

# Standing on the shoulders of giants: The effect of passive investors on activism<sup>\*</sup>

Ian R. Appel<sup>†</sup>, Todd A. Gormley<sup>‡</sup>, and Donald B. Keim<sup>§</sup>

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## Abstract

We analyze whether the growing importance of passive investors has influenced the campaigns, tactics, and successes of activists. We find activists are more likely to pursue changes to corporate control or influence (e.g., via board representation) and to forego more incremental changes to corporate policies (e.g., via shareholder proposals) when a larger share of the target company's stock is held by passively managed mutual funds. Furthermore, higher passive ownership is associated with increased use of hostile, expensive tactics (e.g., proxy fights) and a higher likelihood the activist obtains board representation or the sale of the targeted company. Overall, our findings suggest that the increasingly large ownership stakes of passive institutional investors mitigate free-rider problems associated with certain forms of intervention and ultimately increase the likelihood of success by activists.

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**Keywords:** activism, passive funds, corporate control, proxy fights

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<sup>†</sup> Carroll School of Management, Boston College, 140 Commonwealth Avenue Chestnut Hill, MA, 02467. Phone: (617) 552-1459. Fax: (617) 552-0431. E-mail: [ian.appel@bc.edu](mailto:ian.appel@bc.edu)

<sup>‡</sup> The Wharton School, University of Pennsylvania, 3620 Locust Walk, Suite 2400, Philadelphia, PA, 19104. Phone: (215) 746-0496. Fax: (215) 898-6200. E-mail: [tgormley@wharton.upenn.edu](mailto:tgormley@wharton.upenn.edu)

<sup>§</sup> The Wharton School, University of Pennsylvania, 3620 Locust Walk, Suite 2400, Philadelphia, PA, 19104. Phone: (215) 898-7685. Fax: (215) 898-6200. E-mail: [keim@wharton.upenn.edu](mailto:keim@wharton.upenn.edu)

*“This is the biggest shift in the battle for corporate control since private equity was invented in the 1980s...activists realize they can influence [the] concentrated shareholder base at many companies, and they’re tapping into the desires of shareholders to see change take place.”*

— James Rossman, head of corporate preparedness at Lazard  
*The New York Times*, March 18, 2014

## 1. Introduction

The willingness of investors to engage in activism has grown rapidly in recent years. About 400 U.S. activist campaigns are launched per year, and as noted by *The Economist*, the current “scale of their insurrection in America is unprecedented... one in seven [companies in the S&P 500 index] has been on the receiving end of an activist attack” over the past five years.<sup>1</sup> The goals of activists have also become more ambitious, and the success rate of activist campaigns has improved. Activists increasingly wage proxy fights to obtain board representation, and more than 70% of these campaigns were successful in 2014.<sup>2</sup> As noted by *The Wall Street Journal*, “Activists are on a roll” and have “cemented their position as a force in U.S. markets and boardrooms.”<sup>3</sup> Consistent with the growing influence of activist investors, managers and boards are increasingly concerned about being targeted by an activist, and there is no shortage of advice from consultancy firms on how managers and boards should prepare for an activist campaign.<sup>4</sup> The determinants of this shift in activist tactics and success rates, however, are not well understood. For example, why do activists seem more willing in recent years to engage in hostile and costly tactics, like initiating a proxy fight? And, what factors affect their likelihood of success?

One potential contributor to the rise of activism is the growing presence of large, passive investors. Passively managed mutual funds, which seek to deliver the returns of a market index (e.g., S&P 500) or particular investment style (e.g., large-cap value) have quadrupled their ownership share of the U.S. stock market over the last 15 years and now account for more than a third of all mutual fund

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<sup>1</sup> See “Capitalism’s unlikely heroes: why activist investors are good for the public company,” *The Economist*, February 7, 2015.

<sup>2</sup> For example, in an article titled, “Activist Investors Ramp Up, and Boardroom Rifts Emerge,” *The Wall Street Journal* reports that the number of companies targeted by an activist seeking board representation has more than doubled in the last five years. And in a separate article, “CEOs Test: Contending With Activist Investors,” *The Wall Street Journal* reports that activists seeking a board seat obtained at least a partial victory in 72% of such campaigns in 2014, up from a success rate of 57% in 2008.

<sup>3</sup> See “Activists are on a roll, with more to come,” *The Wall Street Journal*, January 1, 2015.

<sup>4</sup> For example, Deloitte published an article in October 2015 titled, “Ways to Prepare for and Manage Shareholder Activist Campaigns,” and McKinsey & Company and PricewaterhouseCoopers recently published articles titled, respectively, “Preparing for bigger, bolder shareholder activists,” and “Shareholder activism: Are you prepared?” And in a Nov. 25, 2014 article titled, “CEOs’ Test: Contending with Activist Investors,” *The Wall Street Journal* reported that “CEOs now prepare exhaustively. Advisers compile lists of activists’ names, in case one approaches at a conference. They write fake “white papers” about companies’ shortcomings to highlight corporate weaknesses antagonists could flag. Some role-play famous activists at board dinners.”

assets (see Fig. 1). Furthermore, the institutions that offer these funds, like Vanguard, State Street, and Blackrock, are now often the largest shareholders of U.S. companies. While these large, passive institutions do not generally initiate activist campaigns, the expanding size and concentration of their ownership stakes might facilitate activist investors' ability to rally support for their demands (Brav et al., 2008; Bradley et al., 2010), which can affect both the type of demands activists make and the likelihood that managers heed these demands. In this paper, we examine whether the increased presence of passive institutional investors influences the types of campaigns undertaken by activists, the tactics they employ, and their eventual outcomes.

Activist investors face a classic free-rider problem (Grossman and Hart, 1980) when considering intervention in a firm. While the activist bears all costs associated with intervention, the benefits accrue across all shareholders. However, passive institutions (along with their large ownership stakes) may help to partially overcome this problem. Specifically, passive investors might either decrease the costs or increase the expected payoff of intervention. Lower costs may come in the form of easier coordination (e.g., during the proxy solicitation process) when the shareholder base contains multiple blockholders.<sup>5</sup> Higher expected payoffs may result if bringing a few reputed passive institutions on board lends credibility to a campaign and increase activists' likelihood of success. For example, the activist hedge fund ValueAct was successful in obtaining a board seat on Microsoft with less than 1% of stock because Microsoft recognized that other large institutional investors backed the fund's demand. Consistent with the potential decisive role these large passive investors can play, anecdotal evidence also suggests activists attempt to gauge the support of a firm's largest institutional investors before making demands of management. For example, in its fight against Agrium, the activist hedge fund Jana Partners gauged potential support from large institutional investors before going public with its demands.<sup>6</sup>

Identifying the impact of passive investors on activists' choices and success rates poses an empirical challenge. Actions by activists are an equilibrium outcome that reflect both the costs and benefits of different forms of intervention. Thus, correlations between passive investors and activism outcomes might not reflect a causal relation because ownership by passive investors might be correlated with factors—such as firms' past performance or level of stock liquidity—that directly affect activists' tactics and success rates.

To overcome this challenge and to assess whether passive investors affect activism by other

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<sup>5</sup> Brav et al. (2008) note that the tendency of activists to coordinate with other shareholders distinguishes them from corporate raiders in the 1980s who sought to internalize all benefits of their intervention.

<sup>6</sup> See "New alliances in the battle for corporate control," *The New York Times*, March 18, 2014.

investors, we exploit variation in stock ownership by passive mutual funds that occurs around the cutoff point used to construct two widely-used market benchmarks, the Russell 1000 and Russell 2000 indexes. The Russell 1000 comprises the largest 1,000 U.S. stocks, in terms of market capitalization, and the Russell 2000 comprises the next largest 2,000 stocks. Because portfolio weights assigned to each stock within an index are value-weighted, a stock's index assignment has a significant impact on the extent of passive ownership. As shown in Appel, Gormley, and Keim (2015a), this benchmarking by passive funds leads to a sharp difference in ownership by passive institutional investors for stocks at the top of the Russell 2000 relative to stocks at the bottom of the Russell 1000 even though these stocks are otherwise similar in terms of their overall market capitalization. During our sample period, the ownership by passively managed mutual funds is about 40% higher, on average, for stocks at the top of the Russell 2000 index relative to stocks at the bottom of the Russell 1000 index. Moreover, the ownership stakes of the biggest passive investors, Vanguard, State Street, DFA, and BGI/Blackrock (the owners of iShares during our sample period), are 30% higher among stocks at the top of the Russell 2000, and each of these institutions' likelihood of owning more than 5% of a firm's shares increases by 60% on average, while their likelihood of being a top 5 shareholder is higher, on average, by 17%. There is *no* corresponding increase in ownership of stocks in the Russell 2000 by actively managed mutual funds.

Exploiting this variation in ownership around the Russell 1000/2000 cutoff in an instrumental variable (IV) estimation, we assess the effect of passive funds on the activism of other investors. Specifically, we follow the approach of Appel, Gormley, and Keim (2015a) and instrument for ownership by passive funds with an indicator for being assigned to the Russell 2000 in a given year. However, because our sample of activism events runs through 2014, we augment the specification of Appel, Gormley, and Keim (2015a) to account for an important change in how Russell constructed the two indexes after 2006. Beginning in 2007, Russell implemented a "banding" policy in which stocks within a certain range of the cutoff would not switch indexes unless the change in their relative size ranking was sufficiently large. Our IV estimation relies on the assumption that, after conditioning on stocks' market capitalization and this banding policy, inclusion in the Russell 2000 index does not directly affect our outcomes of interest except through its impact on passive ownership. This assumption seems reasonable in our setting in that it is unclear why index inclusion would be directly related to activism outcomes after restricting the sample to stocks near the Russell 1000/2000 cutoff and after controlling for the factors that determines index inclusion—stocks' end-of-May market capitalization and last year's index assignment.

In this paper, we study the effect of passive investors on the types of campaigns undertaken by activists, the tactics they employ, and their eventual outcomes. Activist campaigns in the sample are

classified into three categories based on their primary goal: (1) those seeking board representation; (2) those seeking to improve shareholder value by demanding policy changes (e.g., increased dividends); and (3) other goals, which include campaigns related to shareholder proposals and exempt proxy solicitations (e.g., “just vote no” campaigns for management proposals). We also analyze the tactics of activist campaigns, including whether they initiate a proxy fight, call for a special meeting, or launch a hostile offer. Finally, we consider the effects of passive investors on the eventual success of activism. For example, we examine if campaigns lead to board representation for the activist, increased dividends/payouts, changes in capital structure, governance reform, or a spinoff or acquisition of the firm.

Using our IV approach, we find that passive mutual funds have a significant impact on the nature of activism. While we find that passive ownership is not associated with differences in the overall prevalence of activist campaigns from 2008–2014, we document significant differences in the goals of activist campaigns. Among firms targeted by an activist, we find that a one standard deviation increase in passive ownership is associated with about a two-thirds standard deviation increase in campaigns seeking board representation and a similar magnitude decrease in other types of campaigns, including those limited to shareholder proposals and exempt solicitations. We find no association between passive ownership and the likelihood of an activist campaign centered on specific policy changes.

Board representation can be gained through both friendly and confrontational approaches (Brav et al., 2008; Fos, 2015). We document a sizeable shift in the likelihood of activists employing hostile tactics in an attempt to gain seats on the board. Specifically, among firms targeted by an activist, a one standard deviation increase in passive ownership is associated with a 0.78 standard deviation increase in the likelihood of activists launching a proxy fight against incumbent directors. Furthermore, we find an increase in both proxy fights seeking board representation as well as an increase in those seeking control over the entire board. A one standard deviation increase in passive ownership is associated with almost a one standard deviation increase in the activists nominating a “short slate” of directors (constituting a minority of the board) and a 0.43 standard deviation increase in the nomination of a full slate of directors.

Combined, our results suggest that the presence of passive institutions and their concentrated ownership stakes alter the strategic choices of activists and increase their willingness to engage in more costly forms of activism. Specifically, the costs associated with seeking board representation and initiating a proxy fight (e.g., hiring lawyers, bankers, etc.) can amount to millions of dollars (Gantchev, 2013), while pushing for a shareholder proposal or exempt solicitation is “easier, less costly and demand a lower level of commitment from dissidents” (Wilcox, 2005). Consistent with this shift towards more intensive and costly activism campaigns, we also find that activists are more likely to seek reimbursement

from the company for their campaign; a one standard deviation increase in passive ownership is associated with a 0.70 standard deviation increase in the likelihood of such a request.

A natural question is whether increased passive ownership ultimately leads to different outcomes and success rates for activist campaigns. While we do not find evidence that passive ownership is associated with the differences in the number of times activists win proxy fights, we document a sizeable increase in the likelihood of a settlement with managers. Specifically, a one standard deviation increase in passive ownership is associated with a 0.94 standard deviation increase in the likelihood of a proxy fight settlement. However, the effect of passive investors on activist tactics and success is not limited to board representation. We also find evidence that activists are more likely to successfully remove takeover defenses, facilitate the sale of the firm to a third party, and engage in a hostile offer when passive ownership is higher. The effects of passive investors on activism appear to be primarily related to tactics and outcomes related to corporate influence or control. We do not find any evidence of effects related to dividends, capital structure, CEO compensation and other incremental changes to corporate policies.

We find no evidence that passive ownership affects the likelihood of an activism event or the type of firms being targeted, which is another mechanism by which passive ownership might affect activism outcomes. Specifically, the effect of passive ownership on the likelihood of activism is statistically indistinguishable from zero. Furthermore, passive mutual fund ownership is not associated with ex ante firm characteristics identified by the previous literature that affect the likelihood of being targeted by an activist, including past dividend yields, leverage, capital expenditures, return on assets, Tobin's Q, and stock returns.

Our findings are robust to various specification choices. For example, varying the functional form we use to control for firms' end-of-May market cap, which is the key factor determining stocks' index assignment each year, does not affect our findings. The findings are also robust to adding various controls, including whether the firm recently switched indexes and the firms' float-adjusted market cap, which is a proprietary measure used by Russell to determine a stock's ranking within indexes. Moreover, our findings are not sensitive to excluding activists that only file a 13D or to only using end-of-May market cap rankings to select our sample of stocks each year.

Overall, this paper contributes to the line of literature that studies the causes and effects of investor activism. A fundamental question in this literature is whether activists improve the long-term performance of firms, or if they are myopic in the sense of pushing for changes that boost short-term profits at the expense of long-term success. Previous papers document that governance deficiencies and

disagreements over strategy are important triggers for shareholder activism (McCahery, Sautner, and Starks, 2014) and that activists tend to target smaller firms with higher operating performance and lower payouts and that their activities are associated with positive abnormal returns and changes to financial policies and firm performance that are consistent with activists creating shareholder value.<sup>7</sup> Activists have also been found to affect a wide range of other outcomes including innovation (Brav, Jiang, Ma, and Tian, 2014), corporate culture (Popadak, 2013), director labor markets (Fos and Tsoutsoura, 2014), labor productivity (Brav, Jiang, and Kim, 2015), mergers (Boyson, Gantchev, and Shivdasani, 2015), and measures of adverse selection (Collin-Dufresne and Fos, 2015). A related strand of literature explores coordinated actions by “wolf packs” consisting of multiple activists (e.g., Brav, Dasgupta, and Mathews, 2015; Coffee and Palia, 2015; Dimson, Karakaş, and Li, 2015). While the effects of activism have been widely studied, relatively little is understood about how such investors choose their tactics and what factors contribute to their success. We contribute to this literature by showing that passive ownership has a significant impact on the tactics deployed by activists and ultimately the outcome of these campaigns. In particular, our findings suggest that the increased presence of passive investors facilitates activism.

We also contribute to the growing literature on the effects of passive institutional investors. Appel, Gormley, and Keim (2015a) find that passive investors are able to use their significant voting power in an earlier sample period, 1998-2006, to exert influence over firms’ governance choices (e.g., more independent directors, fewer takeover defenses, and more equal voting rights) and ultimately their performance. In contrast to this earlier work, this paper offers novel evidence that an increased presence of passive investors also affects the choices of activists, an entirely separate class of institutional investors that are widely thought to play an important role in governance. Thus, our evidence indicates that, while not engaging in traditional forms of activism themselves, passive investors have a meaningful impact on the activism of other investors, providing another distinct mechanism by which the recent growth of passive investors may be affecting the monitoring of managers and corporate performance.

Finally, our work is related to recent papers that use the Russell 1000/2000 cutoff as a source of identification. Previous research uses this setting to analyze the price effects of additions and deletions from a market index (Chang, Hong, and Liskovich, 2015), the importance of institutional investors’ portfolio weights for monitoring incentives (Fich, Harford, and Tran, 2015), and the association between institution-level (13F) ownership and payouts, investment, CEO pay, management disclosure, acquisitions, and CEO power (Boone and White, 2014; Crane, Michenaud, and Weston, 2014; Lu, 2013;

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<sup>7</sup> See, for example, Bebchuk, Brav, and Jiang, 2015; Becht et al., 2009; Brav et al., 2008; Brav, Jiang, and Kim, 2009; Clifford, 2008; Greenwood and Schor, 2009; Klein and Zur, 2009. For comprehensive reviews of this literature see Brav, Jiang, and Kim, 2010; Denes, Karpoff, and McWilliams, 2015; Gillan and Starks, 2007.

Mullins, 2014; Schmidt, 2012). In this paper, we follow Appel, Gormley, and Keim (2015a) in using the Russell 1000/2000 cutoff and fund-level data to isolate variation in ownership by passively managed mutual funds. Because our data on activism tactics and outcomes cover a more recent time period than in their study, we augment the IV specification of Appel, Gormley, and Keim (2015a) to account for changes by Russell to their index construction methods after 2006.

## 2. Sample, data sources, and descriptive statistics

In this paper, we merge stock-level data on mutual fund ownership and Russell equity index membership with activist campaign data. We now briefly describe each data source and our sample.

### 2.1. Mutual fund holdings and Russell 1000/2000 index membership

We use the S12 mutual fund holdings data compiled by Thomson Reuters and available from Wharton Research Data Services (WRDS) to compute mutual fund holdings in a stock as a percent of its market capitalization. Since May 2004, all mutual funds holding stocks traded on U.S. exchanges are required to report those holdings every quarter to the SEC using Forms N-CSR and N-Q. Reported securities include all NYSE/Amex/Nasdaq, Toronto and Montreal common stocks. We exclude observations where the total mutual fund holdings exceed a firm's market capitalization. We calculate the total market cap of each stock using the CRSP monthly file as the sum of shares outstanding multiplied by price for each class of common stock associated with a firm.

To classify a mutual fund as either passively managed or actively managed, we use a method similar to that of Busse and Tong (2012) and Iliev and Lowry (2015). Specifically, we obtain fund names by merging the Thomson Reuters data with the CRSP Mutual Fund data using the MFLINKS table available on WRDS. We then flag a fund as passively managed if its fund name includes a string that identifies it as an index fund or if the CRSP Mutual Fund Database classifies the fund as an index fund.<sup>8</sup> We classify all other mutual funds that can be matched to the CRSP mutual fund data as actively managed, and funds that cannot be matched are left unclassified. To generate variables for mutual fund ownership disaggregated into these three categories, we compute the percentage of each stock's market capitalization that is owned by passive, active, and unclassified mutual funds at the end of each quarter.

Our subsequent analysis is restricted to the sample of stocks found in the Russell 1000 and 2000 indexes beginning with the 2007 reconstitution. We start the sample in 2007 to correspond with Russell's "banding" policy (see next section for further details). Russell Inc. provides index constituents as well as

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<sup>8</sup> The strings we use to identify index funds are: *Index, Idx, Indx, Ind\_* (where *\_* indicates a space), *Russell, S & P, S and P, S&P, SandP, SP, DOW, Dow, DJ, MSCI, Bloomberg, KBW, NASDAQ, NYSE, STOXX, FTSE, Wilshire, Morningstar, 100, 400, 500, 600, 900, 1000, 1500, 2000, and 5000.*

its proprietary measure for the float-adjusted market capitalization, which is used to determine the rank (i.e., portfolio weight) of each security within an index.

## *2.2. Activism data*

We obtain data on corporate activist campaigns from Shark Watch (FactSet), which offers a comprehensive database of activism events. The source of the information in Shark Watch includes company/activist filings and press releases, news/trade publications, and company websites. The analysis in this paper is conducted at the event level

We classify activist campaigns into three mutually exclusive categories based on their primary goal: campaigns seeking board representation, campaigns seeking to maximize shareholder value by advocating for specific policy changes, and all other campaigns. Campaigns seeking board representation capture cases where the activist seeks a board representative or when the activist seeks control of the board by nominating an entire slate of directors. Campaigns seeking changes in corporate policy capture campaigns where the activist seeks changes thought to improve shareholder value, including increased payouts, changes in the company's capital structure, or the sale of the company, but is not seeking board representation. Finally, "other" campaigns include those where the activist only seeks an exempt solicitation,<sup>9</sup> the adoption of a shareholder proposal, or publicly communicates its intent to engage in activism (e.g., through press releases).

Shark Watch also includes 13D filings with no stated activist goals from 50 well-known activists (known as the SharkWatch50). A schedule 13D filing is required under Section 12 of the Securities Exchange Act when a shareholder's beneficial ownership exceeds 5% and that shareholder plans to engage in activism. The purpose of the transaction (e.g., board representation) must also be provided in Item 4 of the 13D filing. Some institutions, however, will file a 13D but not declare a specific intention to engage in activism. This is likely done to leave open the future option of becoming more active, and we classify these campaigns as "other." As discussed in Section 5, however, our main findings are robust to excluding activist campaigns associated with 13D filings with no stated goals.

We also use Shark Watch for data on tactics used by activists and the eventual outcome of each campaign. While activist shareholders often employ a wide range of tactics in campaigns, we focus our analysis on tactics likely related to activist attempts to obtain board representation. Specifically, we

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<sup>9</sup> An exempt solicitation under Rule 14a-2(b)(1) of the Securities Exchange Act of 1934 involves activists communicating with other shareholders but not soliciting proxies. Because exempt solicitations do not involve soliciting proxies, they are typically viewed as being a less costly form of activism (Wilcox, 2005).

construct indicators for whether the activist (1) nominates a slate of directors or (2) initiates a proxy fight. A proxy fight involves the activist soliciting proxies from other shareholders to support a resolution that is opposed by management. Proxy fights often involve activists seeking board representation following their nomination of a slate of directors, though they can also pertain to other types of shareholder resolutions. We also analyze other tactics, including the drafting of shareholder proposals, calling for a special shareholder meeting, or requesting reimbursement for expenses incurred. To analyze the effects of passive ownership on the outcomes of activism, we construct indicators for the most common goals/outcomes of an activist campaign: whether the activist campaign results in a proxy settlement where the activist wins a board representative; increased dividends/payouts; governance reform (not including activist representation on the board); or acquisition of the firm.

### *2.3. Sample and descriptive statistics*

For our main analysis, we restrict our sample to activist events occurring in the 500 bandwidth around the cutoff between the Russell 1000 and 2000 indexes, as determined using the end-of-June Russell-assigned portfolio weights for stocks within each index. There are 426 such events for 282 unique firms. For the firms targeted by multiple activist campaigns, 80 are in the same calendar year.

Table 1 reports summary statistics for our main sample. Total mutual fund ownership for the stocks in our sample, is 35.6%. The largest component of mutual fund ownership is active investors (22.9%), followed by passive (9.2%), and unclassified investors (3.5%). Almost 30% of all activist campaigns seek board representation as their primary goal, while seeking to maximize value by enacting policy changes represents 20% of campaigns. The remaining half of the campaigns, including those where an investor initiates a 13D filing indicating a future desire to engage in activism but does not subsequently state its goals or tactics, are classified as an “other campaign type” by Shark Repellent. The most common tactic in campaigns is to write a non-proxy letter to the board or shareholders (28.4%), and despite their high-profile nature, only about 22% of campaigns employ a proxy fight as one of their tactics. Other tactics, like hostile offers, precatory proposals, and calling for special meetings, are less common. About 3% of campaigns (or about 14% of proxy fights) end in a proxy settlement, and activists only win proxy fights in 3.8% of campaigns (and 17% of campaigns) during our sample.

### **3. Empirical framework**

Identifying the impact of passive investors on the types of campaigns undertaken by activists, the tactics they employ, and their eventual outcomes poses an empirical challenge. Cross-sectional

correlations between passive ownership and activism outcomes might not reflect a causal relation because ownership by passive investors could be correlated with factors—such as firms’ stock liquidity or operating performance—that directly affect activism. Failure to control for such factors could introduce an omitted variable bias that confounds inferences. To overcome this challenge and to determine the importance of passive investors, we use stocks’ assignment to the top of the Russell 2000 index as an exogenous shock to passive mutual fund ownership. We now describe our identification strategy.

### *3.1. Russell index construction and passive institutional investors*

Passive funds attempt to match the performance of a market index by holding a basket of representative securities in the particular market index being tracked in proportion to their weights in the index. The most visible types of passive funds are index funds, which hold nearly all stocks in the market index rather than a representative sample.

Two market indexes widely used as benchmarks are the Russell 1000 and Russell 2000. During our sample period, the Russell 1000 comprises 1000 U.S. stocks that mostly reflect the largest 1000 companies in terms of market capitalization, while the Russell 2000 comprises the next largest 2000 stocks that are not included in the Russell 1000. An example index fund that uses the Russell 1000 as a benchmark is the Vanguard Russell 1000 Index Fund (VRNIX), while the Vanguard Russell 2000 Index Fund (VRTIX) uses the Russell 2000 as a benchmark.

To account for changes in stocks’ ranking by market cap, the Russell indexes are reconstituted each year at the end of June. At the end of June, Russell Investments determines which stocks will be included in each index for the following twelve months using a combination of three factors—a stock’s market capitalization as of the last trading day in May of that year, the stock’s index assignment in the previous reconstitution year, and whether the stock’s market cap falls within a certain range of the cutoff between 1,000<sup>th</sup> and 1,001<sup>st</sup> largest stock market caps.<sup>10</sup> Specifically, a stock with an end-of-May market cap below (above) the market cap of the 1,000<sup>th</sup> (1,001<sup>st</sup>) largest market cap will be included in the Russell 2000 (Russell 1000) index *unless* that stock was included in the Russell 1000 (Russell 2000) last year *and* its market cap is not below (above) the market cap of the 1000<sup>th</sup> (1001<sup>st</sup>) largest market cap by more than 2.5% of the cumulative market cap of the Russell 3000E Index, which comprises the 4,000 largest stocks. This “banding” was implemented by Russell beginning in 2007 to minimize the number of

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<sup>10</sup> However, when the last Friday of June falls on the 29<sup>th</sup> or 30<sup>th</sup>, the two indexes are reconstituted on the preceding Friday. During the following twelve months, stocks are only deleted from the indexes due to Chapter 7 bankruptcy filings, delistings, and corporate actions (takeovers), while IPOs are added quarterly to the indexes on the basis of the market capitalization breaks established during the most recent reconstitution. For more details regarding the reconstitution process and eligibility for inclusion in the Russell indexes, see Russell Investments (2013).

stocks that switch indexes each year. Prior to 2007, the Russell 1000 simply included the 1,000 largest stocks at the end of the last trading day in May, while the Russell 2000 includes the next 2,000 largest stocks.

After index assignments are made, each stock's weight in the index is then determined using its end-of-June float-adjusted market cap. The float-adjusted market cap is different than the market cap used to determine index membership in that it only includes the value of shares that are available to the public. Shares held by another company or individual that exceed 10% of shares outstanding, by another member of a Russell index, by an employee stock ownership plan (ESOP), or by a government will be removed when calculating a firm's float-adjusted market cap, as will unlisted share classes.

Because the Russell indexes are value-weighted, index assignment has a significant effect on portfolio weights; the 950<sup>th</sup> largest stock at the end of May is more likely to be included in the Russell 1000 and to be given a very small portfolio weight within its index, while the 1050<sup>th</sup> largest stock is more likely to be included in the Russell 2000 and to be given a much larger weight. For example, during our sample period, the average portfolio weight of the bottom 250 stocks in the Russell 1000 was 0.014%, while the average portfolio weight of the top 250 stocks in the Russell 2000 was an order of magnitude larger at 0.145%. The difference in portfolio weights persists over a wide range around the cutoff. This is seen in Fig. 2, in which we plot the end-of-June portfolio weights of the 500 smallest float-adjusted stocks in the Russell 1000 and the 500 largest float-adjusted stocks in the Russell 2000 for the year 2013.

These differences in portfolio weights can have a significant impact on the extent of a stock's ownership by passive investors. Because passive funds weight their holdings based on the portfolio weights of the underlying index in an attempt to minimize tracking error, it is more important that they match the weights of the stocks at the top of the index than of stocks at the bottom of the index. In other words, for each dollar invested in a passive fund benchmarked to the Russell 1000, very little of it will be invested in stocks at the bottom of that index, while for each dollar invested in a passive fund benchmarked to the Russell 2000, a large proportion of it will be invested in stocks at the top of the index. Because of the considerable amount of money passively tracking the two Russell indexes (Chang, Hong and Liskovich, 2015), the portfolio decisions of passive institutions can lead to large ownership differences in stocks around the Russell 1000/2000 threshold.

The importance of index assignment for ownership by passive mutual funds is illustrated in Fig. 3, in which we sort stocks using their end-of-May CRSP market capitalization and plot the average share of firms in the Russell 2000 and average end-of-September ownership by passively managed funds. The

sample in Fig. 3 contains the top 500 stocks of the Russell 2000 and bottom 500 stocks of the Russell 1000 for each year between 2007 and 2013, as determined using the end-of-June Russell-assigned portfolio weights within each index. By construction, the top panel of Fig. 3 shows a smooth relation between size and ranking, but as shown in the middle panel, there is a rather distinct relation between ranking and the probability of being assigned to the Russell 2000. The largest stocks are assigned to the Russell 1000; the smallest stocks are assigned to the Russell 2000; and in an intermediate range around the midpoint, there is a positive correlation between a stock's probability of being in the Russell 2000 and a stock's relative ranking. This upward slope for intermediate rankings reflects Russell's use of banding during our sample period, where stocks within a certain range of the cutoff are kept in their previous index regardless of their new ranking this year. The bottom panel of Fig. 3 demonstrates that the ownership of passive funds across rankings closely tracks the share of stocks assigned to the Russell 2000. During our sample period, the total ownership stake of passive funds is, on average, 40% higher for a stock among the top 500 stocks of the Russell 2000 relative to a stock among the bottom 500 stocks of the Russell 1000 ( $p$ -value of difference  $< 0.001$ ).

The magnitude of the observed difference in passive ownership corresponds well to the magnitude one would predict using estimates of the total amount of passive assets tracking each of the two indexes. While the Russell 1000 is more than 10 times larger in total market cap than the Russell 2000 during our sample period, there is only about 2 to 3 times more dollars passively tracking the Russell 1000 relative to the Russell 2000 (see Table 1, Panel A of Chang, Hong, and Liskovich, 2015).<sup>11</sup> Using their estimates for 2010, \$56.8 billion in assets were passively tracking the Russell 2000, which accounts for about 4.93% of the index's total market cap of \$1,115 billion, while there was only \$137.1 billion of assets passively tracking the Russell 1000, accounting for just 1.17% of the index's total market cap of \$11,740 billion. Based on these estimates, assignment to the Russell 2000 in that year would increase a stock's passive institutional ownership by about 3.8 percentage points, which is similar to the 3.4 percentage point increase we detect in 2010 using our measure of passive ownership. In practice, the realized differences in passive ownership we detect will be slightly smaller around the cutoff than predicted by this simple back-of-the-envelope calculation because passive investments by some institutions, like pension funds, are not reported in the S12 mutual fund database.

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<sup>11</sup> The disproportionate amount of money passively tracking the Russell 2000 occurs because the Russell 2000 is the most widely used market index for small cap stocks. The Russell 1000, which spans both large and midcap stocks, is less widely used as a benchmark because it faces more competition from other large cap and midcap market indexes, including the S&P 500 (which is the most popular market index), the CRSP U.S. midcap index, and the S&P 400 midcap index.

The importance of index assignment for passive ownership is further highlighted by examining the total ownership stake of the largest passive institutions during our sample period—Vanguard, State Street, DFA, and BGI/Blackrock (the owners of iShares during our sample). For this, we use the Thomson Reuters Institutional Holdings (13F) Database, which reports the total holdings, both passive and active, of each institution. On average, the ownership stake of each of these institutions is 30% higher for the 500 firms at the top of the Russell 2000 relative to the bottom 500 firms of the Russell 1000, while the likelihood of each institution owning more than 5% of a firm’s shares is 60% higher and the likelihood of being a top five shareholder is 17% higher.

We find no evidence that index assignment is related to an increase in ownership by actively managed funds and unclassified funds. We formally test and demonstrate this in Section 3.3.

### *3.2. Identification strategy and empirical specification*

The construction of the Russell 1000 and 2000 indexes thus provides a source of exogenous variation in ownership by passive mutual funds. Stocks at the top of the Russell 2000 exhibit greater ownership by passive investors because of their inclusion at the top of their index, while stocks at the bottom of the Russell 1000 do not. Because index assignment is determined by an arbitrary rule surrounding the market capitalization of the 1000<sup>th</sup> largest firm and firm’s past index assignment, this variation in ownership is plausibly exogenous after conditioning on the three factors that determine a firm’s index assignment—the firms’ market capitalization, the firm’s past index assignment, and whether the firm’s market capitalization falls within a certain range of the 1000<sup>th</sup> largest firm.

Following Appel, Gormley, and Keim (2015a), we use an instrumental variable strategy to identify the effect of ownership by passive mutual funds on activism tactics and outcomes; specifically, we use inclusion in the Russell 2000 as an instrument for ownership by passive funds and include a robust set of controls for stocks’ end-of-May market capitalization in our estimation. Our sample includes all activism events that occur from 2008-2014 for firms that are in the top 500 rankings of the Russell 2000 index and for firms that in the bottom 500 rankings of the Russell 1000.

Unlike Appel, Gormley, and Keim (2015a), however, our sample period occurs after Russell’s switch to using additional thresholds and past index assignments to determine a stock’s yearly index assignment. Because of this, we augment their IV specification to include three additional controls for each firm  $i$  and reconstitution year  $t$  (i.e., from end-of-June year  $t$  to end-of-June year  $t+1$ ): (1) an indicator for having an end-of-May market capitalization that ensures firm  $i$  will not switch indexes in reconstitution year  $t$  because the distance between its market cap and the Russell 1000/2000 cutoff is less than 2.5% of the Russell 3000E Index cumulative market cap,  $band_{it}$ , (2) an indicator for being in the

Russell 2000 last reconstitution year  $t-1$ ,  $R2000_{it-1}$ , and (3) the interaction of these two indicators. These three additional controls capture the additional criteria used by Russell beginning in 2007 when determining each firm's index assignment at the annual end-of-June reconstitution for year  $t$ .<sup>12</sup>

Specifically, we estimate the following activism event-level regression:

$$Y_{eit+1} = \alpha + \beta \text{Passive}\%_{it} + \sum_{n=1}^N \theta_n \left( \text{Ln}(\text{Mktcap}_{it}) \right)^n + \gamma \text{Ln}(\text{Float}_{it}) + \mu_1 \text{band}_{it} + \mu_2 R2000_{it-1} + \mu_3 (\text{band}_{it} \times R2000_{it-1}) + \delta_t + \varepsilon_{eit} \quad (1)$$

where  $Y_{eit+1}$  is the outcome of interest for activism event  $e$  targeting firm  $i$  in year  $t+1$  scaled by its sample standard deviation;  $\text{Passive}\%_{it}$  is the percent of a firm's shares held by passively managed mutual funds at the end of the end of September in year  $t$  (i.e., in the first quarter after reconstitution in year  $t$ ) scaled by its sample standard deviation;  $\text{Mktcap}_{it}$  is the end-of-May CRSP market capitalization of stock  $i$  in year  $t$ ;  $\text{Float}_{it}$  is the float-adjusted market capitalization calculated by Russell when setting the portfolio weights during the end-of-June reconstitution. We scale both  $Y_{eit+1}$  and  $\text{Passive}\%_{it}$  by their sample standard deviations so that the point estimate of  $\beta$  can be interpreted as the standard deviation difference in  $Y_{eit+1}$  for a one standard deviation increase in  $\text{Passive}\%_{it}$ . We control for float-adjusted market capitalization because Russell uses it to compute portfolio weights and could be related to a firm's stock liquidity, which might affect activism. We also include year fixed effects,  $\delta_t$ , to ensure that our estimates are identified using within-year variation in ownership and are not driven by the aggregate upward trend in ownership by passive investors (see Fig. 1). Finally, we cluster the standard errors,  $\varepsilon$ , at the firm level.<sup>13</sup>

To account for the possibility that ownership by passive funds, as measured using  $\text{Passive}\%$ , might be correlated with the error term,  $\varepsilon$ , because of the omitted variable issues discussed above, we instrument for ownership by passive funds using index assignment. Specifically, we instrument  $\text{Passive}\%$  in the above estimation using  $R2000_{it}$ , which is an indicator equal to one if stock  $i$  is part of the Russell 2000 index in reconstitution year  $t$ . As shown in Fig. 3, being assigned to the Russell 2000 is associated with a significant increase in ownership by passive funds for stocks at the top of Russell 2000 relative to stocks at the bottom of the Russell 1000.

<sup>12</sup> These additional controls are necessary to account for how banding affects the configuration of firms around the cutoff between the Russell 1000 and 2000 indexes. In the post-banding period, stocks with better past stock returns will tend to remain in the Russell 2000 while stocks with worse past stock returns will tend to be kept in the Russell 1000. The importance of including these additional controls in the post-banding period tradeoffs is discussed in Appel, Gormley, and Keim (2015b), which can be found at <http://ssrn.com/abstract=2641548>.

<sup>13</sup> We do not include firm fixed effects in our estimation because only a small fraction of our sample firms switch indexes at some point during the sample and because most firms do not experience multiple activism events.

Our IV estimation relies on the assumption that, after conditioning on the criteria used to determine a stock's index assignment, inclusion in the Russell 2000 index is associated with an increase in *Passive%* (relevance condition) but does not directly affect our outcomes of interest except through its impact on ownership by passive investors (exclusion restriction). We verify the relevance condition below in our first stage estimations, and the exclusion restriction seems reasonable in that it is unclear why index inclusion would be directly related to our outcomes of interest after robustly controlling for the factors that determine index inclusion, including a firm's end-of-May market capitalization, as calculated by Russell. To control for firms' market capitalization, we restrict our sample to activism events that occur for the 500 stocks at the bottom of the Russell 1000 and top 500 stocks of the Russell 2000 and include a robust set of controls for firms' log market capitalization,  $\text{Ln}(Mktcap)$ , as measured using CRSP data, by varying the polynomial order  $N$  we use to control for end-of-May market capitalization.<sup>14</sup>

The use of  $R2000_{it}$  as an instrument allows us to isolate an exogenous source of variation in passive ownership. While non-index funds that passively seek to deliver the performance of a benchmark portfolio have discretion over which stocks within the benchmark to hold, the instrumental variable never uses such endogenous variation in passive ownership; the IV estimation *only* uses variation in ownership that is driven by a stock's index assignment and the reshuffling of holdings by passively managed mutual funds seeking to minimize their tracking error. We do not use the actual portfolio weight or ranks of stocks as our instrument because this would introduce a potentially serious endogeneity concern.<sup>15</sup>

### 3.3. First stage estimation

In this section, we report estimates of our first-stage regression of passive mutual fund holdings on membership in the Russell 2000 index plus additional controls. Specifically, we estimate

$$\begin{aligned} \text{Passive}\%_{it} = & \eta + \lambda R2000_{it} + \sum_{n=1}^N \chi_n \left( \text{Ln}(Mktcap_{it}) \right)^n + \sigma \text{Ln}(Float_{it}) \\ & + \phi_1 \text{band}_{it} + \phi_2 R2000_{it-1} + \phi_3 \left( \text{band}_{it} \times R2000_{it-1} \right) + \delta_t + u_{eit} \end{aligned} \quad (2)$$

where  $R2000_{it}$  is a dummy variable equal to one if stock  $i$  is in the Russell 2000 Index for reconstitution year  $t$ , and the other variables are as defined for equation (1). In our initial tests, we also analyze other outcome measures, including the percentage of shares outstanding owned by all mutual funds; the

<sup>14</sup> At some level, our estimation can be viewed as one that makes use of a threshold event in a non-RD estimation, as discussed in Bakke and Whited (2012).

<sup>15</sup> See Appel, Gormley, and Keim (2015a, 2015b) for more details. Chang, Hong, and Liskovich (2015) and Mullins (2014) also discuss this issue of why the actual weights or rankings should not be used as instruments or as part of a regression discontinuity estimation in the Russell 1000/2000 setting.

percentage of shares outstanding owned by actively managed funds; and the percentage of shares outstanding owned by unclassified mutual funds. The model is estimated using all activism events from 2008 through 2014 that targeted firms within a bandwidth of 500 stocks around the Russell 1000/2000 threshold and includes a second-order polynomial for  $\ln(Mktcap)$ .

The results, reported in Table 2, confirm that a targeted firm's passive ownership structure is related to index assignment. So that the point estimates in Table 2 align with the observed differences in ownership shown in Fig. 3, we do not scale the ownership variables by their sample standard deviations in these initial estimates. The first column shows that aggregate mutual fund ownership is higher for activist targets that are at the top of the Russell 2000, but the estimate is not statistically significant. Breaking mutual fund ownership into its different investment styles, however, we see that index assignment is associated with the composition of a target's ownership. The level of passive ownership for targeted firms that are included in the Russell 2000 is about five percentage points greater than the level of passive ownership observed for targeted firms that are in the Russell 1000. The estimated coefficient is positive and significant at the 1% level (column 2). There is no evidence that index assignment is related to ownership of either actively managed mutual funds (column 3) or unclassified funds (column 4).

In Table 3 we demonstrate that the estimated relation between passive ownership and Russell 2000 membership is robust to using a higher-order polynomial, and to better quantify the economic magnitude of the observed difference in ownership, we scale *Passive%* by its sample standard deviation. Using activism events that target firms within a bandwidth of 500 firms and varying the polynomial order of controls for market cap, we find an increase in ownership by passive funds of about 1.12–1.21 standard deviations (Table 3, columns 1–3). In all cases, the increase is statistically significant at the 1% level.<sup>16</sup>

The potential declines in ownership for actively managed and unclassified mutual funds is also robust to varying the polynomial order of controls for *Mktcap*. This can be seen in Appendix Table 2. The point estimates for both active ownership and unclassified ownership are economically small and not statistically significant in any of the specifications.

Overall, our first stage estimates confirm that index assignment corresponds with a shift in passive ownership. We now turn to analyzing whether passive ownership affects the types of campaigns undertaken by activists, the tactics they employ, and their eventual outcomes

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<sup>16</sup> Because our IV model is just-identified, the IV estimation is median-unbiased and weak instruments are unlikely to be a concern in our setting, especially given the strong first stage estimates (Angrist and Pischke, 2009). Additionally, the Kleibergen-Paap F stat on the excluded instrument exceeds 10, providing further confidence that a weak instrument is unlikely to be a concern (Stock, Wright, and Yogo, 2002; Angrist and Pischke, 2009).

#### 4. How passive investors affect activism by other investors

Does the increased presence of passive investors have an effect on the types of campaigns undertaken by activists, the tactics they employ, and their eventual outcomes? In this section, we investigate these questions using the identification strategy and instrumental variable estimation described in Section 3. We also analyze the impact of passive investors on the frequency of activism.

##### *4.1 Passive ownership and the likelihood of activism*

We first examine whether passive ownership affects the likelihood of a firm being targeted by an activist campaign. Theoretically, the direction of this effect is ambiguous. On the one hand, the presence of passive investors may facilitate an increase in activism if the size and concentration of their ownership stakes increases activist investors' ability to rally support for their demands (Brav et al., 2008). On the other hand, the presence of passive investors might negate the need for activism if they themselves take actions (e.g., voting for more independent directors) to improve firm-level governance and performance (Appel, Gormley and Keim, 2015a). Furthermore, cognizant that passive investors might facilitate activism, managers might act to preempt activist campaigns (e.g., through a reform of governance practices) if such campaigns are personally costly for the manager (Fos and Tsoutsoura, 2014).

We use the IV estimation to analyze whether passive investors affect the likelihood of an activist campaign. The results of this analysis are reported in Table 4. The dependent variable is an indicator for activism constructed using the Shark Watch database. The sample consists of all observations in the 500 bandwidth around the Russell 1000/2000 cutoff during our sample period. We find that the effect of passive ownership on the likelihood of activism is statistically indistinguishable from zero. The lack of a statistically significant effect does not appear to depend on how we measure the occurrence of an activism event. For example, in unreported analysis we omit activism events that consist of only a 13D filing, and we also do not find a significant result for this sample. Overall, the lack of a clear statistical relation between passive ownership and the likelihood of activism suggests that both mechanisms discussed above may be in operation and offsetting each other during our sample period.<sup>17</sup>

##### *4.2 Type of activist campaigns*

While the above results suggest passive ownership does not, on average, influence the likelihood that an activist targets a company, we now turn attention to whether passive ownership affects the types of

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<sup>17</sup> Interestingly, these estimates differ from those found in Appel, Gormley, and Keim (2015a), which documents a negative association between passive ownership and the likelihood of hedge fund activism during an earlier sample period between 1998 and 2006. The potential attenuation of this negative association between passive ownership and the likelihood of activism over time could be consistent with anecdotal evidence (provided in the introduction) that passive investors have grown more willing to support activist campaigns in recent years.

campaigns initiated by activists. For this analysis (and the remainder of the paper), the sample is restricted to those firms in the 500 bandwidth around the Russell 1000/2000 cutoff that experience an activist event as defined by Shark Watch from 2008 through 2014.

We first examine whether passive ownership affects the likelihood of different types of activism. Activists pursue a variety of different goals through their campaigns. While some campaigns seek to alter the fundamental aspects of governance such as control of the corporation, others seek more modest goals such as pressuring management to increase payouts to shareholders or provide additional disclosures. As noted earlier, Shark Watch provides the primary goal of each activism event in the database. The most common goals are board representation and policy changes thought to enhance value (e.g., changes to financial policies). The remainder of the campaigns seek a wide-range of different outcomes, including the adoption of shareholder proposals, sending exempt solicitations to other shareholders, and those related to idiosyncratic firm events (e.g., blocking a merger). We classify each activism event in the sample into one of three groups based on its primary goal: board representation (27.5% of sample), value-enhancing policy changes (20.9% of the sample), and other (51.6%). We include 13D filings by well-known activists that have no explicitly stated activist intent in the “other” category. This choice does not have a material effect on our findings.

Table 5 reports the effects of passive ownership on each of the three groups of activist campaigns classified above. The key finding is that higher passive ownership leads to an increase in campaigns seeking board representation. Specifically, among firms targeted by an activist during our sample period, a one standard deviation increase in passive ownership is associated with a 0.66 standard deviation increase in the likelihood that the activist campaigns seeking board representation ( $p$ -value < 0.05, column 1). The increase is robust to including higher-order polynomial controls for firm’s end-of-May market cap. We observe about a 0.89 standard deviation increase in campaigns related to board representation when including a second- or third-order polynomial control for market cap, and both estimates are statistically significant at the 1% level (columns 2–3).

Given the lack of a change in the total level of activism reported in Table 4, the increase in campaigns seeking board representation should be offset by a drop in different types of campaigns. We report results for “policy change” and “other” campaigns in Columns 4–5 of Table 5. For brevity, we only report estimates that include a second-order polynomial control for market cap. The increase in campaigns seeking board representation appears to largely come at the expense of campaigns under the “other” categorization. Specifically, a one standard deviation increase in passive ownership is associated

with a 0.52 standard deviation decrease in the likelihood of campaigns classified as other; the estimate is statistically significant at the 10% level. We do not find a statistically significant effect on campaigns seeking policy changes.

Overall, the results indicate that passive ownership leads to a meaningful shift in the types of campaigns pursued by activists. Specifically, higher passive ownership is associated with activists being more inclined to initiate campaigns seeking to alter the balance of corporate control away from incumbent directors. While activists are not necessarily seeking full control of the board in such campaigns, an attempt to get “a chair at the metaphorical table where corporate strategy is set” represents an ambitious intervention on the part of the activist that holds the potential to affect firms along virtually any dimension (Kahan and Rock, 2007). The increase in campaigns seeking board representation is offset by a decrease in campaigns seeking incremental changes to firm policies through the use of shareholder non-binding resolutions, exempt solicitations, and other means. In the next section, we explore the effect of passive investors on proxy fights as one potential explanation for this shift in the nature of activism.

#### *4.3 Board representation and proxy fights*

Why is passive ownership associated with activist investors pursuing board representation? We shed light on this question by exploring a common tactic used by activists to win board seats: proxy fights. Passive investors may facilitate proxy battles by activists by reducing their costs and ultimately increasing the chances of a favorable outcome. In this section, we examine whether passive investors influence the likelihood of activists engaging in a proxy fight with management and whether activists are more likely to obtain a successful outcome.

Proxy fights differ from many other activist tactics due to their considerable cost. These costs can be both direct (e.g., proxy solicitation services, legal fees, etc.) and indirect (e.g., effort) in nature. Gantchev (2013) estimates the total average cost of a campaign ending in a proxy fight to be over \$10 million. Other types of activism, like supporting a particular shareholder proposal or seeking an exempt solicitation, are usually less costly. For example, the primary direct cost for exempt solicitations is to “EDGARize” (i.e., format in accordance with SEC guidelines) the filing, which costs about \$100.<sup>18</sup> An exempt solicitation features the dissident writing a letter to other shareholders, so indirect costs (e.g., effort) are likely minimal as well. Similarly, there is no cost to submit shareholder proposals for inclusion

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<sup>18</sup> See “Use of Exempt Solicitations Up Dramatically in 2012: Chesapeake (CHK) Latest Example” available at <http://www.corpgov.net/2012/05/use-of-exempt-solicitations-up-dramatically-in-2012-chesapeake-chk-latest-example/>

on a company's proxy statement provided that certain ownership and procedural requirements are satisfied (Briggs, 2007).

Activists face a free-rider problem with respect to proxy fights since they internalize the potentially sizeable costs yet the benefits are shared proportionally among shareholders. Passive investors might mitigate this problem both by reducing the total costs of a proxy contest. Costs may be reduced due to easier coordination with passive investors who have large ownership stakes. Specifically, one obviously important aspect of a proxy fight is convincing other shareholders to vote for the dissident directors. However, communication with other shareholders is complicated by the fact that many hold shares in "street name" and cannot easily be identified. Thus, activists must hire proxy solicitation services. The costs associated with this are often considerable. For example, one study estimates the proxy solicitor fees alone cost activists \$150,000 on average when the activist issues a preliminary or definitive proxy statement (Activist Insights, 2014). Furthermore, activists often meet with other shareholders to convince them to vote for the dissident slate; Bebchuk (2007) notes that Red Zone LLC spent \$950,000 for travel alone in its proxy fight against Six Flags. While such costs may be prohibitive with a widely dispersed shareholder base, the large, concentrated ownership stakes of passive investors holds the potential to facilitate this process.

Passive investors might also affect the chances that proxy fights launched by activists are ultimately successful if their presence increases the potential number of dissatisfied shareholders an activist can rely on for support. Because passive funds weight their holdings based on the portfolio weights of the underlying index in an attempt to minimize tracking error, they are less willing than more actively managed funds to divest their positions in poorly performing stocks. Unable to exit, they might be more motivated than other institutions to be engaged owners and to support an activist. Additionally, the concentrated ownership stakes of large passive investors, like Vanguard, State Street and Blackrock, might make it easier for activists to gauge the support of investors before launching a campaign.

Consistent with the idea that passive investors mitigate free-rider problems, we find that higher passive ownership is associated with an increase in campaigns involving a proxy fight. These results are reported in Table 6. Specifically, among firms targeted by an activist, a one standard deviation increase in passive ownership is associated with about a 0.73–0.78 standard deviation increase in the likelihood of a proxy fight, and the point estimate is statistically significant at the 1% level (columns 1–3). This effect is driven by an increase in campaigns seeking representation on the board as well as an increase seeking full control. In particular, a one standard deviation increase in passive ownership is associated with a 0.98

standard deviation increase in the likelihood the activist nominates a short slate of directors (column 4) and a 0.43 standard deviation increase in the likelihood the activist nominate a full slate of directors, which would occur in cases where the activist seeks full control of the board (column 5).

We also find evidence consistent with passive investors increasing the probability of favorable outcomes from proxy battles. These results are reported in Table 7. The dependent variable in columns 1–3 is an indicator for management settling a proxy fight with the activist. A one standard deviation increase in passive ownership is associated with approximately a 0.70 standard deviation increase in the likelihood of such a settlement, statistically significant at the 5% level. We do not, however, find any evidence of differences in the rates at which activists or managers win contested elections (columns 4 and 5). These findings suggest that activists have a better chance of winning a proxy fight when backed by passive investors, and managers are therefore more likely to offer a settlement. The reason why passive investors wield such influence potentially stems from them publicly supporting the activist and lending credibility to the campaign, or a credible threat of them voting shares in support of a dissident slate of directors.

Overall, the findings suggest passive investors play a key role in mitigating free-rider problems associated with proxy battles. Specifically, passive ownership is associated with an increased likelihood of activists initiating a proxy fight, and an increased willingness of managers to capitulate to activists demands and offer a settlement. Both results are consistent with passive investors lowering the costs associated with this particular form of intervention and/or increasing its expected payoff.

#### *4.4 Other activism outcomes*

In this section, we test whether passive ownership is associated with activists' likelihood of success in dimension besides board representation. To do this, we collect information on common activist outcomes from Shark Watch's campaign summaries, and create indicator variables to flag campaigns where the activist was successful in obtaining specific policy outcomes. The outcomes relate to both corporate policies (increased payouts, spinoffs, and accepting a takeover offer) and governance policies (removal of takeover defenses). For brevity, we continue to restrict our analysis to estimations that include a second-order polynomial control for  $Ln(\text{market cap})$ .

Our results, reported in Table 8, indicate that passive investors have a significant effect on the likelihood of activists achieving some corporate policy goals, but not others. First, we examine the effect of passive investors on the ability of activists to instigate changes to corporate policies that are at the sole discretion of managers and boards (e.g., dividends, capital structure, and spinoffs). While it might be the

case that managers and boards are inclined to make such changes if refusal to do so could result in a proxy fight, it may also be the case that a proxy fight in response to refusal is viewed as a non-credible threat. This would be the case, for instance, if the proportional increase resulting from a change in firm policies does not outweigh the costs of a proxy fight. The results of our analysis are consistent with the second viewpoint. Specifically, passive ownership is not related to success in either obtaining an increase in payouts (column 1) or in facilitating a spinoff (column 2), two common goals of activist campaigns. In unreported results, we also do not find a statistically significant relationship between passive ownership and the ability of activists to influence changes to capital structure (e.g., to increase leverage). These findings suggest that the presence of passive investors does not facilitate activists' efforts seeking changes along these dimensions of corporate policy. In this regard, the findings are also consistent with the idea that passive investors tend to focus on governance issues and do not generally seek changes to firm policies related to investment, payouts, and capital structure that they believe are better left to the discretion of managers and boards (Appel, Gormley, Keim, 2015a).

However, we do find that passive ownership matters for issues that potentially have a more significant effect on firm value. For example, passive ownership is associated with an increased likelihood that activists are able to successfully push for an acquisition of the target. Among firms targeted by an activist, a one standard deviation increase in passive ownership is associated with about a 0.84 standard deviation increase in the likelihood the activist successfully seeks and obtains an acquisition by a third party (column 3) and a 0.52 standard deviation increase in the likelihood the activist seeks and acquires the target firm itself (column 4). Both estimates are statistically significant at the 10% level. Greater passive ownership, however, is associated with a decline in the likelihood an activist is able to successfully block a merger or agitate for a higher price in a proposed merger (column 5). One potential explanation for this latter finding is that passive investors often hold significant ownership stakes in both the acquirer and the target, thus mitigating their incentive to support a higher price. Given the potentially large value implications of these outcomes, activists success could be the result of a credible threat of a proxy fight should they face resistance from managers. Furthermore, the findings could be consistent with passive investors being more inclined to support acquisitions where shareholders are being offered a premium, which has a clear implication for the value of their investments.

Finally, we find evidence that greater passive ownership is associated with increases in activists' success in the removal of takeover defenses. Reform of governance practices, including the removal of takeover defenses, is a common goal of activists. Our results, reported in Table 8, indicate that passive

investors have a significant effect on the likelihood of activists successfully agitating for the removal of a takeover defense; a one standard deviation increase in passive ownership is associated with a 0.37 standard deviation increase in the likelihood of the firm removing a takeover defense (column 6). This finding is consistent with the earlier evidence the activists campaigns are more likely to result in the firm's sale when passive ownership is higher and with recent evidence that passive investors tend to oppose takeover defenses (Appel, Gormley, and Keim, 2015a).

In sum, the above findings suggest passive investors have a tangible effect on the success of activist campaigns, especially the likelihood of success in gaining board representation, removing takeover defenses, and facilitating the acquisition of the target, but their presence is not associated with differences in activists' ability to increase payouts or block a merger.

#### *4.5 Other types of activist tactics*

Next, we analyze other tactics used by activists in campaigns. In practice, an activist can employ a combination of tactics besides nominating a slate of directors and initiating a proxy fight. The most common tactic of an activist is to write a letter to the board and other shareholders. Other tactics, however, can include making an unsolicited offer to acquire the firm, requesting a special shareholder meeting, obtaining a vote on a precatory shareholder proposal, and seeking reimbursement for expenses occurred. The findings pertaining to these other activist tactics are reported in Table 9.

Increased passive ownership is associated with a shift in activist tactics. While we find little evidence that passive ownership is associated with the frequency of a letter to shareholders or the board (column 1) or the likelihood of using a precatory shareholder proposal (column 2), both of which are relatively less costly tactics, we find an increase in the likelihood of the activist making a hostile takeover offer for the target (column 3), which is a relatively more expensive tactic. Interestingly, we also find that greater passive ownership is associated with fewer requests by the activist for a special shareholder meeting (column 4). The decline in requests for a special meeting is both large—a 1.3 standard deviation decline—and statistically significant at the 5% level. This decline may reflect that many companies require at least 10% to 25% of shareholders to make such a request before a special meeting is granted. Because contributing to such a request will typically require the investors to file a 13D form, passive institutional investors, which generally file 13G forms, may be hesitant to support such requests even if they support the activists' goal.<sup>19</sup> This may lead activists that are depending on the support of large passive institutional investors to pursue their agenda during annual meetings.

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<sup>19</sup> As noted in Brav, Jiang, and Kim (2015), investors with a passive stance will not want to file a 13D since it entails more legal obligations and requires the disclosure of more information than required with a 13G filing.

Finally, we observe that greater passive ownership is also associated with an increase in the tactic of seeking reimbursement from the firm for the activists' expenses. Such requests are often made in expensive proxy fights, and we find that a one standard deviation increase in passive ownership is associated with about a 0.70 standard deviation increase in the likelihood the activist seeks reimbursement. This increase in reimbursement requests provides additional evidence that activists appear to undertake more expensive campaigns in the presence of increased passive ownership.

#### *4.6 Activism targets*

Finally, we examine whether passive ownership is associated with a change in the types of firms targeted by activists. If passive ownership affects the choice of targets by activists, this could be another potential mechanism by which their presence affects the strategic choices of activists.

We find no evidence, however, that passive mutual fund ownership is associated with the ex ante characteristics of firms targeted by activism. In particular, we find that passive mutual fund ownership does not have a statistically significant association with target firms' dividend yield, leverage ratio, level of capital expenditures or R&D, return on assets, Tobin's Q, or stock return in the year prior to being targeted.

### **5. Additional robustness checks and alternative mechanisms**

In this section, we discuss the robustness of our IV estimates. In particular, we demonstrate that our findings are not sensitive to excluding activists that only file a 13D or to using end-of-May market cap rankings to select our sample of stocks each year.

#### *5.1. Robustness to alternative sampling choices and controls*

In our main analysis, we select our sample to be the 500 stocks with the smallest portfolio weights in the Russell 1000 and the 500 stocks with the largest portfolio weights in the Russell 2000. Our findings, however, are not sensitive to instead using end-of-May market caps to determine the sample of stocks each year. In particular, we can instead rank stocks based on their end-of-May market cap, calculated with data from CRSP, and select the sample for each year using firms ranked 500<sup>th</sup> through 1500<sup>th</sup> in that year. An advantage of this latter approach is that it eliminates the risk that Russell's float-adjusted reweighting of stocks within an index affects our findings. A disadvantage of this approach, however, is that we are no longer necessarily comparing the very bottom firms of the Russell 1000 against the very top firms of the Russell 2000, which is where we would expect to find the biggest difference in passive ownership (and hence, outcomes) to occur. This sampling choice, however, has little impact on

our IV estimates. While the first stage estimates are expectedly smaller in magnitude when we use end-of-May market caps to rank stocks and select our sample each year (coefficient = 0.94,  $t$ -stat = 3.03), the IV estimations are largely unchanged (see Appendix Table 3).

Our findings are also largely unaffected if we add controls to account for firms that moved from the Russell 1000 to the Russell 2000 that year, and vice versa. If such switchers differ in other dimensions and represent a disproportionate share of either index, this could affect our earlier estimates. However, all of the findings are robust to the inclusion of these controls (see Appendix Table 4).

### *5.2. Robustness to excluding activists that only file a 13D or to combining within-year campaigns*

Our findings are also robust to excluding activist campaigns where we only observe the filing of a 13D, but no subsequent information on the tactics employed or changes sought by the activist, which occurs in 78 of our 426 activist campaigns. This is shown in Appendix Table 5. We find qualitatively similar results for all of our key findings even after excluding these activist campaigns.

Finally, our findings are also robust to combining activist campaigns that occur within the same year. In our main analysis, we treat each activist event reported in Shark Watch as a separate campaign. However, collapsing multiple activist events that occur in the same year to one combined campaign does not qualitatively affect our findings. This is shown in Appendix Table 6.

## **6. Conclusion**

Activists have been more aggressive in pursuing board seats and more successful in such campaigns. For example, in an article titled, “Activist Investors Ramp Up, and Boardroom Rifts Ensur,” *The Wall Street Journal* reports that the number of companies targeted by an activist seeking board representation has more than doubled in the last five years. And in a separate article, “CEOs Test: Contending With Activist Investors,” the *Journal* reports that activists seeking a board seat obtained at least a partial victory in 72% of such campaigns in 2014, up from a success rate of 57% in 2008.

Interestingly, the rise in activism and its successes has coincided with the growing influence of passive institutional investors. Passively managed mutual funds now account for more than a third of all mutual fund assets, and the institutions that offer these funds, like Vanguard, State Street, and Blackrock, are now often the largest shareholders of U.S. companies. In this paper, we ask whether the growing importance of passive institutional investors has influenced activists.

We find, over the 2008-2014 period, that activists are more likely to pursue expensive activism campaigns when the target company’s stock has higher ownership by passively managed mutual funds.

On average, activists are more likely to pursue campaigns to obtain board representation when a larger proportion of a company's stock is held by passive investors. We also document significant increases in activists' likelihood of nominating directors or initiating a proxy fight when passive ownership is higher. In that proxy fights are generally seen as a more expensive form of activism than simply writing to shareholders or seeking an exempt solicitation, our findings suggest an increased willingness by activists to pursue more expensive tactics when passive ownership is higher. We find no evidence, however, that passive ownership increases the likelihood of an activist attack or a shift in the type of firms targeted by activists; rather our evidence suggests a shift in the goals and tactics of activists.

Our findings suggest that the growth of passive investors might be facilitating activism by lowering the costs associated with certain activism tactics and by increasing the activists' likelihood of success. In further support of this possibility, we find that greater passive ownership is also associated with greater success by activists in obtaining board representation, in removing takeover defenses, and in facilitating the sale of a targeted company. We find no evidence, however, that passive ownership improves the chances of a payout increase or a subsequent spinoff, and more passive ownership is associated with activists being less successful in agitating against a merger. Activists are also more likely to seek reimbursement for their campaign expenses, consistent with these proxy fights being more costly to wage, and less likely to seek a special meeting, which passive investors may be less willing to support given the regulatory implications that such support might entail.

Given the myriad of agency conflicts that might exist between managers and shareholders, such as a manager's inclination to empire build, to enjoy the quiet life, or to play it safe (e.g., Jensen, 1986; Bertrand and Mullainathan, 2003; Gormley and Matsa, 2015), it is crucial to understand how the shifting nature of U.S. stock ownership might affect the ability of shareholders to discipline managers. While some worry that the growth of passive investors weakens firm-level governance (e.g., *The Economist*, 2015), our findings provide evidence to contrary. Rather, passive investors appear to be willing supporters of activists that seek board representation, and the increasing share of stock held by large passive institutions seems to facilitate activists' ability to successfully enact change.

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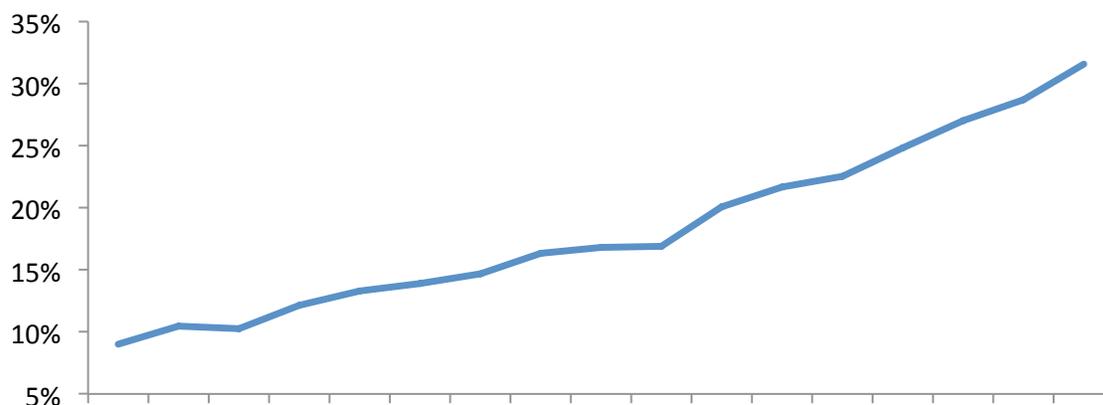
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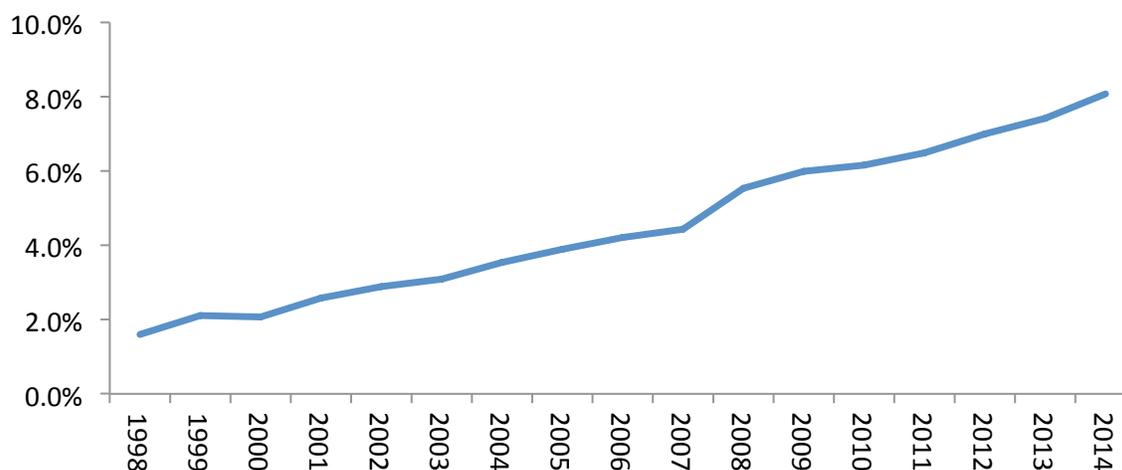
*The Economist*, 2015. Capitalism's unlikely heroes: Why activist investors are good for the public company, February 7<sup>th</sup>.

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### % of equity mutual fund assets that are passively managed



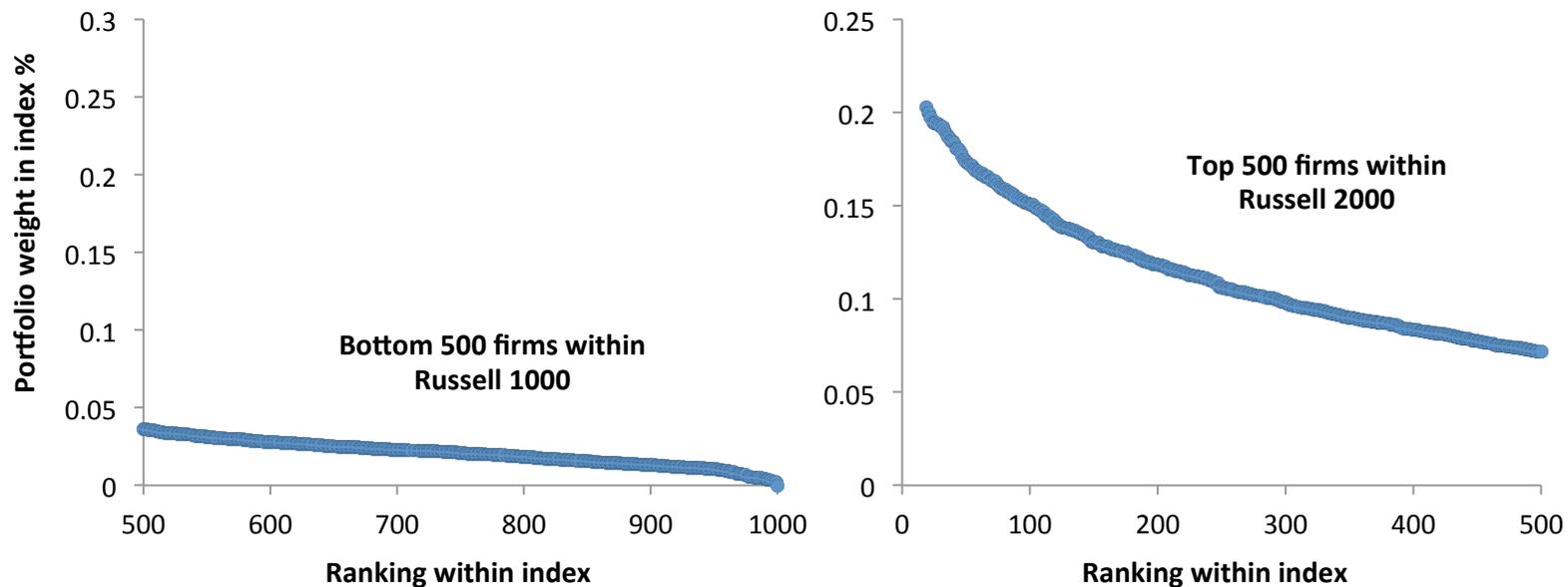
### % of total market cap held by passively managed funds



**Figure 1**

#### **Growth of passive investors, 1998-2014**

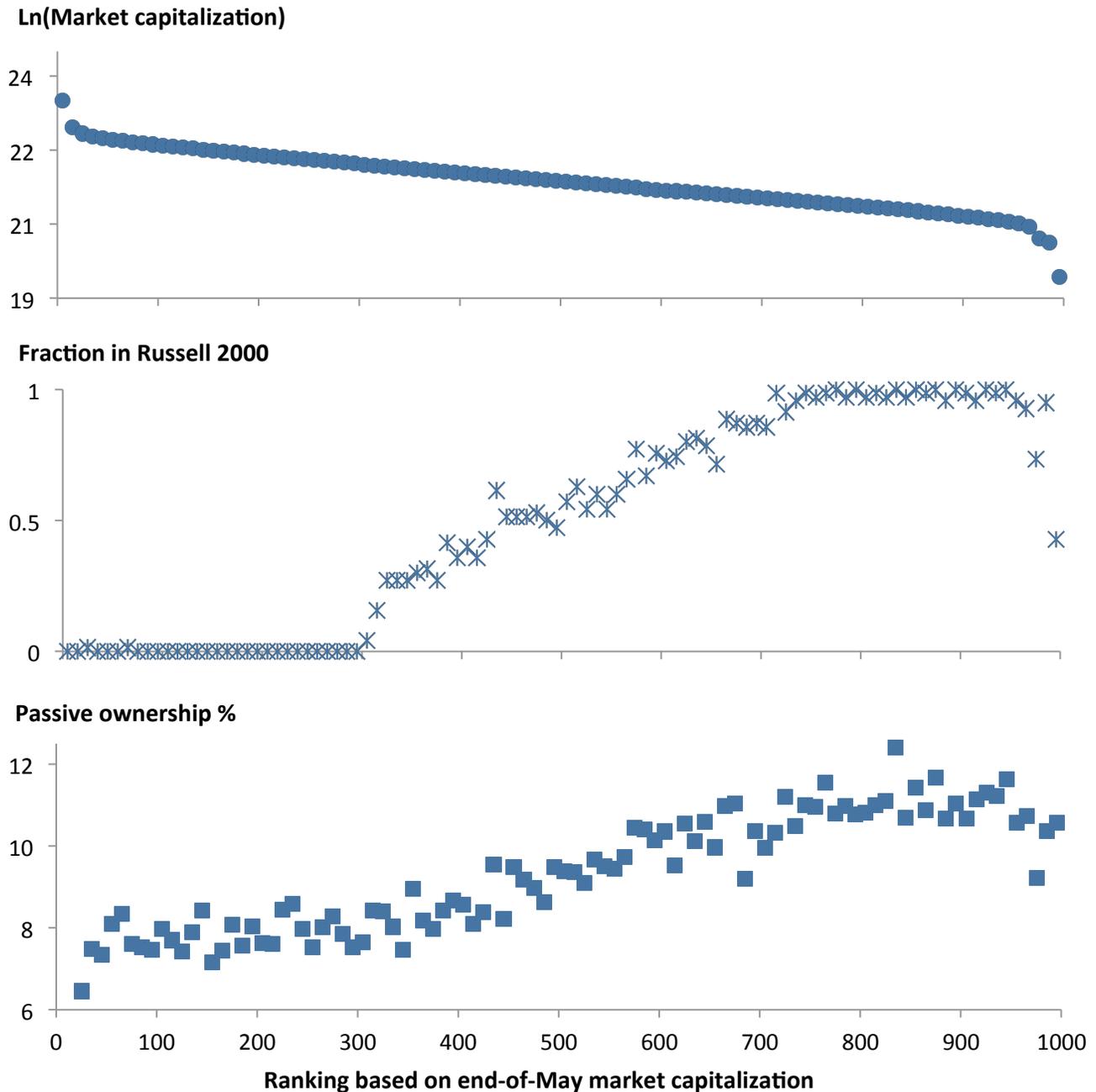
This figure plots the estimated percent of all U.S. equity mutual fund assets under management between 1998 and 2014 that are held in passively managed funds and the estimated percent of total U.S. market capitalization held by passively managed mutual funds. We construct the figure by matching the S12 mutual fund holdings data compiled in the Thomson Reuters Mutual Fund Holdings Database to market caps reported in CRSP and fund names in the CRSP mutual fund data. We use a name-parsing procedure along with the index fund identifier from the CRSP mutual fund file to classify mutual funds as passively managed. Our procedure is described in the text. Holdings and market cap are calculated each year at the end of the third quarter.



**Figure 2**

**Portfolio weights in the Russell 1000 and 2000 indices by within-index ranking for the year 2013**

This figure plots the portfolio weights of the bottom 500 firms in the Russell 1000 index and the top 500 firms in the Russell 2000 index for the end-of-June 2013. Observations are ordered by their within-index ranking such that rankings of 1 and 1,000 represent the firms with the largest and 1,000th largest portfolio weight in the index, respectively. The portfolio weights are given as a percent.



**Figure 3**  
**Market capitalization, index assignment, and passive ownership by market capitalization rankings for the bottom 500 firms of Russell 1000 and top 500 firms of Russell 2000**

This figure plots the average end-of-May Ln(market capitalization), fraction of firm-year observations in the Russell 2000, and passive mutual fund ownership (%) by ranking, where ranking is determined using end-of-May market capitalization, as reported in CRSP. The sample includes the bottom 500 firms of the Russell 1000 and the top 500 firms of the Russell 2000, as determined using end-of-June Russell-assigned portfolio weights for each index. Mutual fund ownership is calculated as of September each year, and all averages are calculated using bins of 10 firms and data from 2007-2013. For the ownership panel, we scale the vertical axis to report two standard deviations on each side of the sample mean.

**Table 1**  
**Summary statistics**

This table reports summary statistics of our key variables for our main sample: activism events that occur for firms in the 500 bandwidth around the cutoff between the Russell 1000 and 2000 indexes from 2008–2014. Definitions for all variables are provided in Appendix Table 1. We delete observations where either mutual fund ownership is missing or total mutual fund holdings exceed a stock's market capitalization.

	Obs.	Mean	SD
<u>Ownership structure</u>			
<i>Total mutual fund ownership %</i>	426	35.6	11.01
<i>Passive ownership %</i>	426	9.19	3.538
<i>Active ownership %</i>	426	22.9	9.856
<i>Unclassified ownership %</i>	426	3.50	2.359
<u>Campaign classifications</u>			
<i>Seek board representation</i>	426	0.275	0.447
<i>Maximize value via policy change</i>	426	0.209	0.407
<i>Other</i>	426	0.516	0.500
<u>Activism outcomes</u>			
<i>Nominate short slate</i>	426	0.073	0.260
<i>Nominate full slate</i>	426	0.124	0.330
<i>Proxy fight - settlement</i>	426	0.031	0.172
<i>Proxy fight - activist wins</i>	426	0.038	0.190
<i>Proxy fight - firm wins</i>	426	0.068	0.252
<i>Increase payouts</i>	426	0.040	0.196
<i>Spinoff or divestiture</i>	426	0.042	0.201
<i>Merger blocked</i>	426	0.040	0.196
<i>Acquisition [by third party]</i>	426	0.026	0.159
<i>Acquisition [by activist]</i>	426	0.019	0.136
<i>Removed takeover defense</i>	426	0.040	0.196
<u>Activism tactics</u>			
<i>Proxy fight</i>	426	0.223	0.417
<i>Hostile offer</i>	426	0.054	0.226
<i>Call for special meeting</i>	426	0.077	0.268
<i>Seek reimbursement for expenses</i>	426	0.096	0.295
<i>Precatory proposal</i>	426	0.120	0.325
<i>Letter to board or shareholders (non-proxy)</i>	426	0.284	0.510

**Table 2**  
**Impact of index assignment on mutual fund ownership**

This table reports estimates of a regression of mutual fund holdings on an indicator for membership in the Russell 2000 index plus additional controls. Specifically, we estimate

$$Ownership\%_{it} = \eta + \lambda R2000_{it} + \sum_{n=1}^N \chi_n (Ln(Mktcap_{it}))^n + X_{it} + banding-controls_{it} + \delta_t + u_{eit}$$

where  $R2000_{it}$  is a dummy variable equal to 1 if stock  $i$  is in the Russell 2000 Index at end of June in year  $t$ ,  $Mktcap_{it}$  is the CRSP market value of equity of stock  $i$  measured at May 31 in year  $t$ ,  $N$  is the polynomial order we use to control for  $Ln(Mktcap_{it})$ , and  $\delta_t$  are year fixed effects. The estimation includes additional controls for the log(float-adjusted market value of equity) at June 30 in year  $t$ ,  $Ln(Float_{it})$ . The estimate also includes additional banding controls: an indicator for having an end-of-May market capitalization sufficiently close to the cutoff such that the firm will not switch indexes,  $band_{it}$ , an indicator for being in the Russell 2000 last year,  $R2000_{it-1}$ , and the interaction of these two indicators.  $Ownership\%_{it}$  measures mutual fund ownership (in percent) for stock  $i$  at the end of September in year  $t$ . In this table we use four different definitions for  $Ownership\%$  for stock  $i$ : (1) the percentage of shares outstanding owned by all mutual funds (from S12 filings); (2) the percentage of shares outstanding owned by "passive" funds; (3) the percentage of shares outstanding owned by "active" mutual funds; and (4) the percentage of shares outstanding owned by "unclassified" mutual funds. The mutual fund classifications are defined in the text. The sample consists of all activism events that target the top 500 firms in the Russell 2000 index and bottom 500 firms of the Russell 1000 index (i.e., bandwidth = 500) over the 2008-2014 period for which we obtain holdings data from Thomson Reuters Mutual Fund Holdings Database and which we match with data from the monthly CRSP file. The model is estimated using a polynomial order control for  $Ln(Mktcap)$  of  $N = 2$ . Standard errors,  $\varepsilon$ , are clustered at the firm level and reported in parentheses. \*\*\* indicates significance at the 1% level.

<i>Dependent variable =</i>	Percent of firm's common shares held by:			
	All mutual funds	Passive funds	Active funds	Unclassified funds
	(1)	(2)	(3)	(4)
<i>R2000</i>	5.772 (4.567)	4.958*** (1.132)	0.904 (4.160)	-0.091 (0.921)
Polynomial order, $N$	2	2	2	2
Banding controls	yes	yes	yes	yes
Float control	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes
Observations	426	426	426	426
<i>R</i> -squared	0.21	0.46	0.13	0.13

**Table 3****First stage estimation for ownership by passively managed funds**

This table reports estimates of our first-stage regression of passive ownership onto an indicator for membership in the Russell 2000 index plus additional controls. Specifically, we estimate

$$Passive\%_{it} = \eta + \lambda R2000_{it} + \sum_{n=1}^N \chi_n (Ln(Mktcap_{it}))^n + X_{it} + banding-controls_{it} + \delta_t + u_{eit}$$

where  $R2000_{it}$  is a dummy variable equal to 1 if stock  $i$  is in the Russell 2000 index at end of June in year  $t$ ,  $Mktcap_{it}$  is the CRSP market value of equity of stock  $i$  measured at May 31 in year  $t$ ,  $Float_{it}$  is the float-adjusted market value of equity (provided by Russell) at June 30 in year  $t$ , and  $\delta_t$  are year fixed effects. The estimation includes additional controls for the log(float-adjusted market value of equity) at June 30 in year  $t$ ,  $Ln(Float_{it})$ . The estimate also includes additional banding controls: an indicator for having an end-of-May market capitalization sufficiently close to the cutoff such that the firm will not switch indexes,  $band_{it}$ , an indicator for being in the Russell 2000 last year,  $R2000_{it-1}$ , and the interaction of these two indicators.  $Passive\%_{it}$  is the percentage of shares outstanding owned by passively managed mutual funds, as defined in the text, for stock  $i$  at the end of September in year  $t$  scaled by its sample standard deviation. The sample consists of all activism events that target the top 500 firms in the Russell 2000 index and bottom 500 firms of the Russell 1000 index (i.e., bandwidth = 500) over the 2008-2014 period. The model is estimated using polynomial order controls for  $Ln(Mktcap)$  of  $N = 1, 2$ , and 3. Standard errors,  $\varepsilon$ , are clustered at the firm level and reported in parentheses. \*\*\* indicates significance at the 1% level.

<i>Dependent variable =</i>	Passive % scaled by its sample standard deviation		
	(1)	(2)	(3)
<i>R2000</i>	1.123*** (0.258)	1.211*** (0.277)	1.196*** (0.281)
Polynomial order, $N$	1	2	3
Banding controls	yes	yes	yes
Float control	yes	yes	yes
Year fixed effects	yes	yes	yes
Observations	426	426	426
$R$ -squared	0.46	0.46	0.46

**Table 4****Ownership by passive investors and the likelihood of an activist campaign**

This table reports estimates of our instrumental variable estimation used to identify the effect of institutional ownership by passive investors on the likelihood of an activism event. Specifically, we estimate

$$Y_{it} = \eta + \lambda \text{Passive}\%_{it} + \sum_{n=1}^N \chi_n \left( \text{Ln}(\text{Mktcap}_{it}) \right)^n + X_{it} + \text{banding-controls}_{it} + \delta_t + \nu$$

where  $Y_{it}$  is an indicator for the likelihood of an activism event targeting firm  $i$  in year  $t$  scaled by its sample standard deviation,  $\text{Passive}\%_{it}$  is the percentage of shares outstanding owned by passively managed mutual funds (as defined in the text) for stock  $i$  at the end of September in year  $t$  scaled by its sample standard deviation,  $\text{Mktcap}_{it}$  is the CRSP market value of equity of stock  $i$  measured at May 31 in year  $t$ , and  $\delta_t$  are year fixed effects. The estimation includes additional controls for the log(float-adjusted market value of equity) at June 30 in year  $t$ ,  $\text{Ln}(\text{Float}_{it})$ . The estimate also includes additional banding controls: an indicator for having an end-of-May market capitalization sufficiently close to the cutoff such that the firm will not switch indexes,  $\text{band}_{it}$ , an indicator for being in the Russell 2000 last year,  $R2000_{i,t}$ , and the interaction of these two indicators. We instrument  $\text{Passive}\%$  in the above estimation using  $R2000_{it}$ , an indicator equal to one if firm  $i$  is part of the Russell 2000 index in year  $t$ . The sample consists of the top 500 firms of the Russell 2000 index and bottom 500 firms of the Russell 1000 over the 2008–2014 period for which we obtain holdings data from Thomson Reuters Mutual Fund Holdings Database and which we match with data from the monthly CRSP file. The model is estimated using polynomial order controls  $N = 1, 2, \text{ and } 3$  for  $\text{Ln}(\text{Mktcap})$ . Standard errors,  $\varepsilon$ , are clustered at the firm level and reported in parentheses.

<i>Dependent variable =</i>	Indicator for an activism campaign		
	(1)	(2)	(3)
<i>Passive %</i>	-0.004 (0.119)	-0.035 (0.116)	-0.085 (0.150)
Polynomial order, $N$	1	2	3
Banding controls	yes	yes	yes
Float control	yes	yes	yes
Year fixed effects	yes	yes	yes
Observations	6,796	6,796	6,796

**Table 5**  
**Ownership by passive investors and type of activist campaign**

This table reports estimates of our instrumental variable estimation used to identify the effect of institutional ownership by passive investors on the type of activism campaign. Specifically, we estimate

$$Y_{it} = \eta + \lambda \text{Passive}\%_{it} + \sum_{n=1}^N \chi_n \left( \text{Ln}(\text{Mktcap}_{it}) \right)^n + X_{it} + \text{banding-controls}_{it} + \delta_t + u_{eit}$$

where  $Y_{it}$  is an indicator for the type of campaign for activism event  $e$  targeting firm  $i$  in year  $t$  scaled by its sample standard deviation,  $\text{Passive}\%_{it}$  is the percentage of shares outstanding owned by passively managed mutual funds (as defined in the text) for stock  $i$  at the end of September in year  $t$  scaled by its sample standard deviation,  $\text{Mktcap}_{it}$  is the CRSP market value of equity of stock  $i$  measured at May 31 in year  $t$ , and  $\delta_t$  are year fixed effects. The estimation includes additional controls for the log(float-adjusted market value of equity) at June 30 in year  $t$ ,  $\text{Ln}(\text{Float}_{it})$ . The estimate also includes additional banding controls: an indicator for having an end-of-May market capitalization sufficiently close to the cutoff such that the firm will not switch indexes,  $\text{band}_{it}$ , an indicator for being in the Russell 2000 last year,  $\text{R2000}_{it-1}$ , and the interaction of these two indicators. The campaign types investigated in this table, from Shark Watch (Factset), are: an indicator for campaign that seeks board representation (columns 1-3), an indicator for campaigns that seek to maximize shareholder value by advocating for specific corporate policy changes (column 4), and an indicator for all other campaigns (column 5). We instrument  $\text{Passive}\%$  in the above estimation using  $\text{R2000}_{it}$ , an indicator equal to one if firm  $i$  is part of the Russell 2000 index in year  $t$ . The sample consists of all activism events that target the top 500 firms in the Russell 2000 index and bottom 500 firms of the Russell 1000 index (i.e., bandwidth = 500) over the 2008-2014 period for which we can obtain holdings data from Thomson Reuters Mutual Fund Holdings Database and which we can match with data from the monthly CRSP file. Standard errors,  $\epsilon$ , are clustered at the firm level and reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1%, 5%, and 10% levels, respectively.

<i>Dependent variable =</i>	Seek board representation			Maximize value via policy change	Other
	(1)	(2)	(3)	(4)	(5)
<i>Passive %</i>	0.663** (0.299)	0.889*** (0.322)	0.890*** (0.326)	-0.336 (0.313)	-0.519* (0.314)
Polynomial order, $N$	1	2	3	2	2
Banding controls	yes	yes	yes	yes	yes
Float control	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes
Observations	426	426	426	426	426

**Table 6****Ownership by passive investors and proxy fight likelihood and tactics**

This table reports estimates of our instrumental variable estimation used to identify the effect of institutional ownership by passive investors on the type of activism campaign. Specifically, we estimate

$$Y_{it} = \eta + \lambda Passive\%_{it} + \sum_{n=1}^N \chi_n \left( Ln(Mktcap_{it}) \right)^n + X_{it} + banding-controls_{it} + \delta_t + u_{eit}$$

where  $Y_{it}$  is an indicator for the type of tactic for activism event  $e$  targeting firm  $i$  in year  $t$  scaled by its sample standard deviation,  $Passive\%_{it}$  is the percentage of shares outstanding owned by passively managed mutual funds (as defined in the text) for stock  $i$  at the end of September in year  $t$  scaled by its sample standard deviation,  $Mktcap_{it}$  is the CRSP market value of equity of stock  $i$  measured at May 31 in year  $t$ , and  $\delta_t$  are year fixed effects. The estimation includes additional controls for the log(float-adjusted market value of equity) at June 30 in year  $t$ ,  $Ln(Float_{it})$ . The estimate also includes additional banding controls: an indicator for having an end-of-May market capitalization sufficiently close to the cutoff such that the firm will not switch indexes,  $band_{it}$ , an indicator for being in the Russell 2000 last year,  $R2000_{it-1}$ , and the interaction of these two indicators. The campaign types investigated in this table, from Shark Watch (Factset), are: an indicator for a proxy fight occurring (columns 1-3), nominating a short slate of directors (column 4), and nominating a full slate of directors (column 5). We instrument  $Passive\%$  in the above estimation using  $R2000_{it}$ , an indicator equal to one if firm  $i$  is part of the Russell 2000 index in year  $t$ . The sample consists of all activism events that target the top 500 firms in the Russell 2000 index and bottom 500 firms of the Russell 1000 index (i.e., bandwidth = 500) over the 2008-2014 period for which we can obtain holdings data from Thomson Reuters Mutual Fund Holdings Database and which we can match with data from the monthly CRSP file. The model is estimated using first and second polynomial order controls for  $Ln(Mktcap)$ . Standard errors,  $\varepsilon$ , are clustered at the firm level and reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1%, 5%, and 10% levels, respectively.

<i>Dependent variable =</i>	Proxy fight			Nominate short slate	Nominate full slate
	(1)	(2)	(3)	(4)	(5)
<i>Passive %</i>	0.729*** (0.271)	0.783*** (0.298)	0.759*** (0.291)	0.976** (0.442)	0.433* (0.252)
Polynomial order, $N$	1	2	3	2	2
Banding controls	yes	yes	yes	yes	yes
Float control	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes
Observations	426	426	426	426	426

**Table 7****Ownership by passive investors and proxy fight outcomes**

This table reports estimates of our instrumental variable estimation used to identify the effect of institutional ownership by passive investors on the type of activism campaign. Specifically, we estimate

$$Y_{it} = \eta + \lambda \text{Passive}\%_{it} + \sum_{n=1}^N \chi_n \left( \text{Ln}(\text{Mktcap}_{it}) \right)^n + X_{it} + \text{banding-controls}_{it} + \delta_t + u_{eit}$$

where  $Y_{it}$  is an indicator for the outcome of activism event  $e$  targeting firm  $i$  in year  $t$  scaled by its sample standard deviation,  $\text{Passive}\%_{it}$  is the percentage of shares outstanding owned by passively managed mutual funds (as defined in the text) for stock  $i$  at the end of September in year  $t$  scaled by its sample standard deviation,  $\text{Mktcap}_{it}$  is the CRSP market value of equity of stock  $i$  measured at May 31 in year  $t$ , and  $\delta_t$  are year fixed effects. The estimation includes additional controls for the log(float-adjusted market value of equity) at June 30 in year  $t$ ,  $\text{Ln}(\text{Float}_{it})$ . The estimate also includes additional banding controls: an indicator for having an end-of-May market capitalization sufficiently close to the cutoff such that the firm will not switch indexes,  $\text{band}_{it}$ , an indicator for being in the Russell 2000 last year,  $R2000_{it}$ , and the interaction of these two indicators. The campaign outcomes investigated in this table, from Shark Watch (Factset), are: an indicator for a proxy settlement between the firm and the activist (columns 1-3), the activist winning the vote in a proxy fight (column 4), and the firm winning the vote in a proxy fight (column 5). We instrument  $\text{Passive}\%$  in the above estimation using  $R2000_{it}$ , an indicator equal to one if firm  $i$  is part of the Russell 2000 index in year  $t$ . The sample consists of all activism events that target the top 500 firms in the Russell 2000 index and bottom 500 firms of the Russell 1000 index (i.e., bandwidth = 500) over the 2008–2014 period for which we can obtain holdings data from Thomson Reuters Mutual Fund Holdings Database and which we can match with data from the monthly CRSP file. The model is estimated using first-, second-, and third-order polynomial controls for  $\text{Ln}(\text{Mktcap})$ . Standard errors,  $\varepsilon$ , are clustered at the firm level and reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1%, 5%, and 10% levels, respectively.

<i>Dependent variable =</i>	Proxy fight settlement			Activist wins	Firm wins
	(1)	(2)	(3)	(4)	(5)
<i>Passive %</i>	0.729** (0.337)	0.940** (0.376)	0.914** (0.369)	0.220 (0.312)	0.311 (0.301)
Polynomial order, $N$	1	2	3	2	2
Banding controls	yes	yes	yes	yes	yes
Float control	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes
Observations	426	426	426	426	426

**Table 8**  
**Ownership by passive investors and activist outcomes**

This table reports estimates of our instrumental variable estimation used to identify the effect of institutional ownership by passive investors on the type of activism campaign. Specifically, we estimate

$$Y_{it} = \eta + \lambda \text{Passive}\%_{it} + \sum_{n=1}^N \chi_n \left( \text{Ln}(\text{Mktcap}_{it}) \right)^n + X_{it} + \text{banding-controls}_{it} + \delta_t + u_{eit}$$

where  $Y_{it}$  is an indicator for the outcome of activism event  $e$  targeting firm  $i$  in year  $t$  scaled by its sample standard deviation,  $\text{Passive}\%_{it}$  is the percentage of shares outstanding owned by passively managed mutual funds (as defined in the text) for stock  $i$  at the end of September in year  $t$  scaled by its sample standard deviation,  $\text{Mktcap}_{it}$  is the CRSP market value of equity of stock  $i$  measured at May 31 in year  $t$ , and  $\delta_t$  are year fixed effects. The estimation includes additional controls for the log(float-adjusted market value of equity) at June 30 in year  $t$ ,  $\text{Ln}(\text{Float}_{it})$ . The estimate also includes additional banding controls: an indicator for having an end-of-May market capitalization sufficiently close to the cutoff such that the firm will not switch indexes,  $\text{band}_{it}$ , an indicator for being in the Russell 2000 last year,  $R2000_{it-1}$ , and the interaction of these two indicators. The campaign outcomes investigated in this table, from Shark Watch (Factset), are: an indicator for whether the firm increases its payout policy (column 1), does a spinoff or divestiture (column 2), is acquired by a third party (column 3), is acquired by the activist (column 4), has a merger blocked (column 5), or removes a takeover defense (column 6). We instrument  $\text{Passive}\%$  in the above estimation using  $R2000_{it}$ , an indicator equal to one if firm  $i$  is part of the Russell 2000 index in year  $t$ . The sample consists of all activism events that target the top 500 firms in the Russell 2000 index and bottom 500 firms of the Russell 1000 index (i.e., bandwidth = 500) over the 2008-2014 period for which we can obtain holdings data from Thomson Reuters Mutual Fund Holdings Database and which we can match with data from the monthly CRSP file. The model is estimated using second-order polynomial controls for  $\text{Ln}(\text{Mktcap})$ . Standard errors,  $\varepsilon$ , are clustered at the firm level and reported in parentheses. \* indicates significance at the 10% level.

<i>Dependent variable</i> =	Increased		Acquired	Acquired		Removed
	payouts	Spinoff	[by third party]	[by activist]	Merger blocked	takeover defense
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Passive %</i>	0.184 (0.191)	-0.206 (0.283)	0.841* (0.488)	0.517* (0.265)	-0.993* (0.540)	0.367* (0.209)
Polynomial order, $N$	2	2	2	2	2	2
Banding controls	yes	yes	yes	yes	yes	yes
Float control	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes
Observations	426	426	426	426	426	426

**Table 9****Ownership by passive investors and other activist tactics**

This table reports estimates of our instrumental variable estimation used to identify the effect of institutional ownership by passive investors on the type of activism campaign. Specifically, we estimate

$$Y_{it} = \eta + \lambda \text{Passive}\%_{it} + \sum_{n=1}^N \chi_n \left( \text{Ln}(\text{Mktcap}_{it}) \right)^n + X_{it} + \text{banding-controls}_{it} + \delta_t + u_{eit}$$

where  $Y_{it}$  is an indicator for the outcome of activism event  $e$  targeting firm  $i$  in year  $t$  scaled by its sample standard deviation,  $\text{Passive}\%_{it}$  is the percentage of shares outstanding owned by passively managed mutual funds (as defined in the text) for stock  $i$  at the end of September in year  $t$  scaled by its sample standard deviation,  $\text{Mktcap}_{it}$  is the CRSP market value of equity of stock  $i$  measured at May 31 in year  $t$ , and  $\delta_t$  are year fixed effects. The estimation includes additional controls for the log(float-adjusted market value of equity) at June 30 in year  $t$ ,  $\text{Ln}(\text{Float}_{it})$ . The estimate also includes additional banding controls: an indicator for having an end-of-May market capitalization sufficiently close to the cutoff such that the firm will not switch indexes,  $\text{band}_{it}$ , an indicator for being in the Russell 2000 last year,  $R2000_{it-1}$ , and the interaction of these two indicators. The campaign outcomes investigated in this table, from Shark Watch (Factset), are: an indicator for writing a letter to shareholders or the board (column 1), offering a precatory shareholder proposal (column 2), making a hostile acquisition offer (column 3), calling a special meeting (column 4), or seeking reimbursement (column 5). We instrument  $\text{Passive}\%$  in the above estimation using  $R2000_{it}$ , an indicator equal to one if firm  $i$  is part of the Russell 2000 index in year  $t$ . The sample consists of all activism events that target the top 500 firms in the Russell 2000 index and bottom 500 firms of the Russell 1000 index (i.e., bandwidth = 500) over the 2008-2014 period for which we can obtain holdings data from Thomson Reuters Mutual Fund Holdings Database and which we can match with data from the monthly CRSP file. The model is estimated using second-order polynomial controls for  $\text{Ln}(\text{Mktcap})$ . Standard errors,  $\varepsilon$ , are clustered at the firm level and reported in parentheses. \*\*, and \* indicate significance at the 5% and 10% levels, respectively.

<i>Dependent variable</i> =	Letter	Precatory	Hostile	Call	Seek
	(non-proxy)	proposal	offer	special meeting	reimbursement
	(1)	(2)	(3)	(4)	(5)
<i>Passive %</i>	-0.192 (0.292)	-0.412 (0.329)	0.423* (0.256)	-1.289** (0.582)	0.699** (0.335)
Polynomial order, $N$	2	2	2	2	2
Banding controls	yes	yes	yes	yes	yes
Float control	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes
Observations	426	426	426	426	426

**Appendix Table 1**  
**Variable definitions**

Variable Name	Source	Definition
<i>R2000</i>	Russell Investments	Indicator equal to 1 if firm is in the Russell 2000
<i>Mutual fund ownership %</i>	Thomson Reuters S12 files	% of shares outstanding held by mutual funds in September of year $t$
<i>Passive %</i>	Thomson Reuters S12 files	% of shares outstanding held in September of year $t$ by passively managed funds
<i>Active %</i>	Thomson Reuters S12 files	% of shares outstanding held in September of year $t$ by actively managed funds
<i>Unclassified %</i>	Thomson Reuters S12 files	% of shares outstanding held in September of year $t$ by unclassified funds
<i>Seek board representation</i>	Shark Watch (FactSet)	Indicator equal to 1 if campaign seeks board representation for activist
<i>Max. value via policy change</i>	Shark Watch (FactSet)	Indicator equal to 1 if campaign specifically seeks to maximize firm value
<i>Other</i>	Shark Watch (FactSet)	Indicator equal to 1 if campaign does not seek board representation or to maximize firm value
<i>Proxy fight</i>	Shark Watch (FactSet)	Indicator equal to 1 if campaign includes a proxy fight
<i>Nominate short slate</i>	Shark Watch (FactSet)	Indicator equal to 1 if campaign nominates a short slate of directors
<i>Nominate full slate</i>	Shark Watch (FactSet)	Indicator equal to 1 if campaign nominates a full slate of directors
<i>Proxy fight - settlement</i>	Shark Watch (FactSet)	Indicator equal to 1 if proxy fight is settled
<i>Proxy fight - activist wins</i>	Shark Watch (FactSet)	Indicator equal to 1 if activist wins proxy fight
<i>Proxy fight - firm wins</i>	Shark Watch (FactSet)	Indicator equal to 1 if firm wins proxy fight
<i>Increase payouts</i>	Shark Watch (FactSet)	Indicator equal to 1 if campaign successfully seeks increased payouts to shareholders
<i>Spinoff and/or divestiture</i>	Shark Watch (FactSet)	Indicator equal to 1 if campaign successfully seeks a spinoff or divestiture
<i>Merger blocked</i>	Shark Watch (FactSet)	Indicator equal to 1 if campaign successfully seeks to block a merger or agitate for higher price
<i>Acquisition by other party</i>	Shark Watch (FactSet)	Indicator equal to 1 if campaign successfully seeks and obtains an acquisition by a third party
<i>Acquisition by activist</i>	Shark Watch (FactSet)	Indicator equal to 1 if campaign successfully seeks and obtains an acquisition by the activist
<i>Removed takeover defense</i>	Shark Watch (FactSet)	Indicator equal to 1 if campaign successfully seeks and obtains removal of takeover defenses
<i>Hostile offer</i>	Shark Watch (FactSet)	Indicator equal to 1 if campaign tactics include a hostile offer
<i>Call special meeting</i>	Shark Watch (FactSet)	Indicator equal to 1 if a special meeting is called
<i>Seek reimbursement</i>	Shark Watch (FactSet)	Indicator equal to 1 if campaign seeks reimbursement from firm
<i>Precatory proposal</i>	Shark Watch (FactSet)	Indicator equal to 1 if campaign features a non-binding proposal
<i>Letter (non-proxy)</i>	Shark Watch (FactSet)	Indicator equal to 1 if campaign issues a non-proxy fight related letter to the board or shareholders

## Appendix Table 2

### First stage estimation for ownership by actively managed and unclassified mutual funds

This table reports estimates of our first-stage regression of ownership by actively managed and unclassified mutual funds onto an indicator for membership in the Russell 2000 index plus additional controls over the 2008-2014 sample period. The specification is the same as in Table 3, except that the dependent variable in columns (1)-(3) is now  $Active\%_{it}$ , which is the percentage of shares outstanding owned by actively managed mutual funds for stock  $i$  at the end of September in year  $t$  scaled by its sample standard deviation, and the dependent variable in columns (4)-(6) is now  $Unclassified\%$  which is the percentage of shares outstanding owned by unclassified mutual funds for stock  $i$  at the end of September in year  $t$  scaled by its sample standard deviation. Both  $Active\%$  and  $Unclassified\%$  are defined in the text. Standard errors are clustered at the firm level and reported in parentheses.

<i>Dependent variable</i> =	Active % scaled by its sample standard deviation			Unclassified % scaled by its sample standard deviation		
	(1)	(2)	(3)	(4)	(5)	(6)
<i>R2000</i>	-0.242 (0.362)	0.089 (0.409)	0.053 (0.409)	0.130 (0.291)	-0.034 (0.345)	0.006 (0.336)
Polynomial order, $N$	1	2	3	1	2	3
Banding controls	yes	yes	yes	yes	yes	yes
Float control	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes
Observations	426	426	426	426	426	426
R-squared	0.12	0.13	0.13	0.13	0.13	0.14

### Appendix Table 3

#### Robustness of findings to selecting sample only using end-of-May market cap rankings

This table reports estimates of the second-stage regression of our instrumental variable estimation to identify the effect of institutional ownership by passive investors on our activism outcome variables when we select our sample using firms with an end-of-May market cap ranking between 500 and 1500. The estimation and outcomes are the same as in Tables 5-9. We instrument *Passive%* using  $R2000_{it}$ , an indicator equal to one if firm  $i$  is part of the Russell 2000 index in year  $t$ . The model is estimated using activism campaigns over the 2008-2014 period that target firms in the selected sample and includes a second-order polynomial control for  $\text{Ln}(Mktcap)$ . Standard errors,  $\varepsilon$ , are clustered at the firm level and reported in parentheses. The symbols \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

<i>Dep. variable =</i>	Board related tactics and outcomes				Other outcomes				Other tactics	
	Seek board rep.	Proxy fight	Nominate short slate	Proxy settled	Merger blocked	Acquired [by third party]	Acquired [activist]	Removed takeover defense	Call special meeting	Seek reimburse- ment
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Passive %</i>	0.938** (0.439)	0.713* (0.366)	0.880* (0.483)	0.909** (0.454)	-1.592** (0.743)	0.754 (0.494)	0.266 (0.446)	0.575 (0.363)	-1.698** (0.830)	0.417 (0.392)
Polynomial order, $N$	2	2	2	2	2	2	2	2	2	2
Banding controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Float control	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	412	412	412	412	412	412	412	412	412	412

**Appendix Table 4**  
**Robustness of findings to controlling for switchers between indexes**

This table reports estimates of the second-stage regression of our instrumental variable estimation to identify the effect of institutional ownership by passive investors on our activism outcome variables when we add an control for whether a firm recently switched indexes. The estimation and outcomes are the same as in Tables 5-9, except we include an additional control  $switch_{it}$  indicating a stock switched from the Russell 1000 to Russell 2000 index or vice versa in the most recent reconsitution. We instrument  $Passive\%$  using  $R2000_{it}$ , an indicator equal to one if firm  $i$  is part of the Russell 2000 index in year  $t$ . The model is estimated using activism campaigns that target firms in the selected sample over the 2008-2014 period and includes a second-order polynomial control for  $\ln(Mktcap)$ . Standard errors,  $\varepsilon$ , are clustered at the firm level and reported in parentheses. The symbols \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

<i>Dep. variable =</i>	Board related tactics and outcomes				Other outcomes				Other tactics	
	Seek board rep.	Proxy fight	Nominate short slate	Proxy settled	Merger blocked	Acquired [by third party]	Acquired [activist]	Removed takeover defense	Call special meeting	Seek reimburse- ment
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Passive %</i>	0.900*** (0.348)	0.746** (0.317)	0.879* (0.458)	0.899** (0.425)	-1.164* (0.597)	1.014 (0.637)	0.523* (0.280)	0.349 (0.218)	-1.396** (0.562)	0.859** (0.386)
Polynomial order, $N$	2	2	2	2	2	2	2	2	2	2
Banding controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Float control	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Control for movers	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	426	426	426	426	426	426	426	426	426	426

## Appendix Table 5

### Robustness of findings to excluding activist campaigns that only include 13D filing

This table reports estimates of the second-stage regression of our instrumental variable estimation to identify the effect of institutional ownership by passive investors on our activism outcome variables when we exclude activist campaigns that only include a 13D filing. The estimation and outcomes are the same as in Tables 5-9. We instrument *Passive%* using  $R2000_{it}$ , an indicator equal to one if firm  $i$  is part of the Russell 2000 index in year  $t$ . The model is estimated using activism campaigns that target firms in the selected sample over the 2008-2014, excluding those with only a 13D filing, and includes a second-order polynomial control for  $\ln(Mktcap)$ . Standard errors,  $\varepsilon$ , are clustered at the firm level and reported in parentheses. The symbols \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

<i>Dep. variable =</i>	Board related tactics and outcomes				Other outcomes				Other tactics	
	Seek board rep.	Proxy fight	Nominate short slate	Proxy settled	Merger blocked	Acquired [by third party]	Acquired [activist]	Removed takeover defense	Call special meeting	Seek reimbursement
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Passive %</i>	1.148** (0.496)	0.863** (0.401)	0.907* (0.501)	1.112** (0.527)	-1.476** (0.702)	0.864 (0.562)	0.285 (0.510)	0.622 (0.404)	-1.665** (0.848)	0.467 (0.418)
Polynomial order, $N$	2	2	2	2	2	2	2	2	2	2
Banding controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Float control	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	348	348	348	348	348	348	348	348	348	348

## Appendix Table 6

### Robustness of findings to combining activist campaigns within a calendar year

This table reports estimates of the second-stage regression of our instrumental variable estimation to identify the effect of institutional ownership by passive investors on our activism outcome variables when we aggregate activist events by year and treat each group of events as one event. The estimation and outcomes are otherwise the same as in Tables 5-9. We instrument *Passive%* using  $R2000_{it}$ , an indicator equal to one if firm  $i$  is part of the Russell 2000 index in year  $t$ . The model is estimated using activism campaigns that target firms in the selected sample over the 2008-2014 period and includes a second-order polynomial control for  $\ln(Mktcap)$ . Standard errors,  $\varepsilon$ , are clustered at the firm level and reported in parentheses. The symbols \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

<i>Dep. variable =</i>	Board related tactics and outcomes				Other outcomes				Other tactics	
	Seek board rep.	Proxy fight	Nominate short slate	Proxy settled	Merger blocked	Acquired [by third party]	Acquired [activist]	Removed takeover defense	Call special meeting	Seek reimburse- ment
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Passive %</i>	0.682* (0.353)	0.697** (0.353)	0.570 (0.392)	1.186** (0.483)	-0.539 (0.421)	0.891 (0.569)	0.429 (0.302)	0.0770 (0.242)	-0.929** (0.472)	0.622* (0.374)
Polynomial order, $N$	2	2	2	2	2	2	2	2	2	2
Banding controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Float control	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	346	346	346	346	346	346	346	346	346	346