The Impact of Investor Horizon on Say-on-Pay Voting

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Abstract

Shareholder investment horizons have a significant impact on Say-on-Pay voting patterns. Short-term investors are more likely to avoid expressing opinion on executive pay proposals by casting an abstaining vote. They vote against board proposals on pay only in cases where the CEO already receives excessive pay levels. In contrast, long-term investors typically cast favourable votes. According to our findings, this is due to effective monitoring rather than collusion with the management. Overall, investor heterogeneity in terms of investment horizons helps explain Say-on-Pay voting, in particular the low levels of Say-on-Pay dissent, which have recently raised questions over the efficiency of this corporate governance mechanism.

Introduction

This study examines the impact of shareholder investment horizon on Say-on-Pay voting patterns. Say-on-Pay is a corporate governance mechanism first introduced in the UK in 2002, which mandates an advisory shareholder vote on executive pay arrangements proposed by the board of directors. Its purpose is to enhance the effectiveness of executive pay by improving transparency and increasing shareholder involvement in its determination. By empowering shareholders to express their opinion on the proposed executive pay arrangements, this mechanism aims to mitigate concerns over excessive executive remuneration and rent extraction (Conyon and Sadler, 2010; Ferri and Maber, 2013).

Since its introduction, various studies have examined the impact of Say-on-Pay on CEO pay levels and structure in the UK. A number of them show that, despite the fact that voting only has an advisory role, high shareholder dissent on the proposed pay arrangements can lead to changes in the proposals (Alissa, 2015; Carter and Zamora, 2009; Ferri and Maber, 2013; Gregory-Smith, Thompson and Wright, 2014). In contrast, Conyon and Sadler (2010) fail to provide strong evidence that there are changes to pay proposals after a highly negative vote. Moreover, the findings of these studies show that voting dissent does not seem to be strong overall and that, on average, significantly fewer than 10% of all votes are against board proposals. These low levels of voting dissent have been considered by some as a sign of shareholder indifference to this mechanism and have raised doubts over the effectiveness of Say-on-Pay (Conyon and Sadler, 2010). Based on theoretical arguments on the importance of institutional investors for corporate governance, we build a set of predictions and show evidence that the existence of long-term as opposed to short-term institutional investors within the firm can explain the low levels of

shareholder voting dissent and also provide a plausible explanation for the conflicting prior findings on the effectiveness of Say-on-Pay as a corporate governance mechanism.

Prior research shows that institutional shareholders' investment horizons can significantly affect their monitoring and informational role within the firm. Value maximization incentives will motivate shareholders to engage with their investee firms (admittedly to varying degrees) through monitoring (Cheng, He Huang, Li and Lobo, 2010; Becht, Franks, Mayer and Rossi, 2010; Maug, 1998). However, the extant literature identifies a cost-benefit trade-off underlying this argument. Shareholders rationally choose to bear monitoring costs only if the associated benefits outweigh these costs (Shleifer and Vishny, 1986; Kahn and Winton, 1998; Maug, 1998). Since any benefits associated with monitoring are typically expected to materialize in the medium to long term, shareholders with long-term investment horizons are the ones expected to bear those costs (Doidge, Dyck, Mahmudi and Virani, 2014; McCahery, Sautner and Starks, 2015). On the other hand, short-term investors will rationally avoid monitoring, or in other words will not engage with their firms. In line with this conjecture, prior studies find that short-term investors avoid engaging with their investee firms; rather, they use their informational advantage and high sophistication levels to achieve private gains through regular trading (Bushee and Goodman, 2007; Brockman and Yan, 2009).

Based on the above, we predict and find that the lack of monitoring incentives for short-term shareholders, combined with the legal requirement for casting a vote, translates into high abstaining Say-on-Pay votes from these investors, thus weakening the effectiveness of this corporate governance mechanism in firms with a significant presence of short-term investors. In

addition, we find that short-term-oriented shareholders only cast a negative vote when the CEO pay arrangements are clearly excessive/abusive. Moreover, they show greater sensitivity; that is, they are more likely to cast a negative vote on excessive pay in cases of poor stock performance. These findings are consistent with the aforementioned arguments on the lack of engagement from short-term investors, since these actions do not involve high monitoring costs.

We also argue and demonstrate that the existence of long-term investors within a firm increases positive voting on the proposed remuneration, since their continuous monitoring increases the probability that the board's proposals on executive pay will be in line with shareholder expectations. We confirm this conjecture by providing evidence that the existence of long-term shareholders is negatively associated with cases of excessive CEO pay. Thus, we affirm the role of long-term shareholders in facilitating effective monitoring and engagement prior to the publication of the proposals as opposed to colluding with managers. This result, together with our finding that the average institutional investor in the UK has a long-term investment horizon, help explain the low levels of shareholder voting dissent observed in prior studies.

Following Gaspar, Massa and Matos (2005) and Gaspar et al. (2013) we use investor turnover as a proxy for investment horizon. Unlike prior studies, we allow for the shareholder investment horizon to be endogenous to firm decision-making. We use instruments for investor turnover and voting in two- and three-stage models and our results remain unchanged. Our findings also remain robust to tests that control for "index hugging" investors who typically do not engage in firm monitoring. To further capture the causal effect of investment horizon on firm voting and mitigate the impact of confounding effects, we run several propensity-score-matching tests; the

results remain consistent with our expectations. Moreover, to alleviate concerns that investor turnover is an imperfect proxy for identifying investment horizons, we rerun our models and use levels of firm ownership by certain investor types, such as hedge funds and investment advisors, instead of investor turnover measures. The results remain consistent with our arguments. Finally, due to the mandatory nature of the Say-on-Pay vote in the UK, our sample does not suffer from selection bias issues at the level of the shareholder's decision to cast a vote.

Our contribution to the Say-on-Pay literature is twofold. First, we introduce institutional ownership stability as an important determinant of the Say-on-Pay voting outcomes. We use prior research on the different monitoring and informational roles of long-term and short-term investors within the firm and argue that these differences can significantly impact on their voting behaviours. In this way, our analysis complements prior studies by identifying an important determining factor of Say-on-Pay voting patterns. Second, our study reconciles prior conflicting findings related to Say-on-Pay effectiveness and shareholder interest in this mechanism (Alissa, 2015; Carter, Ittner and Zechman, 2009; Conyon and Sadler, 2010; Gregory-Smith et al., 2014). By systematically collecting a large amount of panel data on the ownership positions of institutional investors in the UK, we provide empirical evidence that on average there are low levels of investor turnover in the UK. This evidence supplements prior anecdotal evidence and serves as an indication that institutional shareholders in the UK are long-term oriented. This fact combined with our result that long-term shareholders tend to vote in favour of Say-on-Pay proposals offers a plausible explanation for the low levels of negative and abstaining Say-on-Pay voting. Hence, we provide an alternative explanation for the observed low levels of shareholder dissent, which acknowledges rational shareholder decision-making based on a cost-benefit

analysis as the reason behind low dissent rather than indifference about this important corporate governance mechanism as has been argued by prior studies.

Our study also contributes to the wider literature on the role of investment horizons on firm decision-making. Our finding of long-term shareholder support for board remuneration proposals through positive voting is consistent with and extends the findings presented in Dong and Ozkan (2008), Doidge et al. (2014) and McCahery et al. (2015) on such shareholders' effective monitoring role within the firm. Moreover, our result that short-term institutional investors are more likely to cast an abstaining vote is consistent with their lack of monitoring incentives within the firm. Importantly, these findings highlight the importance of investment horizons in identifying heterogeneity in investor incentives, and their impact on a significant firm decision-making, that is, CEO pay. Finally, our study further highlights shareholder heterogeneity as a crucial factor for the success or failure of corporate governance mechanisms (Hambrick, Werder and Zajac, 2008; Hoskisson, Hitt, Johnson and Grossman, 2002). It thus adds to the wider corporate governance literature, which places great importance on shareholder engagement for an efficient corporate governance system that protects firm interests and ensures that managers act in the interests of the company's stakeholders (Aguilera, Filatotchev, Gospel and Jackson, 2008; Filatotchev and Nakajima, 2010).

Our findings are particularly informative for policy makers since a number of countries have followed the UK in introducing similar Say-on-Pay initiatives. Moreover, our results can extend the debate on the usefulness of proposals to further endorse Say-on-Pay as an effective corporate governance mechanism by changing the voting outcome from advisory to compulsory.

Literature Review

Say-on-Pay: Institutional Setting and Prior Research

As part of an ongoing effort to improve the effectiveness of corporate governance and firms' engagement with their shareholders, in 2002 the UK government introduced new legislation to promote transparency in executive pay arrangements by requiring shareholders to express their opinion on these arrangements. Apart from approving or disapproving the remuneration report, shareholders also have the option to cast an abstaining vote. This Say-on-Pay initiative attracted great attention and many other countries followed the UK in enacting similar mechanisms (e.g., Australia, the USA, and Norway, among others).

Since its introduction, a growing literature has focused on shareholder engagement through Say-on-Pay in the UK. Alissa (2015) finds that shareholders express their dissatisfaction about excessive pay practices through voting. He also reports the disciplinary effect of shareholder voting dissent, as firms respond to it by reducing excessive CEO pay practices or forcing the CEO out of office. Carter and Zamora (2009) reach broadly similar conclusions. In addition, Ferri and Maber (2013) report positive market reactions to the 2002 introduction of the Say-on-Pay regulation in the UK for firms with weak penalties for poor performance. They also report that firms respond to a negative shareholder vote by removing controversial CEO pay practices. Gregory-Smith et al. (2014) find a positive association between executive remuneration levels and shareholder voting dissent, which indicates that shareholders react negatively to high proposed levels of remuneration. They also show that, in cases of high levels of voting dissent, there are subsequent changes in the levels of compensation, especially for firms with high levels of executive pay. However, despite the fact that during the 2008/09 crisis we would have

expected shareholders to have increasingly used Say-on-Pay to express their dissatisfaction with board choices, the paper shows no changes in the post-crisis era. This finding is not consistent with prior studies, which present Say-on-Pay as a channel for the expression of shareholder dissatisfaction. In addition, Conyon and Sadler (2010) find limited evidence that Say-on-Pay has a material impact on the subsequent levels and structure of CEO pay, a result which is also inconsistent with prior findings on the board response to high dissent.

A common element across all the aforementioned studies (and something that our analysis also confirms) is the relatively low reported voting dissent; for example, Carter et al. (2009) find that negative votes comprise much fewer than 10% of the total votes cast - in 2005 the figure is only 3.4%. The extant literature has not investigated whether this is a sign of the indifference of shareholders to Say-on-Pay and, to a certain extent, of the ineffectiveness of this mechanism, or whether it can be related to specific shareholder characteristics.

US-based evidence also provides strong support for the significant role of Say-on-Pay for executive pay arrangements. A number of studies have focused on the impact of voluntary shareholder voting proposals before the introduction of the regulation regarding mandatory voting on pay. Ertimur, Ferri and Muslu (2011) find that activist shareholders target firms with excess CEO pay; these firms respond by significantly reducing the level of CEO compensation. Cai and Walkling (2011) find that Say-on-Pay creates value in firms with abnormally high CEO pay, whereas it can destroy value in other firms. Moreover, Burns and Minnick (2013) report changes in the structure of executive pay contracts towards an increased use of performance-based pay, for firms that receive voluntary voting proposals. Furthermore, Del Guercio, Seery

and Woidtke (2008) examine another form of shareholder activism, that is, "just vote no" campaigns, and also report a positive association between these campaigns and CEO turnover decisions, indicating that such campaigns force boards to take action in the shareholders' interests.

Say-on-Pay was introduced in the US as a mandatory corporate governance mechanism through the Dodd-Frank Act. In a quasi-experimental setting that mitigates endogeneity concerns, Iliev and Vitanova (2013) show negative market reactions for smaller-sized firms with the option of exemption from mandatory Say-on-Pay voting, at the time of the announcement of this new regulation. This indicates that investors show a preference for having the opportunity to express their opinion on executive pay proposals. Cotter, Palmiter and Thomas (2013) examine the impact of Say-on-Pay on executive pay practices one year after its mandatory introduction. Overall, they find that companies respond to any shareholder concerns in relation to executive pay, especially in cases of excessive pay arrangements. However, another recent study by Armstrong, Gow and Larcker (2013) finds little evidence that shareholder dissent leads to changes in the level or composition of subsequent CEO pay.

Investment Horizon and Firm Policy

Shleifer and Vishny (1986) and Maug (1998) examine the choice of shareholders to actively engage with the management to increase firm value vis-à-vis achieving private gains via regular trading. Both studies find that shareholders will bear the monitoring costs only if the perceived benefits from monitoring exceed these costs. Other studies have highlighted the importance of shareholders' horizon in this context: Benefits from monitoring are typically expected to

materialize in a medium to long-term time horizon; hence shareholders with a long-term interest in the firm are the ones most likely to bear the monitoring costs (Chen, Harford and Li, 2007). On the other hand, short-term shareholders will rationally avoid monitoring. This is due to the fact that short-term investors have an informational advantage and high sophistication levels that they use to trade regularly rather than monitor the management of firms (Bushee and Goodman, 2007; Brockman and Yan, 2009).

At an empirical level, several studies examine the impact of investment horizon on firm policy, primarily in a US context. Attig, Cleary, El Ghoul and Guedhami (2012) highlight the importance of shareholders' horizon on company investments and report that longer-term investment horizons reduce the company's cost of equity. They argue that long-term investors have the incentive to gather more information about the firm and hence become more efficient in their monitoring role. This decreases information asymmetry and the associated agency costs, thus leading to a decrease in the cost of equity. Similarly, Chen et al. (2007) find that it is mainly independent long-term institutional investors that monitor the actions of corporate directors in relation to M&A decisions.

Derrien, Kecskés and Thesmar (2013) report that, in undervalued firms with long-term investors, managers choose to make larger investments, increase the issuance of new equity and decrease shareholder payouts. These findings highlight the importance of the existence of investors with long-term interests in the firm, which encourages managerial decisions that can boost firm value in the long term. Gaspar et al. (2005) argue that weaker monitoring from short-term shareholders leads their investee firms to hold weaker bargaining positions in corporate acquisitions. Using a

state-of-the-art measure for investment horizon, they show that target companies with short-term shareholders are more likely to receive a bid with a lower premium. Furthermore, Gaspar et al. (2013) find that the investment horizon affects firm payout policies; in particular, short-term investors favour share repurchases over dividend payouts. Their findings highlight short-term investment horizons as a reasonable explanation for the increasing number of share buyback cases in recent years.

Hypotheses Development and Research Design

Hypotheses

The purpose of this study is to establish a link between Say-on-Pay voting patterns and investment horizon. As discussed above, due to substantial differences in the monitoring incentives of long-term and short-term-oriented shareholders, there are considerable differences in their degree of engagement with the firm. Therefore, we expect that shareholders' investment horizons would impact on the overall shareholder voting behaviour in the AGM and in particular on Say-on-Pay, since it is a mechanism that aims to promote shareholder engagement and corporate governance effectiveness. Investment horizons could thus provide an explanation for both the low incidence of shareholder revolt previously documented in the literature and also the contradictory evidence regarding the effectiveness of Say-on-Pay (Conyon and Sadler, 2010; Ferri and Maber, 2013).

Following prior studies, we focus our investigation on UK-listed firms. The UK provides a good setting in which to investigate the proposed relations, since, as described in the previous section, post-2002 investors in the UK are required by law to submit non-binding votes on executive pay.

Therefore, there is a large panel of available data for the UK compared to other countries that have only recently adopted a mandatory Say-on-Pay vote. Moreover, there is no selection bias in the decision to cast a vote, which could be a major problem in other settings where voting is only voluntary.

Shareholders in the UK are allowed to avoid making a "for or against" recommendation by casting an "abstaining" vote. Such a choice implies that shareholders avoid taking a decision on the proposed remuneration package and could negatively impact the effectiveness of this corporate governance mechanism. As discussed above, short-term shareholders choose to trade regularly rather than engage and monitor the management of the firm (Bushee and Goodman, 2007; Brockman and Yan, 2009). Such lack of engagement could have a detrimental impact on the efficiency of corporate governance and ultimately on firm performance (Aguilera, 2005; Aguilera et al., 2008; Cotter et al., 2013; Filatotchev and Nakajima, 2010). In line with this argument and the legal requirement for casting a vote, we predict that the existence of short-term shareholders within a firm will lead to higher levels of abstaining votes. In other words, we hypothesise that the investment horizon is negatively related to shareholder voting abstention; that is, short-term investors are more likely to cast an abstaining vote. Ex ante it is unclear whether short-term investors will choose to cast an abstaining vote or will simply avoid confrontation with the management by casting a vote in favour of the proposals. Since it is a legal requirement to vote, we believe that the decision to cast an abstaining vote is consistent with their lack of incentives to incur any monitoring costs that a "for" or "against" voting decision would entail. Therefore, our first testable hypothesis is:

H1: Short-term investors are more likely to cast an abstaining Say-on-Pay vote; that is, abstaining increases with investor turnover.

As previously discussed, a number of studies have shown that long-term shareholders actively engage with the firm and monitor the actions of its managers (Attig et al., 2012; Chen et al., 2007). These shareholders make such a decision arguably because the perceived benefits from monitoring supersede the costs associated with this course of action (Maug, 1998; Shleifer and Vishny, 1986). As a result, the existence of long-term shareholders promotes the efficiency of corporate governance within a firm (Doidge et al., 2014; McCahery et al., 2015). Consistent with these studies, Dong and Ozkan (2008) show that long-term shareholders improve the efficiency of executive pay contracts by having a positive impact on pay-performance sensitivity. In line with these findings on the monitoring role of long-term shareholders, we expect them to influence board proposals on CEO remuneration packages due to their high degree of engagement with the management of the firm. This influence will lead them to accept the proposals when put forward to the AGM. Hence, our prediction is that shareholders with low investor turnover, and thus a long-term interest in the firm, are more likely to vote in favour of a board proposal on executive pay:

H2a: Long-term investors are more likely to cast a "for" Say-on-Pay vote.

Our main assertion above is that the anticipated support of long-term institutional investors for the proposed executive pay arrangements could be due to effective monitoring by these investors; that is, they influence/shape the board's recommendations before they are even

submitted to the AGM. However, based on Mangen and Magnan (2012), there is also a likelihood of entrenchment problems; that is, given their long-term interest in the firm, long-term shareholders will avoid confrontation with the managers. In order to disentangle the two potential explanations, we also investigate whether the presence of long-term investors in a firm is associated with abnormal/excess CEO pay. Evidence of a negative (positive) association will be consistent with the former (latter) explanation:

H2b: Firms with long-term investors are less likely to have excessive pay practices.

Research Design

To measure investment horizons, we construct an investor turnover measure, following Gaspar et al. (2005; 2013). The construction of this measure is based on the modest assumption that, by definition, short-term investors trade their shares more frequently than long-term investors; hence, the former are expected to rotate (churn) their positions on all stocks in their portfolio more quickly than the latter. We thus initially calculate the frequency of the rotation of the overall portfolio (churn ratio) for each investor in the sample; an investor with a high churn ratio is considered an investor with a short-term horizon, whereas an investor with a low churn ratio can be characterized as a long-term one. Following this process and moving to the company level, we classify a firm in terms of its investment horizon based on the investment profile of its average shareholder.

More precisely, we initially calculate the institutional investors' investment horizons using the following churn ratio measure:

$$CR_{i,t} = \frac{\sum_{z=1}^{Q_t} |N_{z,i,t}P_{z,t} - N_{z,i,t-1}P_{z,t-1} - N_{z,i,t-1}\Delta P_{z,t}|}{\sum_{z=1}^{Q_t} \frac{N_{z,i,t}P_{z,t} + N_{z,i,t-1}P_{z,t-1}}{2}} \quad (1)$$

where $CR_{i,t}$ is the churn ratio for investor i in year t, $N_{z,i,t}$ is the number of shares of company z held by investor i in year t, $P_{z,t}$ is the price of the share, Δ denotes the annual change operator and Q_t is the number of firms in investor i's portfolio in year t. We then use the set of shareholders for company z at time t ($S_{z,t}$) to define investor turnover ($Inv\_Turn_{z,t}$) as follows:

$$Inv\_Turn_{z,t} = \sum_{i \in S_{z,t}} w_{z,i,t} \times CR_{i,t} \quad (2)$$

In effect, we calculate the weighted average of the churn ratios of all investors who own shares in company z in year t. In this way, we can characterize firms in terms of their investment horizon using the average turnover rates of their shareholders for the year (Gaspar et al., 2005; 2013). We next match the average churn-ratio to the relevant firm-level voting outcomes for each firm-year in the sample.

The focus of Hypothesis 1 is on abstaining votes on the remuneration report submitted to the AGM for approval. Following Alissa (2015), we calculate the proportion of shareholders casting an abstaining vote on the remuneration report as follows:

$$Abst\_Vot_{z,t} = \frac{abstain\ vote_{z,t}}{abstain\ vote_{z,t} + against\ vote_{z,t} + for\ vote_{z,t}} \quad (3)$$

where *against* and *for* votes are the number of votes cast against and in favour of the remuneration report of company z in year t respectively, while *abstain vote* is the number of votes in which the shareholders opted to refrain from expressing their opinion on the report.

To test Hypothesis 1 we use the following logit model:

$$High\_Abst\_Vot_{z,t}\left(Ab\_Med\_Abst\_Vot_{z,t}\right) = \beta_0 + \beta_1 * Inv\_Turn_{z,t}\left(Low\_Inv\_Turn_{z,t}\right) + Controls + \varepsilon_{z,t} \quad (4)$$

where *High_Abst_Vot*$_{z,t}$ *(Ab_Med_Abst_Vot*$_{z,t}$*)* is an indicator variable that takes the value 1 for firms in the top 33rd (50th) percentile of the *Abst_Vot*$_{z,t}$ variable (as calculated in equation 3) in a given year and 0 otherwise; *Low_Inv_Turn*$_{z,t}$ is an indicator variable that takes the value 1 for firms in the bottom 33rd percentile of the *Inv_Turn*$_{z,t}$ variable (as calculated in equation 2) in a given year and 0 otherwise. All remaining control variables we include in the model follow prior studies (Cai and Walkling, 2011; Conyon and Sadler, 2010; Ferri and Maber, 2013; Carter and Zamora, 2009) and are described in detail in the appendix. [1] Based on Hypothesis 1, we would expect the coefficient of the independent variable *Inv_Turn*$_{z,t}$ *(Low_Inv_Turn*$_{z,t}$*)*, β_1, to be positive (negative).

The focus of Hypothesis 2a is on favourable shareholder voting on the remuneration report. Following Ertimur et al. (2011), as a proxy for positive voting we use the following ratio:

$$Posit\_Vote_{z,t} = \frac{for\ vote_{z,t}}{against\ vote_{z,t} + for\ vote_{z,t}} \quad (5)$$

Our prediction is that, as the shareholder horizon increases (i.e., *Inv_Turn*$_{z,t}$ decreases), positive voting also increases. Therefore, to test Hypothesis 2a, we use the following regression model:

$$Posit\_Vote_{z,t} = \beta_0 + \beta_1 * Inv\_Turn_{z,t}\left(Low\_Inv\_Turn_{z,t}\right) + Controls + \varepsilon_{z,t} \quad (6)$$

Based on Hypothesis 2a, we expect that β_1 will be negative when $Inv\_Turn_{z,t}$ is the main independent variable; that is, positive voting on the proposed CEO pay arrangements will decrease with investor turnover. On the other hand, we expect β_1 to be positive when $Low\_Inv\_Turn_{z,t}$ is the main independent variable; that is, positive voting will be higher in firms with long-term investors.[2]

To test Hypothesis 2b, we examine whether excessive CEO pay emoluments in a firm are associated with shareholdings of long-term investors. A positive association would be an indication of collusion (or conflict avoidance) of this type of shareholder with the management, whereas a negative association would be consistent with prior findings on the role of long-term investors as efficient monitors of managerial decision-making within the firm. Therefore, to test Hypothesis 2b, we use the following logit model:

$$Abnormal\ Pay\ Q4_{z,t} = \beta_0 + \beta_1 * Inv\_Turn_{z,t}(Low\_Inv\_Turn_{z,t}/Med\_Inv\_Turn_{z,t}/ High\_Inv\_Turn_{z,t}) + Controls + \varepsilon_{z,t} \quad (7)$$

where $Low\_Inv\_Turn_{z,t}$ *(*$Med\_Inv\_Turn_{z,t}$*/* $High\_Inv\_Turn_{z,t}$*)* is an indicator variable that takes the value 1 for firms in the bottom (medium / top) 33rd percentile of the investor turnover distribution and 0 otherwise. *Abnormal Pay* $Q4_{z,t}$ is a dummy variable that takes the value 1 when abnormal pay is in the top quartile of the distribution and 0 otherwise. Following Cai and Walkling (2011), we calculate abnormal pay as the residual of a regression where the dependent variable is the level of total CEO pay and the independent variables are the 3-year stock return, the logarithm of the market value of equity, leverage, ROA and book-to-market, as well as

industry and calendar-year fixed effects. If the results of prior studies on the monitoring role of long-term investors stand, we expect β_1 to be positive (negative) for $Inv\_Turn_{z,t}$ ($Low\_Inv\_Turn_{z,t}$). If our results reveal opposite signs, then that could be an indication of investor collusion with the management team.

Finally, to further investigate investor-voting patterns empirically, we extend our analysis on the relationship between investor turnover and shareholder voting dissent on the remuneration report. This relationship might not be linear, requiring us to study it separately from our previous analysis on favourable voting and investor turnover, which in principle captures the inverse relation. Following Ertimur et al. (2011), we use the following ratio as a proxy for negative voting:

$$Voting\_Dissent_{z,t} = \frac{against\ vote_{z,t}}{against\ vote_{z,t} + for\ vote_{z,t}} \quad (8)$$

Based on Ertimur et al. (2011), we use a 20% negative vote as the threshold for high voting dissent; our prediction is that, as shareholder horizon increases (i.e., $Inv\_Turn_{z,t}$ decreases), firms are less likely to face cases of high voting dissent on the remuneration report. We then use the following logit model:

$$High\_Vot\_Diss_{z,t} = \beta_0 + \beta_1 * Inv\_Turn_{z,t} + Controls + \varepsilon_{z,t} \quad (9)$$

where $High\_Vot\_Diss_{z,t}$ is a dummy variable that takes the value 1 for cases of negative voting (as calculated in equation 8) higher than 20% and 0 otherwise; we define all remaining control variables in the appendix. Based on our previous arguments, we expect β_1 to be positive; that is, we expect the probability of high negative voting on the proposed CEO pay arrangements to increase with investor turnover. To further extend our findings, we examine whether cases of excessive pay arrangements, unexplained by firm characteristics, are the ones that attract higher

dissent from short-term investors. This would be consistent with Hypothesis 1: Short-term investors show a lack of engagement and thus prefer to cast an abstaining vote; however, they do cast a negative vote in cases of excessive CEO pay arrangements since such action does not involve high monitoring costs.

To achieve this, we extend the previous model by adding the following interactions:

$$High\_Vot\_Diss_{z,t} =$$

$$\beta_0 + \beta_1 * Inv\_Turn_{z,t} + \beta_2 * Abnormal\ Pay_{z,t}\left(Abnormal\ Pay\ Q4_{z,t}\right) + \beta_3 * Inv\_Turn_{z,t} *$$

$$Abnormal\ Pay_{z,t}\left(Abnormal\ Pay\ Q4_{z,t}\right) + Controls + \varepsilon_{z,t} \quad (10)$$

Based on the above arguments, we expect to find β_3 to be positive in both interactions but with a stronger effect in the interaction with the dummy variable (*Abnormal Pay* $Q4_{z,t}$), since it represents extreme cases of excessive pay.

Data

Following prior studies, we use Manifest to collect data on shareholder voting and CEO pay arrangements. Our voting and pay data is on the constituent firms of the London Stock Exchange FTSE-350 index, after accounting for yearly changes in the membership of the index, and covers the period from 2003 (i.e., the first full year after the introduction of the Say-on-Pay regulation) to 2011. To construct the investment horizon proxy as described above, we use a large dataset of institutional ownership of UK firms from the Thompson-Reuters One Banker database. This database offers the most comprehensive ownership information for institutional investors holding

the majority of the equity in more than 500 UK-listed firms in the Main LSE market. The database covers a variety of institutional investor types, e.g., banks, hedge and pension funds, investor advisors, and venture capitalists, among others. It uses a proprietary method of collecting ownership information from a variety of sources, which allows it to identify even relatively small ownership stakes (down to 0.01% in some cases). We use Datastream for all the remaining variables. After matching valid observations across the different databases, our final sample comprises 2,782 firm-year observations.

Results

Table 1 presents descriptive statistics on the variables used in our analysis. Consistent with prior studies, Panel A confirms the high levels of positive voting on pay which, in our sample, average at 94.4%. However, with a standard deviation of 9 percentage points, our descriptive statistics indicate a significant variation in the levels of positive voting, which is worth investigating. Given the dominant positive voting, the average levels of against or abstaining votes are naturally low. However, we note there is substantial variation in the abstaining and against votes as well, which means that in some firms these voting outcomes could be dominant.

Panel A also confirms that investors in the UK have, on average, low investor turnover, or, in other words, they are long-term investors. We find an average turnover of 0.363, which indicates that 18.15% (0.363/2) of a company's shares are turned over in a year. This means that institutional investors in the UK hold a company's stock in their portfolio for an average of 66 months (12/0.1815) or 5.5 years. Based on Gaspar et al. (2013), the relevant figures for institutional investors in the US are 44% and 27 months respectively. Therefore, the investment

horizon of institutional investors in the UK is much higher than that of their counterparts in the US. If Hypothesis 2a is confirmed, this result could provide an explanation for the low Say-on-Pay dissenting vote percentages in the UK.

Panel B splits our sample into three portfolios based on the level of investor turnover. We observe that firms in the lowest 33rd percentile of the investor turnover ratio have the lowest ratios of abstaining votes. The abstaining ratio increases monotonically as we move towards the portfolio with the highest investment-turnover firms.[3] Moreover, Panel B reports significant differences in the average investment turnover between firms in the bottom (mean= 0.209) and top (mean= 0.505) percentiles. These differences highlight significant variation in investment horizons between institutional investors in the UK, which could substantially impact on Say-on-Pay voting patterns. Also, Panel C reports that the difference in the investor turnover ratios between firms with negative votes above 20% (a threshold for strong dissent according to prior studies) and with negative votes below 20% is statistically significant at the 1% level and translates to a 6-month difference in investment horizons. This result still holds after using a matched sample (based on size, industry and year) for firms with high voting dissent in Panel D. Finally, Panel E reports descriptive statistics on the remaining control variables that we use in our models. All control variables have values consistent with those reported in prior studies (Carter and Zamora, 2009; Conyon and Sadler, 2010; Ferri and Maber, 2013).

Insert Table 1 about here

Graph 1 shows a decreasing trend for average negative voting, which reverses after the 2008/09 financial crisis. Average abstaining voting follows a negative trend in the first years of Say-on-Pay but remains stable in the following years. There is also a negative trend for positive voting

during and after the financial crisis. We conduct further analyses on voting patterns for industries of specific interest (e.g., financial and utility industries) but we do not observe any substantial deviations relative to other industries.

Insert Graph 1 about here

Table 2 reports the results of the logit model described in equation 4. Our findings are consistent with Hypothesis 1; we show that it is more likely for a firm to receive a large proportion of abstaining votes as $Inv\_Turn_{z,t}$ increases, that is, as short-term shareholder ownership increases. On the other hand, firms in the bottom 33rd percentile of investor turnover, that is, firms with long-term investors, are less likely to receive a high percentage of abstaining votes. We find that short-term investors avoid casting a positive or negative vote on proposed CEO pay arrangements, something that would require additional monitoring costs. Instead, they prefer to cast an abstaining vote and hence take no clear position on the remuneration report submitted to the AGM, which weakens the value/effectiveness of the Say-on-Pay mechanism. From column 2 we can infer that a one-standard-deviation increase in investor turnover around its mean increases the probability of a high level of abstaining voting by 7.76 percentage points. This is economically significant as it suggests a 32% increase in comparison with the unconditional probability of a high level of abstaining voting of 23.66 percentage points.

Insert Table 2 about here

Table 3 shows that positive voting decreases with $Inv\_Turn_{z,t}$ or, in other words, that, as the shareholder investment horizon increases, firms receive more favourable votes on proposed pay arrangements. Columns 3 and 4 further confirm this finding by showing a higher likelihood of positive voting in firms with high levels of long-term institutional ownership. Columns 2 and 4 also show that positive voting decreases in cases of excessive pay and as CEO age increases.

However, shareholders vote in favour of pay proposals for CEOs that have stayed longer with the firm.

Insert Table 3 about here

We then examine whether the positive relationship between "for" voting and the existence of long-term investors is due to a monitoring effect or due to the collusion of these investors with the managers. Table 4 shows that it is more likely for a firm to be in the top quartile for abnormal pay as the institutional investment horizon decreases, that is, as $Inv\_Turn_{z,t}$ increases. We get similar results when we split the firms into three subsamples in terms of their investor turnover (following Gaspar et al., 2013). These results supplement our predictions and interpretation regarding Hypothesis 2a and confirm Hypothesis 2b. That is, they serve as an indication of effective monitoring from long-term institutional investors, which prevents companies from abusing the executive pay-setting process.

Insert Table 4 about here

Table 5 shows that the likelihood of receiving a negative vote above 20% increases with $Inv\_Turn_{z,t}$. Hence, long-term investors are less likely to cast a negative vote on proposed CEO pay arrangements, while the opposite is true for short-term investors. Our findings have substantial economic significance: Column 2 shows that an increase of one standard deviation in investor turnover around its mean increases the probability of high voting dissent by 2.78 percentage points. This translates into a 53.3% increase compared with the unconditional probability of high voting dissent of 5.21 percentage points. Our additional analysis shows that this finding does not mean that short-term investors cast a negative vote lightly; the interaction term in columns 4 and 5, combined with the insignificant coefficient on the interaction term in column 3, indicate that short-term investors will only vote against in cases of extremely

excessive CEO pay, that is, in clear cases of managerial abuse, identifying which does not require significant monitoring costs.

Insert Table 5 about here

Robustness Tests and Limitations

Endogeneity Concerns

Although papers like Gaspar et al. (2013) consider shareholders' investment horizons as exogenous to firm decision-making, we control for the possibility that shareholders' investment decisions are endogenously determined with their voting decisions. We attempt to mitigate endogeneity concerns with the use of an Instrumental Variable (IV) approach.

Instrument Identification Strategy. The instruments must satisfy the criteria of relevance (i.e., correlation with investor turnover) and exclusion (i.e., no direct effect on the relevant voting decisions, other than through investor turnover). Share turnover, a proxy for stock liquidity, should be related to investment horizon since high stock market liquidity could induce more frequent trading and thus impact on the portfolio positions of institutional shareholders (Attig et al., 2012; Bhide, 1993). Therefore, short-term shareholders would engage in more frequent trading of the shares of a firm with high stock market liquidity, given the lower trading costs, hence increasing the firm's average investor churn ratio. We would thus expect to find that investor horizons decrease as liquidity increases, or in other words, a positive relationship between investor and share turnover. On the other hand, we cannot identify any economic reasons that would lead us to expect share turnover to be related to the shareholders' decision to vote in favour, against or cast an abstaining vote in relation to the proposed executive pay

arrangements, other than through our hypothesised investor turnover channel. Since the investor turnover channel is the only valid one, share turnover theoretically satisfies both the relevance and exclusion requirements and we thus use it as a first instrument. We define share turnover as the number of shares in the company traded during the year, divided by the number of common shares outstanding at the company's year-end.

We also consider the adoption of "Markets in Financial Instruments Directive" (MiFID) as an exogenous event that would affect investors' choices but should not have an impact on their voting behaviour. MiFID is a European Union (EU) regulation that was introduced in May 2004 and first implemented in November 2007, to provide harmonisation in financial services across the EU member states. It covers firms that offer investment services and provides them with a "passport" to offer these services to customers in other EU country-members, while they are regulated by their home country. Cumming et al. (2011; 2015) report a significant impact of the introduction of MiFID on share trading and liquidity through an increase in trading transparency and a decrease in transaction costs. We thus anticipate that the introduction of MiFID encourages frequent trading and hence has a positive and significant impact on investor turnover. However, we do not believe that its introduction could impact on shareholders' voting decisions in relation to the proposed pay packages, other than through the investment horizons channel. Hence, the introduction of MiFID theoretically satisfies both the relevance and exclusion requirements. We construct a dummy variable that controls for the introduction of MiFID after the end of 2007 and use it as a second instrument

We follow a two-stage instrumental variable approach, defined as follows:

First stage: $Inv\_Turn_{z,t} = \beta_0 + \beta_1 * IV_{z,t} + Controls + \varepsilon_{z,t}$ (11)

Second Stage: $Vote_{z,t} = \beta_0 + \beta_1 * FIT\_Inv\_Turn_{z,t} + Controls + \varepsilon_{z,t}$ (12)

In the first stage $Inv\_Turn_{z,t}$ is a continuous dependent variable; IV includes $Share\ Turnover_{z,t}$ and *MiFID* as previously discussed; Controls include the variables used in the previous models as independent variables. In the second stage, we use the predicted values as a proxy for $Inv\_Turn_{z,t}$ in a probit model for the different voting outcomes (we use two-stage least squares, 2-SLS, for positive voting since the second-stage dependent variable is continuous).

Instrument Validation and Model Estimation. Based on the economic reasoning provided above and our empirical findings, both criteria of relevance and exclusion for our instruments appear to be satisfied. In particular, Table 6, column 1 reports the results of the first-stage model, where share turnover and the introduction of MiFID have a significant impact on shareholder investment horizons. The F-test of excluded instruments indicates that the instruments we use are jointly significant in explaining the endogenous variable (i.e. investor turnover). Therefore, our evidence indicates that the relevance criterion is satisfied. We also conduct the Hansen J-test for the 2-SLS model (column 4) and the Newey minimum chi-square test for the probit models (columns 2, 3 and 5) to examine potential overidentification problems. Both tests suggest that we cannot reject the null hypothesis that there is no correlation between the instruments and the error term in all model specifications; hence the exclusion criterion also appears to be satisfied. Columns 2 to 5 present the results of the second-stage models, where the predicted effects of investor turnover on shareholder voting decisions remain unchanged. Overall, our results show a

positive effect of investor turnover on the likelihood of high abstaining vote and voting dissent and a negative effect on positive voting.

Insert Table 6 about here

Other Robustness tests

To ensure the robustness of our results, we also use the 3-SLS method, in which we run our models as a system of equations rather than a two-stage model. This approach allows us to use the full informational set (compared to two-stage models) and test explicitly for reverse-causality inferences. As in Table 6, we use share turnover and the MiFID dummy variable as instruments for $Inv\_Turn_{z,t}$. We also introduce the number of resolutions submitted to the AGM every year for voting by the board of directors as an instrument for the voting outcomes. We use this variable as a proxy for the degree of engagement that the company anticipates from its shareholders, which we believe is bound to be correlated with the voting outcomes. Table 7 reports the 3-SLS results; we do not observe substantial changes to our main results. In particular, the $Inv\_Turn_{z,t}$ coefficients remain highly significant and with the correct sign. We acknowledge the fact that the use of binary endogenous variables ($High\_Abst\_Vot_{z,t}$; $High\_Vot\_Diss_{z,t}$) can be problematic in simultaneous equation models. However, we present the results to further support the robustness of our findings.

Insert Table 7 about here

Following Clatworthy, Makepeace and Peel (2009), we run a propensity score matching (PSM) analysis to estimate causal treatment effects: in our setting we match firms based on the probability of having low levels of investor turnover (high levels of long-term institutional investors). Firms with low $Inv\_Turn_{z,t}$ are thus considered as our "treatment" subsample, while the matched subsample comes from all remaining firms. We then compare the proportions of

firms receiving high levels of abstaining (negative) votes and the proportions of positive votes received, for each of the two subsamples, and check for significant differences in the outcomes. This analysis helps us better capture the causal effect of investor horizon on Say-on-Pay voting, since any differences in the outcome (voting) can only be attributed to the treatment effect (investor horizon). Table 8 presents the results of this analysis; we find that the difference in the observed voting outcomes is statistically significant across all specifications. [4]

Insert Table 8 about here

Furthermore, we try to control for the case of "index hugging" investors, as identified by prior studies (Cremers and Petajisto, 2009; Cremers, Ferreira, Matos and Starks, 2014). These are investors that build index-mimicking portfolios, and by definition do not monitor their investee firms. By excluding the firms for which we anticipate "index hugging" to be pronounced, we alleviate concerns that our results might not be driven by investor engagement (or the lack of it), but rather by the passive index-hugging behaviour of investors. We exclude the constituent firms of the FTSE-100 index from our sample, since this is the benchmark index that we would anticipate this type of investor to primarily mimic, and rerun our primary analysis. Table 9 reports the results of this analysis; our main findings remain qualitatively the same.

Insert Table 9 about here

We also run a number of untabulated sensitivity tests. First, we incorporate the impact of recent poor stock performance on the voting behaviour of investors. Based on our prior analysis, we would expect short-term investors to show greater sensitivity, that is, to be more likely to cast a negative vote on excessive pay, in cases of poor performance. This would be consistent with our arguments that negative voting from short-term investors is not the result of active monitoring and engagement with the management, but rather an expression of discontent with clear cases of

poor management practice. We thus split our sample into firms with negative/zero industry-adjusted annual stock returns and positive industry-adjusted annual stock returns; our findings indicate that short-term investors are more likely to cast a negative vote on excessive pay when this is combined with poor performance. Second, we rerun our models using continuous variables for abstaining and dissenting voting and, third, we rerun our tests after including abstaining votes in the denominator of the ratios for positive and negative voting in our calculations; our results remain unchanged in both cases.

Following prior studies (Attig et al., 2012; Gaspar et al., 2005), we also acknowledge that investor turnover can be an imperfect proxy for investment horizon, which can be captured by other characteristics such as investor type. To alleviate such concerns, we rerun our models using as the main independent variable, instead of investor turnover, ownership levels by certain investor types, to implicitly capture the impact of anticipated investment horizons.[5] The untabulated results are consistent with our predictions. We find that, as hedge fund ownership levels increase, a firm is more likely to receive high levels of abstaining votes. This is consistent with our predictions, as hedge funds can be considered, in principle, short-term-oriented investors (Clifford, 2008). We also find that positive voting increases (the likelihood of high negative voting decreases) as ownership levels of investment advisors increase. This is again consistent with our arguments, since investment advisors can be considered an "active" type of investor, with a long-term investment orientation (Almazan, Hartzell and Starks, 2005).

Finally, we acknowledge that a more thorough, case-study type of investigation of Say-on-Pay voting practices in companies characterized by unique ownership structures (e.g., dominated by

activist investors) would be beneficial in further highlighting the dynamics of the voting-ownership relation. Given our large dataset that includes a significant number of institutional investors and firms in the UK, we feel that this methodological approach is beyond the scope of this study.

Moreover, access to proprietary data on private discussions between asset managers and companies would provide us with some interesting insights and would help us to report additional evidence on the association between Say-on-Pay and investment horizons. Such data would also help us to better examine whether the shareholders' voting decision on CEO pay is linked to their monitoring role within the firm or driven by entrenchment issues and collusion with the management team. We thus acknowledge this as a limitation of our study and a potentially fruitful direction for future research.

Conclusion

We study the effect of shareholder investment horizon on Say-on-Pay voting patterns. We show significant differences in the voting outcomes for firms owned by short- and long-term institutional investors. Our findings indicate that, to avoid incurring any monitoring costs, short-term investors are more likely to cast an abstaining vote instead of a negative or positive one; however, they do vote against cases of highly abnormal/excessive, and hence easily identifiable, CEO pay arrangements. On the other hand, long-term investors are more likely to support proposed remuneration reports; we provide evidence that this is the outcome of prior engagement with the management of the firm, and not collusion, since such support is negatively associated with cases of abnormal CEO pay.

Our findings complement prior research on the Say-on-Pay mechanism by identifying the investment horizon as an important factor in this process that prior, relevant studies seem to disregard. Our study is also in line with prior literature on the role of investment horizon in firm governance and decision-making, and highlights the impact of investor heterogeneity on the effectiveness of corporate governance mechanisms. Finally, given the ongoing debate on further promoting shareholder voting on pay as a corporate governance mechanism, our findings are also policy relevant and provide a different perspective to the continuing discussion.

[1] The standard errors in all our models are Huber-White robust and clustered at the firm level. We also control for calendar-year and industry fixed effects.

[2] The dependent variable in equation 6 is a continuous one capturing the ratio of positive voting as opposed to the dichotomous variables we used in equation 4 for abstaining votes. This is due to the fact that, consistent with previous UK-based studies (Carter and Zamora, 2009; Conyon and Sadler, 2010), we observe high levels and concentrations of positive voting. For this reason, the results obtained using a dichotomous dependent variable would not be as informative.

[3] The maximum ratio of abstaining votes (57.4%) is observed in a firm with low investment turnover. We rerun our models after excluding this outlier; our results remain unchanged (untabulated).

[4] Our probability model includes all the variables used in our analysis (as described in equations 4, 6 and 9) and meets the balancing property required for PSM. Moreover, the absolute bias reduction after matching is 3.88, which is below the benchmark of 5. We use a number of algorithms (i.e., radius; nearest neighbour (NN); kernel) to match companies between the treatment and control subsamples.

[5] We follow the investor type classifications provided by ThomsonOne Banker, for example, hedge funds, investment advisors, banks, etc., to construct different ownership-level variables by investor type.

Appendix - Variable Definitions

Ab_Med_Abst_Vot$_{z,t}$	Dummy variable that takes the value 1 for firms above the 50th percentile of the Abst_Vot$_{z,t}$ variable in a given year and 0 otherwise.
Abnormal Pay Q4$_{z,t}$	Dummy variable that takes the value 1 when the estimated abnormal pay is in the top quartile of the distribution in a given year and 0 otherwise.
Abnormal Pay$_{z,t}$	Following Cai and Walkling (2011), this variable is defined as the residual of a regression in which the dependent variable is the level of total CEO pay and the independent variables are the 3-year stock return, the logarithm of the market value of equity, leverage, ROA and book-to-market, as well as industry and calendar-year fixed effects.
Abst_Vot$_{z,t}$	Ratio of the number of abstaining votes divided by the sum of negative, positive and abstaining votes on the remuneration report of company *z* in year *t*.
Board Size$_{z,t}$	Number of board members in company *z* in year *t*.
BTMV$_{z,t}$	Book value of assets divided by the market value of company *z* in year *t*.
High_Abst_Vot$_{z,t}$	Dummy variable that takes the value 1 for firms in the top 33rd percentile of the Abst_Vot$_{z,t}$ distribution in a given year and 0 otherwise.
High_Inv_Turn$_{z,t}$	Dummy variable that takes the value 1 for firms in the top 33rd percentile of the Inv_Turn$_{z,t}$ distribution in a given year and 0 otherwise.
High_Vot_Diss$_{z,t}$	Dummy variable that takes the value 1 for cases of negative voting higher than 20% and 0 otherwise.
Ind Adj. ROA$_{z,t}$	Operating income divided by the book value of assets minus the median ROA of the firms in the sample in a given two-digit SIC industry and year.
Inst. Own. Concentration$_{z,t}$	Herfindahl Index of institutional ownership of firm *z* in year *t*.
Inv_Turn$_{z,t}$	Following Gaspar et al. (2005, 2013), this is the weighted-average churn ratio of institutional shareholders within firm *z* during year *t*.
Leverage$_{z,t}$	Ratio of total debt to total assets for firm *z* in year *t*.
Ln(Num.Resolutions)$_{z,t}$	Natural logarithm of the number of resolutions submitted for voting at the AGM for firm *z* in year *t*.
Ln (Total Assets$_{z,t}$*)*	Natural logarithm of the total assets of firm *z* at the end of year *t*.
Ln(CEO Age$_t$*)*	Natural logarithm of the age of the CEO in years.
Ln(CEO Tenure$_t$*)*	Natural logarithm of the number of years the CEO has been in office.
Low_Inv_Turn$_{z,t}$	Dummy variable that takes the value 1 for firms in the bottom 33rd percentile of the

	distribution of the $Inv\_Turn_{z,t}$ variable in a given year and 0 otherwise.
Managerial Ownership$_{z,t}$	Number of shares held by the CEO divided by total shares outstanding.
Med_Inv_Turn$_{z,t}$	Dummy variable that takes the value 1 for firms in the medium 33rd percentile of the $Inv\_Turn_{z,t}$ distribution in a given year and 0 otherwise.
MiFID	Dummy variable for the introduction of MiFID after the end of 2007.
Non-Executives Ratio$_{z,t}$	Ratio of non-executive directors to total board size for company *z* in year *t*.
Posit_Vote$_{z,t}$	Ratio of the number of positive votes to the sum of negative and positive votes on the remuneration report of company *z* in year *t*.
Return$_{z,t}$	Stock price appreciation plus dividends over three years for company *z* in year *t*.
Share Turnover$_{z,t}$	Number of company shares traded during the year divided by the number of common shares outstanding at the company's year-end.
Voting_Dissent$_{z,t}$	Ratio of the number of negative votes to the sum of negative and positive votes on the remuneration report of company *z* in year *t*.

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Table 1 - Descriptive statistics

This table presents descriptive statistics on the variables used in the study. Panel A presents investor turnover and shareholder voting; Panel B presents abstaining votes after the sample has been split into three portfolios based on the level of investor turnover; Panel C presents the average investor turnover levels after firms have been split in terms of high voting dissent; Panel D presents the average investor turnover after companies with high voting dissent (>20%) have been matched with ones in the remaining sample based on size, industry and year; finally, Panel E presents descriptive statistics on all remaining control variables. All variables are defined in the appendix.

Panel A

	Mean	**Median**	**St.Dev.**	**Min**	**Max**	**Obs.**
Inv_Turn$_{z,t}$	0.363	0.379	0.136	0.016	1.198	2782
Abst_Vot$_{z,t}$	0.033	0.012	0.055	0	0.574	2782
Posit_Vote$_{z,t}$	0.944	0.98	0.090	0.100	1.000	2782
Voting_Dissent$_{z,t}$	0.055	0.019	0.090	0	0.899	2782

Panel B

Low Investment Turnover	**Mean**	**Median**	**St.Dev.**	**Min**	**Max**	**Obs.**
Inv_Turn$_{z,t}$	0.209	0.226	0.072	0.016	0.308	928
Abst_Vot$_{z,t}$	0.027	0.006	0.055	0	0.574	928
Medium Investment Turnover						
Inv_Turn$_{z,t}$	0.375	0.379	0.034	0.309	0.429	927
Abst_Vot$_{z,t}$	0.036	0.015	0.055	0	0.451	927
High Investment Turnover						
Inv_Turn$_{z,t}$	0.505	0.485	0.075	0.429	1.198	927
Abst_Vot$_{z,t}$	0.037	0.015	0.054	0	0.496	927

Panel C

	Inv_Turn$_{z,t}$	**Diff.**	**Obs**
Voting Dissent$_{z,t}$<20%	0.360		2582
Voting Dissent$_{z,t}$>20%	0.401	**0.041*****	200

Panel D

	Inv_Turn$_{z,t}$	**Diff.**	**Obs**
Voting Dissent$_{z,t}$<20%	0.365		200
Voting Dissent$_{z,t}$>20%	0.401	**0.036*****	200

Panel E

Variables	Mean	Median	St.Dev.	Min	Max	Obs.
Abnormal Pay$_{z,t}$	0.000	0.068	0.770	-13.540	3.063	2782
Ln (Total Assets$_{z,t}$)	13.355	13.295	2.655	0.000	21.441	2782
Inst. Own. Concentration$_{z,t}$	0.043	0.030	0.061	0.000	0.467	2782
Managerial Ownership$_{z,t}$	0.020	0.001	0.074	0	0.882	2782
Ind Adj. ROA$_{z,t}$	0.000	-0.197	11.606	-11.845	12.300	2782
BTMV$_{z,t}$	0.625	0.495	0.827	-12.500	16.667	2782
Leverage$_{z,t}$	0.217	0.192	0.196	0.000	1.722	2782
Return$_{z,t}$	-0.007	0.109	0.697	-4.529	2.727	2782
Ln(CEO Tenure$_{t}$)	1.456	1.505	0.906	-3.067	3.762	2782
Non-Executives Ratio$_{z,t}$	0.601	0.600	0.129	0.167	0.941	2782
Board Size$_{z,t}$	10.120	10.000	3.293	3.000	25.000	2782
Ln(CEO Age$_{t}$)	3.955	3.955	0.130	3.499	4.420	2782

Table 2 - Abstaining Vote and Investor Turnover

This table shows the results of different logit models examining the relationship between abstaining votes and investor turnover. All variables are defined in the appendix. The z-statistics presented in parentheses are based on robust standard errors, clustered at the firm level. Asterisks indicate a 1% (***), 5% (**) and 10% (*) level of statistical significance.

	High_Abst_Vot$_{z,t}$				***Ab_Med_Abst_Vot$_{z,t}$***			
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Inv_Turn$_{z,t}$	1.816***	1.571***			3.118***	2.195***		
	(4.50)	(3.51)			(7.70)	(5.01)		
Low_Inv_Turn$_{z,t}$			-0.461***	-0.361***			-0.732***	-0.475***
			(-4.02)	(-2.91)			(-6.97)	(-4.18)
Abnormal Pay$_{z,t}$		0.079		0.090		0.034		-0.050
		(0.91)		(1.04)		(0.56)		(0.81)
Ln (Total Assets$_{z,t}$)		0.054		0.062		0.181***		0.195***
		(1.35)		(1.58)		(4.68)		(5.04)
Inst. Own. Concentration$_{z,t}$		-2.710*		-2.652*		-1.863		-1.995
		(-1.90)		(-1.95)		(-1.32)		(-1.52)
Managerial Ownership$_{z,t}$		-1.366		-1.571		-1.083		-1.373**
		(-1.45)		(-1.64)		(-1.58)		(-1.96)
Ind Adj. ROA$_{z,t}$		0.005		0.005		0.004		0.005
		(1.09)		(1.16)		(1.14)		(1.29)
BTMV$_{z,t}$		0.023		0.026		0.033		0.039
		(0.45)		(0.51)		(0.62)		(0.71)
Leverage$_{z,t}$		-0.040		-0.030		0.132		0.150
		(-0.14)		(-0.10)		(0.58)		(0.66)
Return$_{z,t}$		0.033		0.039		0.104		0.109
		(0.33)		(0.39)		(1.13)		(1.19)
Ln(CEO Tenure$_t$)		0.006		0.012		-0.045		-0.035
		(0.12)		(0.21)		(-0.85)		(-0.67)
Non-Executives Ratio$_{z,t}$		-1.446***		-1.413***		-1.355***		-1.321***
		(-2.77)		(-2.74)		(-3.22)		(-3.17)
Board Size$_{z,t}$		-0.032		-0.032		-0.028		-0.029
		(-1.64)		(-1.39)		(-1.31)		(-1.32)
Ln(CEO Age$_t$)		0.465		0.465		0.219		0.216
		(1.11)		(1.11)		(0.58)		(0.57)
Ind Adj. ROA$_{z,t-1}$		-0.001		-0.002		-0.001		-0.001
		(-0.41)		(-0.49)		(-0.32)		(-0.44)
Return$_{z,t-1}$		-0.118		-0.124		-0.073		-0.077
		(-1.23)		(-1.30)		(-0.83)		(-0.90)
Constant	-1.754***	-2.916*	-0.936***	-2.353	-0.901***	-2.462*	0.478**	-1.694
	(-6.80)	(-1.79)	(-5.01)	(-1.43)	(-3.52)	(-1.65)	(2.32)	(-1.12)
Year Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES
Industry Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES

Pseudo R-squared	0.041	0.051	0.034	0.049	0.045	0.061	0.037	0.057
Chi-square	114.95	141.50	116.06	139.82	111.51	175.06	111.59	167.86
Observations	2782	2782	2782	2782	2782	2782	2782	2782

Table 3 - Positive Voting and Investor Turnover

This table shows the results of regressions testing the relationship between positive voting and investor turnover. All variables are defined in the appendix. The t-statistics presented in parentheses are based on robust standard errors, clustered at the firm level. Asterisks indicate a 1% (***), 5% (**) and 10% (*) level of statistical significance.

	***Posit_Vote*$_{z,t}$**			
	(1)	**(2)**	**(3)**	**(4)**
Inv_Turn$_{z,t}$	-0.063***	-0.035**		
	(-3.90)	(-2.03)		
Low_Inv_Turn$_{z,t}$			0.015***	0.007*
			(3.44)	(1.77)
Abnormal Pay$_{z,t}$		-0.009***		-0.009***
		(-4.05)		(-4.17)
Ln (Total Assets$_{z,t}$)		-0.003**		-0.003**
		(-2.09)		(-2.19)
Inst. Own. Concentration$_{z,t}$		-0.043*		0.089**
		(-1.75)		(2.12)
Managerial Ownership$_{z,t}$		-0.043*		-0.039
		(-1.75)		(-1.60)
Ind Adj. ROA$_{z,t}$		-0.000		-0.000
		(-0.44)		(-0.47)
BTMV$_{z,t}$		-0.002		-0.002
		(-0.90)		(-0.94)
Leverage$_{z,t}$		0.000		0.000
		(0.04)		(0.01)
Return$_{z,t}$		0.005		0.005
		(1.18)		(1.16)
Ln(CEO Tenure$_{t}$)		0.006**		0.006**
		(2.54)		(2.49)
Non-Executives Ratio$_{z,t}$		0.004		0.004
		(0.26)		(0.23)
Board Size$_{z,t}$		-0.001		-0.001
		(-1.33)		(-1.32)
Ln(CEO Age$_{t}$)		-0.033**		-0.033**
		(-2.06)		(-2.05)
Ind Adj. ROA$_{z,t-1}$		0.000		0.000
		(1.03)		(1.05)
Return$_{z,t-1}$		-0.003		-0.003
		(-0.81)		(-0.78)
Constant	0.932***	1.083***	0.904***	1.071***
	(7.61)	(6.88)	(8.99)	(6.54)
Year Fixed Effects	YES	YES	YES	YES
Industry Fixed Effects	YES	YES	YES	YES
R-squared	0.052	0.078	0.050	0.077
F-test	7.42	5.95	7.60	6.01
Observations	2782	2782	2782	2782

Table 4 - Abnormal Pay and Investor Turnover

This table presents the results of different logit models testing the relationship between abnormal pay and investor turnover. All variables are defined in the appendix. The z-statistics presented in parentheses are based on robust standard errors, clustered at the firm level. Asterisks indicate a 1% (***), 5% (**) and 10% (*) level of statistical significance.

	Abnormal Pay Q4$_{z,t}$			
	(1)	**(2)**	**(3)**	**(4)**
Inv_Turn$_{z,t}$	1.816***			
	(3.47)			
High_Inv_Turn$_{z,t}$				0.253**
				(1.98)
Med_Inv_Turn$_{z,t}$			0.066	
			(0.61)	
Low_Inv_Turn$_{z,t}$		-0.380***		
		(-2.57)		
Ln (Total Assets$_{z,t}$)	-0.040	-0.028	-0.008	-0.017
	(-0.88)	(-0.63)	(-0.18)	(-0.39)
Inst. Own. Concentration$_{z,t}$	0.142	0.033	-0.434	-0.267
	(0.13)	(0.03)	(-0.38)	(-0.24)
Managerial Ownership$_{z,t}$	-1.101	-1.404	-1.848	-1.651
	(-1.04)	(-1.27)	(-1.61)	(-1.48)
Ind Adj. ROA$_{z,t}$	0.002	0.003	0.003	0.002
	(0.53)	(0.60)	(0.61)	(0.54)
BTMV$_{z,t}$	-0.186**	-0.180**	-0.174*	-0.177*
	(-2.05)	(-1.97)	(-1.91)	(-1.92)
Leverage$_{z,t}$	-0.497	-0.479	-0.490	-0.510
	(-1.33)	(-1.27)	(-1.29)	(-1.35)
Return$_{z,t}$	0.079	0.086	0.083	0.078
	(0.75)	(0.82)	(0.80)	(0.72)
Ln(CEO Tenure$_t$)	0.032	0.041	0.041	0.034
	(0.44)	(0.55)	(0.55)	(0.46)
Non-Executives Ratio$_{z,t}$	2.159***	2.192***	2.182***	2.108***
	(3.57)	(3.60)	(3.60)	(3.49)
Board Size$_{z,t}$	-0.067***	-0.067***	-0.070***	-0.069***
	(-2.66)	(-2.66)	(-2.75)	(-2.74)
Ln(CEO Age$_t$)	0.430	0.413	0.403	0.427
	(0.74)	(0.71)	(0.69)	(0.74)
Ind Adj. ROA$_{z,t-1}$	-0.002	-0.002	(-0.002)	-0.002
	(-0.45)	(-0.53)	(-0.47)	(-0.45)
Return$_{z,t-1}$	-0.369***	-0.375***	-0.369***	-0.368***
	(-3.47)	(-3.56)	(-3.49)	(-3.45)
Constant	-4.026*	-3.327	-3.605	-3.612
	(-1.73)	(-1.43)	(-1.55)	(-1.56)
Year Fixed Effects	YES	YES	YES	YES

Industry Fixed Effects	YES	YES	YES	YES
Pseudo R-squared	0.042	0.039	0.036	0.038
Chi-square	74.29	68.82	62.49	67.85
Observations	2782	2782	2782	2782

Table 5 - Negative Voting and Investor Turnover

This table shows the results for a number of logit models testing the effect of investor turnover on voting dissent. All variables are defined in the appendix. The z-statistics presented in parentheses are based on robust standard errors, clustered at the firm level. Asterisks indicate a 1% (***), 5% (**) and 10% (*) level of statistical significance.

	High_Vot_Diss$_{z,t}$				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
Inv_Turn$_{z,t}$	1.892***	2.046***	1.858***	0.881	1.159
	(3.18)	(3.11)	(2.85)	(1.28)	(1.54)
Abnormal Pay$_{z,t}$		0.317**	-0.007		
		(2.25)	(-0.04)		
Inv_Turn$_{z,t}$*Abnormal Pay$_{z,t}$			0.916		
			(1.60)		
Abnormal Pay Q4$_{z,t}$				-0.726	-0.724
				(-1.31)	(-1.22)
Inv_Turn$_{z,t}$*Abnormal Pay Q4$_{z,t}$				2.590**	2.695**
				(2.14)	(2.06)
Ln (Total Assets$_{z,t}$)		-0.046	-0.045		-0.046
		(-0.76)	(-0.74)		(-0.75)
Inst. Own. Concentration$_{z,t}$		-6.05**	-6.142**		-6.121**
		(-2.00)	(-2.02)		(-1.99)
Managerial Ownership$_{z,t}$		0.660	0.450		0.108
		(0.67)	(0.47)		(0.11)
Ind Adj. ROA$_{z,t}$		-0.006	-0.006		-0.005
		(-1.12)	(-1.10)		(-0.96)
BTMV$_{z,t}$		0.157**	0.156**		0.140*
		(2.01)	(2.01)		(1.77)
Leverage$_{z,t}$		0.168	0.185		0.206
		(0.38)	(0.42)		(0.46)
Return$_{z,t}$		-0.118	-0.126		-0.139
		(-0.71)	(-0.75)		(-0.84)
Ln(CEO Tenure$_t$)		-0.162*	-0.157		-0.142
		(-1.66)	(-1.61)		(-1.47)
Non-Executives Ratio$_{z,t}$		-0.771	-0.817		-0.762
		(-0.88)	(-0.93)		(-0.87)
Board Size$_{z,t}$		0.013	0.015		0.016
		(0.40)	(0.46)		(0.49)
Ln(CEO Age$_t$)		1.653***	1.629***		1.592***
		(2.66)	(2.65)		(2.65)
Ind Adj. ROA$_{z,t-1}$		-0.006	-0.005		-0.005
		(-1.08)	(-0.93)		(-1.02)
Return$_{z,t-1}$		0.021	0.026		0.022
		(0.14)	(0.18)		(0.15)
Constant	-2.406***	-7.631***	-7.468***	-2.070***	-7.146***
	(-6.13)	(-3.10)	(-3.07)	(-5.24)	(-2.99)
Year Fixed Effects	YES	YES	YES	YES	YES

Industry Fixed Effects	YES	YES	YES	YES	YES
Pseudo R-squared	0.067	0.092	0.093	0.073	0.093
Chi-square	83.16	136.78	144.69	111.04	156.87
Observations	2782	2782	2782	2782	2782

Table 6 – Two-stage Models with Investor Turnover as a Continuous Endogenous Regressor

This table shows the results for a number of IV-probit (columns 2, 3 and 5) and 2-SLS (column 4) models. The dependent variable in the first stage is investor turnover, while those in the second stage are different shareholder voting results. Column 1 reports the results of the first-stage regression. All variables are defined in the appendix. The z-statistics (t-statistics for column 4) presented in parentheses are based on robust standard errors, clustered at the firm level. Asterisks indicate a 1% (***), 5% (**) and 10% (*) level of statistical significance.

	(1) *1st stage* *Inv_Turn$_{z,t}$*	(2) *High_Abst_Vot$_{z,t}$*	(3) *Ab_Med_Abst_Vot$_{z,t}$*	(4) *Posit_Vote$_{z,t}$*	(5) *High_Vot_Diss$_{z,t}$*
Share Turnover$_{z,t}$	0.052***				
	(8.46)				
MiFID	0.040***				
	(4.89)				
Inv_Turn$_{z,t}$		2.100***	3.307***	-0.153***	3.393***
		(2.96)	(5.23)	(-2.88)	(3.23)
Abnormal Pay$_{z,t}$	0.013***	0.018	-0.014	-0.007***	0.101
	(3.46)	(0.41)	(-0.41)	(-2.83)	(1.58)
Ln (Total Assets$_{z,t}$)	0.009***	0.008	0.070***	-0.000	-0.068*
	(3.71)	(0.32)	(2.67)	(-0.37)	(-1.95)
Inst. Own. Concentration$_{z,t}$	-0.231**	-0.993	-0.353	0.045	-1.751
	(-2.07)	(-1.17)	(-0.39)	(0.93)	(-1.32)
Managerial Ownership$_{z,t}$	-0.298***	-0.294	0.029	-0.083***	1.069*
	(-6.16)	(-0.54)	(0.06)	(-2.89)	(1.68)
Ind Adj. ROA$_{z,t}$	0.000	0.002	0.002	-0.000	-0.003
	(0.33)	(0.91)	(0.88)	(-0.34)	(-1.06)
BTMV$_{z,t}$	0.005*	0.011	0.014	-0.001	0.072*
	(1.66)	(0.37)	(0.42)	(-0.72)	(1.78)
Leverage$_{z,t}$	-0.022	-0.012	0.080	0.000	0.048
	(-1.28)	(-0.08)	(0.58)	(0.05)	(0.23)
Return$_{z,t}$	0.011**	0.023	0.066	0.005	-0.047
	(2.30)	(0.42)	(1.19)	(1.18)	(-0.58)
Ln(CEO Tenure$_t$)	0.003	0.000	-0.032	0.006***	-0.088*
	(1.18)	(0.01)	(-0.98)	(2.58)	(-1.88)
Non-Executives Ratio$_{z,t}$	-0.003	-0.805***	-0.835***	0.005	-0.368
	(-0.13)	(-2.70)	(-3.26)	(0.30)	(-0.87)
Board Size$_{z,t}$	-0.001	-0.017	-0.014	-0.001	0.007
	(-1.08)	(-1.30)	(-1.11)	(-1.54)	(0.48)
Ln(CEO Age$_t$)	0.016	0.278	0.126	-0.033**	0.884***
	(0.58)	(1.18)	(0.56)	(-2.02)	(2.85)
Ind Adj. ROA$_{z,t-1}$	-0.000	-0.000	-0.000	0.000	-0.002
	(-1.43)	(-0.34)	(-0.13)	(0.98)	(-0.57)
Return$_{z,t-1}$	-0.002	-0.073	-0.050	-0.003	-0.023
	(-0.42)	(-1.33)	(-0.94)	(-0.81)	(-0.31)
Constant	0.219*	-2.018**	-1.804**	1.101***	-4.754***
	(1.92)	(-2.21)	(-2.01)	(7.08)	(-3.95)
Year Fixed Effects	YES	YES	YES	YES	YES
Industry Fixed Effects	YES	YES	YES	YES	YES

Chi-square (F-test)		146.73	221.97	5.85	154.11
Excluded instruments F-stat	97.34				
Hansen J-statistic (p-value)				0.297	
Newey min. chi-square (p-value)		0.537	0.652		0.245
Observations	2782	2782	2782	2782	2782

Table 7 – 3SLS models

This table shows the results for a number of 3-SLS models. The dependent variable in the first equation is investor turnover (columns 1, 3 and 5), while those in the second equation (columns 2, 4 and 6) are different shareholder voting outcomes. All variables are defined in the appendix. Asterisks indicate a 1% (***), 5% (**) and 10% (*) level of statistical significance.

	(1) $Inv\_Turn_{z,t}$	(2) $High\_Abst\_Vot_{z,t}$	(3) $Inv\_Turn_{z,t}$	(4) $Posit\_Vote_{z,t}$	(5) $Inv\_Turn_{z,t}$	(6) $High\_Vot\_Diss_{z,t}$
Share Turnover$_{z,t}$	0.082***		0.079***		0.098**	
	(3.62)		(4.97)		(2.32)	
MiFID	0.097**		0.027*		0.201**	
	(1.98)		(1.88)		(2.38)	
Ln(Num.Resolutions)$_{z,t}$		-0.092**		0.024***		-0.048**
		(-2.41)		(3.04)		(-2.10)
High_Abst_Vot$_{z,t}$	-0.940					
	(-1.52)					
Posit_Vote$_{z,t}$			3.412**			
			(1.99)			
High_Vot_Diss$_{z,t}$					-2.109	
					(-1.15)	
Inv_Turn$_{z,t}$		0.614***		-0.150***		0.409***
		(2.93)		(-3.47)		(3.24)
Abnormal Pay$_{z,t}$	0.026*	0.005	0.045**	-0.007***	0.050	0.012*
	(1.97)	(0.50)	(2.55)	(-3.05)	(1.45)	(1.77)
Ln (Total Assets$_{z,t}$)	0.018**	0.007	0.016***	-0.001	-0.000	-0.006
	(2.13)	(0.97)	(2.76)	(-1.07)	(-0.02)	(-1.52)
Inst. Own. Concentration$_{z,t}$	-0.592**	-0.242	-0.506***	0.046	-0.647	-0.102
	(-2.06)	(-1.36)	(-2.74)	(1.24)	(-1.55)	(-0.96)
Managerial Ownership$_{z,t}$	-0.527***	-0.056	-0.171	-0.083***	-0.259*	0.143*
	(-2.79)	(-0.41)	(-1.58)	(-2.96)	(-1.68)	(1.75)
Ind Adj. ROA$_{z,t}$	0.000	0.000	0.000	-0.000	-0.000	-0.000
	(0.92)	(1.06)	(0.67)	(-0.62)	(-0.46)	(-0.60)
BTMV$_{z,t}$	0.010	0.002	0.014	-0.001	0.029	0.009
	(0.97)	(0.24)	(1.59)	(-0.89)	(1.18)	(1.48)
Leverage$_{z,t}$	-0.042	-0.006	-0.036	0.000	-0.030	0.005
	(-0.92)	(-0.15)	(-1.05)	(0.04)	(-0.52)	(0.22)
Return$_{z,t}$	0.023	0.004	-0.002**	0.005	-0.000	-0.010
	(1.20)	(0.27)	(-2.09)	(1.58)	(-0.04)	(-1.01)
Ln(CEO Tenure$_t$)	0.005	-0.000	-0.017	0.006***	-0.019	-0.012**
	(0.57)	(-0.06)	(-1.36)	(3.42)	(-0.82)	(-2.15)
Non-Executives Ratio$_{z,t}$	-0.239	-0.234***	-0.024	0.001	-0.090	-0.032
	(-1.41)	(-3.26)	(-0.45)	(0.13)	(-0.76)	(-0.74)
Board Size$_{z,t}$	-0.007	-0.002	0.002	-0.001**	-0.000	0.002
	(-1.42)	(-0.72)	(0.71)	(-2.61)	(-0.04)	(1.15)
Ln(CEO Age$_t$)	0.095	0.075	0.140*	-0.034**	0.273	0.116***
	(1.14)	(1.14)	(1.76)	(-2.49)	(1.15)	(2.90)
Ind Adj. ROA$_{z,t-1}$	-0.000	-0.000	-0.002**	0.000***	-0.001	-0.000

	(-1.09)	(-0.33)	(-2.09)	(3.46)	(-1.14)	(-1.01)
Return$_{z,t-1}$	-0.023	-0.019	0.009	-0.004	-0.007	-0.000
	(-1.05)	(-1.07)	(0.66)	(-1.20)	(-0.32)	(-0.03)
Constant	0.506*	0.054	-3.391*	1.058***	-0.019	-0.240
	(1.65)	(0.20)	(-1.85)	(8.78)	(-0.34)	(-1.47)
Year Fixed Effects	YES	YES	YES	YES	YES	YES
Industry Fixed Effects	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.081	0.053	0.073	0.062	0.049	0.032
Chi-square	131.90	170.73	226.91	244.48	109.28	134.80
Observations	2782	2782	2782	2782	2782	2782

Table 8 - Propensity Score Matching

This table reports the average treatment effect (ATT) results for propensity score matching models after the application of different matching algorithms. Firms have been matched based on all the independent variables used in our main models. The "treatment" subsample includes firms with low levels of investor turnover, while the "control" subsample includes all remaining firms. Each matching algorithm imposes common support and a caliper of 0.01. The balancing property is satisfied in all panels. The outcome variable in Panel A refers to firms in the top 33rd percentile of abstaining votes; the outcome variable in Panel B refers to the levels of positive voting received; the outcome variable in Panel C refers to firms that have a negative vote higher than 20%. Column 3 shows the difference in the ATT between the treated and control samples. Column 4 shows the standard errors, which are calculated using bootstrapping, to control for the fact that the propensity score is estimated. The asterisks indicate a 1% (***), 5% (**) and 10% (*) level of statistical significance.

Panel A: ***High_Abst_Vot*$_{z,t}$**

Matching Algorithm		**Treated**	**Control**	**Difference**	**S.E.**	**t-stat**
		(1)	**(2)**	**(3)**	**(4)**	**(5)**
Radius	ATT	0.198	0.270	-0.072	0.024	-2.95***
NN(1)	ATT	0.198	0.266	-0.068	0.025	-2.68***
NN(3)	ATT	0.198	0.285	-0.087	0.027	-3.16***
NN(5)	ATT	0.198	0.279	-0.081	0.027	-2.94***
Kernel	ATT	0.199	0.267	-0.068	0.024	-2.80***

Panel B: ***Posit_Vot*$_{z,t}$**

Matching Algorithm		**Treated**	**Control**	**Difference**	**S.E.**	**t-stat**
		(1)	**(2)**	**(3)**	**(4)**	**(5)**
Radius	ATT	0.955	0.944	0.01	0.003	2.45**
NN(1)	ATT	0.955	0.947	0.008	0.004	1.65*
NN(3)	ATT	0.955	0.946	0.009	0.004	2.01**
NN(5)	ATT	0.955	0.947	0.008	0.004	2.57***
Kernel	ATT	0.955	0.944	0.011	0.003	2.58***

Panel C: ***High_Vot_Diss*$_{z,t}$**

Matching Algorithm		**Treated**	**Control**	**Difference**	**S.E.**	**t-stat**
		(1)	**(2)**	**(3)**	**(4)**	**(5)**
Radius	ATT	0.049	0.079	-0.028	0.010	-2.62***
NN(1)	ATT	0.050	0.076	-0.026	0.014	-1.90*
NN(3)	ATT	0.049	0.077	-0.028	0.012	-2.30**
NN(5)	ATT	0.049	0.080	-0.031	0.011	-2.60***
Kernel	ATT	0.049	0.077	-0.028	0.010	-2.59***

Table 9 - The Case of "Index Hugging" Investors

This table presents the results of different logit (columns 1, 3 and 4) and OLS (column 2) models. We exclude constituent companies of the FTSE-100 index of the London Stock Exchange. All variables are defined in the appendix. The z-statistics (t-statistics for column 2) presented in parentheses are based on robust standard errors, clustered at the firm level. Asterisks indicate a 1% (***), 5% (**) and 10% (*) level of statistical significance.

	$High\_Abst\_Vot_{z,t}$	$Posit\_Vot_{z,t}$	$High\_Vot\_Diss_{z,t}$	
	(1)	**(2)**	**(3)**	**(4)**
$Inv\_Turn_{z,t}$	1.583***	-0.021**	1.623**	0.759
	(3.09)	(-2.07)	(2.16)	(0.95)
Abnormal Pay $_{z,t}$	0.050	-0.008***	0.266*	
	(0.53)	(-3.72)	(1.86)	
Abnormal Pay $Q4_{z,t}$				-0.735
				(-1.22)
$Inv\_Turn_{z,t}$*Abnormal Pay $Q4_{z,t}$				2.661**
				(2.02)
Ln (Total $Assets_{z,t}$)	0.078	-0.005***	0.073	0.070
	(1.33)	(-3.26)	(1.01)	(0.98)
Inst. Own. $Concentration_{z,t}$	-4.290**	0.128**	-7.791**	-7.915
	(-2.49)	(2.34)	(-2.19)	(-2.50)
Managerial $Ownership_{z,t}$	-1.663*	-0.033	0.319	-0.263
	(-1.66)	(-1.25)	(0.28)	(-0.24)
Ind Adj. $ROA_{z,t}$	0.007	-0.000	-0.001	-0.000
	(1.33)	(-0.56)	(-0.23)	(-0.07)
$BTMV_{z,t}$	0.014	-0.002	0.132*	0.116
	(0.27)	(-0.80)	(1.66)	(1.45)
$Leverage_{z,t}$	-0.232	0.009	-0.326	-0.277
	(-0.70)	(0.75)	(-0.65)	(-0.54)
$Return_{z,t}$	0.032	0.006	-0.221	-0.238
	(0.30)	(1.34)	(-1.32)	(-1.42)
Ln(CEO $Tenure_t$)	-0.006	0.008***	-0.256***	-0.235***
	(-0.10)	(3.05)	(-2.79)	(-2.59)
Non-Executives $Ratio_{z,t}$	-1.387**	0.017	-1.067	-1.036
	(-2.43)	(0.86)	(-1.17)	(-1.14)
Board $Size_{z,t}$	-0.038	-0.000	0.019	0.022
	(-1.37)	(-0.56)	(0.48)	(0.54)
Ln(CEO Age_t)	0.719	-0.041**	1.891***	1.875***
	(1.56)	(-2.34)	(2.90)	(2.98)
Ind Adj. $ROA_{z,t-1}$	-0.003	0.000	-0.007	-0.006
	(-0.64)	(1.14)	(-1.29)	(-1.18)
$Return_{z,t-1}$	-0.089	-0.002	-0.023	-0.020
	(-0.87)	(-0.49)	(-0.15)	(-0.13)
Constant	-3.999**	1.122***	-2.466***	-2.065***
	(-2.13)	(6.00)	(-7.98)	(-8.00)
Year Fixed Effects	YES	YES	YES	YES

Industry Fixed Effects	YES	YES	YES	YES
(Pseudo-) R-squared	0.047	0.079	0.094	0.096
(Chi-square) F-test	101.25	4.76	81.00	75.70
Observations	2221	2221	2221	2221

Graph 1

This graph presents the average levels of the negative, abstaining and positive voting ratios per year. The y-axis on the right refers to positive voting. Variables are defined in the appendix.