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Can the market identify prosperous activist engagements? Evidence from announcement and long-term buy-and-hold returns

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Abstract

We document a discrepancy between abnormal announcement returns (CAARs) and two-year buy-and-hold abnormal returns (BHARs) of activist engagements. Activist targets that earn the highest two-year BHARs do not yield significantly higher CAARs around engagement announcements than the remaining targets. This indicates that financial markets cannot distinguish between long-term top-performing engagements and other engagements at the announcement of an engagement. Even the best activists frequently suffer low or negative two-year BHARs. Short-term CAARs around engagement announcements are linked to activist characteristics, whereas long-term results are not. Long-term top-performing targets have significantly different firm characteristics compared to the remaining targets. However, activists do not solely engage in such targets, and financial markets are unable to initially identify such firms. Thus, we conclude that the long-term performance of target firms seems to be driven by a combination of target firm characteristics, investor skills, and luck, but such performance provides no reasonable follow-on investment strategy for investors.

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1 Introduction

Previous literature on activist engagements has predominantly focused on target firms and their characteristics, the changes in target firms caused by activists, and the top (hedge fund) activists (Klein and Zur, 2009; Krishnan et al., 2016; Becht et al., 2017). As highlighted by Krishnan et al. (2016), particularly hedge fund activists with a reputation of "clout and expertise" generate large abnormal announcement returns. However, studies have not yet analyzed whether these announcement returns are justified, i.e., whether the announcement returns are accompanied by abnormal long-term returns.

In this paper, we focus on the long-term performance of target firms and show that there is no such thing as a "top activist investor" who brings about positive long-term returns with almost every intervention. Even the most successful activists, as measured in terms of their targets' average buy-and-hold abnormal returns (BHARs) over the two-year period following an engagement, experience various failures and show considerable variation in returns. We find that abnormal announcement returns and long-term BHARs are inconsistent with one another, i.e., engagements with large positive announcement returns do oftentimes fail to generate large abnormal buy-and-hold returns over a longer time period.

Our evidence is based on a large sample of international activist engagements from *Activist Insight*. *Activist Insight* identifies activist engagements of hedge funds and non-hedge funds of any size across the globe by examining regulatory filings, news articles, and other data sources and provides detailed engagement information, such as public demands of activists or exit types. It is challenging to obtain international data on activist engagements because many countries do not require disclosures equivalent to Schedule 13D filings in the U.S. (Becht et al., 2017). More importantly, unlike previous studies, our sample period from 2008 to 2019 covers various cycles in shareholder activism. We cover the internationalization of activist engagements

and include the disruptions in the market for hedge fund activism in 2015 that included substantial losses and failed interventions (see, e.g., Krishnan et al., 2016). The distortions of 2015 and the general increase in activist engagements since the mid-2010s raise important questions regarding the activists' success in recent years. In addition, our large international sample allows us to extend the primary focus of previous studies from hedge fund activists to non-hedge fund activists (see, e.g., Brav et al., 2008; Greenwood and Schor, 2009; Klein and Zur, 2009; Becht et al., 2010; Prevost et al., 2012; Becht et al., 2017).

Our observations regarding activist investor performance are similar to the observation that private equity and venture capital firms exhibit extremely noisy performance (Korteweg and Sorensen, 2017). Just as skilled limited partners who face difficulties in identifying top private equity funds (see, e.g., Lerner et al., 2007; Korteweg and Sorensen, 2017), stock market investors seem to be challenged in identifying skilled activist investors and profitable engagements that provide the highest BHARs. Like the limited partners who consider detailed information beyond past performance to distinguish top private equity funds, investors seeking to follow activist investors cannot rely solely on the reputation or past performance; instead, they must consider the specific activist-target combination to identify successful engagements.

The remainder of the paper is organized into four sections. Section 2 discusses the key findings of the related literature. Section 3 describes our sample and the empirical methodology and reports descriptive statistics on activist engagements. Section 4 presents, and most importantly, provides a synoptic discussion of our main results. Section 5 concludes.

2 Related literature

This paper contributes to three strands of literature. First, we contribute to the literature on short- and long-term performance as well as the target characteristics of activist engagements.

Second, we contribute to the research on the drivers of short-term abnormal announcement returns (CAARs) around engagement announcements. Third, we contribute to the literature on potential links between short- and long-term stock performance.

2.1 Activist engagements: Performance and target characteristics

The literature on shareholder activism initially focused on target firm characteristics, short- and long-term stock returns, and realized changes in target firms (Denes et al., 2017). This scope has broadened over time, covering additional aspects of activist engagements, such as specific types of investors (Klein and Zur, 2009; Becht et al., 2010; Prevost et al., 2012; Mietzner and Schweizer, 2014) or settlement processes between activists and target firms (Bebchuk et al., 2020). The main conclusion of this research is a significant difference in short- and long-term performance between hedge fund and non-hedge fund activists.

The global spread of shareholder activism has also led to an expansion of the geographic focus of research and analysis of the European and the Asia-Pacific region (see, e.g., Mietzner and Schweizer, 2014; Becht et al., 2017). For instance, Becht et al. (2017) find that target firm characteristics and short-term CAARs are not driven by country characteristics, as country characteristics only affect the initial investment decision but not stock-market reactions.

Empirical evidence for the U.S. suggests that activist engagements yield significant positive abnormal announcement returns. In addition, financial markets estimate the value creation potential of hedge fund engagements to be higher than that of non-hedge fund engagements. Hedge fund engagements yield CAARs between 5% and 10% compared to 1% to 4% for non-hedge fund engagements (Brav et al., 2008; Clifford, 2008; Klein and Zur, 2009; Greenwood and Schor, 2009; Prevost et al., 2012; Becht et al., 2017). Although not driven by country characteristics, Becht et al. (2017) find that engagement announcements by hedge funds

yield higher CAARs in North America than in the Asia-Pacific region or Europe. In addition, Klein and Zur (2009) report significantly higher CAARs for hedge fund engagements than those for non-hedge fund engagements using a North American sample, whereas Mietzner and Schweizer (2014) find no significant differences in CAARs of hedge fund engagements and private equity (i.e., non-hedge fund) engagements in Germany.

Prior research also finds that activist engagements achieve mostly positive long-term BHARs that are, on average, higher for hedge fund engagements than those for non-hedge fund engagements. Target firms of hedge fund activists yield, on average, annualized BHARs between 5% and 11%, whereas the non-hedge fund targets earn only between 1% and 5% and sometimes even negative returns. However, some results seem to be sample specific and driven by certain regions and whether the studies jointly analyze hedge fund and non-hedge fund engagements. For instance, Clifford (2008) reports one-year BHARs of 22% for hedge fund targets in the U.S., and Klein and Zur (2009) report one-year BHARs of 17.8% for non-hedge fund targets in the U.S., whereas Mietzner and Schweizer (2014) report negative one-year BHARs for a German sample of hedge fund (-22%) and non-hedge fund engagements (-3%). Nevertheless, research has yet to investigate the connection between CAARs and BHARs for the same engagements. Our study fills this void.

With respect to target firm characteristics, on average, hedge fund and non-hedge fund activists tend to prefer smaller firms with lower market-to-book ratios and lower sales growth compared to control groups (Brav et al., 2008; Klein and Zur, 2009; Denes et al., 2017). Moreover, Denes et al. (2017) report that hedge fund activists invest in larger firms that are financially healthier, with higher earnings and profitability that offer individual opportunities for value creation compared to non-hedge fund investors, who often focus on firms with overall poor

financial and operational performance. Becht et al. (2017) present evidence from a large international sample, reporting similar target firm characteristics for hedge fund targets in the Asia-Pacific region, Europe, and North America; however, the authors do not investigate non-hedge fund activism.

In summary, the overarching picture seems to be that, on average, activist engagements yield significant positive abnormal announcement returns as well as long-term returns. In addition, activists tend to prefer target firms with specific characteristics. Yet, the important question that remains is whether and, if so, why some targets outperform others, and which specific target firm or investor characteristics help to predict future top-performing targets.

2.2 Determinants of engagement returns

Krishnan et al. (2016) are among the first to analyze the drivers of short-term outperformance, reporting that activist engagements by *top investor*[1] hedge funds yield the highest CAARs, on average, as they have financial clout and expertise based on their track record and have proven their abilities to realize changes in target firms. A track record of frequent transactions and possibly superior expertise is not necessarily sufficient for realizing higher CAARs for future engagement announcements (Krishnan et al., 2016). Consistent with these observations, Albuquerque et al. (2021) report that about 75% of CAARs in the [-30, +10] window around engagement announcements can be explained by the experiences of activist investors, and only about 14% by target firm characteristics. As a result, investor-specific characteristics drive announcement returns, thus implying that financial markets may use this information to assess the value creation potential of new engagements.

[1] See Table VI for a detailed description of *top investor* activists.

2.3 Determinants of long-term performance

While the literature on shareholder activism has not yet investigated the connection between short-term CAARs and long-term stock returns, research on corporate acquisitions provides evidence on this relationship. Ben-David et al. (2020) find only limited predictive power of CAARs around acquisition announcements for the ultimate outcomes of acquisitions. Uncertainties regarding merger outcomes or biases by confounding events around acquisition announcements may explain this observation; therefore, CAARs should be interpreted with caution (Ben-David et al., 2020).

In addition to short-term CAARs, investors may also try to identify top-performing engagements based on the returns of activists' past investments. Korteweg and Sorensen (2017) analyze this approach in the context of private equity funds. They find that private equity firms achieve, on average, positive internal rates of return (IRRs) between 13.9% and 17.7% after fees over a ten-year period; however, past IRRs are not a reliable foundation for private equity investors to identify funds that earn the highest IRRs in the future. While some fund characteristics, such as fund size or investment style, may be an indicator of performance persistence, investors usually face difficulties in generalizing this information to identify future top-performing funds. In addition, persistence in fund performance has declined over time. These findings may explain why fund investors have started to collect broad information on private equity firms as additional basis for their investment decisions (Korteweg and Sorensen, 2017).

Consistent with these findings, Lerner et al. (2007) find that some private equity investors are more successful in identifying those newly established private equity funds with higher returns in the future. This success is mostly driven by the ability of seasoned investors to leverage their private information in their selection process and not by the different risk profiles of funds, different objectives of investors, or potential limitations in access to funds.

Nonetheless, the investable performance for new investors without a track record of past fund investments is limited. Although neither Korteweg and Sorensen (2017) nor Lerner et al. (2007) can link long-term returns to short-term returns due to the nature of private equity funds, they provide meaningful insights into the (non-)existence of long-term return persistence and limitations in the identification of future top-performing funds. We extend these insights to the increasingly important context of activist engagements.

3 Empirical design

3.1 Data

We obtain our data on activist engagements from *Activist Insight. Activist Insight* is a commercial database provider of global shareholder activism that collects engagements from regulatory filings, press releases, newspaper articles, and other relevant materials. The data include engagements in publicly traded firms of all sizes and industries across the globe. The database provides information on investors, their demands, achieved outcomes, and exit strategies. The data offer several advantages compared to hand-collected data based on regulatory filings. Specifically, the data provide comprehensive insights into the campaigns of both regulated and nonregulated companies, such as hedge funds, asset managers, traditional companies, and private individuals. The data also contain engagements, regardless of the number of shares acquired, including campaigns below regulatory thresholds.

We collect information on all activist engagements between January 2008 and July 2019, which gives us an initial dataset of 9,829 activist engagements. We filter the data using criteria similar to prior studies (see, e.g., Brav et al., 2008; Greenwod and Schor, 2009; Klein and Zur, 2009; Boyson and Mooradian, 2011) and report the results of filtering on our sample in Table I. We require activists to disclose their engagements within ten days following an investment,

which corresponds to regulatory requirements, such as 13D filings with the U.S. Securities and Exchange Commission (SEC, 2018). The extension of our ten-day notice period to forty days would not substantially change the sample and results in 152 additional engagements. The final sample comprises 2,689 engagements by 1,109 unique investors in 2,221 unique target firms.

Place Table I about here

We complement the data with annual balance sheet and profit and loss data from *Refinitiv Worldscope* and additional share price data from *Refinitiv Datastream*. We collect a control group of nontarget firms using all available data from *Refinitiv Worldscope*. The control group comprises 61,155 unique firms—30,048 from the Asia-Pacific region, 14,422 from Europe, and 16,685 from North America—and 528,816 year-firm matches. Descriptions of all variables and their calculations are given in Table A.I in the Appendix. Table A.II in the Appendix reports information on the investors and countries covered in our study.

3.2 Methodology

Stock performance

We estimate CAARs to measure the announcement returns across regions and for different geographies using the market model. Our estimation window comprises the last 200 trading days prior to the event window, i.e., [-220, -21]. Formally, we estimate the following:

$$R_{it} = \alpha_i + \hat{\beta}_i R_{mt} + \varepsilon_i \qquad \text{for} \qquad t = \text{-}220, \dots, \text{-}21, \tag{1}$$

where R_{it} denotes the stock return for company *i* on day *t* and R_{mt} denotes the market index return for day *t*. We provide a list of benchmark indices in Table A.II in the Appendix (see also Campbell et al., 2010). We consider only target firms with observations on all trading days within the estimation and event window. We then calculate expected returns in the event window

and daily abnormal returns as the difference between observed and expected stock returns. To assess the statistical significance, we use a cross-sectional *t*-test, the standardized cross-sectional test by Boehmer et al. (1991), and the generalized sign test by Cowan (1992).

BHARs

We determine the long-term stock price effects of activist engagements with BHARs over a two-year period following an engagement. We use a two-year holding period to calculate BHARs as the average holding period of all exited engagements in our sample is 2.2 years, and this period should give activists enough time to potentially shape target firms. In addition, we provide results for the one-year and three-year periods.

To calculate BHARs, we build a sample of target and matched nontarget firms. We use one-to-one propensity score matching based on total assets (measured in USD), market-to-book ratios, and return on assets on a year-by-year basis (see, e.g., Rosenbaum and Rubin, 1983; Rosenbaum, 1989; Li and Prabhala, 2007; Roberts and Whited, 2013). We only match firms within the same geographic region and industry based on the first two digits of the firms' SIC codes. We test the statistical significance of the difference between target and nontarget firms using a cross-sectional *t*-test. The results of our matching procedure are shown in Table A.III in the Appendix. In addition, we assess the quality of our matching by attempting to forecast which firms of our matched sample are target firms (see, e.g., Pelster, 2021). We fit a logit model to estimate the determinants of becoming a target. The dependent variable is a dummy variable (treatment), which takes a value of one for target firms and zero for nontarget firms. Explanatory variables are firm characteristics. We then calculate the fitted values and the root mean square error (RMSE) as the differences between fitted values and the treatment dummy. The average

RMSE of this exercise is 0.4998. A forecast with absolutely no explanatory power has an RMSE of 0.5. The resulting distribution of forecast errors is shown in Table A.IV in the Appendix.

We calculate BHARs as the difference in log returns of two-year buy-and-hold returns (BHRs) for target and matched nontarget firms:

$$BHAR_i = \ln(1 + BHR_{it}) - \ln(1 + BHR_{im}), \quad (2)$$

where BHR_{it} denotes the two-year stock return of target firm *i* following an investment and BHR_{im} the stock return of the matched nontarget firm. BHRs are calculated using the following equations:

$$BHR_{it} = \frac{Price\ Year2_{it}}{Price\ Year0_{it}} - 1, \text{and} \quad (3)$$

$$BHR_{im} = \frac{Price\ Year2_{im}}{Price\ Year0_{im}} - 1. \quad (4)$$

Finally, we separately construct sub-samples for hedge fund and non-hedge fund engagements based on the BHARs. We label engagements that achieve two-year BHARs above the 75th percentile as *top 25%* or *top-performing engagements* and the remaining engagements as *other* or *remaining engagements*.

3.3 A descriptive overview of shareholder activism around the globe

We begin our analysis with a descriptive analysis of activist engagements in our sample. Table II provides an overview of activist engagements in different regions along with several investment details.

Place Table II about here

The number of activist engagements has sharply increased over the last decade, from only 80 engagements in 2008 to 243 engagements in 2018 (see also Figure I). We observe an increase in activist engagements by hedge funds and non-hedge funds across all regions. Engagements peaked in 2015 and have declined slightly since. The regional split of the 2,689 activist engagements in our sample indicates unequal distribution across the globe. A total of 1,380 engagements took place in North America, 680 in Europe, and 629 in the Asia-Pacific region. The top ten countries in terms of the number of engagements account for 90% of all engagements and are led by the U.S. (47% of all engagements), the United Kingdom (12% of all engagements), and Japan (11% of all engagements).

Place Figure I about here

Although North America (the U.S. and Canada) accounts for 51% of all engagements in our sample, the growth rates of activist engagements in the Asia-Pacific region between 2008 and 2018 are almost five times higher than those in North America (840% vs. 180%), highlighting the increasing relevance of shareholder activism outside North America. Surprisingly, the growth rate in Europe is 80% over the same period, which is approximately half the growth rate in North America. The overall increase in the number of activist campaigns is driven by increased investment activities of present investors in addition to many new investors.

We observe an increase in the number of unique activists across all regions for both hedge funds and non-hedge funds. The share of activist investors that only engage in one transaction is highest in the Asia-Pacific region with 41% (256 engagements), followed by 27% (374 engagements) in North America, and 26% (176 engagements) in Europe. The average share of one-time investors across all regions is highest among non-hedge funds at 58% (595 engagements) compared to 13% (211 engagements) for hedge funds (untabulated).

Investor experience (measured as the number of an activist's past engagements over a two-year period prior to an engagement) is highly skewed, indicating that hedge fund investors, who engage in an average of 7.5 transactions, have higher experience than non-hedge fund investors, who engage in an average of 2.8 transactions.

Finally, we turn to activist engagements based on the investors' origin, defining an investor as domestic if the target firm and investor originate in the same country. We find that shareholder activism has grown internationally, and hedge funds invest abroad more frequently than non-hedge funds (see Table II, Panel I). Only a few foreign activists engage in North America, whereas North American investors, on average, are more open to investing abroad. The share of domestic investors is largest in North America, where 92% of hedge fund and 88% of non-hedge fund engagements are domestic. In the Asia-Pacific region and Europe, the share of domestic investors is lower for hedge fund investors than for non-hedge fund investors (Asia-Pacific: 50% vs. 78%, Europe: 34% vs. 53%).

4 Empirical results

4.1 BHARs

Table III shows that the top 25% hedge fund targets and the top 25% non-hedge fund targets achieve significant positive BHARs and outperform matched nontarget firms and a global stock index. We also report simple BHRs for target firms for informational purposes. Our results are robust for several time periods.

Place Table III about here

In Panel A, we report significant positive average two-year BHRs of 79.2% (*t*-statistic of 13.68) for the top 25% targets compared to 6.1% (*t*-statistic of 3.73) for the remaining targets in the hedge fund sample. The observed difference between top-performing and remaining targets

is statistically significant and increases from first to third year of the engagement. The top 25% hedge fund targets also significantly outperform their matched nontarget firms, with a coefficient of 1.52 (*t*-statistic of 24.75). Two-year BHRs of the top 25% target firms are, on average, about four and a half times higher than those of the matched nontarget firms. For the remaining targets, we estimate a significant negative performance of target firms compared to the matched nontargets. Differences in log returns of two-year BHRs are, on average, -0.38 (*t*-statistic of -13.51), indicating that target firm returns are only about 70% of the returns of the matched nontarget firms. The differences in log returns increase from the first to the third year and are statistically significant.

We next focus on the non-hedge fund sample in Panel B. Differences in long-term stock performance for the top 25% and remaining non-hedge fund targets are similar to those in the hedge fund sample. On average, top 25% targets earn significant two-year BHRs of 79.5% (*t*-statistic of 8.79), while the remaining targets earn significant negative two-year BHRs of -12.1% (*t*-statistic of -5.22). The top 25% targets also significantly outperform matched nontarget firms with a difference in two-year log returns of 1.41 (*t*-statistic of 21.01), i.e., about four times higher two-year BHRs. We estimate contradictory results for the remaining non-hedge fund targets, with an average difference in log returns of -0.55 (*t*-statistic of -14.37), implying that the BHRs of the remaining targets are only about 60% of the BHRs of matched nontargets. Estimated differences between top and remaining non-hedge fund targets are persistent and significant for different holding periods.

We also compare target firms' BHRs with the performance of the MSCI World index, finding the top 25% hedge fund targets to significantly outperform the stock index by, on average, 61.4 percentage points over a two-year period (*t*-statistic of 8.32), whereas the

remaining hedge fund targets significantly underperform the stock index by an average -13.9 percentage points (*t*-statistic of -8.08). Our results are similar for the non-hedge fund sample, with a significant outperformance of 61.0 percentage points for the top 25% targets (*t*-statistic of 5.47) and a significant underperformance of -30.2 percentage points for the remaining targets (*t*-statistic of -11.77). Observed differences are persistent for different holding periods for both panels.

We also compare the differences in BHARs across the hedge fund and non-hedge fund sample, finding no significant differences in BHARs between the top 25% targets of hedge funds and non-hedge funds in most cases. However, the remaining hedge fund targets achieve significantly higher BHARs than the remaining non-hedge fund targets in all holding periods (untabulated).

Our results are robust across different geographic regions. We observe similar trends in the performance of the top 25% and remaining targets with regard to BHARs in the Asia-Pacific region, Europe, and North America for different holding periods for the hedge fund and non-hedge fund samples (untabulated).

Finally, we turn to the long-term performance of engagements by activists with frequent engagements, focusing on the distribution of target firms' long-term performance of activists with at least five engagements in our sample period. We report the distribution of two-year BHARs in Figure II and assign engagements in the following groups: (1) engagements with top 25% two-year BHARs, (2) engagements with negative two-year BHARs, and (3) remaining engagements. The figure demonstrates that no activist can place all their engagements in the top 25%. All activists with multiple engagements suffer from positive, but relatively low, or even

negative two-year BHARs. This observation holds true for both hedge fund and non-hedge fund investors.

Place Figure II about here

Table IV provides detailed information on each category of BHARs in Figure II. We find that estimated two-year BHARs in each group are widely spread and not solely driven by a few outliers for hedge fund and non-hedge fund engagements. These results indicate that even activists with a track record of multiple successful transactions are challenged in consistently defining and implementing successful investment strategies on a larger scale.

Place Table IV about here

4.2 Engagement announcement returns

We report the short-term abnormal returns around engagement announcements in Table V. We estimate significant positive CAARs of 7.4% for all hedge fund engagements in the [-20, +20] event window. We find that CAARs of target firms in the top 25% of two-year BHARs achieve similar CAARs around engagement announcements than the remaining targets. Observed differences are marginal and mostly insignificant; the *t*-statistics range between -0.18 and -1.89. We illustrate this observation for CAARs in the [-20, +20] window and corresponding two-year BHARs in Figure III, demonstrating a similar distribution for the top 25% targets and remaining targets.

Place Table V and Figure III about here

Regarding the non-hedge fund sample, we estimate CAARs of 11.2% for the top 25% targets compared to 6.7% for the remaining targets in the [-20, +20] event window. This difference persists in shorter event windows, with *t*-statistics ranging from -0.29 to -2.08.

Figure III supports these results, as the distribution of CAARs and corresponding BHARs for the top 25% non-hedge fund targets is similar to the distribution for the remaining targets.

Finally, we analyze differences between Panel A and B and results for individual regions. Overall, we find no evidence that CAARs in either panel are significantly different from those in the other (untabulated). We observe similar trends in CAARs for each region, as differences in CAARs for the top 25% targets and the remaining targets are mostly statistically not significant and do not provide evidence of a general outperformance of certain sub-samples (untabulated).

4.3 Drivers of announcement and long-term returns and their relationship

We now turn to a discussion of the determinants of announcement and long-term returns. We begin with the potential drivers of short-term CAARs and replicate the findings of Krishnan et al. (2016) with our novel sample in Table VI. Panel A shows that only targets of *top investor* and *top return* hedge fund activists, on average, earn significantly higher CAARs than the remaining targets. In Panel B, we report that targets by *top return* and *top investor* non-hedge fund activists, on average, earn higher CAARs, but differences between remaining targets are statistically insignificant.

Place Table VI about here

Next, we focus on the long-term performance of those sub-samples to understand whether initial differences in perceived value creation potential are justified, presenting our results in Table VII. We find that two-year BHARs of engagements by *top investor* and *top return* hedge fund and non-hedge fund activists do not differ significantly from the remaining targets for the global sample. We conclude that these investor-specific characteristics drive short-term CAARs but cannot explain long-term returns.

Place Table VII about here

Next, we analyze whether target firm characteristics help to explain superior long-term returns of some target firms. Panel A in Table VIII indicates that target firms in the top 25% of two-year BHARs, on average, have significantly lower market capitalizations (hedge fund targets USD 1.14bn vs. USD 1.86bn, *t*-statistic of 3.37; non-hedge fund targets USD 0.74bn vs. USD 1.72bn, *t*-statistic of 3.51) and sales levels as well as lower payout ratios (hedge fund targets 10% vs. 16%, *t*-statistic of 4.37; non-hedge fund targets 7% vs. 12%, *t*-statistic of 3.08) and return on assets (hedge fund targets -8% vs. -1%, *t*-statistic of 2.16; non-hedge fund targets -15% vs. -12%, *t*-statistic of 0.74) than the remaining targets. These results follow a similar trend in single regions (untabulated). We repeat this analysis for CAARs in the [-20, +20] window around engagement announcements and report our results in Panel B. We find that engagements in the top 25% are significantly smaller in terms of market capitalization (hedge fund targets USD 1.31bn vs. USD 2.14bn, *t*-statistic of 3.58; non-hedge fund targets USD 0.55bn vs. USD 1.77bn, *t*-statistic of 5.14) and have lower payout ratios (hedge fund targets 9% vs. 17%, *t*-statistic of 5.81; non-hedge fund targets 5% vs. 12%, *t*-statistic of 4.51) and return on assets (hedge fund targets -9% vs. -2%, *t*-statistic of 2.72; non-hedge fund targets -36% vs. -15%, *t*-statistic of 2.8) than the remaining targets. Thus, with regard to CAARs and two-year BHARs, the top 25% target firms significantly differ from the remaining targets for the same target characteristics.

We also analyze engagement-specific characteristics in Panels A and B, but the share of engagements with public demands or cross-border engagements is relatively similar for top-performing engagements and other engagements. We also find no specific industry or target size clusters (untabulated).

Place Table VIII about here

To further investigate the observation that engagements with particular target characteristics can be found in both the top announcement returns and the top long-term returns, we lastly study the distribution of two-year BHARs of target firms with those particular characteristics. Thus, we address the question of whether selecting target firms based on those characteristics could allow investors to consistently identify future top 25% engagements already at their announcement. Based on the identified target characteristics, we consider target firms that have below average characteristics for sales, market capitalization, payout ratio, and return on assets. We summarize our findings in Figure IV.

Place Figure IV about here

The distribution of two-year BHARs of those target firms is negatively skewed for the hedge fund (skew -0.75) and non-hedge fund sample (skew -0.06). Of a total 186 hedge fund engagements, only 64 end up in the top 25%. Similarly, for the non-hedge fund sample, only 49 out of 183 engagements rank in the top 25% after two years. Thus, our findings highlight that although there are significant differences in target firm characteristics between long-term top-performing and remaining target firms, these characteristics are not useful for consistently identifying top-performing targets.

In untabulated analyses, we repeat this exercise for different thresholds, using the 50th, 25th, and 10th percentiles, requiring target firm characteristics below the thresholds for three of the four variables to ensure a sufficiently large number and find similar results (untabulated).[2]

[2] If we require that target firms are above the thresholds for all four characteristics in the 25th and 10th percentile, our sample of top 25% engagements would consist of zero hedge fund and non-hedge fund targets; thus, we require that firms are above the threshold for three characteristics, leading to a sample of 75 hedge fund and 58 non-hedge fund targets using the 25th percentile cut and 17 hedge fund and 7 non-hedge fund targets using the 10th percentile cut.

Finally, we combine the data from this analysis with the categories by Krishnan et al. (2016) used in Table VI and analyze the distribution of two-year BHARs of *top return* and *top investor* engagements. However, the distribution of two-year BHARs does not provide evidence that the combination of both models helps to identify long-term top-performing targets for the hedge fund and non-hedge fund samples (untabulated).

4.4 Discussion

We analyze the long-term performance of activist engagements, focusing on the relationship between announcement returns and long-term returns of target firms. We highlight an important discrepancy between announcement returns and long-term returns for a large international sample of hedge fund and non-hedge funds engagements.

We find that activists' engagement announcements, on average, result in significant positive CAARs of 6.8% and 8.5% for the hedge fund and non-hedge fund sample, respectively. These numbers are comparable with previous studies (Brav et al., 2008; Clifford, 2008; Klein and Zur, 2009; Krishnan et al., 2016; Becht et al., 2017). We also find significant positive two-year BHARs of 0.09, on average, for hedge funds, whereas the BHARs for non-hedge fund engagements are not significant and negative at -0.06. These findings are congruent with the results of Clifford (2008), Klein and Zur (2009), and Mietzner and Schweizer (2014). Our results also show that some hedge fund and non-hedge fund engagements realize significantly higher returns than other engagements and consistently outperform matched nontarget firms as well as the overall stock market in the long-term.

Notably, we find that the top-performing targets in terms of long-term returns earn similar CAARs around engagement announcements than the remaining targets. This implies that financial markets may not be able to properly price the future value creation potential of activist

engagements around their announcements and is consistent with the results of Ben-David et al. (2020) regarding takeovers. This is particularly evident for the non-hedge fund sample, as we estimate significant negative two-year BHARs, on average, compared to significant positive short-term CAARs.

Our analysis of short-term CAARs confirms the findings of Krishnan et al. (2016). We find that certain investor-specific aspects help to explain the differences in short-term CAARs; however, these characteristics fail to explain the variation in long-term target returns, as engagements by different types of investors do not yield significant higher long-term BHARs. In addition, we demonstrate that neither hedge fund nor non-hedge fund activists can replicate their success in selecting and shaping target firms on a large scale. We find that activists with multiple engagements achieve mixed long-term results, as only some of their engagements place in the top 25%, while others earn relatively low or even negative two-year BHARs.

We analyze the mismatch between announcement and long-term returns using data on investor, engagement, and target firm characteristics to identify potential patterns in the group of the long-term top-performing engagements. We find that top-performing target firms have significantly different financial ratios than other targets and engagements with similar characteristics also have significantly higher short-term CAARs. However, we show that this information alone, or in combination with investor-specific characteristics, does not allow the consistent identification of top-performing targets around engagement announcements.

One may argue that our analysis on the determinants of top-performing engagements misses important (inside) information that may be unobservable for researchers. As a result, the failure in identifying the engagements that are most promising would be no surprise. However, it is important to note that activist investors, who may have better resources at their disposal and

may even gain access to inside information, are also unable to consistently identify the most promising targets. Overall, our findings indicate that neither activists nor financial market participants can identify long-term top-performing targets despite extensive due diligence. Publicly available information on activist investors and target firms cannot be used by outside investors to consistently identify top-performing engagements and offers no investable strategy.

These findings are consistent with those of prior studies on the long-term performance of private equity firms and the identification of top-performing private equity funds. In particular, Korteweg and Sorensen (2017) find that publicly available information and past performance of private equity funds provide only minimal guidance to identify top-performing funds in the future, as there is limited persistence in fund returns.

Although Lerner et al. (2007) highlight the role of private information and demonstrate that the ability to select future high-performing private equity funds seems to be influenced by the knowledge of seasoned private equity investors, we argue that this finding does not seem to apply to activist engagements. In particular, activists with multiple engagements should also have access to this kind of information, but they appear to consistently fail to leverage such potential insights on a larger scale. Thus, luck may be an important ingredient for achieving long-term outperformance in activist engagements.

5 Conclusion

We use a large international sample of activist engagements by hedge fund and non-hedge fund investors between 2008 and 2019 to investigate long-term BHARs and their relationship with short-term stock price reactions around engagement announcements.

We find that some engagements consistently outperform other engagements and the stock market in the long-term. However, this difference is not reflected in the short-term CAARs

because the top-performing and other target firms yield similar CAARs around engagement announcements. Our results show that differences in investor, engagement, or target firm characteristics do not explain the differences in long-term target firm returns. We find that activists with multiple engagements are unable to consistently identify targets that rank in the long-term top-performing engagements. Thus, neither activist investors nor financial market participants can identify engagements with the highest long-term value creation potential around engagement announcements. Announcement returns are not a suitable indicator for long-term outcomes.

Activist engagements demonstrate no persistent performance that allows for a successful investment strategy based on publicly available information to achieve significant abnormal long-term returns. Thus, it would be interesting to examine how financial markets may adjust their initial assessments and the euphoria around engagement announcements or how activists will position themselves in the future and potentially adjust their decision-making strategies.

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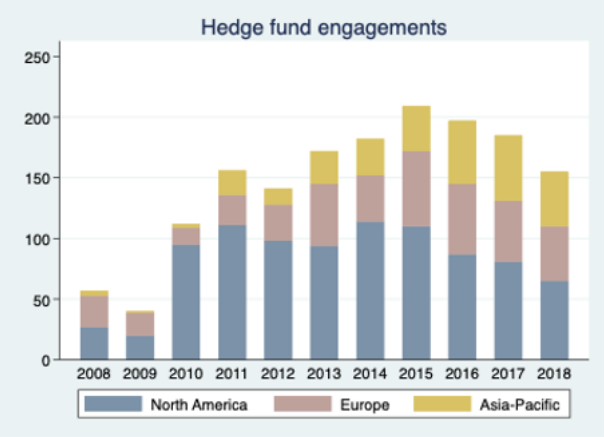
Figure I: Development of the number of activist engagements

This figure reports the number of activist engagements for different regions for a given year in our sample. Information on the panel composition is given in Table A.II in the Appendix.



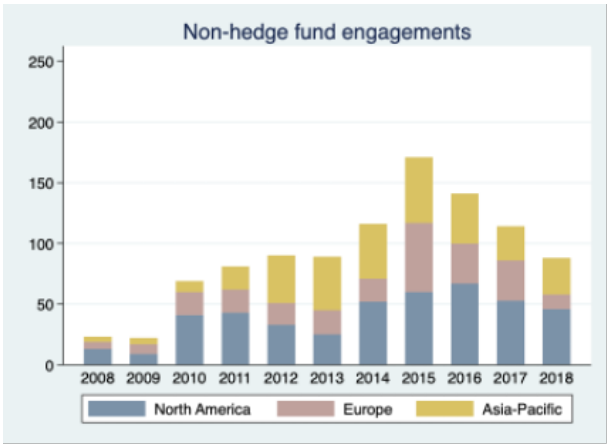
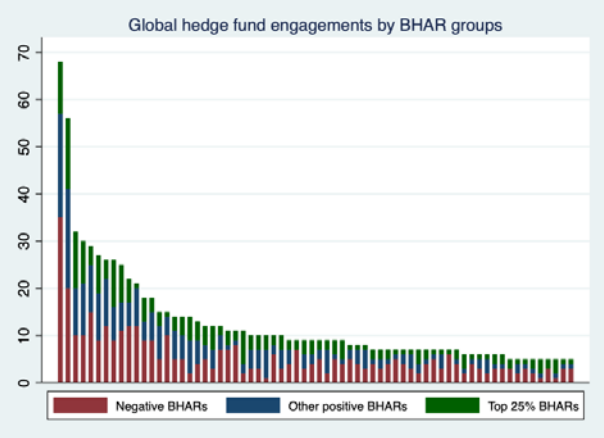


Figure II: Distribution of engagements based on the two-year BHAR outcomes across investors

This figure shows the levels of two-year BHARs achieved by target firms of activists who engaged in more than five transactions in our sample period. The *Top 25% BHARs* comprise engagements that are in the top 25% in terms of two-year BHARs, *Other positive BHARs* comprise engagements that yield positive two-year BHARs that are below the top 25%, *Negative BHARs* comprise engagements that yield negative two-year BHARs. Information on the panel composition is given in Table A.II in the Appendix.



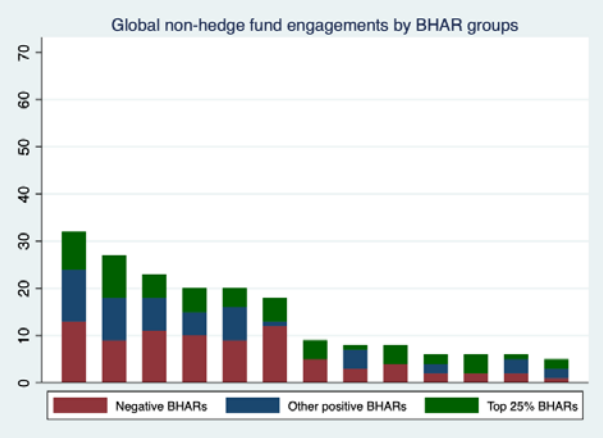


Figure III: Distribution of two-year BHARs and CAARs

This figures plots CAARs in the [-20, +20] event window and corresponding two-year BHARs for the global sample of hedge fund and non-hedge fund engagements. We also show the distribution of CAARs and two-year BHARs for engagements that are in the top 25% in terms of two-year BHARs. Information on the panel composition is given in Table A.II in the Appendix.

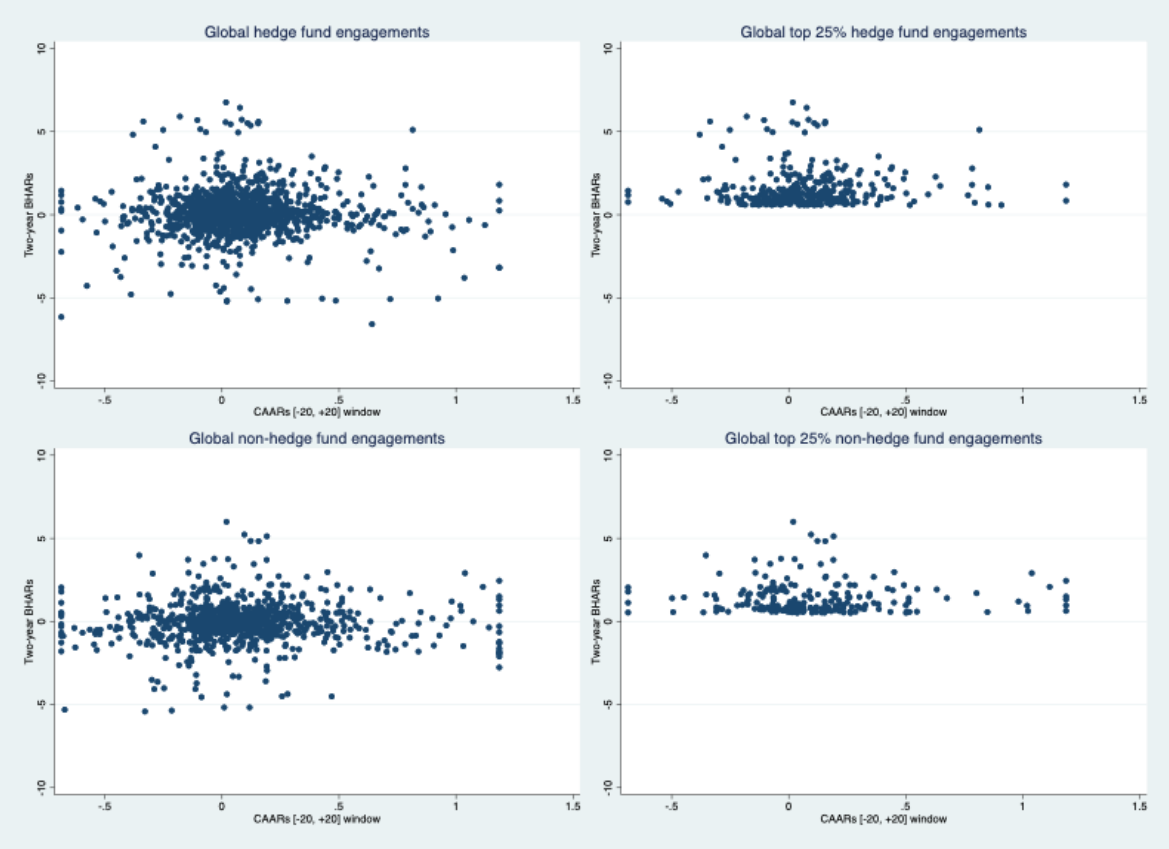


Figure IV: Distribution of two-year BHARs for specific target firm characteristics

This figure presents the distribution of two-year BHARs of engagements with specific target firm characteristics. We only include target firms in the analysis that have below-average characteristics in terms of sales, market capitalization, payout ratio, and return on assets compared to the full sample. The definitions of the variables and their data sources as well as the panel composition are given in Tables A.I and A.II in the Appendix.

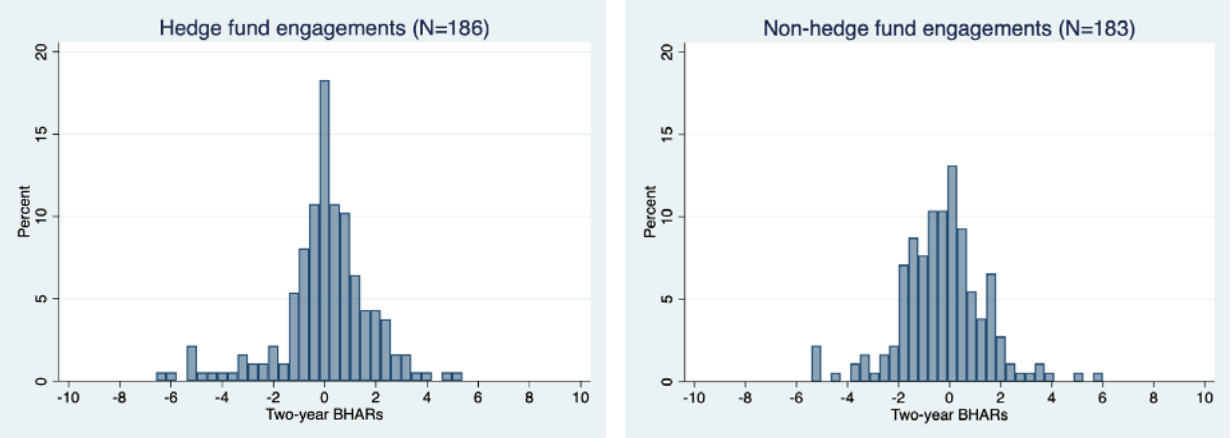


Table I: Sample selection process

This table reports all applied filters and the number of excluded engagements to identify our sample.

	# Engagements	Filter criteria
	9,829	Initial dataset
-	228	Engagements outside the Asia-Pacific region, North America, and Europe
-	218	Reinvestments by activists
-	55	Holding period of at least 30 days
-	2,379	No information on acquired stake
-	550	No classification of activists' business background
-	504	Investments in funds
-	2,587	Announcements of acquired stake after more than ten days after the acquisition
-	230	Multiple investments on the same date
-	389	No price or financial statement data available
	2,689	Final sample

Table II: Descriptive statistics

Panel I provides an overview of the engagement sample for different types of investors and single geographies. The panel also reports the share of engagements for which investors raise public demands and the share of domestic investors. Panel II reports all public demands made by investors in the samples for different regions. Demands are clustered according to *Activist Insight*. Fields with "–" indicate no observation. We classify a demand as successful (success) if the demand is completely or partially met by the target firm or other shareholders, and as unsuccessful (failure) if the demand is withdrawn by the activist or not met by the target firm or other shareholders. Panel III reports the number and frequency of different exit types by investors as well as details regarding average holding periods for different regions and investors. The holding period statistics are restricted to completed engagements. *Taken private* classifies exits when a company goes private as part of a merger or an acquisition. *Delisting* classifies exits when a company is removed from a stock exchange; e.g., due to voluntarily delisting or for not adhering to listing requirements. The definitions of the variables, data sources, and panel composition are given in Tables A.I and A.II in the Appendix.

Panel I: Sample composition

	Panel A: Hedge funds				Panel B: Non-hedge funds			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Global	Asia-Pacific	Europe	North America	Global	Asia-Pacific	Europe	North America
Number of engagements	1,655	301	430	924	1,034	328	250	456
Current engagements	840	242	249	349	715	266	166	283
Exited engagements	815	59	181	575	319	62	84	173
Engagements with public demands	54%	29%	45%	66%	78%	78%	81%	76%
Engagements by domestic investors	69%	50%	34%	92%	76%	78%	53%	88%
Unique activists	427	61	102	323	682	252	171	274
Unique targets	1,457	285	369	803	913	286	209	418
Average investor experience	7.5	11.5	9.9	5.1	2.8	3.0	2.3	3.0
Average acquired stake	7.4%	6.3%	6.1%	8.3%	10.5%	10.8%	10.3%	10.5%
Average invested capital (in $mn)	135.2	109.6	149.7	137.1	138.8	107.7	206.9	123.9

Panel II: Public demands and success rates

	Panel A: Hedge funds				Panel B: Non-hedge funds			
	(1) Number	(2) Success	(3) Failure	(4) Ongoing	(5) Number	(6) Success	(7) Failure	(8) Ongoing
Board-related activism	860	66%	27%	7%	1,034	51%	44%	5%
M&A activism	359	38%	48%	14%	208	38%	46%	15%
Balance sheet activism	257	40%	43%	17%	130	35%	48%	17%
Business strategy	157	53%	29%	18%	73	41%	40%	19%
Other governance	113	35%	53%	12%	115	38%	50%	12%
Remuneration	59	29%	49%	22%	46	43%	46%	11%
Other	13	31%	69%	–	15	47%	40%	13%
Total	*1,818*	*52%*	*36%*	*12%*	*1,621*	*47%*	*45%*	*9%*

Panel III: Exit types and holding periods

	Panel A: Hedge funds				Panel B: Non-hedge funds			
	(1) Global	(2) Asia-Pacific	(3) Europe	(4) North America	(5) Global	(6) Asia-Pacific	(7) Europe	(8) North America
Exit types								
Sold shares	49.6%	59.3%	38.7%	52.0%	31.3%	46.8%	23.8%	29.5%
Purchased by listed company	24.8%	22.0%	34.8%	21.9%	21.6%	11.3%	20.2%	26.0%
Purchased by private equity	6.7%	–	5.0%	8.0%	3.8%	–	–	6.9%
Purchased by private company	6.4%	8.5%	7.7%	5.7%	9.4%	6.5%	11.9%	9.2%
Merger	3.9%	3.4%	1.7%	4.7%	5.0%	1.6%	2.4%	7.5%
Delisted	2.0%	3.4%	2.8%	1.6%	11.6%	24.2%	22.6%	1.7%
Taken private	1.3%	1.7%	1.7%	1.2%	0.9%	–	1.2%	1.2%
Bankruptcy	1.2%	–	–	1.7%	1.6%	–	–	2.9%
Company liquidated	1.1%	–	2.8%	0.7%	3.1%	3.2%	4.8%	2.3%
Purchased by activist	1.1%	–	1.7%	1.0%	4.1%	–	3.6%	5.8%
Company entered administration	0.7%	–	1.7%	0.5%	1.9%	1.6%	4.8%	0.6%
Acquired the company	0.6%	–	0.6%	0.7%	4.4%	4.8%	3.6%	4.6%
Wound down	0.4%	1.7%	0.6%	0.2%	–	–	–	–
Stock buyback	0.1%	–	0.6%	–	0.9%	–	–	1.7%
Demerger	–	–	–	–	0.3%	–	1.2%	–
Total number of exits	*815*	*59*	*181*	*575*	*319*	*62*	*84*	*173*
Average holding period (completed engagements)								
less than 1 year	35.5%	37.3%	37.0%	34.8%	25.4%	21.0%	28.6%	25.4%
1 to 2 years	24.9%	28.8%	23.8%	24.9%	22.9%	22.6%	17.9%	25.4%
2 to 3 years	15.1%	11.9%	9.9%	17.0%	15.7%	16.1%	15.5%	15.6%
3 to 4 years	10.3%	10.2%	13.3%	9.4%	14.1%	19.4%	20.2%	9.2%
4 to 5 years	5.6%	5.1%	6.6%	5.4%	7.5%	6.5%	3.6%	9.8%
5 to 6 years	3.6%	3.4%	1.7%	4.2%	5.6%	6.5%	3.6%	6.4%
6 to 7 years	2.8%	1.7%	2.8%	3.0%	2.8%	3.2%	4.8%	1.7%
more than 7 years	2.2%	1.7%	5.0%	1.4%	6.0%	4.8%	6.0%	6.4%
Total number of exits	*815*	*59*	*181*	*575*	*319*	*62*	*84*	*173*

Table III: Long-term returns of top 25% engagements and other engagements

This table reports average buy-and-hold returns (BHRs) and abnormal buy-and-hold returns (BHARs) for target and matched nontarget firms as well as the outperformance of target firms compared to a global stock index for various holding periods. Sample sizes vary across different time periods and the given information corresponds to the sample size for two-year BHARs. Statistical significance is based on a cross-sectional *t*-test and the generalized sign test specified by Cowan (1992). Information on the panel composition is given in Table A.II in the Appendix. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Hedge funds

	Target BHRs			Log difference to matched firms			Difference to stock index		
	1-year	2-year	3-year	1-year	2-year	3-year	1-year	2-year	3-year
Top hedge funds (N=353)									
Return	0.386	0.792	0.901	0.715	1.518	1.675	0.337	0.614	0.635
t-test	10.43***	13.68***	12.55***	18.93***	24.75***	17.89***	4.91***	8.32***	4.99***
Generalized sign test	9.94***	12.18***	11.60***	16.87***	19.75***	17.27***	5.14***	3.65***	-1.90*
Other hedge funds (N=1,058)									
Return	0.034	0.061	0.137	-0.160	-0.380	-0.419	-0.055	-0.139	-0.183
t-test	2.50**	3.73***	6.12***	-8.06***	-13.51***	-10.77***	-4.12***	-8.08***	-7.40***
Generalized sign test	4.40***	5.75***	6.56***	-3.36***	-5.88***	-4.98***	-4.71***	-9.63***	-12.96***
Significance tests between groups									
t-test	-8.94***	-12.14***	-10.16***	-20.50***	-28.13***	-20.65***	-5.60***	-9.94***	-6.31***
Rank sum test	-9.52***	-12.84***	-10.74***	-20.88***	-28.17***	-23.02***	-9.02***	-11.99***	-8.38***

Panel B: Non-hedge funds

	Target BHRs			Log difference to matched firms			Difference to stock index		
	1-year	2-year	3-year	1-year	2-year	3-year	1-year	2-year	3-year
Top non-hedge funds (N=209)									
Return	0.336	0.795	0.827	0.651	1.408	1.370	0.312	0.610	0.452
t-test	5.94***	8.79***	7.94***	12.51***	21.01***	12.25***	3.80***	5.47***	3.78***
Generalized sign test	4.27***	7.46***	6.72***	10.78***	15.50***	12.63***	2.88***	1.35	-1.31
Other non-hedge funds (N=627)									
Return	-0.058	-0.121	-0.066	-0.236	-0.549	-0.600	-0.143	-0.302	-0.348
t-test	-3.18***	-5.22***	-2.08**	-8.42***	-14.37***	-11.13***	-7.37***	-11.77***	-9.46***
Generalized sign test	-3.77***	-5.77***	-3.07***	-4.97***	-8.33***	-7.39***	-9.05***	-13.13***	-14.31***
Significance tests between groups									
t-test	-6.64***	-9.81***	-8.20***	-15.00***	-25.37***	-15.87***	-5.39***	-7.96***	-6.40***
Rank sum test	-6.75***	-11.34***	-8.79***	-13.98***	-21.67***	-16.77***	-6.95***	-9.89***	-7.152***

Table IV: Details on two-year BHARs

This table presents the two-year BHARs for different groups of engagements. *Top 25%* comprise engagements that are in the top 25% in terms of two-year BHARs, *Other* comprise engagements that yield positive two-year BHARs that are below the top 25%, and *Negative* comprise engagements that yield negative two-year BHARs. Statistical significance is based on a cross-sectional *t*-test for the respective means. Information on the panel composition is given in Table A.II in the Appendix. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	Panel A: Hedge funds			**Panel B: Non-hedge funds**		
	Top 25%	Other	Negative	Top 25%	Other	Negative
N	221	259	383	54	51	83
Mean	1.479	0.254	-0.619	1.531	0.241	-0.864
Std. dev.	1.153	0.168	0.717	1.137	0.140	0.946
Skewness	2.519	0.224	-3.010	1.831	0.064	-2.408
Kurtosis	9.458	1.853	15.800	6.062	2.138	9.033
Minimum	0.578	0.001	-5.224	0.517	0.005	-4.549
5th percentile	0.608	0.021	-1.866	0.532	0.021	-2.953
25th percentile	0.777	0.102	-0.810	0.764	0.149	-1.048
Median	1.105	0.231	-0.418	1.140	0.255	-0.569
75th percentile	1.612	0.395	-0.159	1.983	0.343	-0.280
95th percentile	4.090	0.541	-0.031	4.849	0.481	-0.070
Maximum	6.764	0.576	0.000	5.232	0.502	-0.011
t-test	19.06***	24.24***	-16.90***	9.90***	12.25***	-8.33***

Table V: CAARs of top 25% engagements and other engagements

This table reports the CAARs estimated over several event windows for different regions and for different types of investors. *Top* engagements are those that are in the top 25% in terms of two-year BHARs, whereas *other* engagements comprise the remaining 75%. Information on the panel composition is given in Table A.II in the Appendix. Statistical significance is based on the cross-sectional *t*-test, the standardized cross-sectional test specified by Boehmer et al. (1991), and the generalized sign test specified by Cowan (1992). Differences between *top* engagements and *other* engagements are tested using a cross-sectional *t*-test and rank sum test. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Hedge funds

Top 25% (N=353)							
Day	[-20, +20]	[-10, +10]	[-5, +5]	[-2, +2]	[-1, +1]	[-1, 0]	[0, +1]
CAAR	7.4%	5.8%	5.6%	3.6%	2.8%	0.8%	1.3%
t-test	5.75***	6.02***	7.38***	6.66***	6.74***	3.54***	5.63***
Standardized cross-sectional test	5.82***	6.07***	7.12***	6.63***	6.41***	4.04***	6.51***
Generalized sign test	6.53***	5.78***	6.64***	6.74***	6.21***	3.33***	3.23***
Other (N=1,058)							
Day	[-20, +20]	[-10, +10]	[-5, +5]	[-2, +2]	[-1, +1]	[-1, 0]	[0, +1]
CAAR	7.0%	5.6%	4.5%	3.5%	2.7%	1.3%	0.8%
t-test	9.78***	10.47***	11.46***	12.39***	11.95***	8.91***	7.25***
Standardized cross-sectional test	10.47***	11.37***	11.85***	12.04***	11.44***	8.56***	6.95***
Generalized sign test	9.26***	10.12***	11.97***	12.15***	11.66***	8.21***	6.00***
Significance tests between groups							
t-test	-0.33	-0.18	-1.35	-0.22	-0.18	1.57	-1.89*
Rank sum test	-0.95	-0.60	-1.08	-0.69	-0.16	1.32	-1.52

Panel B: Non-hedge funds

Top 25% (N=209)							
Day	[-20, +20]	[-10, +10]	[-5, +5]	[-2, +2]	[-1, +1]	[-1, 0]	[0, +1]
CAAR	11.2%	9.6%	6.2%	4.9%	3.6%	1.6%	0.8%
t-test	4.85***	5.84***	5.21***	5.44***	4.88***	3.56***	2.36**
Standardized cross-sectional test	5.20***	6.44***	6.03***	6.17***	5.81***	4.09***	2.26**
Generalized sign test	4.68***	6.07***	5.51***	4.54***	5.65***	3.16***	1.91*
Other (N=627)							
Day	[-20, +20]	[-10, +10]	[-5, +5]	[-2, +2]	[-1, +1]	[-1, 0]	[0, +1]
CAAR	6.7%	5.7%	5.2%	3.8%	3.3%	1.4%	1.0%
t-test	5.31***	6.30***	7.76***	7.54***	7.79***	5.67***	4.59***
Standardized cross-sectional test	5.24***	6.85***	8.05***	7.90***	8.12***	6.45***	4.42***
Generalized sign test	5.11***	6.71***	7.03***	5.43***	5.83***	5.51***	2.55**
Significance tests between groups							
t-test	-1.70*	-2.08**	-0.72	-1.13	-0.29	-0.45	0.49
Rank sum test	-1.69*	-1.98**	-1.14	-1.33	-1.05	-0.52	-0.29

Table VI: Analysis of short-term CAARs

This table reports the CAARs estimated over several event windows for different groups of investors. We group our engagements similar to the groups used by Krishnan et al. (2016). An investor is labeled as *most active* if the investor conducts at least five engagements over the past three years prior to an engagement. *Top return* investors are those with CAARs of at least 10% in the [-20, +20] window for at least three engagements over the past three years prior to an engagement. *Top investors* are in the top ten percent of all investors regarding aggregate dollar investments over the past three years prior to an engagement. We only cover engagements from 2011 to 2019 to provide the three-year data for clustering of groups. We use the full sample of engagements for the group of *most active* and *top return* investors, while we use only engagements with available information for *top investors*. Statistical significance is based on a cross-sectional *t*-test. Information on the panel composition is given in Table A.II in the Appendix. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	Panel A: Hedge funds						
	[-20, +20]	[-10, +10]	[-5, +5]	[-2, +2]	[-1, +1]	[-1, 0]	[0, +1]
Most active (N=439)	7.1%***	5.7%***	4.4%***	3.4%***	2.8%***	1.2%***	0.8%***
Other (N=793)	7.6%***	6.2%***	5.2%***	3.6%***	2.7%***	1.1%***	1.0%***
t-test	0.39	0.50	0.97	0.35	-0.36	-0.25	0.96
Top return (N=184)	10.2%***	8.9%***	6.5%***	4.9%***	3.8%***	1.3%***	1.3%***
Other (N=1,048)	6.9%***	5.6%***	4.6%***	3.3%***	2.5%***	1.1%***	0.8%***
t-test	-2.07**	-2.50**	-2.05**	-2.25**	-2.18**	-0.70	-1.31
Top investor (N=95)	10.7%***	8.2%***	6.1%***	5.2%***	4.5%***	2.2%***	0.9%*
Other (N=751)	6.0%***	5.2%***	4.0%***	3.0%***	2.5%***	1.0%***	1.0%***
t-test	-2.50**	-1.74*	-1.89*	-2.29**	-2.34**	-2.44**	0.16

	Panel B: Non-hedge funds						
	[-20, +20]	[-10, +10]	[-5, +5]	[-2, +2]	[-1, +1]	[-1, 0]	[0, +1]
Most active (N=102)	7.2%***	4.9%***	4.6%***	4.3%***	4.1%***	1.8%***	1.6%***
Other (N=636)	8.7%***	7.2%***	5.9%***	4.2%***	3.4%***	1.4%***	0.9%***
t-test	0.56	1.37	0.98	-0.11	-0.73	-0.76	-1.33
Top return (N=42)	10.2%**	8.5%***	7.4%***	6.0%***	6.1%***	2.1%***	2.5%**
Other (N=696)	8.3%***	6.8%***	5.6%***	4.1%***	3.3%***	1.4%***	0.9%***
t-test	-0.41	-0.68	-0.79	-1.00	-1.55	-1.05	-1.39
Top investor (N=18)	10.0%**	14.4%***	9.6%***	6.7%***	5.7%***	2.2%	3.2%*
Other (N=209)	6.2%***	4.9%***	4.3%***	3.2%***	3.4%***	1.5%***	0.7%**
t-test	-0.86	-2.48**	-1.87*	-1.42	-0.98	-0.39	-1.48

Table VII: Analysis of BHARs

This table presents average BHARs for the target firms as well as the outperformance of target firms compared to a global stock index for various holding periods. We group our engagements similar to the groups used by Krishnan et al. (2016): An investor is labeled as *most active* if the investor conducts at least five engagements over the past three years prior to an engagement. *Top return* investors are those with CAARs of at least 10% in the [-20, +20] window for at least three engagements over the past three years prior to an engagement. *Top investors* are in the top ten percent of all investors regarding aggregate dollar investments over the past three years prior to an engagement. We only cover engagements from 2011 to 2019 to provide three-year data for clustering of groups. We use the full sample of engagements for the group of *most active* and *top return* investors, while we use only engagements with available information for *top investors*. Sample sizes vary across different time periods and the given information corresponds to the sample size for two-year BHARs. Statistical significance is based on a cross-sectional *t*-test. Information on the panel composition is given in Table A.II in the Appendix. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Hedge funds

	Log difference to matched firms			Difference to stock index		
	1-year	2-year	3-year	1-year	2-year	3-year
Most active (N=439)	0.085***	0.118***	0.139**	0.024	0.041	0.072
Other (N=793)	0.033	0.047	0.001	0.036	0.024	-0.042
t-test	-1.15	-0.96	-1.45	0.30	-0.32	-1.16
Top return (N=184)	0.080*	0.059	-0.033	-0.009	-0.035	-0.033
Other (N=1,048)	0.047*	0.075*	0.064	0.039	0.040	-0.005
t-test	-0.55	0.16	0.76	1.10	0.99	0.17
Top investor (N=95)	0.098*	0.126	0.139	0.056	0.113	0.297
Other (N=751)	0.066***	0.077**	0.086*	0.009	0.003	-0.043
t-test	-0.45	-0.42	-0.35	-0.92	-0.94	-1.14

Panel B: Non-hedge funds

	Log difference to matched firms			Difference to stock index		
	1-year	2-year	3-year	1-year	2-year	3-year
Most active (N=102)	0.081	0.069	0.278	0.012	-0.060	-0.072
Other (N=636)	-0.046	-0.088*	-0.202***	-0.048	-0.081*	-0.163***
t-test	-1.48	-1.14	-2.69***	-0.79	-0.22	-0.71
Top return (N=42)	-0.031	-0.073	0.101	-0.073	-0.041	0.057
Other (N=696)	-0.028	-0.066	-0.148**	-0.037	-0.080*	-0.158***
t-test	0.02	0.03	-0.93	0.33	-0.19	-0.60
Top investor (N=18)	0.080	0.266	0.356	-0.182*	-0.258**	-0.339**
Other (N=209)	0.012	0.003	-0.007	-0.027	-0.002	-0.044
t-test	-0.35	-0.79	-0.83	1.45	1.93*	1.60

Table VIII: Target firm characteristics

This table reports target firm and engagement characteristics for targets that are in the top 25% in terms of two-year BHARs (Panel A) and in terms of CAARs in the [-20, +20] event window (Panel B) compared to the remaining targets. Statistical significance is based on a cross-sectional *t*-test. The definitions of the variables and their data sources as well as the panel composition are given in Tables A.I and A.II in the Appendix. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Target and engagements characteristics by two-year BHARs

	Hedge funds			Non-hedge funds		
	Top 25%	**Other**	***t*-test**	**Top 25%**	**Other**	***t*-test**
Revenue (in $bn)	1.29	1.92	3.02***	0.93	1.66	2.91***
Market capitalization (in $bn)	1.14	1.86	3.37***	0.74	1.72	3.51***
Market-to-book ratio	0.47	0.22	-2.08**	0.29	0.36	0.51
Leverage	0.20	0.22	0.98	0.23	0.23	0.15
Current ratio	3.12	2.79	-1.05	3.67	3.73	0.12
Payout	0.10	0.16	4.37***	0.07	0.12	3.08***
Asset turnover	0.98	0.89	-1.88*	0.83	0.81	-0.33
Ebitda margin	-0.02	-0.01	2.10**	-0.03	-0.02	0.60
Return on assets	-0.08	-0.01	2.16**	-0.15	-0.12	0.74
Capital expenditure	0.34	0.21	-1.18	0.72	0.57	-0.61
R&D investments	0.49	0.35	-0.64	0.52	0.41	-0.49
Acquired stake	0.07	0.07	-0.63	0.10	0.10	0.01
Share domestic investors	0.72	0.68	-1.64	0.78	0.75	-1.15
Investor experience	6.99	7.71	1.32	2.96	3.05	0.27
Invested capital (in $mn)	79.88	131.69	2.44***	48.67	184.97	5.28***

Panel B: Target and engagements characteristics by CAARs in the [-20, +20] window

	Hedge funds			Non-hedge funds		
	Top 25%	**Other**	***t*-test**	**Top 25%**	**Other**	***t*-test**
Revenue (in $bn)	1.64	2.05	1.70*	0.85	1.68	3.37***
Market capitalization (in $bn)	1.31	2.14	3.58***	0.55	1.77	5.14***
Market-to-book ratio	0.31	0.28	-0.32	0.35	0.36	0.11
Leverage	0.23	0.21	-0.96	0.25	0.24	-0.46
Current ratio	2.74	3.05	1.29	3.65	3.68	0.05
Payout	0.09	0.17	5.81***	0.05	0.12	4.51***
Asset turnover	0.92	0.91	-0.31	0.72	0.82	1.64
Ebitda margin	-0.02	-0.01	2.43**	-0.04	-0.02	1.79*
Return on assets	-0.09	-0.02	2.72***	-0.36	-0.15	2.80***
Capital expenditure	0.44	0.20	-1.91*	1.00	0.68	-1.23
R&D investments	0.81	0.22	-2.44**	0.82	0.40	-1.21
Acquired stake	0.08	0.07	-3.21***	0.11	0.10	-0.45
Share domestic investors	0.73	0.68	-2.22**	0.76	0.76	-0.15
Investor experience	7.35	7.54	0.35	2.29	3.00	2.93***
Invested capital (in $mn)	119.16	140.64	0.86	68.20	162.58	3.90***

Appendix

A.I: Variable description

All continuous variables are winsorized at the 1st and 99th percentiles.

Variable	Description	Source	Worldscope items
Acquired stake	Acquired stake of total outstanding shares as a percentage	Activist Insight	
Asset turnover	Net sales or revenues/Total assets	Worldscope, own calc.	item01001/item02999
Capital expenditure	Capital expenditure/Net sales or revenues	Worldscope	item08421
Current ratio	Current assets (total)/Current liabilities (total)	Worldscope	item08106
Ebitda margin	Ebitda/Net sales or revenues	Worldscope, own calc.	item18198/item01001
Invested capital (in $mn)	Dollar equivalent value of shares acquired	Activist Insight, own calc.	
Investor experience	Number of executed transactions in the two years prior to an engagement	Activist Insight, own calc.	
Leverage	Total Debt % Total Assets	Worldscope	item08236
Market capitalization	Market capitalization in USD	Worldscope	item07210
Market-to-book ratio	Market capitalization/(Total assets - Total assets * Total debt % Total assets)	Worldscope, own calc.	item07210/(item07230 – item07230*item08236)
Payout ratio	Dividend payout (% earnings)	Worldscope, own calc.	item8256
R&D investments	Research & Development/Sales	Worldscope	item08341
Return on assets	Return on assets	Worldscope	item08326
Revenue	Total sales in USD	Worldscope	item7240
Total assets	Total assets in USD	Worldscope	item7230

A.II: Panel description

Category	Description
Asia-Pacific	Activist engagements in the Asia-Pacific region take place in the following countries: Australia, China, Hong Kong, India, Japan, South Korea, Malaysia, New Zealand, Papua New Guinea, Singapore, Taiwan, and Thailand
Europe	Activist engagements in Europe take place in the following countries: Austria, Belgium, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Gibraltar, Greece, Guernsey, Iceland, Ireland, Isle of Man, Italy, Jersey, Latvia, Luxembourg, Monaco, Netherlands, Norway, Poland, Portugal, Romania, Slovenia, Spain, Sweden, Switzerland, Ukraine, and the United Kingdom
North America	Activist engagements in North America take place in the following countries: Canada and the U.S.
Hedge fund investors	Hedge funds
Non-hedge fund investors	Asset managers, institutional, family offices, listed companies, private companies, anonymous shareholders, current/former directors, individual investors, private equity investors, government organizations, cause-oriented investors, short-focused investors
Benchmark index for the Asia-Pacific region	MSCI Pacific, MSCI Japan
Benchmark index for Europe	MSCI Europe
Benchmark index for North America	MSCI Canada, MSCI USA
Benchmark index global	MSCI World

A.III: Descriptive statistics for target and matched nontarget firms

This table provides descriptive statistics for the characteristics of both target and matched nontarget firms. The variables are lagged by one year. The statistical significance of the differences between target and matched nontarget firms is based on a cross-sectional *t*-test. The definitions of the variables and their data sources as well as the panel composition are given in Tables A.I and A.II in the Appendix. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	Control group		Target firms		
Global	Mean	SD	Mean	SD	*t*-test
Total assets (in $bn)	2.88	9.44	3.13	9.25	-0.92
Market-to-book ratio	0.37	2.00	0.32	1.58	0.90
Return on assets	-0.07	0.54	-0.07	0.45	0.05
Asia-Pacific	Mean	SD	Mean	SD	*t*-test
Total assets (in $bn)	2.14	8.53	2.38	8.19	-0.47
Market-to-book ratio	0.37	2.38	0.45	1.89	-0.61
Return on assets	-0.07	0.52	-0.09	0.49	0.72
Europe	Mean	SD	Mean	SD	*t*-test
Total assets (in $bn)	4.52	12.39	5.24	12.52	-1.00
Market-to-book ratio	0.22	1.64	0.18	1.49	0.45
Return on assets	0.02	0.18	0.00	0.18	1.46
North America	Mean	SD	Mean	SD	*t*-test
Total assets (in $bn)	2.42	7.97	2.44	7.52	-0.08
Market-to-book ratio	0.43	1.96	0.33	1.45	1.54
Return on assets	-0.11	0.66	-0.10	0.51	-0.67

A.IV: Propensity-score matching assessment

This figure reports the distribution of forecast errors to assess the quality of the matching procedure of target and matched nontarget firms.