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# Large Shareholders and Corporate Policies

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**Abstract**

We develop an empirical framework that allows us to analyze the effects of heterogeneity across large shareholders, using a new blockholder-firm panel data set in which we can track all unique blockholders among large public U.S. firms. We find statistically significant and economically important blockholder fixed effects in investment, financial, and executive compensation policies. This evidence suggests that blockholders vary in their beliefs, skills, or preferences. Different large shareholders have distinct investment and governance styles: they differ in their approaches to corporate investment and growth, their appetite for financial leverage, and their attitudes towards CEO pay. We also find blockholder fixed effects in firm performance measures, and differences in style are systematically related to firm performance differences. Our results are consistent with influence for activist, pension fund, corporate, individual, and private equity blockholders, but consistent with systematic selection for mutual funds. Finally, we analyze sources of the heterogeneity, and find that blockholders with larger block size, board membership, or direct management involvement as officers are associated with larger effects on corporate policies and firm performance.

*JEL classification:* G31; G32; G34; G35

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## 1. Introduction

Do large shareholders play an important role for corporate policy choices and firm performance? At least since the seminal paper by Shleifer and Vishny (1986), a body of work in corporate finance has modeled the monitoring role of large shareholders as a potential solution to the agency problem that arises from the separation of ownership and control in public corporations.[1] Given this body of theoretical work, it is surprising that so few important corporate policies − related to, e.g., investment, financial, and executive compensation decisions − have been found empirically to be different in the presence of a large shareholder.[2]

In this paper, we argue that one explanation for the lack of large-sample evidence of blockholder effects is that large shareholders differ from each other along important dimensions, and existing empirical frameworks do not incorporate *blockholder heterogeneity* into an economic analysis of large shareholders. Blockholders can have heterogeneous beliefs, skills, and preferences. For example, they can have different beliefs about how to best influence or select firms, and what set or combination of corporate policies will maximize firm value. With few exceptions, such as the study of differences in large public pension funds' shareholder proposals by Del Guercio and Hawkins (1999), prior work has paid very little attention to the economic effects of blockholder heterogeneity.[3]

Our contribution is to develop an empirical framework and to construct a new blockholder-firm panel data set that can be used to analyze the economic effects of blockholder heterogeneity. The novel feature of our data set is that it allows us to identify and track all unique large shareholders among large

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[1] Other theoretical papers have pointed out that factors such as liquidity or risk aversion may reduce blockholders' incentives to monitor firms (e.g., Admati, Pfleiderer and Zechner (1994), Burkart, Gromb and Panunzi (1997), Kahn and Winton (1998), Maug (1998), and DeMarzo and Urošević (2006)).

[2] Examples of insignificant coefficients for an (outside) blockholder indicator variable include McConnell and Servaes (1990) and Mehran (1995) (Tobin's Q and ROA), Masulis, Wang and Xie (2007) (mergers and acquisitions), and Kaplan and Minton (2006) (CEO turnover). By contrast, Dlugosz, Fahlenbrach, Gompers and Metrick (2006) relate large shareholders to Q, and report significant relations. See Holderness (2003) for a survey of the blockholder literature, and Holderness (2006) for evidence that many U.S. public firms have a blockholder.

[3] Ample anecdotal evidence supports our idea of significant variation across large shareholders. A blockholder can have very different beliefs, skills, and preferences compared to another blockholder, even if the comparison is within one category. For example, the front page of a November 2004 issue of BusinessWeek features financier Eddie Lampert, a large shareholder in some companies through his firm ESL, and asks whether he is "The Next Warren Buffet?" The article inside the magazine then discusses some similarities and some differences between the two blockholders' investment and governance styles.

U.S. public firms − in essence the Standard and Poor's (S&P) 1,500 universe − from 1996 to 2001.[4] This data set allows us to take the analysis of large shareholders to the smallest possible economic unit: the individual blockholder. Our approach involves running panel regressions in which corporate policy and firm performance variables are regressed on year and firm fixed effects as well as time-varying firm-level characteristics to control for observable and unobservable firm heterogeneity, and most importantly, blockholder fixed effects. Our framework is similar to Bertrand and Schoar (2003) who study the impact of individual executives' styles on firm policies.

Consistent with a model in which large shareholders differ from each other along dimensions such as their beliefs, skills, or preferences, we find evidence of significant heterogeneity across different blockholders. Investment, financial, and executive compensation policies are systematically related to the particular large shareholder present in a firm. Adding blockholder fixed effects to a model that already controls for important firm variation improves the model fit, and our statistical tests reject the null hypothesis that all blockholder effects are zero for most policies. The effects are mainly concentrated in blockholder categories such as activists, pension funds, corporations, individuals, private equity firms, and mutual funds. By contrast, we cannot reject the null hypothesis of no blockholder effects for categories such as insurance companies, money managers, and banks.

To gauge the economic importance of the effects, we relate the interquartile range of an estimated blockholder fixed effects distribution to the average value of the corporate policy among the firms in our sample. We conclude that the estimated effects are economically large. For example, the interquartile range of the blockholder fixed effects investments distribution is 0.17, while the average investment ratio in our sample is 0.28. Hence, a blockholder at the 75th percentile is associated with an investment ratio that is about 60% higher than for a blockholder at the 25th percentile, when compared to the mean. We find similarly strong effects for the financial policies we study and for executive compensation.

[4] Throughout the paper, we use the terms "large shareholders" and "blockholders" interchangeably. In either case, we refer to entities that own more than 5% of a firm's outstanding shares, and thus have to be reported as "Principal Shareholders" in corporations' proxy statements. See Regulation and Schedule 14a (240.14a) of the Security Exchange Act of 1934 for further details.

Our investigation also shows that large shareholders have different investment and governance styles. The fixed effects of individual shareholders across different corporate policies are correlated in an economically meaningful way. Interestingly, we find that large shareholders differ in their approaches to corporate investment and growth, their appetites for financial leverage, and their attitudes towards CEO pay. Some large shareholders have an aggressive investment style, and some have an aggressive financial style. We also find that blockholders associated with higher CEO pay have a more aggressive attitude towards company growth.

Given the evidence on blockholder heterogeneity and corporate policies, we ask whether firm performance is systematically related to the particular large shareholder present in a firm. We find significant variation across different blockholders. For example, a blockholder in the 75th (25th) percentile is associated with 4% (3%) higher (lower) return on assets (ROA), all else equal. These are large effects given that the average ROA is around 5% in our sample. We also find that some blockholder investment and governance styles are linked to higher operating performance and Tobin's Q. Firms with large shareholders that have a more aggressive investment or financial style, or who are associated with more CEO pay-for-performance sensitivity, are associated with higher ROA and Q ratios.

The documented blockholder effects on firm policies could be consistent with either an influence explanation, in the sense that large shareholders impact policies, or a selection interpretation, in that blockholders systematically select firms in which they invest major stakes based on a preference for certain policies. Our evidence is more consistent with an influence explanation for activist, pension fund, corporate, individual, and private equity blockholders, but more consistent with a systematic selection explanation for large mutual fund shareholders. In a final step, we explore some potential sources of the blockholder effects by relating the magnitude of the fixed effects to three observable blockholder characteristics. We find that blockholders with more potential power, measured by block size, board representation and direct management involvement as an officer of the corporation, are associated with larger effects on corporate policies and firm performance.

The paper is organized as follows. Section 2 develops an empirical framework for analyzing blockholder heterogeneity. Section 3 describes our new blockholder-firm panel data set. Section 4 reports evidence on the statistical significance of blockholder fixed effects in corporate policies. Section 5 analyzes the economic significance of the estimated effects. Section 6 explores the origin and sources of the estimated blockholder effects. Section 7 concludes.

## 2. An empirical framework for analyzing blockholder heterogeneity

Consider a model of the world in which large shareholders differ from each other along dimensions such as their beliefs, skills, or preferences. For example, different blockholders may have heterogeneous beliefs about how to monitor firms most effectively or what constitutes "good policies" that maximize firm value. In this section, we develop an empirical framework that can be used to analyze the economic effects of such heterogeneity across large shareholders.[5]

### *2.1. Identification of blockholder fixed effects*

Before we describe our empirical framework in more detail, we can explain our identification strategy for estimating blockholder fixed effects in firm policies using a simple and intuitive example. Consider for example a firm's choice of capital structure policy. In the first step, we compute the residual for each firm-year based on a benchmark model specification that controls for year and firm fixed effects as well as time-varying firm-level characteristics which previous literature has suggested as factors affecting a firm's capital structure decision. Next, we quantify the extent to which the variation in these residuals can be explained by blockholder fixed effects.[6]

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[5] Several previous studies (e.g., Barclay and Holderness (1991)) have shown that the trading of large blocks is associated with abnormal positive stock returns. These papers analyze the average stock market reaction to large block trades. However, the stock market reaction might vary across block trades depending on who the blockholder is. To the extent that the stock market incorporates information about the changes to corporate policies that a blockholder will bring about, the results of these papers suggest that blockholder heterogeneity is important.

[6] The panel regression model we use is similar to that of Bertrand and Schoar (2003) who study the impact on firm behavior of individual executives' styles. They identify manager fixed effects from variations in firms' policies created by executives who move from one firm to another, and presumably imprint similar styles on the different

Formally, we estimate the following panel regression model for each policy variable of interest:

$$y_{it} = \lambda_t + \delta_i + \boldsymbol{\beta}\mathbf{X}_{it} + \boldsymbol{\Gamma}\mathbf{Z}_{it} + \varepsilon_{it}, \qquad (1)$$

where *i* indexes firms and *t* indexes years. $y_{it}$ is one of the firm policy variables of interest, $\lambda_t$ are year fixed effects, $\delta_i$ are firm fixed effects, $\mathbf{X}_{it}$ is a vector of time-varying firm-level controls, $\mathbf{Z}_{it}$ is a $J \times 1$ vector of blockholder indicators, and $\varepsilon_{it}$ is an error term. The year dummy variables control for aggregate fluctuations in corporate policies over time. This model specification also controls for fixed differences between firms (and therefore industry effects). $\boldsymbol{\Gamma}$ is the focus of our study and is a $1 \times J$ vector of blockholder fixed effects, where *J* is the total number of different large shareholders in our data set. Note that in equation (1), the identification of the fixed effect for blockholder *j* comes from both the cross-section of *j*'s stakes in different firms in a given year and from the time-series of its holdings.

As can be seen in equation (1), it is not feasible for us to estimate the fixed effect for a large shareholder that is present in only one firm during the entire time period in which the firm is in our dataset. The effect of such a blockholder is perfectly collinear with the firm fixed effect, thus we cannot statistically separate out their respective effects. It is feasible for us to identify the blockholder fixed effect for a large shareholder that is present in a firm during some subperiod of the entire time period which the firm is in our dataset. However, the fixed effects for such large shareholders may simply proxy for some firm-period-specific effects. It is difficult for us to rule out that we are incorrectly attributing firm-period-specific effects to a blockholder instead of some unobservable time-varying firm-level characteristic. In estimating equation (1), we therefore err on the side of caution by imposing the restriction that a blockholder has to be present in multiple firms.[7]

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firms that they manage. The identification in this paper comes from blockholders who move from one firm to another, but also from the cross-section of holdings because, unlike managers, large shareholders are often present in multiple firms at a given point in time.

[7] We consider it unlikely that this restriction biases our results in the direction of stronger evidence. Blockholders with stakes in only one firm are likely to be management, company founders and their families, and Employee Stock Ownership Plans, i.e., blockholders that we expect to have a strong impact on firms' policies. As a robustness check, we have estimated specification (1) including blockholder fixed effects for large shareholders that are present

### *2.2. Influence versus selection*

Significant blockholder fixed effects in corporate policies can be consistent with either of two interpretations. On the one hand, they can be due to influence on firm decisions by different large shareholders, i.e. causality goes from an investment by a large shareholder to changes in policies. This interpretation suggests that a large shareholder influences policies in the same way across all its investments because of a belief that a particular set of policies maximizes firm value. On the other hand, the blockholder fixed effects could also be evidence that different blockholders systematically select firms based on different corporate policies, i.e., causality goes from changes in firm policies to an investment by a large shareholder.

#### *2.2.1. How can blockholders influence firm policies?*

In the U.S., large shareholders can influence firms directly through electing directors, voting on changes to the corporate structure or charter, or through proxy contests and shareholder proposals.[8] They can also impact policies indirectly through informal negotiations and governance discussions with incumbent management. We are not aware of any detailed clinical study of large shareholders in the U.S., but a recent paper by Becht et al. (2006) carefully examines the investment and governance style of the Hermes Focus Fund, a shareholder engagement fund in the U.K. Becht, et al. show that a lot of influence appears to be informal. Brav et al. (2006) perform a detailed study of one type of shareholder, hedge funds, and provide several specific examples, using SC 13D filings, of how such institutions actively influence corporate policies.[9]

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in a firm during some subperiod of the entire time period in which the firm is in our dataset. The results tend to be stronger and statistically more significant than those reported in the paper.

[8] Because shareholder proposals cannot relate to the day-to-day operation of firms, some legal scholars have argued that there are significant restrictions on the ability of large shareholders to directly influence a firm (e.g., Black (1990)).

[9] The Securities Exchange Act of 1934, rules 13D-1 to 13D-6 (§240.13d), contain the legal definitions and filing requirements for large shareholders. Individuals and groups that have acquired a beneficial stake of 5% or more are required to file form SC 13D. However, a select category of "persons" such as banks, brokers and dealers, and

Item 4 of form SC 13D requires the filer to disclose intentions with respect to the company, and thus offers researchers some insights into the way large shareholders could potentially influence companies. As can be seen in Appendix I, item 4 of form SC 13D is very specific and lists ten different actions of a large shareholder that would require disclosure, many of which are operational in nature and thus directly related to the corporate policies that we study in this paper (e.g., M&A activity, capital structure and dividend policy). While a firm is not required to follow the requests of a large shareholder, managers who do not comply with the suggestions of a blockholder may lose their jobs. The following example from our sample illustrates the significant power that a large shareholder can exert if a firm does not follow its suggestions.

*2.2.2. Example of influence activities: ESL's investment in Autozone, Inc.*

Eddie Lampert's ESL Partners acquired a stake in Autozone, Inc. on June 4, 1999. In form SC 13D, item 4 of the initial filing, ESL stated that the block of 11.7% was acquired in the ordinary course of business solely for investment purposes and not for the purposes of participating in, or influencing, the management of Autozone. However, on July 12, 1999, ESL increased their stake to 13% and added to the disclosure in item 4 that "*from time to time, ESL […] may discuss Autozone and its performance with representatives of Autozone […].*"

On August 13, 1999, ESL decided to increase its stake to 14.5% and filed under SC 13D, item 4 that "*The Filing Persons believe that the recent operating performance of Autozone does not properly reflect the strength of its franchise […]. The Filing Persons have also […] indicated their willingness, if asked, to make representatives of the Filing Persons available to serve as members of the Board of Directors.*"

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insurance companies can file, under certain restrictions, an abbreviated form, called SC 13G. Several persons in our sample who are commonly associated with an active investment role do sometimes file form SC 13G and not the form SC 13D. For example, Warren Buffett filed form SC 13G after his acquisition of a 5.5% stake in American Express. The reason was that Mr. Buffett and Berkshire Hathaway held the block jointly with some of the insurance subsidiaries of Berkshire Hathaway (National Indemnity Company, National Fire & Marine Insurance Company).

In August of 1999, ESL and its partners increased the pressure further and notified Autozone and federal antitrust authorities that they each had the intention to acquire more than 15% of the shares. These notifications were considered a pre-merger notification as required under the Hart-Scott-Rodino Antitrust Improvements Act of 1976. This was a direct threat to the management of Autozone, and, as is evident from the amendment to the SC 13D filed on September 17, 1999, Autozone's management gave in to the demands of ESL: "*[A]t a Board of Directors meeting held on September 17, 1999, the Board of Directors voted to expand the Board from nine members to ten and nominated Edward S. Lampert for election to the Board of Directors. Through Mr. Lampert's representation on the Board, the Filing Persons anticipate that they will continue to have discussions and other communications with Autozone's management […].*"

### *2.2.3. Systematic selection of large ownership stakes*

Under the selection hypothesis, large shareholders still have heterogeneous beliefs about what constitutes "good policies" and they systematically base their investment decisions on these beliefs. However, rather than actively influencing corporate policies by informal negotiations and governance discussions with incumbent management, they select firms such that if policies do change, they sell their large stake and invest in another firm that has already adopted the policies that the blockholder prefers. For example, a conservative mutual fund may, as an internal investment rule, only invest in firms that pay out at least 50% of free cash flow as dividends. If the payout ratio of one of their investments dropped below that threshold, they would sell their stake and seek out a different firm from the investment opportunity set that had a payout ratio more in line with their belief about value maximization.

### *2.2.4. Empirical implications*

The influence and selection hypotheses come with different predictions regarding the precise timing of changes in firm policies. Under the influence interpretation, firm policy changes take place after the investment by a blockholder. By contrast, under the selection hypothesis, firm policy changes

start to take place, and then blockholders invest in response to these policy changes. Our identification strategy is therefore to use these predictions regarding timing of policy changes to provide evidence on whether blockholder fixed effects in firm policies are more consistent with active influence or selection.

Finally, it is important to note that there is no reason for us a priori to believe that one of these two explanations fits all large shareholders: Some large shareholders may be able to influence firms, while others systematically select firms based on the observable corporate policies which they believe maximize firm value. In fact, the argument in this paper that heterogeneity across large shareholders is important suggests that variation in, e.g., skills or sophistication, can explain why some blockholders are more likely to influence versus select the firms in which they hold large ownership stakes.

### *2.3. A comparison of empirical frameworks*

Because we argue that accounting for blockholder heterogeneity might be important for an analysis of the economic effects of large shareholders, it is useful to compare the empirical framework we developed in the section 2.1 to standard frameworks which do not account for variation in behavior across blockholders. First, consider the following model:

$$y_{it} = \lambda_t + \delta_i + \boldsymbol{\beta}\mathbf{X}_{it} + \gamma d_{it} + \varepsilon_{it}, \qquad (2)$$

where $d_{it}$ is a dummy variable indicating that there is at least one large shareholder present in firm *i* in year *t*. Compared to equation (1), this model specification imposes the restriction that the effects of all *J* blockholders are identical and equal to $\gamma$. That is, equation (2) assumes that all large shareholders have a homogeneous investment and governance style. Thus, equation (2) only allows us to estimate an average blockholder effect.

Second, we can also consider the following model:

$$y_{it} = \lambda_t + \delta_i + \boldsymbol{\beta}\mathbf{X}_{it} + \boldsymbol{\gamma}\mathbf{D}_{it} + \varepsilon_{it}, \qquad (3)$$

where $\mathbf{D}_{it}$ is a $K \times 1$ vector of blockholder category indicator variables. These different categories could be activists, corporations, mutual funds, and so on. $\boldsymbol{\gamma}$ is a $1 \times K$ vector of blockholder category fixed effects. Compared to equation (2), this model specification relaxes the restriction that the effect of any blockholder *j* is equal to $\gamma$.[10] However, it imposes the restriction that the effect related to any blockholder $j \in J_k$ is identical to $\gamma_k$, where $J_k$ is the set of blockholders of type *k*. Thus, in equation (3), all large shareholders in a particular category are restricted to have the same effect.

In our empirical analysis in Section 4, we will compare the effects of using model specification (2) or (3) to using specification (1), which takes an analysis of large shareholders to the smallest possible economic unit and accounts for heterogeneity across blockholders.

## 3. Data

### *3.1. Construction of new blockholder-firm panel data set*

To analyze the effects of blockholder heterogeneity, we require a panel data set that allows us to identify and track each unique blockholder, both over time in a given firm and also across firms at any given point in time. Because such a data set cannot be obtained from standard databases, we construct a new blockholder-firm panel data set. We start with the 1996-2001 unbalanced panel data set of 1,919 different large public corporations in the U.S. and all their blockholders, originally compiled by Dlugosz et al. (2006).[11] This set of firms is essentially the S&P 1,500 universe excluding dual-class share firms. Their data on blockholders are hand-collected from firms' annual proxy statements.[12] As is common in the study of investment and financial policies, we exclude financial firms and utilities from our analysis.

The next step involves identifying and tracking all unique blockholders that are present in at least two different firms. The Dlugosz, et al. database contains information on the names of all 5%

[10] Qiu (2006) presents evidence that public pension funds and mutual funds are associated with different behavior.
[11] The Dlugosz, et al. (2006) database is free from biases due to coding and classification errors compared to standard databases such as Compact Disclosure.
[12] The use of annual data, as opposed to more frequent observations, may underestimate the number of large shareholders because some blockholders hold just below 5% to avoid reporting responsibilities, and some may enter and exit our panel within a year, thus not showing up in annual proxy statements.

blockholders copied from firms' original proxy statements, available through the Edgar online database. However, in many cases the naming of blockholders is not consistent across years or firms. For example, mutual fund manager Fidelity shows up under different names, including "FIDELITY MANAGEMENT & RESEARCH CORP," "FMR CORP," "FIDELITY INVESTMENTS," and "SUBSIDIARIES OF FMR CORP." Some involve misspellings in the original SEC filings, like "FIEDELITY MANAGEMENT & RESEARCH CORP" or "FIDELTY MANAGEMENT & RESEARCH."

The most complicated cases arise because various investment vehicles are sometimes used by the same blockholder. The names of those entities may not necessarily resemble the name of the blockholder. For example, "BASS MANAGEMENT TRUST," "BASS; ROBERT ET AL." and "SID R BASS & LEE M BASS GROUP," are easily recognized as investment vehicles associated with the so-called "Bass brothers" (Lee, Ed, Sid, and Robert Bass), the Texas financiers. However, several other entities also belong to the same blockholder, e.g., "KEYSTONE INC," and limited partnerships, such as "FW STRATEGIC PARTNERS L P," and "TRINITY I FUND L P." We use several different information sources (e.g., information in firms' SEC filings and newspaper databases) to identify the ultimate owner of such entries.

Although we have been careful in assigning unique identifiers to all the blockholders in our dataset, for instance by correcting misspellings and identifying various investment vehicles used by the same investor, our blockholder-firm panel data set is still subject to at least three limitations. First, the role of blockholders may well be different in our sample of larger, established firms than in smaller, entrepreneurial firms. For example, one could argue that the scope for influence is smaller among our large firms. Second, we aggregate holdings by different subsidiaries into one block. This is appropriate when subsidiaries share a common investment or governance function. However, if there is significant heterogeneity across different subsidiaries, then this approach will only be able to capture the component of the effect that is shared across all subsidiaries. Third, we determine ownership based on who is the largest ultimate owner of a particular entity even if there are other owners as well. This approach is

similar to the one used to identify ultimate owners in stock pyramids and other complex ownership structures (see, e.g., La Porta, Lopez-de-Silanes and Shleifer (1999)).

### *3.2. Summary statistics of large shareholders*

Table 1 reports summary statistics for the 361 unique large shareholders in our data set. We classify blockholders into the following categories: (i) activists and pension funds, (ii) corporations, (iii) individuals, (iv) mutual funds, (v) insurance companies and money managers, (vi) hedge funds,[13] (vii) leverage buyout (LBO) firms, (viii) venture capital (VC) firms, and (ix) banks, trusts, and universities. In some of these categories, we include multiple subcategories of blockholders, e.g., activists as well as pension funds, to avoid categories with very few observations. We see that the average large shareholder is present in 16 different firms, and the average blockholder fixed effect is estimated from 32 (= 11,625 / 361) blockholder-years.

There are 23 large activist and pension fund shareholders. Activists are shareholders who announce their intention of influencing firm policies at the time of the block purchase or who are known to have pursued activist policies in the past. We have checked that our activist classifications correspond to those of previous work specifically studying shareholder activists (Holderness and Sheehan (1985), Smith (1996), and Bethel, Liebeskind and Opler (1998)). This group includes several well-known raiders, like Carl Icahn, Warren Buffet, and the Bass brothers. Pension funds include U.S. and international public pension funds (e.g., the Ohio Public Employees Retirement System and the Ontario Teachers' Pension Plan), and some large private pension funds.

Table 1 also shows that there are 29 blockholding corporations in our data set. For example, Intel Corporation or Henkel KgAA, a German manufacturer of personal care and household cleaning products, hold multiple blocks in our dataset. Previous research suggests that these corporate blockholdings may be related to strategic product market relationships (Allen and Phillips (2000) and Fee, Hadlock and Thomas

[13] Note that our sample period predates the more recent time period in which hedge funds have become more active investors (e.g., Klein and Zur (2006) and Brav et al. (2006)).

(2006)). In addition, some individuals are also large shareholders in our data set. Most of them are non-management blockholders in at least one of their holdings. An example is Wayne Huizenga.

Finally, we see that various financial institutions are present as blockholders in a large number of different firms. One hundred and eleven mutual funds such as Fidelity are present as blockholders, and 119 insurance companies and money managers are large shareholders. A relatively small number of hedge funds, LBO firms,[14] and VC firms (e.g., Kleiner Perkins Caufield & Byers), are also present as large shareholders. In addition, there are 26 bank, trust, and university blockholders.

### *3.3. Data on corporate policies and firm performance*

We analyze a broad range of important corporate policy variables. The specific investment variables we study are investment policy, investment to Q and cashflow sensitivities, mergers and acquisitions (M&A) and diversification policies, and research and development (R&D) policy. The financial variables we analyze are leverage, dividend policy, and cash holdings. Our source for data on annual accounting variables is Compustat. We winsorize the variables at the 1% level in each tail. From SDC's M&A database (by Thomson Financial), we obtain data on the number of acquisitions and diversifying acquisitions.[15] The specific executive compensation variables we analyze are base salary, total annual compensation, including stock and stock option grants, and total dollar equity incentives, which is the pay-for-performance measure used by, e.g., Core and Guay (1999). Our source for data on CEO pay is S&P's Execucomp database. All variable definitions are reported in Appendix II.

Table 2 presents means, medians, and standard deviations for the corporate variables that we analyze. The first set of columns presents summary statistics for our new blockholder-firm data set. As a comparison, the second set of columns in the table reports the same statistics but for the full Compustat data set during the time period we study. The firms in our data set tend to be larger and more profitable,

[14] To increase their influence, some LBO firms will take firms private. This introduces a sample selection bias since we only analyze public corporations. However, such a bias is likely to work against us finding any effects on corporate policies for this category of large shareholders.

[15] Given the short time period available for our analysis, and given the infrequency of major corporate divestitures (e.g., spinoffs, equity carve-outs, and selloffs), we do not study such corporate events.

have higher cash flows, dividend/earnings ratios, and leverage than the average Compustat firm. Our sample of firms also invests less in capital expenditures and R&D, as we would expect from S&P 1,500 firms.

## 4. Statistical evidence on blockholder heterogeneity and corporate policies

In this section, we demonstrate the importance of accounting for heterogeneity across blockholder by documenting statistically significant blockholder fixed effects in corporate policies.

### *4.1. Large shareholders and corporate policies: Average blockholder effects*

Before applying our new empirical framework for analyzing blockholder heterogeneity developed in Section 2.1, we report in Table 3 evidence of average blockholder effects by estimating specifications (2) and (3) above, which do not account for blockholder heterogeneity. In the table, we report results for three corporate policies − investment, leverage, and total CEO pay − but we note that the conclusion is the same for the other policies. The first set of columns reports results from regressing a policy variable on year and firm fixed effects, time-varying firm-level controls and a blockholder indicator variable (equation (2)).[16] We see that the blockholder dummy is not significantly related to any of the policies. The second set of columns in the table reports evidence from including a set of blockholder category indicator variables (equation (3)). We find that only two blockholder categories are significant at the 10% level and for only one policy variable (leverage).

There are two possible interpretations of the results in Table 3. First, it is possible that there is no systematic relation between the presence of a blockholder in large U.S. firms and the policies of these firms. Second, it is also possible that heterogeneity across large shareholders is important, but if the

[16] One concern is that blockholdings change only slowly from year to year, and in a specification with firm fixed effects, it might be problematic to identify effects of blockholders or blockholder categories, even if they are present in the data (see the arguments by Zhou (2001) regarding the evidence by Himmelberg, Hubbard and Palia (1999)). However, we have checked that the conclusion is unaffected if we use industry fixed effects instead of firm fixed effects.

effects are averaged across blockholders or within blockholder categories, as they are when we estimate specifications (2) and (3), opposing effects cancel each other out.

### *4.2. Blockholder fixed effects in corporate policies*

Table 4 reports regression results using the framework outlined in equation (1). It shows two panel regressions for each corporate policy variable. The first row reports the adjusted $R^2$ and the number of firm-years for a benchmark model specification which includes year and firm fixed effects and time-varying firm-level characteristics only. The second row adds blockholder fixed effects, and reports the number of blockholders, the median effect, and an F-test for the joint significance of the blockholder fixed effects.[17] Adding blockholder fixed effects improves the model fit of almost all of the regressions despite having already controlled for important observable and unobservable heterogeneity across firms through time-varying controls and firm fixed effects. Also, for most of the policies, the F-statistics are statistically significant, rejecting the null hypothesis that all blockholder fixed effects are zero.

The first variable we analyze in Panel A, investment, is defined as capital expenditures divided by lagged net property, plant, and equipment. The benchmark regression includes as explanatory variables year and firm fixed effects, lagged Q, lagged cash flow, and the lagged logarithm of total assets. We find that the model fit increases by two percentage points when we add blockholder fixed effects. Also, the F-statistic is large and significant (p-value = 0.000), rejecting the hypothesis that all blockholder fixed effects are zero for firms' capital expenditures decisions.

Next, we evaluate investment to Q and cash flow sensitivities. The benchmark regression for investment to Q (cash flow) sensitivity involves regressing investment on year and firm fixed effects, lagged cash flow, lagged Q, lagged logarithm of total assets, and firm fixed effects interacted with lagged Q (cash flow). We then add blockholder fixed effects as well as those effects interacted with lagged Q (cash flow). The estimated coefficients of interest are those on the interaction terms. We find once again

[17] The number of firm-years and blockholder fixed effects differ across policies due to missing observations.

substantial increases in adjusted $R^2$ – as much as seven percentage points. Also, the F-statistics show that there are significant blockholder fixed effects in both measures of firms' investment sensitivity.

Other important dimensions of a firm's investment decision are its acquisition, diversification, and R&D policy. Each regression contains year and firm fixed effects, lagged cash flow, lagged logarithm of total assets, and return on assets. We cannot reject the hypothesis of no blockholder fixed effects in firms' M&A activity or diversification policy. However, for R&D policy, we find that the model fit improves by about two percentage points and the F-statistic is significant when we add blockholder fixed effects.

In Panel B, we turn to financial policies. The benchmark regression includes year and firm fixed effects, lagged cash flow, lagged logarithm of total assets, and return on assets. Although the model fit of the benchmark regressions for cash holdings, dividend policy, and leverage are already high (in the range of 66-85%), we find that it increases by up to two percentage points as we allow financial policies to be blockholder specific. Also, the F-statistics are large and significant (p-values = 0.000), rejecting the hypothesis that all blockholder fixed effects are zero for firms' decisions regarding financial policies.[18]

Finally, in Panel C we turn to executive compensation. Each regression contains year and firm fixed effects, lagged logarithm of total assets, and lagged Q. We analyze three different variables: CEO salary, total incentive CEO compensation, and total CEO compensation which includes stock and options grants. We find substantial increases in adjusted $R^2$ of as much as nine percentage points. Also, from the F-statistics, we reject the hypothesis of no blockholder fixed effects in any of the policy variables related to CEO pay.

In summary, the evidence in Table 4 establishes statistically significant blockholder fixed effects in a broad range of important corporate policies. Note in Table 4 that the median effect associated with a large shareholder is not significantly different from zero for any of the policies, which is consistent with the insignificant average blockholder effects in Table 3. However, our evidence shows that an average or

[18] The significant blockholder fixed effects in dividend policy might possibly be explained by different large shareholders having differential tax status (see, e.g., Pérez-González (2003)), although this is an unlikely explanation for blockholder fixed effects in many of the other corporate policy variables.

median blockholder effect of zero does not mean that large shareholders are not important. It is the heterogeneity across blockholders that leads to a dispersion of the fixed effects that is statistically, and, as we will show in section 5, economically important. Finally, we note that we have to be careful not to give any causal interpretations of the blockholder fixed effects in the table.[19]

### *4.3. Blockholder fixed effects for different categories of large shareholders*

Next, we examine whether these blockholder fixed effects in corporate policies are present for all blockholder categories or whether they are concentrated in some of them. Table 5 reports separate F-tests for the joint significance of the blockholder fixed effects for each group of large shareholders. In the case of activists and pension funds, we find significant effects for almost all of the policies. We document significant effects for R&D, financial policies such as dividends, and CEO compensation for corporate blockholders. We also find significant blockholder fixed effects in investment and financial policies for mutual funds. For LBO firms, we find significant effects related to capital expenditures, leverage ratios, and, cash holdings; by contrast, the significant effects are related to investment, R&D policy, and cash holdings for VC firms. Interestingly, for many corporate policies, the F-tests cannot reject the null hypothesis of zero blockholder fixed effects for insurance companies and money managers, despite the wealth of observations in this category. Moreover, none of the F-tests for banks, trusts, and universities are significantly different from zero.[20]

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[19] We have performed a series of regressions to check that the results presented above are robust. First, while we report results using the variable definitions and benchmark model specifications in Bertrand and Schoar (2003), we have also checked that these particular choices are robust to the use of some alternatives. Our results are robust to scaling capital expenditures by lagged total book value of assets, scaling R&D expenditures with lagged sales, using market-based leverage ratios, or scaling cash holdings by lagged book value of assets net of cash holdings. Second, we have added controls for asset uniqueness and tax advantage of debt in the leverage regressions, but the results were similar. Third, our results are robust to adding an indicator variable to the benchmark regression that is one if there is a management blockholder present in the firm. Finally, we check whether large shareholders with a very large number of investments, such as Fidelity, drive our results by excluding all blockholders in the upper quartile of the distribution of the number of ownership stakes; again the results were unaffected.

[20] One explanation for this evidence is suggested by Brickley, Lease and Smith (1988), who study how business ties affect proxy voting by analyzing institutional investors' aggregate votes on management-initiated proposals for anti-takeover provisions. They find that banks and trusts, which frequently derive benefits from lines of business under management control, are less likely to be active in opposing management. See also Davis and Kim (2006).

The conclusion from this investigation is that significant blockholder effects are present for activists, pension funds, individuals, corporations, mutual funds, and private equity firms. These results suggest that there is significant variation in beliefs, skills, and preferences also among blockholders within the same category of large shareholders. At the same time, the lack of significant blockholder effects, after controlling for firm-level heterogeneity, for many large shareholders of other types (e.g., money managers and banks) should caution us from attributing a significant monitoring role to these particular categories of blockholders.

### *4.4. Discussion of limitations of empirical framework*

While our framework is a first attempt in the corporate finance literature to incorporate blockholder heterogeneity in a large-sample study of blockholders and corporate policies, we recognize that it has some limitations. First, equation (1) restricts the effect of blockholder *j* to be time-invariant, identical across the blockholder's holdings, and equal to $\gamma_j$. However, some factors such as blockholders' preferences can be expected to be relatively fixed. In a clinical study of CalPERS, Jacoby (2007) finds that the fund had a pervasive governance style for years, despite top-management turnover, and even applied it to overseas holdings in markets with different governance systems and cultures. Some large shareholders, e.g., mutual funds, have governance departments to ensure consistent proxy voting. At Fidelity votes are cast by the Investment & Advisor Compliance Department in accordance with the "Fidelity Funds' Proxy Voting Guidelines." Institutional Shareholder Services (ISS) sells the "Governance Analytics" software, which helps funds vote consistently. While we study corporate policies, and not proxy voting, we believe that it is conceivable that coordination also takes place prior to the communication about policies between a large shareholder and the management of a firm.

The short time period of our panel limits our ability to compare blockholder fixed effects over different sub-periods. However, as a crude test, we have estimated blockholder fixed effects separately for 1996-1998 and 1999-2001. We find that the blockholder effects for the early and late periods are

positively correlated for all corporate policies; 11 of 13 correlations are statistically significant at least at the 10% level (unreported). This evidence suggests that there is consistency in the time-series, at least over a short period, in a blockholder's approach to corporate policies. A related issue is that all firm-year observations of a blockholder are equally-weighted. For example, we are assigning equal weight to a block of 25% and a block of 5%. In Section 6, we provide some insight on this issue by examining whether the average block size is systematically related to the magnitude of the estimated blockholder effects.

When two or more large shareholders are present in a firm at the same time, equation (1) estimates their separate effects without accounting for interaction effects between the blockholders. A related issue is that the presence of multiple large shareholders might lead to an underestimation of blockholder effects. We gauge the severity of this problem by calculating the "average block overlap" for each blockholder in the following way. For each firm-year in which a blockholder is present, we create indicator variables for all other shareholders that hold a block. We sum these variables over all firm-years in which the blockholder is present, take an average, and divide by the number of firm-years. The overall average blockholder overlap is less than 20%. We conclude from this exercise that while the problem of blockholder overlap may bias the estimated fixed effects downward in our sample, the effect does not appear to be severe.

Finally, the firm fixed effects specification that we choose to account for unobservable firm characteristics represents a parametric approach to handling correlation in the errors. Petersen (2007) demonstrates that OLS standard errors are unbiased after the inclusion of firm fixed effects if these effects are not time-varying. When firm fixed effects decay over time, a cluster-correction is desirable. To address this issue, we have performed simulations following Petersen's methodology. The (unreported) results indicate that cluster-correction in firm-fixed effect regressions is ineffective with a short time-series such as ours. We have therefore evaluated an alternative approach that requires less parameterization by estimating OLS regressions without firm fixed effects, but with clustered standard errors. Simulations show this method produces unbiased standard errors even for a short panel such as

ours. In unreported regressions, we have re-estimated the results in Table 4 and find that the significance of the blockholder fixed effects increases. Since blockholder fixed effects under this alternative specification may be absorbing unobservable firm characteristics, we choose to report the firm fixed effects specification results.

## 5. Economic significance of blockholder heterogeneity

Most of the analysis so far has involved documenting statistically significant blockholder heterogeneity in corporate policies. In this section, we turn to an analysis of the magnitude and economic significance of the estimated blockholder effects.

### *5.1. Magnitude of blockholder fixed effects*

In Table 6, we quantify the economic significance of the estimated blockholder effects by examining how large the estimated differences between large shareholders actually are. That is, how big are the differences between different blockholders in economic terms? One approach to answer this question is to compare the policy effect associated with a blockholder in the lower tail of a blockholder fixed effects distribution to one in the upper tail of the same distribution. The first set of columns in Panel A of the table reports the 25th and 75th percentiles for each of the blockholder fixed effects distributions.[21] Overall, we find that the magnitude of the blockholder effects is economically significant.

For investment, we find that the difference between large shareholders in the bottom and top quartiles of the investment distribution is 0.17. This can be usefully compared to an average ratio of capital expenditures to total assets of 0.28 among the firms in our sample. We also see in the table that a blockholder at the 25th percentile is associated with 0.29 fewer acquisitions compared to one at the 75th percentile. Given that we observe on average about 0.59 acquisitions per year in our sample, this difference appears to be economically large, although the F-test for acquisition policy was not statistically

[21] In an attempt to account for measurement error in the blockholder fixed effects, we compute these statistics by weighting each blockholder fixed effect by the inverse of its standard error.

significant in Table 4. We also find that the difference between large shareholders in the bottom and top quartiles of the R&D distribution is 0.02, compared to an average R&D ratio of 0.03 in the overall sample.

Turning to financial policies, firms in our sample have an average leverage ratio of about 0.37. A blockholder in the lower tail is associated with 0.06 lower leverage, all else equal. That is, a blockholder at the 25th percentile is associated with about 16% less debt in the capital structure. We also see in the table that a blockholder at the 25th percentile is associated with a 0.09 lower dividends to earnings ratio compared to one at the 75th percentile. Given that the average dividend/earnings ratio is about 0.19 in our sample, this difference seems economically significant. We also find that the difference between large shareholders in the bottom and top quartiles of the cash holdings distribution is 0.58, compared to an average cash ratio of 1.23 in the overall data set.

Finally, we turn to executive compensation and find that the magnitudes of the estimated blockholder fixed effects are economically large. The results are most easily interpreted in dollar terms. To highlight just one example, a blockholder in the lower tail of the total CEO pay distribution is associated with $1.4 million lower total executive compensation per year compared to the sample average of $5.4 million, while one in the upper tail is associated with total CEO compensation that is $1.5 million higher (28% above the mean).

### *5.2. Comparing blockholder fixed effects distributions and simulated distributions*

Another approach to quantifying the magnitude and economic significance of our results is to compare the blockholder fixed effect distributions reported in the first set of columns in Panel A of Table 6 to simulated distributions produced by the reassignment of all blockholders to random firms. More specifically, we start by reassigning each blockholder in our data set to random firm-year observations and then re-estimate the blockholder fixed effects. We repeat this procedure 100 times, which produces the simulated distributions. The second set of columns in the table reports the 25th and 75th percentiles for the resulting simulated distributions. The final set of columns reports the statistic and p-value of a

two-sample Kolmogorov-Smirnov (KS) test for the equality of the actual blockholder fixed effects distribution and the simulated distribution for each corporate policy variable.

The conclusion from this analysis is that the actual blockholder fixed effects distributions are significantly different from the simulated ones. The KS-tests reject the null hypothesis of equality of distribution functions, at least at the 10% level for all of the corporate policies but one. This evidence allows us to conclude that the estimated blockholder fixed effects reported in this paper are economically large and that the estimated differences between blockholders are substantially bigger than what we would expect if blockholdings were simply randomly distributed across firms.

Panel B of Table 6 repeats this analysis for groups of blockholders. We have combined the different categories into two groups based on their significance in Table 5, and report separate KS tests. We can reject the equality of distributions for all corporate policies for the first category, which is comprised of activists, pension funds, corporations, individuals, mutual funds, LBO firms, and VC firms. Hence, for these blockholders, the estimated differences between blockholders are bigger than what would be expected if blockholders were randomly distributed across firms. By contrast, for most corporate policies, we cannot reject the null hypothesis of equality for the group consisting of hedge funds, insurance companies, and money managers.

### *5.3. Large shareholders' investment and governance styles*

The results so far show that there are economically large differences between blockholders. However, because our empirical framework with blockholder fixed effects takes the analysis of large shareholders to the level of the individual blockholder, we are also able to present evidence on systematic patterns in blockholders' behavior. For instance, are some blockholders more focused on investment and firm growth than others? Are some large shareholders financially more aggressive? Our objective is to present evidence on large shareholders' investment and governance styles.

In order to do so, we estimate the following regression model:

$$\mathbf{\Gamma}_{jp} = \alpha + \beta \mathbf{\Gamma}_{jq} + \varepsilon_j \qquad p \neq q \tag{4}$$

where *j* indexes blockholders, $\mathbf{\Gamma}_{jp}$ and $\mathbf{\Gamma}_{jq}$ are the blockholder fixed effect vectors for two of the corporate policy variables of interest, and $\varepsilon_j$ is an error term. The right hand side variable is an estimated coefficient, thus potentially resulting in a downward bias of $\beta$ when using OLS estimation. To correct for this bias, we therefore employ a weighted least squares (WLS) approach where we weight each observation by the inverse of the square root of the standard error on the right hand side blockholder fixed effect $\mathbf{\Gamma}_{jq}$.

Table 7 shows that different large shareholders have distinct styles. First, studying patterns in investment policy, we see that blockholders associated with more capital expenditures are on average also associated with significantly more M&A activity, but fewer diversifying acquisitions. This result indicates that different blockholders have different preferences with regard to company growth: some have an "aggressive investment style," while others believe in the status quo or a policy of diversification. Another interesting pattern is that firms with blockholders with a more aggressive investment style also appear to be more investment to Q sensitive but less investment-to-cash-flow sensitive.

Second, examining patterns in financial policies, we find that while some large shareholders have an "aggressive financial style," others have adopted a much less aggressive approach to corporate financial policies. For example, blockholders that are linked to higher levels of debt in the capital structure of the firms in which they are major owners are also associated with significantly lower levels of cash holdings (i.e., less financial slack).

Finally, we also ask: are blockholders that are linked to higher levels of CEO pay also associated with other corporate policies in an economically meaningful way? As can be seen in the table, we find that blockholders that are associated with higher total CEO compensation are also associated with a significantly more aggressive attitude to investment, higher investment to Q sensitivity, and fewer diversifying acquisitions.

*5.4. Blockholder fixed effects in firm performance*

The above evidence suggests that systematic patterns in corporate investment, financial policies, and CEO compensation are related to the presence of particular large shareholders. A related question is whether such differences translate into significant heterogeneity in firm performance.

To this end, Table 8 applies our empirical framework for analyzing blockholder heterogeneity, and reports − similar to the previous investigation of corporate policies − two panel regressions for each performance variable, ROA (EBITDA over lagged total assets) and Tobin's Q. In this table, the benchmark regressions control for year and firm fixed effects, and lagged logarithm of total assets. The first result to note in Panel A of the table is that the median effects associated with a large shareholder are not significantly different from zero. This finding is broadly consistent with previous studies, which have not found much support for an average (outside) blockholder effect on ROA or Q (e.g., McConnell and Servaes (1990) and Mehran (1995)).[22]

We see that the model fit improves by up to three percentage points when we add blockholder fixed effects to the model specifications for performance, despite having already controlled for important observable and unobservable heterogeneity across firms through time-varying controls and firm fixed effect. The F-statistics are large and statistically significant, rejecting the null hypothesis of no blockholder fixed effects in ROA and Q. We also find that a blockholder at the 75th percentile of the ROA distribution is associated with 4% higher returns, all else equal, while one at the 25th percentile is associated with 3% lower returns. Given that the average ROA is about 5% in the sample, the magnitude of this effect is also large in economic terms.[23] Similarly, we find that the difference between large

[22] Most of the large shareholders in our sample are outside blockholders. There is also an important literature on whether concentrated inside ownership affects firm performance (e.g., Morck, Shleifer and Vishny (1988), Himmelberg, Hubbard and Palia (1999), and Zhou (2001)).

[23] We do not interpret blockholder effects in ROA as evidence that some blockholders want returns to be lower. There are other reasons for blockholder heterogeneity in firm performance. First, some blockholders might extract private benefits from their ownership stakes (e.g., Barclay and Holderness (1989)) that our measures do not account for. Second, there can be variation in skills across different large shareholders, even within one blockholder category. This argument is related to the evidence presented by Lerner, Schoar and Wong (2006) that there is

shareholders in the bottom and top quartiles of the Q distribution is 0.57, compared to an average Q ratio in our sample of 2.1.

A final result to note in Table 8 is that some blockholder investment and governance styles are linked to higher operating performance and Tobin's Q than others. As can be seen in Panel B, we find that return on assets and Q is higher in firms with large shareholders that have an aggressive investment style, i.e., are associated with more investment and M&A activity. Firm performance is also higher in companies with blockholders associated with higher investment to Q sensitivity. Interestingly, we also see that ROA is higher in firms with blockholders with a preference for more debt in the capital structure and higher dividend policy, all else equal. We further report evidence that return on assets and Q are higher in companies with blockholders associated with higher CEO pay and more pay-for-performance sensitivity. The evidence in Table 8 is important in that it shows that the differences in investment and governance styles across large shareholders are in turn linked to actual differences in firm performance.

## 6. Origin and sources of blockholder heterogeneity

The previous sections document statistically significant and economically important blockholder effects in corporate policies and performance of large U.S. firms. This evidence suggests that heterogeneity is important, but does not inform us about where such variation across blockholders actually comes from. We now attempt to provide evidence on the origin and sources of the blockholder fixed effects. In Section 6.1, we shed some light on the question of causality. In Section 6.2, we explore some characteristics of blockholders that might produce blockholder effects of a larger magnitude.

### *6.1. Evidence on influence versus selection*

We have so far been very careful not to give any causal interpretations of the blockholder fixed effects. However, we now turn to the question of causality. Under the influence interpretation, firm

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significant variation in internal rates of return (IRRs) across private equity LPs and it is consistent with their arguments for a skill- or sophistication-based explanation related to the general partners of those firms.

policy changes take place after the investment by a blockholder. By contrast, under the selection hypothesis, firm policy changes start to take place, and then blockholders invest in response to these policy changes. Our identification strategy is therefore to use these predictions regarding timing of policy changes to provide evidence on whether blockholder fixed effects in firm policies are more consistent with active influence or selection.[24]

We randomly allocate each blockholder's ownership stakes into two subsets. Using the first subset of firms, we then estimate blockholder effects *as if* each blockholder had a stake in the firm one to two years (depending on data availability) prior to its actual investment. That is, if blockholder *j* invested in firm *i* in year *t*, then we estimate this blockholder's "pre-investment fixed effect" as if the blockholder had invested in the firm in year *t*-2 and sold its stake in year *t*. Using the second subset we estimate the blockholder fixed effects using equation (1). Next, we examine whether the pre-investment fixed effects and the actual blockholder effects are significantly correlated. Under the influence interpretation, we would expect zero or negative correlation between firms' policy choices just prior to and after a blockholder's investment. Under the selection interpretation, we expect the effects to have a positive correlation because firms' policy choices just prior to and after a blockholder's investment are similar.

Table 9 presents our results. The first set of columns reports results for all large shareholders. We see that the evidence on influence versus selection is inconclusive as some of the coefficients are positive while others are negative. In the next set of columns, we therefore report separate results for different categories of large shareholders. For activist, pension fund, corporate, individual, LBO and VC blockholders, many of the estimated coefficients are negative and significant. This finding is more consistent with an influence interpretation. Firms' policy choices just prior to and after the investment of one of these large shareholders are significantly different. That is, policy changes seem to take place after these categories of large shareholder's invest in a firm. By contrast, several of the estimated coefficients are positive and significant for mutual funds. This result is more consistent with a selection explanation.

[24] We also note that causation can be possible even in cases with significant barriers to intervention in firms' policy choices. Edmans (2007), for example, presents a model in which the arrival of a blockholder allows a manager to pursue projects that he would have otherwise avoided.

Firms' policy choices just prior to and after the investment of a mutual fund blockholder are similar. That is, firm policy changes start to take place, and mutual funds invest in response to these policy changes.

We do not want to interpret the above evidence too aggressively because of the short time period available for analysis. However, the results suggest two novel findings regarding large shareholders and corporate policies in the U.S. First, one of the potential explanations for blockholder fixed effects − influence or selection − does not fit all large shareholders: blockholder heterogeneity is important and some types of large shareholders appear to influence the policy choices of the firms in which they have blocks, while others systematically select firms based on the observable corporate policies which they believe maximize value. Second, our result of systematic selection by some large shareholders adds to existing evidence that institutional investors have a preference for certain stock characteristics, and suggests that the list of characteristics include not only firm size, share price, or liquidity as has previously been suggested by Gompers and Metrick (2001) and Bennett, Sias and Starks (2003), but also corporate policies.

### *6.2. Evidence on the sources of blockholder fixed effects*

Next, we want to go a step further with an analysis that explores the source of blockholder fixed effects in corporate policies and firm performance. Do blockholders that have larger effects on average hold larger ownership stakes? Are they members of the board? And are they involved as officers in the daily management and operations of the firms in which they are major owners? We now analyze the role of these three observable blockholder characteristics to help us understand the sources of the differences in behavior and impact across large shareholders.

We relate the magnitudes of the 361 estimated blockholder fixed effects from Section 4 to observable blockholder characteristics that capture a blockholders' power to monitor and influence important corporate policies. To perform this analysis, we have compiled data on three blockholder characteristics: block size, board representation, and management involvement as an officer. Because a blockholder has by construction multiple holdings in our dataset, we have averaged the characteristics

across a blockholder's stakes. Panel A of Table 10 reports summary statistics of the characteristics. The average holding of each blockholder is 9.6% in our data set, while 10.9% of the blockholders have board representation, and 2.2% are officers, most often CEOs.

We predict that blockholders with, on average, larger blocks, representation on the board, or daily management involvement have more power. In our empirical framework, more blockholder power translates into larger blockholder fixed effects.

Panel B of Table 10 reports that the magnitude of the blockholder fixed effect, as measured by the absolute value of the effect, is positively associated with block size, board membership, and day-to-day operational involvement. First, blockholders with larger blocks have larger fixed effects for most of the corporate policy and firm performance metrics. To see that the economic magnitude of these effects is large, we can compare two blockholders: one with an average block size and one with a 6.5% (= one standard deviation) larger-than-average block size. According to our estimates, the blockholder with the larger average stake is associated with a 23% larger investment fixed effect. Considering capital structure policy, we find that the blockholder with the larger stake has a 24% larger leverage fixed effect. Turning to executive compensation, the blockholder with the larger stake is associated with a 20% larger blockholder effect related to total executive compensation. We also find that the blockholder with the larger average stake is associated with a 25% larger performance fixed effect, compared to the average blockholder in our sample.

We find that large shareholders with board representation have significantly larger blockholder effects, suggesting that a directorship provides a blockholder with more power to monitor and influence. Interestingly, we find particularly strong effects for corporate policies where the board is expected to play an important role. For example, a blockholder with board memberships has dividend policy effects more than double those of a blockholder without board representation. In regards to executive compensation, a blockholder on the board is associated with 1.5 times larger effects related to total CEO compensation.

Finally, although a smaller number of coefficients are significant compared to the other two blockholder characteristics, there is some evidence that blockholders that are officers have larger policy

effects, at least for acquisition and diversification policy, executive compensation policy, and return on assets. Not surprisingly, a blockholder with day-to-day operational involvement is associated with much bigger effects than a blockholder that is not an officer.

In summary, the above analysis provides evidence on the source of the previously documented blockholder heterogeneity. Measures of blockholder power, such as block size, board membership, and daily management involvement are positively related to the magnitude of the blockholder fixed effects. These results suggests that the blockholder fixed effects we identify in this paper can, at least in part, be attributable to observable blockholder characteristics proxying for a blockholder's power and potential to impact corporate policies and firm performance.[25]

## 7. Conclusion

We develop an empirical framework that allows us to analyze the effects of heterogeneity across large shareholders, using a new blockholder-firm panel data set in which we can track all unique blockholders among large U.S. public firms. We find statistically significant and economically important blockholder fixed effects in investment, financial, and executive compensation policies. This evidence suggests that blockholders vary in their beliefs, skills, or preferences. The blockholder effects are found to be concentrated in categories such as activists, pension funds, corporations, individuals, private equity firms, and mutual funds.

Our analysis also shows that different large shareholders have distinct investment and governance styles. We find systematic patterns across large shareholders when it comes to their approaches to corporate investment and growth, their appetites for financial leverage, and their attitudes towards CEO pay. We find that blockholder fixed effects are also present in firm performance measures, and that

[25] While this analysis provides some evidence on the sources of blockholder fixed effects, our particular data set limits the depth and scope of the analysis. For example, the three blockholder characteristics we study in this paper are only a subset of the characteristics that might be related to the behavior and impact of large shareholders. For example, one would want to have detailed data on the top management at the large shareholders' organizations, past investment experiences and returns, and possibly also their social networks. However, data limitations restrict the analysis we are able to perform.

differences in style are systematically related to firm performance differences. Moreover, we show that our results are more consistent with influence for activist, pension fund, corporate, individual and private equity blockholders, but more consistent with systematic selection for large mutual fund shareholders. Finally, we analyze some sources of the heterogeneity, and find that blockholders with more potential power and influence, as measured by block size, board representation, and management involvement as officers are associated with larger effects on corporate policies and firm performance.

The evidence of blockholder heterogeneity has implications for interpretations of existing evidence on large shareholders and corporate policies. Evidence of a small and insignificant average blockholder effect does not mean that large shareholders play no role in shaping corporate policies because important information regarding a blockholder's impact on firms is lost when effects of different blockholders are aggregated in a large cross-sectional sample. Our evidence on blockholder heterogeneity also introduces a number of questions for future research. For example, in this paper we study heterogeneity across blockholders among large U.S. firms, but how do our findings compare to those from samples of smaller firms, where the scope for influence might be greater, or countries and institutional environments with different corporate governance systems?

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## Appendix I: Filing requirements for large shareholders

The Securities Exchange Act of 1934, rules 13d-1 to 13d-6 (§240.13d) contain the filing requirements for large shareholders. Any individual or group that has acquired a beneficial stake of 5% or more in a class of equity is required to file the form SC 13D. However, it is important to know that not all large shareholders file a form SC 13-D. A select category of "persons" such as banks, brokers and dealers, and insurance companies can file an abbreviated form, the SC 13G, that does not require such detailed disclosure. Item 4 of form SC 13-D requires the filer to disclose his intentions with respect to the company. Item 4 is quite specific and lists 10 different actions of a large shareholder that would require disclosure:

(a) The acquisition by any person of additional securities of the issuer, or the disposition of securities of the issuer;

(b) An extraordinary corporate transaction, such as a merger, reorganization or liquidation, involving the issuer or any of its subsidiaries;

(c) A sale or transfer of a material amount of assets of the issuer or any of its subsidiaries;

(d) Any change in the present board of directors or management of the issuer, including any plans or proposals to change the number or term of directors or to fill any existing vacancies on the board;

(e) Any material change in the present capitalization or dividend policy of the issuer;

(f) Any other material change in the issuer's business or corporate structure including but not limited to, if the issuer is a registered closed-end investment company, any plans or proposals to make any changes in its investment policy for which a vote is required by section 13 of the Investment Company Act of 1940;

(g) Changes in the issuer's charter, bylaws or instruments corresponding thereto or other actions which may impede the acquisition of control of the issuer by any person;

(h) Causing a class of securities of the issuer to be delisted from a national securities exchange or to cease to be authorized to be quoted in an inter-dealer quotation system of a registered national securities association;

(i) A class of equity securities of the issuer becoming eligible for termination of registration pursuant to Section 12(g)(4) of the Act; or

(j) Any action similar to any of those enumerated above.

## Appendix II: Variable definitions

The corporate variables used in this paper are defined as follows:

Investment policies

- *Investment* is capital expenditures (Compustat item 128) over lagged net property, plant, and equipment (Compustat item 8).

- *Number of acquisitions* is the total number of acquisitions in the fiscal year.

- *Number of diversifying acquisitions* is the number of acquisitions per fiscal year in industries other than the one of the acquirer. Industry affiliation is measured by the Fama-French 48 industry classification.

- *R&D* is the ratio of R&D expenditures (Compustat item 46) over lagged total assets (Compustat item 6).

Financial policies

- *Leverage* is long-term debt (Compustat item 9) plus current liabilities (Compustat item 34) divided by long-term debt plus current liabilities plus book value of common equity (Compustat item 60).

- *Dividends/earnings* is the ratio of the sum of common dividends (Compustat item 21) and preferred dividends (Compustat item 19) over earnings before depreciation, interest, and tax (Compustat item 13).

- *Cash holdings* is defined as cash and short-term investments (Compustat item 1) over lagged net property, plant, and equipment (Compustat item 8).

Executive compensation

- *Total compensation* is the sum of cash salary, cash bonus, and the Black-Scholes value of options granted during a fiscal year to the CEO (Execucomp item TDC1).

- *Salary* is defined as the cash salary to the CEO for a fiscal year (Execucomp item salary).

- *Total incentive compensation* is the logarithm of total dollar equity incentives. Total dollar equity incentives are measured as the dollar amount an executive has at stake from his entire portfolio of stocks and options for a 1% change in firm value. It is constructed from Execucomp data using the algorithm of Core and Guay (2002).

Firm performance

- *Return on assets* is the ratio of EBITDA (Compustat item 18) over lagged total assets (Compustat item 6).

- *Tobin's Q* is defined as the market value of assets divided by the book value of assets (Compustat item 6). The market value of assets equals the book value of assets plus the market value of

common equity (calendar year close (Compustat item 25) times shares outstanding (Compustat item 199)) less the sum of the book value of common equity (Compustat item 60) and balance sheet deferred taxes (Compustat item 74).

Control variables

- *Cash flow* is defined as the sum of earnings before extraordinary items (Compustat item 18) and depreciation (Compustat item 14) divided by lagged net property, plant, and equipment (Compustat item 8).

- *Total assets* is defined as the natural logarithm of book assets (Compustat item 6).

**Table 1**
**Summary statistics: Large shareholders**

The sample is the blockholder-firm panel data set described in section 3. "Activists" are those who announce their intention to influence firm policies at the time of the block purchase or who are known for activist policies in the past. "Pension funds" include U.S. and international public and private pension funds. "Corporations" are industrial firms. "Money managers" provide investment advice/services to high net worth individuals, foundations, endowments, and so on, but do not sell open-end funds to the general public. "Trusts" are those trusts that cannot be attributed to an individual.

| | | | Number of holdings per blockholder | | | |
|---|---|---|---|---|---|---|
| Blockholder category | N of blockholders | N of blockholder-years | Mean | Median | 75th percentile | Maximum |
| Activists and pension funds | 23 | 481 | 10 | 3 | 11 | 88 |
| Corporations | 29 | 226 | 4 | 2 | 5 | 11 |
| Individuals | 26 | 218 | 3 | 2 | 3 | 5 |
| Mutual funds | 111 | 6,810 | 32 | 10 | 27 | 633 |
| Insurance firms and money managers | 119 | 2,710 | 13 | 4 | 45 | 185 |
| Hedge funds | 10 | 113 | 6 | 3.5 | 6 | 20 |
| LBO firms | 6 | 36 | 2 | 2 | 2 | 4 |
| VC firms | 11 | 195 | 10 | 3 | 11 | 55 |
| Banks, trusts, and universities | 26 | 334 | 7 | 6 | 8 | 27 |
| All | 361 | 11,625 | 16 | 4 | 12 | 633 |

**Table 2**
**Summary statistics: Corporate variables**

The table reports descriptive statistics for the corporate variables analyzed. The "Blockholder-firm sample" is the sample used in this paper. See section 3 for further details on the specifics of the construction of the data set. The "Compustat sample" is a comparison sample of all firms covered by the Compustat-CRSP merged database during our sample time period 1996-2002. Both samples exclude financial firms and utilities. All variable definitions are reported in Appendix II. "N" refers to the maximum number of firm-year observations; not all corporate variables are available for each firm-year.

| | Blockholder-firm sample | | | Compustat sample | | |
|---|---|---|---|---|---|---|
| | Mean | Median | St. dev. | Mean | Median | St. dev. |
| Investment policies | | | | | | |
| Investment | 0.28 | 0.22 | 0.23 | 0.41 | 0.25 | 0.48 |
| Number of acquisitions | 0.59 | 0 | 1.1 | N/A | N/A | N/A |
| Number of diversifying acquisitions | 0.30 | 0 | 0.71 | N/A | N/A | N/A |
| R&D | 0.03 | 0 | 0.06 | 0.05 | 0 | 0.10 |
| Financial policies | | | | | | |
| Leverage | 0.37 | 0.37 | 0.28 | 0.36 | 0.32 | 0.31 |
| Dividends/earnings | 0.19 | 0.05 | 0.55 | 0.15 | 0 | 0.38 |
| Cash holdings | 1.23 | 0.17 | 3.39 | 3.54 | 0.25 | 0.58 |
| Executive compensation | | | | | | |
| Total compensation | 5,374 | 2,716 | 7,724 | N/A | N/A | N/A |
| Salary | 601 | 556 | 300 | N/A | N/A | N/A |
| Total incentive compensation | 1,241 | 238 | 6,233 | N/A | N/A | N/A |
| Firm performance | | | | | | |
| Return on assets | 0.05 | 0.06 | 0.11 | -0.05 | 0.02 | 0.24 |
| Tobin's Q | 2.1 | 1.5 | 1.6 | 2.1 | 1.3 | 1.9 |
| Control variables | | | | | | |
| Cash flow | 0.52 | 0.35 | 0.94 | -0.35 | 0.27 | 3.63 |
| Total assets | 4,624 | 1,218 | 10,317 | 2,007 | 194.9 | 5,703 |
| N | | 5,778 | | | 47,118 | |

**Table 3**
**Large shareholders and corporate policies: Average blockholder effects**

The sample is the blockholder-firm panel data set described in section 3. "Blockholder indicator variable" is a dummy variable that is one if there is any large shareholder present in a particular firm-year, and zero otherwise. The "Blockholder category indicator variables" are a set of dummy variables for whether a blockholder from the category is present in a particular firm-year. All other variable definitions are reported in Appendix II. All model specifications include year and firm fixed effects and time-varying firm-level characteristics. The time-varying firm-level control variables included are lagged Q, lagged cash flow, the lagged logarithm of total assets, and return on assets. Reported are coefficients and standard errors (in parentheses) from panel regressions. Standard errors are adjusted for clustering at the firm level. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

**Table 3 - cont'd**

| | Investment | Leverage | Total comp. | Investment | Leverage | Total comp. |
|---|---|---|---|---|---|---|
| Blockholder indicator variable | | | | | | |
| Blockholder | 0.002 | 0.032 | -0.025 | | | |
| | (0.017) | (0.047) | (0.069) | | | |
| Blockholder category indicator variables | | | | | | |
| Activists and pension funds | | | | -0.021 | 0.015 | 0.028 |
| | | | | (0.021) | (0.020) | (0.118) |
| Corporations | | | | 0.024 | -0.005 | -0.058 |
| | | | | (0.021) | (0.019) | (0.080) |
| Individuals | | | | -0.004 | 0.004 | -0.099 |
| | | | | (0.021) | (0.017) | (0.073) |
| Mutual funds | | | | -0.014 | -0.010 | 0.062 |
| | | | | (0.017) | (0.007) | (0.040) |
| Insurance companies and money managers | | | | -0.004 | 0.002 | -0.036 |
| | | | | (0.010) | (0.007) | (0.036) |
| Hedge funds | | | | 0.001 | -0.055 | -0.069 |
| | | | | (0.029) | (0.029)* | (0.115) |
| LBO firms | | | | -0.038 | 0.140 | 0.134 |
| | | | | (0.040) | (0.072)* | (0.232) |
| VC firms | | | | -0.013 | 0.011 | 0.094 |
| | | | | (0.020) | (0.016) | (0.095) |
| Banks, trusts, and universities | | | | 0.012 | 0.005 | -0.011 |
| | | | | (0.019) | (0.014) | (0.056) |
| Control variables | | | | | | |
| Tobin's Q | 0.058 | | 0.081 | 0.058 | | 0.080 |
| | (0.011)*** | | (0.027)*** | (0.011)*** | | (0.027)*** |
| Cash flow | 0.054 | -0.002 | | 0.054 | -0.002 | |
| | (0.015)*** | (0.007) | | (0.015)*** | (0.007) | |
| Total assets | -0.115 | 0.036 | 0.233 | -0.116 | 0.037 | 0.231 |
| | (0.032)*** | (0.016)** | (0.070)*** | (0.032)*** | (0.016)** | (0.072)*** |
| Return on assets | | -0.157 | | | -0.152 | |
| | | (0.058)*** | | | (0.058)*** | |

**Table 4**
**Blockholder fixed effects and corporate policies**

The sample is the blockholder-firm panel data set described in section 3. All variable definitions are reported in Appendix II. The table reports two regressions for each corporate policy variable. The first row reports the adjusted $R^2$ and the number of firm-years for a benchmark model specification which includes year and firm fixed effects and time-varying firm-level characteristics. The second row also adds blockholder fixed effects, and reports the number of blockholders, the median estimated blockholder fixed effect, and an F-test for the joint significance of the blockholder fixed effects. For the "Investment to cash flow" and "Investment to Q" regressions, the F-tests are for the joint significance of the interaction between the blockholder fixed effects and cash flow and Q, respectively. In the "Investment" regressions, the time-varying firm-level controls included are lagged Q, lagged cash flow, and the lagged logarithm of total assets. In the "Investment to cash flow" and "Investment to Q" regressions, we also include interactions of the firm and blockholder fixed effects with cash flows and lagged Q, respectively. The "Number of acquisitions" regressions include lagged logarithm of total assets and return on assets. The "Number of diversifying acquisitions" and "R&D" regressions include lagged cash flow, lagged logarithm of total assets, and return on assets. In the "N of diversifying acquisitions" regressions we also include a dummy variable for whether the firm undertook any acquisition in that particular firm-year. In the financial policy regressions, the time-varying firm-level controls included are lagged cash flow, lagged logarithm of total assets, and return on assets. In the executive compensation regressions, the time-varying firm-level controls included are lagged Q and the lagged logarithm of total assets. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

| Panel A: Investment policies | | | | | |
|---|---|---|---|---|---|
| Dependent variable | N of blockholders | Median | Adj. $R^2$ | F-test | N of firm-years |
| Investment | | | 0.59 | | 5,555 |
| Investment | 356 | 0.00 | 0.61 | 1.69*** | 5,555 |
| Investment to CF sensitivity | | | 0.65 | | 5,553 |
| Investment to CF sensitivity | 356 | 0.00 | 0.72 | 2.59*** | 5,553 |
| Investment to Q sensitivity | | | 0.66 | | 5,553 |
| Investment to Q sensitivity | 356 | 0.04 | 0.70 | 1.56*** | 5,553 |
| N of acquisitions | | | 0.24 | | 5,753 |
| N of acquisitions | 361 | 0.01 | 0.24 | 0.80 | 5,753 |
| N of diversifying acquisitions | | | 0.45 | | 5,753 |
| N of diversifying acquisitions | 361 | -0.01 | 0.45 | 0.66 | 5,753 |
| R&D | | | 0.84 | | 5,753 |
| R&D | 361 | 0.00 | 0.86 | 3.57*** | 5,753 |

| Panel B: Financial policies | | | | | |
|---|---|---|---|---|---|
| Dependent variable | N of blockholders | Median | Adj. $R^2$ | F-test | N of firm-years |
| Leverage | | | 0.81 | | 5,653 |
| Leverage | 359 | 0.00 | 0.82 | 2.11*** | 5,653 |
| Dividend/earnings | | | 0.66 | | 5,672 |
| Dividend/earnings | 358 | 0.01 | 0.67 | 1.30*** | 5,672 |
| Cash holdings | | | 0.85 | | 5,632 |
| Cash holdings | 357 | 0.04 | 0.87 | 2.33*** | 5,632 |

**Table 4 - cont'd**

| Panel C: Executive compensation | | | | | |
|---|---|---|---|---|---|
| Dependent variable | N of blockholders | Median | Adj. $R^2$ | F-test | N of firm-years |
| Total compensation | | | 0.60 | | 4,999 |
| Total compensation | 338 | -0.01 | 0.69 | 1.44*** | 4,999 |
| Salary | | | 0.62 | | 5,016 |
| Salary | 338 | 0.03 | 0.69 | 2.47*** | 5,016 |
| Total incentive compensation | | | 0.77 | | 4,849 |
| Total incentive compensation | 336 | 0.00 | 0.78 | 1.69*** | 4,849 |

**Table 5**
**Blockholder fixed effects for different categories of large shareholders**

The sample is the blockholder-firm panel data set described in section 3. All variable definitions are reported in Appendix II. The table reports results obtained from the panel regressions as in Table 4. Reported are F-tests for the joint significance of the blockholder fixed effects by blockholder categories. For each F-test we report the value of the F-statistic and the p-value in parentheses. For the "Investment to cash flow" and "Investment to Q" regressions, the F-tests are for the joint significance of the interaction between the blockholder fixed effects and cash flow and Q, respectively. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

| | N | Inv. | Inv. to CF | Inv. to Q | N acq. | N div. acq. | R&D | Lev. | D/E | Cash | Tot. comp. | Salary | Tot. incent. comp. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Activists, pension funds | 23 | 2.15*** (0.001) | 0.97 (0.503) | 2.93*** (0.000) | 0.75 (0.793) | 0.36 (0.998) | 0.67 (0.883) | 2.18*** (0.001) | 1.41* (0.091) | 2.27*** (0.000) | 2.18*** (0.002) | 2.82*** (0.000) | 1.29 (0.177) |
| Corporations | 29 | 0.85 (0.693) | 2.07*** (0.001) | 1.24 (0.173) | 1.17 (0.242) | 0.84 (0.712) | 17.3*** (0.000) | 1.73** (0.010) | 2.74*** (0.000) | 3.85*** (0.000) | 1.45* (0.066) | 15.4*** (0.000) | 1.02 (0.429) |
| Individuals | 26 | 1.74** (0.011) | 3.25*** (0.000) | 2.25*** (0.000) | 1.67** (0.018) | 0.84 (0.694) | 9.62*** (0.000) | 4.98*** (0.000) | 1.31 (0.132) | 0.57 (0.961) | 2.47*** (0.000) | 7.41*** (0.000) | 2.61*** (0.000) |
| Mutual funds | 111 | 2.08*** (0.000) | 3.85*** (0.000) | 1.74*** (0.000) | 0.73 (0.984) | 0.67 (0.997) | 1.14 (0.159) | 1.37*** (0.007) | 1.18* (0.097) | 1.91*** (0.000) | 1.20* (0.085) | 0.96 (0.587) | 1.73*** (0.000) |
| Insurance companies, money manager | 119 | 1.25** (0.035) | 1.23* (0.054) | 1.19* (0.081) | 0.43 (1.000) | 0.36 (1.000) | 0.71 (0.993) | 1.39*** (0.005) | 1.05 (0.347) | 1.35*** (0.007) | 0.75 (0.976) | 1.04 (0.357) | 1.34*** (0.010) |
| Hedge funds | 10 | 1.00 (0.438) | 1.33 (0.207) | 0.77 (0.644) | 1.92** (0.038) | 0.21 (0.995) | 4.77*** (0.000) | 1.63* (0.091) | 0.31 (0.978) | 1.10 (0.372) | 1.28 (0.238) | 0.07 (1.000) | 1.85** (0.047) |
| LBO firms | 6 | 4.54*** (0.000) | 0.17 (0.954) | 0.67 (0.673) | 0.44 (0.852) | 0.12 (0.994) | 5.51*** (0.000) | 3.46*** (0.002) | 0.47 (0.802) | 3.13*** (0.008) | 1.15 (0.332) | 8.75*** (0.000) | 2.11* (0.076) |
| VC firms | 11 | 3.58*** (0.000) | 1.84** (0.044) | 1.56 (0.105) | 0.57 (0.858) | 0.73 (0.711) | 8.33*** (0.000) | 1.37 (0.179) | 0.84 (0.603) | 13.3*** (0.000) | 1.71* (0.072) | 2.87*** (0.002) | 1.79* (0.064) |
| Banks, trusts, universities | 26 | 0.85 (0.684) | 0.39 (0.998) | 1.09 (0.340) | 0.87 (0.652) | 0.41 (0.995) | 1.35 (0.112) | 0.70 (0.872) | 1.18 (0.239) | 0.73 (0.842) | 0.66 (0.895) | 0.76 (0.833) | 0.89 (0.622) |

**Table 6**
**Size distributions of blockholder fixed effects**

The sample is the blockholder-firm panel data set described in section 3. All variable definitions are reported in Appendix II. Panel A reports the size distributions of the blockholder fixed effects estimated in Table 4. The first set of columns reports the 25th and 75th percentiles for each of the blockholder fixed effects distributions obtained from the panel regressions in Table 4. The second set of columns reports the 25th and 75th percentiles for simulated distributions, obtained by re-assigning all blockholders to random firm-years and then re-estimating the blockholder fixed effects. This procedure is repeated 100 times, which produces the simulated distributions. The final set of columns performs two-sample Kolmogorov-Smirnov (KS) tests for the equality of the blockholder fixed effects distribution and the simulated distribution, and reports KS-statistics and p-values. Panel B reports KS tests for different categories of large shareholders. P-values are reported within parentheses. Each fixed effect is weighted by the inverse of its standard error to account for estimation error. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

| Panel A: Size distributions of blockholder fixed effects | | | | | | |
|---|---|---|---|---|---|---|
| | Blockholder fixed effects distributions | | Simulated distributions | | | |
| | 25th percentile | 75th percentile | 25th percentile | 75th percentile | KS-test | p-value |
| Investment policies | | | | | | |
| Investment | -0.08 | 0.09 | -0.04 | 0.03 | 0.106*** | 0.001 |
| Inv. to CF sensitivity | -0.10 | 0.26 | -0.10 | 0.10 | 0.133*** | 0.000 |
| Inv. to Q sensitivity | -0.10 | 0.13 | -0.07 | 0.07 | 0.130*** | 0.000 |
| N of acquisitions | -0.13 | 0.16 | -0.13 | 0.10 | 0.087*** | 0.007 |
| N of div. acquisitions | -0.11 | 0.05 | -0.06 | 0.05 | 0.045 | 0.436 |
| R&D | -0.01 | 0.01 | -0.00 | 0.00 | 0.076** | 0.028 |
| Financial policies | | | | | | |
| Leverage | -0.06 | 0.06 | -0.03 | 0.03 | 0.112*** | 0.000 |
| Dividends/earnings | -0.03 | 0.06 | -0.03 | 0.03 | 0.086*** | 0.008 |
| Cash holdings | -0.22 | 0.36 | -0.22 | 0.20 | 0.072** | 0.032 |
| Executive compensation | | | | | | |
| Total compensation | -0.32 | 0.39 | -0.16 | 0.15 | 0.078** | 0.030 |
| Salary | -0.07 | 0.18 | -0.06 | 0.06 | 0.073** | 0.050 |
| Total incentive compensation | -0.49 | 0.35 | -0.20 | 0.21 | 0.075** | 0.031 |

**Table 6, cont'd**

| Panel B: Kolmogorov-Smirnov (KS) tests for different categories of large shareholders | | |
|---|---|---|
| | Activists, pension funds, corporations, individuals, mutual funds, LBO firms, VC firms | Hedge funds, insurance companies, money managers |
| N | 206 | 129 |
| Investment policy | | |
| Investment | 0.140*** | 0.167*** |
| | (0.000) | (0.001) |
| Inv. to CF sensitivity | 0.234*** | 0.104 |
| | (0.000) | (0.130) |
| Inv. to Q sensitivity | 0.074** | 0.083 |
| | (0.030) | (0.345) |
| N of acquisitions | 0.100*** | 0.125** |
| | (0.001) | (0.030) |
| N of diversifying acquisitions | 0.091*** | 0.103 |
| | (0.002) | (0.113) |
| R&D | 0.092*** | 0.069 |
| | (0.002) | (0.534) |
| Financial policy | | |
| Leverage | 0.118*** | 0.124** |
| | (0.000) | (0.032) |
| Dividends/earnings | 0.080** | 0.081 |
| | (0.013) | (0.338) |
| Cash holdings | 0.067* | 0.073 |
| | (0.053) | (0.467) |
| Executive compensation | | |
| Total compensation | 0.120*** | 0.153 |
| | (0.000) | (0.159) |
| Salary | 0.114*** | 0.169* |
| | (0.000) | (0.089) |
| Total incentive compensation | 0.095** | 0.220 |
| | (0.044) | (0.119) |

**Table 7**
**Large shareholders' investment and governance styles**

The sample is the blockholder-firm panel data set described in section 3. All variable definitions are reported in Appendix II. Each number in this table corresponds to a separate regression. Each number reports the coefficient from a regression of the blockholder fixed effects from the row variable on the blockholder fixed effects from the column variable. Observations in the regressions are weighted by the inverse of the standard error of the explanatory variable to account for estimation error. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

| | Investment | | Leverage | | Total comp. | |
|---|---|---|---|---|---|---|
| | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. |
| Investment | | | | | 1.57*** | 0.20 |
| Leverage | -0.13* | 0.07 | | | -0.85** | 0.35 |
| Inv. to CF sensitivity | -0.02*** | 0.00 | 0.00 | 0.01 | -0.12*** | 0.02 |
| Inv. to Q sensitivity | 0.02*** | 0.00 | 0.00 | 0.02 | 0.04*** | 0.01 |
| Cash holdings | 0.05*** | 0.01 | -0.02*** | 0.01 | 0.14*** | 0.02 |
| Dividend/earnings | 0.15 | 0.09 | 0.06 | 0.07 | 0.62 | 0.44 |
| N of acquisitions | 0.19*** | 0.03 | -0.06*** | 0.02 | 0.53*** | 0.10 |
| N of diversifying acq. | -0.31*** | 0.04 | -0.05 | 0.03 | -0.79*** | 0.19 |

**Table 8**
**Blockholder fixed effects and firm performance**

The sample is the blockholder-firm panel data set described in section 3. All variable definitions are reported in Appendix II. Panel A reports two regressions for each corporate policy variable. The first row reports the adjusted $R^2$ and the number of firm-years for a benchmark model specification which includes year and firm fixed effects and time-varying firm-level characteristics. The second row also adds blockholder fixed effects, and reports the number of blockholders, the median estimated blockholder fixed effect, the 25th and 75th percentiles of each blockholder fixed effects distribution, and an F-test for the joint significance of the blockholder fixed effects. In each regression, we also control for the lagged logarithm of total assets. Each fixed effect is weighted by the inverse of its standard error to account for estimation error. Panel B reports the coefficient from a regression of the blockholder fixed effects in performance on each of the row variables. Each number in this table corresponds to a separate regression. Observations in the regressions are weighted by the inverse of the standard error of the explanatory variable to account for estimation error. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

Panel A: Blockholder fixed effects in firm performance

| Dependent variable | N of blockholders | Median | 25th percentile | 75th percentile | Adj. $R^2$ | F-test | N of firm-years |
|---|---|---|---|---|---|---|---|
| Return on assets | | | | | 0.57 | | 5,711 |
| Return on assets | 359 | 0.01 | -0.03 | 0.04 | 0.60 | 1.75*** | 5,711 |
| Tobin's Q | | | | | 0.74 | | 5,695 |
| Tobin's Q | 359 | 0.03 | -0.23 | 0.34 | 0.75 | 1.27*** | 5,695 |

Panel B: Firm performance and large shareholders' investment and governance styles

| | Return on assets | | Tobin's Q | |
|---|---|---|---|---|
| | Coef. | S.E. | Coef. | S.E. |
| Investment policies | | | | |
| Investment | 0.16*** | 0.02 | 2.02*** | 0.24 |
| Investment to CF sensitivity | -0.03*** | 0.00 | -0.02*** | 0.00 |
| Investment to Q sensitivity | 0.02** | 0.01 | 0.02*** | 0.00 |
| N of acquisitions | 0.07*** | 0.01 | 0.54*** | 0.13 |
| N of diversifying acquisitions | -0.05** | 0.02 | -0.90*** | 0.23 |
| R&D | -0.35*** | 0.05 | 9.97*** | 1.35 |
| Financial policies | | | | |
| Leverage | 0.05* | 0.03 | 0.18 | 0.36 |
| Dividend/earnings | 0.22*** | 0.04 | 1.62*** | 0.48 |
| Cash holdings | 0.01*** | 0.00 | 0.07** | 0.03 |
| Executive compensation | | | | |
| Total compensation | 0.05*** | 0.00 | 0.30*** | 0.07 |
| Salary | 0.02*** | 0.00 | 0.30*** | 0.03 |
| Total incentive compensation | 0.01* | 0.00 | 0.13* | 0.07 |

**Table 9**
**Evidence on influence versus selection**

The sample is the blockholder-firm panel data set described in section 3. All variable definitions are reported in Appendix II. Each number in this table corresponds to a separate regression. Reported in the table are estimates from regressing "pre-entry blockholder fixed effects" (from a period prior to the blockholder's investment) on the actual blockholder fixed effects. Observations in the regressions are weighted by the inverse of the standard error of the explanatory variable to account for estimation error. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

| | All | | Activists, pension funds, corporations, individuals, LBO-firms, VC-funds | | Mutual funds | |
|---|---|---|---|---|---|---|
| | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. |
| Investment policies | | | | | | |
| Investment | -0.05 | 0.04 | -0.14** | 0.06 | -0.03 | 0.19 |
| N of acquisitions | 0.16** | 0.06 | 0.05 | 0.08 | 0.21* | 0.12 |
| N of diversifying acquisitions | 0.18* | 0.10 | 0.06 | 0.06 | 0.21*** | 0.08 |
| R&D | -0.04 | 0.05 | -0.19* | 0.10 | 0.20 | 0.14 |
| Financial policies | | | | | | |
| Leverage | 0.00 | 0.07 | -0.37*** | 0.12 | -0.03 | 0.12 |
| Dividends/earnings | -0.03 | 0.05 | -0.10* | 0.05 | 0.10 | 0.36 |
| Cash holdings | -0.07** | 0.03 | -0.20*** | 0.07 | -0.06 | 0.06 |
| Executive compensation | | | | | | |
| Total compensation | -0.08 | 0.05 | -0.15* | 0.09 | -0.09 | 0.12 |
| Salary | -0.05 | 0.05 | 0.07 | 0.10 | 0.15** | 0.08 |
| Total incentive compensation | -0.10* | 0.06 | -0.15** | 0.06 | 0.02 | 0.02 |
| Firm performance | | | | | | |
| Return on assets | 0.03 | 0.05 | 0.11 | 0.10 | 0.25*** | 0.09 |
| Tobin's Q | -0.10*** | 0.03 | -0.25*** | 0.10 | -0.08 | 0.11 |

**Table 10**
**Where do blockholder effects come from?**

The sample is the blockholder-firm panel data set described in section 3. All variable definitions are reported in Appendix II. Panel A reports summary statistics for blockholder characteristics. "Block size" is the fraction of shares held by a blockholder. "Board member" is a dummy variable that is equal to one if a blockholder is a board member, and zero otherwise. "Officer" is a dummy variable that is equal to one if the blockholder is an officer of the corporation, and zero otherwise. A blockholder's overall characteristic is based on an average across a blockholder's holdings. Panel B reports estimates from regressing the absolute value of blockholder fixed effects on these three blockholder characteristics. Each row corresponds to a separate regression. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

Panel A: Summary statistics: Characteristics of blockholders

| | N | Minimum | Maximum | Mean | Median | St. dev. |
|---|---|---|---|---|---|---|
| Block size | 361 | 0.051 | 0.624 | 0.096 | 0.078 | 0.065 |
| Board membership | 361 | 0 | 1 | 0.109 | 0 | 0.257 |
| Officer | 361 | 0 | 1 | 0.022 | 0 | 0.119 |

Panel B: Blockholder fixed effects and blockholder characteristics

| | Block size | | Board member | | Officer | |
|---|---|---|---|---|---|---|
| | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. |
| Investment policies | | | | | | |
| Investment | 0.345*** | 0.104 | -0.044 | 0.032 | 0.067 | 0.062 |
| N of acquisitions | 0.186 | 0.207 | 0.264*** | 0.062 | 0.242* | 0.124 |
| N of diversifying acq. | 0.302** | 0.128 | 0.123*** | 0.039 | 0.150* | 0.077 |
| R&D | 0.068*** | 0.020 | 0.013** | 0.006 | 0.007 | 0.012 |
| Financial policies | | | | | | |
| Leverage | 0.249*** | 0.075 | 0.051** | 0.022 | 0.048 | 0.044 |
| Dividends/earnings | 0.287*** | 0.057 | 0.038** | 0.017 | 0.036 | 0.034 |
| Cash holdings | 0.470 | 1.070 | 0.184 | 0.325 | 0.047 | 0.639 |
| Executive compensation | | | | | | |
| Total compensation | 1.140** | 0.443 | 0.253** | 0.118 | 1.093*** | 0.248 |
| Salary | 5.61*** | 0.984 | 0.591** | 0.262 | 2.904*** | 0.550 |
| Total incentive comp. | 0.434 | 0.527 | 0.374*** | 0.141 | 0.187 | 0.295 |
| Firm performance | | | | | | |
| Return on assets | 0.148*** | 0.040 | 0.015 | 0.012 | 0.071*** | 0.024 |
| Tobin's Q | 2.380*** | 0.526 | 0.096 | 0.156 | 0.457 | 0.312 |

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