

Monitoring via Securities Lending

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Abstract

This paper examines the impact of securities lending on the monitoring behavior of mutual funds. While securities lending generates revenue through lending fees and collateral reinvestment, it also provides funds with private information via interactions with short sellers. I hypothesize that this informational advantage strengthens funds' capacity to monitor their portfolio holdings through their voting. Using detailed fund-level voting data, I investigate mutual funds' voting behavior. I document that securities lending is associated with higher vote alpha around the meeting date, consistent with informed shareholders influencing voting outcomes. I also study mutual funds' voting behavior on contentious agenda items, where management and the proxy advisor disagree, and on contested proposals, where outcomes are uncertain and votes may be pivotal. I find that mutual funds are less likely to support management in companies whose shares they have lent near the meeting date. The findings further reveal that mutual funds exhibit higher average voting participation in these companies. The effects are more pronounced when funds work with affiliated lending agents, suggesting an information channel. The results imply that securities lending enhances mutual funds' role in corporate governance, especially when direct portfolio adjustments are constrained.

Keywords: securities lending, voting, monitoring, short selling, information acquisition, mutual funds

JEL Classification: G23,G24

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1 Introduction

In recent years, securities lending by large institutions has increased substantially. Major pension funds, mutual funds, and other institutional investors commonly operate securities lending programs, viewing them as a significant source of income ([Aggarwal et al., 2015](#)). The primary motivation for securities lending is its substantial revenue potential ([Blocher and Whaley, 2016](#)), which is complemented by low-risk income derived from interest on collateral provided by borrowers ([Dong et al., 2024](#)). Beyond financial gains, securities lending plays a crucial role in information transmission. [Cohen et al. \(2007\)](#) highlight the short selling market as an important mechanism for the revelation of private information. And [Chague et al. \(2023\)](#) document information leakage from short sellers, noting that brokers often learn about informed trades through securities lending and relay this information to clients. Similarly, [Evans et al. \(2017\)](#) find that short sellers, who are typically the borrowers in these transactions, are better informed than fund managers. Through lending contracts with short sellers, lenders can access private information not reflected in prices or even in stock-level short interest. Specifically, securities lending provides not only fee income but also valuable insights into short selling activity, including demand, pricing, and supply conditions, information that is often more detailed and timely than publicly available metrics such as short interest. Securities lending also brings the attention of the security lenders to those portfolio firms that need more monitoring among their numerous portfolio firms.

Mutual funds exploit the information acquired through securities lending, in adjusting their positions in stocks ([Honkanen, 2025](#)). However, many funds cannot act on the signal due to investment restrictions by their fund family and the need to diversify ([Evans et al., 2017](#)). Some funds are also less flexible by nature to readjust their portfolio frequently. Namely, index funds with an inherent "exit problem" or ETFs. Nevertheless, the funds with restrictions to act on the short sellers' signal could use the information in active monitoring to enhance their performance through their impact on their portfolio

companies. Specifically, the monitoring would be less costly for the mutual funds engaged in securities lending. Monitoring, with no extra cost, could be an effective way to offset the potential loss due to the short sales of the securities, the mutual funds have to keep in their portfolio, alongside the income they earn by lending such securities.

The funds either sell their positions after receiving signals from short sellers or retain their holdings. If the funds opt to keep their securities, due to the fund family strategy or the nature of the fund, they may contribute positively to corporate governance by monitoring the firm using information already obtained, without incurring additional monitoring costs. In this scenario, the anticipated decline in security prices is expected to be less severe.

Considering the information channel, this study raises the question: does securities lending impact the monitoring behavior of mutual funds? A question that has yet to be explored in the existing literature.

Voting serves as the main mechanism by which shareholders exercise their influence. Prior studies show that shareholder votes function as an external control and monitoring mechanism that holds management accountable and shapes corporate policies (Balachandran et al., 2012; Dao et al., 2012). Similarly, Aggarwal et al. (2015) emphasize that the proxy voting process is a key governance tool enabling institutional investors to influence firm decisions. To vote effectively, shareholders must collect and process information that helps them choose the option that maximizes the value of their holdings (Gao and Huang, 2025). As a result, information production by shareholders is essential for voting outcomes to translate into better collective decisions (Bar-Isaac and Shapiro, 2020; Gao and Huang, 2025; Levit et al., 2024; Malenko and Malenko, 2019). However, the cost of researching every agenda item across all portfolio companies is substantial for individual funds. For many funds, these costs exceed the expected benefits, making meaningful independent research unlikely, consequently, the precision of their voting signals tends to be low (Iliev and Lowry, 2015). While, information acquired through

securities lending can help improve the accuracy of mutual funds' voting decisions. To capture informed voting, I examine the vote alpha of mutual funds, a return-based measure proposed by [Gao and Huang \(2025\)](#). They define informed voting as voting in the direction that the market perceives as value increasing, thus supporting the proposals viewed as value-enhancing and opposing those viewed as value-destroying. I show that the securities lending enhance the the vote alpha of the mutual funds votes. While the vote alpha proposed by [Gao and Huang \(2025\)](#) is at fund level I refine it at fund-stock level for this study.

[McCahery et al. \(2016\)](#) document in their survey that voting against management is a primary channel through which mutual funds use their voice to change corporate policies. To evaluate the monitoring behavior of the mutual funds, I adopt the approach of [Heath et al. \(2022\)](#) and [Michaely et al. \(2024\)](#), examining the funds' pro-management voting behavior on contentious agenda items. Specifically, I focus on instances where Institutional Shareholder Services (ISS)¹ recommendations diverge from firm management recommendation, and when the funds' votes are anticipated to be pivotal. This framework allows me to capture the extent to which funds actively engage in governance oversight. I also focus on special meetings where monitoring by mutual funds, particularly those with significant ownership stakes, becomes more pronounced than annual meetings. The special meetings are often called to address urgent or unexpected issues, such as mergers or legal matters, that can have immediate and significant impacts on an organization.

Within securities lending arrangements, it is noteworthy that lenders temporarily transfer voting rights to borrowers. One might expect this to cause funds to refrain from voting; however, I show that this is generally not the case. On the contrary, securities lending can in fact enhance funds' active voting. This occurs because securities lending agreements, as specified by the SEC, may be terminated at any time by either party

¹Institutional Shareholder Services Inc. (ISS) is one of the largest American proxy advisory firms.

(Hu et al., 2020), rendering the shares effectively recallable. The mutual funds typically lend only a small fraction of their holdings.² Consequently, even if funds do not recall shares by the record date, they retain the ability to vote the shares that remain in their possession. Moreover, funds must report instances of non-voting, designated as “Do Not Vote” in N-PX filings, and fiduciary and reputational considerations make it unlikely that they would forgo voting simply because a portion of their shares is on loan. In addition, information flows associated with lending can improve the informed voting of the funds. This, in turn, reduces the probability of abstention on proposals that might otherwise be skipped due to uncertainty about their voting decision. Specifically, when the funds’ votes could be pivotal, regardless of whether the loaned shares are ultimately recalled. The findings are consistent with the idea that securities lending facilitate the monitoring by mutual funds.

The decision by institutional investors to recall loaned shares is likely influenced by several factors. These include the size of their ownership stake, their investment philosophy and time horizon, and their fiduciary responsibilities. It is also affected by their willingness or ability to engage with company management, as well as their capacity or incentive to acquire private information necessary for effective corporate oversight (Aggarwal et al., 2015; Edmans, 2009; Kahn and Winton, 1998; Maug, 1998). In order to take the recalling behavior to the account, I consider a regulatory change in the vote reporting of the mutual funds. The mutual funds report their voting in N-PX files, mandated by the SEC. However, the number of votes cast in each meeting was not reported before July 2023. In 2022, for the first time, SEC announced that *“Funds and managers will be required to disclose the number of shares that were voted or instructed to be voted, as well as the number of shares loaned and not recalled and thus not voted”* to be effective from July 2023. This could reduce the incentives for mutual funds to refrain from voting the shares that are on loan. Since partial vote abstaining becomes visible and

²Mutual funds are generally permitted to lend up to one-third of their portfolio’s total value. Although there are no explicit limits on the proportion of any individual stock that can be lent, funds usually lend only a small portion of their shares.

concerns about their reputation and fiduciary responsibilities become more significant. Therefore, following the SEC's new requirement, I expect higher recall by mutual funds on record dates. Thus, as the funds have gained information on loaned and subsequently recalled shares, I expect the funds to consider the information in their voting decision, specially given their more powerful voice in this case.

I utilize securities lending data and holding information at the fund-stock level reported in N-PORT files, from 2019Q3 to 2024Q2, sourced from the SEC's Edgar database. I also collect information on the funds' lending agent and loan details at the fund level from N-CEN reports from the SEC's Edgar database. I obtain the voting records of the investment funds, voting outcome and meeting details from ISS voting analysis. I then match each fund to the CRSP mutual fund database to collect data on fund characteristics. Finally I match the stocks to Compustat and CRSP to obtain information on firms' characteristics.

I investigate the monitoring of the funds with different levels of securities lending in a high-dimensional fixed effect model, which allows me to compare the voting behavior of the funds for the same agenda item in a specific meeting of a certain company. And to to compare the vote alpha of the funds for a specific meeting of a certain company. To investigate the impact further, I implement a difference-in-difference model using the effective date, first of July 2023, when the funds were required to be transparent about the number of their shares on loan and the shares they cast their vote with in the meetings.

The findings show the vote alpha of the lending funds is higher around the meeting of the companies whose shares they have lent out. The higher vote alpha implies that the mutual fund's vote shifts more toward the direction that the market perceives as value increasing. These results suggest that securities lending securities lending can help improve the accuracy of mutual funds' voting decision.

Investigating voting behavior suggests that the mutual funds side with the firm management less on contentious agenda items and in contested proposals, when they lend

shares of that company around the meeting date. The focus on contested proposals is due to two reasons. First, since voting outcomes are often anticipated before the meeting day (Cuñat et al., 2012), partly because key institutional investors may disclose their intended votes and the rationale behind them (Brochet et al., 2021), funds can expect their own votes to carry greater importance, when the proposal is likely to be contested. Second, although contested proposals represent a relatively small share of mutual funds' total vote records, they are likely to generate a disproportionately large amount of information production (Gao and Huang, 2025). The findings show that, overall, lending funds are less likely to vote with management of the companies whose shares they lent out, on contentious and contested proposals, than non-lending funds. These results hold true when I consider the magnitude of securities lending. Specifically, the more shares a fund lends around the meeting date, the less it votes with management of that company. This pattern holds when measuring securities lending using either the percentage of the fund's position on loan or the fund's share of total short value lent. The results are stronger for the special meetings, in which the more urgent issues are voted on, thus the voting of the shareholders gets more importance. Overall, the results are consistent with the idea that securities lending improves monitoring by mutual funds.

I posit that the main channel of the impact is through the information acquisition via the lending activity. To test the channel of impact I categorize the funds into funds with an affiliated and non-affiliated agent. Affiliated agents are generally more likely to share information with funds than non-affiliated agents due to incentive alignment and the relationship depth. The findings show that the results are driven from the funds with an affiliated agent, as the funds have more timely and direct access to the information, and the results are not hold for the fund with an non-affiliated agent. This finding highlights that the information acquisition plays an important role in the facilitation of funds monitoring through the securities lending.

I also find that, following the SEC's requirement to increase transparency around securities lending, the vote alpha of the lending funds tends to improve, and these

funds are less likely to side with management on contentious agendas and in contested proposals, compared to funds that did not have shares on loan. Moreover, they show higher participation in voting. I suggest that this is due to the increased recalling behavior of funds, allowing them to incorporate the acquired information into their voting decision with the maximum of their voting rights. However, as a consequence of this heightened recalling rate I expect lending fees to rise around record dates. This increase in fees may make keeping the security on loan on record dates, more attractive than recalling to exercise the voting rights and leads to a trade-off for the funds with a higher supply of securities lending.

This paper contributes to both securities lending and investment funds corporate governance literature, by suggesting the monitoring implications of securities lending by mutual funds.

In the subsequent sections, I first provide an overview of the securities lending market structure. Next, I review the relevant literature. I then describe the data and explain the methodology. This is followed by an analysis of the findings and a discussion of the next steps of the study. Finally, I present the conclusions.

2 Securities Lending Market Structure

To understand the corporate governance implications of securities lending broadly, in this section, I shed light on the structure of the securities lending market, outlining its key participants, operational mechanics, and economic incentives.

Securities lending is a transaction in which the beneficial owner of securities, typically a large institutional investor such as a pension fund, insurance company, or mutual fund, temporarily lends securities to a borrower, often a hedge fund ³, in exchange for collateral. This collateral may consist of cash or other high-quality securities. The lender

³Hedge funds are among the most important players in the short selling market ([Jiao et al., 2016](#)).

earns a return by reinvesting the cash collateral in low-risk, short-term instruments, generating a spread over the rebate paid to the borrower. In the U.S., standard collateral requirements are 102% of the value for domestic securities and 105% for international securities ([Aggarwal et al., 2015](#)).

The market involves three key participants: the lender, the borrower, and a lending agent, usually a custodian bank or third-party intermediary that facilitates and administers the transaction ([Baklanova et al., 2016](#)).

Funds commonly lend multiple securities throughout the year, with volumes influenced by borrower demand, fund-specific lending policies, and applicable regulations. These loans are generally open-ended, meaning they have no fixed maturity and can be terminated at any time. Most are settled within a few days or weeks. Lenders retain the right to recall loaned shares at any moment, providing flexibility in portfolio management ([Dong and Zhu, 2022](#)).

Income from securities lending is shaped by various factors, including the supply and demand for specific securities, the negotiated rebate or lending fee, agent compensation, and returns on collateral reinvestments. According to SEC Regulation S-X, funds may report this income within the broader “other income” category, alongside other miscellaneous earnings ([Adams et al., 2014](#)).

[Aggarwal et al. \(2015\)](#), using Markit data for the 2007–2009 period, report that the average loan duration was 16 days, while the median was just one day. This reflects the dominance of short-term, open-ended loans that are typically rolled over daily. More recently, [Honkanen \(2025\)](#) finds that passive funds often charge higher lending fees, suggesting a premium paid by short sellers to mitigate recall risk and ensure loan stability.

In summary, a clear understanding of the securities lending market structure is crucial in order to evaluate its role in monitoring facilitation, that I review and examine in the next sections.

3 Literature review

Prior research has attempted to explore how institutional investors influence corporate decisions by analyzing governance factors they are presumed to value. Namely, [Gillan and Starks \(2000\)](#) examined the impact of shareholder activism in the U.S., and merger activity ([Chen et al., 2007](#); [Gaspar et al., 2006](#)). The study by [Aggarwal et al. \(2011\)](#) found that increases in institutional ownership tend to precede improvements in firm-level governance. Some studies in this strand categorize the funds and compare their influential role, mostly to investigate the active versus passive role of investment funds. Many studies have focused on the monitoring behavior of index funds. One view suggests that index funds play an active role in governance ([Bhide, 1993](#); [Fisch et al., 2019](#)). Proponents of this view argue that since index funds cannot exit a position, they have strong incentives to enforce good governance through their voice. Conversely, another view posits the passive role of index funds ([Bebchuk et al., 2017](#); [Bebchuk and Hirst, 2019a,b](#); [Lund, 2017](#)). Advocates of this perspective argue that index funds lack sufficient incentives to actively monitor their portfolio firms due to lower fees, their goal of tracking the index, and the large size of their portfolios. Some studies also compare two types of investment funds, suggesting that active funds monitor their portfolio companies more than index funds, and index funds have weaker incentives to monitor compared to traditional active funds ([Heath et al., 2022](#); [Schmidt and Fahlenbrach, 2017](#)). This study relates to this line of research since it examines the monitoring of mutual funds as an important corporate governance implication of funds' securities lending activity. I include all active and index funds since both types lend their holdings. I propose that the information acquisition can address the constraints identified in previous studies as key reasons for low monitoring, particularly among index funds. I posit that the securities lending can improve the active role of mutual funds regardless of the type of the fund.

Several studies on shareholder monitoring focus specifically on the voting practices of mutual funds. [Heath et al. \(2022\)](#) investigate the voting of the funds with the

management on contentious agenda items (i.e., when ISS and firm management disagree), to compare the active monitoring behavior of index funds versus actively managed funds. [Michaely et al. \(2024\)](#) examine the voting behavior of Environmental and Social (ES) funds within non-ES fund families on ES proposals, where their vote is more likely to be pivotal, to investigate whether ES funds' voting reflects their fiduciary duties and investors' preferences, or aligns more closely with the preferences of their fund families. [Davis and Kim \(2007\)](#) and [Cvijanović et al. \(2016\)](#) show that mutual fund families are more likely to support management when they also manage the company's pension plan. [Iliev and Lowry \(2015\)](#) explore the extent to which mutual fund families rely on proxy advisor recommendations, finding that such recommendations significantly shape shareholder voting outcomes. [Gao and Huang \(2025\)](#) in a recent study introduce a new stock-return-based indicator designed to identify informed voting behavior. This metric, referred to as vote alpha, captures the extent to which a shareholder votes in the direction that the market perceives as value increasing. They show that funds with higher vote alpha are better predictors of subsequent long-run abnormal returns for proposals that narrowly pass or fail (i.e., within 20% of the threshold). These findings indicate that such funds possess information that is reflected in their voting choices. Following these papers, I also investigate the monitoring behavior of the funds by examining their voting records on contentious agenda items, and in contested proposal, where the funds predict their vote will be pivotal. Moreover, following [Gao and Huang \(2025\)](#) I assess whether the securities lending improve the funds' informed voting.

Another line of research related to this study investigates the consequences of lending activity. [Daniel et al. \(2025\)](#) document a sharp rise in U.S. equity borrow costs over the past two decades and show that this has led to increased mispricing, especially among high borrow-cost stocks. They attribute the decline in market efficiency to weak competition in the lending chain and institutional investors' reluctance to hold costly-to-borrow stocks, and they estimate the resulting social welfare losses. [Dong and Zhu \(2022\)](#) show that short sellers depend on a small, stock-specific group of repeat lenders, indicating inelastic

lending supply. This concentration limits arbitrage, drives up fees when lenders exit, and contributes to market mispricing. [Dong et al. \(2024\)](#) find that while securities lending by index funds weakens the corporate information environment, index ownership improves transparency and reduces managerial bad news hoarding. These positive effects outweigh the negative impact of lending and are especially evident around Russell index reconstitutions. Overall, index funds enhance information disclosure despite their passive nature and lending activity. [Dunham and Simpson \(2015\)](#) argue securities lending has become a major income source for U.S. equity ETFs. Their study shows that this income helps ETFs reduce tracking errors, affecting how performance is evaluated by investors.

The other strand of studies focus on the corporate governance implications of securities lending by institutional investors. [Evans et al. \(2018\)](#) by focusing on the voting, highlight how ETF short selling leads to the creation of "phantom" shares, units that carry economic rights but no voting power. Unlike regular ETF shares tied to underlying securities, phantom shares are typically used in hedging strategies and result in fewer proxy votes cast and more broker non-votes for the affected stocks. Several studies in this strand have investigated the recalling behavior of investment funds around the record date. These studies suggest that firms with higher ownership of active funds have been recalled more around the record dates, and the securities lending supply of firms with higher index funds is more pronounced ([Aggarwal et al., 2015](#); [Dong et al., 2024](#)). Within this line of research, there are studies suggesting a trade-off between the potential improvement in governance by recalling shares to vote and receiving certain fees by not recalling and abstaining from voting ([Brav and Mathews, 2011](#); [Hu et al., 2020](#); [Hu and Black, 2006](#)).

In a study closely related to this research, [Greppmair et al. \(2024\)](#), using data from German mutual funds, find that active managers treat lending activity as an informal signal of short selling interest and adjust their portfolios accordingly to preempt future losses. This behavior, reveals a strategic use of lending for informational rather than purely financial purposes. The findings point to a previously underexplored role of the

lending market in aggregating and conveying information. [Honkanen \(2025\)](#) by focusing on U.S. mutual funds shows that active funds use information from securities lending to adjust portfolios, reducing exposure to borrowed stocks that are likely to decline, while passive funds do not. However, [Evans et al. \(2017\)](#) find that while lending fees have become a growing source of income for mutual funds, funds that engage in securities lending tend to underperform comparable non-lending funds. This underperformance is most pronounced among funds constrained by family-level investment restrictions, which prevent them from acting on short selling signals. Their findings suggest that organizational structure within fund families, rather than manager discretion, largely drives the decision to lend rather than sell securities facing short selling pressure. These studies suggest that, equity lenders gain access to timely and detailed information through their interactions with short sellers, insights that go beyond what's reflected in prices or aggregate short interest. By observing the structure of shorting demand, lending fees, and supply-demand imbalances, lenders obtain a clearer view of market sentiment. This informational advantage offers a strategic motive for lending, complementing the revenue benefits, particularly for funds constrained by portfolio restrictions ([Evans et al., 2017](#)).

Building on the existing literature, this study investigates whether mutual funds incorporate the acquired insight into their monitoring actions in order To mitigate the predicted decline in return, particularly in light of the restrictions many mutual funds face in closing their positions in response to short-selling signals.

As of now, there are no studies investigating the changes in the monitoring incentives of investment funds as an important governance implications of securities lending, which I aim to address in this study.

4 Data

U.S. registered investment funds, excluding money market funds and SBICs, are mandated to submit detailed monthly reports on their portfolio holdings and liquidity

data with the SEC in N-PORT filings. Additionally, they must file quarterly reports detailing their securities lending activities, in accordance with Rule 30b1-9 of the Investment Company Act of 1940 in the same filing. In addition to N-PORT filings, these investment funds are also required to submit comprehensive annual reports using N-CEN files. These reports provide the SEC with detailed information about the fund’s organizational structure, investment strategies, and operational data. N-CEN filings offer a broad overview at the fund level, while N-PORT files include detailed lending information at the fund-stock level. Together, these filings enhance transparency and facilitate regulatory oversight by providing both aggregate and granular views of the fund’s activities.

I gather the N-PORT and N-CEN fund filings from the SEC’s Edgar database. The sample period for this study spans from 2019Q3, when funds started to report their holdings and lending activity through N-PORT filing, to 2024Q2, the latest available voting record information.

I subsequently link each fund to the CRSP mutual fund database to obtain information on fund performance and characteristics. For funds with multiple share classes, I convert share-class-level data to the fund level by consolidating the information using class weights, applying aggregation or averaging as appropriate, and eliminating duplicates to avoid redundancy.

I analyze mutual funds’ proxy voting behavior using their voting records obtained from the Institutional Shareholder Services (ISS) Voting Analytics database. Under the Securities and Exchange Commission’s Rule 30b1-4, all U.S.-registered mutual funds have been required, since 2003, to disclose their proxy voting records for shareholder meetings of their portfolio companies through Form N-PX filings. ISS compiles its dataset from these N-PX disclosures, providing comprehensive information on votes cast by individual funds across most publicly traded U.S. firms. In addition to vote-level data, I also collect meeting-level information from ISS Voting Analytics. For each agenda item,

the dataset includes the company receiving the proposal, the date of the shareholder meeting, the record date, the subject of the vote, the proposal’s sponsor, management’s recommendation, and the fund’s final vote.

Following [Heath et al. \(2022\)](#) I use the voting recommendations of Institutional Shareholder Services (ISS), the largest proxy advisory firm, to identify agenda items where disagreements arise between fund managers and firm management. Proxy advisors like ISS play a critical economic role by analyzing vast amounts of information and providing informed recommendations to institutional investors ([Malenko and Malenko, 2019](#)). I treat ISS recommendations as a proxy for identifying contentious proposals, specifically, those items for which ISS and company management issue opposing voting recommendations. I have access to actual ISS recommendation records until the end of 2020, which enables me to test the voting behavior related to contentious agenda items as a measure for monitoring behavior over 2019Q3-2020Q4. To extend the analysis across the full sample period from 2019 to 2024, I also use imputed ISS voting recommendations provided by [Zytnick \(2024\)](#). This method applies Bayes’ theorem to infer ISS recommendations based on observed fund votes and iteratively refines both the imputed recommendations and estimated follow rates over multiple rounds. To enhance accuracy, particularly for contested proposals and to mitigate systematic bias, the approach estimates follow rates that vary by contextual factors, such as whether management or another proxy advisor agrees with the recommendation. Validation against actual ISS recommendations demonstrates a high degree of accuracy, with a match rate of 96.48%.

For each agenda item, I analyze voting at the fund level rather than the fund-family level, since within-family differences in votes on contentious and contested proposals are large and comparable to across-family differences ([Gao and Huang, 2025](#)).

For capturing the vote alpha, Cumulative Abnormal Return, and the firm controls, I gather the information of the firms in the portfolio of the funds from Compustat and

CRSP and match them with their related meeting information, from ISS Analytics, and N-PORT reports of their mutual fund shareholders using CUSIP identifiers. In N-PORT filings some CUSIPs are missing, which are tried to be found using related ISINs and the CUSIP ISIN maps, TICKER and the companies name.

These different data sources don't share the same fund identifiers, and they are matched through a semi-manual fuzzy matching, in such a way that funds are joint by their names using fuzzy matching, and the matches are verified manually. I obtained the information for 5,032 funds and I analyze 2,040,488 votes casted by them in the meetings of the 3,854 firms in their portfolio. The Descriptive statistics are reported in the table 1.

[TABLE 1 ABOUT HERE]

In this section, I examine the relationship between securities lending and fund's voting. Prior research shows that short selling (or borrowing) demand for a stock is a strong predictor of future underperformance (Evans et al., 2017). However, not all funds can act on such signals by selling the stock, due to either their fund family strategy or the their fund management nature. To address the research question, how does securities lending impact the monitoring by the mutual funds, I analyze the relationship using two complementary approaches: a high-dimensional fixed effects panel model and a difference-in-differences regression.

5 Methodology

To test the monitoring implications of securities lending by mutual funds, I employ a high-dimensional fixed effect model and a difference-in-differences regression model. Specifically, I test how securities lending impacts the informed voting, vote decision, and voting participation of the mutual funds. I further investigate whether the presence of lending funds will positively affect voting outcomes, thereby making the outcomes

value-enhancing.

To measure the funds' informed voting, I use Vote Alpha, the metric proposed by [Gao and Huang \(2025\)](#). I refine their metric by applying it at the fund-stock level for each meeting, in each period, as shown in Equation 1. This adjustment reflects the fact that the information funds obtain or process may vary across the companies in their portfolios. Such variation can lead to differences in the precision of their voting across firms and influence their ability to assess the value-enhancing potential of proposals for each specific company.

$$\text{VoteAlpha}_{i,j} = \text{CAR}_j \frac{\sum_{k=1}^K I_{i,j,k}}{K_j}. \quad (1)$$

where CAR_j is the cumulative market-adjusted return over a 12-day window (from day -1 to +10, with day 0 being the date of the meeting) around the meeting of firm j . Following [Gao and Huang \(2025\)](#) I compute the vote alpha over a 12-day window to account for the possibility that the market may need additional time to fully absorb the value effects of contentious proposals. $I_{i,j,k}$ is a win/lose indicator, which equals 1 if fund i wins the vote on proposal k in the meeting of firm j (i.e., the vote outcome goes in the direction of the fund's vote) and -1 if fund i loses (i.e., the vote outcome goes in the opposite direction of the fund's vote). K_j is the number of proposals (or voting agenda items) at the meeting of firm j for which fund i cast a vote. A higher vote alpha reflects a mutual fund's stronger alignment with the market's assessment of a proposal's impact on shareholder value.

5.1 High-dimensional fixed effect model

I estimate the impact of securities lending on funds' informed voting, in the following High-dimensional fixed effect model.

$$\text{VoteAlpha}_{ijt+1} = \beta_0 + \beta_1 \text{SecuritiesLending}_{ijt} + \gamma X_{it} + \sigma Z_{jt} + \alpha_i + \phi_j + \lambda_t + \epsilon_{ijt} \quad (2)$$

Where $VoteAlpha_{ijt+1}$ is the informed voting metric, by fund i in the meeting of firm j at time $t + 1$. $SecuritiesLending_{ijt}$ is measured in three different ways: (i) an indicator showing whether any portion of the position in stock j by fund i is on loan at time t (ii) the percentage of the position in stock j held by fund i that is on loan at time t (iii) the percentage of the total short value of stock j at time t that is lent by fund i , . X_{it} is a vector of fund controls, including Total Net Assets, fund's age, expense ratio, yield and management fees of fund i at time t . Z_{jt} is a vector of firm controls, such as firm size, operating performance and Tobin's Q ratio of firm j at time t . α_i is fund fixed effect, ϕ_j is firm fixed effect, and λ_t is time fixed effect.

To examine the voting behavior of mutual funds, I employ a high-dimensional fixed-effects model, similar to Regression Model 2, but including agenda-item-level effects, as follows.

$$Y_{ijkt+1} = \beta_0 + \beta_1 SecuritiesLending_{ijt} + \gamma X_{it} + \sigma Z_{jt} + \alpha_i + \phi_j + \omega_k + \lambda_t + \epsilon_{ijkt} \quad (3)$$

Where Y_{ijkt+1} is an indicator for the vote with management⁴, by fund i in agenda item k in the meeting of firm j at time $t + 1$ when agenda item is contentious or proposals are contested. In another test, Y_{ijkt+1} is an indicator for the non-participation of fund i in contested agenda item k at the meeting of firm j at time $t + 1$.⁵ And ω_k is the agenda item fixed effect.

The fixed effects capture characteristics of firms and funds that change over time, enabling me to control for any potential omitted variables that might otherwise bias the estimates. Using this high-dimensional fixed effect model I compare the voting behavior of funds with different securities lending on the same agenda item of the same firm's

⁴Management's recommendation is defined as voting "Yes" on a recommendation of "Yes", and "No" or "Abstain" on a recommendation of "No" or "Withhold." (Heath et al., 2022)

⁵Institutional investment managers must file N-PX even when no proxies are voted. Such cases appear as "Do Not Vote" in the fund's voting records.

meeting during each meeting. This approach controls for any inherent differences in fund or firm governance, also other fund, firm and item specific traits, effectively addressing a potential omitted variable bias.

I categorize the funds based on their lending agent type and test the model for two categories of funds with an affiliated and non-affiliated agent. This allows me to examine the channel of impact through information acquisition as a consequence of securities lending. Since I expect the affiliated agents to share the information more with funds than non-affiliated agents due to incentive alignment and the relationship depth.

I also examine the model depending on the meeting types, since the monitoring of the funds can get different importance depending of the type of the meeting. Namely, in special meetings the monitoring of the mutual funds as large shareholders can get more importance than annual meetings. Because the special meetings are often called to address urgent or unexpected issues, such as mergers or legal matters, that can have immediate and significant impacts on an organization.

5.2 Difference-in-differences regression

A potential concern that might be raised is a reverse causality, in such a way that the funds might monitor the companies more to decide which stock is less risky to lend, that leads to better voting behavior. To address this concern I implement a difference-in-difference model.

Mutual funds report their voting records via N-PX filings, a requirement set by the SEC. Up until July 2023, these reports did not include information on the total number of votes cast at each meeting. In a 2022 announcement, the SEC stated that effective from July 2023, funds and fund managers will be required to report the specific number of shares that were voted or instructed for voting, as well as shares that were loaned out and not recalled, and thus not included in the voting totals. This policy change likely reduced the incentive for funds to avoid fully utilizing their voting rights in the meeting to earn

lending income, as concerns about reputation and fiduciary responsibility became more pronounced. As a result, I anticipate increased recalling behavior by funds around the record dates. Since funds, as security lenders, gained more access to information about companies whose shares had been loaned out and subsequently recalled, I expect improved voting behavior. I focus on the effective date of July 1, 2023, when funds were mandated to disclose information about the shares on loan and the votes they retained. This date serves as a key cutoff in the difference-in-differences model, allowing me to examine changes in funds' voting behavior. I restrict the sample period to 2022Q2–2024Q2, which allows for observing up to one year prior to and one year following the event date. Specifically, I compare the voting behavior of the funds that lend out the shares prior to the record dates with those that do not, to assess the impact of the transparency regulation on their subsequent informed voting.

$$VoteAlpha_{ijt+1} = \beta_0 + \beta_1 Treat * Post + \gamma X_{i,t} + \sigma Z_{jt} + \alpha_i + \phi_j + \lambda_t + \epsilon_{ijt} \quad (4)$$

Where $VoteAlpha_{ijt+1}$ is the informed voting metric, by fund i in the meeting of firm j at time $t + 1$. $Treat$ is an Indicator for the firms whose securities were on loan at time t , before record date, by fund i . $Post$ is a indicator for the period after July 1, 2023, when increased transparency regarding the effective voting numbers was required by SEC. $X_{i,t}$ is a vector of fund controls, including Total Net Assets, fund's age, and the expense ratio, yield and management fees of fund i at time t . $Z_{j,t}$ is a vector of firm controls, such as firm size, operating performance and Tobin's Q ratio j at time t . α_i is fund fixed effect, ϕ_j is firm fixed effect, and λ_t is agenda time fixed effect.

To examine the voting behavior of mutual funds, I employ a similar difference-in-difference model, but including agenda-item–level effects, as follows.

$$Y_{ijkt+1} = \beta_0 + \beta_1 Treat * Post + \gamma X_{i,t} + \sigma Z_{jt} + \alpha_i + \phi_j + \omega_k + \lambda_t + \epsilon_{ijkt} \quad (5)$$

Where Y_{ijkt+1} is an indicator for the vote with management, by fund i in agenda item k in the meeting of firm j at time $t + 1$ when agenda item is contentious or proposals are contested. In another test, Y_{ijkt+1} is an indicator for the non-participation of fund i in contested agenda item k at the meeting of firm j at time $t + 1$. And ω_k is agenda item fixed effect.

6 Securities lending and monitoring

In this section, I present the main empirical findings of the analysis. Using a high-dimensional fixed effect and a difference-in-differences approach. I examine how fund's monitoring behavior can be impacted by their securities lending activity. The results highlight notable voting behavior differences in the meetings, between funds that lend the company's shares before the meeting and those that do not. I also show that the monitoring by the funds is facilitated as a subsequence of the of the information the funds acquire via their securities lending activity.

6.1 High-dimensional fixed effect models Results

I begin by estimating the high-dimensional fixed effect models. Initially, I estimate the impact of securities lending on the informed voting of the mutual funds, at the meeting-fund level, using regression model 2. To measure the securities lending as the main independent variable, I use: (i) a dummy variable indicating whether the shares of the firm have been on loan by fund around the meeting date. (ii) Loaned value relative to the total value of the fund's position in the stock, I name it security on loan percentage, and (iii) the percentage of a stock's total short value lent by the fund, I name it fund share of total short. I also add other fund characteristics, firm characteristics, alongside the fund, firm, and time fixed effects. The results are reported in table 2. Column 1 shows that vote alpha is higher for the lending funds around the meetings. Column 2 shows that the vote alpha of funds that lend more shares of the company before the meeting is

higher. However, as reported in column 3, the coefficient is not significant when I measure the securities lending by the fund's share of total short. These results indicate that funds tend to cast their votes in ways that enhance shareholder value when they lend the shares of the company before the meeting.

[TABLE 2 ABOUT HERE]

I measure voting behavior, as the dependent variable, in two ways, voting with management on contentious agenda items, when the ISS recommendation is in contrast with the management recommendation, also funds' vote with management in contested proposals where the voting outcome is between 40 to 60 percent, and the funds predict that their voting will be pivotal. I examine the impact at vote level, therefore I add item fixed effect to the model. The results are reported in the table 3. Column 1 show that on average the funds show less pro-management voting behavior in the meetings of the companies whose shares have been on loan by them before the meetings. Column 2 shows that the likelihood of pro-management voting is less when the funds lend the more the shares of the company before the meeting. As reported in column 3, the coefficient is not significant when I measure the securities lending by the fund share of total short. The results stay consistent when I focus on the contested proposal, when the voting outcome is in the range of [40%,60%], in such a way that the likelihood of voting with management by fund is less when the fund lend at least part of the shares of the company before the meeting in which they expect their votes to be pivotal. Also the higher the security on loan percentage, the lower the likelihood that the fund vote with the management when they expect their voting to be pivotal. The results are consistent with the findings of [Aggarwal et al. \(2015\)](#) examining the aggregated recall around the record date at stock level, and the subsequent voting outcome. They show that on average the higher recall of lendable supply is associated with less support for management proposals, such as those relating compensation and corporate control, and more support for shareholder proposals.

[TABLE 3 ABOUT HERE]

Voting in special meetings tends to carry more weight than in annual meetings because the issues presented, such as mergers, takeovers, or significant restructuring, often have an immediate and substantial impact on shareholder value and corporate direction. In contrast, annual meetings usually address recurring governance items like director elections and auditor approvals. Therefore I test the results in different meeting types, as a robustness test. The results are reported in table 4. By comparing column 1 with 4, also column 2 with 5, I see that the coefficients are stronger in the special meetings. These findings indicate on average the impact of the securities lending on the voting behavior of the funds is stronger in the special meetings, where the voting is getting more importance. However as reported in column 6 the coefficient is not significant when I use fund share of total short value as a measure for funds securities lending in special meetings, consistent with the results in the table 4. As reported in column 7, 8 and 9 the securities lending activity of the funds does not impact their voting behavior in proxy contested meetings. However, since ISS Voting Analytics does not provide voting records for most contested proxy meetings, likely due to potential bias concerns, I do not interpret this finding.

[TABLE 4 ABOUT HERE]

By participating in the securities lending market, mutual funds gain access to real-time information on short selling activity. This information can be highly valuable, as short interest has been shown to predict future stock price declines. Leveraging such insights may enable funds to better anticipate market movements and manage risk accordingly ([Honkanen, 2025](#)). Affiliated lending agents are more likely to share detailed short selling information with mutual funds. The closer relationship fosters greater trust, aligned incentives, and streamlined communication channels, which facilitate the flow of sensitive

data. In contrast, non-affiliated agents may be more constrained by confidentiality policies or lack of shared interests, making them less willing or able to provide the same level of transparency. As a result, mutual funds working with affiliated agents may enjoy a significant informational advantage.

Additional on examining vote alpha, as a measure of informed voting, to test the channel of impact I test the models conditional on the securities lending agent type.⁶ I estimate the impact of securities lending on fund informed voting by splitting the sample into sub-samples based on whether the fund’s lending agent is affiliated or non-affiliated with the fund. The results, reported in table 5, indicate that the informed voting patterns observed in table 2 are primarily driven by funds with affiliated lending agents. That could be because the information is shared more directly with funds through affiliated agents, who have aligned interests. Column 1 shows that, within the sub-sample of funds with affiliated lending agents, funds that lend shares of a company before its meeting exhibit higher vote alpha around the meeting compared to non-lending funds. Moreover, this coefficient is larger than the corresponding estimate for the full sample reported in Column 1 of table 2. Column 2 presents similar results when considering the amount of securities lending, with the coefficient again exceeding that in Column 2 of table 2. In Column 3, the coefficient on securities lending, measured by the fund’s share of total short, shifts from negative in table 2 (also Columns 6 in table 5) to positive, although it remains statistically insignificant, consistent with table 2. In contrast, for the sub-sample of funds with non-affiliated lending agents, where I expect information to be less shared with the funds, I observe positive coefficients across the two measures of securities lending. And statistical significance is found only for the securities lending dummy and not for the securities lending percentage. Overall, these results suggest that, on average, funds with affiliated lending agents are more informed in their voting.

[TABLE 5 ABOUT HERE]

⁶Lending agent type information is obtained from N-CEN reports; however, this information is not available for all funds in the sample since some funds have not reported it.

The results, reported in table 6, show that the impact of securities lending on the voting behavior are driven from the funds with affiliated lending agent, while this doesn't stand for the funds with non-affiliated lending agents. Column 1 in table 6 show that on average the funds show less pro-management voting behavior in the contentious meetings items of the companies whose shares have been on loan by them before the meetings. Column 2 in table 6 also show that the likelihood of pro-management voting on contentious items is less when the funds, with affiliated agents, lend the more the shares of the company before the meeting. These coefficients are larger in magnitude and statistically more significant than those reported in table 3. As reported in column 3, table 6, the funds with affiliated lending agents show less pro-management voting behavior on contentious items when they lend larger share of total short value. However these results do not stand for the funds with a non-affiliated lending items. These findings are align with the idea that the securities lending impact on fund voting is through the information channel.

[TABLE 6 ABOUT HERE]

Investment funds often lend a portion of their holdings and are generally allowed to lend up to one-third of the total value of their portfolios. Although there are no explicit restrictions on the percentage of shares in a particular company that can be lent, funds typically loan only a fraction of their holdings in any given stock. Consequently, even if loaned shares are not recalled by the record date of a company meeting, funds can still exercise voting rights over the shares they continue to hold. It suggests that securities lending does not necessarily lead to the omission of votes; rather, it may enable funds to vote more actively once relevant information becomes available. To examine this, I test whether securities lending affects the likelihood of funds skipping votes on contested agenda items, where fund's votes can be pivotal. These cases are indicated by the "Do Not Vote" entries in N-PX filings. The results of this analysis are presented in table 7. Column 1 shows that funds are less likely to skip casting votes on agenda items when

the shares are lent through an affiliated lending agent. Column 2 further indicates that this likelihood decreases with the amount of securities on loan. Column 3 yields a similar result when securities lending is measured by the fund’s share of total short positions. In contrast, Column 4 shows that when lending occurs through a non-affiliated lending agent, funds are more likely to skip voting. Column 5 points in the same direction when considering the extent of securities lending, although the estimate is not statistically significant. Column 6 aligns with Column 4, and the effect becomes significant when securities lending is measured by the fund’s share of total short positions. These findings for non-affiliated lending agents therefore run counter to those for affiliated agents. One possible explanation is that when funds are less informed about a proposal and their vote is pivotal, they may simply prefer to skip voting. By contrast, better-informed funds, whose votes are more likely to be pivotal, appear more willing to actively cast votes. Finally, for non-contested proposals, where outcomes are not close, the likelihood of skipping a vote is not significantly related to securities lending.

[TABLE 7 ABOUT HERE]

6.2 Difference-in-differences Regression Results

Effective from July 2023, funds and fund managers are required by SEC to report the specific number of shares that were voted or instructed for voting, as well as shares that were loaned out and not recalled, and thus not included in the voting totals, in their N-PX reports. The enhanced transparency requirement could increase the incentives of the funds to recall their shares on the loan by mutual funds, in order to exercise their maximum of voting rights in the meetings, as concerns about reputation and fiduciary responsibility become more pronounced. Since funds that recall the shares have gained the information I expect improved voting behavior by them, since it allows them to incorporate the acquired information into their voting decision with the maximum of their voting rights and influential power. Using the effective date of July 1, 2023, I implement

a difference-in-differences model, to examine changes in funds' voting behavior of the funds that lend out the shares prior to the record dates compared to those that do not.

I restrict the sample period to 2022Q2–2024Q2, which allows for observing up to one year prior to and one year following the event date. Initially I examine the informed voting of the funds. The results reported in table 8. I find that after SEC requirement, funds display higher vote alpha around the meeting of a company whose shares were on loan before casting the vote, compared with the matched non-lending funds. By splitting the sample into two sub-samples of funds based on their lending agent type, I find that the results are driven from the funds with an affiliated lending agent. While This pattern doesn't hold true for funds with a non-affiliated lending agents. The results are aligned with the fund informed voting analysis using high-dimensional fixed effect model. The findings indicate that informed lending funds incorporate the information they obtain more actively into their voting decisions following the new SEC requirements. One possible explanation is that these regulations heighten the scrutiny placed on funds' voting. Additionally, the requirement may encourage more systematic information retrieval, which combined with the greater influence they hold when exercising higher voting rights, as results of higher recalling.

[TABLE 8 ABOUT HERE]

I also examine the voting behavior of the funds using the Difference-in-differences model. The results reported in table 9. The findings indicate that following the implementation of enhanced transparency requirements, funds exhibited less pro-management behavior in the meeting of a company whose shares were on loan before casting the vote, compared to funds that had not lent out their shares. This pattern holds true for both contentious agenda and contested proposals. The results show that funds adjust their voting behavior in response to increased transparency, particularly when their shares on loan on record date, when their voting right is determined, could be

scrutinized. However, as a consequence of this heightened recalling rate I expect lending fees to rise around record dates. This increase in fees may make keeping the security on loan on record dates, more attractive than recalling to exercise the voting rights and leads to a trade-off for the funds with a higher supply of securities lending.

[TABLE 9 ABOUT HERE]

Following the SEC’s enhanced transparency requirements for securities lending, I expect funds to recall loaned shares more frequently so they can vote with a larger share of their voting rights. The new rules heighten both reputational concerns and fiduciary responsibilities, making active participation in voting more salient. As a result, one would expect an increase in overall voting participation. To evaluate this idea, I examine whether the likelihood of skipping a vote changes for lending funds relative to matched non-lending funds after the new requirement takes effect. As shown in table 10, lending funds with an affiliated lending agent are less likely to skip votes compared with their matched non-lending peers in the post-requirement period. However, this difference is not statistically significant when I focus on contentious or contested proposals. The effect reported in Column 1 is small in magnitude and only weakly significant. This is consistent with the fact that funds were already required to report instances of non-voting, marked as “Do Not Vote” in N-PX filings, prior to the rule change. Thus, the new requirement mainly affects the extent to which funds vote with their full available voting power, rather than the basic decision of whether to cast a vote. It is also important to note that funds typically lend only a small portion of their holdings in a given firm. Therefore, the act of lending does not imply that a fund avoids voting entirely, even when it does not recall loaned shares. Instead, the more relevant mechanism likely involves information. Funds are less likely to skip voting on specific agenda items when they believe their votes may have meaningful influence.

[TABLE 10 ABOUT HERE]

These findings are consistent with the high-dimensional model suggesting that securities lending activity of the funds around the meeting date make them more active in monitoring. This could mitigate the decline in return predicted by short sellers, as explained in the next section.

7 Further Research

In the next phase of the study, I will analyze how returns are influenced by monitoring behavior of funds through securities lending. The funds either close their positions after receiving signals from short sellers or retain their holdings. If the funds opt to keep their securities, they may contribute positively to corporate governance by monitoring the firm using information already obtained, without incurring additional monitoring costs. In this scenario, the anticipated decline in security return is expected to be less severe. The decision to sell or retain and monitor depends largely on the fund's nature and the strategic orientation of its fund family importantly, many funds may lack the flexibility to make this choice freely.

[Evans et al. \(2017\)](#) show that mutual funds engaging in lending activities underperform otherwise comparable funds, despite earning income from those loans. They explain this phenomenon by highlighting why fund managers may choose to lend rather than sell securities in the presence of short sellers. Funds often face constraints that limit their ability to exit positions. As a result, I discuss and show that they are expected to monitor the borrowing firms more closely. This could potentially mitigate the expected decline in returns, without incurring additional monitoring costs. Accordingly, I hypothesize that the price drop following short selling is less pronounced when funds retain their positions and actively monitor the firms.

To assess the impact, I examine whether the Cumulative Abnormal Return (CAR) around the meeting dates is associated with the securities lending activity on the shares of the company. Since I expect the informed funds to impact the voting outcome

positively, which could mitigate the initial anticipated decline in price by short sellers. I observe a positive association between aggregated loaned value by funds before the meeting and the CAR around the meeting. Consistent with [Aggarwal et al. \(2015\)](#), that the securities lending could impact the outcome of the voting. I discuss the impact is through the information channel. In the next step of the analysis, I test this hypothesis using quasi-exogenous variation in passive ownership around the Russell 1000/2000 cutoff, following [Aggarwal et al. \(2011\)](#), noting that index funds serve as the main suppliers of lendable securities.

8 Conclusion

Because of the surge in ownership of investment funds and their influence on corporate governance, this study aims to investigate how securities lending, a common activity among investment funds, can affect their governance role in portfolio firms, through their monitoring. The mutual funds receive the private information by lending their securities to the short sellers. This information draws the funds' attention to the companies that are most likely to experience a decline in their stock prices within their extensive portfolios. Not all funds can sell their holding based on the signals they receive; however, they can use these signals to monitor those companies better in order to mitigate the predicted decline in price. In this study I investigate the impact of securities lending on the monitoring behavior of the companies.

Following the related literature, I measure the funds informed voting using vote alpha. I also assess the funds monitoring by their voting decision. Since institutional investors use the proxy process as an important channel for affecting corporate governance and place great significance on how they cast their votes ([Aggarwal et al., 2015](#)). I test the vote alpha of the funds for each firm around its meeting. And to assess funds' voting behavior, I focus on contentious agenda items, the items for which the voting recommendation of the management and the proxy advisory are not aligned. I also investigate the funds'

voting behavior in the contested proposal, when the funds predict that their voting would be pivotal. And I analyze the likelihood of skipping casting a vote for an agenda items by funds. I estimate two sets of regression specifications. First, I employ high-dimensional fixed-effects models that incorporate time, firm, fund, and agenda-item fixed effects, tailored to the level of analysis appropriate for each test. Second, difference-in-difference models considering the required enhancement in the securities lending of the funds on record dates before meetings.

I find that the funds informed voting and monitoring improve following their securities lending activity. I show that this effect arises from the information that mutual funds obtain through their lending contracts with informed borrowers. Putting differently, mutual funds may face constraints that limit their ability to exit positions as an act on short sellers signals. As a result, the funds monitor the borrowing firms more closely which could potentially mitigate the expected decline in returns, without incurring additional monitoring costs for the funds.

In summary, the findings consistently indicate that the securities lending improve the monitoring and informed voting of the funds, and therefore not only brings the extra income for the funds and their investors, but also has positive sequence on the governance of the portfolio firms.

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Table 1: **Descriptive statistics**

This table reports summary statistics for funds that filed N-PORT and N-CEN reports, together with information on their securities lending activities, which we matched to data from ISS Voting Analytics from 2019Q3 to 2024Q2. Panel A presents the characteristics of these funds. Panel B summarizes the characteristics of their portfolio companies, while Panel C provides statistics on the voting records of these funds in meetings of their portfolio companies.

	N	Mean	Min	Median	Max	SD
Panel A. Funds						
Total Net Assets (\$M)	5,032	9423.727	0.100	218.650	420637	27177.870
Expense Ratio (%)	5,032	0.264	0.020	0.220	2.370	0.247
Management Fee (%)	5,032	0.215	0.000	0.150	1.630	1.102
Age	5,032	11.222	0.000	8.000	59.000	9.400
Portfolio Loan Value	5,032	1922399	0.000	0.000	5.13e+07	4.75e+06
Holding Loan Value	5,032	55555.81	0.000	0.000	2.85e+06	336674.7
Holding on loan (%)	5,032	0.042	0.000	0.000	1.000	0.180
Holding on loan (dummy)	5,032	0.073	0.000	0.000	1.000	0.261
Panel B. Firms						
ROA	3,854	0.02	-5.77	0.02	1.80	0.05
Ln_MarketCap	3,854	22.70	9.48	22.70	29.55	1.99
Tobin's Q	3,854	2.62	0.10	2.10	13.04	2.63
Ln_Cash Flow	3,854	-2.00	-11.04	-1.92	7.59	1.31
Panel C. Funds Voting						
VWM on Contentious Agenda	2,040,488	0.35	0.00	0.50	1.00	0.47
VWM in Contested Proposals	398,926	0.41	0.00	0.50	1.00	0.49

Table 2: **Fund informed voting**

This table presents the findings of fund informed voting analysis based on the high-dimensional fixed-effects model specified in Equation (2). The findings suggest that funds cast their votes in ways that enhance shareholder value when they lend the shares of the company before the meeting.

	Dependent Variable = VoteAlpha		
	(1)	(2)	(3)
Security on Loan_dummy	0.0521*** (0.0185)		
Security on Loan%		0.0815*** (0.0271)	
Fund share of total short			-0.0190 (0.0461)
Fund Controls	YES	YES	YES
Firm Controls	YES	YES	YES
Fund FE	YES	YES	YES
Firm FE	YES	YES	YES
Time FE	YES	YES	YES
Observations	1,180,019	1,180,019	1,180,019
R-squared	0.205	0.205	0.205

Table 3: **Fund voting behavior**

This table presents the findings of fund voting behavior analysis based on the high-dimensional fixed-effects model specified in Equation (3). The findings suggest that on average the funds show less pro-management voting behavior in contentious agenda items, and contested proposals of the companies whose shares they have loaned out prior to the meeting date.

	Dependent Variable = VotedWithMgmt					
	VWM on contentious agenda			VWM in contested proposals		
	(1)	(2)	(3)	(4)	(5)	(6)
Security on Loan_dummy	-0.005** (0.002)			-0.021*** (0.006)		
Security on Loan%		-0.006* (0.003)			-0.016** (0.008)	
Fund share of total short			-0.006 (0.005)			-0.011 (0.0123)
Fund Controls	YES	YES	YES	YES	YES	YES
Firm Controls	YES	YES	YES	YES	YES	YES
Fund FE	YES	YES	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES
Item FE	YES	YES	YES	YES	YES	YES
Time FE	YES	YES	YES	YES	YES	YES
Observations	1,949,704	1,949,704	2,040,488	383,273	383,273	398,926
R-squared	0.53	0.53	0.53	0.42	0.42	0.43

Table 4: **Fund voting behavior in different meeting types**

This table presents the findings of fund voting behavior analysis based on the high-dimensional fixed-effects model specified in Equation (3), in different meeting types. The findings indicate the impact of the securities lending on the voting behavior of the funds is stronger in the special meetings, where the voting is getting more importance. However, the securities lending activity of the funds does not impact their voting behavior in proxy contested meetings.

	Dependent Variable = VotedWithMgmt								
	Annual Meetings			Special Meetings			Proxy Contest Meetings		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Security on Loan_dummy	-0.006** (0.003)			-0.024** (0.014)			0.002 (0.019)		
Security on Loan%		-0.008** (0.003)			-0.044*** (0.016)			-0.012 (0.035)	
Fund share of total short			-0.009** (0.005)			-0.009 (0.027)			0.051 (0.071)
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fund Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fund FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Item FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,844,678	1,844,678	1,941,197	27,033	27,033	28,939	67,687	67,687	68,141
R-squared	0.54	0.54	0.54	0.53	0.53	0.53	0.56	0.56	0.56

Table 5: **Fund informed voting conditional on the lending agent type**

This table presents the findings of fund informed voting analysis based on the high-dimensional fixed-effects model specified in Equation (2), for funds with affiliated versus non-affiliated lending agent. Overall, funds with affiliated lending agents exhibit higher vote alpha around meetings, suggesting they are more informed, whereas the effect is mostly insignificant for funds with non-affiliated agents.

	Dependent Variable = VoteAlpha					
	Affiliated Lending Agent			Non-Affiliated Lending Agent		
	(1)	(2)	(3)	(4)	(5)	(6)
Security on Loan_dummy	0.0654** (0.0275)			0.0717** (0.0289)		
Security on Loan%		0.140*** (0.0427)			0.0648 (0.0419)	
Fund share of total short			0.0211 (0.0641)			-0.0101 (0.0664)
Fund Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fund FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	313,978	313,978	313,978	495,943	495,943	495,943
R-squared	0.335	0.335	0.335	0.207	0.207	0.207

Table 6: **Fund voting behavior on contentious agenda items conditional on the lending agent type**

This table presents the findings on channel of the impact through information acquisition. We test the high-dimensional fixed effect model, specified in Equation (3), for funds with affiliated versus non-affiliated lending agent. The results show that on average the funds show less pro-management voting behavior in the contentious meetings items of the companies whose shares have been on loan by them before the meetings. Column 2 also show that the likelihood of pro-management voting on contentious items is less when the funds, with affiliated agents, lend the more the shares of the company before the meeting. These coefficients are larger in magnitude and statistically more significant than those reported in table 3. As reported in column 3 the funds with affiliated lending agents show less pro-management voting behavior on contentious items when they lend larger share of total short value, while this coefficient is not significant in table 2. These results do not stand for the funds with a non-affiliated lending items. These findings show that the results reported in table 2 are driven from the funds with a affiliated lending agent.

	Dependent Variable = VotedWithMgmt					
	Affiliated Lending Agent			Non-Affiliated Lending Agent		
	(1)	(2)	(3)	(4)	(5)	(6)
Security on Loan_dummy	-0.01*** (0.003)			-0.000 (0.004)		
Security on Loan%		-0.014*** (0.004)			-0.002 (0.005)	
Fund share of total short			-0.012** (0.005)			-0.005 (0.008)
Fund Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fund FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Item FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	547,208	547,208	416,092	846,128	846,128	630,705
R-squared	0.56	0.56	0.56	0.50	0.50	0.50

Table 7: **Fund voting participation**

This table examines how securities lending affects the probability that funds do not cast vote, in the contested proposals, based on the high-dimensional fixed-effects model specified in Equation (3). The results show that securities lending through affiliated agents is associated with reduced incidence of skipped votes, while lending through non-affiliated agents increases skipping behavior. Suggesting that when funds are less informed about a proposal and their vote is pivotal, they may simply prefer to skip voting. By contrast, better-informed funds, whose votes are more likely to be pivotal, appear more willing to actively cast votes.

	Dependent Variable = NonVoting					
	Affiliated Lending Agent			Non-Affiliated Lending Agent		
	(1)	(2)	(3)	(4)	(5)	(6)
Security on Loan_dummy	-0.00162** (0.000775)			0.00107* (0.000618)		
Security on Loan%		-0.00274** (0.00108)			0.000676 (0.000883)	
Fund share of total short			-0.00371*** (0.00115)			0.00279* (0.00143)
Fund Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fund FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Item FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	98,420	98,420	98,420	172,146	172,146	172,146
R-squared	0.882	0.882	0.882	0.767	0.767	0.767

Table 8: **Enhanced required transparency on security lending and fund informed voting**

This table presents the findings of fund informed voting analysis based on the difference-in-differences model specified in Equation (4). The findings indicate that following the implementation of enhanced transparency requirements, funds with affiliated agents display higher vote alpha around the meeting of a company whose shares were on loan before casting the vote, compared with the matched non-lending funds. This pattern doesn't hold true for funds with a non-affiliated lending agents.

	Dependent Variable = VoteAlpha	
	Affiliated Lending Agent	Non-Affiliated Lending Agent
	(1)	(2)
Post $\times$ Treat	0.0336*** (0.0825)	0.396 (0.0611)
Fund Controls	Yes	Yes
Firm Controls	Yes	Yes
Fund FE	Yes	Yes
Firm FE	Yes	Yes
Time FE	Yes	Yes
Observations	126,794	207,962
R-squared	0.640	0.452

Table 9: **Enhanced required transparency on security lending and fund voting behavior**

This table presents the findings of fund voting behavior analysis based on the difference-in-differences model specified in Equation (5). The findings indicate that following the implementation of enhanced transparency requirements, funds exhibited less pro-management behavior in the meeting a company whose shares were on loan before casting the vote, compared to funds that had not lent out their shares. This pattern holds true for both contentious agenda and contested proposals.

	VWM on Contentious Agenda	VWM in Contested Proposals
	(1)	(2)
Post $\times$ Treat	-0.013*** (0.003)	0.018*** (0.0185)
Fund Controls	Yes	Yes
Firm Controls	Yes	Yes
Fund FE	Yes	Yes
Firm FE	Yes	Yes
Item FE	Yes	Yes
Time FE	Yes	Yes
Observations	885,993	144,271
R-squared	0.48	0.41

Table 10: **Enhanced required transparency on security lending and fund voting participation**

This table presents the findings of the funds voting participation difference-in-differences model. The findings indicate that following the implementation of enhanced transparency requirements, the incidence of skipped votes by lending funds with an affiliated lending agent decreases, compared with the matched non-lending funds. This pattern doesn't hold for funds with non-affiliated lending agents. However, the results do not remain statistically significant when the analysis is restricted to contentious or contested proposals.

	Dependent Variable = NonVoting	
	Affiliated Lending Agent	Non-Affiliated Lending Agent
	(1)	(2)
Post $\times$ Treat	-0.000385* (0.000197)	0.000160 (0.000313)
Fund Controls	Yes	Yes
Firm Controls	Yes	Yes
Fund FE	Yes	Yes
Firm FE	Yes	Yes
Item FE	Yes	Yes
Time FE	Yes	Yes
Observations	692,595	1,229,537
R-squared	0.721	0.756