55.12	72.65	74.15		

Panel B: Regression Analysis

Variable	Small Domestic Individual Investors		Foreign Individual Investors		Foreign Financial Institutions		Domestic Financial Institutions		Large Domestic Individual Investors	
	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 $\times$ 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 $\times$ 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 $\times$ 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. R^2	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	

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

Among the investors who enjoy security benefits only, 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 show that investors who are not connected with company insiders hold fewer stocks of companies with weak corporate governance. As always with nonexperimental 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 security benefits only could press for improvements in corporate governance. If so, we should 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 companies with weak corporate governance, we should also observe that new investors in 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 as of 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 has a positive effect on 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.²¹ For brevity, we report only the estimates for our main proxy. Since new shareholders cannot have 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 demonstrate 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

²¹ The effect of corporate governance does not appear to depend on the sample period, as the results are qualitatively invariant if we reestimate 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 in 2001.

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 is equal to 0 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 are 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 is 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 0 otherwise. In our sample, 75% of the companies with C/CF > 1 are family firms. In the equation for new positions, domestic small individual investors include only individuals born between the first and the fifth day of the month. In the holdings regression, domestic small investors include only individuals born on the third of the month. Estimates are obtained using a probit model. The t -statistics are 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, $x_2, \dots, x_n$) is 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 are calculated taking the mean value of the independent variables and multiplying them by 100. All variables are statistically significant at least at the 5% level.

	Small Domestic Individual Investors	Foreign Individual Investors	Foreign Financial Institutions	Domestic Financial Institutions
New Positions				
New positions	7,554	7,860	5,461	2,696
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

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 find that, at the same time, no other characteristics of these firms changed, we would have evidence that the effect of corporate governance that we detect is indeed exogenous. Unfortunately, given the small number of firms for which we observe a change in corporate governance, we cannot make a full-fledged econometric analysis. Still, we can attempt 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 2 years after the change in corporate governance to the number of investors 6 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% level of confidence. 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 (neither do we 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 about.

Second, we try to test the mechanism of why corporate governance affects investor behavior. Nonconnected investors should avoid companies with weak corporate governance because extraction of private benefits is larger. Previous studies (see, for instance, Barclay and Holderness (1989), and Claessens et al. (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 other company characteristics. The results reported in Table IX suggest that weaker corporate governance (only estimates for C/CF are reported) reduces the holdings of nonconnected investors only in family-controlled companies, supporting the mechanism behind the causal interpretation of the results.

This empirical evidence is difficult to reconcile with hypotheses different from the causal interpretation, especially considering that (1) we control for at least as many firm characteristics as in the previous literature, (2) we use several proxies for corporate governance, and (3) 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.²² Therefore, we believe that it is highly unlikely that an omitted factor—one that is equally correlated with our different proxies for corporate governance in such a way as to support the mechanisms of the causal interpretation, one that has a similar effect on the decision to buy shares in a company and the portfolio shares of investors, and one that is not correlated with the firm characteristics for which we control—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

²² If unobservable firm characteristics correlated with our measures of corporate governance drive 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 estimates of our variable of interest. In fact, the estimates are almost invariant.

well as foreign and domestic financial institutions that most likely enjoy only security benefits of their equity participation, are reluctant to hold shares in companies in which 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 in which the controlling shareholder has strong incentives to extract private benefits.

Our findings suggest that investors who enjoy security benefits only 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, in particular, those better connected with company insiders, appear to know which companies with weak corporate governance to pick. Information appears more likely to trickle down to the insiders and their friends in companies with weak corporate governance.

While the previous literature, following Kang and Stulz (1997), highlights 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 thus enjoy private benefits, and investors who do not.

Our results point to a clear relationship 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 who are relatively less taxed, as in Allen et al. (2000).

Since in Sweden, investor protection 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 greater consequences in environments of lower investor protection and less effective law enforcement.

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