ABSTRACT

We examine whether passively managed index funds monitor their portfolio companies using a new research design that generates exogenous variation in fund holdings. We find index funds are weak monitors. Unlike active funds, index funds: (i) usually vote with firm management; (ii) do not use exit to enforce good governance, although they do sell 16% of holdings each year; (iii) rarely file a Schedule 13D, indicating they do not intend to affect firm policies. Moreover, the agenda items that index funds support reduce firm value. Our results show that index investing hurts shareholders by shifting control from investors to managers.

Keywords: Governance, Monitoring, Index Investing, Voting, Exit

JEL Classification Numbers: G12, G14
I. Introduction

The separation of ownership and control generates an agency conflict between a firm’s managers and its shareholders. This well-known problem has been studied since at least the time of Adam Smith (1776);¹ Yet recently there has been a fundamental shift in equity investing, potentially altering this classic agency conflict. Over the last 25 years public corporations have experienced a dramatic increase in ownership by passively managed index funds (see Figure 1), and index funds are now the largest shareholders of many U.S. corporations (Azar, Tecu, and Schmalz (2018)). Although the increasingly large positions held by index funds should motivate them to monitor their portfolio firms (Grossman and Hart (1980), Shleifer and Vishny (1986), Admati, Pfleiderer, and Zechner (1994)), these new intermediaries have different incentives than managers of traditional active funds (Bebchuk, Cohen, and Hirst (2017)). As a consequence, the rise of passive investing raises fundamental questions about monitoring and corporate governance. Notably, to what extent do index funds monitor their portfolio companies? And also, does the rise of index investing lead to increased agency conflicts that affect firm value?

In this paper, we study the monitoring behavior of index funds by directly examining the two main monitoring mechanisms predicted by theory: voice and exit. We find that index funds are 12.5 percentage points less likely to vote against firm management compared to active funds. And while we find that active funds are more likely to exit a position after losing a vote, there is no evidence that passive funds do this. In other words, index funds do not use the exit mechanism to enforce good governance. We also find that index funds rarely, if ever, file a Schedule 13D, which indicates that they do not intend to affect firm policies.

¹Smith wrote, “The directors of such [joint stock] companies, however, being the managers rather of other people’s money than of their own, it cannot well be expected that they should watch over it with the same anxious vigilance with which the partners in a private copartnery frequently watch over their own.”
Thus, consistent with the theoretical predictions in Bebchuk et al. (2017) and Edmans, Levit, and Reilly (2018), our results indicate that passive investors are passive monitors. Finally, we show that this shift in control matters: On average, the agenda items that index funds support reduce firm value when they pass, and raise firm value when they fail. These results are consistent with the idea that passively managed index funds are exacerbating the well-known agency conflict between managers and investors.

Given the increasingly large positions held by index funds, principal-agent theory would argue that these funds have strong incentives to monitor (Jensen and Meckling (1976), Grossman and Hart (1980), Shleifer and Vishny (1986), Admati et al. (1994)). Moreover, since the need to minimize tracking error makes it costly for index funds to exit a position, index funds should have strong incentives to enforce good governance through the voice mechanism (e.g., Fisch, Hamdani, and Davidoff Solomon (2018)). Consistent with this view, a number of recent studies argue that index funds are “closet activists” who improve a variety of corporate policies, from dividends and disclosure to competitive strategy.\(^2\)

However, the business model of index funds suggests that these funds have weak incentives to monitor, since they typically have many firms in their portfolio and limited resources to invest in monitoring due to their low-cost structure.\(^3\) Moreover, unlike active investing, index investing creates a free-rider problem because improvements to firm value are shared with all funds that follow the same index, but the costs are borne only by the fund that exerts monitoring effort (Bebchuk et al. (2017); Bebchuk and Hirst (2018)). Empirically, it remains unclear which of these effects prevail. Our results show the latter effects dominate. Index

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\(^3\)In our data, the average index fund holds 357 stocks while the average active fund holds 114 stocks. We discuss this point further in Sections II and IV.
funds do not exert the same monitoring effort, on average, that active funds do.

The main challenge in studying fund behavior is that fund holdings are endogenous. First, firm characteristics such as size and liquidity jointly affect ownership and governance. Second, different firm policies attract different types of investors. Thus, there is the potential for endogeneity due to omitted variables and reverse causality. There is also the potential for selection bias: If a fund chooses not to hold a firm, we do not observe how that fund would have voted. Thus, if index funds tend to hold well-run firms or active funds tend to hold poorly-run firms, differences in monitoring might simply reflect differences between firms.

To generate exogenous variation in fund holdings, we develop a new research design using Russell index reconstitutions. Importantly, we develop the first approach specifically designed to examine index investing in the post-2006 time period. In June of each year, Russell Investments reconstitutes their indexes by allocating the largest 1000 firms in terms of market capitalization to the Russell 1000 index, and the next 2000 firms to the Russell 2000 index. This created a sharp discontinuity around the 1000th ranked market capitalization cutoff point. However, starting in June 2007, Russell implemented a new assignment regime designed to make it less likely that firms near the cutoff would switch indexes. Specifically, each year Russell ranks each firm and computes a "band" around the 1000th ranked market capitalization cutoff point that is equal to +/- 2.5% of the total market capitalization of the Russell 3000E. To move out of its index, a stock must not only cross the 1000th ranked cutoff point, but it must move all the way across the band.

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4Grinstein and Michaely (2005) find that higher firm payouts attract institutional holdings, while Brav, Jiang, Partnoy, and Thomas (2008), Aghion, Van Reenen, and Zingales (2013), and Michaely, Popadak, and Vincent (2015) find that active investors target firms with weak governance and high leverage.

5In the pre-2007 regime, a firm that started the year in the Russell 1000 would move to the Russell 2000 if its market capitalization fell below the rank 1000 cutoff point. However, under the post-2006 regime, a firm that started the year in the Russell 1000 would move to the Russell 2000 if its market capitalization fell such that it was below the rank 1000 cutoff point by a sufficient margin, where the margin is defined as at least 2.5% of the Russell 3000E market capitalization.
This new assignment regime prevents traditional regression discontinuity designs (RDD) from examining this setting in the post-2006 period. However, we proceed from the insight that the new assignment regime introduced two yearly discontinuities, and we use these discontinuities to generate exogenous variation in index ownership in a difference-in-differences panel setting. Moreover, our approach allows us to use exogenous variation in fund holdings in a Heckman (1979) model, to correct for selection bias in addition to reverse causality and omitted variable biases. As a result, our methodology does not suffer from bias due to noise in the forcing variable (Pei & Shen, 2017) or selection bias (Wei and Young (2017), Gloßner (2018)), which is a concern in existing studies that use an RDD around Russell Index reconstitutions.

We first examine funds’ voting behavior across all agenda items. On consensus votes when ISS (a third party proxy advisor) and management agree, index funds and active funds vote identically. By contrast, on contentious votes (when ISS and management disagree), index funds are 12.5 percentage points more likely than active funds to vote with management. Furthermore, index funds with low expense ratios are more likely to vote with management than index funds with high expense ratios. This second result is informative for two reasons: First, it indicates that voting with management is indeed passive, because index funds that have less resources to invest in monitoring are more likely to cede authority to firm’s

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6We find that when a stock switches into the Russell 2000, index fund ownership increases by 1.03% of its market capitalization on average, and when a stock switches out of the Russell 2000 index fund ownership falls by 0.86% of its market capitalization.

7In further analysis we examine voting at the fund family level. We find that fund families that have more assets under management (AUM) by index funds are more likely to side with firm management.
management. Second, it provides support for the theoretical prediction that index funds lack the incentives and resources to actively monitor their portfolio firms (Bebchuk et al. (2017)).

Arguably, not all votes are equally important, and our results might just describe index funds’ voting behavior on agenda items that do not impact corporate governance. To shed further light on index funds’ monitoring behavior, we examine voting on specific governance issues: board of directors elections, executive compensation, corporate disclosure, and managerial entrenchment. We find that index funds are more likely than active funds to vote with management across all of these categories. This is particularly striking as it shows that index funds cede authority to managers on all categories of votes that affect corporate governance.

It might be argued that three alternative hypotheses explain these findings. First, index funds could sell their shares instead as a monitoring mechanism to enforce good governance (the exit hypothesis). Second, index funds could engage with managers either publicly or behind the scenes, and then vote in support of management proposals that they negotiated beforehand (the engagement hypothesis). Third, even if index funds do not actively engage with their portfolio firms, managers might be driven to appease these large shareholders by following policies that are preferred by index funds (Fisch et al. (2018)).

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8In other words, while it might not be clear a priori that voting with management is passive, we find that index funds with higher expense ratios vote more like active funds do. Moreover, it is clear that from a principal-agent perspective, voting with management cedes power from the investor (the principal) to firm management (the agent). We also find that index funds are less likely to formally abstain on contentious items. Del Guercio, Seery, and Woidtke (2008) argue that both voting against management and abstaining (“a soft no”) are active voting strategies.

9The economics of index investing restrict the resources that index funds have to employ in monitoring since index funds compete on providing a standardized product at the lowest price (i.e. expense ratio) possible.

10In a recent survey, McCahery, Sautner, and Starks (2016) find evidence of behind the scenes intervention by institutional investors. However, they do not distinguish between active funds and index funds.
First, we investigate the exit hypothesis. Although one might think that index funds hold each stock in their benchmark index, in fact they may omit holdings in small and illiquid firms that would otherwise increase the transaction costs of rebalancing their portfolio. We examine funds’ decisions to exit and document strategic substitution between voting and exit for active funds but not for index funds: When active funds lose a vote, they are more likely to exit the position subsequently, as theory predicts (Edmans et al. (2018)). Conversely, index funds do not exit a position after losing a vote. In other words, while index funds may exit stocks in their benchmark index, they do not use exit to express their dissatisfaction with management.

Next we examine the engagement hypothesis in two ways. First, we split agenda items into shareholder proposals and management proposals. Behind the scenes engagement could explain index funds’ voting behavior on management proposals, but it cannot apply to shareholder proposals. In other words, “active” index funds could support management proposals that they negotiated beforehand. But when it comes to shareholder proposals, “active” index funds should be more willing to oppose management. Yet we find that relative to active funds, index funds are 9.2 percentage points more likely to vote with management on contentious shareholder proposals. These results are echoed in a contemporaneous working paper by Brav, Jiang, and Li (2018). They document that in proxy contests, an important and contentious subset of shareholder proposals, index funds do not support activist shareholders but instead side with firm management.

Second, we examine the relative propensity of funds to engage. Shareholders are required to disclose a holding above 5% of the firm’s market capitalization via either Schedule 13D, which allows the fund to officially engage with the firm, or Schedule 13G, which does not. We find that index funds are significantly less likely to file Schedule 13D than active funds. This
finding echoes the evidence in Bebchuk and Hirst (2018) that index funds do not meet with the majority of their portfolio firms. Also, engagement relies on the fund expending resources to become informed: funds must first do research on their portfolio firms to understand what policies need to be implemented and then they must engage with managers. In a recent working paper, Iliev, Kalodimos, and Lowry (2018) document that, relative to active funds, index funds conduct significantly less research about their portfolio firms. In sum, our results on shareholder proposals and 13D filings, together with the evidence in Bebchuk and Hirst (2018), Brav et al. (2018) and Iliev et al. (2018), are inconsistent with the hypothesis that index funds engage with firm management.

Finally, we examine the hypothesis that managers improve governance in response to increased index fund holdings without the funds’ direct intervention. We find that when index fund ownership of a firm increases, the fraction of both consensus and contentious proposals does not change. Moreover, if index funds indirectly encourage better governance in their portfolio firms, we would expect an increase in the fraction of agenda items that were approved by ISS and management together. We see no such change. These results are inconsistent with the hypothesis that firm managers are driven to appease index funds by following policies that they prefer.

Our results uniformly indicate that index funds monitor their portfolio firms less than active funds do. Relative to active funds, index funds are less likely to vote against management, to use exit to influence corporate governance, or to engage with management. Thus, the shift from active to passive investing could alter the classic agency conflict between managers and shareholders. In other words, the passive monitoring behavior of index funds could increase agency costs. Accordingly, we examine stock market returns around shareholder votes to better understand whether passive monitoring destroys firm value. We find
that it does. Specifically, we find a negative (positive) market reaction when an index fund votes for (against) an agenda item that passes, but we find no such effect for active funds. The market reaction to index funds’ voting indicates that passive monitoring by index funds can hurt firm value.

Our paper contributes to the literature in several ways. First, our study builds on the literature that examines agency conflicts and monitoring incentives arising from dispersed ownership (e.g., Berle and Means (1932); Jensen and Meckling (1976); Demsetz (1983); Shleifer and Vishny (1986); Admati et al. (1994); Maug (1998)). Given the dramatic increase in ownership by passively managed index funds, and since index funds are now the largest blockholders of many U.S. corporations (Azar et al. (2018)), studying their monitoring incentives is of fundamental importance (Edmans (2014)). In this regard, our study provides the first direct evidence on the prediction that index funds are weaker monitors than active funds (Bebchuk et al. (2017), and Bebchuk and Hirst (2018)). Our results show that the rise of passive investing is shifting power from investors to firm managers.

Second, we develop a novel methodology to generate exogenous variation in fund holdings. In contrast to most existing papers (e.g., Boone and White (2015), Appel et al. (2016), Crane et al. (2016), Schmidt and Fahlenbrach (2017)), our approach is specifically based on the post-2006 index assignment regime. This has several advantages. First, the amount of capital allocated to passive index funds has grown dramatically since 2006, so our approach allows us to examine the impact of index investing when it is most prevalent. Second, our approach avoids selection issues in studies that use pre-2007 Russell Index reconstitutions (see Wei and Young (2017) and Gloßner (2018) for a discussion). Third, our fixed effects specification avoids problems with measurement error in the forcing variable that may lead

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11 We document this with extensive balance and robustness checks.
to biased estimates in existing studies (Pei & Shen, 2017). Finally, our sample period means that our results can be viewed as out-of-sample relative to previous studies.

Finally, our paper contributes to the literature examining the impact of index investing on corporate behavior (see Edmans (2014) for a recent review of this literature). While recent work has focused primarily on the voting behavior of institutional investors (e.g., Matvos and Ostrovsky (2010), Iliev and Lowry (2014)), we examine the different monitoring practices of active and passive funds. Furthermore, a number of papers have shown that corporate outcomes appear to be affected by index fund ownership (e.g., Boone and White (2015), Appel et al. (2016), Crane et al. (2016), Appel et al. (2018)). However, given the economics of index investing, it remains unclear how index funds actually alter corporate governance. Our study shows that index funds do not influence firm-level outcomes through the two main monitoring channels, voice and exit. Overall, we provide strong evidence that passive investors are passive monitors.

The remainder of the paper proceeds as follows: Section II describes the data used in this study and presents key summary statistics regarding the monitoring behavior of funds. Section III provides a detailed overview of our identification strategy. Sections IV and V present our results. Section VI concludes.

II. Data and Summary Statistics

To examine the governance implications of passive index investing, we combine data from the Center for Research in Security Prices (CRSP), Compustat, Institutional Shareholder Services (ISS), and the Frank Russell Company (Russell), as discussed in detail below.
A. Data

We use Russell Index membership lists provided directly from Russell and we match this data to firm and stock-level data from CRSP and Compustat.\footnote{We do not impose filters on firm or stock characteristics, because our identification strategy requires all firms that are in the Russell 1000 or Russell 2000 in cohort year $t$ and year $t-1$.} To measure fund voting behavior, we use the ISS Fund Voting data. Starting from 2003, ISS records the votes cast by individual mutual funds and exchange traded funds (ETFs) at shareholder meetings for the majority of publicly traded U.S. firms.\footnote{One potential challenge for studies of fund voting is that funds incorporated as a trust, such as SPY and QQQ, are not subject to NP-X reporting requirements. As such, their voting data is not publicly reported anywhere. None of the Russell 2000 index funds including IWM are incorporated as trusts, so our voting results are not affected by the omission of this data. We thank Tara Bhandari and Amy Edwards at the Securities and Exchange Commission for helpful conversations on this topic.} We link the ISS data by fund-year to the CRSP mutual fund database, requiring that all sample funds be U.S. equity funds with at least $\$10$ million in assets under management.

We measure fund holdings by combining the CRSP mutual fund holdings database with the Thomson Reuters S12 database. We find that both databases omit some holdings of certain mutual funds in certain years, but the omissions are largely orthogonal across the two databases.\footnote{For example, S12 omits some data on the Vanguard Russell 2000 fund, which is well covered in CRSP. Conversely, prior to 2008 CRSP omits some data on the iShares Russell 2000 fund. Combining the two databases yields good coverage of both funds in all sample years. Formally, we take the union of the two databases; if a fund-firm-year holding is in one databases but not the other, we include it; if it is in both databases, we take the larger of the two positions.} In unreported analyses, we find that all our results are similar when we use only S12 or only CRSP holdings data.

B. Summary Statistics

We begin our analysis by examining the cross-sectional variation of voting outcomes between active and index funds using univariate summary statistics. Consistent with the
literature, we define an index fund as a fund with fund flag “D” in the CRSP Mutual Fund Database, and we classify all other funds as active funds (all variables are defined in Appendix A). Row 1 of Table I shows the distribution of fund votes across the entire set of agenda items (i.e., the full matched sample). Unconditionally, index funds vote *Yes* 90.4% of the time compared to 89.4% of the time for active funds.

Many agenda items are largely procedural, such as renewing the board of directors or voting to adjourn the meeting. Accordingly, in the next four rows of Table I we split agenda items into two categories: “consensus votes”, i.e. items for which management and ISS made the same recommendation (rows 2-3), and “contentious votes”, i.e. items for which management and ISS made opposing recommendations (rows 4-5). For items that management and ISS both approve, index funds vote *Yes* 95.6% of the time while active funds vote *Yes* 96.0% of the time. Similarly, for votes that management and ISS both oppose, index funds vote *Yes* 4.2% of the time while active funds vote *Yes* 5.1% of the time. The rates at which active and index funds vote no, abstain, or fail to record a vote are also similar. Thus, on consensus votes, index funds and active funds vote identically.

On contentious items the results are very different. For items which management supports but ISS opposes, index funds vote *Yes* 54.3% of the time compared to 41.9% for active funds. For items which management opposes but ISS supports, index funds vote *No* 53.5% of the time compared to 46.0% for active funds. Thus, in both cases index funds are significantly more likely to side with management. Summing across all contentious votes and coding abstentions as “no” votes, index funds voted with management 55.5% of the time while active funds voted with management 46.2% of the time.

15In CRSP, a fund with flag D is a “pure index fund” whose “objective is to match the total investment performance of a publicly recognized securities market index.” In unreported tests, we classify funds according to their fund name or their active shares (Petajisto (2009)) and our results are similar.
Interestingly, index funds are less likely than active funds to abstain on contentious items. As argued in Maug and Rydqvist (2001), if voting is costless, no shareholder should ever abstain. Hence, the significant number of abstentions in our analysis implies that voting on contentious items is costly to funds. For example if a fund wishes to maintain a long-term relationship with management, voting “abstain” may be preferred to voting “against”. Since most items require a majority of all votes cast to approve a measure, abstention can have the same effect as voting against a proposal but be perceived as a “soft no” (Del Guercio et al. (2008), Bebchuk et al. (2017)). Hence, finding that active funds are more likely than index funds to abstain on contentious items again suggests that active funds are more likely to oppose management than index funds are.

These results provide broad descriptive evidence that index funds are passive monitors in that they are more likely than active funds to vote with firm management. While *a priori* it may be unclear if this behavior should be considered passive, it is clear that voting with management transfers power from the principals (from investors) to the agents (the firm’s managers). Hence, from a principal-agent perspective (e.g., Berle and Means (1932), Jensen and Meckling (1976), Maug (1998)) such a voting strategy is clearly passive.

Of course, it remains possible that index funds use other mechanisms to monitor their portfolio companies, such as the exit mechanism. Put differently, to understand whether index funds are good monitors, it is necessary to examine both voice and exit behavior (e.g., Edmans et al. (2018)). Using the mutual fund holdings data, we observe if a fund exits a given stock in a given year. We further distinguish between voluntary and involuntary exit: All funds must exit a position if a firm is acquired or delisted, so we code these as involuntary exits.

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16 The voice mechanism also includes engagement. We examine this monitoring mechanism in Section IV B.
In untabulated results, we find that each year on average an active fund exits 36 (or 32%) of their 114 positions. By comparison, on average each year an index fund exits 61 (16%) of its 371 positions. This comparison is conservative, because it does not take into account stocks that switch out of the fund’s benchmark index. When we take index switching into account, we find that each year on average a Russell 2000 index fund holds 1789 of the Russell 2000 stocks and exits 290 stocks (10.4%), 223 because the stock delisted or left the index and 67 voluntarily. Thus, the data suggest that index funds do voluntarily exit from a significant number of their positions each year, although much less frequently than active funds. While it may seem surprising that index funds do not hold 100% of their benchmark stocks, we find that they are more likely to hold stocks with high index weights, so on a value-weighted basis they hold most of the stocks in their benchmark index.

A limitation of the results presented so far is that both active funds and index funds (to a lesser extent) choose which stocks they hold. Hence, there is the potential for both an *endogeneity bias* – if fund holdings are correlated with firm governance – and a *selection bias* – since if a fund chooses not to hold a firm then we do not observe how the fund would have voted. To address these potential biases, in the next section we develop a new research design that uses post-2006 Russell index reconstitutions. We show that this empirical approach produces exogenous variation in fund holdings, and we use this variation to examine fund voting, engagement, and exit.
III. Research Design

A. Background on Russell Indexes

In June of each year Russell Investments reconstitutes their popular Russell 1000 (large-cap) and Russell 2000 (small-cap) indexes. To determine index assignment, Russell ranks all qualifying U.S. common stocks by their market capitalization as of the last business day in May.\footnote{Russell reports the index weights on the component stocks, which are based on their proprietary calculation of float-adjusted market capitalization. However, Russell does not disclose the initial rankings that determine index assignment, which are based on unadjusted market capitalization. We compute our own proxy market capitalizations and rankings at the end of May each year using CRSP and Compustat data following Chang, Hong, and Liskovich (2015). Our predicted Russell membership recovers the actual Russell Index membership for 99.5\% of firm-years, and all results are similar when we use alternative methods of imputing the Russell rankings.} Before June 2007, index assignment followed a simple threshold rule: Stocks ranked from 1-1000 were assigned to the Russell 1000 while stocks ranked from 1001-3000 were assigned to the Russell 2000.

Starting in June 2007, Russell implemented a new assignment regime (“banding”). After sorting stocks by their market capitalization, Russell computes an upper and lower band around the rank-1000 cutoff; the bands are calculated as +/- 2.5\% of the total market capitalization of the Russell 3000E.\footnote{The 3000E is an “extended” version of the Russell 3000 that includes microcap stocks.} Stocks within the bands do not switch indexes. That is, if a stock that was in the Russell 2000 last year is above the rank-1000 cutoff but below the upper band, it will stay in the Russell 2000 the following year, and vice versa.

Figure 2 plots index assignments in 2007, the first year of the banding regime. We see that banding entirely eliminated the discontinuity across the rank-1000 cutoff; hence, an RDD across the cutoff is no longer feasible. However, Figure 2 also shows there are two new discontinuities at the upper and lower bands (dashed vertical lines). These discontinuities correspond to whether stocks switched indexes or stayed in their previous index.
Consider a stock in the Russell 2000 that is nearby the upper band when the indexes are reconstituted. The stock’s index assignment depends on four parameters as calculated by Russell:

1. The stock’s ranking in the Russell 3000
2. The market capitalization of the rank-1000 stock
3. The total market capitalization of the Russell 3000E
4. The cumulative market cap of the stocks ranked below the focal stock but above the rank-1000 stock

All four parameters are difficult to predict ex ante – indeed, Russell does not make their unadjusted market capitalizations or rankings available ex post. All four parameters are difficult or impossible to manipulate. This line of reasoning suggests that within a sufficiently narrow window around each band in each year, whether a stock ranks above or below the band – and therefore switches or stays – is quasi-randomly assigned.

B. Research Design

For each index reconstitution since June 2007, we select a cohort that consists of two sets of treated and control stocks. Specifically, we select all stocks that were potential switchers (based on their lagged index membership) in windows of +/-100 ranks around the upper and lower band. Figure 3 shows the treated and control stocks in the 2007 cohort. Figure 4 shows the market capitalization of our sample stocks within the universe of all Russell 3000 stocks; as the figure shows, our Russell sample consists of two narrow groups of mid-cap stocks. For each stock in each cohort, we include firm-years from three years prior to the cohort year.
(pretreatment years -3, -2, -1) and three years after the cohort year (post-treatment years 0, 1, 2).

In Table II Panel A, we report summary statistics for the firm-years in our Russell sample from 2004 to 2017. The average firm has a market capitalization of 2.5 billion dollars, total ownership by mutual funds of 9.56% of the firm’s market capitalization, and an entrenchment (“E”)-index of 3.2. The average ownership by index funds is 3.86% of market capitalization (0.93% of which is by Russell 2000 index funds, and 0.09% of which is by Russell 1000 index funds), and the average ownership by active funds is 5.70% of market capitalization.

In Table II Panel B we report summary statistics for the mutual funds in the sample from 2004 to 2017. Relative to active funds, index mutual funds are less numerous, similar in size in terms of assets under management, have lower expense ratios, and are more diversified on average.

The discontinuity in treatment status based on the unadjusted Russell rankings suggests a regression discontinuity design (RDD). However, there are features of the setting that make an RDD undesirable. The main feature is that we do not observe the true rankings that determined index assignment; instead, we must impute them using the CRSP and Compustat data. Our proxy rankings predict the true index assignments with 99.5% accuracy, but there could still be significant errors in the rankings of individual firms. This is a concern because errors in measuring the forcing variable bias the RDD control function to be too flat, and produce spurious or upward biased estimates of treatment effects (Pei & Shen, 2017).\textsuperscript{19}

To deal with this concern we exploit the panel nature of our data. Specifically, we estimate a cohort difference-in-differences design with firm-by-cohort fixed effects. To see why this approach addresses measurement error in the forcing variable, consider the RDD

\textsuperscript{19}Note that a fuzzy RDD, which adjusts for non-compliance with treatment assignment, does not address this issue.
estimate from the following model:

\[ Y_j = \beta_1 I\{R1000 \to R2000\}_j + \beta_2 I\{R2000 \to R1000\}_j \]

\[ + \gamma (\text{truerank}_j + \text{measurementerror}_j) + \epsilon_j, \]

where \( I\{R1000 \to R2000\}_j \) is an indicator variable that takes the value one if a stock switches from the Russell 1000 to the 2000, \( I\{R2000 \to R1000\}_j \) is an indicator variable that takes the value one if a stock switches from the Russell 2000 to the 1000, and \( \gamma \) is the coefficient on a linear control function (that is measured with error). Standard arguments (Wooldridge, 2008) show that measurement error in \( \text{caprank} \) causes \( \hat{\gamma} \) to be biased toward zero. Since \( \text{truerank} \) is correlated with treatment status, the estimated treatment effect \( \hat{\beta} \) is biased away from zero. This bias may be present for any choice of control function.

Instead, we estimate the following difference-in-differences model:

\[ Y_{jt} = \beta_1 I\{R1000 \to R2000\}_j \times I\{PostTreat_t\} + \]

\[ \beta_2 I\{R2000 \to R1000\}_j \times I\{PostTreat_t\} + \phi_j + \lambda_t + \epsilon_{jt}, \]

where \( \phi_j \) and \( \lambda_t \) are firm and date fixed effects and \( I\{PostTreat_t\} \) is an indicator variable that takes the value one after index re-balancing.\(^{20}\) We compare the outcome variable before treatment versus after treatment, with a fixed effect applied to each firm in each cohort. Because each firm had a fixed ranking within the cohort, the fixed effects \( \phi_j \) absorb any association of the outcome variable with both the true ranking and the error in the proxy ranking for each firm. Thus, the specification (2) estimates the treatment effect of switching indexes

\(^{20}\)Importantly, this means that \( \beta_1 \) and \( \beta_2 \) – the effects of switching from the R2000 to the R1000 and vice versa – are identified from disjoint sets of treated and control stocks. The stock-by-cohort fixed effects sweep out any non-time-varying differences between treated and control stocks, while the year fixed effects remove aggregate trends in firm behavior or ownership.
as would a correctly measured RDD, but in a way that is not sensitive to measurement error in the forcing variable.

This approach is not a panacea. Errors in the proxy rankings could also cause us to select firms that were farther away from the bands than we know, which would introduce selection bias into the sample. We examine the possibility of selection bias in two ways. First, if our treated and control firms are different ex ante it should be visible in their pretreatment characteristics.\textsuperscript{21} In the Appendix Figure A3 and Table A2 we present formal balance tests which show that the firms on either side of each band are indistinguishable on a variety of measures. Second, in the Appendix Table A4 we document that our estimates remain stable as we vary the windows around the bands. These results are inconsistent with selection bias.

Our methodology differs from previous papers that use Russell reconstitutions in two important dimensions. First, we are the first to develop a research design that explicitly uses Russell index reconstitutions in the post-2006 period. This means that our results reflect a more recent period, during which index investing is at all-time highs. Second, unlike previous RDD research designs, our difference-in-differences specification uses firm fixed effects to sweep out unobserved heterogeneity among firms. Among other advantages, this means that our estimates are not biased by noise in the measurement of the forcing variable, which can be an issue in sharp and fuzzy RDD specifications (Pei & Shen, 2017).

\textbf{C. Effects of Index Switching on Fund Ownership}

Next, we examine the effects of Russell index assignment on fund ownership. In Column 1 of Table III, we present estimates (2) of the effects of index switching on ownership by

\textsuperscript{21}Wei and Young (2017) show via balance tests that Russell RDD specifications from the existing literature have large pretreatment differences between treated and control firms, suggesting the presence of selection bias.
Russell 2000 index funds. We find that ownership by Russell 2000 index funds rises by an average 1.45% of market capitalization for stocks that switch into the Russell 2000 relative to nearby stocks that stay in the Russell 1000. At the same time, we find that ownership falls by 1.34% of market capitalization for stocks that switch into the Russell 1000 relative to similar stocks that stay in the Russell 2000. The two coefficient estimates are very similar in magnitude, even though they are estimated from two disjoint sets of stocks.

In Column 2 of Table III, we report the effects of index switching on ownership by Russell 1000 funds. As expected, we find the opposite effect (relative to the change in ownership by Russell 2000 funds shown in Column 1). However, the coefficient is smaller for Russell 1000 fund holdings, falling by 0.18% of market capitalization in the lower band treatment group and rising by 0.17% of market capitalization in the upper band treatment group. This is as expected, because the index weights of stocks at the bottom of the Russell 1000 are significantly smaller than the index weights of stocks at the top of the Russell 2000.

In Column 3 of Table III, we examine the effects of index switching on ownership by index funds that replicate the S&P500 index. (This is by far the largest category of index funds both numerically and by assets under management.) Russell index assignments should be largely irrelevant to the holdings of these funds. Indeed, although the assets under management of the S&P 500 funds are an order of magnitude larger than those of the Russell funds, the changes in holdings by S&P 500 funds are tiny, on the order of 0.03% of the firm’s market capitalization.

The net effect on holdings by all passive mutual funds in the data (Table III Column 4) is similar to the net effect on holdings by Russell 1000 and 2000 index funds. By contrast, in Column 5 we examine the effects of index switching on ownership by active mutual funds. The changes in ownership by active funds are small and not statistically significant, sug-
gesting that on average, index assignment does not affect ownership by active mutual funds. As a result, total holdings by all mutual funds (Table III Column 6) are entirely driven by changes in holdings by index funds.

Figure 5 plots Russell 2000 fund ownership for the four groups (switchers vs. stayers near the upper band; switchers vs stayers near the lower band) in event time, that is, the observation year minus the cohort year. The results clearly show that: (i) Switchers and stayers in both groups have the same pre-treatment levels and trends, and (ii) switching into the Russell 2000 leads to higher index fund ownership and vice versa. Because firms in any group may also switch indexes in the post-treatment years, the treated and control groups converge toward each other after the treatment year.

To sum up, near the yearly Russell bands index switching is plausibly random among sample firms, and is followed by symmetric shifts in ownership by index funds.

IV. Voting

In this and the next section, we examine the monitoring behavior of index funds, moving from broad cross-sectional comparisons to the cleanly identified estimates in our Russell cohort setting. We examine voice and exit and find that index funds are passive monitors. Accordingly, we then examine whether passive monitoring behavior has implications for firm value. We find that it does.

We first examine funds’ voting behavior. In Table IV Columns 1 and 2, we estimate the difference in fund voting on all contentious votes across the universe of firms. The dependent variable VotedWithMgmt is an indicator equal to 1 if a fund votes with management’s rec-
ommendation, and 0 otherwise. The independent variable *IndexFund* is an indicator equal to 1 if the fund is an index fund and 0 if the fund is an active fund, as defined in Section II B and Appendix A. The estimates include firm fixed effects, which remove non-time-varying differences across firms in management quality or governance, and year fixed effects which remove aggregate trends.

In Table IV Column 1 we see that compared to active funds, index funds are 12.5 percentage points more likely to side with management on contentious votes. This is a larger difference than in the summary statistics (Table I) and is due to the addition of firm fixed effects, so that we now compare index versus active funds’ voting within each firm.

Table IV Column 2 adds as an explanatory variable each fund’s yearly expense ratio. We estimate the coefficient on the expense ratio separately for index and active funds because of the different incentives that the two types of funds face, and their different distributions of expense ratios. We find that active funds’ voting behavior does not vary significantly with their expense ratio. By contrast, among index funds, funds with higher expense ratios are significantly less likely to side with management on contentious votes. The coefficient of \(-0.238\) means that an index fund with an expense ratio that is 25 basis points higher (about one standard deviation) is 6.1 percentage points less likely to side with management – half of the overall difference between index and active funds. This result is strikingly consistent with the prediction of Bebchuk et al. (2017): The economics of index investing restricts the resources that the fund has to employ in monitoring, since index funds compete on providing a standardized product at the lowest price. This result also supports the interpretation that siding with management is passive. When index funds have more resources to employ in monitoring, they behave more like active funds, i.e., they side less with management on

\footnote{Following management’s recommendation is defined as voting Yes on a recommendation of Yes, and No or Abstain on a recommendation of No or Withhold.}
contentious votes.

The firm and year fixed effects in Columns 1 and 2 mitigate concerns of endogeneity bias, since they compare how index funds and active funds vote within the same firm. In the Appendix Table A5 we present alternate specifications that compare fund voting within firm-years and within individual agenda items. The difference in voting between index funds and active funds is identical to our main estimates. These results suggest that firm and year fixed effects, as in our main specification, account for most of the relevant variation across firm-years and agenda items that explain fund voting behavior. In other words, within our panel, relevant characteristics such as firm governance or shareholder engagement vary hugely between firms but little within firms over time.

However, there is still the potential for selection bias because funds choose which firms they hold. If index funds tend to hold better-run firms, or vice versa, then the gap in fund voting behavior might be due to selection. To examine the potential for selection bias, we next compare fund voting on contentious votes within the Russell cohort sample. Table IV Columns 3 and 4 present results for the Russell subsample, and find similar results to those in the entire sample. Columns 5 and 6 present results that explicitly correct for selection bias in fund holdings (Heckman, 1979). Specifically, we estimate the following two-stage model:

\[ \text{Observed}_{ijt} = \text{Probit}(\tau \text{IndexFund}_i) \]

\[ + \xi_1 R1000 \rightarrow R2000_j \times Post_t \times \text{IndexFund}_i \]

\[ + \xi_2 R2000 \rightarrow R1000_j \times Post_t \times \text{IndexFund}_i \]

\[ + \mu_1 R1000 \rightarrow R2000_j \times Post_t + \mu_2 R2000 \rightarrow R1000_j \times Post_t \]

\[ + \phi_j + \chi_t + \nu_{ijt} \]
\[
Y_{ijt} = \beta \text{IndexFund}_i + \alpha \text{InverseMillsRatio}_{ijt} + \lambda_j + \kappa_t + \epsilon_{ijt} 
\] (4)

In Equation (3) \textit{Observed} is an indicator variable equal to 1 if a fund \( j \) holds a stock \( i \) on date \( t \), and zero otherwise; \textit{IndexFund} is an indicator variable equal to 1 if the fund is an index fund, and 0 otherwise; \( R1000 \rightarrow R2000 \) is an indicator variable equal to 1 if a firm switches from the Russell 1000 to the Russell 2000, whereas \( R2000 \rightarrow R1000 \) is an indicator variable equal to 1 if a firm switches from the Russell 2000 to the Russell 1000. \textit{Post}_t is an indicator variable equal to 1 if the stock-year is post Russell assignment, and 0 if it is pre-Russell assignment. In Equation (4) the outcome variable is \textit{VotedWithMgmt} (as defined above), \textit{InverseMillsRatio} is the Heckman correction term from Equation (3). \( \phi_j \), \( \lambda_j \) are firm fixed effects and \( \chi_t \), \( \kappa_t \) are year fixed effects.

The results for the first stage (Equation (3)) are reported in Appendix Table A6. As documented in the previous section, index switching generates significant variation in mutual fund ownership, which we have argued is plausibly exogenous for firms in the Russell cohort sample. In Table IV Columns 5 and 6 we report the second-stage estimates (4). The gap in voting behavior between index and active funds is still present but smaller: Index funds are 8.4 percentage points more likely than active funds to side with management, and again index funds with higher expense ratios are less likely to side with management. These results suggest that part of the gap in voting behavior is due to selection bias: Active funds may choose to hold firms whose management they are more likely to disagree with relative to
Appendix Table A8 presents another observation that is again consistent with our summary statistics on fund voting: Index funds are significantly less likely than active funds to abstain on contentious votes. This observation is consistent with the argument of Del Guercio et al. (2008) and Bebchuk et al. (2017) that it is costly for shareholders to openly oppose firm management. That index funds abstain less than active funds indicates again that index funds openly cede power to management, whereas active funds may prefer to either directly oppose firm management (vote No) or abstain (soft No).

In sum, across a wide range of comparisons, index funds are more likely than active funds to side with firm management on contentious agenda items. They are also less likely to formally abstain on contentious items. Moreover, index funds with higher expense ratios are less likely to side with firm management. These results are consistent with the prediction that, owing to their incentives, index funds are passive monitors of the firms in their portfolios.

A. Types of Agenda Item

A concern with our results in Table IV is that they might just describe index funds’ voting behavior on less relevant agenda items, i.e. votes that do not affect corporate governance policies. Accordingly, in this section we examine how index funds’ voting differs within categories of contentious items related to corporate governance issues. Consistent with prior

\footnote{In many cases, funds belong to fund families such as Fidelity or Vanguard, and voting might be decided at least partly at the fund-family level. Such coordination is clear in the data: We find that the fund-family identity explains 26% of the variation in fund voting, while fund identity (which is nested within fund-family identity) explains 33%. Appendix Table A7 presents results when we examine voting policy at the fund-family level. The results are consistent with our main estimates in Table IV, and indeed stronger: Without any reference to individual fund characteristics, funds in fund families with more passively managed assets are again more likely to vote with firm management on contentious items.}
studies,\textsuperscript{24} we examine the following voting categories:

1. Board of Directors: Items whose description includes “director” or “board”;

2. Compensation: Items whose description includes “executive compensation”. This category is mostly (83\%) made up of say-on-pay votes;

3. Disclosure: Items whose description includes “disclosure” or “reporting”;

4. Entrenchment: Items whose description includes “staggered”, “bylaw”, “poison pill” or “parachute”.

We report results for this analysis in Table V. In Column 1, we find that index funds are 13.2 percentage points more likely to side with management on contentious items relating to the board of directors. A small subset of these items relate to formal proxy battles between the incumbent board and an activist shareholder. That is, our results in Column 1 are consistent with those of Brav et al. (2018), who focus on fund voting in proxy battles.

Next, in Columns 2 to 4 we find that the gap in fund voting between index and active funds is positive and of similar magnitude for items related to compensation, disclosure and managerial entrenchment. Thus, on four important categories of agenda items related to firm governance, we document that index funds consistently side with management.

Our findings suggest that the rise of passive investing has consequences for (at least) board structure, managerial compensation, disclosure, and managerial entrenchment. In other words, these results suggest that the rise of index funds gives managers more power in decisions related to corporate governance across the board.

\textsuperscript{24}E.g., Ertimur, Ferri, and Oesch (2017), Ertimur, Ferri, and Oesch (2015), and Ertimur, Ferri, and Oesch (2013), Larcker, McCall, Ormazabal, et al. (2012)
V. Other Monitoring Mechanisms

It might be argued that three alternative hypotheses explain our voting results. First, index funds could use exit instead as a monitoring mechanism to enforce good governance. We test the exit hypothesis in Section V.A, below. Second, it might be that index funds engage with managers either publicly or behind the scenes (Mc Cahery et al. (2016)), and then vote in support of management proposals that they negotiated beforehand. We test the engagement hypothesis in Section V.B. Third, even if index funds do not actively engage with their portfolio firms, managers might be driven to appease these large shareholders by following policies that are preferred by index funds (Fisch et al. (2018)). We test the appeasement hypothesis in Section V.C.

A. Exit

In this section we examine the second channel by which shareholders monitor and exert influence: exit. According to Edmans (2009) and others, in addition to voting, shareholders can influence a firm’s actions by selling the stock or threatening to sell the stock.

In Table VI we examine fund exit behavior. The dependent variable VoluntaryExit is equal to 1 if a fund exits a stock voluntarily as defined in Section II.B, and 0 otherwise. The independent variables of interest are IndexFund (as defined in Section II.B), ActiveFund, an indicator equal to 1 if a fund is an active fund, and 0 if a fund is an index fund, and LostVote, an indicator equal to 1 if a fund voted Yes on an item that failed (did not pass) or No on an item that passed. As in our prior analysis, we include firm and year fixed effects. First, in Columns 1, 3, and 5 we examine the probability of exit, whereas in Columns 2, 4, and 6 (see next Subsection A.1) we examine the probability of exit conditional on a voting outcome.
In Table VI Column 1 we see that across the full sample, index funds are 17.9 percentage points less likely to voluntarily exit a position relative to active funds. These findings are in line with the summary statistics in Section II.B, and suggest that index funds may use the exit channel as a monitoring mechanism, but they do so significantly less than active funds.

In Table VI Column 3, we estimate the probability of exit within our Russell cohort sample, and in Column 5 we add the Heckman correction term (InverseMillsRatio). The coefficient on the InverseMillsRatio is negative and statistically significant, which is consistent with significant selection bias in studies of fund exit behavior (Coffee (1991), Bhide (1993), and Edmans, Fang, and Zur (2013) discuss the implications of liquidity for governance). However, there is little effect on the comparison between index and active funds’ exit behavior. After the correction, index funds are again much less likely to exit a position than active funds (18.5 percentage points compared to 17.4 percentage points in the uncorrected OLS estimate).

A.1. Voting and Exit as Strategic Substitutes

We next examine fund exit behavior after a lost vote to provide an empirical test of theoretical models that predict strategic substitution between voting and exit (e.g., Edmans et al. (2018)). Specifically, when a fund loses a vote, theory predicts the fund will be more likely to exit the position.

The results are shown in Columns 2, 4, and 6 of Table VI. Across the full cross-section (Column 2) we find that, if over the previous year (during which a fund held the position in a firm) the fund “lost” a vote (that is, the fund voted Yes on an item that failed or No on an item that passed), an active fund is 0.9 percentage points more likely to exit that position the following year. On the other hand, an index fund that loses a vote is 0.4 percentage points
less likely to exit. In Column 4, we estimate the probability of exit conditional on a voting outcome within our Russell cohort sample and we find results similar to those in Column 2. Finally, adjusting for both endogeneity and selection bias (Column 6), we continue to find that subsequent to a vote that went against their wishes, active funds are more likely to exit that position, while index funds are not.

These findings further support the notion that index funds make less use of the exit channel compared to active funds. Our results are consistent with strategic substitution between the voting and exit mechanisms, but only by active funds. Active funds – who are more likely to vote against management a priori – are also more likely to exit a position after a vote goes against them. Thus, the difference in exit behavior conditional on previous voting outcomes is again consistent with weaker monitoring by index funds – given that voting and exit are strategic substitutes for funds to affect firm policy (e.g., Admati and Pfleiderer (2009); Edmans et al. (2018)).

Overall, in light of these empirical findings we reject the exit hypothesis and we conclude that for both the voting and exit channels, index funds are relatively passive monitors of the firms in their portfolios.

B. Engagement

The engagement hypothesis predicts that index funds – rather than voting against management or exiting if they disagree with a firm’s policies – may engage with a firm’s managers. Arguably, we cannot observe engagement between index funds and the managers of their portfolio firms (although survey data in Bebchuk and Hirst (2018) show that these events are rather rare). However, we can test the engagement hypothesis in two ways.

First, we can examine index funds’ voting behavior on shareholder proposals. The in-
tuition behind this test is that engagement could explain index funds’ voting behavior on management proposals, but it cannot apply to shareholder proposals. In other words, “active” index funds could support management proposals that they negotiated (or proposed to managers) beforehand, but when it comes to vote on shareholder proposals “active” index funds should be more willing to oppose management. We present results for this analysis in the next Subsection B.1.

Second, in Subsection B.2, we further study the engagement hypothesis by examining index funds’ propensity to file a Schedule 13D. Shareholders are required to disclose a holding above 5% of the firm’s market capitalization via either Schedule 13D, which allows the fund to officially engage with the firm, or Schedule 13G, which does not. Hence, if index funds are in fact active monitors of their portfolio firms they should be more likely to file a Schedule 13D than a Schedule 13G.

B.1. Voting on Proposals by Shareholders

We report results for the first test of the engagement hypothesis in Table VII, where we split contentious items between items proposed by shareholders and items proposed by management. We see that the pattern that index funds are more likely to side with management holds true regardless of who proposed the agenda item. On management proposals that are opposed by ISS, index funds are 14.4 percentage points more likely to vote with management. On the other hand, on shareholder proposals that are opposed by management, when “active” index funds should be more willing to support the shareholders, index fund are still 10.3 percentage points more likely to vote with management.

The results in Table VII allow us to address the hypothesis that index funds might be voting in agreement with management after they coordinated with managers behind the
Arguably, such a story may apply to index funds’ voting on proposals by management. However, it cannot apply to index funds’ voting on proposals by shareholders. In other words, if an index fund is an active monitor, it should be willing to oppose management on contentious shareholder proposals. Yet we find the opposite: For contentious votes on shareholder proposals, index funds again cede authority to management. Moreover, our results are echoed in a contemporaneous working paper by Brav et al. (2018). They document that in proxy contests, an important and contentious category of shareholder proposals, index funds do not support activist shareholders but instead side with firm management.

B.2. Disclosure: Schedule 13D vs Schedule 13G

Next we examine funds’ propensity to publicly signal their intention to be active monitors by filing a 13D schedule. The SEC requires shareholders to disclose a holding above 5% of any public company via either Schedule 13D or Schedule 13G. Schedule 13D is required if the shareholder has “the purpose or the effect” of influencing the control of the firm. This category includes actions such as “proposing governance changes... or engaging with the portfolio company to propose or facilitate the appointment of particular individuals as directors” (Bebchuk and Hirst (2018)). The short-form Schedule 13G, by contrast, requires that the shareholder has no such purpose or effect. A blockholder who files Schedule 13G and then engages with firm management opens themselves up to SEC investigations or class action lawsuits.\(^{25}\)

Table VIII presents the results.\(^{26}\) The dependent variable is an indicator variable for whether each filing is under the “activist” Schedule 13D (\(\text{Filed 13D}=1\)) or the short-form

\(^{26}\)Because blockholdings are disclosed at the level of the fund family, we match disclosure filings to fund families and not to the individual funds. In all, we match 30,864 disclosure filings since 2004 to a fund family in our data.
and passive Schedule 13G ($\text{Filed 13D}=0$). The independent variable $\text{FracAUMPassive}_{jt}$ is the fraction of fund family $j$’s AUM that was managed by index funds in year $t$. Thus it ranges from 0 for a fund family entirely populated by active funds, to 1 for a fund family entirely populated by index funds. Column 1 shows that fund families with more index-fund assets under management are significantly less likely to file Schedule 13D. The marginal effect (which corresponds to moving from 100% active to 100% passive) is $-27$ percentage points, which is more than 100% of the base rate probability. The same conclusion holds when we control for the fund family’s total AUM (Column 2) and for the number of blockholding disclosures the family filed in that year (Column 3).

Thus, more passive fund families (those with more index-fund assets under management) are less likely to file Schedule 13D and more likely to file Schedule 13G. However, because this analysis is at the fund-family level, these results do not directly measure the individual funds’ propensity to engage. In a further step we match blockholdings by individual funds, as revealed in the merged S12 and CRSP holdings data, to SEC disclosure filings by that fund’s parent family. We keep only matches that are unambiguous at the fund-firm-year level. In all, we match 4,475 disclosure filings to individual funds. For active mutual funds, 64 of 4085 filings were under Schedule 13D. For index funds, 0 of 390 filings were under Schedule 13D (two-sample comparison of means $t$-statistic=8.1).

Thus, both at the fund family level and at the individual fund level, index funds are less likely to file the activist Schedule 13D and more likely to file the passive Schedule 13G. These findings are inconsistent with the hypothesis that index funds affect governance through engagement with their portfolio firms.
C. Changes in the Supply of Agenda Items

Finally, we test the appeasement hypothesis, which predicts that even if index funds do not actively engage with their portfolio firms, managers might still be driven to appease these large shareholders by following policies that are preferred by index funds (Fisch et al. (2018)). In other words, the mere fact of higher index fund ownership might drive firm managers to follow the index funds’ stated preference, with no need for engagement or voting.

In this section, we test this hypothesis by examining the effect of changes in fund holdings on the types of agenda items that appear at the firm’s annual meeting. Specifically, we compare the number of agenda items and, in particular, the proportion of agenda items supported by managers and/or ISS on the annual shareholder meetings for our treated and control firms. This also gives a useful snapshot of how our Russell firms’ shareholder meetings are changing over time, if at all.

Table IX presents the results. Neither set of treated firms (i.e. firms that switched indexes in either direction) significantly changed the number of agenda items at their annual meetings in the post-treatment period (Column 1); there was no change in the number of proposals by firm management or by shareholders (Columns 2 and 3). Moreover, we observe no change in the fraction of agenda items that were opposed by management (Column 4) or opposed by ISS (Column 5). Finally, if index funds indirectly encourage better governance in their portfolio firms, we would expect to see an increase in the fraction of agenda items that were approved by ISS and management together. We see no such change (Column 6).

Thus, the results in Table IX are inconsistent with the hypothesis that index fund holdings lead to a change in the supply of consensus agenda items that are up for a vote at firms’ annual

\[27\text{In untabulated results, we also find no change in the fraction of contentious items (regardless of who – ISS or management – opposed the agenda item). Moreover, we find no changes in the number of agenda items (i) opposed by ISS, (ii) opposed by management, or (iii) consensus items.}\]
shareholder meetings. These results are inconsistent with the appeasement hypothesis, and consistent with index funds being passive monitors.

D. Announcement Returns

After documenting uniform evidence that index funds are passive monitors of their portfolio firms, we next examine whether their monitoring behavior exacerbates agency conflicts in a way that impacts firm value. To do this, we examine the stock market reaction on the days when agenda items are decided, conditional on how different funds voted. This test also provides additional evidence to rule out the alternative hypothesis that index funds intervene to improve firms’ governance through unobserved channels. In other words, if stock returns do not react to fund voting, then index funds might be “rationally passive” monitors, who eschew costly monitoring actions that do not affect firm strategy. But, if (i) index funds affect firm value positively by other means (e.g., engagement), or (ii) the difference in voting between active and index funds is immaterial to firm outcomes, then average announcement returns conditional on index funds’ voting should be positive or zero, respectively.

In Table X we present results for the comparisons of announcement returns to the firm’s stock on the day each item is decided. We condition on (i) whether the fund voted for the item or against it (we use VotedYes, an indicator equal to 1 if a fund voted yes on an agenda item, and 0 otherwise), (ii) whether the item passed or failed (we use ItemPassed, an indicator equal to 1 if an agenda item passed, and 0 otherwise), and (iii) whether the fund was an index fund or active fund (we use IndexFund as previously defined). We estimate
the following equation, where \( i \) denotes funds and \( k \) denotes agenda items:

\[
\text{DailyRtn}_{ik} = \beta_1 \text{IndexFund}_i \times \text{VotedYes}_{ik} \times \text{ItemPassed}_k \\
+ \beta_2 \text{IndexFund}_i \times \text{VotedYes}_{ik} \\
+ \beta_3 \text{ActiveFund}_i \times \text{VotedYes}_{ik} \times \text{ItemPassed}_k \\
+ \beta_4 \text{ActiveFund}_i \times \text{VotedYes}_{ik} \\
+ \text{Main Effects} + \text{Fixed Effects} + \epsilon_{ik}
\]  

(5)

Thus, the first two coefficients \( \beta_1, \beta_2 \) compare the average announcement return for agenda items which index funds supported when the item passes versus when it fails. The third and fourth coefficients \( \beta_3, \beta_4 \) compare the average return for agenda items which active funds supported when the item passes versus when it fails.

We find that when an index fund votes for an item that passes, the firm’s stock falls by 4 basis points, while when an index fund votes in favor of an item that fails, the firm’s stock rises by 4 basis points (Column 1). By contrast, the difference in announcement returns conditional on active funds’ voting is of the opposite sign: higher when the item passes, and lower when the item fails. These results suggest that the difference in funds’ voting behavior may have an impact on firm value. On average, the agenda items that index funds support reduce firm value when they pass, and raise firm value when they fail. Conversely, the results for active funds’ voting have the opposite signs, consistent with the idea that passive monitoring reduces shareholder value.

In Column 2 we repeat the same analysis within the Russell cohort sample. The results are similar. When an index fund votes in support of an item, the average daily return is -14 basis points if the item passes compared to +12 basis points if the item fails. There is no
similar pattern in daily returns for active funds’ votes.

In sum, when index funds vote in favor of agenda items that pass, the average daily return to the firm’s stock is negative. Conversely, when index funds vote in favor of an item that fails, the average return is positive. These results are inconsistent with a world in which fund voting is irrelevant to firm strategy or firm value; they are consistent with a world in which index funds’ voting behavior relative to active funds may be detrimental to firm value.

VI. Conclusion

This paper examines the implications of the rise of passive index investing for monitoring and corporate governance. While the increasingly large positions held by index funds should motivate them to monitor their portfolio firms, these new intermediaries also have different incentives than managers of traditional active funds.

Our results document that index funds are passive monitors of the firms in their portfolios, consistent with theoretical predictions in Bebchuk et al. (2017), Edmans et al. (2018), and Bebchuk and Hirst (2018). We find that, relative to active funds, index funds are significantly more likely to side with firm management on contentious corporate governance votes. Index funds are also less likely to exit their position in a firm, both unconditionally and after they lose a vote. Furthermore, we find that index funds rarely, if ever, file a Schedule 13D, which indicates that they do not intend to affect firm policies. Finally, we show that this shift in control matters: On average, the agenda items that index funds support reduce firm value when they pass, and raise firm value when they fail.

Overall, our findings show that across the board, index funds cede power to firm managers. These results are consistent with the theoretical prediction that the rise of index
investing is exacerbating the classic agency conflict between managers and investors.
References


Figure 1. Yearly Passive Assets Under Management
The figure plots the total assets under management (AUM) for index funds in the CRSP Mutual Fund database, by year, in total dollars (solid line) and as a fraction of AUM (dashed line) across all funds.
Figure 2. Index Assignment Post-Banding

The figure plots assignments to the Russell 1000 and 2000 indexes in June of 2007 (vertical axis) against our proxy for Russell’s proprietary market cap rankings (horizontal axis). In 2007, the first year of the banding regime, stocks near the threshold all stayed in their previous years’ index, breaking the discontinuity in index assignment at rank 1000. Close to the estimated upper and lower bands (dashed lines), however, there are clear discontinuities in index switching.
Figure 3. Sample Selection
The figure plots the sample for the 2007 cohort consisting of all Russell stocks that lay within a +/-100 rank window of the upper and lower bands, and are potential switchers, i.e. were in the Russell 2000 in 2006 for those near the upper band or were in the Russell 1000 in 2006 for those near the lower band.
**Figure 4. Sample Selection**

The figure plots the sample for the 2007 cohort consisting of all Russell stocks that lay within a +/-100 rank window of the upper and lower bands, relative to the entire set of all Russell 3000 stocks that were subject to the Russell index assignment in 2007.
Figure 5. Index Switching and Index Fund Ownership
The figure plots the evolution of index fund ownership in event time relative to index assignment. On the left hand side is average ownership by Russell 2000 index funds, in event time, for firms near the lower band that were in the Russell 1000 prior to index assignment. On the right hand side is average ownership by Russell 2000 index funds, in event time, for firms near the upper band that were in the Russell 2000 prior to index assignment. The error bars represent 95% confidence intervals.
Table I
Summary Statistics of Fund Voting

The table summarizes the ISS voting data and presents comparisons of fund voting between active and passive investment funds. The table shows the fraction of each type of fund that voted Yes, No, Abstain or that failed to vote ("did not vote", DNV) on each agenda item across all shareholder meetings of U.S. firms recorded by ISS from 2003-2017. N is the number of individual fund-vote observations.

<table>
<thead>
<tr>
<th>Management ISS</th>
<th>Index funds</th>
<th>Active Funds</th>
<th>Difference</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommend</td>
<td>Recommend</td>
<td>Yes</td>
<td>No</td>
<td>Abstain</td>
</tr>
<tr>
<td>All</td>
<td></td>
<td>90.4%</td>
<td>6.2%</td>
<td>3.2%</td>
</tr>
<tr>
<td>Consensus</td>
<td></td>
<td>95.6%</td>
<td>2.8%</td>
<td>1.4%</td>
</tr>
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<td>No</td>
<td>4.2%</td>
<td>84.6%</td>
<td>8.8%</td>
</tr>
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<td>19.0%</td>
<td>24.9%</td>
</tr>
<tr>
<td>Yes</td>
<td>No</td>
<td>41.5%</td>
<td>53.5%</td>
<td>4.9%</td>
</tr>
<tr>
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<td>Yes</td>
<td>41.5%</td>
<td>53.5%</td>
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</tr>
</tbody>
</table>
Table II
Summary Statistics of Firms and Funds
Panel A presents statistics for firms in our Russell cohort sample from 2004 to 2017. Sample firms are selected on lagged index membership and proximity to the upper and lower Russell bands in each June cohort from 2007 to 2015. Each firm is included for three years before and after its cohort year. Panel B presents statistics for all mutual funds – assets under management (AUM), yearly expense ratio, and the number of firms held – in our sample from 2004 to 2017.

### Panel A: Russell Sample Firms

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>10th Pctile</th>
<th>Median</th>
<th>90th Pctile</th>
<th>Firm-Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Cap ($M)</td>
<td>2,456</td>
<td>920</td>
<td>1,354</td>
<td>2,394</td>
<td>3,815</td>
<td>4,392</td>
</tr>
<tr>
<td>PassiveOwn$_{R2000}$</td>
<td>0.93%</td>
<td>1.00%</td>
<td>0.00%</td>
<td>0.63%</td>
<td>2.29%</td>
<td>4,392</td>
</tr>
<tr>
<td>PassiveOwn$_{R1000}$</td>
<td>0.09%</td>
<td>0.12%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.27%</td>
<td>4,392</td>
</tr>
<tr>
<td>PassiveOwn</td>
<td>3.86%</td>
<td>2.60%</td>
<td>0.46%</td>
<td>3.72%</td>
<td>7.26%</td>
<td>4,392</td>
</tr>
<tr>
<td>ActiveOwn</td>
<td>5.70%</td>
<td>4.71%</td>
<td>0.39%</td>
<td>4.78%</td>
<td>11.66%</td>
<td>4,392</td>
</tr>
<tr>
<td>TotalFundOwn</td>
<td>9.56%</td>
<td>5.93%</td>
<td>1.58%</td>
<td>9.25%</td>
<td>16.70%</td>
<td>4,392</td>
</tr>
<tr>
<td>E-Index ( / 6)</td>
<td>3.2</td>
<td>1.2</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>2,036</td>
</tr>
</tbody>
</table>

### Panel B: Mutual Funds

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>10th Pctile</th>
<th>Median</th>
<th>90th Pctile</th>
<th>Fund-Years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Index Funds</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AUM ($M)</td>
<td>3,335</td>
<td>16,769</td>
<td>31</td>
<td>344</td>
<td>4,924</td>
<td>5,698</td>
</tr>
<tr>
<td>Expense Ratio</td>
<td>0.47%</td>
<td>0.33%</td>
<td>0.15%</td>
<td>0.43%</td>
<td>0.74%</td>
<td>5,698</td>
</tr>
<tr>
<td># Firms Held</td>
<td>370.6</td>
<td>593.8</td>
<td>14</td>
<td>109</td>
<td>971</td>
<td>4,763</td>
</tr>
<tr>
<td><strong>Active Funds</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AUM ($M)</td>
<td>2,246</td>
<td>7,826</td>
<td>35</td>
<td>391</td>
<td>4,391</td>
<td>25,807</td>
</tr>
<tr>
<td>Expense Ratio</td>
<td>1.16%</td>
<td>0.41%</td>
<td>0.68%</td>
<td>1.12%</td>
<td>1.72%</td>
<td>25,807</td>
</tr>
<tr>
<td># Firms Held</td>
<td>115.9</td>
<td>228.1</td>
<td>12</td>
<td>62</td>
<td>230</td>
<td>20,940</td>
</tr>
</tbody>
</table>
Table III
Index Switching and Fund Ownership

The table presents estimates of the effects of Russell index switches on investment fund ownership expressed as a percentage (1=1%) of stocks’ market capitalization. The sample consists of stocks that were “potential switchers” within a +/- 100-rank window of the yearly Russell upper and lower bands from 2007 to 2015, three years before and after index assignment for each firm in each cohort. Robust standard errors clustered by firm are shown in parentheses. *, **, *** indicates statistical significance at the 10%, 5%, and 1% levels, respectively.

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$R_{2000}$</td>
<td>$R_{1000}$</td>
<td>$S_{500}$</td>
<td>$ActiveOwn_{t}$</td>
<td>$TotalFundOwn_{t}$</td>
<td></td>
</tr>
<tr>
<td>$R_{1000} \rightarrow R_{2000}$, $PostAssignment_{t}$</td>
<td>1.45***</td>
<td>-0.18***</td>
<td>-0.03**</td>
<td>1.03***</td>
<td>-0.06</td>
<td>0.97*</td>
</tr>
<tr>
<td></td>
<td>(0.10)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.24)</td>
<td>(0.36)</td>
<td>(0.48)</td>
</tr>
<tr>
<td>$R_{2000} \rightarrow R_{1000}$, $PostAssignment_{t}$</td>
<td>-1.34***</td>
<td>0.17***</td>
<td>0.02***</td>
<td>-0.86***</td>
<td>-0.06</td>
<td>-0.93**</td>
</tr>
<tr>
<td></td>
<td>(0.08)</td>
<td>(0.02)</td>
<td>(0.01)</td>
<td>(0.14)</td>
<td>(0.27)</td>
<td>(0.34)</td>
</tr>
<tr>
<td>Observations</td>
<td>4,392</td>
<td>4,392</td>
<td>4,392</td>
<td>4,392</td>
<td>4,392</td>
<td>4,392</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>0.468</td>
<td>0.474</td>
<td>0.361</td>
<td>0.674</td>
<td>0.569</td>
<td>0.582</td>
</tr>
<tr>
<td>Year FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Firm × Cohort FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Table IV
Fund Voting

The table presents comparisons of fund voting, on contentious items only, for index funds versus active funds. Columns 1-2 show estimates for all firms in the sample. Columns 3-6 show estimates for firms that were potential switchers near the yearly Russell bands from 2007-2015. \textit{ExpenseRatio} is the fund’s total expense ratio in that year expressed in percentage points (so 25 basis points = 0.25). The sample consists of votes on contentious items i.e. items on which ISS and firm management were opposed. Robust standard errors clustered by fund are in parentheses. *, **, *** indicates statistical significance at the 10%, 5%, and 1% levels, respectively.

<table>
<thead>
<tr>
<th></th>
<th>(1) VotedWithMgmt</th>
<th>(2) VotedWithMgmt</th>
<th>(3) VotedWithMgmt</th>
<th>(4) VotedWithMgmt</th>
<th>(5) VotedWithMgmt</th>
<th>(6) VotedWithMgmt</th>
</tr>
</thead>
<tbody>
<tr>
<td>IndexFund_\textsubscript{i}</td>
<td>0.125*** (0.025)</td>
<td>0.126*** (0.024)</td>
<td>0.150*** (0.030)</td>
<td>0.150*** (0.030)</td>
<td>0.084*** (0.032)</td>
<td>0.079*** (0.029)</td>
</tr>
<tr>
<td>InverseMillsRatio_\textsubscript{ijt}</td>
<td></td>
<td>-0.114 (0.040)</td>
<td>-0.111 (0.034)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ExpenseRatio_\textsubscript{it} × IndexFund_\textsubscript{i}</td>
<td>-0.238*** (0.073)</td>
<td></td>
<td>-0.209** (0.085)</td>
<td></td>
<td></td>
<td>-0.209** (0.084)</td>
</tr>
<tr>
<td>ExpenseRatio_\textsubscript{it} × ActiveFund_\textsubscript{i}</td>
<td>0.021 (0.046)</td>
<td>0.071 (0.060)</td>
<td></td>
<td></td>
<td></td>
<td>0.071 (0.060)</td>
</tr>
<tr>
<td>Model</td>
<td>OLS</td>
<td>OLS</td>
<td>OLS</td>
<td>OLS</td>
<td>Heckman</td>
<td>Heckman</td>
</tr>
<tr>
<td>Sample Firms</td>
<td>All</td>
<td>All</td>
<td>Russell</td>
<td>Russell</td>
<td>Russell</td>
<td>Russell</td>
</tr>
<tr>
<td>Observations</td>
<td>2,187,598</td>
<td>2,187,598</td>
<td>189,319</td>
<td>189,319</td>
<td>189,319</td>
<td>189,319</td>
</tr>
<tr>
<td>Adjusted \textit{R}^2</td>
<td>0.074</td>
<td>0.083</td>
<td>0.076</td>
<td>0.084</td>
<td>0.076</td>
<td>0.084</td>
</tr>
<tr>
<td>Firm FE</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Firm × Cohort FE</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Year FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Table V
Fund Voting – Split on Item Type

The table presents comparisons of fund voting on contentious items between passive versus active funds, in the full sample of firms, splitting contentious agenda items into categories as defined in the text. The sample consists of votes on contentious items (i.e. items on which ISS and firm management were opposed). Robust standard errors clustered by fund are in parentheses. *, **, *** indicates statistical significance at the 10%, 5%, and 1% levels, respectively.

<table>
<thead>
<tr>
<th>Item Type</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board of Directors Voted with Mgmt</td>
<td>0.132***</td>
<td>0.127***</td>
<td>0.095***</td>
<td>0.116***</td>
</tr>
<tr>
<td>Compensation Voted with Mgmt</td>
<td>0.029</td>
<td>0.028</td>
<td>0.029</td>
<td>0.026</td>
</tr>
<tr>
<td>Disclosure Voted with Mgmt</td>
<td>1,173,740</td>
<td>44,953</td>
<td>106,314</td>
<td>77,189</td>
</tr>
<tr>
<td>Entrenchment Voted with Mgmt</td>
<td>0.086</td>
<td>0.057</td>
<td>0.021</td>
<td>0.101</td>
</tr>
<tr>
<td>Firm FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Year FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Table VI

**Fund Exit**

The table presents comparisons of voluntary exit between index funds versus active funds. Columns 1-2 show estimates for all firms in the sample. Columns 3-6 show estimates for firms that were potential switchers near the yearly Russell bands from 2007-2015. Robust standard errors clustered by fund are in parentheses. *, **, *** indicates statistical significance at the 10%, 5%, and 1% levels respectively.

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IndexFund</strong>&lt;sub&gt;i&lt;/sub&gt;</td>
<td>-0.179***</td>
<td>-0.138***</td>
<td>-0.174***</td>
<td>-0.136***</td>
<td>-0.185***</td>
<td>-0.141***</td>
</tr>
<tr>
<td></td>
<td>(0.012)</td>
<td>(0.012)</td>
<td>(0.015)</td>
<td>(0.014)</td>
<td>(0.015)</td>
<td>(0.014)</td>
</tr>
<tr>
<td><strong>InverseMillsRatio&lt;sub&gt;ijt&lt;/sub&gt;</strong></td>
<td></td>
<td></td>
<td></td>
<td>-0.021***</td>
<td>-0.008**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.005)</td>
<td>(0.004)</td>
<td></td>
</tr>
<tr>
<td><strong>ActiveFund</strong>&lt;sub&gt;i&lt;/sub&gt; × <strong>LostVote&lt;sub&gt;ijt-1&lt;/sub&gt;</strong></td>
<td>0.009**</td>
<td></td>
<td>0.005</td>
<td></td>
<td>0.005</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.004)</td>
<td></td>
<td>(0.008)</td>
<td></td>
<td>(0.006)</td>
<td></td>
</tr>
<tr>
<td><strong>IndexFund</strong>&lt;sub&gt;i&lt;/sub&gt; × <strong>LostVote&lt;sub&gt;ijt-1&lt;/sub&gt;</strong></td>
<td>-0.004</td>
<td>-0.007</td>
<td>-0.007</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.004)</td>
<td>(0.007)</td>
<td>(0.007)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>OLS</td>
<td>OLS</td>
<td>OLS</td>
<td>OLS</td>
<td>Heckman</td>
<td>Heckman</td>
</tr>
<tr>
<td>Sample Firms</td>
<td>All</td>
<td>All</td>
<td>Russell</td>
<td>Russell</td>
<td>Russell</td>
<td>Russell</td>
</tr>
<tr>
<td>Observations</td>
<td>4,192,281</td>
<td>2,211,016</td>
<td>452,902</td>
<td>282,738</td>
<td>452,902</td>
<td>282,738</td>
</tr>
<tr>
<td>Adjusted R&lt;sup&gt;2&lt;/sup&gt;</td>
<td>0.093</td>
<td>0.074</td>
<td>0.072</td>
<td>0.058</td>
<td>0.072</td>
<td>0.058</td>
</tr>
<tr>
<td>Firm FE</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Firm × Cohort FE</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Year FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Table VII
Fund Voting on Proposals by Management vs Shareholders
The table presents comparisons of fund voting on contentious items between passive versus active funds, in the full sample of firms, splitting contentious agenda items into items proposed by firm management and items proposed by shareholders. The sample consists of votes on contentious items (i.e. items on which ISS and firm management were opposed). Robust standard errors clustered by fund are in parentheses. *, **, *** indicates statistical significance at the 10%, 5%, and 1% levels, respectively.

<table>
<thead>
<tr>
<th></th>
<th>(1) VotedYes</th>
<th>(2) VotedNo</th>
<th>(3) Abstained</th>
<th>(4) VotedYes</th>
<th>(5) VotedNo</th>
<th>(6) Abstained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management Proposals</td>
<td>IndexFund&lt;sub&gt;i&lt;/sub&gt;</td>
<td>0.144***</td>
<td>-0.050***</td>
<td>-0.085***</td>
<td>-0.092***</td>
<td>0.103***</td>
</tr>
<tr>
<td></td>
<td>(0.031)</td>
<td>(0.011)</td>
<td>(0.020)</td>
<td>(0.023)</td>
<td>(0.022)</td>
<td>(0.008)</td>
</tr>
<tr>
<td>Observations</td>
<td>1,408,736</td>
<td>1,408,736</td>
<td>1,408,736</td>
<td>778,846</td>
<td>778,846</td>
<td>778,846</td>
</tr>
<tr>
<td>Adjusted R&lt;sup&gt;2&lt;/sup&gt;</td>
<td>0.079</td>
<td>0.232</td>
<td>0.218</td>
<td>0.089</td>
<td>0.071</td>
<td>0.055</td>
</tr>
<tr>
<td>Firm FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Year FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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Table VIII
Blockholding Disclosures: Schedule 13D versus Schedule 13G

The table presents comparisons of fund families’ blockholding disclosure filings. “Filed 13D” is an indicator variable for whether each filing was under the activist Schedule 13D as opposed to the passive Schedule 13G. $FracAUMPassive$ is the fraction of fund family $j$’s assets under management (AUM) that was managed by index funds in year $t$. $logAUM$ is the logarithm of the fund family’s total AUM. $numFilings$ is the number of blockholding disclosures the family filed in that year. Robust standard errors clustered by fund family are in parentheses. *, **, *** indicates statistical significance at the 10%, 5%, and 1% levels respectively.

<table>
<thead>
<tr>
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<th>(1) Filed 13D</th>
<th>(2) Filed 13D</th>
<th>(3) Filed 13D</th>
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</thead>
<tbody>
<tr>
<td>$FracAUMPassive_{jt}$</td>
<td>-1.13**</td>
<td>-1.05**</td>
<td>-1.15**</td>
</tr>
<tr>
<td></td>
<td>(0.48)</td>
<td>(0.46)</td>
<td>(0.49)</td>
</tr>
<tr>
<td>$logAUM_{jt}$</td>
<td></td>
<td>-0.052</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.042)</td>
<td></td>
</tr>
<tr>
<td>$numFilings_{jt}$</td>
<td></td>
<td>0.00028</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.00032)</td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>Probit</td>
<td>Probit</td>
<td>Probit</td>
</tr>
<tr>
<td>Observations</td>
<td>920</td>
<td>920</td>
<td>921</td>
</tr>
<tr>
<td>Pseudo $R^2$</td>
<td>0.018</td>
<td>0.018</td>
<td>0.018</td>
</tr>
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</table>
Table IX
Changes in the Supply of Agenda Items
The table presents comparisons of the number and type of agenda items at sample firms’ shareholder meetings. \textit{NumItems} is the number of agenda items voted on in a given year. \textit{NumShrProp} and \textit{NumMgmtProp} is the number of items tabled by shareholders and management, respectively. \textit{FracISSAgainst} and \textit{FracISSMgmtAgainst} are the fraction of agenda items that were opposed by ISS and firm management respectively. \textit{FracConsensus} is the fraction of agenda items for which ISS and management made the same recommendation. Robust standard errors clustered by firm are in parentheses. *, **, *** indicates statistical significance at the 10%, 5%, and 1% levels, respectively.

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NumItems$_{jt}$</td>
<td>NumShrProp$_{jt}$</td>
<td>NumMgmtProp$_{jt}$</td>
<td>FracISSAgainst$_{jt}$</td>
<td>FracMgmtAgainst$_{jt}$</td>
<td>FracConsensus$_{jt}$</td>
</tr>
<tr>
<td>R1000 $\rightarrow$ R2000$<em>{jt}$ $\times$ PostAssignment$</em>{jt}$</td>
<td>0.02</td>
<td>-0.02</td>
<td>0.05</td>
<td>-0.01</td>
<td>0.003</td>
<td>0.012</td>
</tr>
<tr>
<td></td>
<td>(0.34)</td>
<td>(0.07)</td>
<td>(0.32)</td>
<td>(0.02)</td>
<td>(0.004)</td>
<td>(0.017)</td>
</tr>
<tr>
<td>R2000 $\rightarrow$ R1000$<em>{jt}$ $\times$ PostAssignment$</em>{jt}$</td>
<td>-0.28</td>
<td>0.001</td>
<td>-0.29</td>
<td>-0.00</td>
<td>0.004</td>
<td>-0.00</td>
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<tr>
<td></td>
<td>(0.37)</td>
<td>(0.03)</td>
<td>(0.37)</td>
<td>(0.01)</td>
<td>(0.003)</td>
<td>(0.013)</td>
</tr>
<tr>
<td>Observations</td>
<td>3,726</td>
<td>3,726</td>
<td>3,726</td>
<td>3,726</td>
<td>3,726</td>
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<tr>
<td>Adjusted $R^2$</td>
<td>0.614</td>
<td>0.119</td>
<td>0.623</td>
<td>0.430</td>
<td>-0.031</td>
<td>0.431</td>
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<tr>
<td>Firm $\times$ Cohort FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Year FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Table X

Fund Votes and Announcement Returns

The table presents comparisons of the daily stock return minus the market return on the day that the agenda item was decided, conditional on how the fund voted on the item \(VotedYes_{ik}\), whether the item passed \(ItemPassed_k\), and the fund's type (active or index fund). Robust standard errors clustered by item are in parentheses. *, **, *** indicates statistical significance at the 10%, 5%, and 1% levels respectively.

<table>
<thead>
<tr>
<th></th>
<th>(1) (DailyRtn_{ik})</th>
<th>(2) (DailyRtn_{ik})</th>
</tr>
</thead>
<tbody>
<tr>
<td>(VotedYes_{ik} \times IndexFund_i)</td>
<td>0.0004</td>
<td>0.0012</td>
</tr>
<tr>
<td></td>
<td>(0.0006)</td>
<td>(0.0015)</td>
</tr>
<tr>
<td>(VotedYes_{ik} \times IndexFund_i \times ItemPassed_k)</td>
<td>-0.0004</td>
<td>-0.0014</td>
</tr>
<tr>
<td></td>
<td>(0.0007)</td>
<td>(0.0016)</td>
</tr>
<tr>
<td>(VotedYes_{ik} \times ActiveFund_i)</td>
<td>-0.0003</td>
<td>0.0000</td>
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<tr>
<td></td>
<td>(0.0006)</td>
<td>(0.0012)</td>
</tr>
<tr>
<td>(VotedYes_{ik} \times ActiveFund_i \times ItemPassed_k)</td>
<td>0.0003</td>
<td>-0.0002</td>
</tr>
<tr>
<td></td>
<td>(0.0007)</td>
<td>(0.0012)</td>
</tr>
</tbody>
</table>

Sample Firms All Russell
Observations 22,148,249 2,514,263
Adjusted \(R^2\) 0.175 0.209
Firm FE Yes No
Firm \(\times\) Cohort FE No Yes
Year FE Yes Yes