Free-riders and Underdogs: Participation in Corporate Voting *

Dragana Cvijanović Moqi Groen-Xu Konstantinos E. Zachariadis

PRELIMINARY. COMMENTS WELCOME
February 2017

Abstract

This paper studies voting participation in a corporate context. We show in a rational-choice model how shareholder heterogeneity and preferences affect their decision to vote. We exhibit a free-rider effect (agreement among shareholders leads to less participation) and an underdog effect (disagreement leads to more participation). Participation rates contain information about the importance of proposals to shareholders. The model produces a formula that allows us to estimate the implied importance controlling for ownership structure. We use the formula to document novel stylized facts in a sample of 18,520 corporate voting proposals of US firms: shareholder proposals are perceived as more important than management proposals, and the most important shareholder proposals are about restructuring.

Keywords: voting participation; corporate governance; shareholder proposals; shareholder preferences; heterogeneity of ownership; institutional ownership

*We are grateful to seminar participants at LSE and Swansea, and STICERD for financial support.
§Kenan-Flagler Business School, University of North Carolina at Chapel Hill. e-mail: Dragana_Cvijanovic@kenan-flagler.unc.edu.
¶Department of Finance, London School of Economics. e-mail: m.xu1@lse.ac.uk.
∥School of Economics and Finance, Queen Mary University of London. e-mail: k.e.zachariadis@qmul.ac.uk.
1 Introduction

Are corporate voting outcomes representative of the shareholder base? The recent rise of shareholder activism has attracted much attention and resources to shareholder voting ballots.\footnote{https://www.ft.com/content/a284e414-95ee-11e1-a163-00144feab49a or similar} However, conventional wisdom suggests that many shareholders do not vote unless they own large blocks or are legally obliged to vote (e.g., mutual funds in the US). Many mandatory voters follow off-the-shelf recommendations by proxy advisors (Iliev and Lowry (2014)) that potentially have a conflict of interest (Li (2016)). Thus selection into voting participation may bias voting outcomes. A wrong interpretation of voting outcomes, especially of the non-binding advisory proposals, can lead to unwanted implementation decisions, with potentially adverse results.

This paper studies voting participation by shareholders. To set the stage, we document that participation rates are substantial in US corporate voting among discretionary voters, much higher than in political elections. The participation rates also exhibit substantial variation, which implies that they contain valuable information, an assumption of much theoretical work (e.g., Levit and Malenko (2011)). However, participation is difficult to interpret because of ownership heterogeneity. Unlike in political elections where each person has one vote, ownership determines voting power in corporate voting. As a result, ownership dispersion is empirically the single largest determinant of participation rates (Van der Elst (2011)).

We help overcome the difficulty in interpreting participation rates with a model that takes ownership heterogeneity into account. The model illustrates that the effect of ownership is not unambiguous but depends on the degree of disagreement between shareholder groups. Moreover, the model produces a formula that allows us to isolate ownership effects from information on voter preferences. Illustrating an application of the formula, we document a number of stylized facts about the perceived importance of proposal types using data on corporate voting. We show that, to shareholders, shareholder proposals are more important than management proposals. Among shareholder proposals, restructuring related proposals are the most important, followed by Corporate Social Responsibility (CSR) and business-related proposals. Among management proposals, governance related management proposals are the most important management proposals and CSR are the least important.

In this paper we conduct the first formal analysis of participation in corporate voting contests.
Extending the political voting participation model of Myatt (2015) to the corporate context, we explain what affects the shareholder decision on whether to vote. The model illustrates how preferences, beliefs, and ownership structure affect participation. Importantly, the model describes the mechanism via which variation in participation rates relates to variation in ex-ante preferences among shareholders. More homogenous ex-ante preferences among shareholders yield lower participation rates on average, and vice versa, higher disagreement among shareholders yields higher participation rates.

Corporate elections differ from political elections. First, voting power in corporate elections is determined by the size of the holdings, which are not equally distributed (one-share-one-vote). Second, many voters are institutions rather than individuals. Moreover, institutional shareholders adhere to a set of regulations that in most countries require them to vote.

The substantive innovation of our model, relative to Myatt (2015), is to account for this heterogeneity in shareholder characteristics. In particular, we consider two groups of shareholders in terms of voting participation: the first who always vote, henceforth regular voters, and the second who choose whether to do so, henceforth discretionary voters (or intermittent voters). We can interpret the first group as either institutional shareholders that are legally bound to vote or shareholders that hold such a large fraction that voting is always beneficial to them. The second group can be thought of as dispersed shareholders who choose to vote or not.

For example, in the US, institutional investors are legally bound to vote in their portfolio firms. Moreover, those that are custodians of retail investments (like mutual funds) have to report their actual votes, as well as their intended voting policies in the so-called N-PX forms, submitted to the SEC annually. The rest of the investors (e.g., hedge funds, family offices, individuals) can essentially freely decide whether they want to vote, and are not required to disclose their votes.

The model unravels the effects of ownership structure and preferences on discretionary participation. If the two groups have ex-ante similar preferences, that is they agree, then discretionary voters will free-ride on regular ones, and show up to vote less on average. In contrast, when the two groups disagree about the best course for the firm, this leads to greater (discretionary) participation, or an underdog effect, as the vote is more likely to be close and any single vote matters. The model admits a closed-form solution for the equilibrium participation rate of discretionary voters.

\[ \text{underdog effect} \]

In the political science literature, where there is a single group of only discretionary voters, the underdog effect refers to the higher participation rate of supporters of the option that is (ex-ante) less popular amongst the electorate.
This allows us to express the perceived importance (the benefit-cost ratio) of a proposal, in terms of observable variables such as participation and ownership.

In more detail the model works as follows. We consider a voting contest between two options where: voting is costly; voters are born with a preferred alternative (i.e., they are partisan); there are two groups, regular and discretionary voters; and there is aggregate uncertainty about the popularities of the proposal amongst discretionary voters. Aggregate uncertainty is the major innovation of Myatt (2015) relative to the previous literature, for example Krishna and Morgan (2012). A simplifying assumption of the model is that it treats the direction of vote as exogenous, and separate from the decision to participate. We inherit this feature from Myatt (2015). This assumption seems to fit our setup well, as many shareholders appear to have predetermined views and behave in a partisan manner. For example most institutional investors subscribe to proxy advisors (ISS, etc) and follow closely their recommendations on how to vote. Moreover, Maug and Rydqvist (2009) show that strategic voting is unlikely in simple majority voting contests, which is the setting in the model and most of the data.

We solve for an equilibrium with incomplete participation for discretionary voters who are either against or for the proposal, who we refer to as types of voters. Voters of either type are homogeneous other than their preferred voting outcome. We obtain closed-form expressions for the equilibrium participation rates of each type as well as for total participation. Those depend on: the number of voting shares, the importance (benefit-cost ratio) for the voting contest, the average preferences of the two groups (regular vs discretionary voters), and the value of the distribution of discretionary voters’ preferences at the mean. The model produces a wealth of empirical predictions based on comparative statics, which are confirmed by the data. For example the important tension between agreeing discretionary voters (i.e., free-riders) who are less likely to vote, and disagreeing discretionary voters (i.e., underdogs) who are more likely.

The insights from the model guide our empirical design: we can use the model’s closed-form solutions to calculate the implied importance (benefit-cost ratio) of voting from observable variables, such as total voting participation. Using those estimates we can moreover calculate: the participation rates for supporters on both sides of the proposal, that is, per voter type, and the probability

---

3Evren (2012) also uses aggregates uncertainty but focuses on the altruistic motive of voters.

4Even when deviations from these recommendations occur (e.g., Cvijanovic, Dasgupta, and Zachariadis (2015) show that mutual funds vote more with a firm’s management when they have business ties with that firm) they do not seem to be associated strongly with any strategic consideration (pertaining to the voting contest).
of being pivotal in such a contest (which in the equilibrium with incomplete participation is equal to the cost-benefit ratio). To the best of our knowledge this is the first time these quantities are calculated from voting data.

Our data consists of a sample of 18,520 proposals put forward in Russell 3000 firms between 2003 and 2011. To estimate the preferences of the different owner groups we use the institutional setting in the US, where many institutional investors, notably mutual funds, must vote (SEC Final Rule IA-2106) and publicize their votes annually in form N-PX. Proxy filing data on beneficiary ownership over 5% shows that the vast majority of block ownership in the US is actually institutional. Indeed, non-institutional block ownership is so rare (2% of all block ownership) that it is unlikely that their preferences are common knowledge (there is no voting history available for non-institutional owners in the US). We therefore use the N-PX (filing) owners and their voting history to estimate preferences of regular voters, and use the rest of the data, that is, the non-N-PX ones, to estimate preferences of discretionary voters. Our model is also applicable to a broader setting, more pertinent to countries outside the US and the UK, where our regular voters are family owners whose preferences are known and who own sufficiently large blocks so that they always vote.

We first show that the comparative statics of the model are consistent with the data. Shareholders that are not N-PX are less likely to vote when N-PX voters strongly support the proposal, and when the distribution of preferences is more dispersed (i.e., shareholders know less about each other’s preferences). We also show evidence for the free-rider effect and the underdog effect: participation in elections with more N-PX ownership is higher when the two groups disagree with each other and lower when they agree. We then use the formula generated by the model to estimate per-voter importance of proposals. In terms of magnitudes, our estimates are comparable to the average returns to the passing of a proposal in Cuñat, Gine, and Guadalupe (2012) if we assume average block size numbers from the insider trading literature (Ahern (2015)).

We establish a number of stylized facts on the importance of proposals. First, the importance (benefit-cost ratio) of voting has increased over time, potentially because the cost of voting decreased in light of electronic voting. We then rank proposal types. In general, shareholder proposals are more important than management proposals. This may reflect the legal requirement for management to have shareholders decide upon certain topics even if they may be trivial in that specific case (Listokin (2008)). Among shareholder proposals, restructuring (i.e., share issuance,
spinoffs, mergers, etc) related proposals are the most important, followed by CSR and business-related proposals. The least important shareholder proposals are on takeover defence mechanisms and corporate governance. The order reverses for management proposals: governance related management proposals are the most important management proposals and CSR are the least important. Finally, within shareholder proposals, we rank sponsor types. Differences between sponsor types are not statistically significant with the exception of pension funds and individual activists: pension fund sponsored proposals are more important than those sponsored by activists. The empirical results are robust to a number of estimation methods. Irrespective of how we measure ex-ante preferences and other model parameters, our results stay qualitatively the same. Our regression results hold with firm, industry, and meeting fixed effects. Importantly, the stylized facts are on a per-voter basis and therefore do not depend on assumptions on average holding sizes.

Related Literature. We contribute to the literature on corporate voting. The closest paper to ours is Van der Elst (2011), which studies empirically the effect of block ownership on corporate voting participation. We contribute to this literature first, by theoretically showing how ownership matters and second, by isolating the effects of ownership, describing how to back out importance-related information from participation rates.

Most of the current literature on corporate voting is theoretical. Maug and Rydqvist (2009) study the effect of supermajority voting; Levit and Malenko (2011) show how the direction of votes can convey information about the true (directional) nature of the proposal. We are the first to systematically study voting participation in a theoretical framework. We then deliver a method to estimate the importance of specific proposals.

Other empirical work on the importance of shareholder proposals has focused on the stock market reaction to the passing of proposals. Examples are Cuñat, Gine, and Guadalupe (2012), and Bach and Metzger (2015). We contribute here by delivering another method to estimate the importance of proposals that does not rely on discontinuity analysis of only close elections, but rather uses all proposals. We also document the role of participation for outcomes. Furthermore, we contribute to the empirical literature on mutual fund voting (Brickley, Lease, and Smith Jr. (1994), Matvos and Ostrovsky (2010), and Cvijanovic, Dasgupta, and Zachariadis (2015)) by studying the effects of mutual fund ownership on participation.
Finally, we build on and contribute to a large literature of voting participation in political
elections such as Palfrey and Rosenthal (1983), Feddersen and Pesendorfer (1996), Feddersen (2004),
Krishna and Morgan (2012), Evren (2012), and Myatt (2015). This literature, starting from Downs
(1957) is most concerned with explaining observed participation rates which are high compared to
model predictions, so called voters’ paradox. Our setting where voters are more likely to be rational
and impact the outcome of the vote (i.e., be pivotal) is potentially better suited to test more
general predictions of the literature. The empirical literature on voter participation in political
elections documents how participation varies with institutional differences [e.g., compulsory voting
(Blais (2006))] and voter characteristics [e.g., age (Wolfinger and Rosenstone (1980) and Blais
(2000)), altruism (Blais (2000)), education (Abramson, Aldrich, Paolino, and Rohde (1992))] and
candidates [e.g., viability (Abramson, Aldrich, Paolino, and Rohde (1992))]. We document how
voting participation in corporate contests varies with proposal and sponsor type.

2 Model

In this section we present a rational-choice model of voting participation. The model is an exten-
sion of Myatt (2015), where the important variation is that we allow for heterogeneity between
shareholders in their voting discretion. The goal is to derive a formula for voting participation,
which we then use in our empirical analysis.

Setup. Consider a corporate proposal, where shareholders need to decide between two options
$R$ and $L$. The firm has $n + 1$ voting shares. The number of voting shares $n$ can be thought of as
the market capitalization of the firm divided by the average holdings in that firm, for example, in
a firm with $10$M market capitalization and $10$K average holding we have $n = 1000$. A fraction
$\gamma \in [0, 1)$ of the $n$ shares belongs to regular voters, while a fraction $1 - \gamma$ (plus one) belongs to
discretionary voters with a single voting share and so a single vote each. Hence, for $\gamma = 0$ we are
in the model of Myatt (2015).

The $\gamma \in [0, 1)$ regular voters are by definition always available, always vote, and their voting
preference is captured by a constant $q \in (1/2, 1)$, which is the fraction of this group who vote for $R$.
Thus, regular voters can be thought of: either as i) two sub-groups (blockholders) with sizes $q$ and
$1 - q$ supporting $R$ and $L$, respectively; or alternatively as ii) coalitions of dispersed shareholders
who always participate, and vote in proportion $q (1-q)$ for $R$ ($L$). Assuming $R$ is the most popular option amongst regular voters (i.e., $q > 1/2$) is without loss of generality, since if $q < 1/2$ we can simply interchange the labels $R$ and $L$.

Now, amongst discretionary voters, option $R$ has ex ante popularity $p \in (0, 1)$. The crux of the model is that $p$ is unknown, distributed according to density $f(\cdot)$ in $(0, 1)$, with mean $\bar{p}$. Moreover, discretionary voters are available to vote with probability $a$, which is distributed according to density $g(\cdot)$ in $(0, 1]$, and has mean $\bar{a}$ (i.e., $a$ is an ‘availability’ shock); $p$ and $a$ are independent random variables, while $q$ is known. The firms’ shareholders are partisan: they vote according to their preferences (types) regardless of others’ voting preferences and participation. Hence, if all were available and always voted then the expected votes for $R$ would be $q \gamma + \bar{p}(1 - \gamma)$.

Discretionary voters decide to vote or not based on an incremental benefit $v > 0$, which they receive only if their preferred option wins, and a cost $c > 0$, which they face when they vote, regardless of the outcome. We assume that $R$ and $L$ supporters have the same $v$ and $c$, and are risk-neutral. Hence, discretionary voters are homogeneous except their voting preferences.\footnote{Introducing heterogeneity in, say, their holdings and voting power is an interesting direction for future work.}

This is primarily to assist our identification of several parameters in the data. The benefit $v$ can be thought of as the subjectively perceived payoff in $$/share accruing to a discretionary voter when her preferred option wins. It is a combination of any (forecasted) short-run stock market reaction and any (unpriced) long-run benefit (“altruistic” motives can also be accommodated). The opportunity cost $c$ captures time spent to cast a vote (primarily electronically for corporate elections).

Once (confidential) voting is done, the outcome is decided by simple majority over the votes cast and in case of a tie a fair coin toss is the tie-breaker. All the above are common knowledge. The only choice variable (strategy) is whether a discretionary voter votes. Hence, the model is silent on how shareholders choose what to vote, but speaks on whether she chooses to voice her opinion by voting or not. We look for symmetric strategies across types $R$ or $L$ of discretionary voters and the solution concept is Bayesian Nash Equilibrium.

**Primitives.** Consider a focal discretionary voter of type $i \in \{R, L\}$ who is contemplating whether to vote or not. For any discretionary participation to be possible we rule out the case where either type of regular voters can decide the outcome unilaterally. Since $q > 1/2$ we need only assume
that:

**A1:** \( \gamma < 1/(2q) \).

Let \( b_R, b_L \) be the votes of non-focal discretionary voters for each option. Then the total votes for \( R \) are \( b_R + q\gamma n \), and for \( L \) they are \( b_L + (1-q)\gamma n \). The focal shareholder is pivotal if: either i) her type is losing by one vote, she pushes the score to a tie and the coin toss is favorable (with probability 1/2); or ii) if there is already a tie, the coin toss is against her type and with her vote she gives a clear majority to her type, that is,

\[
\Pr[\text{Pivotal}|R] = \frac{\Pr[b_R + q\gamma n = b_L + (1-q)\gamma n] + \Pr[b_R + q\gamma n - 1 = b_L + (1-q)\gamma n]}{2},
\]

\[
\Pr[\text{Pivotal}|L] = \frac{\Pr[b_R + q\gamma n = b_L + (1-q)\gamma n] + \Pr[b_R + q\gamma n + 1 = b_L + (1-q)\gamma n]}{2}.
\]

The shareholder votes if \( v \Pr[\text{Pivotal}|i] > c \) or \( \Pr[\text{Pivotal}|i] > c/v \), and does not vote otherwise, for \( i \in \{R, L\} \). Hence, for any participation to be possible we also assume that the cost should not be higher than the benefit:

**A2:** \( v \geq c \).

Now, if

\[
\Pr[\text{Pivotal}|i] = \frac{c}{v},
\]

for either type \( i \in \{L, R\} \), then that type is indifferent between voting or not, follows a mixed strategy, and we have incomplete participation for \( i \).

**Large Elections.** As Myatt (2015) notes, the pivotal probabilities are cumbersome to calculate unless we look at elections with large \( n \). Let \( t_R \) and \( t_L \) denote discretionary voter participation rates, depending on shareholders’ type. Below we present the pivotal probabilities as approximated for large elections, and the case where \( a \) is equal to \( \bar{a} \) (i.e., \( g \) is degenerate). The proof appears in Appendix A.
**Lemma 1** Assuming \( g(a) = \delta(a - \bar{a}) \), i.e., the Dirac function, and A1 we have that the pivotal probabilities for \( R \) and \( L \) in large elections are approximately:

\[
\begin{align*}
\Pr[\text{Pivotal} | R] &\approx \frac{1}{(1 - \gamma)n} \frac{1}{\bar{a}(t_R + t_L)} f(p^*)p^*, \\
\Pr[\text{Pivotal} | L] &\approx \frac{1}{(1 - \gamma)n} \frac{1}{\bar{a}(1 - \bar{p})(t_R + t_L)} f(p^*)(1 - p^*),
\end{align*}
\]

where

\[ p^* := \frac{t_L}{t_R + t_L} - \frac{(2q - 1)\gamma}{1 - \gamma} \frac{1}{\bar{a}(t_R + t_L)}, \]

The value \( p^* \) is the average probability of support for \( R \) amongst the discretionary voters, for which the total average support for \( R \) and \( L \) are equal, that is,

\[ \bar{a}(1 - \gamma)p^*t_R + \gamma q = \bar{a}(1 - \gamma)(1 - p^*)t_L + \gamma(1 - q). \]

Although, (2) and (3) are approximations we will use them as equalities in what follows and in that sense we are looking at approximate equilibria, defined in Myatt (2015, p. 10).

Note that since \( p^* \) is a probability it should be in \((0, 1)\) and hence, we can readily see from (4) that \( t_L \) cannot be zero. So we have the following result.

**Corollary 1** There is no equilibrium where discretionary voters of type \( L \) do not turn out, that is, \( t_L \neq 0 \).

**Equilibrium with Incomplete Participation.** Given the expressions for the pivotal probabilities we now inquire on the existence of an equilibrium with incomplete participation for both \( L \) and \( R \) [i.e., \( t_L, t_R \in (0, 1) \)], which is plausibly the most realistic case.\(^6\) From (1) we have that since the cost-benefit ratio is the same for both types the pivotal probabilities should also be the same for both types. Hence, using (2) and (3), in equilibrium we must have:

\[ p^* = \bar{p}. \]

\(^6\) In ongoing work we inquire on the existence of equilibria with \( t_L = 1 \) and \( t_R = \{0, 1\} \).
Given (5) this means that at equilibrium the total average supports for $L$ and $R$ are equalized. In other words, the advantage of the favorite in the whole population of voters is overcome by higher participation rates of the underdog’s voters. From (6) the pivotal probabilities in equilibrium are:

$$\Pr[\text{Pivotal}|R] = \Pr[\text{Pivotal}|L] = \frac{1}{(1-\gamma)n} \frac{1}{\bar{a}(t_R + t_L)} f(\bar{p}) .$$

Moreover, in the equilibrium with incomplete participation we have that the pivotal probability for type $R$ is equal to her cost-benefit ratio (1), hence

$$t_R + t_L = \frac{1}{(1-\gamma)n\bar{a}} f(\bar{p}) \frac{v}{c} .$$

Furthermore, from the definition of $p^*$ (4) and the fact that it is equal to $\bar{p}$ (6) we have after some simple algebra

$$t_L = (t_R + t_L)\bar{p} + \frac{(2q-1)\gamma}{1-\gamma} \frac{1}{\bar{a}} .$$

Using (7) with (8) we derive the equilibrium $t_L$ and $t_R$.

$$t_L = \frac{1}{n} \frac{1}{\bar{a}(1-\gamma)} f(\bar{p}) \frac{\bar{p}v}{c} + \frac{(2q-1)\gamma}{1-\gamma} \frac{1}{\bar{a}} ,$$

$$t_R = \frac{1}{n} \frac{1}{\bar{a}(1-\gamma)} f(\bar{p})(1-\bar{p}) \frac{v}{c} - \frac{(2q-1)\gamma}{1-\gamma} \frac{1}{\bar{a}} ,$$

and

$$\bar{t} = \frac{2\bar{p}(1-\bar{p})}{n(1-\gamma)} \frac{v}{c} f(\bar{p}) + \frac{(2q-1)\gamma}{1-\gamma} (1-2\bar{p}) ,$$

$$t_{\text{total}} = \frac{2\bar{p}(1-\bar{p})}{n} \frac{v}{c} f(\bar{p}) + \gamma (\bar{p}(1-q) + q(1-\bar{p}) ) ,$$

where in the third and fourth line we used the definitions of average participation for discretionary voters and average total participation (i.e., also including regular voters):

$$\bar{t} := \bar{a} (\bar{p}t_R + (1-\bar{p})t_L) ,$$

$$t_{\text{total}} := (1-\gamma)\bar{t} + \gamma .$$

By definition what we need for incomplete participation is that $(t_L, t_R) \in (0, 1)$. These restrictions lead to a set of necessary and sufficient conditions in terms of the parameters of the model, in
particular \( v/c, n \) and \( \gamma \). The full set of parameter regions that imply and are implied by incomplete participation are presented in Proposition 1 in Appendix A. Below we present the part of the result which is empirically relevant to us. Namely the parameter space where we have a relatively large fraction of regular voters, regular block for short, and many voters.\(^7\)

**Proposition 1 (Large Regular Block, Many Voters)** Assume that \( q \in (1/2, 1), \bar{p} \in (0, 1), f(\bar{p}) > 0, \bar{a} \in (0, 1], g(a) = \delta(a - \bar{a}), \)

\[
\frac{n\gamma(2q - 1)}{f(\bar{p})(1 - \bar{p})} \quad \frac{v}{c} \quad \min \left\{ \frac{n(\bar{a} - \gamma(\bar{a} - 1 + 2q))}{f(\bar{p})\bar{p}}, \frac{n(\bar{a} - \gamma(\bar{a} + 1 - 2q))}{f(\bar{p})(1 - \bar{p})} \right\},
\]

\[
n > \frac{\bar{a}(1 - \bar{p})}{\bar{a}(2q - 1)}, \quad \text{and}
\]

\[
\frac{f(\bar{p})(1 - \bar{p})}{n(2q - 1)} < \gamma < \frac{\bar{a}(1 - \bar{p})}{\bar{a}(1 - \bar{p}) + 2q - 1}.
\]

These conditions are sufficient for the existence of an incomplete participation equilibrium by both types, that is \( t_L, t_R \in (0, 1) \), and given by equations (9) and (10). Furthermore, average participation amongst discretionary voters \( \bar{t} \) and average total participation \( t_{total} \) are given by (11) and (12). Finally, in such equilibrium the probability of being pivotal for either \( R \) of \( L \) is equal to the common cost-benefit ratio \( c/v \) (1), and the total expected votes for \( R \) and \( L \) are equal (5).

**2.1 Comparative Statics**

From the formulas for the rates (9)–(12) we see that all of the participation rates: decrease with the size of the electorate \( n \), in a larger pool of shareholders each one has a smaller probability of being pivotal; increase with the concentration of the ex-ante beliefs around the mean \( f(\bar{p}) \), shareholders are more likely to vote if they are more certain about each other’s preferences; increase with the benefit-cost ratio, the ‘importance’, of the election \( v/c \). As expected, the average availability shock \( \bar{a} \) decreases both \( t_L \) and \( t_R \), and does not affect \( \bar{t} \) and \( t_{total} \). More average support for \( R \) \( \bar{p} \) increases \( t_L \), and decreases \( t_R \); similarly, as \( q \) (the fraction of regular voters who support \( R \)) increases \( t_L \) increases and \( t_R \) decreases. Both of the latter two effects are manifestations of the underdog effect for supporters of \( L \) and a free-rider effect for supporters of \( R \). The effect of \( \gamma \) is more subtle,

\(^7\)The restriction to many voters is innocuous as our approximations work well for large \( n \) in any case. The focus on large enough regular block size is empirically motivated.
the first parts of $t_R$ and $t_L$ both increase with $\gamma$ capturing the fact that higher $\gamma$ translates to less discretionary voters, however the second part is increasing in $\gamma$ for $t_L$ and decreasing for $t_R$. Again, for a fixed $q$ a larger regular block translates to more votes for $R$ and commands higher participation of $L$, due to an underdog effect, and lower of $R$, due to a free-rider effect.\(^8\)

These effects of $q$, $\bar{p}$ and $\gamma$ on $t_L$ and $t_R$ are combined once we calculate average discretionary participation $\bar{t}$. In particular, $\bar{t}$ is also split into two parts. The first term is also present in Myatt (2015) (par the $\gamma$) and the second is a new term due to the existence of regular voters. The first part of $\bar{t}$ increases with the contestedness of the vote, that is, as $\bar{p} \to 1/2$, capturing the fact that close elections command more participation. The second part decreases with $\bar{p}$, because the more discretionary voters agree with regular voters the less they participate. Now, the effect of $\gamma$ in the first term is to increase $\bar{t}$ because all else equal a larger regular block means a lower number of discretionary voters. However, in the second term the effect of $\gamma$ and $q$ depends on the sign of $1 - 2\bar{p}$: If $\bar{p} > 1/2$ so that there is agreement on average between discretionary and regular voters (since $q > 1/2$) then the second term decreases with $\gamma$, this is the free-rider effect; while if $\bar{p} < 1/2$ so that there is disagreement on average between discretionary and regular voters then the second term increases with $\gamma$ (and $q$), this is the underdog effect. Total participation $t_{\text{total}}$ (which is less interesting as it also includes the regular participation) is: decreasing in $\bar{p}$; increasing in $\gamma$; and increasing in $q$ if $\bar{p} < 1/2$, and decreasing otherwise.

Note that the effect of the parameters will also come from the regions in which we get incomplete participation. As we see we have conditions on the benefit-cost ratio $v/c$, number of voting shares $n$, and regular block size $\gamma$, in terms of the other parameters $q$, $\bar{p}$, $f(\bar{p})$, $\bar{a}$. In Proposition 1 the lower bound on $\gamma$ guarantees that the lower bound on $v/c$ exceeds one, and hence some participation is possible. The upper bound on $\gamma$ guarantees that the lower bound on $v/c$ does not exceed the upper bound, and hence an equilibrium with incomplete participation exists. The (lower) bound on $n$ guarantees that the lower bound on $\gamma$ does not exceed the upper bound. The lower bound on $v/c$ guarantees that participation of the agreeing shareholders is positive. The upper bound on $v/c$ guarantees that neither of the groups participates fully. Within these bounds for $v/c$, $\gamma$, and $n$ participation is strictly between zero and one for both types.

\(^8\)Many of these effects are also found in Myatt (2015). Our innovation relative to his model is the introduction of the regular voters block, which yields the distinction between free-riders and underdogs.
Numerical Illustration. To illustrate the effects of ownership we plot, in Figures 1–4 several quantities of interest vs. the regular block size $\gamma$, pertaining to the result of Proposition 1. We also pick availability shock $\bar{a} = 1$, so that discretionary voters are always available (other parameters are as follows: $f$ normal, $n = 1000$, $\text{Var}[p] = 0.01$, and $q = 0.6$). In each of the figures we include two panels: the left panel with $\bar{p} = 0.9$ so that on average shareholder types agree; and the right panel with $\bar{p} = 0.3$ so that on average shareholder types disagree. Figure 1 plots the lower and upper threshold of $v/c$ as given by Proposition 1. The range of $\gamma$ is different between the left and right panels because the upper and lower permissible values of $\gamma$ in Proposition 1 depend on $\bar{p}$. In particular, in the case of disagreement ($\bar{p} = 0.3$) we have incomplete support for both types for a larger range of values. In both panels Figure 1 gives us the permissible values of the benefit-cost ratio for the permissible values of $\gamma$, and shows that as $\gamma$ increases the range of permissible values for $v/c$ decreases. Now, in Figure 2 we plot the probability of being pivotal, which in the incomplete participation equilibrium is equal to the cost-benefit ratio $c/v$ (note the logarithmic scale on the $y$-axis). Hence, Figure 2 depicts the reverse of Figure 1, and is included for completeness.

Now, in Figure 3 we plot the participation rates $t_L$ and $t_R$ as given by (9) and (10). In both panels we pick $v/c$ equal to the common limit for the upper and lower bounds of $v/c$ for $\gamma$ equal to its upper limit in each case, as can been seen in Figure 1. As we see in both panels as $\gamma$ increases participation for $L$ supporters increases (the underdog effect) while that of $R$ supporters decreases (the free-riding effect). Moreover the rate of increase and decrease is more pronounced when the two types of shareholders disagree. Finally, in Figure 4 we plot the average discretionary participation $\bar{t}$ and total (average) participation $t_{\text{total}}$ as given by (11) and (12) for the same values of $v/c$ as the corresponding panels of Figure 3. Recall that both of these quantities do not depend on $\bar{a}$ but the range of permissible $\gamma$ does. Looking first at $\bar{t}$ we see that, interestingly, it decreases with $\gamma$ when there is agreement and increases when there is disagreement. Recall that $\bar{t}$ is a weighted sum of the expected participation of $L$ and $R$ supporters. In the agreement case there are by definition on average less $L$ supporters and hence their behavior (i.e., the fact that their participation increases with $\gamma$) does not dominate on aggregate; while in the disagreement case there are more $L$ supporters and their behavior also determines the one of average participation. As expected total participation increases linearly with $\gamma$, as a larger block of regular voters always leads to a higher participation in part mechanically because these shareholders by definition always vote. Moreover, any decrease in
the participation of $R$ supporters in equilibrium is more than outweighed by the increase of regular voters.

3 Data

3.1 Voting Data

Our aggregate voting data comes from the ISS Voting Results database. The data includes the voting direction for all proposals (total votes for, against, and abstain votes) in all Russell 3000 firms between 2003–2013. Also, it provides the voting outcome (Pass/Fail), the base for calculating the voting outcome (for plus against, for plus against plus abstain, or outstanding), the majority rule (simple or super-majority), and the Broker-NonVotes. Broker-NonVotes are the shares that have not been voted and which are held via brokers (i.e., in “street name”) rather than directly. Finally, the dataset includes the recommended vote of both management and the ISS. As in the previous literature (e.g., Cvijanovic, Dasgupta, and Zachariadis (2015)), we exclude: director elections as we cannot estimate the ex-ante popularity of a particular director; ratification proposals as they are routine and non-controversial; and say-on-pay proposals where the outcome is not binary. Finally, we exclude the very few (approximately 2%) super-majority voting contests since our model only addresses simple majority elections.

We combine the aggregate voting results with the ISS Mutual Fund Voting database, which provides the number of votes per voting direction (for, against, or abstain) of individual mutual funds on each proposal in our sample. The source for this database are the mandatory N-PX filings which mutual funds have to report. We aggregate mutual fund level voting information at the corresponding fund-family level.

3.2 Ownership data

In the US, corporate ownership data is available from several sources. There are also a number of other sources, such as Yahoo Finance, that aggregate current ownership data from these sources and share it online for no charge or membership. Thus shareholders can easily access ownership information when evaluating proposals. We use two sources of ownership data. First, firms must report ownership of blocks over 5% in the proxy statement, the document accompanying the voting
invitation. We hand-collect the fraction of shares owned and the type of the owner (institutional or private) from the proxy statements. Second, institutional owners must report their holdings on a quarterly basis in the 13F form filings. We obtain this data from Thomson Reuters. Institutions reported in 13F filings include mutual funds that also disclose their votes in the N-PX forms, as well as hedge funds, and other money managers.

3.3 Summary statistics

Table 1 presents summary statistics for the data sample used in the paper. Panel A provides the number of observations per year. Our sample includes 8,568 meetings with 18,520 non-standard proposals. There are on average two proposals per meeting. Both the number of meetings and proposals per meeting increase over time, with 1.7 proposals per meeting in 2003 and 2.5 proposals per meeting in 2011. Panel B presents the characteristics of the firms in our sample. Our firms are comparable to the sample of other papers on shareholders meetings (e.g., Cvijanovic, Dasgupta, and Zachariadis (2015)), with an average book asset size of $18 billion, leverage of 23%, and a market to book ratio of 1.9. Panel C presents summary statistics for share ownership at the meeting level. At the time of the meeting, there are on average 272 million shares outstanding, of which on average 68% are owned by institutional investors. Among these, 20% report their votes (N-PX shares). The blocks over 5% reported in the proxy statement account for 25% of the shares owned. Most of these blocks belong to institutional shareholders, in total amounting to 23% of the shares. Private shareholders among the blocks over 5% only account for 2% of all shares. Finally, directors own on average 1.6% of the shares.

3.4 Regular and discretionary voters in our data

We use the voting regulations in the US to distinguish regular from discretionary voters. In the US, investment advisers must vote on behalf of their clients (SEC Final Rule IA-2106). Among these, voting is practically enforced only among mutual funds and other registered investment management companies, which are required to disclose their votes in the N-PX forms. We estimate regular voter statistics using these ”N-PX” shareholders. As Table 1, Panel C shows, these shareholders hold a significant fraction, 20%, of shares.

9 Hence, some of the mutual funds who file N-PX forms also own significant (more than 5%) parts of individual firms.
To calculate votes for discretionary voters, we subtract the votes of regular (N-PX) voters from the aggregates in each category (for, against, abstain). These ”NonN-PX” votes can come from other institutional investors (such as hedge funds, pension funds) as well as individuals (such as insiders, directors, and dispersed shareholders). The category total per proposal of these NonN-PX votes is our discretionary participation measure \( t \). The average discretionary participation across a proposal type is \( \bar{t} \).

Participation is then formally defined as all votes cast:

\[
\text{Participation} = \text{Yes} + \text{No} + \text{Abstain} = \text{ParticipationN-PX} + \text{ParticipationNonN-PX}.
\]

Further, we also define Registered-NonVote as:

\[
\text{Registered-NonVote} = \text{SharesOutstanding} - \text{Participation} - \text{Broker-NonVote}.
\]

Registered-NonVote are shares held primarily by individual investors that were not voted. Hence, the sum of Registered-NonVote and Broker-NonVote is equal to the Non-Voted shares, i.e., it is the complimentary of Participation. All voting data are available per proposal. In Figure 5 we illustrate how a firm’s shares outstanding split in terms of voting behaviour.

### 3.5 Voting direction and participation: stylized facts

In Table 2 we report summary statistics on voting direction and participation. The fraction of votes For a proposal is calculated as the number of votes for the proposal as a fraction of the base valid for the specific proposal. The base can be either the number of shares outstanding or the number of shares voted and depends on state laws and the company charters (Bach and Metzger (2015)). Our data specifies the appropriate base for each voting contest.

Panel A shows that a little over a half of all proposals passes: on average, 53% (of the applicable base) vote for a proposal. Total participation is on average 77% of shares outstanding, and discretionary participation 73%. This is substantial compared to participation in political elections: for example, participation in the 2016 US presidential election was 55%.

Panel B reports the voting direction and participation by type of proposal. Here we summarize the very fine proposal description provided by the ISS into eleven categories. In Appendix B we
provide more details on our classification, including examples. The *Restructuring* category contains proposals regarding equity issuance, divestitures and other transactions that change the structure of the firm. We distinguish those from *Mergers* because these usually require special meetings. The *Payout* category contains proposals on dividends and repurchases: there are very few observations on these in our data. *Business* proposals are other proposals that are not related to corporate governance, such as whether to invest into a specific country. We classify the corporate governance proposals into *Board*-related issues, *Compensation*-related issues, takeover defense, *Corporate Social Responsibility* related matters, and other corporate governance related matters (*Governance*). We exclude *Say-On-Pay* proposals from our main analysis because they have more than one voting option (one, two, or three years).

Panel B orders the proposals by the frequency they appear in our sample. Compensation-related proposals are the most frequent, followed by the say-on-pay and restructuring proposals. The least frequent proposals are payout-related. The proposals that receive the most support are related to mergers (73%) and payout (70%). CSR proposals receive the least support (10%). These averages already reveal that participation is not always related to the level of support. Even CSR-related proposals with their low support rates receive a fairly high discretionary participation rate with 75%. Restructuring-related proposals receive the highest discretionary participation rates (79%), although their support rates are not the highest (69%) and also they are not on average contested.

A large fraction of institutional voters rely on proxy advisory recommendations. Lowry and Illiev (2014) show that over a quarter of mutual funds rely almost entirely on ISS recommendations. Therefore, many shareholders are likely to use the ISS recommendation as a proxy for the regular voters’ direction. To see how accurate such beliefs would be, we show in the last column of Panel B the average fraction of the appropriate base that votes with the ISS recommendation. The categories where the highest fraction of shareholders votes with ISS are merger (83%) and payout proposals (96%). In proposals that are more taste-based such as CSR (68%), Say-On-Pay frequency (54%) or governance proposals (64%), shareholders follow the ISS recommendation less frequently. We will take these following frequencies into account when calculating ISS-based beliefs.

Panel C shows voting direction and participation by the type of sponsor. Among shareholder sponsored proposals, we distinguish between types of institutional shareholders (pension funds, and other - non-pension - funds). Non-institutional shareholders are classified into: individual activists,
social groups, unions, employees, proxy advisors, and other corporations. Coalitions are proposals by multiple sponsors that fall into several categories. Among shareholders, individual activists are the most frequent sponsors of proposals, followed by pension funds. There are very few proposals sponsored by proxy advisors, other firms, and employees.

Management proposals receive the highest support rates (60%), and shareholders are most likely to follow the ISS recommendation with these proposals (76%). This may be partly driven by routine proposals that management are legally bound to sponsor, but also highlights that shareholders self-select themselves into firms and thus on average support management.

Among the shareholder proposals, support is highest for coalitions (30%) and proxy advisors (37%) and lowest for corporations (9%). In contrast, proposals by social groups receive the highest discretionary participation rates (75%). The lowest discretionary participation rates are received by employee proposals (47%). Shareholders are most likely to follow the ISS recommendations on proposals by social groups (71%) and least likely to do so for proposals by coalitions (50%), unions (51%), and, not surprisingly, proxy advisors (52%).

Our results highlight that participation rates contain information in addition to support rates: shareholders seem to consider proposals by social groups important enough to vote (against) even if they are unlikely to succeed. Given the discrepancy between support rates and participation rates, this suggests that participation rates carry information over and above the support rates. In the next section we use the model to isolate such information.

4 The Model in the US Data

We use the model to infer information from actual participation rates, in particular about the perceived importance of proposals, that is, the benefit-cost ratio $v/c$. We start this section with a discussion of how to fit the model to the data.

4.1 Parameters

This section maps the model parameters to the data: we start with a brief discussion about the measurement of regular and discretionary voters and then suggest several methods to measure average directional preferences, and finally discuss the interpretation of voting directions.
The distinction between regular and discretionary voters is the most important choice when translating the model into the data. In the US, we exploit the regulatory setting where mutual funds must file their votes. We use the information of these "N-PX shareholders" to estimate fraction and direction of regular voters. The residual, "NonN-PX shareholders", are the discretionary voters in our setting. However, the model can also be used in other contexts. This is reasonable especially when shareholders 1) believe that owners of large blocks will participate almost certainly and 2) can reasonably predict how those block owners will vote. For example, it is probable that shareholders can predict the voting direction of a majority family or state owner. This setting is prevalent in many countries with concentrated ownership in contrast to the US, where individuals own on average only 2% of the firms).

The model has the following main parameters: the fraction owned by regular voters $\gamma$; the support by regular voters $q$; the average support by discretionary voters $\bar{p}$; the density of their support computed at the average $f(\bar{p})$; the number of voters $n$. The regular block size $\gamma$ is the fraction of N-PX holdings. We do not have information on holding size and therefore will calculate all numbers per voter. We will discuss in Section 4.4 how realistic implied magnitudes for $n$ are.

For each proposal type, we use actual voting data to estimate the parameters on voting direction preferences $q$, $\bar{p}$, $f(\bar{p})$. We propose three ways to calculate these parameters.

The first alternative is the most general approach. Here we use the average of all proposals of a given type. This approach can be interpreted as shareholders’ general expectations of voting directions. We also estimate the density, $f(\bar{p})$, using this approach.

The second approach is the most proposal-specific. Here we use the proposal-specific ISS recommendation and the average fraction of voters that follow that ISS recommendation direction (i.e., separate for/against) for a given proposal type.

The third approach is the closest to actual practice. Here we focus on proposals in a given type that occurred in the most recent meeting of the same firm (if there were none, we use the next most recent meeting, and so on). In interviews with proxy advisors, data providers, and shareholders, we verify that this is the most common way for shareholders to obtain a prediction of voting directions.

As in our model, we standardize as $R$ the direction (for or against) which is more popular (on average) amongst regular voters, and compute $\bar{p}$ and $f(\bar{p})$ accordingly.

Our estimates are based on revealed votes as opposed to the ex-ante voting preferences as in
the model. In the model \( p \) is the population ex-ante support of discretionary voters for option \( R \) (i.e., the most popular amongst regular voters). These are unobservable. However, in our data we do observe (per proposal type) \( t_R p \), that is, the support of discretionary votes for option \( R \) who did choose to vote. Similarly, we observe \( t_L(1 - p) \). However, we cannot divide these by the true \( t_R \) and \( t_L \) as these are the quantities we seek to calculate with the estimated \( p \) and \( 1 - p \).

In order to resolve this circularity, we use a simple iterative approach. We start with bounds for \( p \) and \( 1 - p \) rather than one number. For these bounds, we assume that either \( t_L = 1 \) or \( t_R = 1 \), i.e., full participation by the left, or the right side, respectively. In practice, this implies that for one bound we use the ‘votes for’, for the other ‘votes against’, as representative of the whole population’s preferences. This yields two sets of estimates for each of \( \bar{p} \) and \( f(\bar{p}) \). Using these bounds, and the resulting bound estimates for \( v/c \) (see Section 4.3), we can then compute the ‘true’ \( t_L \) and \( t_R \) using formulas (9) and (10).

Theoretically, we can then return and correct our original estimate of \( p \) based on the estimates. This can be repeated until convergence. For our current sample it turns out that the \( t_L = 1 \) estimates are remarkably accurate, as discussed below. That is, our data suggests that the shareholders against the majority regular voter opinion fully participate.

### 4.2 Model predictions and the data

Before we use the model to predict importance, we confirm in this section that its predictions hold empirically. For this purpose, we regress discretionary participation on the observable model parameters. We control for a full set of fixed effects of proposal types, sponsor types, and years, as well as firm characteristics: the fraction of institutional block ownership, the fraction of private block ownership, leverage, the market-to-book ratio, and size (the logarithm of assets).

We report results for three different ways to estimate the preferences: with proposal average preferences (columns 1 and 2), the ISS recommendations (weighted by the fraction of followers, columns 3 and 4) and the averages of the previous year’s meeting (columns 5 and 6). In columns 7 and 8 we report estimates using actual preferences of the respective votes. We also report estimates using the two extreme assumptions for full participation in the two directions, respectively (\( t_R = 1 \) or \( t_L = 1 \)), which gives us the two bounds for the range of coefficient estimates with incomplete participation.
Table 3 presents the results (for the sample that satisfies the bounds of Proposition 1 as explained in Section 4.3). Column 1 shows the estimation results using proposal averages for $\bar{p}$ and $q$ estimation, and assuming full participation to the direction against the regular voters ($t_L = 1$). It reveals several general patterns in the data independent of model predictions:

First, discretionary participation rates $\bar{t}$ are significantly higher when the average support by non-regular voters, $\bar{p}$, is higher. If 10% of non-regular voters changed their intended voting direction towards the one of the regular voters, that change would be associated with an 13% increase in discretionary participation. This result also holds when we assume full participation for the regular voters ($t_R = 1$) in column 2. The coefficient is not significant with alternative measures of $q$ and $\bar{p}$.

Second, discretionary participation rates are lower for higher support of the regular voters to their favourite cause, $q$. Because we define the direction of $q$ to be pro management if regular voters are on average pro management, and pro shareholders if regular voters are on average pro shareholders, $q$ can never be below 50%. Therefore, a higher $q$ means that regular voters are more unified. The coefficient means that a change of opinion of 10% of regular voters towards their favourite cause (10% points more unified regular voters) is associated with 4% decrease in discretionary participation. This result is similar when we use the previous year’s averages to estimate $q$ and $\bar{p}$ and weaker when we use ISS recommendations or the actual support rates.

Now we show that the model predictions are visible in the data. First, discretionary participation rates are increasing in the density at the mean $f(\bar{p})$, as the model predicts. That is, shareholders are more likely to vote if they are better able to predict how others vote. The effect is statistically small: an 10% increase of $f(\bar{p})$ is associated with a 0.1% change in discretionary participation. This implies that firms or sponsors can theoretically increase discretionary participation by providing more information, but that they need to provide much more precision to achieve substantial changes in participation. These results hold directionally in most specifications but are generally strongest using proposal averages to estimate $\bar{p}$ and $q$, which are arguably the most precise. The positive coefficient in the density at the mean $f(\bar{p})$ is lower when we assume full participation of discretionary voters that agree with the regular voters ($t_R = 1$) for all estimations and not significant for the combination of $t_R = 1$ with proposal average estimates (column 2).

The model makes predictions regarding ownership that depends on the degree of disagreement between regular and discretionary voters. In the model agreement means that average support of
discretionary voters $\bar{p}$ is in the same direction as the direction of the regular ones $q$, i.e., $\bar{p} > 1/2$ (since $q > 1/2$); and disagreement corresponds to $\bar{p} < 1/2$. To estimate average disagreement, we compute the fraction of proposals within each proposal type for which N-PX voters on average voted in a direction opposite to all other voters. We then mark the upper quintile of this variable as “disagreement”. We then interact the N-PX ownership $\gamma$ with a disagreement dummy and an agreement dummy.

As we can see in Column 1, the coefficient of the interaction term between agreement and regular block size $\gamma$ is negative and significant (at 10% level). This suggests that discretionary voters free-ride if their preferences are consistent with the preferences of the regular voters. When N-PX voters agree with the non-N-PX voters, a 10% increase in N-PX ownership is associated with a 1.5% decrease in discretionary participation.

We also document weak evidence on the underdog effect. The coefficient on the interaction term between the disagreement dummy and N-PX ownership $\gamma$ is positive in all specifications, albeit significant only in the combination of ISS estimations and full participation on the right, or when previous year’s shareholder meeting is used for $p$ and $q$ estimation). Shareholders with preferences opposed to N-PX voters are more likely to participate because they are more likely to make a difference.

Overall, the empirical results are consistent with the comparative statics of the model. This adds validity to our use of the model in the data to assess the importance of proposals. In the next section, we will use its predictions to estimate the importance of proposals.

4.3 Bounds & Estimations

Table 4 Panel A shows how many observations satisfy the sufficient conditions of Proposition 1. The bound on $n$ in Proposition 1 is innocuous as we always focus on large elections; as mentioned, empirically $n$ is an estimate that depends on assumptions regarding the average holding size (see Section 4.4). Therefore we focus on the bounds on $\gamma$ and $v/c$. Table 4 shows the number of observations that satisfy bounds for four estimations of $\bar{p}$ and $q$: 1) the two estimation strategies for expected preferences of NonN-PX shareholders (the proposal average, ISS recommendations, and the average of the previous meeting; and for both of these estimates 2) assuming full participation for each direction ($t_R = 1$ or $t_L = 1$). As discussed in the previous subsection, these options result
into the bounds of the range of possible estimates. We discuss below which estimation is more realistic.

Below we describe the results of estimations assuming full participation of shareholders that disagree with N-PX (regular) voters (i.e., $t_L = 1$). The bounds for $\gamma$ (in Proposition 1) are satisfied for 9,793 proposals, which corresponds to around a half of all proposals, using the proposal average. Using the ISS recommendations or the average preferences of the previous meeting is more restrictive, with 9,072 (7,435) proposals for which the bound is satisfied. The assumption on full participation ($t_L = 1$ or $t_R = 1$) makes little difference. From what follows we exclude those proposals in firms where the regular block size $\gamma$ is not within the bounds in Proposition 1.

Now, we re-arrange (11) for $\bar{t}$ to back out importance $v/c$,

$$
\frac{v}{c} = \frac{n}{2\bar{p}(1-\bar{p})f(\bar{p})} \left((1-\gamma)\bar{t} - (2q-1)\gamma(1-2\bar{p})\right),
$$

or importance per voter,

$$
\frac{v}{nc} = \frac{1}{2\bar{p}(1-\bar{p})f(\bar{p})} \left((1-\gamma)\bar{t} - (2q-1)\gamma(1-2\bar{p})\right).
$$

For each of our estimates of $\bar{p}$, $f(\bar{p})$, $q$ and the observed $\gamma$ (within the bounds) and $\bar{t}$ we can calculate the importance per voter $v/(nc)$ and see whether it satisfies the bounds in Proposition 1. As Table 4 Panel A reports the bounds on $\gamma$ and $v/(nc)$ are jointly satisfied for 3,034 proposals using all proposals to estimate preferences, and assuming full participation of discretionary voters against the regular voters (i.e., $t_L = 1$). Using the ISS recommendations or the previous meeting’s average preferences the two bounds are satisfied for 3,616 (3,040) proposals. The $v/(nc)$ bound is less restrictive for the recommendation-based estimations. It is more restrictive when we assume full participation of shareholders who agree with the N-PX majority opinion (i.e., $t_R = 1$), resulting in 10% fewer observations for which this bound is satisfied. In what follows, when our estimated $v/nc$ is out of the bounds postulated by Proposition 1 we set it equal to the corresponding bound it violates.

Now, once we have calculated $v/(nc)$ we can calculate the true equilibrium discretionary participation rates for each voter type $t_L$ and $t_R$ from (9) and (10), as well the probability of being pivotal times the number of voters, i.e., the reciprocal of $v/(nc)$. These are reported in Table 4, Panel B.
for each of the four estimations of $\bar{p}$. This allows us to judge which of our assumptions is more realistic. Over and above their implications for our estimations, however, these data are important in their own right. Without the model we can only observe aggregate support and participation rates. The model provides the structure with which we can now infer how many voters of each direction participate.

We observe that discretionary participation of voters against the regular voters ($t_L$) is much more pronounced than discretionary participation of voters that agree with the regular voters ($t_R$). The average discretionary participation rate for disagreeing voters is 98% when we estimate $\bar{p}$ and $q$ using proposal averages (Table 4, Panel B, columns 1 and 2). The rate using estimations from ISS recommendations (the previous meeting) is 78% (90%) when we assume $t_L = 1$ and 80% (88%) when we assume $t_R = 1$. The average discretionary participation rate for agreeing voters is 32% when we estimate $\bar{p}$ and $q$ using proposal averages (Table 4, Panel B, columns 1 and 2). The rate using estimations from ISS recommendations (previous meeting’s average preferences) is 55% (41%) when we assume $t_L = 1$ and 52% (50%) when we assume $t_R = 1$. That is, discretionary voters that are against the regular voters are much more likely to participate in voting contests. In contrast, discretionary voters that share the direction with regular voters can free-ride on those and are therefore less likely to participate.

The high participation rates for $t_L$ implies that assuming full participation against the average regular voter, $t_L = 1$, is more consistent with the data. For the estimates that follow we will therefore focus on results using this assumption.

### 4.4 Holding Size

We do not observe holding sizes and therefore calculate proposal importance per voters instead of in absolute terms. In this section, we illustrate the proposal importance distribution as a function of the average holding size.

Figure 6 depicts the average proposal importance for an average share block worth $100,000 up to $3 million. For these estimations, we exclude unrealistic estimations, that is, where relative importance (the ratio of benefit over costs) is below 1. Hence the curves are almost, but not quite in the $1/x$ function form. We plot the “return” of a proposal by dividing the benefit-cost ratio estimate by the assumed block size. This can be interpreted as a return on a proposal if we assume
a cost of $1. Assuming a higher cost would linearly translate into lower returns. The average proposal importance computed by using proposal averages is plotted in solid, while the dotted curve represents average importance computed by using previous year’s meetings.

As we can see from the graph, the realistic estimates (below 20%) of the benefit-cost ratios can be obtained assuming share holdings of $700,000 (using proposal averages), and $1.1 million (using the previous year’s proposals). For $1.5 million, the average holding size for insider holdings convicted by the SEC (Ahern (2015)) the “return” is 3% (using proposal averages), or 11% (using the previous year’s proposals). This compares to an average return of 1.6% for the passing of governance related proposals by Cuñat, Gine, and Guadalupe (2012). Hence, using the average holding sizes from Ahern (2015) yields plots that are roughly comparable to the previous literature. Moreover, using these average holding sizes one can also infer the probability of being pivotal per discretionary voter of each type by diving the estimates in Table 4 Panel B by the corresponding number of voters.

Although our estimates do not seem unreasonable going forward we show all estimates of importance as importance per voter (14) so that we do not have to make an assumption on holding size, which is likely to fluctuate across time and firms.

5 Estimates of importance

In this section we present our estimates of proposal importance.

5.1 Time trends

Figure 7 shows the importance per voter over time for our time period of 2003 and 2011. Overall, the importance per voter has increased over time, with a trend that is significant in a regression with a $t$-statistic of 2.52. This is consistent with a falling average cost of voting, as firms have introduced and enhanced electronic voting during this time period.

Table 5 reports the numbers underlying Figure 7 and how they differ with alternative estimation methods. The trend is visible in all estimations.
5.2 Proposal types

Figure 8 shows a ranking of importance per voter across proposal types. We order the types by the importance of shareholder proposals (solid). Shaded columns are the importance per voter for management proposals of the same categories. The rankings hold when we measure them as ranking of indicator variables in a regression. Table 6 reports that the rankings are similar across different estimation methodologies.

First, shareholder proposals are on average much more important than management proposals. Although we have excluded the most standard management proposals, this result indicates that our sample still contains many management proposals that formally have to be raised even though they are not important to their shareholders.

Among the shareholder proposals, restructuring related proposals are the most important to shareholders, followed by the CSR proposals and business proposals. These are then followed by board, compensation, defense, and governance proposals. The fact that restructuring and business related proposals are considered as important is perhaps less surprising than CSR-related proposals. All three, however, are about actual decisions, where the less important Corporate Governance related proposal types are about overarching monitoring-related issues. According to our data such concrete decisions are more important to shareholders.

The ranking is almost reversed for management proposals. Among these, governance proposals are considered as important as shareholder proposals in this matter. They are followed by compensation and restructuring proposals, where the least important are CSR related proposals.

Note that the estimated proposal per type does not coincide with the voting support (Table 2). For example, shareholder CSR proposals receive very low support, around 10%, but participation rates reveal that shareholders consider these nevertheless important enough to participate.

5.3 Sponsor types

The discrepancy between shareholder and management proposals indicates that not only the proposal type matters, but also the sponsor. Figure 9 shows a ranking by proposal sponsor for shareholder proposals. In a regression where we estimate the same ranking using indicators, only the coefficients for pension funds and individual activists are significant, suggesting that for the other sponsors there is too much noise to estimate a significant ranking between them.
Our univariate evidence shows that social groups, funds, and pension funds sponsor the most important shareholder proposals. The least important proposals come from individual activists, corporations, and proxy advisors. Table 7 reports that the rankings are similar across different estimation methodologies.

6 Conclusion

We present a model of participation in corporate voting. The substantive innovation from the political science literature (Myatt (2015)) is that we introduce heterogeneity in ownership, with a group of regular voters who always vote with known preferences. The rest of the shareholders are discretionary voters in that they decide on whether to participate based on their preferences and their perceived probability of being pivotal. Our model links discretionary participation to several proposal characteristics such as the contestedness and the benefit-cost ratio. The model considers a contest between two alternatives where voting is costly, where voters are partisan, and where the crux is that there is aggregate uncertainty about the popularities of the proposal amongst discretionary voters.

We solve for a unique equilibrium with incomplete participation for supporters of either alternative. This results into a formula for participation rates of each group, as well as total participation which depends on: the number of voting shares, the benefit-cost ratio for this contest, the fraction of regular voters, the ex-ante popularity of the alternatives, and uncertainty about it. We then use this formula in the data to estimate the benefit-cost ratio (i.e., the importance) for specific proposals.

The model produces a wealth of empirical predictions based on comparative statics, but most importantly it highlights an important tension: We document that agreeing discretionary voters are less likely to participate as they free ride on regular voters. In contrast, discretionary voters that disagree are more likely to participate as they compete against regular voters. We verify that these patterns are indeed present in the data. Hence, participation can be non-monotonic in the size of the regular block.

Given the observed participation rates, we use the formula in the data to back out the importance as perceived by shareholders. Our methodology allows us to extract information from all
proposals and not just those that pass or fail within close margins, which were the focus of the previous literature. Nonetheless, our estimates of the benefit of voting for a proposal are comparable to the literature in terms of magnitudes. We establish several stylized facts about the importance of proposals: importance is increasing over time; management proposals are less important than shareholder proposals; within shareholder proposals restructuring is the most important and governance is the least; within management proposals governance is the most important. These results are robust to a number of tests.

**References**


Blais, A., 2000, *To vote or not to vote?: The merits and limits of rational choice theory,* University of Pittsburgh Press.


APPENDIX

A. Equilibrium With Incomplete Participation

Proof of Lemma 1. Define \( u_R := a p t_R, \ u_L := a(1 - p)t_L, \) the actual voting probabilities for \( R \) and \( L \) amongst discretionary voters, and the probability of absentee votes \( u_0 := 1 - u_R - u_L. \)

Vector \( u := (u_R, u_L, u_0) \) lives in simplex \( \Delta \) and assume that beliefs over \( u \) are represented by density \( h(\cdot| i), \) for \( i \in \{R, L\}. \) Then adapting Lemma 1 of Myatt (2015) for our purposes we have that the probability of a tie with \( x \) votes of discretionary voters for \( R \) is:

\[
\Pr[b_R = x, b_L = x + (2q - 1)\gamma n| h(\cdot| i)] = \\
\int_{\Delta} \frac{((1 - \gamma)n + 1)!u_R^x u_L^{(2q-1)\gamma n} u_0 (1 - 2q\gamma)n - 2x}{(x + 1)!(x + (2q - 1)\gamma n + 1)!((1 - 2q\gamma)n - 2x + 1)!} h(u| i) du \approx \\
h\left(\frac{x}{(1 - \gamma)n}, \frac{x}{(1 - \gamma)n} + \frac{(2q - 1)\gamma}{1 - \gamma}, \frac{1 - 2q\gamma}{1 - \gamma} - 2 \frac{x}{(1 - \gamma)n}\right) \frac{\Gamma((1 - \gamma)n + 1)}{\Gamma((1 - \gamma)n + 3)} \approx \\
\frac{1}{(1 - \gamma)n} h\left(\frac{x}{(1 - \gamma)n}, \frac{x}{(1 - \gamma)n} + \frac{(2q - 1)\gamma}{1 - \gamma}, \frac{1 - 2q\gamma}{1 - \gamma} - 2 \frac{x}{(1 - \gamma)n}\right) ,
\]

for \( i \in \{R, L\}. \)

Summing over \( x \) we have that the overall probability of a tie is:

\[
\sum_{x=0}^{n/2-q\gamma n} \Pr[b_R = x, b_L = x + (2q - 1)\gamma n| h(\cdot| i)].
\]

Given the above approximation we have that for \( n \) large enough the sum can be approximated by the integral

\[
\frac{1}{(1 - \gamma)n} \int_0^{1/2-q\gamma} h(y, y + (2q - 1)\gamma/(1 - \gamma), (1 - 2q\gamma)/(1 - \gamma) - 2y|i) dy.
\]

These approximations depend on the observation that as \( n \) is large most of the distribution will be concentrated at its mode.
Now, using Lemma 2 of Myatt (2015) the probability of a tie and a near tie are equal for large $n$ and hence for $i \in \{R, L\}$:

$$\Pr[Pivotal|i] \approx \frac{1}{(1-\gamma)n} \int_{0}^{\frac{1}{2}-\frac{q\gamma}{1-\gamma}} h(y, y + (2q - 1)\gamma/(1-\gamma), (1 - 2q\gamma)/(1-\gamma) - 2y|i) dy. \quad (15)$$

Now, we wish to revert the above expressions from vector $u$ to vector $(p,a)$ so that we can transition from density $h$ to densities $f$ and $g$. Recall that $u_R = apt_R$, $u_L = a(1-p)t_L$, hence the Jacobian $\partial(u_R, u_L)/\partial(p,a)$ has a determinant equal to $at_R t_L$. Moreover, a subtle point is that each shareholder updates her beliefs based on her own availability and so

$$h(x, y, 1 - x - y|i) = \frac{f(p(x)|i) g(a(x), y)|\text{available}}{a(x, y)t_L t_R},$$

for any $x, y \in (0,1)$ and $i \in \{R, L\}$, where

$$g(a|\text{available}) = \frac{g(a)a}{a}, \quad f(p|L) = f(p)\frac{1-p}{1-\bar{p}}, \quad f(p|R) = f(p)\frac{p}{\bar{p}}.$$

Hence, for $u_R = y$ and $u_L = y + (2q - 1)\gamma/(1-\gamma)$ from (15), after some simple algebra we have

$$p(a) := \frac{t_L}{t_R + t_L} - \frac{(2q - 1)\gamma}{1-\gamma} \frac{1}{a(t_R + t_L)},$$

$$a(y) := \frac{y(t_R + t_L)}{t_R t_L} + \frac{(2q - 1)\gamma}{1-\gamma} \frac{1}{t_L}. $$

Substituting all the above in the integrand of (15) we have

$$h(y, y + (2q - 1)\gamma/(1-\gamma), (1 - 2q\gamma)/(1-\gamma) - 2y|R) = \frac{f(p(a(y)) g(a(y)) a(y)p(a(y))}{a(y)t_R t_L \bar{a} \bar{p}} \frac{1}{t_R t_L \bar{a} \bar{p}}$$

and similarly

$$h(y, y + (2q - 1)\gamma/(1-\gamma), (1 - 2q\gamma)/(1-\gamma) - 2y|L) = (1 - p(a(y))) f(p(a(y)) g(a(y)) \frac{1}{t_R t_L \bar{a} (1 - \bar{p})}.$$
Now, in order to calculate the integral in (15) we perform a change of variable from $y$ to $a = a(y)$. We have $da = dy(t_R + t_L)/(t_R t_L)$ and

\[
a(0) = \frac{(2q - 1)\gamma}{1 - \gamma} \frac{1}{t_L},
\]

\[
a\left((1/2 - q\gamma)/(1 - \gamma)\right) = \frac{t_R (1/2 - \gamma(1 - q)) + t_L (1/2 - q\gamma)}{(1 - \gamma)t_R t_L}.
\]

Then we have that:

\[
\Pr\{\text{Pivotal} \mid R\} \approx \frac{1}{(1 - \gamma)n} \int_0^{1/(2-q\gamma)} h(y, y + (2q - 1)\gamma/(1 - \gamma), (1 - 2q\gamma)/(1 - \gamma) - 2y \mid R) dy \, dy
\]

\[
= \frac{1}{(1 - \gamma)n} \int_{a(0)}^{a(1/(2-q\gamma))} f(p(a))p(a)g(a)\, da.
\]

(16)

Since we are after a simple formula that we can take to the data we assume that $a$ follows a degenerate distribution around its mean, that is, $g(a) = \delta(a - \bar{a})$, where $\delta(\cdot)$ is the Dirac function. Then in order to have a strictly positive probability of being pivotal we need:

\[
a(0) < \bar{a} < a\left((1/2 - q\gamma)/(1 - \gamma)\right) \iff \frac{(2q - 1)\gamma}{1 - \gamma} \frac{1}{t_L} < \bar{a} < \frac{t_R (1/2 - \gamma(1 - q)) + t_L (1/2 - q\gamma)}{(1 - \gamma)t_R t_L}.
\]

(17)

The above is a restriction on the equilibrium $t_R, t_L$ which we need to verify after they are derived.\(^{11}\) Given $g(a) = \delta(a - \bar{a})$ and A1 we have that (16) becomes (2) and similarly we reach (3) for $\Pr\{\text{Pivotal} \mid L\}$, where $p^* = p(\bar{a})$ given by (4). □

A.1 Bounds on Parameters

Now, we will derive the necessary and sufficient conditions, that is, the parameter regions, for which we get a valid equilibrium with incomplete participation from both sides.\(^{12}\) Note that condition (6) generates another restriction in the equilibrium $t_R, t_L$, namely that

\[
0 < p^* < 1 \iff 0 < \frac{t_L}{t_R + t_L} - \frac{(2q - 1)\gamma}{1 - \gamma} \frac{1}{\bar{a}(t_R + t_L)} < 1 \iff \bar{a} > \frac{(2q - 1)\gamma}{1 - \gamma} \frac{1}{t_L}.
\]

\(^{11}\)Note that (17) is satisfied for all $t_R, t_L \in (0, 1)$ for $\gamma = 0$ (i.e., the Myatt (2015) setup).

\(^{12}\)In future work we also plan to look for equilibria with complete participation from at least one type.
which is satisfied given (17) in the proof of Lemma 1 above. Since we have the equilibrium \( t_L, t_R \)
from (9) and (10) we can check (17) and express it in terms of the primitives of the model.\(^\text{13}\) First, (17) requires that
\[
\bar{a} > \frac{(2q - 1)\gamma 1}{1 - \gamma} t_L \iff t_L > \frac{(2q - 1)\gamma 1}{1 - \gamma} \bar{a},
\]
which is clearly satisfied by \( t_L \) in (9). Second, it requires that
\[
\bar{a} < \frac{t_R (1/2 - \gamma (1 - q)) + t_L (1/2 - \gamma q)}{(1 - \gamma) t_R t_L}.
\]
Plugging the expressions for \( t_L \) and \( t_R \) (9) and (10), and after some algebra the above is equivalent to:
\[
\frac{v}{c} < \frac{n (1 - 2\gamma (\bar{p}(1 - q) + q(1 - \bar{p})))}{f(\bar{p})(1 - \bar{p})\bar{p}}, \tag{18}
\]
What we need for incomplete participation by definition is that \((t_L, t_R) \in (0, 1)\). From (9) it is
evident that \( t_L > 0 \) for all parameter values. The condition \( t_L < 1 \) is equivalent to:
\[
\gamma < \frac{\bar{a}}{2q - 1 + \bar{a}}, \text{ and} \tag{19}
\]
\[
\frac{v}{c} < \frac{n (\bar{a} - \gamma (\bar{a} - 1 + 2q))}{f(\bar{p})\bar{p}}. \tag{20}
\]
Given our assumption that \( q > 1/2 \) the condition of (19) takes precedent over A1 with respect to
the upper permissible value of \( \gamma \). Now, the condition \( t_R > 0 \) is equivalent to:
\[
\frac{v}{c} > \frac{n\gamma (2q - 1)}{f(\bar{p})(1 - \bar{p})}. \tag{21}
\]
For (21) to be the relevant lower bound on \( v/c \) given A2 we have a lower bound on the regular
block size and the number of voting shares,
\[
\gamma > \frac{f(\bar{p})(1 - \bar{p})}{n(2q - 1)}, \text{ and} \tag{22}
\]
\[
n > \frac{2q f(\bar{p})(1 - \bar{p})}{2q - 1}, \tag{23}
\]
\(^{13}\)Note, that for the computed \( t_L \) and \( t_R \) in (9) and (10) the pivotal probabilities in Lemma 1 (2) and (3) are well
defined.
otherwise \( v/c \geq 1 \) from A2. Finally, the condition \( t_R < 1 \) is equivalent to:

\[
\frac{v}{c} < \frac{n (\bar{a} - \gamma (\bar{a} + 1 - 2q))}{f(\bar{p})(1 - \bar{p})}.
\]

Hence, for the benefit-cost ratio \( v/c \) we have three possible upper bounds in (18), (20), and (24).

We can show that (18) is never the relevant one, but (20) and (24) can be depending on parameter values. So the upper bound on \( v/c \) is

\[
\frac{v}{c} < \min \left\{ \frac{n (\bar{a} - \gamma (\bar{a} - 1 + 2q))}{f(\bar{p})\bar{p}}, \frac{n (\bar{a} - \gamma (\bar{a} + 1 - 2q))}{f(\bar{p})(1 - \bar{p})} \right\}.
\]

(25)

For \( v/c \) we also have a lower bound, which is either given by (21) if \( \gamma \) satisfies (22), or it is equal to one otherwise. In either case, we need to make sure the lower bound is smaller than the upper bound on \( v/c \). Let’s look at each case in turn:

1. \( \gamma > \frac{f(\bar{p})(1 - \bar{p})}{n(2q - 1)} \),

then for the bound in (25) to be higher than the bound in (21) we have another restriction on \( \gamma \),

\[
\gamma < \frac{\bar{a}(1 - p)}{\bar{a}(1 - p) + 2q - 1}.
\]

(26)

From the two possible upper bounds on \( \gamma \) in (19) and (26) we can show that for \( q > 1/2 \) the relevant one is condition (26). Finally, we need to make sure that the lower bound on \( \gamma \) in (22) is lower than the upper bound in (26). This puts a lower bound on the amount of voting shares:

\[
n > \frac{f(\bar{p}) (\bar{a}(1 - \bar{p}) + 2q - 1)}{\bar{a}(2q - 1)},
\]

which supersedes the other lower bound in (23).
2. \[ \gamma < \frac{f(\bar{p})(1 - \bar{p})}{n(2q - 1)}, \] (27)

then for the upper bound in (25) to be higher than the lower bound in A2 we have the following two further restrictions on \( \gamma \),

\[ n(\bar{a} - (2q - 1))\gamma < \bar{a}n f(\bar{p})(1 - \bar{p}), \]
\[ n(\bar{a} + (2q - 1))\gamma < \bar{a}n - f(\bar{p})\bar{p}. \]

For these to be satisfied we need

\[ n > \frac{f(\bar{p})\bar{p}}{\bar{a}}. \] (28)

Observe also that the second restriction above implies the one in (19) so this latter bound can be ignored in what follows. Then we have the following sub-cases:

(a) \( n > f(\bar{p})\bar{p} \) and \( a < 2q - 1 \), then the only other restrictions on \( \gamma \) (i.e., other than (27)) can be written as

\[ \gamma < \frac{\bar{a} - f(\bar{p})\bar{p}}{(\bar{a} - 1 + 2q)n}. \] (29)

(b) \( n > f(\bar{p})\bar{p} \) and \( a > 2q - 1 \), then the added restriction on \( \gamma \) can be written as

\[ \gamma < \min \left\{ \frac{\bar{a}n - f(\bar{p})(1 - \bar{p})}{(\bar{a} + 1 - 2q)n}, \frac{\bar{a}n - f(\bar{p})\bar{p}}{(\bar{a} - 1 + 2q)n} \right\}. \] (30)

(c) \( n < f(\bar{p})\bar{p} \) and \( a > 2q - 1 \), then there is no equilibrium with incomplete participation.

(d) \( n < f(\bar{p})\bar{p} \) and \( a < 2q - 1 \), then provided that \( \bar{p} < 1/2 \) we need

\[ \frac{\bar{a}n - f(\bar{p})(1 - \bar{p})}{(\bar{a} + 1 - 2q)n} < \gamma < \frac{\bar{a}n - f(\bar{p})\bar{p}}{(\bar{a} - 1 + 2q)n}, \] for
\[ \frac{f(\bar{p})(\bar{a}(1 - \bar{p}) + 2q - 1)}{2\bar{a}(2q - 1)} < n < \frac{f(\bar{p})(1 - \bar{p})}{\bar{a}}. \] (32)
All the above are summarized in the proposition below.

**Proposition 2** Assume that \( q \in (1/2, 1) \), \( \bar{p} \in (0, 1) \), \( f(\bar{p}) > 0 \), \( \bar{a} \in (0, 1] \), \( g(a) = \delta(a - \bar{a}) \) and

\[
\frac{v}{c} < \min \left\{ \frac{n (\bar{a} - \gamma (\bar{a} + 1 + 2q))}{f(\bar{p})\bar{p}}, \frac{n (\bar{a} - \gamma (\bar{a} - 1 + 2q))}{f(\bar{p})(1 - \bar{p})} \right\}.
\]

In addition consider the following disjoint parameter regions:

(a) Small regular block size:

\[
\begin{align*}
\frac{v}{c} & \geq 1, \\
n & > \frac{f(\bar{p})\bar{p}}{\bar{a}}, \text{and}
\end{align*}
\]

(i) Many voters, high availability:

\[
\begin{align*}
n & > \frac{f(\bar{p})(1 - \bar{p})}{\bar{a}}, \bar{a} > 2q - 1, \text{and } 0 \leq \gamma < \min \left\{ \frac{\bar{a}n - f(\bar{p})(1 - \bar{p})}{(\bar{a} + 1 - 2q)n}, \frac{\bar{a}n - f(\bar{p})\bar{p}}{(\bar{a} - 1 + 2q)n}, \frac{f(\bar{p})(1 - \bar{p})}{n(2q - 1)} \right\}, \text{or}
\end{align*}
\]

(ii) Many voters, low availability:

\[
\begin{align*}
n & > \frac{f(\bar{p})(1 - \bar{p})}{\bar{a}}, \bar{a} < 2q - 1, \text{and } 0 \leq \gamma < \min \left\{ \frac{\bar{a}n - f(\bar{p})\bar{p}}{(\bar{a} + 1 - 2q)n}, \frac{f(\bar{p})(1 - \bar{p})}{n(2q - 1)} \right\}, \text{or}
\end{align*}
\]

(iii) Few voters, low availability:

\[
\begin{align*}
\frac{f(\bar{p}) (\bar{a}(1 - 2\bar{p}) + 2q - 1)}{2\bar{a}(2q - 1)} & < n < \frac{f(\bar{p})(1 - \bar{p})}{\bar{a}}, \bar{a} < 2q - 1, \bar{p} < \frac{1}{2}, \text{and} \\
\frac{\bar{a}n - f(\bar{p})(1 - \bar{p})}{(\bar{a} + 1 - 2q)n} & < \gamma < \frac{\bar{a}n - f(\bar{p})\bar{p}}{(\bar{a} - 1 + 2q)n}.
\end{align*}
\]

(b) Large regular block size (Many Voters, any availability):

\[
\begin{align*}
\frac{v}{c} & > \frac{n\gamma(2q - 1)}{f(\bar{p})(1 - \bar{p})}, \\
n & > \frac{f(\bar{p}) (\bar{a}(1 - \bar{p}) + 2q - 1)}{\bar{a}(2q - 1)}, \text{and}
\end{align*}
\]
\[
\frac{f(\bar{p})(1 - \bar{p})}{n(2q - 1)} < \gamma < \frac{\bar{a}(1 - \bar{p})}{\bar{a}(1 - \bar{p}) + 2q - 1}.
\]

These conditions are necessary and sufficient for the existence of an incomplete participation equilibrium by both types, that is \(t_L, t_R \in (0, 1)\), and given by equations (9) and (10). Furthermore, average participation amongst discretionary voters \(\bar{t}\) and average total participation \(t_{\text{total}}\) are given by (11) and (12). Finally, in such equilibrium the probability of being pivotal for either \(R\) of \(L\) is equal to the common cost-benefit ratio \(c/v\) (1), and the expected votes for \(R\) and \(L\) are equal (5).

Note that Proposition 1 in the main text is the restriction to case (b), which is the empirically most plausible one, of Proposition 2 above.

**B. Proposal Classification**

The ISS functional classification of proposals into 257 types is fine enough to risk obscuring the economic meaning of each proposal type. For example, ISS assigns a different proposal type for “Amend Omnibus Stock Plan (M0524)” and “Approve Omnibus Stock Plan (M0522)” even though these two proposals address the same economic issue, executive compensation. For this reason, it is useful to work with a coarser, more economically meaningful, classification. Our classification groups proposals into 12 economically relevant types. We list these types along with their frequency in our sample in Table 5. The set of types is chosen to reflect leading issues arising in the literature on voting and corporate governance (see for example (Knoeber 1986), (LaPorta, de Silanes, Shleifer, and Vishny 1998), (Grullon and Michaely 2002), (Gompers, Ishii, and Metrick 2003), (Bebchuk, Cohen, and Ferrell 2009), (Becht, Franks, Mayer, and Rossi 2009), (Bebchuk and Fried 2009), (Ferri and Maber 2012)). Once the set of types is chosen, proposals are classified based on their description in a straightforward way, as illustrated in the example above on M0524 and M0522. In Table 8 we list the top 3 proposals per category. Needless to say, this classification is not unique.

**C. Tables and Figures**
Table 1: **Univariate Statistics**

This table shows univariate statistics for a sample of proposals voted upon in US firms 2003-2011. Panel A shows number of proposals and meetings. Panel B shows firm characteristics (at the firm-year level). Panel C shows summary statistics for ownership (at the meeting level).

### Panel A: Number of observations per year

<table>
<thead>
<tr>
<th>Date</th>
<th>Proposals</th>
<th>Meetings</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>358</td>
<td>212</td>
</tr>
<tr>
<td>2004</td>
<td>2,566</td>
<td>1,389</td>
</tr>
<tr>
<td>2005</td>
<td>1,256</td>
<td>788</td>
</tr>
<tr>
<td>2006</td>
<td>1,776</td>
<td>1,021</td>
</tr>
<tr>
<td>2007</td>
<td>1,562</td>
<td>824</td>
</tr>
<tr>
<td>2008</td>
<td>1,491</td>
<td>862</td>
</tr>
<tr>
<td>2009</td>
<td>2,069</td>
<td>1,149</td>
</tr>
<tr>
<td>2010</td>
<td>4,149</td>
<td>1,756</td>
</tr>
<tr>
<td>2011</td>
<td>3,293</td>
<td>1,296</td>
</tr>
</tbody>
</table>

### Panel B: Firm level statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assets</td>
<td>8568</td>
<td>18,780.92</td>
<td>109,456.10</td>
<td>0.76</td>
<td>2,265,792.00</td>
</tr>
<tr>
<td>Leverage</td>
<td>8568</td>
<td>0.23</td>
<td>0.23</td>
<td>-</td>
<td>3.64</td>
</tr>
<tr>
<td>M/B</td>
<td>8568</td>
<td>1.88</td>
<td>1.36</td>
<td>0.38</td>
<td>26.82</td>
</tr>
<tr>
<td>Return (monthly)</td>
<td>6256</td>
<td>0.08</td>
<td>0.47</td>
<td>(3.61)</td>
<td>3.62</td>
</tr>
<tr>
<td>Return (annual)</td>
<td>6191</td>
<td>0.009</td>
<td>0.032</td>
<td>-0.229</td>
<td>0.256</td>
</tr>
</tbody>
</table>

### Panel C: Summary statistics for ownership

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>% instit. ownership of which:</td>
<td>9297</td>
<td>68.32</td>
<td>21.58</td>
<td>0.60</td>
<td>99.96</td>
</tr>
<tr>
<td>N-PX</td>
<td>9297</td>
<td>20.13</td>
<td>10.77</td>
<td>0.01</td>
<td>58.96</td>
</tr>
<tr>
<td>% &gt; 5% ownership of which:</td>
<td>8705</td>
<td>24.51</td>
<td>18.43</td>
<td>0</td>
<td>97.90</td>
</tr>
<tr>
<td>institutional</td>
<td>8705</td>
<td>23.13</td>
<td>17.88</td>
<td>0</td>
<td>97.90</td>
</tr>
<tr>
<td>private</td>
<td>9297</td>
<td>2.24</td>
<td>5.43</td>
<td>0</td>
<td>65.95</td>
</tr>
<tr>
<td>% management ownership</td>
<td>9297</td>
<td>5.18</td>
<td>5.56</td>
<td>0</td>
<td>79.43</td>
</tr>
<tr>
<td>Shares outstanding</td>
<td>9163</td>
<td>272,000,000</td>
<td>861,000,000</td>
<td>555,992</td>
<td>29,100,000,000</td>
</tr>
</tbody>
</table>
Table 2: Proposals

This table shows univariate statistics for a sample of proposals voted upon in US firms 2003-2011. Panel B (C) shows the frequency of proposals voted upon in US firms 2003-2011 per proposal (sponsor) type.

Panel A: Summary Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Votes for</td>
<td>52.97</td>
<td>29.33</td>
<td>-</td>
<td>99.75</td>
</tr>
<tr>
<td>Total Participation</td>
<td>77.35</td>
<td>11.78</td>
<td>0.00</td>
<td>100.00</td>
</tr>
<tr>
<td>Discretionary</td>
<td>73.33</td>
<td>14.39</td>
<td>0.00</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Panel B: Proposals per proposal type

<table>
<thead>
<tr>
<th>Proposal Type</th>
<th>Frequency</th>
<th>Support (%)</th>
<th>Participation (%)</th>
<th>ISS following total discretionary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation</td>
<td>10,294</td>
<td>63.20</td>
<td>76.75</td>
<td>72.42</td>
</tr>
<tr>
<td>Say-On-Pay</td>
<td>1,819</td>
<td>N/A</td>
<td>77.23</td>
<td>72.96</td>
</tr>
<tr>
<td>Restructuring</td>
<td>1,301</td>
<td>69.42</td>
<td>81.35</td>
<td>78.51</td>
</tr>
<tr>
<td>Board</td>
<td>1,274</td>
<td>50.70</td>
<td>78.54</td>
<td>72.89</td>
</tr>
<tr>
<td>CSR</td>
<td>1,086</td>
<td>10.02</td>
<td>73.93</td>
<td>75.08</td>
</tr>
<tr>
<td>Defense</td>
<td>990</td>
<td>67.54</td>
<td>80.94</td>
<td>75.61</td>
</tr>
<tr>
<td>Governance</td>
<td>806</td>
<td>56.41</td>
<td>78.67</td>
<td>74.19</td>
</tr>
<tr>
<td>Merger</td>
<td>356</td>
<td>72.52</td>
<td>75.15</td>
<td>70.46</td>
</tr>
<tr>
<td>Business</td>
<td>237</td>
<td>45.26</td>
<td>76.59</td>
<td>73.23</td>
</tr>
<tr>
<td>Payout</td>
<td>21</td>
<td>69.53</td>
<td>80.66</td>
<td>76.66</td>
</tr>
<tr>
<td>Other proposals</td>
<td>336</td>
<td>46.97</td>
<td>76.49</td>
<td>73.09</td>
</tr>
</tbody>
</table>

Panel C: Proposals per sponsor type

<table>
<thead>
<tr>
<th>Sponsor type</th>
<th>Frequency</th>
<th>Support (%)</th>
<th>Participation (%)</th>
<th>ISS following total discretionary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>14,912</td>
<td>60.17</td>
<td>78.25</td>
<td>74.09</td>
</tr>
<tr>
<td>Individual activist</td>
<td>1016</td>
<td>26.26</td>
<td>72.39</td>
<td>66.58</td>
</tr>
<tr>
<td>Institutional (Pension Fund)</td>
<td>665</td>
<td>25.69</td>
<td>74.29</td>
<td>70.45</td>
</tr>
<tr>
<td>Social group</td>
<td>451</td>
<td>10.76</td>
<td>74.74</td>
<td>74.92</td>
</tr>
<tr>
<td>Institutional (Non-pension Fund)</td>
<td>309</td>
<td>20.68</td>
<td>73.33</td>
<td>71.45</td>
</tr>
<tr>
<td>Union</td>
<td>295</td>
<td>25.78</td>
<td>75.14</td>
<td>71.80</td>
</tr>
<tr>
<td>Coalition</td>
<td>43</td>
<td>30.19</td>
<td>74.69</td>
<td>70.16</td>
</tr>
<tr>
<td>Employee</td>
<td>12</td>
<td>17.97</td>
<td>62.42</td>
<td>47.38</td>
</tr>
<tr>
<td>Corporate</td>
<td>5</td>
<td>9.16</td>
<td>74.27</td>
<td>74.24</td>
</tr>
<tr>
<td>Proxy advisor</td>
<td>2</td>
<td>37.11</td>
<td>69.70</td>
<td>65.98</td>
</tr>
<tr>
<td>Other sponsors</td>
<td>810</td>
<td>24.38</td>
<td>74.14</td>
<td>71.08</td>
</tr>
</tbody>
</table>

Panel D: ISS recommendations

<table>
<thead>
<tr>
<th></th>
<th>All</th>
<th>Regular</th>
<th>Discretionary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Against</td>
<td>0.52</td>
<td>0.74</td>
<td>0.48</td>
</tr>
<tr>
<td>For</td>
<td>0.80</td>
<td>0.84</td>
<td>0.81</td>
</tr>
<tr>
<td>One Year</td>
<td>0.54</td>
<td>0.90</td>
<td>0.66</td>
</tr>
<tr>
<td>Total</td>
<td>0.73</td>
<td>0.83</td>
<td>0.74</td>
</tr>
</tbody>
</table>
Table 3: Model Predictions

This table shows the results of OLS regressions where discretionary participation is the dependent variable and the independent variables $\bar{p}$, $q$, $f(\bar{p})$, interactions of N-PX ownership $\gamma$ with a dummy that equals 1 for proposal types in which the fraction of proposals where $\bar{p} < 0.5$ is in the upper quintile and 0 otherwise (“disagreement”), and 1-disagreement (“agreement”), fixed effects for proposal type, sponsor type, and year, as well as the fraction of institutional block ownership, the fraction of private block ownership, leverage, market-to-book, and log of book assets. In column 1-2 $\bar{p}$ and $q$ are estimated as the proposal average, in columns 3 and 4 using the previous year’s average of the same firm, and in columns 5 and 6 as the actual. For the estimation, we assume full participation against the regular block in column 1, 3, and 5, and for the regular block in columns 2, 4, and 6. Asterisks indicate significance on the ***1% **5% and *10% level.

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Discretionary participation $t$</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\bar{p}$ and $q$ estimation</td>
<td>Proposal avg</td>
<td>Proposal avg</td>
<td>ISS</td>
<td>ISS</td>
<td>Previous year</td>
<td>Previous year</td>
<td>Actual</td>
<td>Actual</td>
<td></td>
</tr>
<tr>
<td>$t$ bounds</td>
<td>$t_L = 1$</td>
<td>$t_R = 1$</td>
<td>$t_L = 1$</td>
<td>$t_R = 1$</td>
<td>$t_L = 1$</td>
<td>$t_R = 1$</td>
<td>$t_L = 1$</td>
<td>$t_R = 1$</td>
<td></td>
</tr>
<tr>
<td>$\bar{p}$ (non-N-PX support)</td>
<td>1.303***</td>
<td>1.089***</td>
<td>-0.006</td>
<td>-0.031</td>
<td>0.013</td>
<td>-0.006</td>
<td>0.015</td>
<td>0.021***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.5905)</td>
<td>(0.006)</td>
<td>(-0.640513)</td>
<td>(-1.62235)</td>
<td>(1.20138)</td>
<td>(-0.447083)</td>
<td>(1.59706)</td>
<td>(2.66485)</td>
<td></td>
</tr>
<tr>
<td>$q$ (N-PX support)</td>
<td>-0.427*</td>
<td>-0.494***</td>
<td>-0.049***</td>
<td>-0.008</td>
<td>-0.040**</td>
<td>-0.082***</td>
<td>-0.038***</td>
<td>-0.003</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(-1.8472)</td>
<td>(-4.18349)</td>
<td>(-4.70097)</td>
<td>(-0.338605)</td>
<td>(-2.36093)</td>
<td>(-4.59945)</td>
<td>(-2.64529)</td>
<td>(-0.294417)</td>
<td></td>
</tr>
<tr>
<td>$f(\bar{p})$</td>
<td>0.015**</td>
<td>0.006</td>
<td>0.031***</td>
<td>0.028***</td>
<td>0.025***</td>
<td>0.021***</td>
<td>0.024***</td>
<td>0.021***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.2087)</td>
<td>(0.729299)</td>
<td>(4.79367)</td>
<td>(4.68369)</td>
<td>(4.34831)</td>
<td>(2.67594)</td>
<td>(4.356)</td>
<td>(2.66485)</td>
<td></td>
</tr>
<tr>
<td>$\gamma$ (N-PX ownership) $\times$ disagreement</td>
<td>0.041</td>
<td>0.036</td>
<td>0.072</td>
<td>0.138***</td>
<td>0.086*</td>
<td>0.088</td>
<td>0.067</td>
<td>0.062</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.813346)</td>
<td>(0.737809)</td>
<td>(1.47795)</td>
<td>(2.80645)</td>
<td>(1.69899)</td>
<td>(1.5923)</td>
<td>(1.38167)</td>
<td>(1.10879)</td>
<td></td>
</tr>
<tr>
<td>$\gamma$ (N-PX ownership) $\times$ agreement</td>
<td>-0.153*</td>
<td>-0.092</td>
<td>-0.022</td>
<td>0.022</td>
<td>-0.104</td>
<td>-0.087*</td>
<td>-0.125*</td>
<td>-0.095**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(-1.96031)</td>
<td>(-1.05479)</td>
<td>(-0.458071)</td>
<td>(0.423548)</td>
<td>(-1.36356)</td>
<td>(-1.7481)</td>
<td>(-1.79043)</td>
<td>(-2.07127)</td>
<td></td>
</tr>
<tr>
<td>Proposal type FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Sponsor type FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Year FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Firm characteristics</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.088</td>
<td>0.086</td>
<td>0.093</td>
<td>0.081</td>
<td>0.1</td>
<td>0.088</td>
<td>0.103</td>
<td>0.088</td>
<td></td>
</tr>
<tr>
<td>$N$</td>
<td>6,692</td>
<td>6,653</td>
<td>6,137</td>
<td>6,026</td>
<td>6,236</td>
<td>6,136</td>
<td>6,191</td>
<td>6,024</td>
<td></td>
</tr>
</tbody>
</table>
Table 4: Bounds

This table reports the number of proposals for which assumptions hold and next to it those proposals for which assumptions are binding. The relevant assumption is given in the row title. Columns 1-4 use proposal averages to estimate $\bar{p}$ and $q$, columns 5-8 assume that the average fraction that follow ISS recommendations for/against the given category follows the current recommendation, and columns 9-12 the average of the previous meeting. Columns 1-2, 5-6 and 9-10 assume that full participation against the regular block, and columns 3-4, 7-8 and 11-12 full participation for the regular block.

### Panel A

<table>
<thead>
<tr>
<th>Estimation</th>
<th>Proposal averages</th>
<th>Proposal averages</th>
<th>ISS</th>
<th>ISS</th>
<th>Previous meeting</th>
<th>Previous meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td>$t_{L} = 1$</td>
<td>Satisfied</td>
<td>Violated</td>
<td>Satisfied</td>
<td>Violated</td>
<td>Satisfied</td>
<td>Violated</td>
</tr>
<tr>
<td><strong>Bounds on $\gamma$</strong></td>
<td>9793</td>
<td>8727</td>
<td>9737</td>
<td>8783</td>
<td>9072</td>
<td>9448</td>
</tr>
<tr>
<td><strong>Bounds on $\gamma$ and $v/(nc)$</strong></td>
<td>3034</td>
<td>15486</td>
<td>2781</td>
<td>15739</td>
<td>3616</td>
<td>14904</td>
</tr>
</tbody>
</table>

### Panel B

<table>
<thead>
<tr>
<th>Estimation</th>
<th>Proposal averages</th>
<th>ISS</th>
<th>Previous meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td>$t_{L} = 1$</td>
<td>$t_{R} = 1$</td>
<td>$t_{L} = 1$</td>
<td>$t_{R} = 1$</td>
</tr>
<tr>
<td>$t_{L}$</td>
<td>min</td>
<td>0.06</td>
<td>0.10</td>
</tr>
<tr>
<td>mean</td>
<td>0.98</td>
<td>0.98</td>
<td>0.79</td>
</tr>
<tr>
<td>max</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>$t_{R}$</td>
<td>min</td>
<td>0.04</td>
<td>0.00</td>
</tr>
<tr>
<td>mean</td>
<td>0.32</td>
<td>0.32</td>
<td>0.55</td>
</tr>
<tr>
<td>max</td>
<td>1.00</td>
<td>0.88</td>
<td>1.00</td>
</tr>
<tr>
<td>$n \Pr[Pivotal</td>
<td>i]$</td>
<td>min</td>
<td>0.02</td>
</tr>
<tr>
<td>mean</td>
<td>1.70</td>
<td>1.87</td>
<td>1.82</td>
</tr>
<tr>
<td>max</td>
<td>39.21</td>
<td>27.55</td>
<td>754.29</td>
</tr>
</tbody>
</table>
Table 5: **Time trends**

This table shows the average estimated importance (benefits/cost ratio) per voter per year for the years between 2003 and 2011. The relevant assumption is given in the row title. Columns 1-2 use proposal averages to estimate $\bar{p}$ and $q$, columns 3-4 assume that the average fraction that follow ISS recommendations for/against the given category follows the current recommendation, and columns 5-6 the average of the previous meeting. Columns 1, 3 and 5 assume that full participation against the regular block, and columns 2, 4 and 6 full participation for the regular block.

<table>
<thead>
<tr>
<th>Estimation</th>
<th>Proposal averages</th>
<th>ISS</th>
<th>Previous meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>$t$ assumption</td>
<td>$t_L = 1$</td>
<td>$t_R = 1$</td>
<td>$t_L = 1$</td>
</tr>
<tr>
<td>2003</td>
<td>0.53</td>
<td>0.94</td>
<td>0.64</td>
</tr>
<tr>
<td>2004</td>
<td>0.72</td>
<td>1.84</td>
<td>0.86</td>
</tr>
<tr>
<td>2005</td>
<td>0.58</td>
<td>1.12</td>
<td>0.65</td>
</tr>
<tr>
<td>2006</td>
<td>0.84</td>
<td>2.45</td>
<td>1.05</td>
</tr>
<tr>
<td>2007</td>
<td>0.91</td>
<td>2.89</td>
<td>1.25</td>
</tr>
<tr>
<td>2008</td>
<td>0.77</td>
<td>2.39</td>
<td>1.06</td>
</tr>
<tr>
<td>2009</td>
<td>0.81</td>
<td>2.42</td>
<td>1.10</td>
</tr>
<tr>
<td>2010</td>
<td>1.09</td>
<td>3.68</td>
<td>1.48</td>
</tr>
<tr>
<td>2011</td>
<td>0.47</td>
<td>0.79</td>
<td>0.57</td>
</tr>
<tr>
<td>Total</td>
<td>0.79</td>
<td>2.25</td>
<td>1.02</td>
</tr>
</tbody>
</table>
Table 6: Importance by proposal type

This table shows the average estimated importance (benefits/cost ratio) per voter per proposal type. The relevant assumption is given in the row title. Columns 1-2 use proposal averages to estimate $\bar{p}$ and $q$, columns 3-4 assume that the average fraction that follow ISS recommendations for/against the given category follows the current recommendation, and columns 5-6 the average of the previous meeting. Columns 1, 3 and 5 assume that full participation against the regular block, and columns 2, 4 and 6 full participation for the regular block.

<table>
<thead>
<tr>
<th>Panel A: Shareholder Proposals</th>
<th>Proposal averages</th>
<th>ISS</th>
<th>Previous meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$t_L = 1$</td>
<td>$t_R = 1$</td>
<td>$t_L = 1$</td>
</tr>
<tr>
<td>Board</td>
<td>0.72</td>
<td>1.01</td>
<td>0.72</td>
</tr>
<tr>
<td>Business</td>
<td>3.07</td>
<td>6.35</td>
<td>3.79</td>
</tr>
<tr>
<td>CSR</td>
<td>5.63</td>
<td>33.05</td>
<td>8.37</td>
</tr>
<tr>
<td>Compensation</td>
<td>0.67</td>
<td>1.61</td>
<td>0.70</td>
</tr>
<tr>
<td>Defense</td>
<td>0.62</td>
<td>0.62</td>
<td>0.60</td>
</tr>
<tr>
<td>Governance</td>
<td>0.53</td>
<td>0.59</td>
<td>0.53</td>
</tr>
<tr>
<td>Other</td>
<td>4.92</td>
<td>6.84</td>
<td>6.16</td>
</tr>
<tr>
<td>Restructuring</td>
<td>5.88</td>
<td>1.24</td>
<td>8.66</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel B: Management Proposals</th>
<th>Proposal averages</th>
<th>ISS</th>
<th>Previous meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$t_L = 1$</td>
<td>$t_R = 1$</td>
<td>$t_L = 1$</td>
</tr>
<tr>
<td>Board</td>
<td>0.20</td>
<td>0.14</td>
<td>0.28</td>
</tr>
<tr>
<td>Business</td>
<td>0.15</td>
<td>0.17</td>
<td>0.16</td>
</tr>
<tr>
<td>CSR</td>
<td>0.13</td>
<td>0.11</td>
<td>0.14</td>
</tr>
<tr>
<td>Compensation</td>
<td>0.36</td>
<td>0.34</td>
<td>0.43</td>
</tr>
<tr>
<td>Defense</td>
<td>0.24</td>
<td>0.19</td>
<td>0.41</td>
</tr>
<tr>
<td>Governance</td>
<td>0.51</td>
<td>0.43</td>
<td>0.77</td>
</tr>
<tr>
<td>Merger</td>
<td>0.16</td>
<td>0.14</td>
<td>0.19</td>
</tr>
<tr>
<td>Other</td>
<td>0.53</td>
<td>0.50</td>
<td>0.78</td>
</tr>
<tr>
<td>Payout</td>
<td>0.13</td>
<td>0.11</td>
<td>0.14</td>
</tr>
<tr>
<td>Restructuring</td>
<td>0.26</td>
<td>0.25</td>
<td>0.29</td>
</tr>
</tbody>
</table>
Table 7: Importance by sponsor type

This figure shows the average estimated importance (benefits/cost ratio) per voter per sponsor type (except management). The relevant assumption is given in the row title. Columns 1-2 use proposal averages to estimate $p$ and $q$, columns 3-4 assume that the average fraction that follow ISS recommendations for/against the given category follows the current recommendation, and columns 5-6 the average of the previous meeting. Columns 1, 3 and 5 assume that full participation against the regular block, and columns 2, 4 and 6 full participation for the regular block.

<table>
<thead>
<tr>
<th>Sponsor type</th>
<th>Proposal averages</th>
<th>ISS</th>
<th>Previous meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>$t_L = 1$</td>
<td>$t_R = 1$</td>
<td>$t_L = 1$</td>
<td>$t_R = 1$</td>
</tr>
<tr>
<td>Coalition</td>
<td>0.98</td>
<td>3.30</td>
<td>1.16</td>
</tr>
<tr>
<td>Corporate</td>
<td>0.99</td>
<td>1.44</td>
<td>0.97</td>
</tr>
<tr>
<td>Employee</td>
<td>1.28</td>
<td>2.14</td>
<td>1.06</td>
</tr>
<tr>
<td>Fund</td>
<td>2.93</td>
<td>13.95</td>
<td>4.17</td>
</tr>
<tr>
<td>Individual activist</td>
<td>1.06</td>
<td>2.42</td>
<td>1.22</td>
</tr>
<tr>
<td>Management</td>
<td>0.35</td>
<td>0.33</td>
<td>0.42</td>
</tr>
<tr>
<td>Other</td>
<td>1.79</td>
<td>6.26</td>
<td>2.35</td>
</tr>
<tr>
<td>Pension Fund</td>
<td>1.86</td>
<td>7.28</td>
<td>2.49</td>
</tr>
<tr>
<td>Proxy advisor</td>
<td>0.78</td>
<td>1.13</td>
<td>0.75</td>
</tr>
<tr>
<td>Social group</td>
<td>3.64</td>
<td>19.10</td>
<td>5.37</td>
</tr>
<tr>
<td>Union</td>
<td>1.48</td>
<td>3.28</td>
<td>1.93</td>
</tr>
</tbody>
</table>
Table 8: Proposal type classification

<table>
<thead>
<tr>
<th>Proposal Type</th>
<th>Proposal Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation</td>
<td>Amend Omnibus Stock Plan, Advisory Vote to Ratify Named Exec. Officers’ Comp., Approve Omnibus Stock Plan</td>
</tr>
<tr>
<td>Say-On-Pay</td>
<td>Advisory Vote on Say on Pay Frequency, Bundled Say on Pay/Golden Parachute Advisory</td>
</tr>
<tr>
<td>Restructuring</td>
<td>Increase Authorized Common Stock, Company Specific-Equity-Related, Approve Reverse Stock Split</td>
</tr>
<tr>
<td>Board</td>
<td>Require a Majority Vote for the Election of Board, Require Independent Board Chairman, Restore or Provide for Cumulative Voting</td>
</tr>
<tr>
<td>CSR</td>
<td>Political Contributions and Lobbying, Social Proposal, Improve Human Rights Standards or Policy</td>
</tr>
<tr>
<td>Defense</td>
<td>Declassify the Board of Directors, Reduce Supermajority Vote Requirement, Submit Shareholder Rights Plan (Poison Pill)</td>
</tr>
<tr>
<td>Governance</td>
<td>Amend Articles/Bylaws/Charter-Non-Routine, Amend Articles/Bylaws/Charter–Call Special Meetings, Company Specific-Gov. Related</td>
</tr>
<tr>
<td>Merger</td>
<td>Approve Merger Agreement, Approve Acquisition OR Issue Shares in Connection with Acquisition, Approve Sale of Company Assets</td>
</tr>
<tr>
<td>Business</td>
<td>Change Company Name, Claw-back of Payments under Restatement, Company-Specific–Organization-Related</td>
</tr>
<tr>
<td>Payout</td>
<td>Approve Allocation of Income and Divide, Approve Dividends, Initiate Payment of Cash Dividend</td>
</tr>
<tr>
<td>Other</td>
<td>Company-Specific–Shareholder Miscellaneous, Other Business, Company-Specific–Miscellaneous</td>
</tr>
</tbody>
</table>

47
**Appendix Table. ISS following**

**Panel A: By Proposal**

<table>
<thead>
<tr>
<th></th>
<th>All</th>
<th>Regular</th>
<th>Discretionary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation</td>
<td>0.78</td>
<td>0.83</td>
<td>0.77</td>
</tr>
<tr>
<td>Say-On-Pay</td>
<td>0.54</td>
<td>0.90</td>
<td>0.66</td>
</tr>
<tr>
<td>Restructuring</td>
<td>0.72</td>
<td>0.82</td>
<td>0.80</td>
</tr>
<tr>
<td>Board</td>
<td>0.66</td>
<td>0.69</td>
<td>0.68</td>
</tr>
<tr>
<td>CSR</td>
<td>0.68</td>
<td>0.74</td>
<td>0.60</td>
</tr>
<tr>
<td>Defense</td>
<td>0.77</td>
<td>0.95</td>
<td>0.79</td>
</tr>
<tr>
<td>Governance</td>
<td>0.64</td>
<td>0.79</td>
<td>0.68</td>
</tr>
<tr>
<td>Merger</td>
<td>0.83</td>
<td>0.98</td>
<td>0.95</td>
</tr>
<tr>
<td>Business</td>
<td>0.72</td>
<td>0.82</td>
<td>0.75</td>
</tr>
<tr>
<td>Payout</td>
<td>0.96</td>
<td>0.97</td>
<td>0.96</td>
</tr>
<tr>
<td>Other proposals</td>
<td>0.69</td>
<td>0.79</td>
<td>0.67</td>
</tr>
</tbody>
</table>

**Panel B: By Sponsor**

<table>
<thead>
<tr>
<th></th>
<th>All</th>
<th>Regular</th>
<th>Discretionary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>0.76</td>
<td>0.87</td>
<td>0.79</td>
</tr>
<tr>
<td>Individual activist</td>
<td>0.62</td>
<td>0.70</td>
<td>0.59</td>
</tr>
<tr>
<td>Institutional (Pension Fund)</td>
<td>0.53</td>
<td>0.55</td>
<td>0.52</td>
</tr>
<tr>
<td>Social group</td>
<td>0.71</td>
<td>0.76</td>
<td>0.63</td>
</tr>
<tr>
<td>Institutional (Non-pension Fund)</td>
<td>0.58</td>
<td>0.64</td>
<td>0.55</td>
</tr>
<tr>
<td>Union</td>
<td>0.51</td>
<td>0.50</td>
<td>0.51</td>
</tr>
<tr>
<td>Coalition</td>
<td>0.50</td>
<td>0.53</td>
<td>0.49</td>
</tr>
<tr>
<td>Employee</td>
<td>0.64</td>
<td>0.66</td>
<td>0.50</td>
</tr>
<tr>
<td>Corporate</td>
<td>0.62</td>
<td>0.72</td>
<td>0.65</td>
</tr>
<tr>
<td>Proxy advisor</td>
<td>0.52</td>
<td>0.53</td>
<td>0.52</td>
</tr>
<tr>
<td>Other sponsors</td>
<td>0.61</td>
<td>0.67</td>
<td>0.57</td>
</tr>
</tbody>
</table>
Figure 1: The upper and lower bounds of the benefit-cost ratio vs. the size of the regular block (for $f$ normal, $n = 1000$, Var[$p$] = 0.01, and $q = 0.6$).

Figure 2: The probability of being pivotal at the upper and lower bounds of $v/c$ vs. the size of the regular block (for $f$ normal, $n = 1000$, Var[$p$] = 0.01, $q = 0.6$).
Figure 3: The participation rate of L and R supporters vs. the size of the regular block (for \( f \) normal, \( n = 1000, \text{Var}[p] = 0.01, q = 0.6 \)).

\[ \bar{p} = 0.9, v/c = 167.11 \]

\[ \bar{p} = 0.3, v/c = 55.70 \]

Figure 4: The average participation of discretionary voters, and total average participation vs. the size of the regular block (for \( f \) normal, \( n = 1000, \text{Var}[p] = 0.01, q = 0.6 \)).

\[ \bar{p} = 0.9, v/c = 167.11 \]

\[ \bar{p} = 0.3, v/c = 55.70 \]
Figure 5: Split of shares outstanding in terms of voting behaviour.

Figure 6: **Block size** This figure shows the ratio of the estimated importance (benefits/cost ratio) to holding size on the y-axis for average holding sizes (in $) on the x-axis. The continuous line shows importance when estimated with proposal average p and q and the dotted line when estimated with average p and q from the previous meeting of the same firm.
Figure 7: **Time** This figure shows the average estimated importance (benefits/cost ratio) per voter per year for the years between 2003 and 2011, and a trendline.
Figure 8: Proposals This figure shows the average estimated importance (benefits/cost ratio) per voter per proposal type, where solid bars are shareholder proposals and striped bars management proposals. Although the depicted bars are the univariate averages, coefficients on dummy variables for each proposal type are directionally the same and statistically significant on a 5% level, controlling for fixed effects for year and firm, where standard errors are heteroscedasticity robust and clustered by meeting.
Figure 9: **Sponsors** This figure shows the average estimated importance (benefits/cost ratio) per voter per sponsor type (except management). The depicted bars are the univariate averages. Coefficients on dummy variables for each proposal type are directionally the same and statistically significant on a 5% level for darker bars, controlling for fixed effects for year and firm, where standard errors are heteroscedasticity robust and clustered by meeting.