Institutional investors and the governance spillovers of financial regulations: Evidence from a natural experiment*

Sergio J. Garcia† Jose M. Martin-Flores‡ Alvaro Remesal§

January 27, 2022

ABSTRACT

We empirically study how financial regulations generate corporate governance spillovers through the institutional ownership network. Exploiting the Regulation SHO Pilot experiment, we find a significant removal of anti-takeover provisions by Non-Pilot firms when their motivated monitors are more exposed to Pilot firms. Besides, results across other corporate governance fronts such as board structure, opportunism, and innovation provide further support to a positive governance spillover. The results are consistent with the increase in market discipline in Pilot firms allowing motivated monitors to reallocate monitoring and promote investor engagement in Non-Pilot firms. Our findings provide novel insights for the evaluation of financial regulations.

KEYWORDS: institutional ownership, short-selling constrains, corporate governance

JEL Classification: G23, G30, G32

*We thank Ivan Blanco, Julio Crego, Alexandre Garel, Alberta di Giuli, Christophe Moussu, and Arthur Romec for their valuable comments and suggestions on earlier versions of the paper. Authors are listed in alphabetical order. Jose M. Martin-Flores gratefully acknowledges financial support from the Spanish Ministry of Science and Innovation (Project PID2019-111066GA-100). Alvaro Remesal gratefully acknowledges financial support from the Spanish Ministry of Science, Innovation, and Universities (Project PGC2018-099415-B-100 MICINN/FEDER/UE). All remaining errors are our own.

†Universidad Pontificia Comillas (ICADE); Madrid, Spain; e-mail: sjgarcia@comillas.edu

‡CUNEF Universidad; 28040 Madrid, Spain; e-mail: josemaria.martin@cunef.edu

§CUNEF Universidad; 28040 Madrid, Spain; e-mail: alvaro.remesal@cunef.edu

1 Introduction

Financial regulations usually aim at changing investor and corporate behavior to facilitate a well-functioning of financial markets. Very often, these policies tend to target specific subsets of firms, or at least influence more some firms than others. However, the incentives of active market players—such as many institutional investors—may drastically change after new rulings that affect a substantial part of their portfolios. Regulations may reshape the monitoring allocation of institutional investors and subsequently alter corporate policies across their portfolios, even in firms non-targeted by these regulations. Novel to the literature, we analyze this salient role of institutional investors as a channel of spillovers from financial regulations in the context of corporate governance policies.

We explore this issue using the randomized control trial executed through the Regulation SHO Pilot Program (RegSHO) and conducted by the U.S. Securities and Exchange Commission (SEC) from 2005 to 2007. RegSHO was a regulation that targeted short-selling activities in U.S. equity markets and announced by the SEC in July 2004. For research and evaluation purposes, the regulation contained a rule under which one-third of the stocks from the Russell 3000 index were randomly included into a treatment group, labeled as Pilot stocks. From May 2005 to August 2007, Pilot stocks were exempted from price tests, which posed limits on short-selling. Effectively, Pilot stocks experienced a relevant increase in short-selling after the experiment (Diether et al., 2009; Grullon et al., 2015).

The RegSHO experiment provides a unique setting to study how investors reallocate their monitoring effort upon a change in the functioning of secondary markets in part of their portfolios. The monitoring exerted by investors is fundamentally unobservable (McCahery et al., 2016). Therefore, we rely on the RegSHO's exogenous shock to assess its impact on the investors' monitoring incentives by analyzing corporate governance outcomes in Non-Pilot firms. While De Angelis et al. (2017) and Fang et al. (2016), among others, analyze the governance-related outcomes in Pilot firms, our contribution lies on exploring the governance spillover mechanisms generated by RegSHO and channeled by institutional investors to Non-Pilot firms.

Short-sellers are informed investors that seek profits from negative signals (Rapach et al., 2016; Chang et al., 2019). The removal of short-selling constraints can increase the disciplinary effect that stock prices have on managerial behavior (Miller, 1977; Fang et al., 2016; De Angelis et al., 2017). Indeed, external market monitoring can substitute for internal governance mechanisms (Ferreira et al., 2011). Thus, the exogenous increase in market discipline associated with RegSHO may alleviate the investors' need to undertake governance interventions in Pilot firms, and allow a reallocation of monitoring effort towards Non-Pilot firms. Under this hypothesis, we conjecture that the governance quality in Non-Pilot firms must increase due to the more active engagement by investors. We label this prediction as the *positive governance spillover hypothesis*.

Alternatively, the removal of short-selling constraints for Pilot stocks may induce managerial short-termism (Stein, 1988), or amplify price movements due speculative attacks (Brunnermeier and Pedersen, 2005; Khanna and Mathews, 2012; De Angelis et al., 2017). In such case, investors may be forced to devote more resources to Pilot firms, shifting their focus away from Non-Pilot stocks. In turn, Non-Pilot firms' managers may have leeway to increase their entrenchment, worsening the overall governance of those firms (Kempf et al., 2017; Liu et al., 2020). We refer to this prediction as the *negative governance spillover hypothesis*.

Combining these arguments, unveiling if the institutional investors' exposure to Pilot stocks affect governance outcomes in Non-Pilot firms is ultimately an empirical question. To that end, we construct a panel of Non-Pilot firms in the S&P 1500 index relative to their governance structure, institutional ownership, and other firm-level characteristics in the period spanning 2001 to 2006. As the main governance quality indicator, we focus on the entrenchment index, *E-Index*, which captures the strength of anti-takeover provisions—a centerpiece of investors' governance-related actions (Bebchuk et al., 2009; Appel et al., 2016).[1]

[1]Anecdotal evidence highlights that anti-takeover provisions are a key aspect on which institutional investors focus their governance actions. In his letter to board members of Vanguard's largest portfolio holdings in 2015, F. Willian McNabb II, ex-Chairman and CEO of Vanguard Funds, highlights that minimizing the use of anti-takeover devices such as classified boards or poison pills is one of the main governance concerns. This letter also highlights other governance aspects such as independent oversight, which we also study in this paper. The letter is available here: `https:`

We apply a differences-in-differences research design with a continuous treatment variable that measures, for each Non-Pilot firm, the exposure of its institutional investors to Pilot firms. One crucial condition for investors to influence governance policies is that they are sufficiently motivated to do so, as active monitoring entails large costs (Gantchev, 2013). Based on this rationale, we follow Fich et al. (2015) and refine our treatment variable to account only for the exposure to RegSHO through "motivated monitors," i.e., institutional owners for which their investment in the Non-Pilot firm belongs to the top 10 percent of their portfolios.

Consistent with the *positive governance spillover hypothesis*, the estimates suggest a negative and highly statistically significant decrease in the *E-Index* of Non-Pilot firms due to their exposure to Pilot stocks through motivated monitors. Our estimates imply that an interquartile increase in the exposure to Pilot firms is associated with a change in the *E-Index* that represents 8 percent of its annual standard deviation. The result is maintained if we augment our model with control variables for institutional ownership and its concentration, or other firm-level controls.

When we investigate which dimensions of the *E-Index* are most prominently affected by the spillover, we find that the effect is essentially concentrated on poison pills and classified boards. Specifically, an interquartile increase in the exposure to Pilot firms results in a reduction of 4 (3.3) percentage points in the probability that a Non-Pilot stock has a poison pill (classified board) provision—given an unconditional mean of 55.9 (66.5) percent. Besides, if we extend our definition of exposure to Pilot firms using all institutional investors, we find a statistically insignificant relationship with the *E-Index*. The result confirms that governance spillovers most likely channel through investors that are actively involved in corporate governance policies.

The randomization of Pilot stocks render our estimates a causal interpretation (Bramoullé et al., 2020). Still, to explore the robustness of our results, we perform additional tests. First, we confirm that the parallel trends assumption holds (Roberts and Whited, 2013). Second, we run placebo tests that rule out that our results arise from spurious correla-

//pcg.law.harvard.edu/wp-content/uploads/2016/09/7-CEO_Letter_03_02_ext.pdf

tions. Third, we provide evidence against the interpretation that the results may arise just from the presence of motivated monitors instead of their exposure to Pilot stocks. Fourth, the baseline results remain virtually intact in the balanced sample. Finally, we document that the economic impact and statistical significance are more relevant for a NYSE-measured exposure to RegSHO. This result is consistent with the idea that the relaxation of short-selling constraints was more relevant for NYSE stocks than for NASDAQ stocks (Diether et al., 2009).

We further characterize the reallocation of monitoring by investors by considering those motivated monitors that are both so in Pilot and Non-Pilot stocks. We find that the reduction in the *E-Index* experienced by Non-Pilot firms increases with the relevance of Pilot firms in the motivated investors' portfolios. Besides, we confirm that Pilot firms' *E-Index* increases after RegSHO—as shown by De Angelis et al. (2017)—, but only in those Pilot firms with a relatively high ownership of motivated monitors. Therefore, the results are in line with the governance spillovers arising from a slack in the intensity of monitoring that investors must exert over Pilot firms.

We then provide evidence on complementary mechanisms and outcomes that confer further support to the *positive governance spillover hypothesis*. First, we find that Non-Pilot firms with a relatively high exposure to Pilot firms are more likely to experience changes in the board, through higher director turnover and smaller board size, consistent with easier control over management (Yermack, 1996; Eisenberg et al., 1998). In turn, we find no evidence that shareholders of Non-Pilot stocks induce changes in managerial compensation contracts (Fahlenbrach, 2009; Asker et al., 2015; De Angelis et al., 2017). In sum, these results suggest that motivated monitors increased their engagement in the governance of Non-Pilot firms after RegSHO, while exposing managers to more relevant takeover threats.

Second, we further verify the consistency of our results by studying managerial opportunism outcomes, proxied by earnings management. Managers are willing to manipulate earnings to hit earnings targets (Graham et al., 2005), but more intense shareholder monitoring should curve opportunistic behavior and result in lower earnings manage-

ment (McCahery et al., 2016; Abramova et al., 2020; Garel et al., 2021). In support of this interpretation, we document that firms with relatively high exposure to Pilot firms through motivated monitors experienced a significant decrease in accruals-based earnings management, real earnings management, financial restatements, and forecast-meeting behavior.

The results are in line with our initial conjecture on the reallocation of monitoring resources by motivated monitors. Still, other alternative explanations may be relevant. First, motivated monitors exposed to Pilot stocks may simply re-balance their portfolios after RegSHO towards Non-Pilot firms. Portfolio re-balancing could mechanically increase the governance influence of motivated monitors in Non-Pilot firms. However, we find no evidence of portfolio re-balancing. Second, Boehmer et al. (2020) provide evidence that short-selling activity migrates from Non-Pilot towards Pilot stocks in our sample period. Hence, the reduced disciplining effect of short-selling in Non-Pilot stocks may explain the removal of anti-takeover provisions as a substitute incentive mechanism (Edmans et al., 2012). Contrary to this idea, the baseline results hold across firms with high and low reductions in short interest after the announcement of RegSHO.

Finally, we study the implications of the spillovers for corporate innovation policies. We find that a relatively high exposure to RegSHO through motivated monitors is associated with an increase in the quantity and quality of firm innovation. These results are consistent with the increased involvement of institutions enhancing managerial discipline (e.g., Bertrand and Mullainathan, 2003; Aghion et al., 2013).

From a policy perspective, our results highlight the importance of the institutional investors' network in channeling spillovers from financial regulations. The presence of these spillovers has first order implications for policy evaluation and regulatory design. In our particular setup, the results support that a relaxation of short-selling constraints contributes to a reallocation of investor monitoring. The new allocation of monitoring leads to improved governance quality in firms where short-selling constraints are unaffected. We show that the improved governance quality has far-reaching implications through more intense corporate innovation activities.

Our paper contributes to several streams of the literature. First, Boehmer et al. (2020) and Berg et al. (2021) document the existence of spillover effects associated with natural experiments in finance contexts. In this line, our study contributes by identifying an explicit spillover channel through the network of institutional investors.[2]

This paper also relates to the vast literature investigating the economic implications of short-selling regulations. Using RegSHO, the studies have analyzed its effect on firms' earnings management (Massa et al., 2015; Fang et al., 2016), corporate investment (Grullon et al., 2015), resource allocation (Albertus et al., 2017), audit behavior (Hope et al., 2017), or executive compensation (De Angelis et al., 2017; Lin et al., 2019). We extend these findings by considering the spillover effects through institutional investor linkages.

Additionally, our results shed more light on the importance of institutional investors' incentives in corporate governance policies. The literature shows that portfolio weights are useful to elicit the investors' monitoring effort (Fich et al., 2015), and that, under multiple blockholdings, institutions enjoy information advantages and governance experience that results in more efficient monitoring (Kang et al., 2018). In this line, Gilje et al. (2020) analyze the extent to which investor attention can influence managerial decisions. Our study highlights and characterizes the re-balancing of investors' monitoring across firms in their portfolios upon an exogenous relaxation of the monitoring requirements in a subset of firms.

Our findings also add to the literature on anti-takeover provisions, institutional ownership, and managerial short-termism. Theoretical models connect short-termism to the existence of takeover threats (Stein, 1988). The empirical evidence shows that anti-takeover provisions may be value-enhancing for innovative firms as they focus more in the long-run (Cremers et al., 2017). Brochet et al. (2015) show that firms more subject to market pressures display more intense earnings management. In contrast, we find that the removal of anti-takeover provisions leads to an improvement in the quality of earnings and innovation outcomes when it is accompanied by an increase in investor monitoring.

[2]More generally, this study contributes to the policy evaluation literature that analyzes treatment spillovers and treatment peer effects (Angrist and Lang, 2004; Miguel and Kremer, 2004; Kremer and Miguel, 2007; Crépon et al., 2013; Angrist, 2014).

Our results are consistent with the idea that institutional investors' engagement inhibits managers from taking myopic actions when they face takeover threats (Cornett et al., 2008; Aghion et al., 2013).

Lastly, our paper adds to the literature investigating governance spillover effects. Theoretical models show how poor governance can be transmitted across firms due to externalities or strategic interactions associated with the markets for directors or managers (Acharya and Volpin, 2010; Levit and Malenko, 2016). Empirically, Albuquerque et al. (2019) document that international M&A deals propagate good governance practices to firms located in the target's country and industry. Foroughi et al. (2021) show that board interlocks can constitute a mechanism through which governance practices propagate. Different from this mechanism, we show that a relaxation in the intensity of monitoring that investors need to exert on some firms leads to a reallocation of monitoring and, ultimately, to an improvement in the governance quality of other firms.

The rest of the paper is organized as follows. Section 2 explains the hypotheses of the paper. Section 3 describes the data and sample selection procedure. Sections 4 and 5 provide the main empirical findings of the paper. Section 6 describes the implications for corporate innovation. Section 7 concludes.

2 RegSHO and governance spillovers

2.1 Short-sale price tests in U.S. equity markets

Our setting for studying the governance spillovers of financial regulations is the Regulation SHO pilot program (RegSHO) implemented by the U.S. Securities Exchange Commission (SEC) from 2005 to 2007. Before the implementation of the program, all stocks listed in NYSE, NASDAQ or AMEX were subject to price tests restrictions on short sales. Specifically, stocks listed on the NYSE were subject to the so-called "uptick rule." This rule requires short-selling to take place on an "uptick price": a short position must be executed either at a price above the last traded price of the security, or at the last traded price of the security when the most recent price movement was upward. Similar short-

selling price tests prevailed over NASDAQ listed stocks.[3] Diether et al. (2009) argue that investors could easily circumvent price tests for NASDAQ-traded stocks. Hence, the short-selling restrictions on NASDAQ stocks are considered less binding (Boehmer et al., 2020).

In order to advance and facilitate research on the effect of short-selling price tests, the SEC announced on July 28th, 2004 the implementation of a pilot program through Regulation SHO (RegSHO). The program classified every third stock of the Russell 3000 index, ranked by their previous trading volume, as a Pilot stock. From May 2nd, 2005 to August 6th, 2007, Pilot stocks were exempted from price tests, alleviating short-selling constraints on those firms.

2.2 Short-selling constraints and governance spillovers

The literature documents that the announcement and implementation of RegSHO entailed relevant effects for stock markets and corporate policies. Post-RegSHO, Pilot stocks experienced an increase in short-selling activity (Diether et al., 2009; Grullon et al., 2015). This, in turn, altered further features of Pilot firms. For instance, the heightened market discipline seemed to generate effects on several dimensions, such as reduced earnings management (Fang et al., 2016), changes in managerial contracting (De Angelis et al., 2017), or increases in corporate investment (Grullon et al., 2015).

Active institutional investors have access to a variety of tools to monitor and exert governance influence over firms—such as privately negotiating with boards or managers, seeking board representation (Appel et al., 2016; McCahery et al., 2016), or submitting shareholder proposals (Cuñat et al., 2012; Bach and Metzger, 2019). These actions imply important resources and costs for investors (Gantchev, 2013). Thus, institutional owners need to distribute their scarce monitoring resources among the dozens or even hundreds of stocks contained in their portfolios.

In RegSHO, a random subset of firms were exempted from short-selling price tests.

[3]For NASDAQ stocks, the "bid-rule" prohibits short-selling *"at or below the current best (inside) bid as shown on the NASDAQ screen when that bid is lower than the previous best (inside) bid (bid test)."* See NASD Rule 3350: https://www.sec.gov/rules/concept/34-42037.htm

Therefore, this framework provides an ideal identification setting to evaluate if institutional investors constitute a relevant channel of spillovers from financial market regulations. At the same time, we can further understand the behavior of institutional investors by assessing whether they reallocate monitoring—and the direction of the reallocation—upon exogenous changes in the functioning of financial markets.

Our first conjecture is that Pilot stocks require less intense oversight, which frees-up resources to be reallocated towards Non-Pilot stocks. By serving as a substitute for direct shareholder monitoring, an exogenous increase in market discipline may alleviate the need for investors' direct governance (Ferreira et al., 2011). This mechanism can be specially relevant for those investors with greater incentives to monitor—"motivated monitors," using the terminology of Fich et al. (2015). In this regard, Non-Pilot firms will be differentially exposed to RegSHO due to their investors assigning different weights to Pilot stocks before the regulation. This exposure should capture the differential relaxation of monitoring constraints for investors and should be reflected through an increase in the governance quality of Non-Pilot firms. These ideas constitute the basis for our first hypothesis:

> ***Positive governance spillover hypothesis:*** *Post-RegSHO, Non-Pilot firms with a relatively high exposure to the program through institutional investors display an improvement in their corporate governance quality.*

Alternatively, Pilot stocks may require increased oversight from investors. The reduction of short-selling constraints may lead to increased short-termism (Stein, 1988), or amplified price changes due to speculative attacks (Brunnermeier and Pedersen, 2005; Khanna and Mathews, 2012; De Angelis et al., 2017). Therefore, the increased monitoring constraints of investors may provide managers with an advantageous position to increase their entrenchment (Kempf et al., 2017; Liu et al., 2020). This description establishes the grounds for an alternative hypothesis:

> ***Negative governance spillover hypothesis:*** *Post-RegSHO, Non-Pilot firms with a relatively high exposure to the program through institutional investors display a deterioration in their corporate governance quality.*

Finally, although we do not explicitly define it, it is worth mentioning that there exists a third possibility. That is, the shock caused by RegSHO may be insufficient to alter the investors' monitoring allocation. In that case, the exposure to RegSHO through its institutional investors should be unrelated to changes in the quality of corporate governance.

3 Data and Research design

3.1 Data sources

We use the official membership of firms included in the Russell 3000 index as of June 30, 2004, and merge it with the list of Pilot stocks announced on July 28, 2004 by the SEC. We collect information from Institutional Shareholders Services (ISS) database (formerly RiskMetrics) to construct the *E-Index*, a measure of managerial entrenchment (Bebchuk et al., 2009). Specifically, the index counts for each firm the presence of the following provisions: staggered boards, limits to amending the bylaws, limits to amending the company charters, supermajority requirements, golden parachutes, and poison pills. We focus on the *E-Index* as the main governance indicator because it captures the strength of anti-takeover provisions, which represent a centerpiece of governance-related actions by institutional investors (Brickley et al., 1988; Bebchuk et al., 2009; Appel et al., 2016). Below, we analyze other dimensions that capture the strength of shareholder monitoring and engagement.

The information required to compute the *E-Index* is reported on a biennial basis. As it is standard in the literature, we interpolate the variable using the previous year's value. Our sample ends in 2006, as it is common across studies that employ the *E-Index* (e.g., Knyazeva et al., 2013; Appel et al., 2016). A methodology change in the collection of information by ISS precludes a coherent analysis that uses information including and after 2007—which coincides with the end of the RegSHO experiment.

We further restrict our analysis to firms included in the S&P 1500 index, the set of firms for which ISS provides information. We merge the dataset with Compustat/Capital

IQ to obtain accounting information and CRSP to include market data. We also obtain information on earnings announcements from IBES, financial restatements from AuditAnalytics, board structure and shareholding voting from ISS, and CEO compensation from Execucomp.

In order to recover institutional ownership information, we exploit the obligation of institutional investors to report their portfolio holdings at the end of each quarter. The data source is Thomson Reuters institutional holdings database. The database covers all institutional investors required to file form 13F with the Securities and Exchange Commission, which covers all institutions with assets exceeding $100 million in market value. Every quarter, institutions must report the number and market value of each stock they hold, unless they own less than 10,000 shares or the shares they hold are worth less than $200,000 on the last day of the reporting period.

3.2 Research design and identification strategy

3.2.1 Measuring the exposure to pilot firms

Our analysis focuses on Non-Pilot firms. A crucial step in the identification strategy is to measure the extent to which Non-Pilot firms' institutional investors are exposed to firms that are subject to the removal of short-selling constraints—i.e., Pilot firms. The relative importance of Pilot stocks in an institution's portfolio should be associated with the impact of RegSHO in their monitoring incentives. Moreover, an institution's stake in a Non-Pilot firm should determine its monitoring incentives and the capacity to promote governance changes. Thus, our variable of interest must consider: (i) how each institutional investor is exposed to Pilot firms; (ii) the relevance of an institutional investor in Non-Pilot firms' shareholder base; and (iii) the institutional investors' incentives to engage in active governance of Non-Pilot stocks.

First, we begin our construction of the exposure measure by defining, for each institutional investor, the proportion of its portfolio directly affected by RegSHO, using the

corresponding portfolio weight of each stock. Formally,

$$IO\ SHO\ Exposure_i = \sum_{k \in \mathcal{P}_{i,2003q4}} w_{i,k,2003q4} \times\ Pilot\ Stock_k \tag{1}$$

where $\mathcal{P}_{i,2003q4}$ denotes investor i's portfolio at the end of 2003q4, $w_{i,k,2003q4}$ denotes firm k's portfolio weight for investor i, and $Pilot\ Stock_k$ indicates if stock k is "treated" in the RegSHO Pilot Program. Notice that *IO SHO Exposure* is measured before the announcement of RegSHO in July, 2004.[4]

Second, in order to account for the importance of each institution in the shareholder base of a Non-Pilot firm, we aggregate $IO\ SHO\ Exposure_i$ across all investors in Non-Pilot firm j, weighting by the investor's percentage ownership of the firm. That is,

$$SHO\ Exposure_j = \sum_{i}^{N_{j,2003q4}} PO_{i,j,2003q4} \times\ IO\ SHO\ Exposure_i \tag{2}$$

where, $N_{j,2003q4}$ denotes the number of institutional investors holding Non-Pilot firm j at the end of 2003q4, and $IO\ SHO\ Exposure_i$ is weighted by the investor i's percentage ownership of firm j, $PO_{i,j,2003q4}$. In words, *SHO Exposure* represents a weighted average of the exposures of institutional owners to Pilot stocks, with weights equal to the percentage ownership on the Non-Pilot firm.[5]

Finally, we refine the definition (2) to explicitly capture the institutional investors' incentives to engage in governance. Following Fich et al. (2015), we determine that an institutional investor is a motivated monitor for a stock if the holding value of that stock is within the top 10 percent of the investor's portfolio.[6] The investor is a non-motivated monitor otherwise. Therefore, we measure the exposure of Non-Pilot firm j to RegSHO

[4]We refer as 2003q4 the 2003 fiscal-year end, in order to obtain a consistent match between 13F information and the annual accounting data from Compustat/Capital IQ. By construction, the 2003 fiscal year-end can fall in between July, 2003 and June, 2004. Our results are invariant if we ignore observations whose 2003 fiscal-year end falls in 2004.

[5]Notice that the weights do not necessarily add up to one because most firms are not 100 percent owned by institutions. The percentage ownership weights provide a small relevance to index funds and investors alike that hold a large portfolio and usually have no monitoring incentives.

[6]The results are robust if we strengthen our definition of motivated monitors to stakes belonging to the top five percent of the investors' portfolios.

through motivated monitors as follows:

$$SHO\ Exposure_j^M = \sum_i^{N_{j,2003q4}} \mathbb{1}(w_{i,j,2003q4} \geq \mathcal{Q}_i^{90}) \times\ PO_{i,j,2003q4} \times\ IO\ SHO\ Exposure_i \quad (3)$$

where $\mathcal{Q}_i^{90}$ denotes the 90th percentile of the portfolio holdings in terms of market value of investor i as of 2003q4. For completeness, we also define an analogous measure of exposure through non-motivated monitors, $SHO\ Exposure_j^{NM}$:

$$SHO\ Exposure_j^{NM} = \sum_i^{N_{j,2003q4}} \mathbb{1}(w_{i,j,2003q4} < \mathcal{Q}_i^{90}) \times\ PO_{i,j,2003q4} \times\ IO\ SHO\ Exposure_i \quad (4)$$

Notice that the previous expression is just the result of subtracting (4) from (3). Our main variable of interest is $SHO\ Exposure_j^M$, which aggregates in one measure how much investors care about Pilot firms, the stake that investors own in each Non-Pilot firm, and the potential monitoring role in Non-Pilot firms of investors exposed to RegSHO.

3.2.2 Empirical specification

The SEC randomly allocated stocks into the Pilot and Non-Pilot samples. Institutional investors could not self-select into stocks in one sample or another before the announcement of the experiment. Thus, as our measures of exposure are based on portfolio holdings of institutional investors before RegSHO, any effect that we observe of these variables on corporate outcomes is plausibly causal (Bramoullé et al., 2020). Using $SHO\ Exposure^M$ in the regression as a continuous treatment variable, our baseline regression consists of the following difference-in-differences (DiD) specification:

$$Y_{jt} = \alpha + \beta\ Post \times SHO\ Exposure_j^M + \gamma\ X_{jt-1} + \zeta_j + \kappa_t + \varepsilon_{jt} \quad (5)$$

where Y_{jt} corresponds to corporate governance and other variables of firm j in year t, and *Post* equals one for the period when RegSHO is implemented, 2005 and 2006, and zero otherwise. The coefficient β on *Post*×*SHO Exposure* is our main object of interest. If Y_{jt} represents the *E-Index*, β should take a negative (positive) sign if the positive (negative)

spillover hypothesis is at work.

In the above regression, ζ_j and κ_t denote, respectively, firm and year fixed effects. Notice that we omit the separate terms for *Post* or *SHO Exposure*^{M} as they become subsumed in both types of fixed effects.[7] We cluster the standard errors at the firm level to account for potential serial correlation in the error term of the regression within firms. Besides, we estimate regressions as in equation (5) where we, either, replace *SHO Exposure*^{M} with the overall exposure to RegSHO, *SHO Exposure*, or also include as control the interaction term *Post*$\times$*SHO Exposure*^{NM}.

The allocation to treatment in our sample is allegedly random. However, in some regressions we also include a set of pre-determined control variables, X_{jt-1}. The controls account for the fact that, before RegSHO, firms may have different institutional ownership structures that may jointly determine its degree of connection to other firms and their corporate governance choices. These variables are lagged values of the percentage of shares held by institutional owners, *Inst. ownership*, institutional ownership concentration proxied by the total ownership of the top five institutions with bigger stakes, *Top-5 Inst. own.*, the natural logarithm of the market capitalization *Ln(Market Cap)*, *Tobin's Q*, the yearly stock return, *Yearly return*, and the bid-ask spread *Bid-Ask*. Detailed definitions of all the variables appear in the Appendix.

3.2.3 Sample and summary statistics

Our main sample is composed of Non-Pilot firms with available information to enter the estimation of regression (5). Following Fang et al. (2016), we estimate our regressions for the 2001-2006 period and drop observations in 2004.[8] We also drop financial firms (SIC codes between 6000 and 6999) and winsorize all continuous variables at the one and 99 percent levels to avoid the influence of outliers, with the exception of the *E-Index*. Our final sample is an unbalanced panel of 3,095 firm-year observations, in which we have 731

[7] In the Appendix, we show that the results and identification arguments also hold in the regressions without firm fixed effects.

[8] The addition or removal of 2004 information is innocuous for our results, as we illustrate in the Supplemental Appendix. The values of the *E-Index* for the year 2005 correspond to 2004 decisions since we construct the *E-Index* biennially. Still, our results remain if we also drop information from 2005 or if we estimate the regressions on biennial data.

unique Non-Pilot firms.

Table 1 reports descriptive statistics of the main variables in our analysis. Panel A reports summary statistics for our estimation sample. The mean *E-Index* is equal to 2.23 and the median value equal to 2, which are in line with other studies (e.g., De Angelis et al., 2017; Foroughi et al., 2021). This implies that the average firm has at least two anti-takeover provisions implemented. The remaining summary statistics are in line with the related literature. The average firm has 67 percent of its shares held by institutional investors, and 27.1 percent of its ownership is concentrated among the top five institutional owners. For completeness, Panel B also reports summary statistics for the sample of Pilot firms, which display similar characteristics than Non-Pilot firms in line with the randomization of the experiment.

Regarding our treatment variables, measured at the 2003 fiscal-year end, the average exposure to RegSHO through monitors is of 5.6 percent, the average exposure through non-monitors is of 13.2 percent, resulting in an average exposure through all investors of 18.8 percent. We also report that, on average, motivated monitors represent 20 percent of the firms' ownership and 6.2 percent of investors before the implementation of RegSHO.

[*Insert Table 1 around here*]

4 Results

4.1 Baseline results

Table 2 reports the results of our baseline DiD analysis on the spillover effects of RegSHO on Non-Pilot firms' governance quality, measured by the *E-Index*. In Columns 1 to 3, we first consider as main explanatory variable the exposure of Non-Pilot firms through all investors, *SHO Exposure*. The tests allow to investigate if our governance spillover hypotheses hold through all institutional investors. Column 1 contains the regression results from a simple model that includes the DiD interaction term, and firm and year fixed effects. For this model, the DiD estimate is negative but statistically insignificant.

[*Insert Table 2 around here*]

A potential challenge to our identification strategy is that the exposure to Pilot stocks through institutional owners may only be exogenous once we account for the level and concentration of institutional ownership, or other observable characteristics that may jointly determine governance policies and the connections to other firms through institutional investors. Thus, in Column 2, we control for the level and concentration of institutional ownership and, in Column 3, we add other firm characteristics. The results remain statistically insignificant in both specifications. Hence, the overall population of institutional investors seems irrelevant as channel of governance spillovers from RegSHO.

A completely different picture arises once we focus our analysis on the institutions with incentives to monitor. In Columns 4 to 6 of Table 2, we replicate the estimations in Columns 1 to 3, respectively, measuring the exposure to RegSHO only through motivated monitors, i.e., using *SHO Exposure*^{M} as an explanatory variable. The estimated coefficient on the main DiD interaction term is negative and of high statistical significance. The coefficients exhibit little variation in augmented regression models that control for institutional ownership (Column 5) and other firm-level characteristics (Column 6). These findings support the interpretation that the measures of exposure—once we control for unobservable fixed firm heterogeneity and time effects—are as good as randomly assigned, and the set of covariates does not contribute to a "bad controls" issue. In terms of economic impact, taking the coefficient -1.480 in Column 6 as our baseline, a one-interquartile increase in *SHO Exposure*^{M} leads to a differential decrease in the *E-Index* of 0.1, which amounts to approximately 8 percent of its standard deviation.[9]

In Columns 7 and 8 of Table 2 we augment the models in Columns 5 and 6 including information about the exposure to RegSHo through non-motivated monitors, *SHO Exposure*^{NM}, to capture the potential spillover through those institutions. As shown by the coefficient estimates, we find no significant spillover transmitted through investors with

[9]Notice that the *E-Index* displays substantial cross-sectional variation relative to the time series variation within firms. If we state the estimated effect relative to the within-firm variation, the one-interquartile increase in *SHO Exposure*^{M} generates a decrease in the *E-Index* of roughly 30 percent of its within variation.

allegedly low monitoring incentives. Indeed, the DiD coefficient estimates on $Post \times SHO\ Exposure^{M}$ retain their sign and high statistical significance after controlling for the exposure to RegSHO through non-motivated monitors.

Overall, these results validate our *positive governance spillovers* hypothesis. The regressions document a strong spillover effect of RegSHO on Non-Pilot firms through increased governance quality. The spillover is transmitted through the network of institutional owners that are more prone to act as monitors and engage in active governance.

4.2 Anticipation and parallel trends

The validity of our analysis relies on some crucial identification assumptions. Importantly, RegSHO was implemented on a random selection of firms, which makes it virtually impossible for investors to anticipate and identify ex-ante the pool of firms that were part of the program. Consequently, our identification is based on the plausibly exogenous exposure of a firm's institutional owners to Pilot stocks before the experiment is announced. There is a vast literature exploiting RegSHO as an exogenous shock, with a general agreement of its largely unanticipated nature (e.g. Fang et al., 2016; De Angelis et al., 2017).

The internal validity of our investigation also rests on the existence of parallel trends before the implementation of RegSHO. That is, we should find no link between a firm's exposure to RegSHO through its institutional owners and their *E-Index* before the implementation of the program. To test this assumption, we regress a firm's *E-Index* on a set of year dummies for the 2001-2006 period and their interactions with a dummy variable that indicates if the exposure to RegSHO is below or above the median in the sample. As in our baseline regressions, we include controls and firm fixed effects and cluster the standard errors at the firm level.[10]

[*Insert Figure 1 around here*]

[10] In the Appendix we illustrate that the results also hold in a model without firm fixed effects or controls. The results also remain invariant if we introduce information from 2004 as a pre-treatment, or if we use the continuous interaction with the measures of exposure to RegSHO.

Figure 1 depicts the main results from the exercise—notice that 2003 is the omitted category and 2004 is dropped from the estimation. The plot on the left panel of the figure corresponds to a model where the exposure to RegSHO is measured via all institutional investors, *SHO Exposure*, while the plot on the right panel corresponds to the model where the exposure to RegSHO is measured via motivated monitors, *SHO Exposure*^{M}. In both panels, we observe no anticipation or selection issues pre-RegSHO. Furthermore, the estimated coefficients in the post-period remain statistically insignificant for *SHO Exposure*. In contrast, the estimated coefficients in the post-period are negative and statistically significant for *SHO Exposure*^{M} in 2006. These results confirm the existence of parallel trends pre-RegSHO, and are consistent with the post-RegSHO results in Table 2.

4.3 Results across the components of the *E-Index*

We further explore the exact governance provisions within the *E-Index* that explain our main findings. Bebchuk et al. (2009) tailored the *E-Index* by isolating the six governance provisions that were most significantly associated with changes in firm valuation and that systematically find stronger shareholder opposition. The threat of a takeover is one of the key external monitoring devices available to discipline managers. However, it is likely that, among these provisions, some have more appeal than others for institutional investors, and also have different effectiveness in deterring management from shirking. Indeed, in a narrower version of the entrenchment index, Cremers and Nair (2005) highlight that a combination of poison pills, classified boards, and restrictions on shareholder's ability to act by written consent minimize the threat of hostile acquisitions.

We explore the spillovers from RegSHO on the components of the *E-Index* in Table 3. For comparability, we report again in Column 1 our baseline regression estimates from Column 6 in Table 2. Then, we use the same regression model as in Column 1 for each of the six provisions contained in the *E-Index* as individual dummy dependent variables.

[*Insert Table 3 around here*]

The coefficient estimates on Post $\times$ *SHO Exposure*^{M} are negative and of strong statistical significance for *Poison pill* (Column 2) and *Classified board* (Column 5). In economic terms, an interquartile increase in the exposure to Pilot firms results in a reduction of 4 (3.3) percentage points in the probability that a Non-Pilot stock has a poison pill (classified board) provision. The effects represent, respectively, a 7.2 and 5 percent reduction in terms of the unconditional means. As for the other individual components of the *E-Index*, the estimated coefficients display no statistical significance, although the DiD coefficient estimates are negative for five of the six provisions—the exception being supermajority requirements.

In sum, these results are consistent with the substantial importance that investors assign to poison pills and classified boards as anti-takeover defenses and more general governance mechanisms. Most of the spillover effect of RegSHO on firms' governance quality occurs through provisions that play the most relevant roles to discipline management.

4.4 Motivated monitors in Pilot stocks

Our results so far highlight the salience of motivated monitors in affecting corporate governance outcomes. Governance activities require a major involvement on the part of shareholders. Hence, motivated monitors in Pilot firms should be more significantly affected by an increase in market discipline due to RegSHO. If our results truly capture an increase in monitoring intensity, the spillover effects should be stronger among those firms with relatively high RegSHO exposure through motivated monitors that are both so in Pilot and Non-Pilot firms.

In order to test this hypothesis, we repeat the DiD analyses performed in Column 6 of Table 2, but we now further restrict the computation of *SHO Exposure*^{M} to the relative importance that each Pilot firm has in the investor's portfolio, according to the distribution of portfolio weights. In particular, we construct new investor-level exposure

variables of the form:

$$IO\ SHO\ Exposure_i^{Bottom\ p} = \sum_{k \in \mathcal{P}_{i,2003q4}} w_{i,k,2003q4} \times \mathbb{1}(w_{i,k,2003q4} \leq \mathcal{Q}_i^p) \times\ Pilot\ Stock_k \quad (6)$$

$$IO\ SHO\ Exposure_i^{Top\ 100\text{-}p} = \sum_{k \in \mathcal{P}_{i,2003q4}} w_{i,k,2003q4} \times \mathbb{1}(w_{i,k,2003q4} \geq \mathcal{Q}_i^p) \times\ Pilot\ Stock_k \quad (7)$$

where $\mathcal{Q}_i^p$ denotes the p^{th} percentile of the distribution of portfolio weights for investor i. That is, in equation (6) we measure the exposure of motivated investors through Pilot stocks of low relevance, while in equation (7) we consider Pilot stocks of high relevance. We compute these variables for different threshold levels p and then recompute the firm-level exposure $SHO\ Exposure^M$. We expect that the effect of $SHO\ Exposure^M$ on the *E-Index* becomes insignificant as we decrease the value of p.

Panel A in Table 4 contains the results from the regression analysis based on a decreasing relevance of Pilot firms for Non-Pilot firms' motivated monitors. Column 1 reports the results of our baseline regression that includes all Pilot stocks to compute $SHO\ Exposure^M$. Columns 2 to 4 show that the statistical significance of the effect vanishes as we consider Pilot stocks that are of lesser relevance to Non-Pilot's motivated monitors. The absolute magnitude of the DiD estimates increases across columns, but this is a byproduct restricting the computation of $SHO\ Exposure^M$ to smaller holdings. In the bottom part of the table, we verify this point by reporting the sample average of the dependent variable in each regression.

In Panel B, we mirror the procedure above by restricting the analysis to Pilot firms that are of high relevance in the investor's portfolio. The governance spillover on Non-Pilot firms becomes stronger as we consider the exposure through institutions that have substantial monitoring incentives in both Pilot and Non-Pilot firms, consistent with our hypothesis. The DiD coefficient estimates in Panel B are all highly statistically significant, while both the statistical significance and absolute magnitude of the estimates increase.[11]

[11]By the same token, our results are also robust if we make the same analysis, but changing the definition of motivated monitors in Non-Pilot firms. That is, in untabulated tests, we obtain robust results if we increase the threshold that defines a motivated monitor to five percent.

4.5 Placebo tests

Another potential concern in our identification strategy is that the baseline results may arise from a spurious correlation. To verify this point, we perform two placebo tests. First, we obtain 10,000 artificial samples by randomly assigning to each firm, with replacement, a value from the true empirical distribution of *SHO Exposure*^{M}. For each artificial sample, we estimate our baseline regression. We illustrate the results of this exercise in Figure 2. Our true estimated coefficient lies well on the left tail of the distribution of placebo estimates, which goes against the interpretation of a spurious correlation being relevant.

[*Insert Figure 2 around here*]

Second, we perform an alternative placebo exercise where we assign the RegSHO treatment period to different (prior) years. For this, we follow the same sample construction and selection than in our baseline setup, but we estimate separate regressions under the assumption that the RegSHO experiment takes place in the years 1996 to 2001.[12] Figure 3 illustrates the results, showing that in none of the experiments considered *SHO Exposure*^{M} displays a statistically significant relationship with the *E-Index*.

[*Insert Figure 3 around here*]

4.6 Other robustness tests

We perform a battery of further robustness tests to confirm the relevance of our results. Here we summarize the results, while we defer the specific information to the Supplemental Appendix for an interested reader.

One relevant concern is the fact that the baseline effects of *SHO Exposure*^{M} on governance quality may just capture the effect of firms having more motivated investors. To address this issue, we add in our regressions measures of motivated monitor presence in

[12] For instance, for the placebo test in 1996, we compute the exposure to the actual Pilot firms using information on institutional ownership from 1995q4.

terms of percentage ownership and as a proportion of all investors. The results remain virtually unchanged.

In the empirical exercise, we omit 2004 because the identity of the Pilot stocks was made public in July 2004, so it is not clear whether 2004 should be as classified pre-RegSHO period. However, the results are qualitatively similar if we include observations in 2004 in the pre-RegSHO period.

Our results arise from an unbalanced panel of firms. Another potential concern is that the sample may suffer from attrition of firms with low governance quality that may drive the results. We also estimate our baseline regression in the balanced panel and confirm that the baseline results also hold.

Lastly, RegSHO had a differential impact on Pilot firms depending on the exchange where its shares are traded. The regulation implied a more relevant reduction in short-selling constraints in NYSE stocks instead of NASDAQ stocks (Diether et al., 2009). In line with RegSHO producing a stronger increase in market discipline in NYSE stocks, we find that spillovers to Non-Pilot firms take place mostly through the exposure to NYSE Pilot stocks.

5 Evidence on other governance mechanisms

We turn to provide further evidence on the positive governance spillover effect of RegSHO. We first consider alternative measures and outcomes associated with institutional shareholders' active governance involvement. Then we analyze the investors' trading activities and the role of migration of short-selling activity.

5.1 Institutions' engagement in governance

We conjecture that the most plausible mechanism explaining the *positive governance spillover* is a reallocation of institutions' monitoring effort. The increase in market discipline in Pilot firms allow monitors to shift resources to Non-Pilot stocks after RegSHO. In this section, we describe additional supporting evidence for this mechanism. Specifically,

we explore the impact of the exposure to RegSHO on the boards of directors, managerial opportunism, and compensation.

5.1.1 Board composition

We study changes in the board of directors as a complementary channel that shareholders can use to exert active governance. In particular, institutions seeking to alleviate managerial entrenchment will likely support the election of investor-friendly directors or foster the replacement of manager-friendly directors (Cai et al., 2009).

We investigate the relationship of Non-Pilot firms' RegSHO exposure with board variables by focusing on board turnover, size, and independence. Table 5 contains the coefficient estimates from our regressions. Columns 1 and 2 report a positive coefficient on Post$\times$*SHO Exposure*^{M} for board turnover and negative for board size. Both coefficients are statistically significant. Thus, Non-Pilot firms with higher exposure to RegSHO through their motivated monitors experienced significantly more frequent board replacements and a reduction in the size of the board. Columns 3 and 4 show no relevant relationship with board independence.

The results in Table 5 suggest a significant change in board composition metrics towards an investor-friendly structure. The results are also consistent with a stronger involvement of monitoring-prone institutions in the governance of Non-Pilot firms upon the implementation of RegSHO. Increased director turnover is consistent with the above-documented reduction in classified board provisions—see Table 3—having the explicit purpose of replacing directors. Reductions in board size are also associated with attempts to enhance management control (Jensen, 1993; Yermack, 1996; Eisenberg et al., 1998). These changes, however, are unrelated to a significant effect on board independence. Thus, new or replaced directors are as likely to be independent as non-independent.

[*Insert Table 5 around here*]

5.1.2 Managerial opportunism

We also study the effects on managerial opportunism as proxied by earnings management outcomes. The literature shows how managers manipulate earnings if that allows them to hit earnings targets, increase their compensation, and obtain other private perks (Graham et al., 2005). Investor oversight, in turn, tends to curve managerial opportunistic behavior related to earnings manipulation. Indeed, institutional investors have a preference for firms with more transparent accounts (McCahery et al., 2016; Abramova et al., 2020; Garel et al., 2021). Consistent with the *positive governance spillover hypothesis*, we expect that the exposure to RegSHO of Non-Pilot firms is associated with a reduction in opportunistic managerial behavior.

To test this conjecture, we rely on various proxies of earnings management as dependent variables. The variables are *Signed Discretionary Accruals* (McNichols, 2002), *Real Earnings Management* (Roychowdhury, 2006), and dummy variables for financial restatements, *Restatement*, and for whether the quarterly earnings announcements fall within a one-cent distance from the analysts' consensus forecast, *Meet* (Burgstahler and Dichev, 1997; Dechow et al., 2010). In the latter case, we perform the regressions using quarterly data to exploit that earnings announcements take place at that frequency.[13]

The results in Table 6 suggest that the exposure to RegSHO through motivated monitors led to a decrease in accruals-based earnings management, in Column 1, and real earnings management, in Column 2. We also find a decrease in the probability of restatement, in Column 3, and a decrease in the probability of meeting earnings forecasts, in Column 4. The results are statistically significant. Overall, these findings suggest an increased involvement of motivated monitors in active monitoring on Non-Pilot firms that precludes managerial opportunism.

[*Insert Table 6 around here*]

[13]For that regression, the variable *IO SHO Exposure* is defined using the exposure to Pilot stocks at the end the first calendar quarter of 2004.

5.1.3 Managerial compensation

We investigate the potential role played by managerial compensation incentives. A reduction in managerial entrenchment—e.g., through the removal of anti-takeover provisions—leaves managers more exposed to the market for corporate control (Bebchuk, 2003), and increases the pressure for myopic decisions due to career concerns (Edmans et al., 2012). On one hand, shareholders can mitigate managerial short-termism by explicitly altering compensation incentives (De Angelis et al., 2017). On the other hand, increased shareholder engagement in governance can serve as a substitute for explicit compensation incentives, alleviating career concerns and increasing the managers' appetite for risky projects (Aghion et al., 2013; Fahlenbrach, 2009; Acharya and Volpin, 2010).

We test the effect of RegSHO on Non-Pilot firms' managerial compensation by relying on different measures that capture the degree of pay-for-performance sensitivity of managers. Specifically, we use as dependent variables the natural logarithm of CEO Delta, CEO Vega, the ratio of Delta/Vega, and total CEO Pay. The results appear in Table 7. Consistent with the view of higher engagement by institutional shareholders, we find that $SHO\ Exposure^{M}$ has no significant effect on any measure of CEO compensation, which remains unaltered to the exposure of Non-Pilot firms to RegSHO.

[*Insert Table 7 around here*]

5.1.4 Connection with De Angelis et al. (2017)

Our results support the *positive governance spillover hypothesis* from the reallocation of monitoring by investors due to the increased role of market discipline in Pilot stocks. De Angelis et al. (2017) find that Pilot stocks increased their *E-Index* and offered more convex incentive payments to their managers, in a bid to protect managers from potential speculative attacks and takeover threats. That is, investors likely tackled the potential negative consequences of short-selling pressure—i.e., price pressures, takeover threats, or short-termism—with reduced governance quality, while also took advantage of the increased market discipline by exploiting stock incentives for managers.

In the Supplemental Appendix, we show the results of a replication exercise of the results in De Angelis et al. (2017). That is, we estimate the effect of RegSHO on the *E-Index* of Pilot stocks. The replication results are in line with the original findings. Moreover, we extend the results by showing that the increase in Pilot firms' *E-Index* is accounted by firms with relatively higher ownership of motivated monitors. Thus, the results suggest that the market-induced disciplining effect of short-selling pressures eased motivated monitors from exerting direct intervention on Pilot firms. This provides further evidence on the active monitoring reallocation mechanism.

5.2 Alternative explanations

5.2.1 Portfolio re-balancing

The previous results reinforce the view that RegSHO propelled monitoring-prone investors to increase their involvement in the governance of Non-Pilot firms. We turn to investigate a potentially mechanical explanation of this result. Specifically, RegSHO may have led investors to re-balance their portfolios, migrating from Pilot to Non-Pilot stocks for which they already were motivated monitors. This, in turn, could mechanically induce a higher implication of institutions in the governance of these firms.

We test for the re-balancing mechanism by performing a DiD exercise at the investor-stock-level and quarterly frequency for Non-Pilot stocks. Our interest lies on uncovering potential differential trading behaviors across monitoring investors that are differently exposed to RegSHO. Specifically, we estimate the following regressions, where our main interest lies on the coefficient on the triple interaction term:

$$\begin{aligned} Trading_{ijq} = \eta_0 + \eta_1\ Post \times IO\ SHO\ Exposure_j + \eta_2\ Post \times Monitor_{ij} + \\ + \eta_3\ Post \times IO\ SHO\ Exposure_j \times\ Monitor_{ij} + \phi X_{iq-1} + \\ + \delta_{jq} + \lambda_{ij} + \nu_{ijq} \end{aligned}$$

where $Trading_{ijq}$ represents variables that capture the intensive or extensive margin of trading of investor i on stock j in quarter q. These variables are the quarter-on-quarter

change in the percentage ownership of stock j by investor i and dummy variables that capture if the investor trades—regardless of the direction—, buys, or sells shares of stock j in a net quarterly basis. In this case, we measure *IO SHO Exposure*^{M} as of the end of the first calendar quarter of 2004, in a similar fashion as in expression (1). In the regressions, we include stock-quarter fixed effects, δ_{jq}, stock-investor fixed effects, λ_{ij}, and a set of (lagged) investor-level controls, X_{iq-1}.[14] We cluster the standard errors at the investor level.

We report the results of this test in Table 8. In Column 1, we show that the estimated coefficient η_3 on the triple interaction term is statistically insignificant. In Columns 2 to 4, we obtain further confirmation from analysing the extensive margin of the investors' trading. The coefficient on the triple interaction term remains insignificant in all columns. The results rule out the potential relevance of the portfolio re-balancing mechanism.

[*Insert Table 8 around here*]

5.2.2 Migration of short-selling activity

Boehmer et al. (2020) document a substitution of short-selling activity from Non-Pilot to Pilot stocks in the 2004-2007 period. Such a migration may reduce the disciplining effect of secondary markets in Non-Pilot firms. This may lead Non-Pilot firms' investors to promote other incentive mechanisms form managers, such as the market for corporate control (Edmans et al., 2012). Our results may then be explained by the migration of short-sellers if Non-Pilot firms that are relatively more exposed to Pilot firms through motivated monitors experience a relatively stronger migration.

We explore this possibility in Table 9. Specifically, we obtain from Compustat the monthly time series of the level of a stock's short interest. Short interest is defined as the number of all open short positions on the last business day on or before the 15th of

[14] We use as investor level controls the natural logarithm of institutional owner size of the portfolio, *Ln(IO Size)*, a measure of portfolio and industry concentration, *Portfolio industry concentration*, the natural logarithm of the number of stocks the investor holds, *Ln(N stocks)*, and the natural logarithm of the number of industries in which the investor holds stocks, *Ln(N industries)*

each calendar month, scaled by the shares outstanding in the previous month reported by CRSP. With this information, we construct measures of the change in short interest surrounding the announcement of RegSHO. Specifically, *Short interest drop, +3mo* is a dummy variable taking the value of one if the change in short interest from the month prior to the announcement of RegSHO to three months after is below the 25th percentile. We construct similar measures for 6 and 10-month horizons—*Short interest drop, +6mo* and *Short interest drop, +10mo*, respectively.[15]

We include the previous variables in our regressions by including a triple interaction term to test if our baseline results are different across Non-Pilot firms with high reductions in short interest. Column 1 in in Table 9 reports our baseline result. In Column 2, we find that the triple interaction term is negative but not significant. In Columns 3 and 4 we find similar results for longer horizons. These results are inconsistent with a differential decrease in short-selling activity in Non-Pilot firms driving the results.

[*Insert Table 9 around here*]

6 Implications for corporate investment

In this section, we study the implications that our findings have on firm investment outcomes. Corporate investment decisions entail risk for managers due to the associated risk of dismissal. This fear may be specially important when a firm is more exposed to takeovers (Stein, 1988; Asker et al., 2015). However, some theories also predict that the monitoring and engagement activities of institutional owners may substitute for the protection of anti-takeover provisions, reducing the fear of managers about losing their jobs after a takeover (Cremers and Nair, 2005).

Monitors may alleviate the managerial career concerns related to corporate investment and takeovers, encouraging the implementation of risky but profitable projects

[15]The same results hold regardless of the horizon to compute the change in short interest—unreported for exposition purposes.

(Aghion et al., 2013). Likewise, the engagement of investors may reduce managerial entrenchment, pushing managers to increase effort and make better decisions (Bertrand and Mullainathan, 2003). These theories suggest that firms exposed to RegSHO through motivated monitors should experience positive investment outcomes. This should specially be the case for innovation, as it is riskier and implies higher effort costs (Aghion et al., 2013).

We test these predictions in Table 10. Specifically, we run our baseline regression, using proxies for corporate investment and innovation as outcome variables. In Columns 1 to 3 we use investment measures reported in the financial statements, such as R&D expenses, CAPEX, and the year-on-year change in PPE, all scaled by total assets. We find that the interaction $Post \times SHO\ Exposure^{M}$ has a positive and significant impact on R&D and no effect on CAPEX or PPE after RegSHO. In Columns 4 to 7, we study innovation outcomes using patent citations and the number of patents as dependent variables using both OLS and Poisson regressions.[16] The exposure to RegSHO through motivated monitors has a positive effect on the number of citations, although this effect is only significant when we implement a Poisson model. Likewise, we document that the continuous treatment variable is positive and significantly related to the number of patents using both OLS and Poisson models.

[*Insert Table 6 around here*]

Overall, these results suggest that governance engagement and the subsequent changes promoted by motivated monitors improve innovation outcomes. Thus, the spillovers from RegSHO have governance implications that, importantly, also have consequences on the allocation of resources by firms.

[16]We thank Ivan Blanco and David Werheim for providing us with access to their innovation dataset. Cohn et al. (2021) determine that a fixed-effects Poisson model produces consistent and reasonably efficient estimates in corporate finance settings with count dependent variables, compared to logarithmic dependent variables. We follow the estimation procedure in Correia et al. (2019).

7 Conclusion

We verify, in the framework of the RegSHO experiment, the existence of governance spillovers on Non-Pilot firms due to the exposure of their institutional investors to Pilot stocks. The RegSHO experiment removed short-selling constrains on a random subset of stocks and allegedly improved the role of the price mechanism as a governance device.

We find results consistent with monitoring institutions—i.e., those for which a firm is in the top 10 per cent in terms of portfolio weight—enjoying slack in their monitoring resources due to RegSHO and promoting governance improvements in Non-Pilot firms. Specifically, we find that the exposure of Non-Pilot firms to RegSHO through motivated monitors is associated with a decrease in managerial entrenchment. This effect appears more prominently through the exposure of motivated monitors in both Pilot and Non-Pilot stocks, suggesting a reallocation of monitoring effort within their portfolios.

We confirm that the more intense engagement of monitoring institutions in corporate governance is the most plausible mechanism explaining the main result. Specifically, we find that firms with relatively high exposure to Pilot stocks experience investor-friendly changes in the board, and decrease earnings management. Furthermore, we find that the reduction in managerial entrenchment is not compensated with changes in CEO compensation. Finally, we document that the reduction in entrenchment is associated with an improvement in innovation outcomes.

To our knowledge, our paper is the first to provide direct evidence on governance spillovers arising from regulations aimed at eliminating short-selling constrains. Our results are important as they provide novel and causal evidence on how the allocation of monitoring resources by active investors shapes corporate governance and other outcomes.

The results of the paper have relevant policy implications, as they highlight that the spillovers of financial regulations may have far-reaching effects for firms that may be in principle non-targeted by regulations. This paper brings forward that regulators should be careful in understanding potential spillovers from regulations that alter the investors' monitoring incentives.

References

I. Abramova, J. E. Core, and A. Sutherland. Institutional investor attention and firm disclosure. *The Accounting Review*, 95(6):1–21, 2020.

V. V. Acharya and P. F. Volpin. Corporate governance externalities. *Review of Finance*, 14(1): 1–33, 2010.

P. Aghion, J. Van Reenen, and L. Zingales. Innovation and institutional ownership. *American economic review*, 103(1):277–304, 2013.

J. F. Albertus, A. Bird, S. A. Karolyi, and T. G. Ruchti. External governance and internal resource allocation. *Working Paper*, 2017.

R. Albuquerque, L. Brandão-Marques, M. A. Ferreira, and P. Matos. International corporate governance spillovers: Evidence from cross-border mergers and acquisitions. *The Review of Financial Studies*, 32(2):738–770, 2019.

J. D. Angrist. The perils of peer effects. *Labour Economics*, 30:98–108, 2014.

J. D. Angrist and K. Lang. Does School Integration Generate Peer Effects? Evidence from Boston's Metco Program. *American Economic Review*, 94(5):1613–1634, December 2004.

I. R. Appel, T. A. Gormley, and D. B. Keim. Passive investors, not passive owners. *Journal of Financial Economics*, 121(1):111–141, 2016.

J. Asker, J. Farre-Mensa, and A. Ljungqvist. Corporate investment and stock market listing: A puzzle? *The Review of Financial Studies*, 28(2):342–390, 2015.

L. Bach and D. Metzger. How close are close shareholder votes? *The Review of Financial Studies*, 32(8):3183–3214, 2019.

L. Bebchuk, A. Cohen, and A. Ferrell. What matters in corporate governance? *The Review of financial studies*, 22(2):783–827, 2009.

L. A. Bebchuk. Why firms adopt antitakeover arrangements. *National Bureau of Economic Research, Working Paper 10190*, 2003.

T. Berg, M. Reisinger, and D. Streitz. Spillover effects in empirical corporate finance. *Journal of Financial Economics*, 2021.

M. Bertrand and S. Mullainathan. Enjoying the quiet life? corporate governance and managerial preferences. *Journal of Political Economy*, 111(5):1043–1075, 2003.

E. Boehmer, C. M. Jones, and X. Zhang. Potential pilot problems: Treatment spillovers in financial regulatory experiments. *Journal of Financial Economics*, 135(1):68–87, 2020.

Y. Bramoullé, H. Djebbari, and B. Fortin. Peer effects in networks: A survey. *Annual Review of Economics*, 12(1):603–629, 2020.

J. A. Brickley, R. C. Lease, and C. W. Smith Jr. Ownership structure and voting on antitakeover amendments. *Journal of Financial Economics*, 20:267–291, 1988.

F. Brochet, M. Loumioti, and G. Serafeim. Speaking of the short-term: Disclosure horizon and managerial myopia. *Review of Accounting Studies*, 20(3):1122–1163, 2015.

M. K. Brunnermeier and L. H. Pedersen. Predatory trading. *The Journal of Finance*, 60(4): 1825–1863, 2005.

D. Burgstahler and I. Dichev. Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics*, 24(1):99–126, 1997. Properties of Accounting Earnings.

J. Cai, J. L. Garner, and R. A. Walkling. Electing directors. *The Journal of Finance*, 64(5): 2389–2421, 2009.

E. C. Chang, T.-C. Lin, and X. Ma. Does short-selling threat discipline managers in mergers and acquisitions decisions? *Journal of Accounting and Economics*, 68(1):101223, 2019.

J. B. Cohn, Z. Liu, and M. Wardlaw. Count data in finance. *Available at SSRN*, 2021.

M. M. Cornett, A. J. Marcus, and H. Tehranian. Corporate governance and pay-for-performance: The impact of earnings management. *Journal of financial economics*, 87(2): 357–373, 2008.

S. Correia, P. Guimarães, and T. Zylkin. ppmlhdfe: Fast poisson estimation with high-dimensional fixed effects, arxiv. org. 2019.

K. M. Cremers and V. B. Nair. Governance mechanisms and equity prices. *The Journal of Finance*, 60(6):2859–2894, 2005.

K. M. Cremers, L. P. Litov, and S. M. Sepe. Staggered boards and long-term firm value, revisited. *Journal of Financial Economics*, 126(2):422–444, 2017.

B. Crépon, E. Duflo, M. Gurgand, R. Rathelot, and P. Zamora. Do Labor Market Policies have Displacement Effects? Evidence from a Clustered Randomized Experiment. *The Quarterly Journal of Economics*, 128(2):531–580, 04 2013.

V. Cuñat, M. Gine, and M. Guadalupe. The vote is cast: The effect of corporate governance on shareholder value. *The journal of finance*, 67(5):1943–1977, 2012.

D. De Angelis, G. Grullon, and S. Michenaud. The effects of short-selling threats on incentive contracts: Evidence from an experiment. *The Review of Financial Studies*, 30(5):1627–1659, 2017.

P. Dechow, W. Ge, and C. Schrand. Understanding earnings quality: A review of the proxies, their determinants and their consequences. *Journal of Accounting and Economics*, 50(2): 344–401, 2010.

K. B. Diether, K.-H. Lee, and I. M. Werner. It's sho time! short-sale price tests and market quality. *The Journal of Finance*, 64(1):37–73, 2009.

A. Edmans, I. Goldstein, and W. Jiang. The real effects of financial markets: The impact of prices on takeovers. *The Journal of Finance*, 67(3):933–971, 2012.

T. Eisenberg, S. Sundgren, and M. T. Wells. Larger board size and decreasing firm value in small firms. *Journal of financial economics*, 48(1):35–54, 1998.

R. Fahlenbrach. Shareholder rights, boards, and ceo compensation. *Review of Finance*, 13(1): 81–113, 2009.

V. W. Fang, A. H. Huang, and J. M. Karpoff. Short selling and earnings management: A controlled experiment. *The Journal of Finance*, 71(3):1251–1294, 2016.

D. Ferreira, M. A. Ferreira, and C. C. Raposo. Board structure and price informativeness. *Journal of Financial Economics*, 99(3):523–545, 2011.

E. M. Fich, J. Harford, and A. L. Tran. Motivated monitors: The importance of institutional investors portfolio weights. *Journal of Financial Economics*, 118(1):21–48, 2015.

P. Foroughi, A. J. Marcus, V. Nguyen, and H. Tehranian. Peer effects in corporate governance practices: Evidence from universal demand laws. *The Review of Financial Studies, Forthcoming*, 2021.

N. Gantchev. The costs of shareholder activism: Evidence from a sequential decision model. *Journal of Financial Economics*, 107(3):610–631, 2013.

A. Garel, J. M. Martin-Flores, A. Petit-Romec, and A. Scott. Institutional investor distraction and earnings management. *Journal of Corporate Finance*, 66:101801, 2021.

E. P. Gilje, T. A. Gormley, and D. Levit. Who's paying attention? measuring common ownership and its impact on managerial incentives. *Journal of Financial Economics*, 137(1):152–178, 2020.

J. R. Graham, C. R. Harvey, and S. Rajgopal. The economic implications of corporate financial reporting. *Journal of Accounting and Economics*, 40(1-3):3–73, 2005.

G. Grullon, S. Michenaud, and J. P. Weston. The real effects of short-selling constraints. *The Review of Financial Studies*, 28(6):1737–1767, 2015.

O.-K. Hope, D. Hu, and W. Zhao. Third-party consequences of short-selling threats: The case of auditor behavior. *Journal of Accounting and Economics*, 63(2-3):479–498, 2017.

M. C. Jensen. The modern industrial revolution, exit, and the failure of internal control systems. *the Journal of Finance*, 48(3):831–880, 1993.

J.-K. Kang, J. Luo, and H. S. Na. Are institutional investors with multiple blockholdings effective monitors? *Journal of Financial Economics*, 128(3):576–602, 2018.

E. Kempf, A. Manconi, and O. Spalt. Distracted shareholders and corporate actions. *The Review of Financial Studies*, 30(5):1660–1695, 2017.

N. Khanna and R. D. Mathews. Doing battle with short sellers: The conflicted role of blockholders in bear raids. *Journal of Financial Economics*, 106(2):229–246, 2012.

A. Knyazeva, D. Knyazeva, and R. W. Masulis. The supply of corporate directors and board independence. *The Review of Financial Studies*, 26(6):1561–1605, 2013.

M. Kremer and E. Miguel. The Illusion of Sustainability. *The Quarterly Journal of Economics*, 122(3):1007–1065, 08 2007.

D. Levit and N. Malenko. The labor market for directors and externalities in corporate governance. *The Journal of Finance*, 71(2):775–808, 2016.

T.-C. Lin, Q. Liu, and B. Sun. Contractual managerial incentives with stock price feedback. *American Economic Review*, 109(7):2446–68, 2019.

C. Liu, A. Low, R. W. Masulis, and L. Zhang. Monitoring the monitor: Distracted institutional investors and board governance. *The Review of Financial Studies*, 33(10):4489–4531, 2020.

M. Massa, B. Zhang, and H. Zhang. The invisible hand of short selling: Does short selling discipline earnings management? *The Review of Financial Studies*, 28(6):1701–1736, 2015.

J. A. McCahery, Z. Sautner, and L. T. Starks. Behind the scenes: The corporate governance preferences of institutional investors. *The Journal of Finance*, 71(6):2905–2932, 2016.

M. F. McNichols. Discussion of the quality of accruals and earnings: multiples. *Journal of Accounting Research*, 40(1):135–172, 2002.

E. Miguel and M. Kremer. Worms: Identifying impacts on education and health in the presence of treatment externalities. *Econometrica*, 72(1):159–217, 2004.

E. M. Miller. Risk, uncertainty, and divergence of opinion. *The Journal of finance*, 32(4): 1151–1168, 1977.

D. E. Rapach, M. C. Ringgenberg, and G. Zhou. Short interest and aggregate stock returns. *Journal of Financial Economics*, 121(1):46–65, 2016.

M. R. Roberts and T. M. Whited. Endogeneity in empirical corporate finance1. In *Handbook of the Economics of Finance*, volume 2, pages 493–572. Elsevier, 2013.

S. Roychowdhury. Earnings management through real activities manipulation. *Journal of Accounting and Economics*, 42(3):335–370, 2006.

J. C. Stein. Takeover threats and managerial myopia. *Journal of Political Economy*, 96(1): 61–80, 1988.

D. Yermack. Higher market valuation of companies with a small board of directors. *Journal of financial economics*, 40(2):185–211, 1996.

Figures and Tables

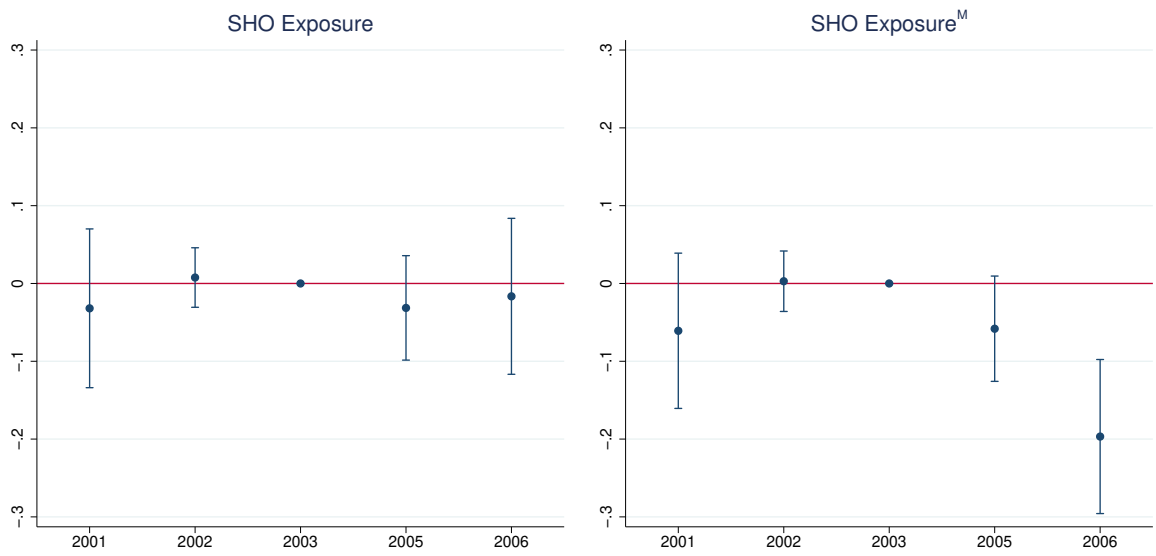

Figure 1: **DiD coefficients of the effect of RegSHO exposure on Non-Pilot firms' *E-Index*.**

In the left (right) panel, the regressors are four different dummy variables equalling one for each of the years indicated in the horizontal axis and zero for the rest of the years, as well as the interaction term of these dummy variables with dummy variables that take the value of one if SHO Exposure (SHO Exposure^M) is above the median in the sample. The sample includes non-Pilot firms in the index S&P 1500 for the years 2001-2006. 2003 is the reference year in the regressions and the year 2004 is removed from the sample as it is the year when Regulation SHO was first announced. The regressions also include firm and year fixed effects, as well as the control variables described in the main text. Variable definitions are provided in the Appendix. Standard errors are clustered at the firm level. The vertical bars represent the 95 percent confidence intervals for each estimation. Standard errors are clustered at the firm level.

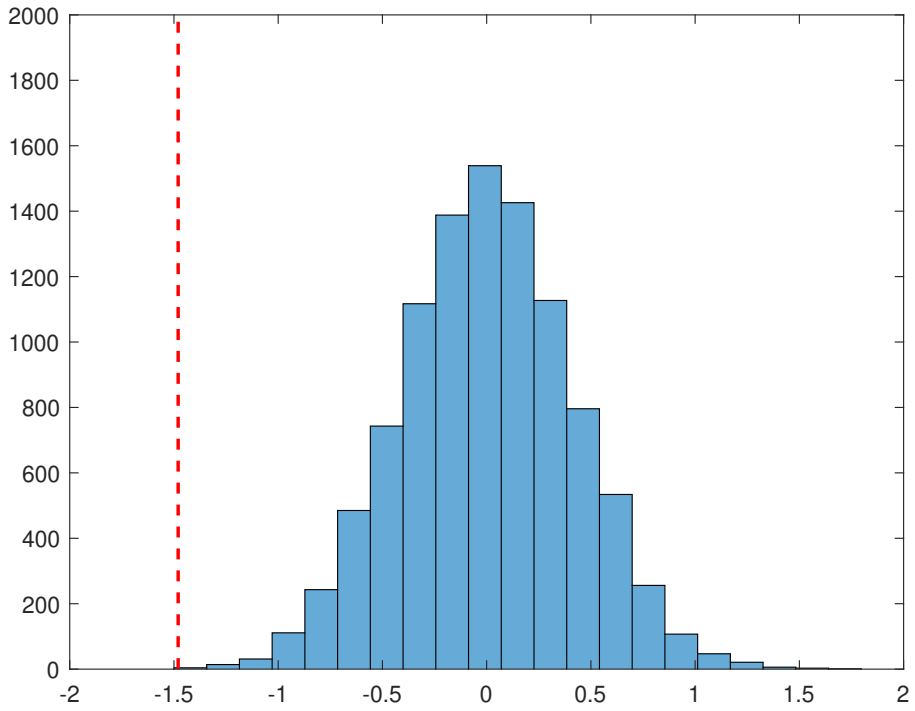

Figure 2: **DiD coefficients of the effect of RegSHO exposure on Non-Pilot firms' *E-Index*: Placebo test 1.**

This figure depicts the results from the placebo test that creates randomly-allocated treatments from assigning the values of SHO Exposure^M with replacement across firms in the sample. We obtain 10,000 random allocations and estimate our baseline regression for each one. The plot shows the histogram of estimated coefficients. The actual empirical estimate is represented with a dashed line.

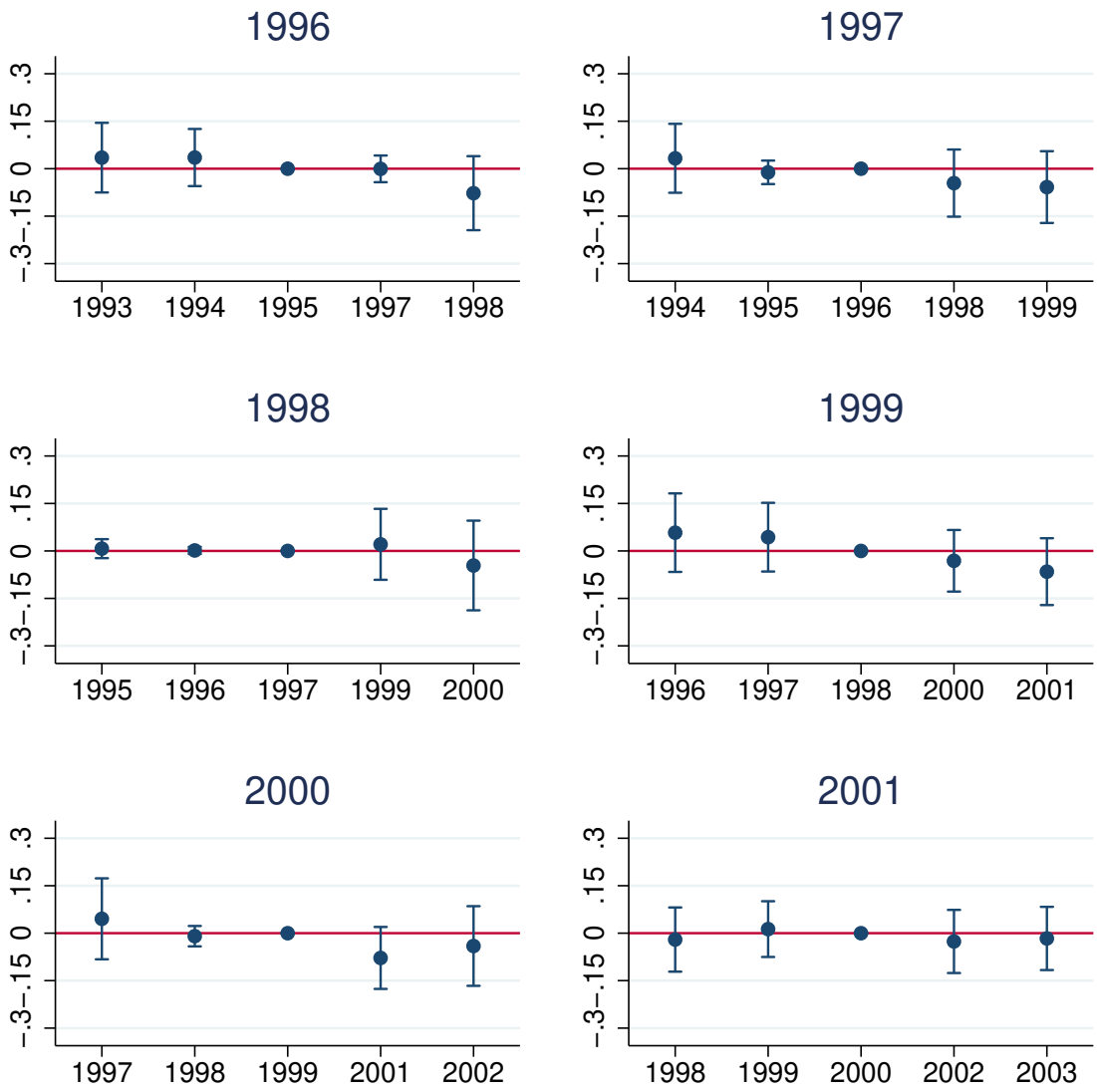

Figure 3: **DiD coefficients of the effect of RegSHO exposure on Non-Pilot firms' *E-Index*: Placebo test 2.**

In all panels, the regressors are four different dummy variables equalling one for each of the years indicated in the horizontal axis and zero for the rest of the years, as well as the interaction term of these dummy variables with a dummy variable that indicates if $SHOExposure^{M}$ *is above the median in the sample. We use six different tests in which we assume that the treatment occurs in years different from the actual RegSHO experiment, following the same procedure as in our baseline tests. The regressions also include firm and year fixed effects, as well as the control variables described in the main text. Variable definitions are provided in the Appendix. Standard errors are clustered at the firm level. The vertical bars represent the 95 percent confidence intervals for each estimation. Standard errors are clustered at the firm level.*

Table 1: **Summary statistics**

Panel A: Summary Statistics of Non-pilot stocks

	Mean	Std.Dev	p10	p25	p50	p75	p90	Obs
E-Index$_t$	2.230	1.249	0.000	1.000	2.000	3.000	4.000	3,095
Poisson pill$_t$	0.574	0.495	0.000	0.000	1.000	1.000	1.000	3,095
Golden par.$_t$	0.696	0.460	0.000	0.000	1.000	1.000	1.000	3,095
Supermaj.$_t$	0.160	0.367	0.000	0.000	0.000	0.000	1.000	3,095
Classified board$_t$	0.599	0.490	0.000	0.000	1.000	1.000	1.000	3,095
Bylaws limits$_t$	0.187	0.390	0.000	0.000	0.000	0.000	1.000	3,095
Charter limits$_t$	0.014	0.116	0.000	0.000	0.000	0.000	0.000	3,095
Inst. ownership$_{t-1}$	0.667	0.195	0.388	0.543	0.696	0.815	0.896	3,095
Top-5 Inst. own.$_{t-1}$	0.271	0.093	0.152	0.208	0.268	0.332	0.388	3,095
Ln(Market cap)$_{t-1}$	3.004	1.409	1.319	2.008	2.852	3.821	4.979	3,095
Tobin's Q$_{t-1}$	1.937	1.198	1.031	1.208	1.556	2.200	3.239	3,095
Yearly return$_{t-1}$	-0.029	0.450	-0.589	-0.228	0.028	0.228	0.435	3,095
Bid-Ask$_{t-1}$	0.926	1.051	0.075	0.138	0.462	1.479	2.339	3,095
Disc. Accruals$_t$	-0.016	0.140	-0.179	-0.081	-0.008	0.047	0.124	2,883
Real Earnings Manag.$_t$	-0.012	0.409	-0.488	-0.230	-0.008	0.201	0.433	2,558
Restatement$_t$	0.194	0.396	0.000	0.000	0.000	0.000	1.000	3,045
Meet$_t$	0.356	0.316	0.000	0.000	0.250	0.500	0.750	2,841
Governance-related proposal dummy$_t$	0.179	0.384	0.000	0.000	0.000	0.000	1.000	3,095
# Governance-related proposals$_t$	0.358	0.989	0.000	0.000	0.000	0.000	1.000	3,095
Board Size$_t$	9.046	2.253	6.000	7.000	9.000	11.000	12.000	2,541
Indep. Dir.$_t$	6.287	2.244	4.000	5.000	6.000	8.000	9.000	2,541
Ln(Delta)$_t$	4.766	1.237	3.185	3.921	4.753	5.589	6.362	2,637
Ln(Vega)$_t$	3.585	1.243	2.008	2.767	3.613	4.435	5.197	2,662
Ln(Delta/Vega)$_t$	1.111	0.947	0.183	0.491	0.887	1.435	2.243	2,610
Ln(CEO pay)$_t$	8.054	0.995	6.774	7.323	8.038	8.746	9.387	2,660
R&D$_t$	0.035	0.057	0.000	0.000	0.005	0.047	0.115	3,095
CAPEX$_t$	0.050	0.044	0.012	0.021	0.037	0.063	0.101	3,084
PPE$_t$	0.007	0.083	-0.035	-0.011	0.004	0.025	0.063	3,092
# Citations$_t$	249.715	870.127	0.000	0.000	0.000	60.000	553.000	3,066
# Patents$_t$	20.493	71.545	0.000	0.000	0.000	6.000	42.000	3,066
SHO Exposure^M	0.056	0.048	0.003	0.017	0.043	0.083	0.133	731
SHO Exposure^{NM}	0.132	0.059	0.051	0.089	0.134	0.175	0.212	731
SHO Exposure	0.188	0.056	0.111	0.152	0.195	0.227	0.256	731
Top 10% monitors ownership	0.200	0.175	0.012	0.061	0.155	0.303	0.470	731
Top 10% monitors proportion	0.062	0.070	0.008	0.017	0.041	0.078	0.152	731

(continued)

Table 1: **Summary statistics (continued)**

Panel B: Summary Statistics of Pilot stocks

	Mean	Std.Dev	p10	p25	p50	p75	p90	Obs
E-Index$_t$	2.213	1.358	0.000	1.000	2.000	3.000	4.000	1,875
Poisson pill$_t$	0.559	0.497	0.000	0.000	1.000	1.000	1.000	1,875
Golden par.$_t$	0.665	0.472	0.000	0.000	1.000	1.000	1.000	1,875
Supermaj.$_t$	0.177	0.382	0.000	0.000	0.000	0.000	1.000	1,875
Classified board$_t$	0.559	0.497	0.000	0.000	1.000	1.000	1.000	1,875
Bylaws limits$_t$	0.232	0.422	0.000	0.000	0.000	0.000	1.000	1,875
Charter limits$_t$	0.021	0.143	0.000	0.000	0.000	0.000	0.000	1,875
Inst. ownership$_{t-1}$	0.659	0.198	0.377	0.535	0.683	0.809	0.892	1,875
Top-5 Inst. own.$_{t-1}$	0.266	0.094	0.149	0.199	0.259	0.327	0.392	1,875
Ln(Market cap)$_{t-1}$	3.008	1.471	1.333	2.011	2.767	3.869	5.002	1,875
Tobin's Q$_{t-1}$	2.105	1.388	1.044	1.211	1.607	2.466	3.897	1,875
Yearly return$_{t-1}$	-0.012	0.436	-0.551	-0.198	0.042	0.235	0.452	1,875
Bid-Ask$_{t-1}$	0.914	1.059	0.076	0.133	0.437	1.455	2.370	1,875
Disc. Accruals$_t$	-0.021	0.137	-0.182	-0.088	-0.014	0.043	0.123	1,739
Real Earnings Manag.$_t$	-0.045	0.398	-0.516	-0.285	-0.052	0.164	0.401	1,542
Restatement$_t$	0.201	0.401	0.000	0.000	0.000	0.000	1.000	1,834
Meet$_t$	0.357	0.320	0.000	0.000	0.250	0.500	0.750	1,700
Governance-related proposal dummy$_t$	0.170	0.375	0.000	0.000	0.000	0.000	1.000	1,875
# Governance-related proposals$_t$	0.311	0.875	0.000	0.000	0.000	0.000	1.000	1,875
Board Size$_t$	8.975	2.286	6.000	7.000	9.000	10.000	12.000	1,538
Indep. Dir.$_t$	6.122	2.248	3.000	4.000	6.000	8.000	9.000	1,538
Ln(Delta)$_t$	4.823	1.339	3.056	3.913	4.771	5.774	6.596	1,605
Ln(Vega)$_t$	3.547	1.313	1.858	2.750	3.566	4.453	5.233	1,596
Ln(Delta/Vega)$_t$	1.193	0.997	0.217	0.513	0.912	1.614	2.582	1,573
Ln(CEO pay)$_t$	7.970	1.049	6.614	7.236	7.972	8.645	9.403	1,616
R&D	0.034	0.059	0.000	0.000	0.002	0.047	0.115	1,875
CAPEX$_t$	0.051	0.044	0.012	0.023	0.037	0.064	0.102	1,862
PPE$_t$	0.013	0.072	-0.028	-0.008	0.006	0.029	0.067	1,871
# Citations$_t$	194.730	731.136	0.000	0.000	0.000	64.000	385.000	1,833
# Patents$_t$	16.247	61.944	0.000	0.000	0.000	7.000	32.000	1,833
Top 10% monitors ownership	0.188	0.165	0.008	0.060	0.139	0.286	0.452	411
Top 10% monitors proportion	0.064	0.079	0.007	0.018	0.037	0.076	0.165	411

This table reports the summary statistics for the variables we use throughout the paper. Panel A reports the summary statistics for our sample of non-Pilot firms and Panel B reports the summary statistics for the sample of Pilot firms. Variable definitions appear in the Appendix. The information about Meet corresponds to the average over the 4 quarters of the fiscal year.

Table 2: **Effect on Non-Pilot firms' *E-Index* through RegSHO Exposure**

	Dependent Variable: E-Index$_t$							
	All investors			Motivated monitors			Monit. & Non-monit.	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post × SHO Exposure	-0.010	-0.052	-0.113					
	(-0.028)	(-0.150)	(-0.324)					
Post × SHO Exposure^M				-1.505***	-1.426***	-1.480***	-1.152**	-1.240***
				(-3.516)	(-3.292)	(-3.432)	(-2.398)	(-2.595)
Post × SHO Exposure^{NM}							0.489	0.421
							(1.322)	(1.134)
Inst. ownership$_{t-1}$		0.318**	0.422**		0.244	0.324*	0.217	0.299*
		(2.015)	(2.430)		(1.502)	(1.814)	(1.350)	(1.680)
Top-5 Inst. own.$_{t-1}$		-0.203	-0.324		-0.168	-0.259	-0.130	-0.224
		(-0.804)	(-1.259)		(-0.667)	(-1.010)	(-0.524)	(-0.881)
Ln(Market cap)$_{t-1}$			0.012			0.026		0.025
			(0.385)			(0.848)		(0.818)
Tobin's Q$_{t-1}$			-0.014			-0.020		-0.019
			(-0.900)			(-1.343)		(-1.267)
Yearly return$_{t-1}$			0.024			0.018		0.020
			(1.056)			(0.805)		(0.862)
Bid-Ask$_{t-1}$			0.051***			0.053***		0.052***
			(3.068)			(3.150)		(3.092)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj-R2	0.909	0.909	0.909	0.910	0.910	0.910	0.910	0.910
Obs	3,095	3,095	3,095	3,095	3,095	3,095	3,095	3,095

*This table reports the coefficient estimates of the effect of the exposure of firms' institutional investors to Pilot firms at the end of the fiscal year 2003 on the E-index. In columns 4 to 8, we condition the measurement of SHO Exposure on investors being motivated or non-motivated monitors in each firm. The variable Post is a dummy variable that equals one in the period in which the Regulation SHO was in force (years 2005 and 2006), and zero otherwise. The sample includes Non-Pilot firms in the S&P 1500 Index for the years 2001-2006. Information in 2004 is removed from the sample as this is the year when Regulation SHO was first announced. Firm and Year fixed effects are included in the regressions as indicated. Variable definitions are provided in the Appendix. Standard errors are clustered at the firm level. T-statistics are shown in parenthesis. The significance levels are represented as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

Table 3: **Decomposition of *E-Index***

	E-Index$_t$ (1)	Poison pill$_t$ (2)	Golden par.$_t$ (3)	Supermaj.$_t$ (4)	Classified board$_t$ (5)	Bylaws limits$_t$ (6)	Charter limits$_t$ (7)
Post × SHO Exposure^M	-1.480***	-0.604***	-0.325	0.132	-0.503***	-0.158	-0.021
	(-3.432)	(-2.938)	(-1.193)	(1.298)	(-2.708)	(-1.556)	(-0.973)
Inst. ownership$_{t-1}$	0.324*	0.199**	0.047	0.008	0.084	-0.030	0.016
	(1.814)	(2.525)	(0.471)	(0.145)	(1.305)	(-0.590)	(1.450)
Top-5 Inst. own.$_{t-1}$	-0.259	-0.206	0.004	-0.023	-0.063	-0.006	0.036
	(-1.010)	(-1.572)	(0.023)	(-0.360)	(-0.858)	(-0.083)	(1.556)
Ln(Market cap)$_{t-1}$	0.026	0.002	-0.006	0.010	0.008	0.015*	-0.003
	(0.848)	(0.172)	(-0.298)	(1.306)	(0.639)	(1.800)	(-1.274)
Tobin's Q$_{t-1}$	-0.020	-0.003	-0.005	-0.001	-0.005	-0.007	0.001
	(-1.343)	(-0.528)	(-0.457)	(-0.214)	(-0.902)	(-1.374)	(0.896)
Yearly return$_{t-1}$	0.018	0.008	0.028**	-0.020***	-0.002	0.004	0.001
	(0.805)	(0.666)	(1.973)	(-2.954)	(-0.319)	(0.546)	(0.464)
Bid-Ask$_{t-1}$	0.053***	0.020**	0.019*	-0.001	0.007	0.008*	-0.001
	(3.150)	(2.577)	(1.861)	(-0.274)	(1.423)	(1.810)	(-0.553)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj-R2	0.910	0.870	0.765	0.939	0.938	0.913	0.926
Obs	3,095	3,095	3,095	3,095	3,095	3,095	3,095

This table reports the coefficient estimates of the effect of the exposure of firms' institutional investors classified as motivated monitors to Pilot firms at the end of the fiscal year 2003 (i.e., SHO Exposure^M) on the different components of the E-index. The first column corresponds to the baseline estimation reported in Column 6 of Table 2. The dependent variables in columns 2 to 7 are dummy variables equalling one if a firm has in place the governance provision stated on the top of the table, and zero otherwise. The variable Post is a dummy variable that equals one in the period in which the Regulation SHO was in force (years 2005 and 2006), and zero otherwise. The sample includes Non-Pilot firms in the S&P 1500 Index for the years 2001-2006. Information in 2004 is removed from the sample as this is the year when Regulation SHO was first announced. Firm and Year fixed effects are included in the regressions as indicated. Variable definitions are provided in the Appendix. Standard errors are clustered at the firm level. T-statistics are shown in parenthesis. The significance levels are represented as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 4: **Decreasing/Increasing monitoring incentives in Pilot firms**

Panel A: Exposure through institutions with decreasing monitoring incentives in Pilot firms

	Dependent Variable: E-Index$_t$			
	All	Bottom 90%	Bottom 75%	Bottom 50%
	(1)	(2)	(3)	(4)
Post × SHO Exposure^M	-1.480***	-3.458**	-5.435	-17.295
	(-3.432)	(-2.252)	(-1.514)	(-1.386)
Controls (Table 2, Column 6)	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Mean SHO Exposure^M	0.056	0.018	0.008	0.002
Adj-R2	0.910	0.910	0.909	0.909
Obs	3,095	3,095	3,095	3,095

Panel B: Exposure through institutions with increasing monitoring incentives in Pilot firms

	Dependent Variable: E-Index$_t$			
	All	Top 50%	Top 25%	Top 10%
	(1)	(2)	(3)	(4)
Post × SHO Exposure^M	-1.480***	-1.523***	-1.661***	-2.081***
	(-3.432)	(-3.462)	(-3.506)	(-3.620)
Controls (Table 2, Column 6)	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Mean SHO Exposure^M	0.056	0.054	0.048	0.037
Adj-R2	0.910	0.910	0.910	0.910
Obs	3,095	3,095	3,095	3,095

*This table reports the coefficient estimates of the effect of the exposure of firms' institutional investors classified as motivated monitors to Pilot firms at the end of the fiscal year 2003 (i.e., SHO Exposure^M) on the E-index. In Panel A, the measurement of SHO Exposure^M is conditioned on Pilot stocks in the institutional investors' portfolio being below the p^{th} percentile in terms of portfolio weight that is indicated on the top of the table. In Panel B, the measurement of SHO Exposure^M is conditioned on the pilot stocks in the institutional investors' portfolios being above the p^{th} percentile in terms of portfolio weight that is indicated on the top of the table. Details on the construction of the variables in these tests are provided in section 4.1. The first column, in both Panel A and B, corresponds to the baseline estimation reported in Column 6 of Table 2. The bottom of each panel reports the average value of each version of SHO Exposure^M. The variable Post is a dummy variable that equals one in the period in which the Regulation SHO was in force (years 2005 and 2006), and zero otherwise. The sample includes Non-Pilot firms in the S&P 1500 Index for the years 2001-2006. Information in 2004 is removed from the sample as this is the year when Regulation SHO was first announced. Firm and Year fixed effects and controls are included in the regressions as indicated. Variable definitions are provided in the Appendix. Standard errors are clustered at the firm level. T-statistics are shown in parenthesis. The significance levels are represented as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

Table 5: **Board variables**

	Board turnover$_t$ (1)	Ln(Board Size)$_t$ (2)	Ln(1+Ind.Dir.)$_t$ (3)	Ind.Dir.$_t$/Board Size$_t$ (4)
Post × SHO Exposure^M	1.211**	-0.297**	-0.240	0.015
	(2.530)	(-2.272)	(-1.225)	(0.135)
Inst. ownership$_{t-1}$	0.062	-0.015	0.061	0.033
	(0.251)	(-0.235)	(0.722)	(0.716)
Top-5 Inst. own.$_{t-1}$	-0.368	0.006	0.035	0.044
	(-1.032)	(0.068)	(0.299)	(0.677)
Ln(Market cap)$_{t-1}$	-0.142***	0.029**	0.032**	0.004
	(-3.022)	(2.104)	(2.056)	(0.430)
Tobin's Q$_{t-1}$	0.029	-0.007	-0.017**	-0.005
	(1.086)	(-1.215)	(-2.056)	(-1.289)
Yearly return$_{t-1}$	0.106**	-0.010	0.000	0.005
	(2.532)	(-1.297)	(0.037)	(0.896)
Bid-Ask$_{t-1}$	-0.077***	0.004	0.006	0.003
	(-2.815)	(0.594)	(0.664)	(0.623)
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Adj-R2	0.014	0.816	0.794	0.713
Obs	1,926	2,541	2,541	2,541

*This table reports the coefficient estimates of the effect of the exposure of firms' motivated institutional investors to Pilot firms at the end of the fiscal year 2003 (i.e., SHO Exposure^M) on different governance variables. In Column 1, the dependent variable is a measure of board turnover. In Column 2, the dependent variable is the natural logarithm of the board size. In Column 3, the dependent variable is the natural logarithm of 1 plus the number of independent directors. In Column 4, the dependent variable is the percentage of independent directors. The variable Post is a dummy variable that equals one in the period in which the Regulation SHO was in force (years 2005 and 2006), and zero otherwise. The sample includes Non-Pilot firms in the S&P 1500 Index for the years 2001-2006. Information in 2004 is removed from the sample as this is the year when Regulation SHO was first announced. Firm and Year fixed effects are included in the regressions as indicated. Variable definitions are provided in the Appendix. Standard errors are clustered at the firm level. T-statistics are shown in parenthesis. The significance levels are represented as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

Table 6: **Earnings Management**

	Disc. Accruals$_t$ (1)	Real Earn. Manag.$_t$ (2)	Restatement$_t$ (3)	Meet$_t$ (4)
Post × SHO Exposure^M	-0.223**	-0.475***	-0.464*	-0.504***
	(-2.074)	(-2.830)	(-1.726)	(-2.784)
Inst. ownership$_{t-1}$	-0.173***	-0.090	0.031	0.064
	(-3.033)	(-1.244)	(0.229)	(1.071)
Top-5 Inst. own.$_{t-1}$	0.025	0.126	-0.029	0.026
	(0.304)	(1.062)	(-0.140)	(0.285)
Ln(Market cap)$_{t-1}$	-0.019	0.032*	0.011	0.016
	(-1.484)	(1.909)	(0.443)	(1.206)
Tobin's Q$_{t-1}$	0.013*	-0.039***	0.001	0.017**
	(1.835)	(-3.344)	(0.085)	(2.275)
Return$_{t-1}$	0.007	-0.020*	-0.028	0.017
	(0.876)	(-1.886)	(-1.224)	(0.978)
Bid-Ask$_{t-1}$	0.004	0.002	-0.027**	0.013*
	(0.697)	(0.195)	(-2.024)	(1.771)
Time FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Adj-R2	0.217	0.831	0.084	0.195
Obs	2,883	2,558	3,045	15,338

This table reports the coefficient estimates of the effect of the exposure of firms' motivated institutional investors to Pilot firms at the end of the fiscal year 2003 (i.e., SHO Exposure^M) on earnings management variables. In Column 1, the dependent variable is the measure of discretionary accruals developed by McNichols (2002). In Column 2, the dependent variable is the the measure of real earnings management developed by Roychowdhury (2006). In Column 3, the dependent variable is a dummy variable equal to one if the firm restates the accounts in the year, and zero otherwise. In Column 4, the coefficients are obtained from a regression using quarterly data that includes fiscal quarter fixed effects. The dependent variable is a dummy variable equal to one if the firm beats the analysts' earnings per share target by one cent in the quarter, and zero otherwise. The variable Post is a dummy variable that equals one in the period in which the Regulation SHO was in force (years 2005 and 2006), and zero otherwise. The sample includes Non-Pilot firms in the S&P 1500 Index for the years 2001-2006. Information in 2004 is removed from the sample as this is the year when Regulation SHO was first announced. Firm and Year fixed effects are included in the regressions as indicated. Variable definitions are provided in the Appendix. Standard errors are clustered at the firm level. T-statistics are shown in parenthesis. The significance levels are represented as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 7: **Managerial Compensation**

	Ln(Delta$_t$) (1)	Ln(Vega$_t$) (2)	Ln(Delta$_t$/Vega$_t$) (3)	Ln(CEO Pay$_t$) (4)
Post × SHO Exposure^M	-0.120	0.379	-0.954	-0.284
	(-0.203)	(0.705)	(-1.459)	(-0.541)
Inst. ownership$_{t-1}$	0.181	0.510*	-0.215	0.668**
	(0.661)	(1.949)	(-0.619)	(2.536)
Top-5 Inst. own.$_{t-1}$	-0.214	-0.197	-0.599	-0.011
	(-0.561)	(-0.561)	(-1.223)	(-0.035)
Ln(Market cap)$_{t-1}$	0.244***	0.112**	0.082	0.274***
	(3.843)	(2.205)	(1.263)	(5.714)
Tobin's Q$_{t-1}$	-0.028	-0.028	0.011	-0.001
	(-0.905)	(-0.939)	(0.346)	(-0.026)
Yearly return$_{t-1}$	0.127***	0.086**	0.065*	0.085**
	(3.012)	(2.301)	(1.657)	(2.108)
Bid-Ask$_{t-1}$	0.004	0.016	0.007	0.021
	(0.120)	(0.742)	(0.252)	(0.817)
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Adj-R2	0.806	0.851	0.598	0.689
Obs	2,637	2,662	2,610	2,660

*This table reports the coefficient estimates of the effect of the exposure of firms' motivated institutional investors to Pilot firms at the end of the fiscal year 2003 (i.e., SHO Exposure^M) on CEO compensation variables. In Column 1, the dependent variable is the natural logarithm of the delta of the CEO compensation. In Column 2, the dependent variable is the natural logarithm of the vega of CEO compensation. In Column 3, the dependent variable is the natural logarithm of the ratio delta/vega of CEO compensation. In Column 4, the dependent variable is the natural logarithm of the CEO compensation. The variable Post is a dummy variable that equals one in the period in which the Regulation SHO was in force (years 2005 and 2006), and zero otherwise. The sample includes Non-Pilot firms in the S&P 1500 Index for the years 2001-2006. Information in 2004 is removed from the sample as this is the year when Regulation SHO was first announced. Firm and Year fixed effects are included in the regressions as indicated. Variable definitions are provided in the Appendix. Standard errors are clustered at the firm level. T-statistics are shown in parenthesis. The significance levels are represented as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

Table 8: **Institutions' trading on Non-Pilot firms.**

	Change in % Ownership$_q$ (1)	Trades$_q$ (2)	Buys$_q$ (3)	Sells$_q$ (4)
Post × IO SHO Exposure	0.025	0.039	-0.037	0.076
	(0.739)	(1.389)	(-0.525)	(1.154)
Post × Monitor	-0.109***	-0.014*	-0.098***	0.084***
	(-5.249)	(-1.701)	(-5.191)	(4.739)
Post × Monitor × IO SHO Exposure	0.075	-0.010	-0.100	0.090
	(1.066)	(-0.334)	(-1.478)	(1.394)
Ln(IO Size)$_{q-1}$	0.034***	0.007**	0.076***	-0.069***
	(3.969)	(2.162)	(9.253)	(-8.574)
Portfolio concentration$_{q-1}$	-0.083**	-0.110***	-0.212**	0.101
	(-2.186)	(-3.244)	(-2.037)	(0.999)
Portfolio industry concentration$_{q-1}$	0.044	0.032	0.042	-0.010
	(1.618)	(1.419)	(0.658)	(-0.160)
Ln(N stocks)$_{q-1}$	0.004	0.011	0.040**	-0.029
	(0.309)	(1.052)	(2.506)	(-1.631)
Ln(N industries)$_{q-1}$	-0.027	-0.005	-0.039**	0.034*
	(-1.332)	(-0.470)	(-2.309)	(1.901)
Stock-Investor FE	Yes	Yes	Yes	Yes
Stock-Quarter FE	Yes	Yes	Yes	Yes
Adj-R2	0.061	0.454	0.147	0.138
Obs	6,277,798	6,277,798	6,277,798	6,277,798

*This table reports OLS regression results on the trading behavior of institutional investors. The sample comprises investor-stock information at the quarterly frequency for the 2001q1-2006q4 period. The sample only includes Non-Pilot stocks. IO SHO Exposure is the weight of Pilot firms in the institutional investor's portfolio at the end of 2004q1. Monitor equals one if the firm is in the top 10 percent of the investor´s portfolio in terms of market value at the end of 2004q1, and zero otherwise. In Column 1, the dependent variable is the quarterly change in the fraction of the firm's stock owned by the institutional investor. In Column 2, the dependent variable equals one if the investor trades (i.e., buys or sells) the stock during the quarter, and zero otherwise. In Column 3, the dependent variable equals one if the investor increases its ownership during the quarter, and zero otherwise. In Column 4, the dependent variable equals one if the investor reduces its ownership during the quarter, and zero otherwise. Investor-level control variables are defined in the Appendix. All time-variant independent variables except IO SHO Exposure are lagged one quarter. The variable Post is a dummy variable that equals one in the period after the Regulation SHO was announced, and zero otherwise. Fixed effects are included in the regressions as indicated in the table. Variable definitions are provided in the Appendix. Standard errors are clustered at the investor level. T-statistics are shown in parenthesis. The significance levels are represented as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

Table 9: **Effect on Non-Pilot firms' *E-Index* through RegSHO Exposure: Short interest**

	Dependent Variable E-Index$_t$			
	(1)	(2)	(3)	(4)
Post × SHO Exposure^M	-1.480***	-1.472***	-1.357***	-1.366***
	(-3.432)	(-2.904)	(-2.721)	(-2.609)
Post × SHO Exposure^M × Short interest drop, +3mo		-0.243		
		(-0.216)		
Post × SHO Exposure^M × Short interest drop, +6mo			-0.544	
			(-0.469)	
Post × SHO Exposure^M × Short interest drop, +10mo				-0.694
				(-0.655)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Adj-R2	0.910	0.909	0.910	0.909
Obs	3,095	2,984	2,963	2,936

*This table reports the coefficient estimates of the effect of the exposure of firms' institutional investors to Pilot firms at the end of the fiscal year 2003 on the E-index, accounting for a differential impact on firms that experience large drops in short interest in the RegSHO pre-implementation period. Short interest is defined as the number of all open short positions on the last business day on or before the 15th of each calendar month, scaled by the previous month shares outstanding reported by CRSP. Short interest drop, +3mo is a dummy variable taking the value of one if a firm's change in short interest between June, 2004 and September, 2004 is in the bottom quartile of the distribution. Short interest drop, +6mo and Short interest drop, +10mo are defined analogously for 6 and 10 months after the announcement, respectively. The variable Post is a dummy variable that equals one in the period in which the Regulation SHO was in force (years 2005 and 2006), and zero otherwise. The sample includes Non-Pilot firms in the S&P 1500 Index for the years 2001-2006. Information in 2004 is removed from the sample as this is the year when Regulation SHO was first announced. Firm and Year fixed effects are included in the regressions as indicated. Variable definitions are provided in the Appendix. Standard errors are clustered at the firm level. T-statistics are shown in parenthesis. The significance levels are represented as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

Table 10: **Investment & Innovation outcomes**

	Corporate Investment			Innovation			
Dependent Variable:	R&D	CAPEX	PPE	$Ln(1+\#Citations)$	$Ln(1+\#Patents)$	$\#Citations$	$\#Patents$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Post × SHO Exposure^M	0.030**	-0.017	-0.040	0.752	0.664*	4.951***	3.192***
	(2.057)	(-0.865)	(-1.012)	(0.861)	(1.656)	(4.294)	(3.439)
Inst. ownership$_{t-1}$	-0.008	-0.004	0.039*	0.536	0.258	0.840*	1.154***
	(-1.138)	(-0.440)	(1.745)	(1.537)	(1.541)	(1.653)	(2.790)
Top-5 Inst. own.$_{t-1}$	0.006	-0.016	-0.033	0.497	0.075	-1.327*	-1.622***
	(0.564)	(-1.263)	(-1.188)	(1.069)	(0.328)	(-1.914)	(-2.888)
Ln(Market cap)$_{t-1}$	-0.002	0.011***	-0.004	0.232***	0.142***	0.031	0.098**
	(-1.009)	(5.120)	(-0.613)	(2.842)	(3.781)	(0.546)	(2.314)
Tobin's Q$_{t-1}$	0.001	0.001	0.012***	-0.018	-0.036*	-0.031	-0.036
	(0.734)	(0.975)	(3.644)	(-0.390)	(-1.925)	(-1.235)	(-1.491)
Yearly return$_{t-1}$	-0.004***	-0.001	0.015***	-0.134**	-0.063***	0.040	-0.067
	(-2.991)	(-1.069)	(4.235)	(-2.577)	(-2.766)	(0.672)	(-1.173)
Bid-Ask$_{t-1}$	-0.001	-0.002	-0.001	0.006	0.033*	0.063	0.089**
	(-1.295)	(-1.632)	(-0.777)	(0.146)	(1.681)	(1.321)	(2.322)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj-R2	0.920	0.763	0.291	0.884	0.941		
Pseudo-R2						0.953	0.941
Obs	3,095	3,084	3,092	3,066	3,066	3,066	3,066

*This table reports the coefficient estimates of the effect of the exposure of firms' motivated institutional investors to Pilot firms at the end of the fiscal year 2003 (i.e., SHO Exposure^M) on firm investment (Columns 1 to 3) and innovation (Columns 4 to 7). In Columns 1 to 5 the coefficients are estimated using OLS. In Columns 6 and 7 the coefficients are estimated using a fixed-effects Poisson model. In Column 1, the dependent variable is the ratio R&D expenses over total assets. In Column 2, the dependent variable is the the ratio of CAPEX over total assets. In Column 3, the dependent variable is the ratio of the change in PPE (Property, Plant and Equipment) over total assets. In Columns 4-7, # Citations is the number of patents for issued patents applied for in year t, and # Patents is the number citation-weighted patents for issued patents applied for in year t. The variable Post is a dummy variable that equals one in the period in which the Regulation SHO was in force (years 2005 and 2006), and zero otherwise. The sample includes Non-Pilot firms in the S&P 1500 Index for the years 2001-2006. Information in 2004 is removed from the sample as this is the year when Regulation SHO was first announced. Firm and Year fixed effects are included in the regressions as indicated. Variable definitions are provided in the Appendix. Standard errors are clustered at the firm level. T-statistics are shown in parenthesis. The significance levels are represented as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

Table 11: **Variable definitions - Firm level**

VARIABLE	SOURCE	DEFINITION
E-Index	Institutional Shareholder Services (ISS)	A measure of managerial entrenchment based on anti takeover provisions (Bebchuk et al., 2009). It is the sum of the presence of the six following measures: poison-pills, golden parachutes, supermajority, classified (staggered) boards, limits to amend bylaws, limits to amend the company´s charter.
SHO Exposure	13-F filings	A measure of the average exposure of the firm's institutional owners to Pilot firms. It is measured at the end of 2003q4 when the sample is annual and at the end of 2004q1 when the sample is quarterly.
SHO Exposure^{M}	13-F filings	A measure of the average exposure of the firm's institutional owners that are motivated monitors to Pilot firms. It is measured at the end of 2003q4 when the sample is annual and at the end of 2004q1 when the sample is quarterly. An institutional investor is a motivated monitor for a stock if the holding value of the stock is within the top 10% of its portfolio.
SHO Exposure^{NM}	13-F filings	A measure of the average exposure of the firm's institutional owners that are non-motivated monitors to Pilot firms. It is measured at the end of 2003q4 when the sample is annual and at the end of 2004q1 when the sample is quarterly. An institutional investor is a non-motivated monitor for a stock if the holding value of the stock is outside the top 10% of its portfolio.
Inst. Ownership	13-F filings	Percentage of outstanding shares held by institutional owners.
Top-5 Inst. Own.	13-F filings	Fraction of the firm's stock owned by the five institutional investors with highest ownership.
Ln(Market Cap)	CRSP	The natural log of price times shares outstanding adjusted to 2012 dollars using the U.S. GDP deflator.
Tobin's Q	Compustat	Market cap plus the book value of total liabilities divided by the book value of assets.
Yearly (Quarterly) return	CRSP	Stock's return over the year (quarter).
Bid-Ask	CRSP	Quarterly average of daily ask price minus bid price divided by the mid-point, expressed in percentage terms.
Delta	Execucomp	Total Black Scholes Delta of the equity awards granted in the fiscal year.
Vega	Execucomp	Total Black-Scholes Vega of the equity awards granted in the fiscal year.
CEO pay	Execucomp	CEO total direct compensation (tdc1).
Short interest drop, +3mo	Compustat	A dummy variable that takes the value of one if the change in short interest prior to the announcement of the RegSHO to 3 months later is in the first quartile of the distribution. Short interest is scaled by the number of shares at the end of the previous month using information from CRSP. Similar measures are calculated using 6 and 10-month horizons.

Table 12: **Variable Definitions - Firm Level (continued)**

VARIABLE	SOURCE	DEFINITION
Disc. Accruals	Compustat	Signed measure of discretionary accruals as developed by McNichols (2002). Discretionary accruals are estimated as the residuals of the following regression: $\frac{TA_{jt}}{Assets_{jt-1}} = \alpha + \beta_1 \frac{CFO_{jt-1}}{Assets_{jt-2}} + \beta_2 \frac{CFO_{jt}}{Assets_{jt-1}} + \beta_3 \frac{CFO_{jt+1}}{Assets_{jt-1}} + \beta_4 \frac{1}{Assets_{jt-1}} + \beta_5 \frac{\Delta\ REV_{jt}}{Assets_{jt-1}} + \beta_6 \frac{PPE_{jt-1}}{Assets_{jt-1}} + \varepsilon_{jt}$ where TA_{jt} is total accruals defined as difference between income before extraordinary items and operating cash flows divided by lagged total assets ($Assets$), CFO_{jt} is cash flow from operations, $\Delta\ REV_{jt}$ is the annual change in sales, and PPE_{jt} is plant, property and equipment. This regression is estimated for each year for all firms in each 2-digits SIC Code. We ensure that there are at least 20 observations available for each regression.
Real Earnings Manag.	Compustat	Following Roychowdhury (2006) we create a measure of real earnings management as the sum of (-) abnormal cash flow, (-) abnormal discretionary expenses, and (+) abnormal production costs. Abnormal cash flow is determined as the residuals of the following industry-year regression: $\frac{CFO_{jt}}{Assets_{jt-1}} = \alpha + \beta_1 \frac{1}{Assets_{jt-1}} + \beta_2 \frac{REV_{jt}}{Assets_{jt-1}} + \beta_3 \frac{\Delta\ REV_{jt}}{Assets_{jt-1}} + \varepsilon_{jt}$ Abnormal discretionary expenses are determined as follows: $\frac{Disx_{jt}}{Assets_{jt-1}} = \alpha + \beta_1 \frac{1}{Assets_{jt-1}} + \beta_2 \frac{REV_{jt}}{Assets_{jt-1}} + \varepsilon_{jt}$ Abnormal discretionary production costs are determined as follows: $\frac{Prod_{jt}}{Assets_{jt-1}} = \alpha + \beta_1 \frac{1}{Assets_{jt-1}} + \beta_2 \frac{REV_{jt}}{Assets_{jt-1}} + \beta_3 \frac{\Delta\ REV_{jt}}{Assets_{jt-1}} + \beta_4 \frac{\Delta\ REV_{jt-1}}{Assets_{jt-1}} + \varepsilon_{jt}$ where CFO_{jt} is cash flow from operations, REV_{jt} is sales, $Prod_{jt}$ is the sum of cost of the goods sold and the change in inventory between t and $t-1$, $Disx_{jt}$ is discretionary expenses measured as the sum of R&D, advertising and selling, general and administrative expenses, and $Assets$ is total assets. The residuals of these regression are estimated for each year using firms in each 2-digits SIC Code. We ensure that there are at least 20 observations available for each regression.
Restatement	Audit Analytics	A dummy variable that equals one if the firm restates its accounts in the year, and zero otherwise.
Meet	IBES	A dummy variable that equals one if the firm beats the quarterly analysts´earnings per share benchmark by one cent, and zero otherwise.
Board Size	Institutional Shareholder Services (ISS)	the total number of directors sitting on the board.
Indep. Dir.	Institutional Shareholder Services (ISS)	The number of directors in the board that are outsiders.
Board Turnover	Institutional Shareholder Services (ISS)	Dummy variable equal to one if there are departed board members in the year, and zero otherwise.
R&D	Compustat	R&D expenses over total assets.
CAPEX	Compustat	Capital expenditure over total assets.
PPE	Compustat	Year-on-year change in Plant, Property and Equipment over total assets.
Citations	National Bureau of Economic Research (NBER) Patent Citation database	The number citation-weighted patents for issued patents applied for in year t.
Patents	National Bureau of Economic Research (NBER) Patent Citation database	The number of patents for issued patents applied for in year t.

Table 13: **Variable Definitions - Investor Level**

VARIABLE	SOURCE	DEFINITION
IO SHO Exposure	13-F filings	A measure of the institutional investors´portfolio weight of Pilot stocks measured at the end of 2003q4.
Change in pct. ownership	13-F filings	The quarter-on-quarter change in ownership held by the institutional investor. Ownership is measured as the percentage of the outstanding shares of the stock.
Trades	13-F filings	A dummy variable that equals one if the institutional investor changes the percentage owned in the stock from the previous quarter, and zero otherwise.
Buys	13-F filings	A dummy variable that equals one if the institutional investor increases the percentage owned in the stock from the previous quarter, and zero otherwise.
Sells	13-F filings	A dummy variable that equals one if the institutional investor decreases the percentage owned in the stock from the previous quarter, and zero otherwise.
Portfolio industry concentration	13-F filings and CRSP	HHI index of the number of shares held for firms in a industry divided by total shares held.
Portfolio concentration	13-F filings	HHI index of the number of shares held for each firm divided by total shares held.
Ln(N industries)	13-F filings and CRSP	Natural logarithm of the number of industries present in the portfolio of the institutional investor.
Ln(N stocks)	13-F filings	Natural logarithm of the number of different stocks held by the institutional investor.

A Supplemental Appendix

This Appendix includes additional methodological details and supplemental regression results that are referenced in the main text.

Table A.1 reports the results from replicating the regressions reported in Table 2 including controls for the percentage ownership of motivated monitors (i.e., *Top 10% monitors ownership*) and the proportion of institutional owners that are motivated monitors (i.e., *Share of 10% monitors*). Including these controls leaves unchanged our baseline results.

Table A.2 reports the results from replicating the regressions reported in Table 2 but using the balanced panel. Figure A.1 illustrates the main results and parallel trends when using the balanced sample. The estimation methodology follows the descriptions of Figure 1. The results are in line with the baseline regressions. In Figure A.2, we show the robustness of the results when we drop firm fixed effects and controls from the estimations, both in the unbalanced and balanced samples. Table A.3 reports the results of including information from 2004 in the pre-RegSHO period. These results confirm the robustness of our baseline results and the validity of the identification assumptions.

Table A.4 reports the results of DiD baseline regressions in which we condition the measurement of *SHO Exposure*^{M} on Pilot stocks being listed in the NYSE or NASDAQ. Before the implementation of the Reg SHO, the short-selling price tests were more binding for stocks listed in the NYSE than in NASDAQ (Diether et al., 2009). Thus, we expect that the implementation of RegSHO represents a more relevant shock for investors that are exposed to Pilot firms listed in the NYSE. Consistent with this conjecture, once we condition the measurement of *SHO Exposure*^{M} on Pilot stocks being listed in the NYSE (Columns 1 to 3), we find a coefficient on the interaction term *Post* $\times$ *SHO Exposure*^{M} that has a higher statistical significance than when we condition on NASDAQ Pilot stocks (Columns 4 to 6).

Table A.5 reports the results of regressing the *E-Index* on the Pilot treatment, exploiting the full sample that includes Pilot and Non-Pilot firms. This exercise attempts to replicate the results reported in Table 6 of De Angelis et al. (2017). In the first three columns, the sample is made of all firms with information available on the relevant variables (i.e., unbalanced panel). In the last three columns, we restrict the estimation to the balanced sample. Consistent with De Angelis et al. (2017), we report in Column 4 that pilot stocks increase their *E-Index* after the Reg SHO is implemented. Indeed, the estimate and t-statistic are extremely similar to the resuls in Column 3 in Table 6 of De Angelis et al. (2017). In Columns 5 and 6 we show results that are consistent with the idea that the increase in the *E-Index* in Pilot firms only occurs in firms whose percentage ownership of motivated monitors is high.

Figure A.1: **DiD coefficients of the effect of RegSHO exposure on Non-Pilot firms' *E-Index*: Balanced sample.**

In the left (right) panel, the regressors are four different dummy variables equalling one for each of the years indicated in the horizontal axis and zero for the rest of the years, as well as the interaction term of these dummy variables with dummy variables that take the value of one if SHO Exposure (SHO Exposure^M) is above the median in the sample. The sample includes Non-Pilot firms in the index S&P 1500 for the years 2001-2006 without missing information in the period. 2003 is the reference year in the regressions and the year 2004 is removed from the sample as it is the year when Regulation SHO was first announced. The regressions also include firm and year fixed effects, as well as the control variables described in the main text. Variable definitions are provided in the Appendix. Standard errors are clustered at the firm level. The vertical bars represent the 95 percent confidence intervals for each estimation. Standard errors are clustered at the firm level.

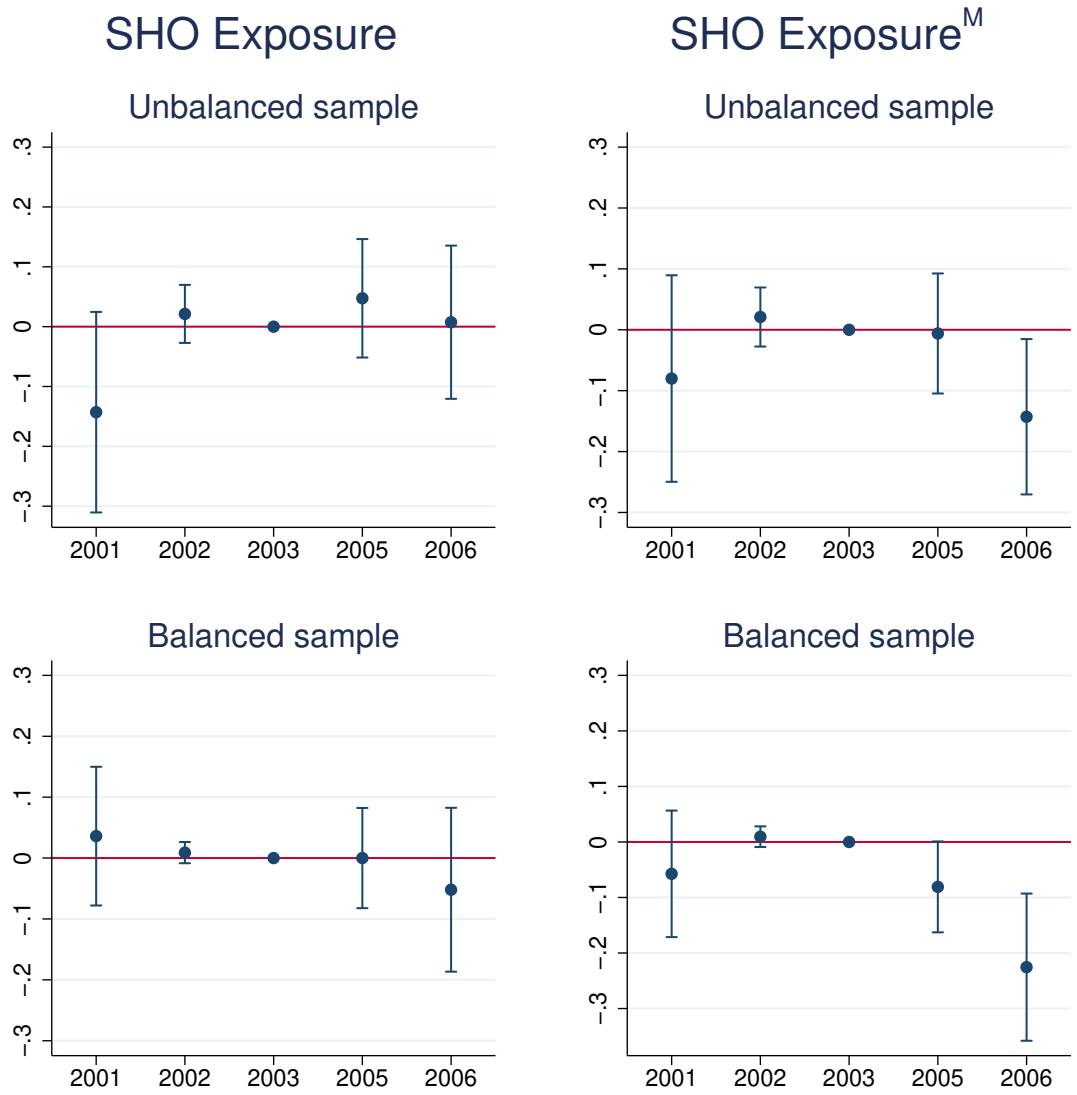

Figure A.2: **DiD coefficients of the effect of RegSHO exposure on Non-Pilot firms' *E-Index*: Dropping firm fixed effects and controls.**

In the left (right) panels, the regressors are four different dummy variables equalling one for each of the years indicated in the horizontal axis and zero for the rest of the years, as well as the interaction term of these dummy variables with dummy variables that take the value of one if SHO Exposure (SHO Exposure^M) is above the median in the sample. The top (bottom) panels display the results for the unbalanced (balanced) sample. The sample includes Non-Pilot firms in the index S&P 1500 for the years 2001-2006. 2003 is the reference year in the regressions. Variable definitions are provided in the Appendix. Standard errors are clustered at the firm level. The vertical bars represent the 95 percent confidence intervals for each estimation. Standard errors are clustered at the firm level.

Table A.1: **Effect on Non-Pilot firms' *E-Index* through RegSHO Exposure: Controlling for monitors' ownership**

	Dependent Variable: E-Index$_t$							
	All investors			Motivated monitors			Monit. & Non-monit.	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post × SHO Exposure	-0.010	-0.058	-0.133					
	(-0.028)	(-0.168)	(-0.384)					
Post × SHO Exposure^M				-1.505***	-1.481***	-1.557***	-1.208**	-1.322***
				(-3.516)	(-3.344)	(-3.538)	(-2.494)	(-2.733)
Post × SHO Exposure^{NM}							0.501	0.423
							(1.347)	(1.137)
Inst. ownership$_{t-1}$		0.265	0.398**		0.159	0.280	0.128	0.254
		(1.643)	(2.322)		(0.945)	(1.586)	(0.767)	(1.442)
Top-5 Inst. own.$_{t-1}$		-0.039	-0.207		-0.043	-0.201	-0.010	-0.173
		(-0.152)	(-0.788)		(-0.166)	(-0.762)	(-0.039)	(-0.662)
Top 10% monitors ownership$_{t-1}$		-0.179	-0.160		-0.026	-0.001	-0.006	0.015
		(-0.940)	(-0.844)		(-0.135)	(-0.007)	(-0.032)	(0.080)
Share of 10% monitors$_{t-1}$		0.897*	1.322**		0.745	1.199**	0.719	1.171**
		(1.937)	(2.487)		(1.645)	(2.296)	(1.580)	(2.228)
Ln(Market cap)$_{t-1}$			-0.022			-0.017		-0.018
			(-0.639)			(-0.479)		(-0.520)
Tobin's Q$_{t-1}$			-0.019			-0.026*		-0.025
			(-1.211)			(-1.686)		(-1.608)
Yearly return$_{t-1}$			0.032			0.027		0.029
			(1.358)			(1.170)		(1.228)
Bid-Ask (t-1)			0.050***			0.051***		0.050***
			(3.004)			(3.033)		(2.973)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj-R2	0.909	0.909	0.910	0.910	0.910	0.910	0.910	0.910
Obs	3,095	3,095	3,095	3,095	3,095	3,095	3,095	3,095

*This table reports the estimates of the effect of the exposure of firms' institutional investors to pilot firms at the end of the fiscal year 2003 on the E-index. This table is similar to Table 2, but including controls for the percentage ownership held by motivated monitors (i.e.,those institutional investors for which the firm is in the to 10 percent in terms of portfolio weight). In columns 4 to 8, we condition the measurement of SHO Exposure on investors being motivated or non-motivated monitors for the firm. The variable Post is a dummy variable that equals one in the period in which the Regulation SHO was in force (years 2005 and 2006), and zero otherwise. The sample includes Non-Pilot firms in the S&P 1500 Index for the years 2001-2006. Information in 2004 is removed from the sample as this is the year when Regulation SHO was first announced. Firm and Year fixed effects are included in the regressions as indicated. Variable definitions are provided in the Appendix. Standard errors are clustered at the firm level. T-statistics are shown in parenthesis. The significance levels are represented as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

Table A.2: **Effect on Non-Pilot firms' *E-Index* through RegSHO Exposure: Balanced panel**

	Dependent Variable: E-Index$_t$							
	All investors			Motivated monitors			Monit. & Non-monit.	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post × SHO Exposure	-0.068	-0.188	-0.248					
	(-0.134)	(-0.378)	(-0.498)					
Post × SHO Exposure^M				-2.333***	-2.158***	-2.191***	-1.764***	-1.829***
				(-4.260)	(-3.878)	(-3.964)	(-2.803)	(-2.923)
Post × SHO Exposure^{NM}							0.708	0.647
							(1.339)	(1.217)
Inst. ownership$_{t-1}$		0.579***	0.551**		0.415*	0.375	0.368*	0.327
		(2.800)	(2.331)		(1.922)	(1.522)	(1.745)	(1.340)
Top-5 Inst. own.$_{t-1}$		-0.560*	-0.479		-0.451	-0.357	-0.379	-0.286
		(-1.727)	(-1.428)		(-1.397)	(-1.066)	(-1.194)	(-0.861)
Ln(Market cap)$_{t-1}$			0.060			0.070		0.070
			(1.396)			(1.641)		(1.634)
Tobin's Q$_{t-1}$			-0.011			-0.023		-0.023
			(-0.392)			(-0.830)		(-0.839)
Yearly return$_{t-1}$			-0.003			-0.007		-0.005
			(-0.097)			(-0.207)		(-0.135)
Bid-Ask$_{t-1}$			0.042*			0.041*		0.037
			(1.815)			(1.745)		(1.625)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj-R2	0.902	0.903	0.903	0.905	0.905	0.905	0.905	0.906
Obs	1,730	1,730	1,730	1,730	1,730	1,730	1,730	1,730

*This table reports the estimates of the effect of the exposure of firms' institutional investors to pilot firms at the end of the fiscal year 2003 on the E-index. This table is similar to Table 2 but using the balanced panel of firms. The variable Post is a dummy variable that equals one in the period in which the Regulation SHO was in force (years 2005 and 2006), and zero otherwise. The sample includes Non-Pilot firms in the S&P 1500 Index for the years 2001-2006. Information in 2004 is removed from the sample as this is the year when Regulation SHO was first announced. Firm and Year fixed effects are included in the regressions as indicated. Variable definitions are provided in the Appendix. Standard errors are clustered at the firm level. T-statistics are shown in parenthesis. The significance levels are represented as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

Table A.3: **Effect on Non-Pilot firms' *E-Index* through RegSHO Exposure: Including 2004 in pre-RegSHO**

	Dependent Variable: E-Index$_t$							
	All investors			Motivated monitors			Monit. & Non-monit.	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post × SHO Exposure	-0.010	-0.024	-0.064					
	(-0.035)	(-0.083)	(-0.228)					
Post × SHO Exposure^M				-1.280***	-1.203***	-1.248***	-0.966**	-1.031***
				(-3.597)	(-3.320)	(-3.469)	(-2.428)	(-2.619)
Post × SHO Exposure^{NM}							0.418	0.378
							(1.399)	(1.272)
Inst. ownership$_{t-1}$		0.303**	0.391**		0.241	0.315*	0.229	0.304*
		(2.078)	(2.487)		(1.609)	(1.960)	(1.543)	(1.903)
Top-5 Inst. own.$_{t-1}$		-0.266	-0.362		-0.239	-0.318	-0.215	-0.296
		(-1.195)	(-1.603)		(-1.076)	(-1.415)	(-0.978)	(-1.326)
Ln(Market cap)$_{t-1}$			0.015			0.024		0.023
			(0.536)			(0.863)		(0.836)
Tobin's Q$_{t-1}$			-0.013			-0.018		-0.017
			(-1.019)			(-1.349)		(-1.308)
Yearly return$_{t-1}$			0.036*			0.033*		0.034*
			(1.855)			(1.723)		(1.760)
Bid-Ask$_{t-1}$			0.047***			0.049***		0.048***
			(2.925)			(3.021)		(2.974)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj-R2	0.918	0.918	0.918	0.918	0.918	0.919	0.918	0.919
Obs	3,803	3,803	3,803	3,803	3,803	3,803	3,803	3,803

This table reports the coefficient estimates of the effect of the exposure of firms' institutional investors to Pilot firms at the end of the fiscal year 2003 on the E-index. In columns 4 to 8, we condition the measurement of SHO Exposure on investors being motivated or non-motivated monitors in each firm. The variable Post is a dummy variable that equals one in the period in which the Regulation SHO was in force (years 2005 and 2006), and zero otherwise. The sample includes Non-Pilot firms in the S&P 1500 Index for the years 2001-2006. Firm and Year fixed effects are included in the regressions as indicated. Variable definitions are provided in the Appendix. Standard errors are clustered at the firm level. T-statistics are shown in parenthesis. The significance levels are represented as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.4: **Effect on Non-Pilot firms' *E-Index* through RegSHO Exposure: NYSE vs. NASDAQ**

	Dependent Variable: E-Index$_t$					
	NYSE			NASDAQ		
	(1)	(2)	(3)	(4)	(5)	(6)
Post × SHO Exposure^M	-1.974***	-1.876***	-1.928***	-3.884*	-3.639	-4.056*
	(-3.846)	(-3.601)	(-3.719)	(-1.752)	(-1.644)	(-1.829)
Inst. ownership$_{t-1}$		0.230	0.310*		0.299*	0.387**
		(1.416)	(1.731)		(1.858)	(2.203)
Top-5 Inst. own.$_{t-1}$		-0.160	-0.250		-0.195	-0.296
		(-0.636)	(-0.978)		(-0.767)	(-1.149)
Ln(Market cap)$_{t-1}$			0.026			0.021
			(0.848)			(0.672)
Tobin's Q$_{t-1}$			-0.021			-0.017
			(-1.368)			(-1.117)
Yearly return$_{t-1}$			0.018			0.022
			(0.780)			(0.953)
Bid-Ask$_{t-1}$			0.052***			0.053***
			(3.127)			(3.155)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Adj-R2	0.910	0.910	0.910	0.909	0.909	0.910
Obs	3,095	3,095	3,095	3,095	3,095	3,095

*This table reports the coefficient estimates of the effect of the exposure of firms' motivated institutional investors to pilot firms at the end of the fiscal year 2003 (i.e., SHO Exposure^M) on the E-index. This table is similar to Table 2 but we condition the measurement of SHO Exposure^M on pilot stocks being listed in NYSE (Columns 1 to 3) or in NASDAQ (Columns 4 to 6).The variable Post is a dummy variable that equals one in the period in which the Regulation SHO was in force (years 2005 and 2006), and zero otherwise. The sample includes Non-Pilot firms in the S&P 1500 Index for the years 2001-2006. Information in 2004 is removed from the sample as this is the year when Regulation SHO was first announced. Firm and Year fixed effects are included in the regressions as indicated. Variable definitions are provided in the Appendix. Standard errors are clustered at the firm level. T-statistics are shown in parenthesis. The significance levels are represented as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

Table A.5: **RegSHO effect on Pilot firms' *E-Index*.**

	Dependent Variable E-Index$_t$					
	Unbalanced panel			Balanced panel		
	(1)	(2)	(3)	(4)	(5)	(6)
Post × Pilot	0.015	-0.105*	0.016	0.081*	-0.011	-0.016
	(0.308)	(-1.728)	(0.351)	(1.834)	(-0.194)	(-0.276)
Post × Monitors > Median × Pilot		0.187**	0.062		0.181**	0.180**
		(2.043)	(0.910)		(2.043)	(2.070)
Post × Monitors > Median		-0.109**	-0.105***		-0.164***	-0.147***
		(-2.123)	(-2.687)		(-3.309)	(-2.995)
Pilot	0.007	0.033		-0.077	-0.001	
	(0.079)	(0.283)		(-0.710)	(-0.005)	
Monitors > Median		0.091			0.029	
		(0.976)			(0.226)	
Monitors > Median × Pilot		-0.033			-0.157	
		(-0.197)			(-0.721)	
Inst. ownership$_{t-1}$			0.378***			0.438**
			(2.679)			(2.301)
Top-5 Inst. own.$_{t-1}$			-0.225			-0.475*
			(-1.119)			(-1.797)
Ln(Market cap)$_{t-1}$			-0.012			0.026
			(-0.441)			(0.694)
Tobin's Q$_{t-1}$			-0.014			-0.008
			(-0.877)			(-0.307)
Yearly return$_{t-1}$			0.050***			0.027
			(2.625)			(1.010)
Bid-Ask$_{t-1}$			0.014			0.037**
			(1.242)			(2.527)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	No	No	Yes	No	No	Yes
Adj-R2	0.001	0.002	0.911	0.005	0.005	0.904
Obs	5,062	4,842	4,842	2,905	2,905	2,905

*This table reports the coefficient estimates of regressions using different fixed effects. The dependent variable is the E-Index. The variable Post is a dummy variable that equals one in the period in which the Regulation SHO was in force (years 2005 and 2006), and zero otherwise. The variable Pilot is a dummy variable that equals one if a stock is in the Pilot list, and zero otherwise. The variable Monitors>Median is a dummy variable that equals one if the percentage held by institutional investors that are motivated monitors is above the median of the sample, and zero otherwise. The sample includes firms in the S&P 1500 Index for the years 2001-2006. Information in 2004 is removed from the sample as this is the year when Regulation SHO was first announced. Firm and Year fixed effects are included in the regressions as indicated. Variable definitions are provided in the Appendix. Standard errors are clustered at the firm level. T-statistics are shown in parenthesis. The significance levels are represented as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*