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The Effect of Shareholder Activism on Target Firms.

Did shareholder activism become more effective over time?

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Abstract

This paper provides a comprehensive analysis of the effect of shareholder activism on target firms over the period 2010-2014. Contrary to most recent literature, this paper does not solely focus on hedge fund activism and, therefore, provides insight into the view that shareholder activism has evolved and became more successful over time. The main hypothesis holds that shareholder activism has a positive effect on target firms. To test this hypothesis, three subsequent hypothesis are formed: (1) short-term abnormal returns around the campaign announcement date will be positive, (2) long-term abnormal returns over a two year period will be positive, or short-term abnormal returns will not reverse and (3) activism has a positive effect on target firm's operating performance as measured by ROA. The empirical research presents an ambiguous view of the effect of activism on target firms, confirming hypothesis (1) and (3), however, leaving inconclusive findings for hypothesis (2). In contrast to most research based on earlier samples, I do not find a significant negative effect of activism on long-term share price and firm performance. Therefore, this paper confirms the view that shareholder activism has become more effective over time.

Keywords: Corporate Governance; Shareholder Activism; Firm Performance

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1. Introduction

Akzo Nobel NV has dominated the Dutch financial news over the past months, due to conflicts with its activist shareholder Elliot Management Corp. Elliot is an activist that shakes up boardrooms and triggers major changes at a series of companies over the recent years. Akzo Nobel seems to be their new target, starting with forcing Akzo Nobel to consider a take-over offer from PPG. With the support of politicians, employees and the judge, Akzo Nobel was able to win the battle with PPG and Elliot. However, the company was left with lawsuits and angry letters by a group of unsatisfied shareholders, all under the lead of Elliot, who owns 10% of the company's shares. As a response the company announced, among others, a new strategy and the sale of their specialty-chemicals business.

Shareholder activism is a mechanism, used by investors holding a significant but non-majority percentage of a firms' stock, to participate in corporate governance and influence operational decisions of target companies (Klein & Zur, 2009). Agency problems, which arise from the separation of ownership and control, form the basis of shareholder activism. The potential for activism arises when shareholders believe the Board of Directors, who has the responsibility to monitor the managers and their performance, has failed in its duty. The motives for shareholder activism can vary widely, however, most campaigns are targeted at board reforms, takeover defences, executive compensation and confidential voting (Romano, 2000).

With as many as 750 companies publicly subjected to shareholder activism each year, shareholder activism has evolved from being an occasional threat facing corporate management, to a frequently occurring event to firms of all sizes and sectors. The influence of shareholder activism can be quite large, as becomes, amongst others, apparent from the planned merger between Huntsman and Clairant. The two companies announced in May 2017 their plans to merge and, thereby, to become a chemical company with a net worth of 20 billion dollar. However, this plan is off track due to heavy resistance of White Tale Holdings, a vehicle of two hedge funds. The impact of shareholder activism has, thus, became a vital topic of public debate. Consequently, financial economists have tried to measure the effects of shareholder activism on target firms' performance. The literature presents a controversial view of the effect of shareholder activism on target firms' values, earnings, operations and governance structures. Three main competing views exist: (1) the first view sees shareholder activist as bullies, (2) the second sees them as ineffective and (3) the last view as monitors.

Opponents believe that shareholder activism impairs firm management and degrades firm performance. They believe that activist shareholders do not have the skill or experience

to improve on managers' decisions (Wohlstetter, 1993). Moreover, they believe that activists focus on short-term earnings at the expense of the target firm's long-term financial health. By forcing management to consider and respond to activist campaigns, they have less time to focus on their main job: managing the company. If it is indeed the case that shareholder activism negatively impacts firm performance and thereby shareholder value, more strict regulation on activist campaigns should be considered.

The stream that views shareholder activists as ineffective argues that activists are unable to influence targets' firm performance. This view argues that most proposals are precatory and ignored by management. Moreover, the argument is made that most of the activist campaigns are misdirected, since they advocate reforms that have not been found to enhance firm value.

Proponents, on the other hand, portray activists' efforts as helpful in aligning the incentive and control problems that characterize large, diffusely held corporations (Karpoff, 2001). They state that activist shareholders prompt specific actions at the target firm that increase firm value. Moreover, even if an activist campaign is not successful, the targeted firm might be managed more efficiently, as it provides a wake-up call to management and an increased incentive or obligation to its shareholder to increase its performance in the future. For example, DSM has been pressured by its activist shareholder Third Point over the past years. In 2014, Third Point pleaded for a divestment of its Performance Materials division, to be able to fully focus on its Nutrition segments. Even though DSM rejected the campaign, the company successfully launched a plan to make the company more profitable, increasing its ROA from 7.8% in 2014 to 10.4% in 2016.

When analysing the existing literature on shareholder activism, it becomes apparent that there exists a striking discrepancy in the assessment of, and empirical findings on, the effect of shareholder activism. However, it becomes evident that much of the earlier empirical literature finds no significant evidence of improvements in the target firms' performance, whereas, research on hedge fund activism does seem to indicate a positive effect on firm performance. Hedge funds seem to target campaigns on specific strategic, operational and financial objectives and, therefore, engage in a new form of activism. On the whole, when analysing the existing literature, it can be noticed that shareholder activism has become more successful over time. This finding suggests that shareholder activists have learned and adapted their strategies over time.

This paper hypothesises that shareholder activism indeed has progressed over time and became more effective. Since most recent literature is focused on hedge fund activism, this

paper contributes to the existing literature by examining an unfiltered database of shareholder activism over the period of 2010-2014. To verify the hypothesis that shareholder activism positively effects target firms three sub-hypotheses are formulated. (1) The first hypothesis, *H1*, states that short-term abnormal returns around the campaign announcement date will be positive. (2) The second hypothesis, *H2*, states that long-term abnormal returns after the campaign announcement date will be positive, or the positive short-term abnormal returns will at least not reverse. (3) Finally, the third hypothesis, *H3*, states that shareholder activism positively influences on the target firms' operating performance as measured by ROA. Analysing these three hypotheses would provide a thorough understand of the effect of shareholder activism on target companies and facilitates a conclusion on the overall question whether shareholder activism creates firm value.

To test the first hypothesis, I will estimate, by means of an event study, cumulative average abnormal returns around the campaign announcement date. The cumulative average abnormal returns will be calculate over three event windows, [-40,40], [-30,30] and [-20,20]. For the second hypothesis, I will evaluate long-run share price effects by performing a calendar-time monthly portfolio (CTIME) regression around the event dates, also known as the Jensen's alpha approach. Finally, to test the third hypothesis, I will perform a regression analysis to evaluate the effect of activism on operating performance as measured by return on assets. Moreover, to gain a better insight into the source of the effect on target companies performance I will perform a regression analysis on DuPont variables. Additionally, I will analyse the effects that campaign demand and campaign status have on firm performance.

The short-run stock price analysis, as performed by running an event study around the campaign announcement dates, presents statistically significant positive cumulative average abnormal returns over all three timeframes in the range 7%-8%. Indicating that firms being targeted by shareholder activism experience positive stock returns around the announcement date. This finding is in line with the research of Brav et al. (2010), who find across a variety of studies on hedge fund activism positive short-term abnormal returns ranging from 5%-10%. Consequently, this finding confirms the first hypothesis, *H1*.

Second, the long-term stock price analysis is performed by running a CTIME portfolio regression, calculating the alpha intercept, α_i. The empirical result presents a slightly positive alpha value, however statistically insignificant. Therefore, we are unable to draw inferences on the effect of shareholder activism on target firms' long-term share price performance. The result is similar to the outcome of the research of Bebchuk et al. (2015), who also find

positive but statistically insignificant alpha's using a CTIME approach. Hence, the analysis does not allow drawing a conclusion on the second hypothesis, *H2*.

Finally, the effect of shareholder activism on post-targeting firm performance is measured by performing a regression analysis. The empirical results show a negative effect on ROA, indicating that activism has a negative effect on that year's firm performance. One explanation is that activism distracts target's firm management and thereby disrupts target firm's operations (Karpoff et al., 1996). However, the regression analysis indicates that shareholder activism does have a statistically significant positive effect on ROA_{t+2}, suggesting that activist campaigns take a longer time to manifest in a positive effect on firm performance. This finding is in line with the research of Brav et al. (2008), who find that firm performance deteriorates during the event year, but recovers two years after the event. To analyse the effect on firm performance as measured by ROA in more detail, a DuPont like analysis is performed. The DuPont analysis indicates that shareholder activism mainly impacts return on sales, ROS, which is a measure of operating efficiency. Finally, the effects of campaign demand and campaign status on firm performance are measured. The results suggest that campaign demand and campaign status indeed have an impact on firm performance, which is in line with the view of Brav et al. (2010) and Smith (1996). The research on campaign demand mainly provides statistically insignificant results, except for BoardControl, which has a statistically significant negative impact on firm performance as measured by ROA. The research on campaign status indicates that campaigns being unresolved, withdrawn or settled negatively impact firm performance. One interpretation is that these campaigns did consume time from firm's management, but did not lead to a specific action and thereby only disrupts firm performance. Overall, the empirical research presents an ambiguous view of the effect of shareholder activism on target firms. However, I find that activism indeed has a positive impact on firm performance, as measured by ROA, in the two years following targeting. Therefore, we can conclude that activism indeed has a positive influence on firm performance over the long-term and, hence, we can accept *H3*.

This paper contributes to the existing literature by providing a comprehensive analysis of recent shareholder activism on firm value. Analysing short-run and long-run price effects and providing an extensive research of the effect of activism on firm performance over the period 2010-2014. Contrary to most recent research this paper does not focus solely on hedge fund activism. Thereby, providing insight into the view that shareholder activism has evolved and became more successful, as suggested by Denes et al. (2016). In contrast to most previous research on overall shareholder activism, I do not find significant negative effects of activism

on long-term share price and firm performance. This finding confirms the view of Denes et al. (2016) and Goranova and Ryan (2014) that shareholder activism has become more effective over time. Moreover, this paper provides insight into the effect of campaign status and campaign demand on firm performance. Confirming the view that the effect of activist campaigns depends on the actions demanded and the outcome of the campaigns.

The rest of this paper is organized as follows. Section 2 provides background on the discussion by presenting relevant literature on shareholder activism. Section 3 motivates the main hypothesis and the three sub-hypotheses and explains the methodologies used to test the three hypotheses. Section 4 describes the sample used in the empirical research. Section 5 discusses the empirical findings of the tests performed on the sample. After, the main findings and overall conclusion are discussed in section 6. Finally, section 7 provides limitations of the performed research and section 8 recommendations for future research.

2. Literature review

2.1 Shareholder activism

Shareholder activism originated in the late 1980's as a new corporate governance mechanism, in which investors engage in corporate governance activities, to reform corporate governance structures and improve firm performance. The rise of shareholder activism coincidences with the widespread adoption of a public ownership firm structure. The corporate structure of a public company separates ownership and control and, thereby, gives rise to agency problems between shareholders, corporate management and the board of directors. Agency problems, in turn, provide the basis for shareholder activism. In particular, the potential for shareholder activism arises when shareholders are dissatisfied with the performance of the Board of Directors and, supposedly, of the firm itself (Gillan and Starks, 1998). In this case, shareholders have several options; they can sell their shares, also known as "vote with their feet", hold their shares and do nothing, or they can hold their shares and disseminate their dissatisfaction.

2.1.1 Shareholder activists: who are they?

Most public companies have a large shareholder base and the ownership of these companies is, therefore, very dispersed. This gives rise to the problem of free riding, in which individual investors have no to little incentive to monitor managers. Before 1986, only a limited part of the individual investors would devote time to activist campaigns. Between 1979 and 1983, the popularity of shareholder activism increased and half of all proposals

were submitted by religious groups and, approximately, six or seven individuals. From 1986-1990, almost 20% of all proposals came from five institutions, among who four public pension funds. From 1994 on, public pension funds are overtaken by unions as the largest submitter of corporate governance proposals.

Early institutional shareholder activism has been affected by many regulatory and structural barriers, such as free-rider problems and conflicts of interest (Brav, Jiang & Kim, 2010). Over the last decade, hedge funds have more and more focused on activist campaigns. Moreover, a new type of activist shareholders has emerged, activist funds. These funds tend to focus on 10 to 30 investments at a time and are, thus, more focused than mutual and pension funds, which hold shares in hundreds or thousands of companies. Hedge fund and focus fund activism can be collectively referred to as the "New Activism" (Becht, Franks & Grant, 2010). They tend to engage in a new form of activism and monitoring, which fundamentally differs from previous activists' efforts by other institutional investors (Brav, Jiang, Partnoy and Thomas, 2008). This new form of activism arises because they face different incentives and have a different organisational form. Hedge funds are better positioned to lead a successful activist campaign since they are, for example, not subject to heavy regulation like mutual funds and pension funds are. Moreover, they are able to hold large positions in a small number of companies, face fewer conflicts of interests and they can use leverage and derivatives.

2.1.2 Campaign objectives

According to Karpoff (2001), activism by shareholders can take two forms: (1) shareholder proposals at a company's annual meeting and (2) private negotiations. Public shareholder proposals have to be submitted under SEC rule 14a-8. The rule allows shareholders to add to their proxy statement a 500-word supporting argument. Brav et al. (2010) summarise the motives for shareholder activism in five major categories. The five categories are classified as "general undervaluation/maximize shareholder value", "capital structure", "business strategy", "sale of target company", and "governance". These objectives are not mutually exclusive, as activist shareholders campaigns may target multiple objectives at once. The category "capital structure" entails campaigns targeted at either a reduction of excess cash, an increase in firm leverage or higher pay-outs to shareholders. Moreover, it could involve issuance of securities by the targeted company. The category "business strategy" entails activist campaigns targeted at objectives as improving operational efficiency, a particular business restructuring, mergers and acquisitions, or growth strategies. The last

category, "corporate governance", focuses on campaigns such as the replacement of the CEO or chairman, eliminating defensive tactics to takeovers, enhance board independence and fair representation or executive compensation. The governance mechanisms that are of greatest interest to activist shareholders are board reforms, takeover defences, executive compensation and confidential voting (Romano, 2000). Most research on activism focuses on campaigns targeted at corporate governance, as they are the critical issue from an economic perspective, however often campaigns are pursued by social activists that target social reform.

2.1.3   Characteristics of target companies

Several studies examine firm characteristics of typical firms that attract shareholder activism. The general view holds that shareholder activism is targeted at companies that have poor past stock returns. Black (1998) finds that most proposals are targeted at companies that underperform their peers over a longer time period. Moreover, Karpoff (2001) evaluates several studies, by among others Opler and Sokobin (1997), Strickland, Wiles and Zenner (1996) and Wahal (1996), and concludes that the stock returns of the target firm are significantly lower than market returns during a one to four period before targeting. However, according to Karpoff (2001) the overall evidence indicates that targets tend to operate in poorly performing industries and do not, within this industry, necessarily have to be the worst performing firms. Additionally, targets tend to be large and have high institutional and low insider shareholdings (Romano, 2000; Karpoff, 2001). Activists target firms, with these characteristics, to increase their probability of success. Institutional shareholders are, for instance, expected to have greater incentives to vote for proposals enhancing shareholders' ability, whereas insiders are not expected to engage in informed voting restricting their discretion.

Brav, Jiang and Kim (2010) find that targets of hedge fund activism differ from targets of earlier shareholder activism. According to Brav et al. (2010), hedge fund activist target "value" firms that have stable free operating cash flows but low growth potentials. These firms possibly suffer from agency problems that could co-occur with large free cash flows, low levels of leverage and low dividend pay-out ratios. Moreover, hedge funds tend to target relatively smaller firms, with high trading liquidity and high institutional ownership. The reasoning behind this is that it allows hedge funds to acquire a larger stake more easily and without too much stock price impact. Finally, hedge funds tend to target companies that have a poor government structure, who have the highest potential for value improvement (Brav, Jiang & Kim, 2010). In conclusion, hedge fund activists do not tend to target companies with

poor operating performance, like earlier shareholder activist, but rather firms who suffer from free cash flow agency problems.

2.2 Shareholder activism and firm performance

"Shareholder activism by institutional investors is controversial", (Becht et al., 2009). Approximately 750 public companies are targeted by shareholder activism yearly[1]. Shareholder activism has become a regular phenomenon in all sectors to companies of all sizes. However, the long-term consequences of shareholder activism are not straightforward and have recently attracted extensive public debate. The primary question arises whether activist campaigns result in an increase in company performance and shareholder value over the long-term, or whether these campaigns are targeted at short-term improvements that do not necessarily benefit the company, and thereby its shareholders, in the long run. Researchers and investors tend to disagree over the effect of shareholder activism on target firms' values, earnings, operations and governance structures (Karpoff, 2001). According to Karpoff (2001), three main competing views exist; the first view, the opponent, regards shareholder activist as bullies, the second view, as ineffective and the third view, the proponent, regards shareholder activists as monitors. (1) Opponents portray shareholder activists as lacking skill and experience to overrule managers' decisions and, hence, only impair firm management and, thereby, firm performance. (2) The ineffective view argues that activist campaigns have a negligible effect on target firms' performance and policies. (3) Proponents, on the other hand, believe that shareholder activism can resolve monitoring and incentive problems at public companies and thereby improves the targets performance.

"Measuring the effectiveness of shareholder activism is not a straightforward task", (Gillian & Starks, 1998). Two issues arise in measuring performance; first, it is difficult to ascertain the outcome of a campaign and whether this matches the intended actions. Moreover, it is challenging to verify if the outcome positively influences the firm. Second, an extensive part of activism arises through private negotiations and might not be easily observable. Therefore, studies might underestimate the true effects of shareholder activism, as a substantial part is not observable. General measures of campaign effectiveness include short-term stock return performance around the campaign announcement date, long-run stock return performance and measures of operating performance. Long-term performance results

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[1] Data retrieved from activistinsight.com

of activist campaigns as measured by long-run stock returns tend to be more divergent than those for short-term market performance (Gillian & Starks, 1998).

2.2.1 Shareholder activists as bullies

As previous mentioned, opponents regard shareholder activism as impairing firm management and, thereby, degrading firm performance. Opponents make two specific criticisms towards activist shareholders. First, activist shareholders have neither the skill nor the experience to improve on managers' decisions (Wohlstetter, 1993). According to this criticism, activists do not have the skills to organize themselves in an effective manner to influence management and should not overrule management decisions, as management has inside information. Therefore, activist attempts to influence corporate decisions disrupt the firm's operations (Karpoff, Malatesta & Walkling, 1996). Second, activist shareholders focus on short-term returns, at the expense of the firm's long-term financial health. Additionally, some argue that activists act in their own interest and pursuit private benefits. Moreover, opponents hypothesise that the positive market reaction to some forms of activism is simply the result of activist identifying undervalued firms. According to this view, the revelation of new information, rather than the activist campaign, results in a positive market reaction. Opponents, all by all, view activism as disruptive, opportunistic, misguided and ineffective (Becht et al., 2009).

Karpoff, Malatesta & Walking (1996) analyse the relationship between the target firms' performance prior and after an activist campaign. Their findings suggest that targets tend to have poor prior performance when measured by market-to-book ratios, operating return and sales growth. According to Karpoff et al. (1996), this finding indicates that activists focus on proposals that seek operating improvements within the target firm. However, they study a sample of shareholder proposals between 1986 and 1990 and find no evidence of improved operating returns after the proposals. Firms receiving proposals targeted at sales growth, actually experience a decline in sales in the period after the proposal, in comparison to control firms. Additionally, changes in operating return on sale are neither significantly larger for control firms. Moreover, they find that proposals, even when receiving majority votes, have insignificant effects on management turnover and share value. Karpoff et al. (1996) suggest that their results indicate that shareholder activists are not able to improve on management decision-making.

Moreover, Wahal (1996) studies the effect of pension fund activism of the nine most active funds over the period 1987-1993. He finds that pension funds are able to successfully

prompt changes in target firm governance structures. However, their efforts do not lead to statistically significant positive target announcement returns. Moreover, Wahal (1996) finds that the long-term abnormal stock price performance is negative prior to and after targeting. In addition, Wahal (1996) measures changes in operating performance and finds no improvement after targeting. His research indicates negative accounting measures of performance prior and after targeting.

Black (1998) studies corporate governance activity by institutional investors in the United States and discovers that institutions employing active management spend about 100 times more on stock picking than institutions focused on shareholder activism spend on activist campaigns. "The institutions' unwillingness to spend significant amounts on activism says something about the returns that they expect from this activity", (Black, 1998). As partial explanation for the lack of activity he points out, among others, the problem of free riding on the governance efforts of other parties, legal rules and information costs.

Additionally, Hadani, Goranova and Khan (2011) investigate the impact of shareholder activism and monitoring on earnings management. Management could manipulate accounting numbers and thereby influence the attractiveness of their shares. Hadani et al. (2011), argue that monitoring could bring about negative side effects if the increased public scrutiny, due to shareholder activism, leads to increased incentives to manipulate earnings to signal positive managerial quality and firm performance. Their findings indicate that shareholder activism indeed poses reputational threats to the target management that increases the target's motivation to restores its credibility through earnings management. Therefore, Hadani et al., conclude that shareholder activism impairs firm's management.

More recently, a new stream of activism by hedge funds has emerged. Hedge funds typically engage in firm-specific activist campaigns and, rather than most traditional institutional investors, seem to be quite successful in their campaigns. However, Kahan and Rock (2006) argue that, even though hedge funds might hold a great promise as active shareholders, their involvement in corporate governance and control raises some concerns. First, hedge funds are set up to make money for their own investors and might not consider if their actions benefit targets shareholders in general. Second, the intensity of hedge fund activism, as caused by high powered incentives, great sophistication and sufficient capital, could put great pressure on the existing governance system. Kahan and Rock (2006), however do not reach a conclusion as whether the potential drawbacks are significant enough to warrant regulatory reform.

2.2.2 Shareholder activists as ineffective

The stream of researchers that perceives activism as ineffective, argues that most proposals are precatory and ignored by management. Moreover, they argue that institutional investors are unable to influence management and are unaware of which proposals will positively influence the targets' firm performance. The observation that support for proposals has significantly increased over time, but measured firm performance after management response remains insignificant, confirms their philosophy that activist campaigns are ineffective.

In fact, much of the empirical literature finds no significant evidence of improvements in target firms' share price performance after activist campaigns. Moreover, research on both public proposals and private negotiations targeted at changes in governance have not found increases in earnings of target firms. "Shareholder proposals, although an increasingly prominent feature of institutional investor corporate governance activism since the mid-1980s, have not had a significant impact on firm performance" (Romano, 2000). Romano (2000) argues that there is an apparent paradox in the finance literature. According to him, even though most researchers' asses' shareholder activism as a positive development, their empirical studies find statistically insignificant effects on the target firm's performance.

Karpoff (2001), compares 20 empirical studies in his survey of the impact of shareholder activism on target companies, and concludes that activist campaigns might trigger changes in a target firm's governance structure, but these changes have a negligible effect on share values and earnings. Karpoff (2001) starts off with examining the short-run effects and finds that abnormal short-run stock returns are in most cases negative and concludes that there is no evidence for positive short-run effects on share value around campaign announcements or settlements news. Nonetheless, when analysing five studies that examine the announcement of negotiated settlements, all find positive average share value effects. Second, he analyses the long-run abnormal returns of several studies and finds mixed results. Finally, when analysing reports on earning changes following shareholder proposals, he finds that most literature reports insignificant changes in return on assets, return on equity and return on sales. Karpoff (2001) concludes that there is little evidence for value creation after an activist campaign, although some negotiation efforts may have.

Smith (1996), studies the performance of 51 firms that are targeted by CalPERS over the period 1987-93. More specifically, his study tries to explore whether shareholder activism is an effective source of monitoring. Smith (1996) finds that 72 percent of the targeted firms actually adopted the proposed changes or came to a settlement with CalPERS. He finds an

increase in shareholder wealth for activist campaigns that are adopted or settled and a decrease in shareholder wealth for rejected proposals. However, over the total subset Smith (1996) does find not a statistically significant change in operating performance.

Romano (2000), as stated above, argues that there exists a paradox in the finance literature between researchers' assessment of shareholder activism and the empirical results found. He argues that this paradox exists since the governance reforms proposed by activist shareholders have no significant cash flow effects. Through relating research on shareholder activism with studies on corporate governance devices, he suggests that activist campaigns are misdirected. Romano (2000) states that much of the activism is targeted at independent boards of directors, limits on executive compensation and confidential proxy voting, yet there is no proof that these devices improve targeted firms' performance. Hence, shareholder activism advocates reforms that have not been found to be value enhancing corporate governance devices and, hence, these objectives will not reach a significant positive impact on firm performance.

2.2.3   Shareholder activists as monitors

Proponents, on the other hand, believe that shareholder activism can resolve the monitoring and incentive problems that arise with the separation of ownership and control. Proponents claim that the efforts of activist shareholders to prompt specific actions, such as reshaping corporate policy or rescinding poison pills, lead to an increase in firm value. Moreover, they argue that activism can prod incumbent managers to improve the firm's operations and even if these campaigns are not successful, management will have a more focused view, which might be exactly the right result (Karpoff, 2001). The proposed campaign might not lead to a majority vote, but does voice shareholder dissatisfaction and thereby incentivises managements to increase firm performance.

Gillan and Starks (2000) study 23 activist proposals of public pension funds between 1990 and 1991, to examine whether institutional shareholder activism increases shareholder value. Using a 31-event window consisting of days -20 through +10 around the activist campaign and find and average abnormal stock return of 4.22%. This result indicates significant positive short-term returns for governance reforms of target firms. However, when analysing long-run returns, the authors find no evidence of significant positive long-term effects, as the results vary between the different targets.

Becht et al. (2009), perform a clinical study on the Hermes UK Focus Fund (HUKFF), an experiment initiated by the trustees of one UK pension fund, and thereby provide an analysis of private engagements by an activist fund. The initiative is set up to overcome the

free riding problems in an institutional environment. The authors aim to estimate the contribution of activism to performance and to determine if the targeted objectives are value increasing. The findings suggest that when proposals are accepted and the proposed objectives are achieved, target firms experience economically large and statistically significant positive abnormal returns around the announcement date of the change (Becht, Franks, Mayer & Rossi, 2008). In a seven-day event window around the announcement date, they report mean abnormal returns of 5.30%. Their research suggests that proposals targeted at restructuring activities, such as sales of assets or divisions, results in the largest excess returns, mounting to 6.6%. Moreover, CEO and chairman turnover particularly lead to large gains. This study provides, in contrast to most previous studies of activism, substantial evidence of benefits associated with shareholder activism. Becht et al., suggest that well-focused proposals and engagements can result in significant positive returns to both outside shareholders and activist shareholders.

Brav et al. (2008), collect a data set of hedge fund activism from 2001 to 2006, to researchers their effect on corporate governance and firm performance. They find that hedge funds engage in a new form of activism focused on strategic, operational and financial reform. Analysing the effect of activist proposals on the market reaction around the announcement date (-20,+20), they find abnormal returns ranging from 7% to 8%. These findings are consistent with their view that activist proposals create firm value. Moreover, they find no reversal of the positive returns over time. To test the impact of hedge fund activism on operating performance, they evaluate changes in return on assets and operating profit margins. They find that operating performance takes longer to manifest, post event year no too little change is reported, however 2 years after the intervention EBITDA/Assets and EBITDA/Sales at target firms increases by 0.9 to 1.5 percentage points (Brav, Jiang, Partnoy & Thomas, 2008). Brav et al. (2008), suggest that hedge funds are able to allocate inefficiency and increase firm value through activist campaigns.

Recent research on hedge fund activism, by among others Brav et al. (2008), Clifford (2008) and Klein & Zur (2009), seems to indicate that hedge funds, opposed to earlier institutional shareholder activist, are able to create positive firm value. Evidence suggests that hedge funds can take on an important role between internal monitoring by large shareholders and external monitoring by corporate raiders (Brav, Jiang & Kim, 2010). Brav, Jiang and Kim (2010), review a series of empirical research on hedge fund activism, and indeed find evidence for the success of hedge fund activist in creating value for both target companies and shareholders. "The short-term average abnormal returns around the announcement of the

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intervention of hedge funds are significantly positive across studies, on the order of 5-10%",
(Brav, Jiang & Kim, 2010). However, their research indicates that the effect on firm value
differ across campaigns. Moreover, they find that campaigns targeted at the sale of the target
firm or a change in the business strategy leads to the highest abnormal short-term returns. An
important part of their research is the effect on post-event long-run returns. Brav et al. (2010),
find that the long-run returns do not show reversion, indicating that the short-run abnormal
returns are not simply the result of market overreaction. This finding also indicates that
campaigns are not simply targeted at short-term incentives at the cost of long-term firm
wealth, as some proponents of shareholder activism suggest. Additionally, targets experience
improvements in operating performance after the campaign; they experience increases in
CEO turnover, leverage, and dividend payouts, but a decrease in CEO compensation (Brav,
Jiang & Kim, 2010). Brav et al. (2010), conclude that the evidence in the literature indicates
that hedge fund activism indeed adds value through proposing proper operational, financial
and governance reforms at target firms.

2.2.4 Contradictory perspectives and development over time

Literature on shareholder activism shows a striking discrepancy in the assessment of
the effect of shareholder activism between researchers. Besides, the evidence on the
effectiveness, as found in empirical studies, largely varies as well. Moreover, as previously
stated, Romano (2000), identifies the existence of a paradox in the finance literature between
the generally positive assessment of shareholder activism and the insignificant effect on target
firm's performance found in empirical studies. Within the recent literature, no clear
explanation for these discrepancies exists. Brav, Jiang and Kim (2010), argue that the mixed
evidence on the effect of shareholder activism is the result of early institutional shareholder
activism, being plagued by regulatory and structural barriers such as free-riding problems and
conflicts of interest. Becht et al. (2009) blame the failure to link activism to performance on
three elements: free-riding problems causing inadequate monitoring, legal and institutional
obstacles to activism and incentive problems. Karpoff (2001) argues that the discrepancies
exist due to different definitions of success in shareholder activism and differences in time
periods, sample size and types of events examined.

When analysing the existing literature, it can be noticed that most of the recent
literature is mainly devoted to hedge fund activism. The general finding, across different
studies, is that hedge funds are able to successfully advocate value increasing changes at
target firms. Hedge fund activists tend to engage in a new form of shareholder activism that

differs from previous activist efforts (Brav, Jiang, Partnoy and Thomas, 2008). The organizational characteristics of a hedge fund and their accessibility to capital, increases their incentives and bargaining power. Denes, Karpoff and McWilliams (2016) analyse 73 studies of the effect of shareholder activism on target firms. One of the conclusions they draw is that activism has become more successful over time. "Research based on shareholder activism has become more value increasing over time" (Denes, Karpoff & McWilliams, 2016). They argue that this finding suggests that activist shareholders, over the years, have learned and adapted their targeting strategies. However, they also argue that the more positive findings can be the result of using data sets, which include hedge fund activism.

Likewise, Goranova and Ryan (2014) argue that shareholder activist have become increasingly successful in influencing firms' corporate governance. They state, among others, that earlier research on CEO turnover found little effect of shareholder activism, however more recent literature does find that activism enforces managerial discipline and increases CEO turnover. Hence, more recent literature indicates shareholder activism became more successful in and capable of increasing the performance of target firms. However, as most recent literature is concentrated around hedge fund activism, it would be of interest to study a more recent database of shareholder activism, not only focused on hedge fund activism.

<p style="text-align: center">Table 2.1: Summary of literature review</p>

Author(s)	View[1]	Conclusion
Wohlstetter (1993)	I	Activist shareholders neither have the skill nor the experience to improve on managers' decisions
Karpoff, Malatesta & Walking (1996)	I	Activist attempts to influence corporate decisions disrupt the firm's operations. Their findings suggest that targets tend to have poor prior performance when measured by market-to-book ratios, operating return and sales growth. According to them this indicates that activists focus on proposals that seek operating improvements within the target firm. However, they do not find any evidence of improved operating returns post targeting
Wahal (1996)	I	Studies pension fund activism over the period 1987-1993 and finds that activist efforts do not lead to positive announcement and long-run returns. Additionally, his research find negative accounting measure of performance prior and after targeting
Black (1998)	I	Analyses corporate governance activity by institutional investors in the US and discovers that institutions employing active management spend about 100 times more on stock picking than institutions focused on shareholder activism spend on activist campaigns. They view this unwillingness to spend significant amounts as an indication that the expected returns from campaigns are low
Hadani, Goranova and Khan (2011)	I	Investigate the impact of shareholder activism on earnings management. They find that activist campaigns pose reputation threats to the target's management, which increases the motivation for earnings management
Kahan and Rock	I	Argue that hedge funds are set up for making their own money and do not consider the targets shareholders in general. Moreover, they argue that the intensity of hedge fund activism could put great pressure on existing governance systems. They do not reach a conclusion as to whether regulatory reforms are warrant
Romano (2000)	II	Analyses 20 empirical studies on the impact of shareholder activism on target companies and concludes that activist campaigns might trigger changes in a target firm's governance structure, but these changes have a negligible effect on share values and earnings
Karpoff (2001)	II	Compares 20 empirical studies in his survey of the impact of shareholder activism on target companies, and concludes that there is little evidence for value creation after an activist campaign, although some negotiation efforts may have
Smith (1996)	II	Studies the performance of 51 firms that are targeted by CalPERS over the period 1987-93. He does not find a statistical significant change in operation performance. He does find that shareholder wealth increases for adopted or settled proposals and decreases for rejected proposals
Gillan and Starks (2000)	III	Study 23 activist proposals of public pension funds between 1990 and 1991. They find positive short-term returns, however no long-term effects
Becht, Franks, Mayer & Rossi (2009)	III	Perform a clinical study on the Hermes UK Focus Fund (HUKFF) and conclude that well-focused proposals and engagements can result in significant positive returns for both outside shareholders and activist shareholders
Brav, Jiang, Partnoy & Thomas (2008)	III	They find that hedge funds engage in a new form of activism, focused on strategic, operational and financial remedies, and suggest that hedge funds are able to allocate inefficiency and increase firm value through activist campaigns
Clifford (2008)	III	Concludes that firms targeted by hedge funds, that actively manage their investments, earn larger excess stock returns and experience improvement in operating performance, as measured by ROA, than firms being targeted for passive purposes
Brav, Jiang & Kim (2010)	III	Review a series of empirical research on hedge fund activism, and find evidence for the success of hedge fund activist in creating value for both target companies and shareholders. Moreover, they find that the long-run returns do not show reversion, indicating that the short-run abnormal returns are not simply the result of market overreaction

[1]View I represents the view shareholder activists as bullies, as described in section 2.3.1, View II the view shareholder activists as ineffective, as described in section 2.3.2, and View III shareholder activists as monitors, as described in section 2.3.3

3. Hypothesis and Methodology
3.1 Hypothesis development

From the literature review in section 2 it becomes evident that plentiful empirical research has been performed on the effect of shareholder activism, however, the results have been ambiguous. Nonetheless, more recent literature presents a more positive view on the effects of shareholder activism. Denes, Karpoff and McWilliams (2016) and Goranova and Ryan (2014) argue that this can be accounted to activist shareholders learning and adapting their campaign strategies over time. I share this view and hypothesis that shareholder activism has progressed over time and became more effective. However, since most recent literature focuses on hedge fund activism, it would be of interest to analyse a recent database, containing firms not solely targeted by hedge fund activists. Accordingly, this research aims to verify if more recent shareholder activism positively impacts target firms.

In order to verify my hypothesis, that shareholder activism has a positive effect on target firms, I formulate three successive hypotheses:

H1: Short-term abnormal returns around the campaign announcement date will be positive

If shareholder activism is perceived to be effective by investors, the targeting announcement should be associated with positive abnormal returns. Positive short-term abnormal returns indicate that investors perceive activist campaigns as value-enhancing.

H2: Long-term abnormal returns, after the campaign announcement date, will be positive or the positive short-term abnormal returns will at least not reverse

Long-term abnormal returns should be positive, or the short-term abnormal returns should at least not reverse, for shareholder activism to create value for all shareholders. The finding of long-term abnormal returns will refute the main claim of opponents, which holds that activist solely focus on short-term earnings at the expense of the target firm's long-term financial health. Moreover, it indicates that a short-term share price reaction is not simply due to buying pressure and market overreaction.

H3: Shareholder activism positively influences the target firm's operating performance as measured by ROA

For shareholder activism to create value, the operating performance of the target firm post targeting is expected to increase. Positive effects on operating performance indicate that shareholder activists are successful in improving target firm's operating profitability.

Testing the three hypothesises, as stated above, should give a thorough understanding of the effect of shareholder activism on target firms. Analysing short-run abnormal returns around the announcement of activism and the subsequent long-term returns, will explore how the stock market perceives shareholder activism on total shareholder value, and whether this view is consistent with the market's perception (Brav, Jiang and Kim, 2010). Analysing the effects on target firm's operating profitability indicates whether shareholder activism improves firm's operations and, thereby, creates firm value. Hence, positive findings on the three hypothesises, would facilitate a positive conclusion on the main hypothesis that shareholder activism creates value for the target firm.

3.2 Methodology

As mentioned in section 2.2, the relation between target performance and shareholder activism is not straightforward. Therefore, the question if shareholder activism has a positive effect on target firms remains inconclusive. We address this question by examining the effects in three different ways: the short-run stock returns around the campaign announcement date of activism, the long-run returns around the announcement and the post-targeting operating performance as measured by ROA. Hence, to measure if shareholder activism creates value for shareholders, the three hypothesises, as stated above, will be tested. To test the first hypothesis, this paper analyses short-run stock returns by calculating cumulative average abnormal returns around the campaign announcement date. By analysing the short-run stock returns, the market perception of the effect of shareholder activism can be measured. To test the second hypothesis, this paper examines long-run share price effects, using a calendar time monthly portfolio, CTIME, approach to calculate the Jensen alpha as a measure of abnormal return. In analysing the long-run effect on stock performance, we can test if the long-run effects are in line with the market perception as found in the short-run returns, and are not simply caused by buying pressure from the activist shareholder or a market overreaction. Finally, to test the third hypothesis, this paper examines the change in the target firms' operating performance. Improvement on operating performance is measured by performing a regression analysis with as dependent variable return on assets, ROA. To get a thorough understanding of the effect on operating performance, this paper analyses the effect of being targeted on a firms ROA the year of being targeted and the two years post targeting, ROA_{t+1}

and ROA$_{t+2}$. To understand the source of improvement on target companies' performance, as measured by ROA, a DuPont analysis is provided. Return on Assets is broken down into Return on Sales, ROS, and Asset Turnover, ATO. Additionally, the effects of campaign demand and campaign status on firm performance are measured.

3.2.1 Short-run stock price effects

The short-run share price analysis indicates how the stock market perceives the effect of shareholder activism on shareholder value. As stated above, if investors perceive activism as effective, the campaign announcement date should be associated with positive abnormal returns. Abnormal stock returns are defined as the realized stock return over the expected return during a specific time period. By measuring abnormal returns, the effect of the activist campaign on the share price can be isolate from general market movements.

To measure abnormal returns around the campaign announcement date, I will use a standard event study methodology to calculate abnormal returns. Abnormal returns are defined as follows:

$$(1) \ AR_{i,T} = \ R_{i,T} - R_{FF,T}$$

Where R$_{FF,T}$ is the expected return, which I will calculate using the Fama and French (1993) three factor model. The expected return calculates the returns unconditional on the event, in this case shareholder activism. The Fama and French (1993) three factor model is defined as:

$$(2) \ \left(R_{i,T} - r_{f,T}\right) = \ \alpha_i + \beta_{i,M}\left(R_{M,T} - r_{f,T}\right) + \beta_{i,SMB}SMB_T + \beta_{i,HML}HML_T + \varepsilon_{i,T}$$

Where R$_{i,T}$ is the return on the target firm, r$_{f,T}$ the return on a global value-weighted market portfolio. SMB$_T$ is the difference between the returns on a portfolio of small and big shares (as measured by market cap), and, therefore, captures the excess return of small shares over big shares. HML$_T$ is the difference between the returns on portfolios of high- and low- book-to-market stocks (above and below the 0.7 and 0.3 fractals of B/M) (Fama, 1998). For the short-run event window I will use data from 20 days prior to the event date to 20 days afterward, 30 days prior to the event date to 30 days afterward and 40 days prior to the event date to 40 days after for all events from 2010 up to 2015. The estimation window for the normal return model ranges from one year up to 41 days prior to the target announcement date. The event date is defined as the campaign announcement date.

I will analyse the average buy-and-hold return, in excess of the buy-and-hold return as calculated by the Fama and French three factor model. This is referred to as the cumulative abnormal return (CAR), which is defined as the sum of the target firm's abnormal returns over the event window. I analyse the three different event windows: [-40,40], [-30,30] and [-20,20]. The average of the target firm's CAR over the event time window can be referred to as the cumulative average abnormal return (CAAR).

$$(3)\ CAR_{i(T1,T2)} = \sum_{t=T1}^{T2} AR_{i,t}$$

$$(4)\ CAAR_{(T1,T2)} = \frac{1}{N}\sum_{i=1}^{N} CAR_{i(T1,T2)}$$

To be able to draw conclusion on the found CAARs, I will test whether the abnormal returns are significantly different from zero on a statistical basis. To test statistical significance, I will apply a time-series t-test, a cross-sectional t-test and a standard residual test on the results. The time-series t-test is defined as follows:

$$(5)\ T_{time} = \frac{CAAR_t}{(\tau_2-\tau_{1+1})^{1/2}\hat{\sigma}_{AAR_t}}$$

The null hypothesis holds that the cumulative average abnormal return is equal to zero. The variance estimator, $\hat{\sigma}_{AAR_t}$, is based on the time-series of abnormal returns. The cross-sectional t-test is defined as follows:

$$(6)\ T_{cross} = \frac{CAAR_{(\tau_1,\tau_2)}}{\hat{\sigma}_{CAAR_{(\tau_1,\tau_2)}}}$$

Where the variance estimator, $\hat{\sigma}_{CAAR_{(\tau_1,\tau_2)}}$, is based on the cross-section of abnormal returns. The null hypothesis holds that the cumulative average abnormal return is equal to zero. Finally, the standard residual test is defined as follows:

$$(7)\ SAR_{i,\tau} = \frac{AR_{i,\tau}}{S(AR_i)}$$

The null hypothesis holds that the cumulative average abnormal return is equal to zero. The standard deviation is estimated from the time-series of abnormal returns

When we can reject the null hypothesis of the t-tests, the CAARs are positively statistically significantly different from zero. Indicating, I can accept my first hypothesis that short-term abnormal returns around the campaign announcement date will be positive.

3.2.2 Long-run stock price effects

Next, to test the second hypothesis, I will measure the long-run share price effects. Analysing the long-run effect provides insight into the question if activists solely focus on short-term earnings at the expense of the target firm's long-term financial health. Moreover, it

can indicate if the short-term price reaction at the target company cannot just be assigned to buying pressure from the activist shareholder or market overreaction, but truly indicates a positive perception of shareholder activism. Long-term event studies can be seen as a test of performance persistence and allow to draw inferences on the long-term impact of shareholder activism.

For the long-term return analysis, I will use calendar-time monthly portfolio (CTIME) regressions around the event date. A CTIME approach has the preference over a BHAR approach, since a BHAR approach does not control for the cross-sectional correlation among individual firms (Fama, 1998). The CTIME method is also known as the Jensen's alpha approach. The Jensen's alpha is the intercept in a regression of time series of excess returns of the evaluated portfolio against the time series of excess returns of the benchmark portfolio (Grinblatt and Titman, 1994). In other words, the abnormal return will be calculated by a portfolio of target firms as the portfolio's excess return that cannot be explained by risk-factor models used to predict expected returns. As most literature has indicated that multi-factor models tend to predict expected stock returns more accurately, I will use the Fama-French three factor model to predict expected returns.

I will form a portfolio of all firms that will be targeted by an activist shareholder within one months' time, and the positions will be held for 24 months before being sold. For each of the portfolios I will estimate a regression of the portfolio return by using the Fama and French three factor model. If the Fama and French model for expected return estimation is correct, the intercept, the alpha, in a time-series regression on realized returns that empirically tests this model should be statistically insignificant and close to zero. Thus, as evidence for abnormal returns and possible mean reversion, I will focus on the alpha estimate.

$$(8) \ \alpha_i = R_{i,T} - (\ r_{f,T} + \beta_{i,M}(R_{M,T} - r_{f,T}) + \beta_{i,SMB}SMB_T + \beta_{i,HML}HML_T + \varepsilon_{i,T})$$

See section 3.2.1, equation (2) for explanation of the parameters.

Finally, we need to test whether the results found are statistically significant. However, in the time-series regressions the number of target firms varies over time and this can cause heteroscedasticity in the error terms. Therefore, applying a simple t-test will not be sufficient and I will also calculate a t-test based on White (1980) robust standard errors. Using a skewness-adjusted t-Test will eliminate the skewness bias and verify whether the results are statistically significant.

3.2.3 Post-targeting firm performance

Finally, if shareholder activism creates value, the operating performance of the target firm should be improved post targeting. Measures of operating performance are based on accounting numbers and there is a considerable variation in measures used. As a measure of operating performance I will use the accounting variable Return on Assets as defined by Net Income over Assets. Thereby, following the main body of research on shareholder activism, which uses either ROA (e.g. Wahal (1996) and Clifford (2008)) or operating ROA as a measure of firm performance after activism. To measure changes in operating performance, I will run a regression on the panel data of all firms targeted by activist shareholders from 2010-2014. In particular, I will conduct the following regression:

$$(9) \ Y_{i,t} = \alpha_t + \gamma_{i,t} D_{i,t} + \beta_1 \ln(MV_{i,t}) + \beta_2 BVMV_{i,t} + \beta_3 Lev_{i,t} + \alpha_{industry} + \alpha_{year} + \varepsilon_{i,t}$$

Where $Y_{i,t}$ is a measure of performance for firm i in year t and $D_{i,j}$ is a dummy variable for activism at firm i in year t. The coefficient γ_j can be interpreted as the abnormal performance of the target firm during target year t. The variables $logMV_{i,t}$, $BVMV_{i,t}$, $Lev_{i,t}$, $\alpha_{industry}$ and α_{time} can be interpreted as the control variables for size, book-to-market value, leverage, time and industry effects. The dependent and independent variables are defined as follows:

$Y_{i,t}$. The measure of performance for firm i in year t. Firm performance is measured by ROA, defined as Net Income/Assets.

$D_{i,j}$. Dummy variable for Target. The dummy variable Target equals one if firm i was under activist targeting in year t.

$ln(MV_{i,t})$. The market value of equity for firm i at time t. Brav et al. (2008), among others, find that target firms are generally smaller firms. To control for size effects on ROA, the log of market value is added as independent variable.

$BVMV_{i,t}$. Controls for book to market value effects on $Y_{i,t}$ for firm i at time t. Mietzner and Schweizer (2014) and Brav et al. (2008) find that target firms have higher book-to-market multiples than non-target firms. Book-to-market value indicates over- or undervaluation, to control for this effect book-to-market value is added to the regression.

$Lev_{i,t}$. The level of leverage for firm i in time t. Net income is influenced by leverage and reflects the money available for shareholders after paying debt holders. However, assets are available to all providers of capital. Therefore, ROA faces a "mismatch" problem, to control for this phenomena we add leverage as a control variable.

$\alpha_{industry}$. Dummy variables to control for industry effects, since the mean ROA value differs substantially across industries. Before running my regression, I will perform a Hausman test to check if the preferred model is fixed effects. By running a fixed effects regression I control for all fixed effects including industry and, for example, country. When not using a fixed effects model, I will add control variables for industry to the regression.

α_{year}. To control for time-fixed effects I add dummy variables for time to the regression. I will run a Wald test on each regression to test whether there it is a need to control for time-fixed effects.

3.2.3.1 ROA and DuPont

As the dependent variable, $Y_{i,t}$, I will use, as stated above, the accounting based variable ROA, as defined by Net Income over Assets. "ROA reflects the earnings power of a business and thus the effectiveness with which the firm uses assets of a given book value to generate earnings for investors", (Bebchuh et al., 2015). When running the regression, a positive coefficient on the dummy variable, $\gamma_j > 0$, indicates a higher operating profitability for target companies than for non-targeted companies in terms of ROA. Hence, a statistically significantly different from zero γ_j refutes the null hypothesis of no change in operating performance of targeted firms. Additionally, I will run a regression where I use ROA_{t+1}, leadROA, and ROA_{t+2}, lead2ROA, as the dependent variable instead of using ROA. This regression will indicate if and how being targeted by an activist shareholder influences ROA in the two years after being targeted.

Moreover, to gain a thorough understanding of the source of the target company's performance as measured by ROA a DuPont analysis is helpful. A DuPont analysis decomposes ROA in two components: Return on Sales (ROS) and Asset Turnover (ATO). ROS, or Net Profit Margin (PM), is defined as:

$$(10) \qquad ROS = \frac{Net\ Income}{Sales}$$

ROS measures how much of each unit of sales remains as profit and, hence, is a measure of profitability. ATO is defined as follows:

$$(11) \qquad ATO = \frac{Sales}{Assets}$$

ATO, indicates how much sales the assets in place can generate and, hence, is a measure of efficiency.

The DuPont analysis indicates that higher profitability can be generated by either increasing margins or by using assets more efficiently to generate sales. To run a DuPont

analysis on the panel data this paper runs two regressions using ROS and ATO as dependent variables. Positive coefficients on the dummy variables, $\gamma_j > 0$, indicate a positive effect for target companies in terms of either ROS or ATO. As return on sales is a measure of profitability, a positive effect on return on sales would indicate a positive effect on profitability. Asset turnover measures the amount of sales created by assets in place and is a measure of efficiency, hence, a positive effect on ATO would indicate increased efficiency.

3.2.3.2 Campaign demand and status

Additionally, to gain further inside into the effect of shareholder activism on firm performance, I will analyse the effects of campaign demand and campaign status on firm performance. Carleton, Nelson and Weisbach (1998) find in their empirical research that the benefits from activism depend on the actions demanded by the activist shareholder. Moreover, Brav, Jiang & Kim (2010) also find that the effect of activism on firm value differs across campaigns. Hence, it is of interest to test the effect of campaign demand on target firms' performance. The literature on the effect of campaign status on firm performance, on the other hand, is scarce. However, Becht et al. (2009) argue that when proposals are accepted target firms will experience significant positive abnormal returns. Suggesting that the effect of activism is influenced by the status of the campaign. Moreover, Smith (1996) argues that the effect of activism on shareholder wealth depends on the outcome of targeting. Therefore, this paper will measure the effect of campaign status on firm performance as measured by ROA and thereby contributes to the existing literature. The analysis on campaign demand and campaign status will be performed by running the same regression as stated above, equation (9), but instead of using a dummy variable for target, I will create dummy variables on campaign demand and campaign status. As the dependent variable, I will use ROA as a measure of firm performance.

The variable demand in the Thomson One Shareholder Activism database is defined as the specific aim/proposal of the shareholder activist. Studying the demanded actions of the activist campaigns over the period 2010-2014, it becomes evident that the top five demanded actions include Board Representation, Seek Alternatives, Shareholder Rights, Board Control and Hostile Acquisition. With 14% of the campaigns demanding Seek Alternatives, 13% Shareholder Rights, 6% Board Control, 6% Hostile Acquisition and 3% Board Representation. The data is in line with the finding of Romano (2000), who argues that governance mechanisms, like board reforms and takeover defences, are of greatest interest by activist shareholders. I will create the following dummy variables: BoardRep, SeekAlt,

SHRights, BoardControl and HostileAcq. By creating dummy variables for all five most demanded actions, I will be able to analyse the effect of different demands on the target firm's performance as measured by ROA. When running the regression, a positive coefficient on the dummy variables, $\gamma_j > 0$, indicates a higher operating profitability for target companies than for non-targeted companies in terms of ROA.

The variable status in the Thomson One Shareholder Activism database is defined as the outcome of the campaign. Studying the status of the activist campaigns over the period 2010-2014, it becomes evident that the status Dissident Victory, Unresolved, Settled, Withdrawn and Management Victory are most common. With 26% of the campaigns having the status Dissident Victory, 25% Unresolved, 14% Settled, 14% Withdrawn and 13% Management Victory. I will create the following dummy variables: DisVic, Unresolved, Settled, Withdrawn and ManVic. By creating dummy variables for all five statuses, I will be able to analyse the effect of the campaign status on the target firm's performance as measured by ROA. When running the regression, a positive coefficient on the dummy variables, $\gamma_j > 0$, indicates a higher operating profitability for target companies than for non-targeted companies in terms of ROA.

4. Sample

The following section describes the sample that is being used for the empirical research. Section 4.1 illustrates how the sample and the necessary datasets are retrieved and the criteria's that have been used. Section 4.2, describes the main characteristics of the sample and discusses the descriptive statistics.

4.1 Sample Criteria

The sample data is retrieved from the shareholder activism database of Thomson One. The database provides information on the campaign announcement date, target name, target market cap, TRBC economic sector, activist group name, demand, status and campaign history of the activist campaigns. Since I investigate if the presence of an activist shareholder in a company will create value disregarding the outcome of the campaign, I will use all activist campaigns disregarding their status of "pending", "settled", "withdrawn", "dissident victory" or any another status. The only filter I apply in the database is the timeframe from 2010-2014. As follows, I use a database of all companies targeted by activist shareholders disregarding status, demand, country, activist group or industry. The dataset of 2010-2014 contains a total of 1385 events.

After collecting the data set of all firms targeted by shareholder activism in the period 2010-2014, I create several datasets as need for the empirical research. For the short-term and long-term share price analysis, as described in section 3.2.1 and 3.2.2, I create a dataset containing share prices of the target companies using DataStream. Additionally, I create a database containing return data on the Fama and French three factors, using the information provided by the data library of Kenneth R. French[2]. For the regression analysis, as described in section 3.2.3, I create a database containing the necessary accounting data of the target companies. The accounting data for the target companies is found using DataStream.

4.2 Descriptive Statistics

The empirical research is conducted using a dataset of 1385 firms targeted by shareholder activism during 2010-2014. Table 4.1 presents the main characteristics of the dataset. It becomes evident that most of the activist campaigns took place in 2012 (27% of all campaigns) and the least in 2010 (12% of all campaigns). The industry characteristics of the sample indicate that 85% of all target firms operate in the industries Healthcare (40%), Technology (13%), Financials (12%), Cyclical Consumer Goods & Services (11%) and Industrials (10%). Moreover, the five most demanded actions by activist shareholders are seek alternatives (14%), shareholder rights (13%), board control (6%), hostile acquisition (6%) and board representation (3%). Finally, 26% of the campaigns have the status Dissident Victory, 25% Unresolved, 14% Settled, 14% Withdrawn and 13% Management Victory.

Table 4.2 presents the descriptive statistics of the dependent and independent variables used for the empirical research on post-targeting firm performance, as described in section 3.2.3. From the descriptive statistics it becomes evident that most of the dependent and independent variables signal skewness, as a normal distribution should display a skewness value of 0. As skewness measures the symmetry of the distribution, it becomes evident that the variables are either negatively or positively skewed. Moreover, it becomes evident that most of the variables exhibit kurtosis, as a normal distribution should show a value of approximately 3. This indicates that most of the variables exhibit a sharp peak with heavy tails closer to the mean. Hence, the descriptive statistics indicate that the variables are not normally distributed. Performing a Shapiro-Francia test for normality indicates we can indeed reject the null hypothesis of normal distribution for all variables, as presented in table A1 of

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[2] Kenneth R. French is an expert on behavior of security prices and investment strategies, known for his research on the three-factor model together with Eugene F. Fama. http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html

the Appendix. To adjust for the non-normality I will winsorize all variables at the 10% level in both tails. As becomes apparent from table A2 of the Appendix, performing a new Shapiro-Francia test still indicates non-normality. However, the descriptive statistics of the winsorized variables, table A3 of the Appendix, show significantly improved values for skewness and kurtosis, indicating a nearly normal distribution. Therefore, the regression analysis will be performed using the winsorized variables. However, the winsorized values still exhibit non-normality and, therefore, the results should be interpreted with caution.

Moreover, when analysing the descriptive statistics of the winsorized variables, it becomes apparent that the medians of the accounting variables are remarkably low. Hence, the data indicates that target firms are poor performing firms in terms of return on assets, return on sales and asset turnover. This view is in line with the main body of literature, which argues that target firms tend to be poor performers. Black (1998), for example, finds that most activist proposals are targeted at companies who underperform their peers over a longer time frame. Bebchuk et al. (2015), also find that target firms tend to underperform their peers at the time of activism. Moreover, as mentioned in section 2.2.1, Karpoff et al. (1996) find that targets tend to have poor prior performance when measured by market-to-book ratios, operating return and sales growth. Since the variables ROA, ROA_{t+1}, ROA_{t+2} and ROS are all left skewed, the averages lie below the medians.

Table 4.1: Sample Characteristics

Activist Campaigns by Year			Activist campaigns by Industry		
	Amount	*Percentage*		*Amount*	*Percentage*
2014	279	20%	**Healthcare**	548	40%
2013	265	19%	**Technology**	176	13%
2012	368	27%	**Financials**	160	12%
2011	312	23%	**Cyclical Consumer Goods & Services**	154	11%
2010	161	12%	**Industrials**	134	10%
Total	**1385**	**100%**	**Total**	**1172**	**85%**

Activist Campaigns by Status			Activist campaigns by Demand		
	Amount	*Percentage*		*Amount*	*Percentage*
Dissident Victory	355	26%	**Seek Alternatives**	193	14%
Unresolved	333	25%	**Shareholder Rights**	180	13%
Settled	190	14%	**Board Control**	86	6%
Withdrawn	185	14%	**Hostile Acquisition**	78	6%
Management Victory	180	13%	**Board Representation**	45	3%
Total	**1243**	**93%**	**Total**	**582**	**43%**

Table 4.2: Descriptive Statistics

Variable	N	Mean	Median	Std. Dev.	Skew.	Kurt.
ROA	8,888	-18.1	0.8	281.2	-38.0	1,724.2
leadROA	7,927	-19.9	0.7	296.5	-36.3	1,563.2
lead2ROA	6,931	-19.8	0.7	296.9	-37.2	1,650.3
ROS	8,564	-177.2	2.2	7,791.2	5.8	2,352.1
lead2ROS	6,659	-179.1	2.1	8,737.9	5.4	1,911.2
ATO	8,901	0.9	0.7	3.4	85.8	7,842.7
lead2ATO	6,944	0.9	0.7	3.8	77.3	6,278.8
Target	5,450	0.2	0.0	0.4	1.3	2.7
logMV	11,425	5.4	5.2	2.5	0.0	3.3
BVMV	11,425	0.3	0.4	26.9	-61.5	3,965.4
Lev	8,845	17.0	27.1	1,282.2	-85.4	7,765.7

Table 4.2 presents the descriptive statistics for the main dependent and independent variables used in the regression analysis on post-targeting firm performance.

5. Empirical results

The following section summarizes the empirical findings of the tests performed on the sample of targeted companies during 2010-2014. First, in section 5.1, I discus the findings on the short-run stock price analysis. Second, the long-run stock price analysis is discussed in section 5.2. Lastly, section 5.3 describes the findings of the regression analysis on post-targeting firm performance.

5.1 Short-run stock price effects

In order to measure the short-run stock price effects of shareholder activism I will, as discussed in section 3.2.1, perform an event study to calculate the cumulative average abnormal returns (CAARs) around the campaign announcement date. In order to calculate the CAARs, I will calculate the expected returns using the Fama and French (1993) three factor model. The expected returns are used to calculate the cumulative abnormal returns and in turn the cumulative average abnormal return. The CAARs are calculated over three time frames, the windows of [-40,40], [-30,30] and [-20,20]. Finally, I test whether the CAARs are significantly different from zero by performing a time-series t-test, cross-sectional t-test and a standardized residual test, as discussed in section 3.2.1. The results can be found in table 5.1.

[-40,40] window. The time frame of 40 days prior to targeting up to 40 days after targeting presents a cumulative average abnormal return of 0.084. This indicates that firms being targeted by shareholder activism experience a cumulative average abnormal return of

8.4%, suggesting that the stock market perceives shareholder activism as a positive event. The time-series t-test shows a probability of <0.05, meaning we can reject the null hypothesis that the cumulative average abnormal return equals zero. The cross-sectional t-test also shows a probability of <0.05, meaning we can reject the null hypothesis that the cumulative average abnormal return equals zero. Finally, the standardized residual test also shows a probability of <0.05, meaning we can reject the null hypothesis that the cumulative average abnormal return equals zero. Therefore, we can conclude the findings are statistically different from zero.

[-30,30] window. The time frame of 30 days prior to targeting up to 30 days after targeting presents a cumulative average abnormal return of 0.080. This indicates that firms being targeted by shareholder activism experience a cumulative average abnormal return of 8.0%. Suggesting that the stock market perceives shareholder activism as a positive event. The time-series t-test, the cross-sectional t-test and the standardized residual test all show a probability of <0.05, meaning we can reject the null hypotheses that the cumulative average abnormal return equals zero. Therefore, we can conclude the findings are statistically different from zero.

[-20,20] window. The time frame of 20 days prior to targeting up to 20 days after targeting presents a cumulative average abnormal return of 0.073. This indicates that firms being targeted by shareholder activism experience a cumulative average abnormal return of 7.3%. Suggesting that the stock market perceives shareholder activism as a positive event. The time-series t-test, the cross-sectional t-test and the standardized residual test all show a probability of <0.05, meaning we can reject the null hypotheses that the cumulative average abnormal return equals zero. Therefore, we can conclude the findings are statistically different from zero.

The event studies around the time frames of [-40,40], [-30,30] and [-20,20] all show statistically significant positive cumulative abnormal returns in the range 7%-8%. The average over the three time frames is a CAAR of 7.9%. This finding is in line with the main body of literature. Brav et al. (2008), for example, find abnormal returns ranging from 7-8% round a [-20,20] timeframe for hedge fund activism. Moreover, Brav et al. (2010) find that the average short-term abnormal returns around the activism announcement date ranges from 5-10% across a variety of studies on hedge fund activism.

Graph 5.1 shows a graphical illustration of the cumulative average abnormal returns over the whole timeframe. It becomes evident from the graph that the abnormal returns start to increase already before the event date. This could indicate that some of the information about the activist campaign was already leaked before the campaign was announced. Overall,

the findings indicate that the market perceives activist campaigns as a positive event, validating the first hypothesis, *H1*.

Table 5.1: Results CAAR

Window	CAAR	Pos : Neg	T-test time-series	Prob.	t-test cross-sectional	Prob.	patell z	Prob.
(-40:40)	0.084	795 : 527	7.757	0.000	7.863	0.000	10.366	0.000
(-30:30)	0.080	819 : 503	8.429	0.000	8.733	0.000	11.829	0.000
(-20:20)	0.073	838 : 484	9.372	0.000	10.989	0.000	13.450	0.000

Table 5.1 presents the cumulative average abnormal returns around the announcement date of shareholder activism. "Window" presents the timeframe around the targeting announcement date. "CAAR" presents the cumulative abnormal returns found over the window. Abnormal returns are calculated as the return in excess of the expected returns as calculated by the Fama and French three factor model.

Figure 5.1: Cumulative Abnormal Returns over time
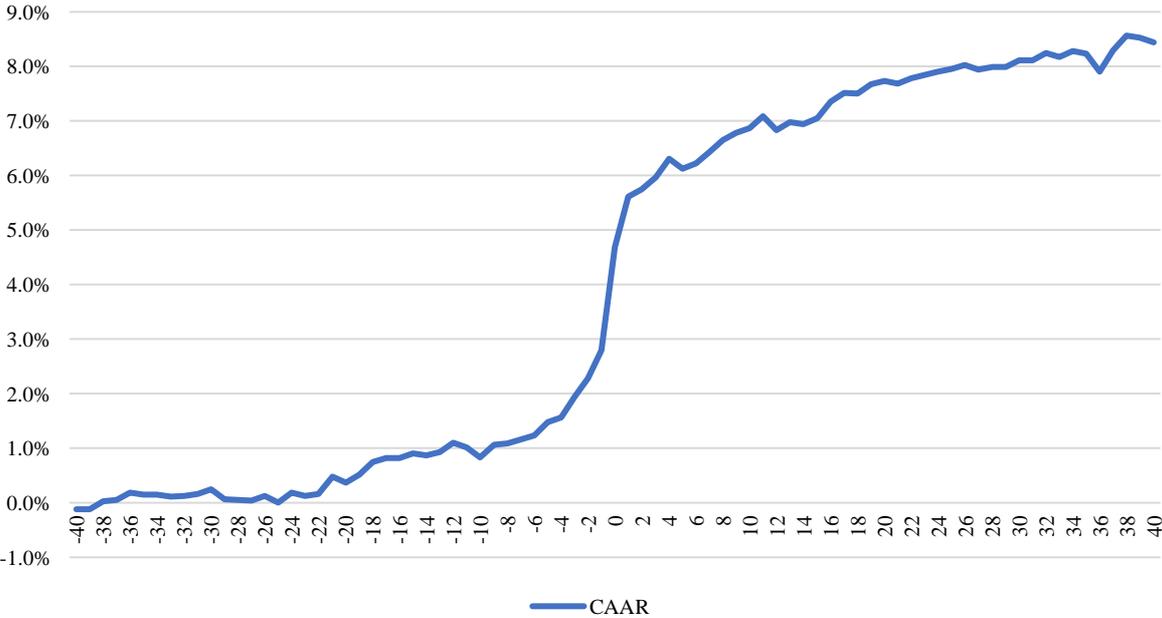
Figure 5.1 presents the cumulative abnormal returns around the announcement date of shareholder activism targeting. Where time "0" represents the campaign announcement date. The time frame ranges from 40 days prior to targeting up to 40 days after targeting.

5.2 Long-run stock price effects

The long-run return analysis is performed by running a calendar-time monthly portfolio (CTIME) regression around the event date, as discussed in section 3.2.2. The CTIME method can also be referred to as the Jensen's alpha approach. The Jensen's alpha is the intercept in a CTIME regression around the event date and can be interpreted as the portfolio's excess return that cannot be explained by the expected returns. To calculate the

expected returns the Fama and French (1993) three factor model is used. I formed a portfolio of all firms targeted within a months' time and the positions will be hold for 24 months before being sold.

Table 5.2 shows the results as found by the Calendar-Time Portfolio method. Under the null hypothesis of no abnormal returns, the estimate of α_i should be not statistically different from zero. Table 5.2 present a positive alpha of 0.001. Moreover, from the factor loading on SMB, it becomes apparent that the target firms are slightly negatively correlated with the returns of small firms, indicating that target firms are relatively large in size. The coefficient on the HML factor indicates that target firms are value firms, however the coefficient is not statistically significant.

If the effect of shareholder activism on target firms' share price would be purely temporary and simply reflect a trading friction, we would expect to find negative abnormal returns shortly after the event and, hence, a negative value for alpha. Therefore, the CTIME regression does not find evidence of long-run underperformance or reversal of short-term returns. In fact, it produces a small but positive alpha, indicating a positive long-term effect. However, when performing a t-Statistic and a t-Statistic (White) test we find $p > 0.05$. These p-values indicate that the findings are statistically insignificant and, hence, I cannot reject the null hypothesis of no abnormal returns.

The result is in line with the research of Bebchuk et al. (2015), who run CTIME regressions over a thirty-six-month and sixty-month period following targeting and find positive alpha's, however statistically insignificant. Since the CTIME regression does not produce statistically significant results, we cannot draw conclusions from it. Hence, we can neither refute nor confirm the null hypothesis of *H2*.

Table 5.2: Results CTIME regression

	Coefficient	t-Statistic	Probability	t-Statistic (White)	Probability
Alpha	0.001	0.923	0.357	0.917	0.299
Beta	0.001	2.365	2.365	1.877	0.020
SMB	-0.010	-4.560	-4.560	-4.927	0.000
HML	0.003	1.299	1.299	1.349	0.882
R2	0.054				

Table 5.2 reports the long-term abnormal returns around shareholder activism using a Calendar-Time Portfolio method. The window of the CTIME regression ranges from one month prior targeting up to 24 months after targeting. "Alpha" presents the estimate of the regression intercept and can be interpreted as the portfolio's excess return that cannot be explained by the expected returns as calculated by the Fama and French three factor model. "Beta" is the factor loading on the market excess return, "SMB" is the factor loading on the Fama and French size factor and "HML" the factor loading on the Fama and French book-to-market factor. R2 is the R-squared from the regression.

5.3 Post-targeting firm performance

In order to measure the impact of shareholder activism on firm performance, I run multiple regressions, as specified in section 3.2.3, on the panel data of all firms targeted by activist shareholders in the period 2010-2014. In section 5.3.1, I start off with a multivariate regressions analysis to measure the effect of being targeted by shareholder activism on firm performance. I discuss the multivariate regression outcomes with as dependent variables ROA, ROA_{t+1}, ROA_{t+2} and the DuPont metrics ROS and ATO. In section 5.3.2, I discuss the effect of campaign demand and campaign status on ROA, to further specify the effect that activist campaigns have on firm performance. I ran multivariate regressions with as dependent variable ROA and independent variables the created campaign demand and campaign status dummies.

5.3.1 ROA and DuPont

I start off with running the multivariate regression, equation (9) as discussed in section 3.2.3.1, with as dependent variable ROA, ROA_{t+1}, and ROA_{t+2}. The outcomes of the multivariate regression are presented in table 5.3.

Model checks. Before running the regressions, I start with multiple model checks to see if adjustments are needed for fixed effects, time-specific fixed effects, heteroscedasticity, serial correlation and multicollinearity. Table A4 of the Appendix, describes the results found for these tests. First, I test whether we need to analyse the data using fixed or random effects by running a Hausman Test. The Hausman Test indicates whether the unique errors are correlated with the regressors. The null hypothesis holds that the preferred model is random effects. For ROA, leadROA and lead2ROA we can reject the null hypothesis, meaning we should use fixed effects. Second, I use a Wald test to determine if the regression model needs adjustments for time-specific fixed effects. Running the Wald test, I find that there are time-specific fixed effects in the model and adjust accordingly by adding dummy variables for time. Third, I test the models for heteroscedasticity and find for all three models heteroscedasticity, suggesting I should control for this phenomenon. Fourth, I test the models for serial correlation and find for all models serial correlation and will adjust accordingly. Since, the model checks indicate both heteroscedasticity and serial correlation, I should run a regression with robust standard errors. However, the findings of the Hausman tests do not support robust standard errors models and, thus, I have to run a robust Hausman test, xtoverid, to check if a fixed effects model is still necessary. The test indicates a p-value below 0.05, indicating I should indeed use a fixed effect model. By running a fixed effect regression, fixed

effects like industry and country are controlled for. Finally, I test for multicollinearity by running a VIF test. The VIF levels are all well below 2 and thus indicate no multicollinearity.

Intercept. The constant in the model, α_t, presents the expected value of the dependent variable, ROA, ROA_{t+1} or ROA_{t+2}, when all independent variables are equal to zero. Hence, the intercept variable on the regression can be interpreted as the change in ROA, which cannot be explained by the log of market value, the book-to-market value, the level of leverage and the fixed effects and time-fixed effects control variables. The negative intercept in the first model is in line with the literature indicating that target firms tend to be underperformers. The intercept shows a reversion in ROA during the two years following the targeting. The intercepts in all three models are significant, indicating that there are unexplained factors, which impact ROA.

ROA. ROA Column (5) of Table 5.3 reports a negative coefficient estimate on the dummy variable *Target* of -1.328. The coefficient can be interpreted as when a firm is being targeted, ROA will decrease by approximately 1.3%. Indicating that being a target of an activist campaign has a negative effect on that years' firm's return on assets and, thus, firm performance. The coefficient is statistically significant at the 0.1% level.

ROA_{t+1}. leadROA Column (5) of Table 5.3 reports a negative outcome of -0.460 on the dummy variable Target. Meaning that being targeted by an activist shareholder will decrease return on assets with 0.5% one year after being targeted. The coefficient is, however, not statistically significant when controlling for time-effects.

ROA_{t+2}. Lead2ROA Column (5) of Table 5.3 reports a positive outcome of 0.676 on the dummy variable Target. Meaning that being targeted by an activist shareholder leads to an increase of 0.7% in ROA two years after being targeted. Hence, shareholder activism leads to an increase in firm performance two years after targeting. The coefficient is statistically significant at the 5% level.

Control variables. The log of market value and the book-to-market value have a positive statistically significant effect on ROA. However, the log of market value and the book-to-market variable have a negative statistically significant effect on ROA_{t+1} and ROA_{t+2}. The latter is in line with the findings of Fama and French (1995), who find that small firms with low book-to-market values are associated with higher profitability. Moreover, in line with the findings of Fama and French (1995) the book-to-market value is a stronger indicator of profitability than size. The variable leverage has a negative effect on ROA and ROA_{t+1} and positive on ROA_{t+2}. However, the effect is only statistically significant at ROA, indicating that an increase in leverage has a negative effect on that years return on assets.

The results indicate that being targeted by shareholder activism, negatively impacts firm performance, as measured by return on assets, the year of being targeted. This could be explained by activist campaigns distracting management and thereby disrupting the firm's operations (Karpoff et al., 1996) or by general underperformance of the target firm. The results, however, indicate that being targeted by activism has a positive effect on the return on assets in the two years following targeting. This indicates that activism does improve firm performance in the long-term. Hence, it could be the case that the proposed changes take a longer time to present positive effects on firm performance. The empirical results are in line with the findings of Bebchuk et al. (2015), who find that the coefficient on dummy variables of being targeted increase each year relative to the time of being targeted. Moreover, Brav et al. (2008) also find similar results. They measure the effect of activism on ROA (however defined as EBITDA/Assets) and find that performance deteriorates during the event year, but recovers two years after the event.

Subsequently, I move on with the DuPont analysis, to gain a thorough understanding of the source of the target companies performance as measured by ROA. I run the multivariate regressions equation (9) as discussed in section 3.2.3, with as dependent variable ROS and ATO. The outcomes of the multivariate regression are presented in table 5.4.

Model checks. Before running the regressions, I start with multiple model checks to see if adjustments are needed for fixed effects, time-specific fixed effects, heteroscedasticity, serial correlation and multicollinearity. Table A5 of the Appendix, describes the results found for these tests. First, I test whether we need to analyse the data using fixed or random effects by running a Hausman Test. The Hausman Test tests whether the unique errors are correlated with the regressors. The null hypothesis holds that the preferred model is random effects. For both models we can reject the null hypothesis, meaning we should use fixed effects. Second, I use a Wald test to determine if the regression model needs adjustments for time-specific fixed effects. Running the Wald test, I find that there are time-specific effects and will control for it by adding dummy variables for time. Third, I test the models for heteroscedasticity and find for both models heteroscedasticity, suggesting I should control for heteroscedasticity. Since, the model checks indicate both heteroscedasticity and serial correlation, I should run a regression with robust standard errors. However, the findings of the Hausman tests do not support robust standard errors models and, thus, I have to run a robust Hausman test, xtoverid, to check if a fixed effects model is still necessary. The test indicates a p-value below 0.05, indicating I should indeed use a fixed effect model. By running the fixed effect regression, fixed effects like industry and country are controlled for. Finally, I test for multicollinearity

by running a VIF test. The VIF levels are all well below 2 and thus indicate no multicollinearity.

ROS. ROS column (5) of Table 5.4 reports a negative coefficient estimate on the dummy variable *Target* of -1.832. The coefficient can be interpreted as when a firm is being targeted, ROS will decrease by approximately 1.8%. Indicating that being a target of an activist campaign has negative effect on a firm's return on sales. The coefficient is statistically significant at the 0.1% level. As ROS can be interpreted as a measure of operating efficiency, the regression analysis indicates that shareholder activism has a negative effect on a target firms' operating efficiency. The control variables market value and book-to-market value are both positive and statistically significant. The control variable for leverage has a slightly negative statistically significant coefficient.

ATO. ATO column (5) of Table 5.4 reports a positive coefficient estimate on the dummy variable *Target* of 0.001. The coefficient can be interpreted as when a firm is being targeted by shareholder activism, ATO will increase by approximately 0.001%. Indicating that being a target of an activist campaign has a very small positive effect on a firm's asset turnover. However, the coefficient is statistically insignificant. As ATO measures the efficiency of the use of assets in place, the results indicate that shareholder activism has a negligible effect on the efficiency of asset use. The control variables market value and book-to-market value are both slightly negative and statistically significant. The control variable for leverage has a negative statistically insignificant coefficient.

ROS_{t+2} and ATO_{t+2}. Since the findings on ROA_{t+2} indicate that activism does have a positive effect on return on assets two years after being targeted, it might be of interest to break down ROA in a DuPont analysis and examine the effect of activism on ROS_{t+2} and ATO_{t+2}. Table A6 in the appendix presents an overview of the model checks, indicating I will run a robust standard errors regression with fixed and time-fixed effects. The results of the regression analysis are presented in table A7. Lead2ROS column (5) presents a positive factor loading on the dummy variable Target of 0.62. Indicating that activism increases return on sales, hence operating efficiency, by 0.6%. lead2ATO column (5) presents a negative factor loading on the dummy variable Target of -0.001. This indicates that activism negatively impacts asset turnover by 0.001%. However, both findings are statistically insignificant and, hence, we cannot draw conclusions from it.

The DuPont analysis breaks return on assets down into return on sales and asset turnover. The regressions indicate that the negative effect of shareholder activism on ROA is mainly due to a negative effect on ROS. The effect on asset turnover is positive, but

statistically insignificant. As return on sales is a measure of operating efficiency, the research indicates that activism negatively impacts operating efficiency in the year of being targeted. This finding contributes to the existing literature by providing a deeper understanding of the effect of activism on firm performance as measured by ROA and indicates that activism mainly has a negative effect on the return on sales, hence operating efficiency. The analysis on the DuPont variables, two years after being targeted, also indicates a larger effect on return on sales. The results indicate that activism has a positive effect on ROS_{t+2}. However, the finding is not statistically significant and, hence, we cannot draw conclusions from it.

Table 5.3: post-targeting performance as measured by ROA, ROA_{t+1} and ROA_{t+2}

Variables	ROA					leadROA					lead2ROA				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Intercept	-2.106***	-9.385***	-28.200***	-23.560***	-23.310***	-2.680***	1.168	8.434**	9.096**	8.683**	-3.044***	1.699	8.998***	8.219**	7.929**
Target	-1.333***	-1.297***	-1.483***	-1.408***	-1.328***	-0.881**	-0.856**	-0.781*	-0.642*	-0.460	0.656*	0.633*	0.709*	0.629*	0.676*
logMV		1.349***	3.665***	3.306***	3.279***		-0.686	-1.576**	-1.565**	-1.298*		-0.837*	-1.726***	-1.632***	-1.505***
BVMV			8.325***	7.308***	7.403***			-3.205***	-3.082***	-3.568***			-3.195***	-3.056***	-3.211***
Lev				-0.066***	-0.064***				-0.026	-0.023				0.00924	0.0123
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time-fixed effects	No	No	No	No	Yes	No	No	No	No	Yes	No	No	No	No	Yes
Model statistics															
N	4,506	4,371	4,371	4,337	4,337	4160	4,023	4,023	3,992	3,992	3,809	3,675	3,675	3,644	3,644
R squared	0.007	0.013	0.077	0.083	0.086	0.003	0.004	0.013	0.011	0.018	0.002	0.004	0.013	0.012	0.016
Adj. R squared	0.007	0.013	0.076	0.083	0.084	0.002	0.003	0.012	0.01	0.016	0.001	0.003	0.012	0.011	0.014

This table presents the results from running a multivariate regression, as describe in section 3.2.3.1, on the panel data of firms being targeted by shareholder activism over the period 2010-2014. As dependent variable ROA, ROA_{t+1} and ROA_{t+2} are used as a measure of firm performance. The main independent variable is Target, which represents a dummy variable for firm *i* being targeted at time *t*. Column (2) adds the variable log of market value to control for size. Column (3) additionally adds a control variable for book-to-market value. Column (4) additionally includes leverage as a control variable. Finally, in column (5), time-fixed effects are taken into account. Standard errors and heteroscedasticity are controlled for by running a robust standard errors model. All models are run including fixed effects to control for industry and country effects.

Significance levels: * $p<0.05$, ** $p<0.01$, *** $p<0.001$

Table 5.4: post-targeting performance as measured by DuPont variables

	ROS					ATO				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Variables										
Intercept	-2.629***	-14.87***	-36.13***	-30.05***	-29.30***	0.783***	0.901***	1.163***	1.231***	1.223***
Target	-1.682***	-1.734***	-1.927***	-1.843***	-1.832***	-0.001	-0.003	-0.001	0.002	0.001
logMV		2.227**	4.819***	4.350***	4.145***		-0.020	-0.052***	-0.057***	-0.057***
BVMV			9.302***	8.087***	8.556***			-0.116***	-0.128***	-0.129***
Lev				-0.087**	-0.087**				-0.001	-0.001
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time-fixed effects	No	No	No	No	Yes	No	No	No	No	Yes
Model statistics										
N	4,317	4,198	4,198	4,174	4,174	4,511	4,374	4,374	4,340	4,340
R squared	0.004	0.010	0.037	0.041	0.045	0.000	0.002	0.024	0.029	0.033
Adj. R squared	0.004	0.010	0.036	0.040	0.043	0.000	0.002	0.023	0.028	0.031

This table presents the results from running a multivariate regression, as describe in section 3.2.3.1, on the panel data of firms being targeted by shareholder activism over the period 2010-2014. As dependent variable ROS and ATO are used to decompose the effect of targeting on ROA according to a DuPont analysis. The main independent variable is Target, which represents a dummy variable for firm *i* being targeted at time *t*. Column (2) adds the variable log of market value to control for size. Column (3) additionally adds a control variable for book-to-market value. Column (4) additionally includes leverage as a control variable. Finally, in column (5), time-fixed effects are taken into account. Standard errors and heteroscedasticity are controlled for by running a robust standard errors model. All models are run including fixed effects to control for industry and country effects.

Significance levels: * p<0.05, ** p<0.01, *** p<0.001

5.3.2 Campaign demand and status

To gain a better insight into the source of the effect of activist campaigns on firm performance, I run regression (9) as discussed in section 3.2.3, with as independent variable dummies for campaign demand and campaign status. As the dependent variable, I will use ROA as a measure of firm performance. I start off with running the multivariate regression, equation (9) as discussed in section 3.2.3, with as dependent variable ROA and independent variable dummy variables created for campaign demand. I will create, as discussed in section 3.2.3.2, the following dummy variables: BoardRep, SeekAlt, SHRights, BoardControl and HostileAcq. The outcomes of the multivariate regression are presented in table 5.5.

Model checks. I start with multiple model checks to see if adjustments are needed for fixed effects, time-specific fixed effects, heteroscedasticity, serial correlation and multicollinearity. Table A8 of the Appendix, describes the results found for these tests. First, I test whether we need to analyse the data using fixed or random effects by running a Hausman Test. For all BoardRep, SeekAlt, SHRights, BoardControl and HostileAcq we reject the null hypothesis, meaning we should use fixed effects. By running a fixed effects regression I will control for industry and country effects. Second, I use a Wald test to determine if the regression model needs adjustments for time-specific fixed effects. Running the Wald test, I find I should control for time-fixed effects and will add dummy variables for time to the regressions. Third, I test the models for heteroscedasticity and find for all models heteroscedasticity, suggesting I should control for it. Fourth, I test the models for serial correlation and find serial correlation for all five models. Hence, I run a regression with robust standard errors and should run a robust Hausman test to check whether fixed effects is still the preferred model. The test indicates that for all models a fixed effects regression is preferred. Finally, I test for multicollinearity and for all five models do not find evidence.

Board Representation. BoardRep column (5) of Table 5.5 reports a negative coefficient estimate on the dummy variable *BoardRep* of -0.956. The coefficient can be interpreted as when a firm is being targeted by a campaign demanding board representation, ROA will decrease by approximately 1.0%. Suggesting that being a target of an activist campaign, which demands board representation, negatively impacts a firm's return on assets. However, the coefficient is statistically insignificant. The control variables market value and book-to-market value are positive and significant at the 0.1% level. The control variable for leverage has a negative coefficient, which is statistically significant at the 0.1% level.

Seek Alternatives. SeekAlt column (5) of Table 5.5 reports a positive coefficient estimate on the dummy variable *SeekAlt* of 0.153. The coefficient can be interpreted as when

a firm is being targeted by a campaign demanding seeking alternatives, ROA will increase by approximately 0.2%. Indicating that being a target of an activist campaign that demands seeking alternatives positively impacts a firm's return on assets. However, the coefficient is statistically insignificant. The control variables log of market value and book-to-market value are positive and significant at the 0.1% level. The control variable for leverage has a negative coefficient, which is statistically significant at the 0.1% level.

Shareholder Rights. SHRights column (5) of Table 5.5 reports a negative coefficient estimate on the dummy variable *SHRights* of -0.651. The coefficient can be interpreted as when a firm is being targeted by a campaign demanding shareholder rights, ROA will decrease by approximately 0.7%. Indicating that being a target of an activist campaign that demands shareholder rights negatively impacts a firm's return on assets. However, the coefficient is statistically insignificant. The control variable log market value and the book-to-market value variable are both positive and statistically significant. The control variable leverage has a negative coefficient and is statistically significant at the 0.1% level.

Board Control. BoardControl column (5) of Table 5.5 reports a negative coefficient estimate on the dummy variable *BoardControl* of -2.696. The coefficient can be interpreted as when a firm is being targeted by a campaign demanding board control, ROA will decrease by approximately 2.7%. This suggests that being a target of an activist campaign, which demands board control, negatively impacts a firm's return on assets. Moreover, the coefficient is statistically significant at the 5% level. The control variable log of market value and the book-to-market value variable are both positive and statistically significant. The control variable leverage has a negative coefficient and is statistically significant at the 0.1% level.

Hostile Acquisition. HostileAcq column (5) of Table 5.5 reports a negative coefficient estimate on the dummy variable *HostileAcq* of -0.071. The coefficient can be interpreted as when a firm is being targeted by a campaign demanding a hostile acquisition, ROA will decrease by approximately 0.1%. Indicating that being a target of an activist campaign that demands a hostile acquisition negatively impacts a firm's return on assets. However, the coefficient is statistically insignificant. The control variable log of market value and the book-to-market value variable are both positive and statistically significant at the 0.1% level. The control variable leverage has a negative coefficient and is statistically significant at the 0.1% level.

The regression analysis of the effect of campaign demand on firm performance indicates that the impact of activism on firm performance, as measured by ROA, differs across campaign demands. This is in line with the findings of Brav et al. (2010), who find that

the effect of shareholder activism depends on the actions demanded. Of the five most demanded actions, only Seeking Alternatives has a positive effect on ROA. However, the coefficients on BoardRep, SeekAlt, SHRights and HostileAcq are all statistically insignificant. The coefficient on BoardControl does provide a statistically significant result. The results indicate that BoardControl decreases ROA by 2.7%. This finding is consistent with the view of Romano (2000), who states that reforming board composition and structure does not improve firm performance.

Thereafter, I continue with the regression analysis using dummy variables for the status of the activist campaign, to explore the effect that the outcome of a campaign has on firm performance. I run the multivariate regression, equation (9), as discussed in section 3.2.3.2, with as dependent variable ROA and independent variable dummy variables created for campaign status. I will create, as discussed in section 3.2.3.2, the following dummy variables: DisVic, Unresolved, Settled, Withdrawn and ManVic. The outcomes of the multivariate regression are presented in table 5.6.

Model checks. Once more, I start with multiple model checks to see if adjustments are needed for fixed effects, time-specific fixed effects, heteroscedasticity, serial correlation and multicollinearity. Table A9 of the Appendix, describes the results found for these tests. First, I test whether we need to analyse the data using fixed or random effects by running a Hausman Test. For all DisVic, Unresolved, Settled, Withdrawn and ManVic we reject the null hypothesis, meaning we should use fixed effects. By running a fixed effects regression I will automatically control for industry and country effects. Second, I use a Wald test to determine if the regression model needs adjustments for time-specific fixed effects. Running the Wald test, I find time-specific fixed effects and control for it by creating dummy variables for time. Third, I test the models for heteroscedasticity and find for all models heteroscedasticity, suggesting I should control for heteroscedasticity. Fourth, I test the models for serial correlation and finds serial correlation in all models and will adjust accordingly. Hence, I run a regression with robust standard errors and should run a robust Hausman test to check whether fixed effects is still the preferred model. The test indicates that for all models a fixed effects regression is preferred. Finally, I test for multicollinearity and for all five models find VIF values below 2 and thus do not find evidence of multicollinearity.

Dissident Victory. DisVic column (5) of Table 5.6 reports a negative coefficient estimate on the dummy variable *DisVic* of -0.878. The coefficient can be interpreted as when a firm is being targeted by an activist shareholder and the campaign is successful for the activist, ROA will decrease by approximately 0.9%. Indicating that being a target of an

activist campaign, won by the activist shareholder, negatively impacts a firm's return on assets. However, the coefficient is not statistically significant. The control variable market value and the book-to-market value variable are both positive and statistically significant. The control variable leverage has a negative coefficient and is statistically significant at the 0.1% level.

Unresolved. Unresolved column (5) of Table 5.6 reports a negative coefficient estimate on the dummy variable *Unresolved* of -1.193. The coefficient can be interpreted as when a firm is being targeted by an activist shareholder and the campaign remains unresolved, ROA will decrease by approximately 1.2%. Indicating that being a target of an activist campaign, which remains unresolved, negatively impacts a firm's return on assets. Moreover, the coefficient is statistically significant at the 5% level. The control variable market value and the book-to-market value variable are both positive and statistically significant. The control variable leverage has a negative coefficient and is statistically significant.

Settled. Settled column (5) of Table 5.6 reports a positive coefficient estimate on the dummy variable *Settled* of -1.529. The coefficient can be interpreted as when a firm is being targeted by an activist shareholder and the campaign is settled, ROA will decrease by approximately 1.5%. The coefficient is statistically significant at the 5% level. Indicating that being a target of an activist campaign, which is settled with the activist shareholder, negatively impacts a firm's return on assets. The control variable market value and the book-to-market value variable are both positive and statistically significant at the 0.1% level. The control variable leverage has a negative coefficient and is statistically significant.

Withdrawn. Withdrawn column (5) of Table 5.6 reports a negative coefficient estimate on the dummy variable *Withdrawn* of -1.583. The coefficient can be interpreted as when a firm is being targeted by an activist shareholder and the campaign is withdrawn, ROA will decrease by approximately 1.6%. This suggests that being a target of an activist campaign, which is withdrawn, negatively impacts a firm's return on assets. However, the coefficient is statistically significant at the 5% level. The control variable market value and the book-to-market value variable are both positive and statistically significant. The control variable leverage has a negative coefficient and is statistically significant.

Management Victory. ManVic column (4) of Table 5.6 reports a negative coefficient estimate on the dummy variable *ManVic* of -0.113. The coefficient can be interpreted as when a firm is being targeted by an activist shareholder and the campaign is overcome by the firm's management, ROA will decrease by approximately 0.1%. Indicating that being a target of an

activist campaign, which is overcome by management, slightly negatively impacts a firm's return on assets. However, the coefficient is statistically insignificant. The control variable market value and the book-to-market value variable are both positive and statistically significant. The control variable leverage has a negative coefficient and is statistically significant.

The regression analysis on the effect of the outcome of an activist campaign on firm performance indicates that the impact of activism on firm performance, as measured by ROA, differs across the campaign outcomes. This finding is in line with the finding of Smith (1996) who finds that the effect of shareholder activism differs depending on the outcome of targeting. The results of the regression analysis show a negative effect of all campaign statuses on firm performance. However, the findings on the status dissident victory and management victory are statistically insignificant and, hence, we cannot draw conclusions from these findings. However, the coefficient on the dummy variable unresolved indicates that the campaign outcome unresolved has a negative statistically significant effect on firm performance as measured by ROA. The same result is produced for the campaign status settled and withdrawn. In all three cases, the proposed action by the activist shareholder is not executed; however, the campaign did consume time of the firm's management. Hence, we could reason that the targeting distracted management and disrupted the firm's operations, therefore, causing a decrease in firm performance.

Overall, the empirical results indicate that shareholder activism has a negative effect on that year's firm performance as measured by return on assets. One way to interpret this result is that activism distracts management and thereby disrupts the target firm's operations (Karpoff et al., 1996). Another view is that target firms were already underperformers. When performing a DuPont analysis by breaking down ROA into return on sales and return on assets, it becomes evident that the negative effect of targeting is mainly caused by a decrease in return on sales. Since return on sales is a measure of operating efficiency, the findings indicate that activism especially negatively impacts operating efficiency in the year of being targeted. Moreover, when analysing the effect that the action demanded by activists has on firm performance, we find that the effect on target performance indeed differs across campaign demand. I find that BoardControl has a statistically significant negative effect on ROA. The other demands, however, provide statistically insignificant results and, hence, we cannot draw conclusions from them. Finally, I investigate the effect that the outcome of a campaign has on firm performance. The empirical findings indicate that campaigns being unresolved, withdrawn or settled produce a statistically significant negative effect on firm

performance. We could reason that these campaigns did consume management time, but did not lead to a direct action, and therefore only served as a distraction to management. On the other hand, the empirical findings do indicate a positive effect of shareholder activism on return on assets two years after being targeted. A DuPont analysis on ROA_{t+2}, indicates that the largest effect is caused by an increase in return on sales. However, this finding is statistically insignificant. Overall, the findings are in line with the research of Bebchuk et al. (2015) and Becht et al. (2008), who also find that activism has a positive effect on target firm performance in the long-run. The third hypothesis, *H3*, states that shareholder activism positively influences target firm's operating performance as measured by ROA. The empirical research shows a somewhat mixed result, however I find that activism indeed positively influences ROA two years after being targeted. This suggests that the proposed actions might take longer to manifest. Therefore, we can conclude that activism indeed has a positive influence on long-term firm performance and, hence, we can accept *H3*.

Table 5.5: post-targeting performance campaign demand

Variables	BoardRep					SeekAlt					SHRights				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Intercept	-2.538***	-13.600***	-26.550***	-22.050***	-19.210***	-2.566***	-13.64***	-26.57***	-22.08***	-19.21***	-2.547***	-13.62***	-26.56***	-22.08***	-19.22***
Demand	-0.663	-0.457	-0.686	-0.746	-0.956	0.611	0.578	0.285	0.102	0.153	-0.57	-0.512	-0.668	-0.562	-0.651
logMV		2.024***	3.581***	3.328***	3.123***		2.027***	3.581***	3.329***	3.124***		2.027***	3.583***	3.330***	3.125***
BVMV			6.109***	5.148***	5.639***			6.097***	5.138***	5.631***			6.103***	5.142***	5.636***
Lev				-0.081***	-0.074***				-0.081***	-0.074***				-0.081***	-0.074***
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time-fixed effects	No	No	No	No	Yes	No	No	No	No	Yes	No	No	No	No	Yes
Model statistics															
N	8,888	8,522	8,522	8,396	8,396	8,888	8,522	8,522	8,396	8,396	8,888	8,522	8,522	8,396	8,396
R squared	0.000	0.021	0.061	0.078	0.094	0.000	0.021	0.061	0.078	0.094	0.000	0.021	0.061	0.078	0.094
Adj. R squared	0.000	0.021	0.061	0.078	0.092	0.000	0.021	0.06	0.078	0.092	0.000	0.021	0.061	0.078	0.092

This table presents the results from running a multivariate regression, as describe in section 3.2.3.2, on the panel data of firms being targeted by shareholder activism over the period 2010-2014. As dependent variable ROA, Net Income/Assets, is used as a measure of firm performance. In each model the main independent variables represent dummy variables for the actions demanded by the activist campaign. Column (2) adds the variable log of market value to control for size. Column (3) additionally adds a control variable for book-to-market value. Column (4) additionally includes leverage as a control variable. Finally, in column (5), time-fixed effects are taken into account. Standard errors and heteroscedasticity are controlled for by running a robust standard errors model. All models are run including fixed effects to control for industry and country effects.
Significance levels: * $p<0.05$, ** $p<0.01$, *** $p<0.001$

Table 5.5 cont'd: post-targeting performance campaign demand

Variables	BoardControl					HostileAcq				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Intercept	-2.531***	-13.57***	-26.51***	-22.02***	-19.16***	-2.557***	-13.62***	-26.56***	-22.07***	-19.21***
Demand	-3.074**	-2.654*	-2.583*	-2.437*	-2.696*	0.281	-0.181	-0.218	-0.240	-0.071
logMV		2.021***	3.576***	3.323***	3.116***		2.026***	3.581***	3.329***	3.124***
BVMV			6.097***	5.136***	5.631***			6.100***	5.140***	5.633***
Lev				-0.081***	-0.074***				-0.081***	-0.074***
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time-fixed effects	No	No	No	No	Yes	No	No	No	No	Yes
Model statistics										
N	8,888	8,522	8,522	8,396	8,396	8,888	8,522	8,522	8,396	8,396
R squared	0.001	0.022	0.062	0.079	0.094	0.000	0.021	0.061	0.078	0.094
Adj. R squared	0.001	0.021	0.061	0.078	0.093	0.000	0.02	0.06	0.078	0.092

This table presents the results from running a multivariate regression, as describe in section 3.2.3.2, on the panel data of firms being targeted by shareholder activism over the period 2010-2014. As dependent variable ROA, Net Income/Assets, is used as a measure of firm performance. In each model the main independent variables represent dummy variables for the actions demanded by the activist campaign. Column (2) adds the variable log of market value to control for size. Column (3) additionally adds a control variable for book-to-market value. Column (4) additionally includes leverage as a control variable. Finally, in column (5), time-fixed effects are taken into account. Standard errors and heteroscedasticity are controlled for by running a robust standard errors model. All models are run including fixed effects to control for industry and country effects.
Significance levels: * $p<0.05$, ** $p<0.01$, *** $p<0.001$

Table 5.6: post-targeting performance campaign status

Variables	DisVic					Unresolved					Settled				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Intercept	-2.537***	-13.58***	-26.54***	-22.05***	-19.21***	-2.519***	-13.57***	-26.52***	-22.04***	-19.20***	-2.537***	-13.60***	-26.55***	-22.05***	-19.22***
Status	-0.651	-0.638	-0.871	-0.793	-0.878	-1.254*	-1.250*	-1.289*	-1.270*	-1.193*	-1.093	-0.916	-1.107	-1.245	-1.529*
logMV		2.023***	3.580***	3.327***	3.123***		2.024***	3.580***	3.328***	3.122***		2.025***	3.582***	3.329***	3.125***
BVMV			6.113***	5.152***	5.642***			6.103***	5.145***	5.636***			6.108***	5.146***	5.637***
Lev				-0.081***	-0.073***				-0.081***	-0.074***				-0.081***	-0.074***
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time-fixed effects	No	No	No	No	Yes	No	No	No	No	Yes	No	No	No	No	Yes
Model statistics															
N	8,888	8,522	8,522	8,396	8,396	8,888	8,522	8,522	8,396	8,396	8,888	8,522	8,522	8,396	8,396
R squared	0.000	0.021	0.061	0.078	0.094	0.001	0.021	0.061	0.079	0.094	0.000	0.021	0.061	0.078	0.094
Adj. R squared	0.000	0.021	0.061	0.078	0.092	0.001	0.021	0.061	0.078	0.093	0.000	0.021	0.061	0.078	0.093

This table presents the results from running a multivariate regression, as describe in section 3.2.3.2, on the panel data of firms being targeted by shareholder activism over the period 2010-2014. As dependent variable ROA, Net Income/Assets, is used as a measure of firm performance. In each model the main independent variables represent dummy variables for the status of the campaign. Column (2) adds the variable log of market value to control for size. Column (3) additionally adds a control variable for book-to-market value. Column (4) additionally includes leverage as a control variable. Finally, in column (5), time-fixed effects are taken into account. Standard errors and heteroscedasticity are controlled for by running a robust standard errors model. All models are run including fixed effects to control for industry and country effects.
Significance levels: * p<0.05, ** p<0.01, *** p<0.001

Table 5.6 cont'd: post-targeting performance campaign status

Variables	Withdrawn					ManVic				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Intercept	-2.543***	-13.60***	-26.55***	-22.04***	-19.17***	-2.556***	-13.63***	-26.56***	-22.07***	-19.21***
Status	-0.776	-0.622	-0.797	-1.062	-1.583*	0.016	0.378	-0.081	0.122	-0.113
logMV		2.025***	3.581***	3.326***	3.119***		2.027***	3.582***	3.329***	3.124***
BVMV			6.105***	5.141***	5.639***			6.101***	5.137***	5.634***
Lev				-0.081***	-0.074***				-0.081***	-0.074***
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time-fixed effects	No	No	No	No	Yes	No	No	No	No	Yes
Model statistics										
N	8,888	8,522	8,522	8,396	8,396	8,888	8,522	8,522	8,396	8,396
R squared	0.000	0.021	0.061	0.078	0.094	0.000	0.021	0.061	0.078	0.094
Adj. R squared	0.000	0.021	0.061	0.078	0.093	0.000	0.021	0.06	0.078	0.092

This table presents the results from running a multivariate regression, as describe in section 3.2.3.2, on the panel data of firms being targeted by shareholder activism over the period 2010-2014. As dependent variable ROA, Net Income/Assets, is used as a measure of firm performance. In each model the main independent variables represent dummy variables for status of the campaign. Column (2) adds the variable log of market value to control for size. Column (3) additionally adds a control variable for book-to-market value. Column (4) additionally includes leverage as a control variable. Finally, in column (5), time-fixed effects are taken into account. Standard errors and heteroscedasticity are controlled for by running a robust standard errors model. All models are run including fixed effects to control for industry and country effects.
Significance levels: * p<0.05, ** p<0.01, *** p<0.001

6. Conclusion

Over the recent years, shareholder activism has evolved from an occasional threat facing corporate management to a frequently occurring event. The impact of shareholder activism has, therefore, became a topic of public debate. However, the literature on shareholder activism presents a controversial view on the effects of activism on target companies. In general, the literature presents three main competing views: (1) shareholder activist as bullies, (2) shareholder activists as ineffective and (3) shareholder activists as monitors. When analysing the existing literature, it becomes evident that shareholder activism has become more successful over time. However, most of the recent literature is devoted to hedge fund activism. The question arises if shareholder activism overall has become more successful or just hedge fund activism. Therefore, this paper makes a contribution to the existing literature by analysing recent data on shareholder activism containing all shareholder activism campaigns, not just hedge fund activism.

The main hypothesis of this paper states that shareholder activism has a positive effect on target firms. To test this hypothesis three subsequent hypothesises are formed. (1) The first hypothesis, *H1*, holds that short-term abnormal returns around the campaign announcement date will be positive. (2) The second hypothesis, *H2*, states that long-term abnormal returns after the campaign announcement date will be positive, or positive short-term abnormal returns will at least not reverse. (3) Finally, the third hypothesis, *H3*, holds that shareholder activism has a positive effect on target firms' operating performance as measured by return on assets.

The short-run stock analysis is performed by running an event study, calculating cumulative abnormal returns over the three event windows [-40,40], [-30,30] and [-20,20]. The empirical results present statistically significant positive CAARs over all three event windows in the range 7%-8%. The cumulative average abnormal return, for example, over the [-30,30] event window equals 0.080. This finding implies that firms being targeted by shareholder activism experience a cumulative average abnormal return of 8.0% over the [-30,30] period. Hence, the empirical results validate the first hypothesis, *H1*.

The long-term event study can be seen as a measure of performance persistence and allows drawing inferences on the long-term impact of shareholder activism. The long-run share price analysis is performed by running a CTIME portfolio regression. The empirical result indicates no statistically significant long-run positive share price effect, as measured by Jensen's alpha. This implies that we cannot conclude if activists solely focus on short-term

earnings at the expense of the target firm's long-term financial health. Therefore, I cannot draw a conclusion on the second hypothesis, *H2*.

Finally, I measure the effect of shareholder activism on post-targeting firm performance. The regression analysis presents a negative relation between shareholder activism and return on assets in the year of targeting. However, when analysing target firm performance in the two subsequent years, the empirical results indicate that activism does have a positive effect on ROA two years post targeting. The results indicate that the proposed actions by shareholder activists take a longer time to manifest in positive firm performance. The negative effect on firm performance in the target year could be caused by the activist campaign distracting management and, thereby, disrupting target firm's operations.

To further define the effect of shareholder activism on firm performance, I performed a DuPont analysis. Breaking down the ROA formula, I ran a multivariate regression with as dependent variables Return on Sales (ROS) and Asset Turnover (ATO) and as the independent variable a dummy variable for target. The results indicate that activism mainly has a negative impact on that years' return on sales and positive on the two years post targeting. Since return on sales is a measure of operating efficiency, this finding indicates that activism mainly impacts operating efficiency. However, only the results of the regression analysis on ROS are statistically significant.

Additionally, I went more in depth into the source of the effect of shareholder campaigns on firm performance. I created dummy variables for campaign demand and campaign status, to test the effect of the actions demanded and the status of the campaign on firm performance as measured by ROA. First, I studied the effect of the demanded actions on firm performance. The empirical findings indicate that the effect of activism differs across campaign demand. However, only for the demanded action BoardControl I find a statistically significant negative effect. Second, I studied the effect of the campaign outcome on firm performance. The empirical results show that campaigns remaining unresolved, withdrawn or settled have a statistically significant negative effect on firm performance. An economic interpretation of this would be that these campaigns do consume management's time but do not lead to a specific action and, hence, are only a distraction to management.

The regression analysis does not provide us with a clear view of what the precise effect of shareholder activism is on target companies performance as measured by ROA. However, we can conclude that activism has a positive effect on target firm performance in the two years post targeting. This suggests that the proposed actions might take longer to

manifest. Therefore, we can conclude that activism indeed has a positive influence on long-term firm performance and, hence, we can accept *H3*.

Overall, the empirical research presents an ambiguous view on the effect of shareholder activism on target firms. Table 5.7 provides a summary of the empirical results and the consecutive conclusions on the hypotheses. The empirical research on short-term stock prices indicates that shareholder activism indeed leads to positive average abnormal returns around the announcement date, confirming the first hypothesis, *H1*. However, the empirical research on long-term stock price performance presents a slightly positive but statistical insignificant result. Therefore, I cannot draw a conclusion on this finding and, hence, cannot verify the second hypothesis, *H2*. Finally, the empirical research on operating performance validates the third hypothesis, *H3*, and indicates that shareholder activism positively influences target firm performance as measured by return on assets over the longer term.

This paper contributes to the existing literature on shareholder activism by providing a comprehensive study on the effect of recent shareholder activism on target firms and, thereby, does not exclusively focus on hedge fund activism. Specifically, it contributes to the question if shareholder activism has become more successful over time. The empirical results present findings very similar to the research of Bebchuk et al. (2015), who find that there is no adverse effect of hedge fund activism on the long-term performance of target firms. Moreover, the results are in line with the research of Brav et al. (2008), who find that firm performance deteriorates during the event year, but recovers two years after the event. Hence, in contrast to most research based on earlier samples, I do not find a significant negative effect of activism on long-term share price and firm performance. Since my research is not solely focused on hedge fund activism, I can refute the claim that the recent positive effect of activism is simply due to the development of hedge fund activism. This study is in line with the view of Denes et al. (2016) and Goranova and Ryan (2014), who state that activist shareholders have become more effective over time. Moreover, the existing literature has advocated that campaign demand and campaign status influence the effect on target performance. However, the empirical research on these campaign characteristics is minimal. This paper confirms the view that effect on firm performance depends on the actions demanded and the outcome of the campaign.

Table 6.1 Summary of research hypotheses outcomes

Hypotheses	Expected	Finding	Result
H1	+	+	Accept
H2	+	n/s	Inconclusive
H3	+	-/+	Accept

Table 5.7 summarises the outcomes on the tested hypotheses. The column "expected" indicates the expected finding. The column "finding" indicates the findings of the empirical research. The column "result" indicates whether the hypotheses are either accept or rejected. "n/s" indicates that the findings were statistically insignificant.

7. Limitations

After concluding on the findings of this paper, there are several limitations of this empirical research I would like to discuss. The limitations might cause biased results as found in the empirical research.

(i) As discussed in section 4.2, the variables used in the empirical research still present non-normality. Even though the winsorized variables present improved values for Kurtosis and Skewness, the Shapiro test, table A2, still indicates that there is non-normality. Hence, the outcomes of the empirical research should be interpreted with caution.

(ii) The long-term results might be biased as part of the data is missing. For a substantial part of the dataset stock prices are not available over the long-run time period. This is caused either by companies going bankrupt or companies being acquired by another company so the stock stops existing. Since the dataset does not contain all stock prices up to $t+2$ after being targeted, the long-term results of the CTIME regression might be biased. This is especially relevant for companies that have been an acquisition target, as the generally large takeover premium that is received by the target shareholders is not incorporated into the results. The same holds for the empirical research on operating performance, since when target firms stop being public companies, data on their operating performance is no longer available.

(iii) The regression analysis on firm performance might have omitted variables. Even though the multivariate regression variables are carefully considered and the most important control variables are added, it might be possible that there are omitted variables. This can cause a bias in the regression analysis outcomes.

(iv) Another flaw, of the regression analysis on firm performance, is that it might be possible that Return on Asset, as defined by Net Income over Assets, is not the most preferred measure of firm performance. Namely, ROA faces a "mismatch" problem since net income reflects the money available to shareholders after paying debt holders

and assets are available to all providers of capital. I control for this problem by controlling for leverage in the regression analysis. However, operating ROA, as defined by operating earnings over assets, might be a better indicator of firm performance.

(v) Since the independent variables used in the regression analysis are book values, just like the dependent variable ROA, it is possible that there is still some collinearity in the regression analysis, even though the VIF tests do not indicate it. This could explain the strong significance found in the independent variables.

8. Recommendations for future research

This paper provides two recommendations for future research on the topic of shareholder activism.

(i) It could be argued that the improved effect of activism on target firms could still be due to hedge fund activism. Some researchers argue that the positive results on activism found in more recent databases, can be assigned to the fact that there are hedge fund activists within the sample. To get an even more clear view on the question whether activism has progressed or if the positive results found can simply be assigned to hedge fund activism, future research could examine a data sample, which excludes hedge fund activism all together.

(ii) Moreover, this paper contributes to the existing literature by decomposing activist campaigns into its status and demand characteristics. Thereby, specifying the effect that different campaigns have on firm performance. It would be of interest to decompose the characteristics of activist campaigns further to pinpoint what campaigns cause a positive effect on firm performance. These findings could produce a guideline for future activism, as it can help activist shareholders to focus on the campaigns that have a positive effect on firm value.

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Appendix

Table A1: Shapiro Francia Test

Variable	N	W	V	z	Prob>z
ROA	8,888	0.1	4743.0	22.2	0.0
leadROA	7,927	0.1	4262.3	21.8	0.0
lead2ROA	6,931	0.1	3758.1	21.3	0.0
ROS	8,564	0.0	4723.6	22.1	0.0
lead2ROS	6,659	0.0	3733.9	21.2	0.0
ATO	8,901	0.1	4646.9	22.1	0.0
lead2ATO	6,944	0.1	3725.2	21.2	0.0
Target	5,450	1.0	0.0	-57.0	1.0
logMV	11,425	1.0	33.3	9.3	0.0
BVMV	11,425	0.0	6249.0	23.3	0.0
Lev	8,845	0.0	4924.0	22.3	0.0

Table A1 presents the results of the Shapiro Francia test for normality. The test is performed on all main dependent and independent variables. "N" presents the number of observations, "W" is the Shapiro Francia test statistic, "V" is the index for departure from normality, "z" presents the z statistics, "Prob>z" displays significance.

Table A2: Shapiro Francia Test on winsorized variables

Variable	N	W	V	z	Prob>z
ROA	8,888	0.9	715.1	17.2	0.0
leadROA	7,927	0.9	666.6	16.9	0.0
lead2ROA	6,931	0.9	568.2	16.4	0.0
ROS	8,564	0.8	755.3	17.3	0.0
lead2ROS	6,659	0.8	592.8	16.5	0.0
ATO	8,901	0.9	264.9	14.6	0.0
lead2ATO	6,944	0.9	218.6	13.9	0.0
Target	5,450	1.0	0.0	-57.0	1.0
logMV	11,425	1.0	133.8	13.0	0.0
BVMV	11,425	1.0	183.6	13.9	0.0
Lev	8,845	1.0	182.8	13.7	0.0

Table A2 presents the results of the Shapiro Francia test for normality. The test is performed on all main dependent and independent variables after they are winsorized at 10% for both distribution tails. "N" presents the number of observations, "W" is the Shapiro Francia test statistic, "V" is the index for departure from normality, "z" presents the z statistics, "Prob>z" displays significance.

Table A3: Descriptive Statistics Winsorized Variables

Variable	N	Mean	Median	Std. Dev.	Skew.	Kurt.
ROA	8,888	-2.6	0.8	11.8	-1.2	3.3
leadROA	7,927	-3.0	0.7	12.2	-1.2	3.4
lead2ROA	6,931	-2.7	0.7	11.7	-1.2	3.4
ROS	8,564	-3.3	2.2	19.2	-1.3	3.7
lead2ROS	6,659	-3.4	2.1	19.3	-1.3	3.7
ATO	8,901	0.8	0.7	0.6	0.5	2.0
lead2ATO	6,944	0.8	0.7	0.6	0.5	2.0
Target	5,450	0.2	0.0	0.4	1.3	2.7
logMV	11,425	5.4	5.2	2.0	0.2	1.8
BVMV	11,425	0.5	0.4	0.5	0.6	2.1
Lev	8,845	29.7	27.1	25.9	0.4	1.8

Table A3 presents the descriptive statistics for the main independent and dependent variables after being winsorized at 10% for both distribution tails.

Table A4: Diagnostic tests ROA, ROA_{t+1} and ROA_{t+2}

Hausman test	ROA		leadROA		lead2ROA	
H0: preferred model is random effects						
chi2(4)	27.630		150.360		195.110	
Prob>chi2	0.000		0.000		0.000	
Time-specific fixed effects						
H0: time dummies are jointly equal to zero						
F(4, 3305)	2.400		4.950		3.120	
Prob>F	0.048		0.001		0.014	
Heteroscedasticity						
H0: sigma(i)^2=sigma^2 for all i						
chi2 (1024)	1.0E+35		1.5E+35		8.5E+34	
Prob>chi2	0.000		0.000		0.000	
Serial Correlation						
H0: no first-order autocorrelation						
F (1, 881)	52.874		51.433		25.556	
Prob>F	0.000		0.000		0.000	
Robust Hausman - xtoverid						
H0: preferred model is random effects						
chi2(4)	19.755		89.892		96.191	
Prob>chi2	0.001		0.000		0.000	
Multicollinearity						
Variables	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF
Target	1.030	0.975	1.030	0.972	1.030	0.972
logMV	1.140	0.881	1.140	0.874	1.150	0.870
BVMV	1.110	0.902	1.110	0.902	1.100	0.906
Lev	1.060	0.945	1.060	0.940	1.070	0.935
Year	1.565	0.639	1.543	0.648	1.523	0.657
Mean VIF	1.320		1.310		1.300	

Table A4 presents the diagnostic tests performed on the regression models for ROA, ROA_{t+1} and ROA_{t+2}. The first section shows the results of the Hausman test, specifying whether a fixed or random effects model is preferred. The second section shows the results for a Wald test of time-specific fixed effects. The third section shows the results of a modified Wald test for heteroscedasticity. The fourth section provides the results of a Woolridge test for serial correlation. The fifth section provides the outcomes of a Robust Hausman test, needed to specify whether fixed or random effects are preferred when running a robust standard errors model. Finally, the sixth section provides a Variance Inflation Factor test to check for multicollinearity.

Table A5: Diagnostic tests DuPont Analysis

Hausman test	ROS	ATO
H0: preferred model is random effects		
chi2(4)	15.160	70.270
Prob>chi2	0.004	0.000
Time-specific fixed effects		
H0: time dummies are jointly equal to zero		
F(4, 3305)	2.660	2.930
Prob>F	0.031	0.020
Heteroscedasticity		
H0: sigma(i)^2=sigma^2 for all i		
chi2 (1024)	2.5E+33	1.3E+34
Prob>chi2	0.000	0.000
Serial Correlation		
H0: no first-order autocorrelation		
F (1, 881)	41.186	40.010
Prob>F	0.000	0.000
Robust Hausman - xtoverid		
H0: preferred model is random effects		
chi2(4)	13.224	89.892
Prob>chi2	0.010	0.000

Multicollinearity				
Variables	VIF	1/VIF	VIF	1/VIF
Target	1.030	0.975	1.030	0.975
logMV	1.140	0.881	1.140	0.881
BVMV	1.120	0.895	1.110	0.903
Lev	1.050	0.950	1.060	0.945
Year	1.558	0.642	1.565	0.639
Mean VIF	1.320		1.320	

Table A5 presents the diagnostic tests performed on the regression models for ROS and ATO. The first section shows the results of the Hausman test, specifying whether a fixed or random effects model is preferred. The second section shows the results for a Wald test of time-specific fixed effects. The third section shows the results of a modified Wald test for heteroscedasticity. The fourth section provides the results of a Woolridge test for serial correlation. The fifth section provides the outcomes of a Robust Hausman test, needed to specify whether fixed or random effects are preferred when running a robust standard errors model. Finally, the sixth section provides a Variance Inflation Factor test to check for multicollinearity.

Table A6: Diagnostic tests DuPont Analysis ROA$_{t+2}$

Hausman test		lead2ROS		lead2ATO	
H0: preferred model is random effects					
chi2(4)		96.660		91.380	
Prob>chi2		0.000		0.000	
Time-specific fixed effects					
H0: time dummies are jointly equal to zero					
F(4, 3305)		2.930		2.370	
Prob>F		0.020		0.051	
Heteroscedasticity					
H0: sigma(i)^2=sigma^2 for all i					
chi2 (1024)		1.7E+36		1.7E+35	
Prob>chi2		0.000		0.000	
Serial Correlation					
H0: no first-order autocorrelation					
F (1, 881)		31.799		41.225	
Prob>F		0.000		0.000	
Robust Hausman - xtoverid					
H0: preferred model is random effects					
chi2(4)		69.827		58.012	
Prob>chi2		0.000		0.000	
Multicollinearity					
Variables		VIF	1/VIF	VIF	1/VIF
Target		1.030	0.971	1.030	0.972
logMV		1.140	0.873	1.150	0.870
BVMV		1.110	0.900	1.100	0.906
Lev		1.060	0.943	1.070	0.934
Year		1.515	0.660	1.523	0.657
Mean VIF		1.300		1.310	

Table 6 presents the diagnostic tests performed on the regression models for ROS$_{t+2}$ and ATO$_{t+2}$. The first section shows the results of the Hausman test, specifying whether a fixed or random effects model is preferred. The second section shows the results for a Wald test of time-specific fixed effects. The third section shows the results of a modified Wald test for heteroscedasticity. The fourth section provides the results of a Woolridge test for serial correlation. The fifth section provides the outcomes of a Robust Hausman test, needed to specify whether fixed or random effects are preferred when running a robust standard errors model. Finally, the sixth section provides a Variance Inflation Factor test to check for multicollinearity.

Table A7: post-targeting performance as measured by DuPont variables t+2

Variables	lead2ROS					lead2ATO				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Intercept	-3.357***	2.234	14.67**	14.05**	13.44*	0.769***	0.791***	0.823***	0.770***	0.768***
Target	0.734	0.632	0.767	0.761	0.62	-0.007	-0.007	-0.007	-0.004	-0.001
logMV		-0.974	-2.483***	-2.379**	-2.334**		-0.002	-0.006	-0.003	0.000
BVMV			-5.308***	-5.421***	-5.399***			-0.014	-0.004	-0.007
Lev				0.005	0.007				0.001	0.001*
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time-fixed effects	No	No	No	No	Yes	No	No	No	No	Yes
Model statistics										
N	3,644	3,524	3,524	3,506	3,506	3,813	3,676	3,676	3,645	3,645
R squared	0.001	0.002	0.010	0.010	0.014	0.000	0.000	0.001	0.005	0.008
Adj. R squared	0.000	0.001	0.009	0.009	0.012	0.000	0.000	0.000	0.004	0.006

This table presents the results from running a multivariate regression, as describe in section 3.2.3.1, on the panel data of firms being targeted by shareholder activism over the period 2010-2014. As dependent variable ROS_{t+2} and ATO_{t+2} are used to decompose the effect of targeting on ROA_{t+2} according to a DuPont analysis. The main independent variable is Target, which represents a dummy variable for firm i being targeted at time t. Column (2) adds the variable log of market value to control for size. Column (3) additionally adds a control variable for book-to-market value. Column (4) additionally includes leverage as a control variable. Finally, in column (5), time-fixed effects are taken into account. Standard errors and heteroscedasticity are controlled for by running a robust standard errors model. All models are run including fixed effects to control for industry and country effects.
Significance levels: * $p<0.05$, ** $p<0.01$, *** $p<0.001$

Table A8: Diagnostic tests dummies for demand

Hausman test	BoardRep		SeekAlt		SHRights		BoardControl		HostileAcq	
H0: preferred model is random effects										
chi2(4)	65.430		65.370		67.700		70.620		69.790	
Prob>chi2	0.000		0.000		0.000		0.000		0.000	
Time-specific fixed effects										
H0: time dummies are jointly equal to zero										
F(10, 7342)	12.640		12.530		12.550		12.660		12.530	
Prob>F	0.000		0.000		0.000		0.000		0.000	
Heteroscedasticity										
H0: sigma(i)^2=sigma^2 for all i										
chi2 (1024)	5.0E+34		1.1E+34		2.2E+34		1.9E+33		1.2E+34	
Prob>chi2	0.000		0.000		0.000		0.000		0.000	
Serial Correlation										
H0: no first-order autocorrelation										
F (1, 881)	125.715		125.832		125.840		126.250		125.795	
Prob>F	0.000		0.000		0.000		0.000		0.000	
Robust Hausman - xtoverid										
H0: preferred model is random effects										
chi2(4)	50.301		50.294		51.558		53.641		54.152	
Prob>chi2	0.000		0.000		0.000		0.000		0.000	
Multicollinearity										
Variables	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF
Demand	1.030	0.972	1.030	0.968	1.020	0.979	1.010	0.986	1.010	0.989
logMV	1.150	0.868	1.150	0.868	1.150	0.868	1.150	0.867	1.150	0.868
BVMV	1.190	0.842	1.190	0.842	1.190	0.842	1.190	0.843	1.190	0.843
Lev	1.070	0.935	1.070	0.935	1.070	0.935	1.070	0.935	1.070	0.935
Year	1.717	0.596	1.716	0.597	1.715	0.597	0.000	1.715	1.714	0.598
Mean VIF	1.540		1.540		1.540		1.540		1.540	

Table A8 presents the diagnostic tests performed on the regression models for ROA with as independent variables dummy variables for campaign demand. The first section shows the results of the Hausman test, specifying whether a fixed or random effects model is preferred. The second section shows the results for a Wald test of time-specific fixed effects. The third section shows the results of a modified Wald test for heteroscedasticity. The fourth section provides the results of a Woolridge test for serial correlation. The fifth section provides the outcomes of a Robust Hausman test, needed to specify whether fixed or random effects are preferred when running a robust standard errors model. Finally, the sixth section provides a Variance Inflation Factor test to check for multicollinearity.

Table A9: Diagnostic tests dummies for status

Hausman test		DisVic		Unresolved		Settled		Withdrawn		ManVic	
H0: preferred model is random effects											
chi2(4)		65.100		65.440		65.480		66.210		67.450	
Prob>chi2		0.000		0.000		0.000		0.000		0.000	
Time-specific fixed effects											
H0: time dummies are jointly equal to zero											
F(10, 7342)		12.570		12.430		12.680		12.780		12.530	
Prob>F		0.000		0.000		0.000		0.000		0.000	
Heteroscedasticity											
H0: sigma(i)^2=sigma^2 for all i											
chi2 (1024)		5.1E+32		1.7E+34		3.2E+34		3.9E+34		1.4E+33	
Prob>chi2		0.000		0.000		0.000		0.000		0.000	
Serial Correlation											
H0: no first-order autocorrelation											
F (1, 881)		125.932		124.313		125.765		125.467		125.784	
Prob>F		0.000		0.000		0.000		0.000		0.000	
Robust Hausman - xtoverid											
H0: preferred model is random effects											
chi2(4)		49.986		50.273		50.598		51.176		50.909	
Prob>chi2		0.000		0.000		0.000		0.000		0.000	
Multicollinearity											
Variables	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	
Status	1.040	0.958	1.090	0.916	1.020	0.979	1.050	0.953	1.020	0.984	
logMV	1.150	0.868	1.150	0.868	1.150	0.868	1.150	0.868	1.150	0.868	
BVMV	1.190	0.842	1.190	0.843	1.190	0.843	1.190	0.842	1.190	0.843	
Lev	1.070	0.935	1.070	0.935	1.070	0.935	1.070	0.935	1.070	0.935	
Year	1.720	0.596	1.724	0.594	1.717	0.597	1.718	0.596	1.715	0.597	
Mean VIF	1.550		1.550		1.540		1.550		1.540		

Table A9 presents the diagnostic tests performed on the regression models for ROA with as independent variables dummy variables for campaign status. The first section shows the results of the Hausman test, specifying whether a fixed or random effects model is preferred. The second section shows the results for a Wald test of time-specific fixed effects. The third section shows the results of a modified Wald test for heteroscedasticity. The fourth section provides the results of a Woolridge test for serial correlation. The fifth section provides the outcomes of a Robust Hausman test, needed to specify whether fixed or random effects are preferred when running a robust standard errors model. Finally, the sixth section provides a Variance Inflation Factor test to check for multicollinearity.