A measure of the impact of activism on the returns to shareholders of the target companies: A European perspective 2008 - 2018

PATRICIA CULLEN

MSc Finance
National College of Ireland

Submitted to the National College of Ireland, August 2019

Abstract

The current upward trajectory of shareholder activism in the European market and the substantial time and capital committed to it solicits clarity on its effectiveness. This research analyses reported shareholder activism of all type and motive in Europe during the period 2008-2018 and assesses the impact of activism on the returns to the shareholders in the short to medium term over 6 defined time frames. The research examines the returns on the target companies compared to the returns available on the market and also measures the Sharpe ratio of both sets of returns. Findings show that shareholder activism in the period provide returns in excess of the market across most time frames and in addition that the Sharpe ratio of stock that has been subject to an activist event is much greater than the Sharpe ratio of the market. Finally the research investigated the impact of multiple activist events as opposed to a single activist event and found no evidence multiple activist events provided any additional returns over single activist events.

Keywords:

Shareholder, activism, performance, returns, Sharpe ratio, multiple events

Declaration

This research paper is wholly my own work and all materials consulted and ideas garnered during the process of researching this dissertation have been properly and accurately acknowledged.

_____

Patricia Cullen

Acknowledgements

I would like to thank my parents Thomas & Bernadette for their unending support and encouragement throughout this process. I acknowledge, with thanks, Alvarez and Marsal of London for their generous assistance and also to my employers AIG Europe for their support.

Table of Contents

Chapter 1: Introduction

The conflict of interest that exists between a company's management and its shareholders has been the premise for extensive theoretical debate and intrigue. This agency problem has dominated the realm of corporate finance for many years and it originates from the separation between ownership and control. It is a feature for all corporations where a board of directors is appointed to act on behalf of shareholders. Conflict can arise between the fiduciary duties owed to the company by the directors and their own personal self-interest. There may also be conflict with the interest of the shareholders. In essence, a director is powered with making decisions considered to be in the interest of the company whilst employed by the shareholders to maximise the shareholder wealth all to be carried out without any cause or concern for their own personal utility. Herein lies the trilogy of conflict referenced by Denes, Karpoff and McWilliams (2015) as being the catalyst for shareholder activism. This conflict traces back to the question of "who will monitor the monitor?" posed in the 1972 Alchian and Demsetz paper cited by Denes *et al.* (2015). Who will watch over the appointed management team and what, if any, powers can be exerted? Has shareholder activism become the answer? Existing research recognises that it is agency theory that provides the primary theoretical lens for literature on shareholder activism. Goranova and Ryan (2014) report that agency theory is five times more likely to be the theoretical framework utilised than any other.

There was a noticeable rise in shareholder activism in the United States throughout the 1980's mainly due to the shift to increased institutional investment at that time. Monks and Minnow (1991) discusses how increased portfolio management and the requirement for adequate diversification created the obstacle for fund managers releasing their positions in underperforming stocks, thus kindling action via activism. In the era of a new millennium this institutional investment and the movement of shareholdings from a private base to beneficial ownership by institutions and portfolio managers has continued to increase (Agnblad *et al.* 2011 and Menkhoff 2002 as cited by Nordén and Strand, 2011). The Schulte Roth & Zabel 2018 Shareholder Activism Insight report outlines that growth in activism in Europe in recent years has been galvanised by this increase in assets under management.

The landmark 2017 activist contest in Proctor and Gamble has been the largest and most expensive to date, and after Unilever made public its proposal to move its headquarters to the Netherlands in 2018 it took just a matter of days for one of its biggest shareholders to publicly criticise the move and eventually lead to the overturning of the idea. It is clear that shareholder activism continues with immense force. In a recent study undertaken by Lazard, in the first half of 2018 alone activists spent $40 billion targeting 136 companies with market values of more than $500 million. In a European context the following activist campaigns have developed: Elliot Management at SAP and Active Ownership Capital at PNE (Germany), Amber Capital at Lagardère and CIAM at Renault (France), Third Point at Nestlé and Larius Capital at Aryzta (Switzerland) and Denis Dumont at Credito Valtellinese and Shareholder Value Management at Reteli in Italy. More recently the Irish cement maker CRH has come under fire from Cevian after it disclosed a 3% stake in February 2019.

Activist Investors have always been a feature of the U.K. market and Elliot management at Sky and the institutional investors at Unilever in 2018 making headlines is not unusual. However it is a view that with the continuing uncertainty around Brexit and the impending deadline combined with the falling value of Sterling activists may sense growing opportunities and be eager to capitalise. The foregoing no doubt is fuelling the momentum of the upward trajectory of shareholder activism in the European market as described in Schulte Roth & Zabel (2018).

What does this increase in shareholder activism mean? Does it reflect success? What does the activism look like and how does it manifest? What does successful activism mean? Whilst this paper will demonstrate that research in the area of activism has been widespread, few papers have focussed their investigations solely on the performance of the target post activism. Denes *et al.* (2015, p. 2) state that "activism in more recent years is more frequently associated with increased share values and operating performance". This study therefore sets out to measure the impact of activism on the returns to shareholders of the target companies. The overall structure of this research takes the form of six chapters. The next chapter, Chapter 2, will present an overview of the previous research in the area of shareholder. Chapters 3 and 4 will focus on the research objective and methodology. The results and findings of the research will be outlined in Chapter 5 and Chapter 6 will conclude the paper. The paper will now review the previous research

in the area of shareholder activism, particularly around the motives for activism, the methods utilised by activists, governance as an issue, and emerging activist trends but with an ultimate focus on performance.

Chapter 2: Literature Review:

Introduction

Shareholder activism has been a widely researched topic in both academic and professional arenas however much of the research focuses on activism in the US (Strickland, Wiles and Zenner, 1996; Karpoff, 2011; Thomas and Cotter, 2007; Fairfax, 2019). For the purpose of this research the literature review will examine empirical research and case studies of shareholder activism principally outside of the US. Multiple strands of research appear within the literature such as the cost of activism, the motives for activism, and of course the outcomes of activism and this research will examine these strands in detail below.

Previous research has been conducted in various forms, however a commonly adopted approach is individual case specific studies. These individual case studies can focus around a named individual activist investor or a study on a specific target event at an institution. Venkiteshwaran, Iyer, and Rao (2010) investigated the effects that the infamous activist investor Carl Ichan produced for the shareholders in the companies targeted by him. Similarly the well-known activist pension scheme the California Public Employees Retirement System (CalPERS) and their particular form of activism, was examined by Nesbitt (2001), Barber (2007) and Wu (2014). These individual activist case studies contrast to the specific target event approach of the bid for the London Stock Exchange by Deutsche Boerse investigated by Sudarsanam and Broadhurst (2012). This research details the corporate governance issues that arose from the bid and the corporate governance regime in Germany whilst Venkiteshwaran *et al*. (2010) examined the manner, method and outcomes of a sample of the companies targeted by Carl Ichan. Both of these studies yield very different results for research in shareholder activism. Immediately observed is the emergence of two distinct strands of activism; the implications of corporate governance and corporate social responsibility (CSR) as a cornerstone of activism and the empirical and quantitative research of the effects of activism.

Denes *et al*.(2015) outline how activism can manifest in many forms and present four conduits used by activists; shareholder proposals, proxy fights, hedge fund activism and

private negotiation. What is apparent is that shareholder activism can materialise in many different forms and thus be researched from many differing angles. So how has shareholder activism been defined?

Activist shareholder definition

Each study reviewed for this research began with its own definition of activism which reflected on an understanding of the particular strand of activism under examination. Where the research failed was in collating a uniform or homogeneous definition of an activist shareholder which could be used to correlate each piece of research. Denes *et al*. (2015) evaluates activism over the past 30 years however makes no attempt to differentiate between the conflicting definitions of activist investor or the significance of the disconnect. Specific Securities Exchange Commission (SEC) legislation provides clear guidance for a general definition for research focussed in the US and on US listed companies. Both Brav *et al.* (2008) and Karpoff (2011) utilise shareholder proposals permissible under SEC rule 14a-8 as their method for defining activism. Under rule 14a-8, a 500-word written argument is included in the firm's proxy statement, and is known as a shareholder proposal. Due to a lack of similar legislation in the jurisdiction of the research of Nordén and Strand (2011), the definition used for activism in their research was borne out of the evidence from documented minutes of Annual General Meetings (AGMs) for Swedish companies paired with a cited definition of institutional owner used by Murphy and Van Nuys (1994). Filatotchev and Dotsenko (2013) take what appears to be a hybrid of the previous two methods and relied on a mixed sample of activist events reported in the public domain together with shareholder proposals. A similar approach will be adopted later in this research.

The event studies of Sudarsanam and Broadhurst (2012) and Becht *et al.* (2008) have pre-conceived definitions of activist investors due to the event-led nature of their research. This is comparable to studies of specified categories of investor such as hedge funds (Mihov, 2015 and Klein and Zur, 2011) and pension funds (Wahal, 1996). Leaning towards research around corporate governance as a driver for activism Sjostrom (2008, p.142) defined activism as "the use of ownership position to actively influence company policy and practice". Moving towards performance driven activism and echoing thoughts

of Monks and Minnow (1991), both Black (1998) and Pound (1992) propose that activism is the organic movement in the market from corporate control to investors seeking alternative approaches to monitor management and seek greater performance. Rajyalakshmi (2014) in exploring shareholder activism in India does not explicitly provide a definition of activism but does yield a broad statement of intent: "shareholder activism is intended to improve private and social gains". This statement is all encompassing and would appear to broadly capture the specific definitions outlined in all of the previously reviewed research. Now that we have a clear idea on what activism is we will review the differing motives for gain, both private and social.

Motives: Corporate governance and social gains

Previous research of Judge, Gaur and Muller-Kahle (2010) has established that activists have two primary motives when targeting firms: 1) to improve the financial performance of the target and 2) to improve the social performance of the firm. Whilst it is the intention of this research to measure the performance outcomes of activism the inputs will include all manner of activism including activism which has its motives grounded in corporate governance, societal gains and CSR. CSR and societal gains appear to be the hot topic (Fairfax, 2019) for activism at the present time. In December 2018 the investor led Institutional Investors Group on Climate Change wrote a public letter to the Financial Times urging utilities in Europe to set timelines for the elimination of coal as a primary source of power generation in the EU specifically naming companies such as Spain's Iberdrola, Centrica and National Grid in the UK and RWE in Germany. The letter was signed by 95 institutional investors representing $11.5 trillion in assets. Climate change and CSR aligns with another emerging issue in the research of shareholder activism, board diversity. Marquardt and Weidman (2016) evidence that shareholder activism is a successful mechanism to improve the gender diversity on boards but evaluating this area from another angle Gupta *et al.* (2018) conclude that companies with female CEOs actually face a greater threat of experiencing an activist event than those companies with male CEO's. To say that the findings of each study contrast enormously would be an understatement. Whilst not forming a strand in this research these findings certainly merit further investigation.

Board composition and the functioning of a board are major components to corporate governance. Denes *et al*. (2015) found that the main driver for demanding board seats via proxy contests was corporate governance reform. The theoretical grounding of corporate governance in agency theory and its correlation with shareholder activism has been an area of much research. It was suggested by Goranova and Ryan (2014) that agency theory is the theoretical framework most likely to be evoked. Both Ingley, Mueller and Cocks, (2010) and Sudardanam and Broadhurst (2010) explore research on corporate governance structures but centre on different specific geographic regions, New Zealand and Germany respectively. Both conclude that the dysfunctional systems which potentially encourage the activism events arise from inward focused and traditionally geared boards oblivious to shareholder relations and adequate communication with shareholders. The concluding remarks of Brav *et al*. (2008) demonstrates a concurrence with this finding. Interestingly, Agrawal and Knoeber (2012) identified increasing movement by shareholders towards activism in an attempt to reduce the agency problem. In contrast to Agrawal and Knoeber (2012), Romamo (cited in Goranova and Ryan, 2014) argues that that shareholder activism may actually amplify the agency problem.

Rajyalakshmi (2014) supports the hypothesis that a continuous dialog paired with meaningful and active engagement with shareholders can mitigate activist events. Additionally, Rajyalakshmi (2014) highlights the balance challenge for boards of retaining their fiduciary duties (acting in the best interest of the company as a whole) whilst managing the threat of individual activist shareholders. A possible shift in the balance of attention to activist shareholders is not necessarily valuable. The motives for activism may not always be improvement of financial performance or sharpening of social responsibility. This finding correlates with the research of Nordén and Strand (2011) who identifies the existence of empirical data supporting the hypothesis that portfolio managers in Sweden engaged in activism events with selfish objectives. Shareholder activism was a mechanism for enhancing both the portfolio managers own societal standing and their organisations legitimacy and reputation. Whilst the primary motive outlined by Nordén and Strand (2011) was selfishness on the behalf of the portfolio managers, this selfishness appears to have been fuelled by performance in the underlying assets. The apparent existence of stock performance in tandem with other motives of activism has directed this research. It is clear that societal gains, corporate

governance and CSR are certainly drivers for shareholder activism but this research will focus on the monetary performance of activism. This literature review will now examine the research conducted where performance of the target company was the primary motive.

Motives: Performance

On of the most examined outcomes of shareholder activism has been the market reaction that follows the event. The results of the research exhibit significant variance. Denes *et al.* (2015), Filatotchev and Dotsenko (2013) and Brav *et al.* (2008) are some of the most recent bodies of research where the target firms performance post activist event were evaluated. These studies demonstrate the shortcomings in the literature as a whole with no consistent definition of shareholder activism and the quasi contradictory findings. Each study took separate sample pools. Brav *at al*. (2008) concentrated on hedge fund activism while Filatotchev and Dotsenko (2013) used a geographical sample of all activism in the UK. Denes *et al.* (2015) reviewed previous empirical studies.

Filatotchev and Dotsenko (2013) observed negative impacts with certain combinations of activism which opposes the 7% abnormal returns, which did not reverse in the subsequent year, of Brav *et al*. (2008). Denes *et al.* (2015) report that most research conducted indicate no significant relationship between activist event and share value. This result should be viewed with caution as the findings were from an investigation into activism via shareholder proposals only. In contrast, data from three research papers has identified small share price increases associated with shareholder proposals (Cuñat, Gine and Guadalupe, 2012; Renneboog and Szilagyi, 2011 and Thomas and Cotter, 2007). Both studies of Filatotchev and Dotsenko (2013) and Brav *et al*. (2008) do however settle on the agreement that hedge fund activism specifically appears to provide an increased market value to the target firm.

A comparable study by Zhu (2013) into hedge fund activism concluded that the threat alone of hedge fund activism has a positive influence on the return on assets figure for the target company. These findings actually conflict with the studies of Gantchev, Gredil and Jotikasthira (2016) who find no significant change in performance metrics at all. The research considered various forms of activism individually and indeed this may reflect

the differing results. Another such individual form of activism that has been heavily researched is that of pension fund activism. CalPERs are prominent in activism driven by a corporate governance motive (Wu, 2014) but it was Wahal (1996) who explored the performance related effects of pension fund activism. Findings were mixed and actually go so far as to publish uncertainty around the efficacy of pension fund activism. Becht *et al.* (2008) observed considerably different results in their research of the private fund manager for the British Telecom pension scheme, the Hermes UK Focus Fund (HUKFF). Considerable value was added as a result of the shareholder activism undertaken by HUKFF. Klein and Zur (2009) supports the hypothesis that pension fund activism creates shareholder value but a further study of this (Klein and Zur, 2011) argues that this shareholder value gained as a result of the activism is actually at the expense of bondholders.

In reviewing the research, recognition must be given to the sources of data for each study. The considerable difference between the Wahal (1996) and Becht *et al*. (2008) research may be reflective of the contrasting results. The Becht *et al*. (2008) report is unique in that HUKFF conducted all of its activism via private engagement channels and Becht *et al.* (2008) were granted full retrospective access to the data to review after the fact. The majority of activism research is heavily reliant on publicly available information so this analysis of private activism is limited and its results stand apart from other research in a similar area. Goranova and Ryan (2014) hypothesizes that the 'januis clausis' effect of the private collaboration between the activist and target management may yield more positive outcomes for all parties. This differs entirely from the empirical findings of Denes *et al.* (2015) which evidences no material changes in the performance of a target firm from private activism. Overall it remains unclear if shareholder activism actually adds value on a monetary level. This is a concerning unknown as if we use the statement of Rajyalakshmi (2014) that "shareholder activism is intended to improve private and social gains", these intended gains come at a cost and a cost benefit analysis would be a prudent task for any investor seeking returns. The cost of activism may impact on the form of activism undertaken. Any research should consider the inherent cost of shareholder activism when analysing the results.

Cost of Activism

An activist campaign, regardless of motive comes at cost. Cost is neither constant nor easily quantified across any of the four forms of activism as outlined by Denes *et al.* (2015). Black (1998) examines the differing methodology in campaigns and how each form requires varying investment commitments for the activist. Black (1998) outlines shareholder proposals as being the form requiring the least investment relying on SEC rule 14a-8, where the proposal document is included in the target company's proxy statement at the expense of the target. Similarly private negotiation can incur very low costs for the activist as it will generally involve a series of meetings between the parties. It would be reasonable to expect the monetary cost here to be negligible. A new form of activism via social media platforms such as Twitter examined in Oranburg (2015) is also allowing activism prevail at no monetary cost to the activist, just 140 characters in a tweet.

These forms contrast with more traditional forms of activism such as proxy contests which are funded entirely by the activist. Buchanan *et al.* (2012) evidences that of a sample of 3,793 shareholder proposals a mere 12% were proxy contests which, considering the cost to the activist is not entirely surprising. There does however exist a material difference in these forms of activism that should not be overlooked. Private activism, shareholder proposal or social media commentary is not legally binding on a company unlike proxy contests. Brav *et al.* (2008) explains the cost implications of hedge fund activism whereby the fund must acquire a 5% position which requires public declaration in the form of a filed 13D form, under SEC rules. Whilst the public declaration of the shareholding would provide the platform for the activist the investment cost of acquiring a 5% position in any company would be significant.

Conclusion

It is clear from the literature review above that shareholder activists certainly divide opinion: from the 'poster child' tag of Carl Ichan by Oranburg (2015) to the 'corporate gadflies' tag by 1970 media as cited by Goranova and Ryan (2014). This cannot be unrelated to the fact that neither academic research nor the professional populis can agree

if activism as a phenomenon adds value. The literature review has sought to demonstrate this and provide a basis and context for this research. The primary objective of this research is to review all activist events recorded on European listed companies and measure the impact of the activist event on the share price and returns for that company to shareholders. This will provide the widest breadth of data as possible in response to the gap in the literature created by event and case specific studies which have been carried out previously. With the upward trajectory of shareholder activism in Europe (Schulte Roth & Zabel 2018) and the substantial time and resources dedicated to it by investors and corporations, the effectiveness of the activism is of increasing interest to the financial world. The research objective is to provide a useful basis for activists, investors, professionals and academics alike.

Chapter 3: Research Question

*"***A measure of the impact of activism on the returns to shareholders of the target companies: A European perspective 2008 - 2018***"*

Having conducted a review of the literature as above this research will explore gaps that appear to exist in the current research by taking an unrestricted definition of activism, activist investor or activist event and utilising the statement of intent outlined by Rajyalakshmi (2014) that "shareholder activism is intended to improve private and social gains". It will not be the intention of the research to dismiss any of the results obtained in the wide search outlined in the following methodology statement, thus ensuring the broadest possible capture of activist events in the study.

The literature review suggests various objectives in the previous research conducted on shareholder activism; however this research will consider stock performance solely. Mixed evidence and results with regard to the effectiveness of shareholder activism as a mechanism for adding value for shareholders has been reported (Denes *et al.* 2015; Cuñat *et al.* 2012; Brav *et al*. 2008,). But a great deal of the previous research has been case study specific, the gap therefore exists to conduct a study of shareholder activism in all forms and measure any change in the targets stock performance post the activist event.

Previous research of Filatotchev and Dotsenko (2013) examined the period of 1998 – 2008. The time period of this research is 2008 – 2018 inclusive. The eleven year range dovetails with the time period of Filatotchev and Dotsenko (2013) but expands on the 10 year period to extract as much data as possible and to ensure the research captures the recent growth in activism in Europe (Schulte Roth & Zabel, 2018). Considering the apparent increase in shareholder activism the researcher did consider taking a shorter time period. This consideration was rejected on the basis that it may prove interesting to observe the period of the financial crisis and the years immediately afterwards and to build on the previous research (Filatotchev and Dotsenko, 2013).

Significant research has been conducted on shareholder activism in the US previously (Fairfax, 2019; Karpoff, 2011; Thomas and Cotter, 2007; Strickland *et al.,* 1996) With activism gaining momentum in Europe and the geo-political turbulence in the region at present, Europe positions itself as an obvious geographical subject. The research is also conscious of achieving a sample size significant enough to withstand robust statistical testing.

The ultimate objective of the research is to determine if there are increased shareholder returns as a result of activist investor events in Europe. The author wishes to examine this by asking 3 questions outlined below which will be used to form specific inferential statistical hypothesis for testing.

- Do activist events add any value to the shareholders of the companies targeted?
- Do activist events add any value above the market returns?
- Do activist events add value above the market return when the returns are adjusted for risk?

Although extensive research has been carried out on shareholder activism there appears no consensus on its impact on the stock performance. In addition and surprisingly, no research has been found that investigated the effect of multiple activist events in a time period. Should the data be robust enough to permit it, an additional possible sub-objective of this research will be to explore if multiple activist events on a company in the period have a different impact on the returns to those companies who have been subject to just a single activist event.

In summary, no single study exists which explores the performance of stock on European listed companies post activist events over the defined time period. This study aims to contribute to the growing area of shareholder activism research in Europe by providing thorough analysis of the performance of the stock prices in the short to medium term post activist event versus the performance of market.

Chapter 4: Research Methodology

"A measure of the impact of activism on the returns to shareholders of the target companies: A European perspective 2008 - 2018"

Research Design

The ultimate objective of the research is to determine if there are increased shareholder returns as a result of activist investor events in Europe. The author will achieve this determination in a deductive quantitative manner through a cross-sectional event study. The event study comprises a collection of activist investor events on European publicly listed companies for a 10 year period from 2008 to 2018 and a quantitative analysis of stock prices around the period of the activist event. Using such financial market data and evaluating the changes in the stock prices around the date of the activist event and measuring the impact of the specific event reflects the event study methodology described by MacKinley (1997).

A deductive approach as outlined in Wilson (2010), involves the developing of a hypothesis based on theory, and subsequent research designed to best test the hypothesis. In the case of this research the theory is that of activist investors as outlined in the literature review. As the core data for the research is the analysis of the stock prices the quantitative approach is most appropriate. If the research was to consider the demands of the activists a qualitative research method may be more appropriate however this is not the case with this research.

As the variables being analysed are independent and there is no manipulation by the research, the research is observational. The measurement and comparison of the variables at the same time displays the cross sectional design of the research

The first hypothesis of this research is to determine if an activist event has an effect on stock price returns when compared to the returns in the stock market. Furthermore are the returns on companies which have been subject to an activist event greater than the market returns?

$H1_0$: Returns on target companies = Return on market

$H1_A$: Returns on target companies > Return on market

The research design is a quantitative review of all activist events from 2008 – 2018 inclusive. This period was chosen to maximise the data and to expand on the research of Filatotchev and Dotsenko (2013) which reviewed shareholder activism in the UK from 1998 to 2008. The author has extended the geographical reach of this research to Europe due to the increasing prevalence of activist events in Europe as ascribed in the literature review. In order to adequately analyse the short and medium term impact of activism on the shareholder returns the research approach will measure the impact using the financial market stock prices and subsequent returns throughout specific time frames around the date of the activist event:

- on the day before the activist event (T-1)
- the day of the activist event (T)
- the day after the activist event (T+1)
- 1 week after the activist event (T+7)
- 2 weeks after the activist event (T+14)
- 30 days after the activist event (T+30)
- 90 days after the activist event (T+ 90)

For the analysis of the returns on the activist events the research will require a comparative data set of returns. Considering the research is centred around activist events on European listed companies the STOXX Europe 600 Index has been chosen as an appropriate benchmark.

Secondly, the research will consider the risk - adjusted performance metric known as the Sharpe ratio. The Sharpe ratio, or 'Sharpe's measure' as explained by Bodie, Kane and Marcus (2011) is a widely used risk –adjusted performance measure and divides the excess return on the stock over the risk free rate by the standard deviations of the returns over that period. Comparisons of Sharpe ratio are an important metric used in financial performance analysis and testing for the equality of Sharpe ratios is a useful tool (Ledoit and Wolf, 2008). In the same manner as outlined above, the research will analyse the Sharpe ratios of the stock subject to the activist event at the specified time frames and the

Sharpe ratio of the market at similar intervals. The hypothesis of this stage of the research is:

$H2_0$: Sharpe Ratio of target companies = Sharpe Ratio of market

$H2_A$: Sharpe Ratio of target companies > Sharpe Ratio of market

In order to consider the effect of multiple activist events on a company, the final design stage of the research will investigate those companies which have had multiple activist events during the time period of the research. The research will divide the data in to two sample data sets:

Dataset A: Companies subject to a single activist event

Dataset B: Companies subject to more than one activist event

The research will examine the same metrics outlined above but comparing the returns and Sharpe ratio of single event companies against the returns and Sharpe ratio of multiple event companies.

$H4_0$: Returns on single event targets = Return on multiple event targets

$H4_A$: Returns on single event targets >Return on multiple event targets

and

$H5_0$: Sharpe Ratio of single event targets = Sharpe Ratio of multiple event targets

$H5_A$: Sharpe Ratio of single event targets > Sharpe Ratio of multiple event targets

Research Philosophy and Approach

Positivist research, defined as "Using scientific method and language to investigate and write about human experience is supposed to keep the research free of the values, passions, politics and ideology of the researcher" (Ryan, Scapens and Theobold (2002). provides the foundational lens for the author undertaking this research. The author aims at obtaining a full understanding of the research question by the conduct of an event study and resulting statistical testing and observations. It is the belief of the author that this

research is independent of the author and thus the research can be truly objective. The philosophical ontology of the author is reflective of a logical positivism as described by Ryan *et al*., (2002). The positivist approach and the focus on scientific methods contrast with the subjective meaning of social action which is core to the interpretivist philosophy. Forged from values which are derived from phenomenology and hermeneutics (Travis, 1999), the interpretivist research style does not fit this research design and thus would be an inappropriate direction in achieving the research objectives.

Data Collection – Activist Events

Alvarez & Marsal, A&M, a global professional services firm providing business advisory, performance improvement and turnaround management services, publish the A&M Activist Alert twice yearly on activist events. A&M provided the author with their recorded activist actions in Europe from 2009 to 2018. This data was used as the primary source of data for the research. The A&M report outlined 625 activist events over the 10 years available which accounted for one activist event record per each activist demand made. As data for this research is concerned primarily with the timings of activist events the author filtered the list by date of activist event.

In addition the author mirrored a data collection methodology used by Filatotchev and Dotsenko (2013) by utilising the Factiva database. Factiva is a business information and research tool owned by Dow Jones & Company and provides comprehensive information on corporate events. The data was collected using a publication search function and using the following combination of words:

'shareholder(s) activism OR investor(s) activism OR activist shareholder(s) OR activist investors(s)' in the headline and 'listed' anywhere in the article.

Factiva settings also allowed for search variables on date and geographical region of the publication which assisted in refining the results. The search results obtained are summarised in Table 1.

Search Term used in Factiva	In the Headline	With 'Listed' anywhere in Article
shareholder activism **OR** shareholders activism **OR** investor activism **OR** investors activism	518	493
activist shareholder* **OR** activist investors*	9,433	6,211

Table 1: Summary of search results from Factiva database

Throughout the review of the above articles the author manually collected data on the time frame of the activist event, details about the activist and their particular demands. The author merged the A&M data and the Factiva data and removed the following:

- Duplicate entries
- Companies listed outside of Europe (53)
- Companies for which historic share prices were not available (18)

When one or more activist event was initiated by the same activist investor or by a different activist investor in relation to the same demand, only the first activist event was recorded in the data sample. This event was recorded provided that the time lag between the events was less than 30 days. If the time lag was over 30 days two separate events were recorded. A full data library of 360 activist events from 150 activists across 231 target companies over the 11 year time frame was collated. 205 of these events represent target companies which have been subject to multiple activist events within the 2008-2018 time range. In total there are 76 target companies which have been subject to one or more activist event as defined above.

Data Collection - Stock Prices, Market Prices and Risk Free Rate

Historical stock prices data for the target companies on the required time frames around the activist event window were downloaded from the Yahoo! Finance website and Bloomberg. There were 18 companies where historical stock information was not available and these 18 companies were excluded from the data.

The stock prices for the STOXX Europe 600 Index were downloaded directly from the STOXX website for the time period of the event study, 01/01/2008 - 31/12/2018 inclusive. The STOXX Europe 600 Index was introduced in 1998 and has a fixed number

of components representing 17 European countries and a range of small to large capitalization companies. Its composition is reviewed four times a year.

In order to consider the Sharpe ratio the researcher required an appropriate risk free rate. Government bonds yields are a common used risk free rate measure, but as the research geographical focus is across Europe the researcher has used Euribor as an appropriate risk free rate for the considered data. Euribor is the Euro Interbank Offered Rate and is the average interest rate at which European banks borrow from each other. An additional positive characteristic of Euribor is that there are 5 different rates depending on the time frame of the transaction. The time frames are 1 week, 1 month, 3 months, 6 months and 12 months. Considering the cross sectional attributes of the research these time frames align with those observed by the research design.

As stated in the research design above, the research is an event study of specified time frames around the date of the activist event, T. The stock prices were collected for the specific dates through Yahoo! Finance and Bloomberg. To ensure integrity of the research the STOXX and Euribor data was collated for the same dates for each of the 360 events and the respective specified time frames after the event.

Data Analysis Tools

As noted in the above sections, the purpose of this research is to quantitatively assess the impact of activist events on European listed companies and the subsequent returns to shareholders in the time frame of 2008 to 2018 inclusive. In this section the author will outline and rationalise the analysis and testing undertaken on the data collated to address the research question. In advance of data analysis the research must address any assumptions of the data library collated and specifically of the data to be analysed.

The activist events collated are a sample of a true population. As we are not accessing a full population the author must make an inference to the population (O'Shea, 2013). The Central Limit Theorem allows us to make explicit statements about a population *"because the sample mean follows an approximate normal distribution for large sample sizes"* (DeFusco *et al.* (2007, p.222). Defusco *et al.* further expand to confirm that where a sample size exceeds 30, an assumption of normality in the sample is valid. As the

sample size of the data library collated for this research is 360 the assumption of normality in the sample is accepted.

Whilst the author can now assume that the mean of the data library is normally distributed, the standard deviation of the population and thus the sample is unknown. As the standard deviation is unknown the analysis is unable to use a z test. Instead the research will use a t test to test the hypothesis that the returns extracted from the stock prices of companies which have been subject to an activist event are greater than the returns extracted from the stock prices of the market.

A t test is a hypothesis test which uses a t-statistic that follows a t-distribution. Lind, Marchal and Watson (2013) outline the characteristics of the t-distribution as follows:

- A continuous probability distribution defined by a single parameter known as degrees of freedom (df)
- It is bell shaped and symmetrical with a mean of zero
- Closely related to the normal distribution
- As the df increasse the distribution approaches normality (Central Limit Theorem)

The author has demonstrated the assumption of normality in the collected sample. The research will now rely on the t test for two samples assuming unequal variances, as the population variance is unknown. The parametric t test is then used to make the statistical decision. A two sample t test compares the means of two independent samples in order to determine if there exists statistical evidence that the two population means are different. Two actions are possible once the test statistic has been calculated (1) Reject the null hypothesis or (2) fail to reject the null hypothesis. The decision made is based on the comparison of the t statistic to the level of significance of the test. All hypothesis tests are undertaken at both $\alpha = 0.05$ and $\alpha = 0.01$ levels of significance. The research will reject the null hypothesis if the p value calculated from the t test is greater than the level of significance of the test. We will fail to reject the null hypothesis if the p value is less than or equal to the significance level. The author performed all calculations and testing using the Microsoft Office application Excel.

In order to complete the testing as described above the author uses a variety of analytical equations to implement and perform the test required determining an answer to the

research question. These are outlined below. The stock returns and market returns are calculated using Equation 4. All rates of returns for the purpose of calculation have been annualised. Calculations of the Sharpe ratios will involve individual calculations of the returns on the target companies and the returns on the STOXX 600. Having obtained the Euribor rates (as the risk free measure) over the time frames around the date of activism the risk free rates for the time period T, T+1, T+7, T+ 14, T+30 and T+90 are aligned as follows:

Time T, time T+1 and time T+7 → 1 week Euribor rate at time of activism

Time T+14 →2 week Euribor rate at time of activism

Time T+30 → 1 month Euribor rate at time of activism

Time T+90 → 3 month Euribor rate at time of activism

Additionally to complete the Sharpe ratio calculation (Equation 6) the standard deviations of the target stock and the STOXX 600 stock are calculated. The standard deviations of the stock are calculated using the stock prices for a 260 day period in the year of the activist event. The standard deviations of the market are calculated using 260 closing prices in the year of the activist event. The standard deviations are calculated using Equation 2 below. The analysis required for the research also requires the use of descriptive and inferential statistics.

$$\bar{x} = \frac{\sum x}{n}$$

Equation 1: Sample Mean

The mean forms the average of the stock prices which forms the basis of the testing

$$s = \sqrt{\frac{\sum(x - \bar{x})^2}{n - 1}}$$

Equation 2: Sample Standard Deviation

This equation is used to calculate the sample standard deviation for use in the Sharpe Ratio

$$s^2 = \frac{\sum(x - \bar{x})^2}{n - 1}$$

$$Return = In\frac{Stock\ Price_{\ t}}{Stock\ Price_{\ t-n}}$$

Equation 3: Sample Variance

A critical input in to calculating the sample standard deviation

$$t = \frac{\left(\bar{X}_1 - \bar{\bar{X}}_2\right) - (\mu_1 - \mu_2)}{\left(\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}\right)^{1/2}}$$

Equation 4: Return on a Stock

Used to calculate the daily returns of a stock

$$df = \frac{\left(\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}\right)^2}{\frac{\left(s_1^2/n_1\right)^2}{n_1 - 1} + \frac{\left(s_2^2/n_2\right)^2}{n_2 - 1}}$$

Equation 5: Test of the Difference between Two Population Means (Unknown Population Variances; Assumed Unequal)

The t-statistic is used for the hypothesis test for the research

$$Sharpe\ Ratio = \frac{R_p - R_f}{Standard\ Deviation_P}$$

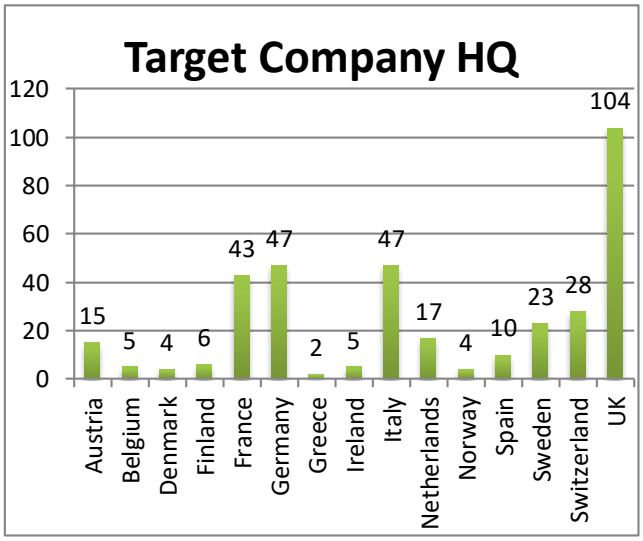
Equation 6: The Sharpe Ratio

Used to calculate the Sharpe ratio for the targeted stock and for the market

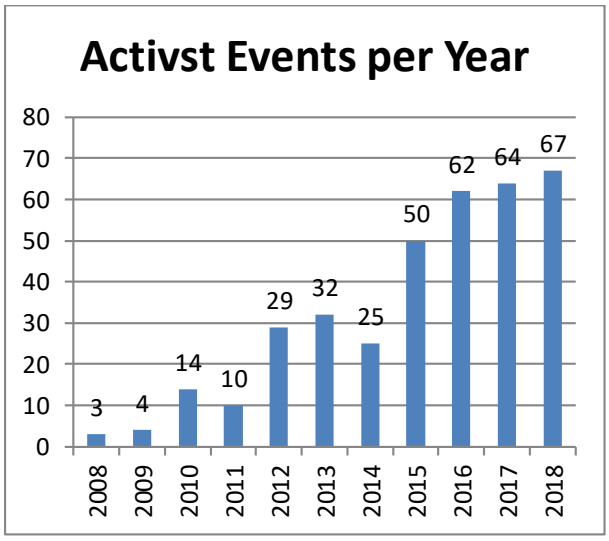
The method of analysis and testing has been outlined above and the author will now outline the results of the analysis.

Chapter 5: Analysis & Findings

To evaluate the impact of activist events on European listed companies and the subsequent returns to shareholders in the time frame of 2008 to 2018 inclusive, the research collated a data library of 360 activist events as described in the methodology section above. Graph 1 and 2 summarise the geographical location of the target company headquarters and the number of activist events recorded by year of the activist event respectively. Graph 1 shows that of the 360 activist events 104 (29%) of these were in UK headquartered companies. Graph 2 reveals that there has been a steady rise in the number of activist events since 2008. However this trend should be approached with caution as the details of activist events 11 years ago can be difficult to extrapolate from press databases. A&M, the alternative data source, have concurred with this observation, that data is limited prior to 2010.



Graph 1: Country of Domicile of Target Company HQ



Graph 2: Breakdown of activist Events by year

Graph 3: Companies having Multiple Activist Events

The research will also investigate those companies which have had multiple activist events. Graph 3 outlines the breakdown of the 205 events that represent the 76 target companies which have been subject to multiple activist events within the 2008-2018 time range. 45 companies experienced only 2 activist events in the period, whilst one company experienced as many as 8.

The author has performed the analysis as presented above and will now outline the results found. The results are outlined for three different datasets. Firstly, we will outline the results of the testing on the returns on the stock prices and the returns on the market across the 6 variable time frames. Secondly, the results will be presented for the t-tests on the Sharpe ratio for the targeted stock returns and market returns. Finally the research will outline the results obtained on the t tests of 1) the returns and 2) the Sharpe ratio of companies which have been subject to a single activist event in the 2008 – 2018 time frame, when compared with the returns and Sharpe ratio of those companies which have been subject to more than one activist even in the stated period.

Results: T- Test of Returns on Stock which has been subject to activist events

Firstly we will outline the results of the t-test on the returns observed on the target companies when compared with the returns observed on the market (STOXX 600). The research has observed these over 6 different time frames. Time T being the day of the activist event, T+1, T+7, T+14, T+30 and T+90. A p value was generated for all 6 variables.

Hypothesis tested:

H_o: Returns on a target company's stock = returns on the market

H_A: Returns on a target company's stock > returns on the market

Level of significance	α = 0.05		α = 0.01	
	Stock Return Day T	Market Return Day T	Stock Return Day T	Market Return Day T
Mean	0.006171669	0.000073516	0.006171669	0.000073516
Variance	0.002452762	0.000102878	0.002452762	0.000102878
Observations	360	360	360	360
Hypothesized Mean Difference	0		0	
df	389		389	
t Stat	2.288757665		2.288757665	
P(T<=t) one-tail	**0.011314401**		**0.011314401**	
t Critical one-tail	1.648780173		2.335972096	

Figure 1: t-test of returns at time T

From Figure 1, on the day of the activist event (T) we can see that the p value of 0.011314401 is less than the α = 0.05 level of significance so we can reject the null hypothesis. However at α = 0.01 there is not sufficient evidence and as a result we fail to reject the null hypothesis. Hence there is evidence at a 95% level to reject the null hypothesis that the returns on activist stock equal the returns on the market on the day of the activist event, but not at the 99% level.

Level of significance	α = 0.05		α = 0.01	
	Stock Return Day T+1	Market Return Day T+1	Stock Return Day T+1	Market Return Day T+1
Mean	0.012333359	-0.001138463	0.012333359	-0.001138463
Variance	0.002734556	0.000144075	0.002734556	0.000144075
Observations	360	360	360	360
Hypothesized Mean Difference	0		0	
df	397		397	
t Stat	4.764140367		4.764140367	
P(T<=t) one-tail	**0.000001332**		**0.000001332**	
t Critical one-tail	1.648700863		2.335777406	

Figure 2: t-test of returns at time T+1

Moving to one day after the activist event (T+1), the testing results in Figure 2 extracts a p value of 0.000001332. Conclusive results are observed at this event window at the two levels of significance. With such a low p value we can reject the null hypothesis and hence deduce that there exists evidence that one day after an activist event the returns on the target company stock is greater than the returns in the market.

Level of significance	**α = 0.05**		**α = 0.01**	
	Stock Return Day T +7	**Market Return Day T +7**	**Stock Return Day T +7**	**Market Return Day T +7**
Mean	0.022053752	0.000200873	0.022053752	0.000200873
Variance	0.017708367	0.000234362	0.017708367	0.000234362
Observations	360	360	360	360
Hypothesized Mean Difference	0		0	
df	369		369	
t Stat	3.095391954		3.095391954	
P(T<=t) one-tail	**0.001057828**		**0.001057828**	
t Critical one-tail	1.648993533		2.336495908	

Figure 3: t-test of returns at time T+7

We now turn to the time frame of 7 days post activist event and the results of the testing are illustrated in Figure 3. We can see that at this variable we have a p value of 0.001057828. At both the α = 0.05 and α = 0.01 levels of significance we reject the null hypothesis at this time. There exists sufficient evidence to suggest that the returns after 7 days, on companies that have been subject to an activist event, are greater than the returns in the market.

Level of significance	α = 0.05		α = 0.01	
	Stock Return Day T+14	Market Return Day T+14	Stock Return Day T+14	Market Return Day T+14
Mean	0.018990176	0.000722674	0.018990176	0.000722674
Variance	0.005884348	0.000211384	0.005884348	0.000211384
Observations	360	360	360	360
Hypothesized Mean Difference	0		0	
df	385		385	
t Stat	4.43933052		4.43933052	
P(T<=t) one-tail	**0.00000590**		**0.00000590**	
t Critical one-tail	1.648821068		2.336072487	

Figure 4: t-test of returns at time T+14

Interestingly we can see from the results in Figure 4 above that when we tested the data 14 days after the activist event we get a lower p value than the previous 7 day time frame. A p value of 0.00000590 is observed for the T+14 data, which is stronger evidence to reject the null hypothesis than obtained for T+7. These results demonstrate that there exists strong evidence at $\alpha = 0.05$ and $\alpha = 0.01$ levels of significance to indicate that the returns on stick that have been subject to an activist event 14 days previously have greater returns than the market in the same time frame.

Level of significance	α = 0.05		α = 0.01	
	Stock Return Day T+30	Market Return Day T+30	Stock Return Day T+30	Market Return Day T+30
Mean	0.021834085	0.000874808	0.021834085	0.000874808
Variance	0.009434779	0.000232545	0.009434779	0.000232545
Observations	360	360	360	360
Hypothesized Mean Difference	0		0	
df	377		377	
t Stat	4.044589173		4.044589173	
P(T<=t) one-tail	**0.000031796**		**0.000031796**	
t Critical one-tail	1.648905466		2.336279687	

Figure 5: t-test of returns at time T+30

We turn now to the results of the testing at the two variable points with the greatest time lapse from the activist event. As can been seen from Figure 5 the results at T+30 generated a p value of 0.000031796. Again we have significant evidence to reject the null hypothesis and state that there is strong evidence at both the 95% and 99% confidence

level to suggest that 30 days after an activist event the returns in the target company stock are greater than the returns on the market.

Level of significance	α = 0.05		α = 0.01	
	Stock Return Day T+90	Market Return Day T+90	Stock Return Day T+90	Market Return Day T+90
Mean	0.019100972	0.000365099	0.019100972	0.000365099
Variance	0.025354396	0.000206716	0.025354396	0.000206716
Observations	360	360	360	360
Hypothesized Mean Difference	0		0	
df	365		365	
t Stat	2.223490776		2.223490776	
P(T<=t) one-tail	**0.013397179**		**0.013397179**	
t Critical one-tail	1.649039017		2.336607587	

Figure 6: t-test of returns at time T+90

Finally for this data set the research will outline the results at T+90 as seen in Figure 6. A p value of 0.013397179 is obtained from this data testing. This result indicates that we can reject the null hypothesis at α = 0.05 but not at α = 0.01. At α = 0.01 we fail to reject the null hypothesis. With 95% confidence we can say that returns are greater on companies that have been subject to an activist event 90 days previously than on returns on the market, however we cannot make this statement at a 99% confidence level. In fact at 99% confidence we fail to reject the null hypothesis that the returns on both activist stock and the market are equal after a 90 day time lapse.

Results: T – Test of Sharpe Ratio of Returns which has been subject to activist events

Turning now to the results of the t-tests where we examined the differences between the Sharpe ratio of the returns on the stocks which have been subject to an activist event and the Sharpe ratio of the returns on the market. We have observed these variables across the same 6 time frames as the previous data and will now outline the results found.

Hypothesis tested:

H_0: Sharpe Ratio of returns on target company's stock = Sharpe Ratio of returns on the market

H_A: Sharpe Ratio of returns on target company's stock > Sharpe Ratio of returns on the market

Level of significance	α = 0.05		α = 0.01	
	Stock Sharpe Day T	Market Sharpe Day T	Stock Sharpe Day T	Market Sharpe Day T
Mean	0.025812381	0.002175282	0.025812381	0.002175282
Variance	0.023472603	0.00082266	0.023472603	0.00082266
Observations	360	360	360	360
Hypothesized Mean Difference	0		0	
df	384		384	
t Stat	2.877296552		2.877296552	
P(T<=t) one-tail	**0.002117487**		**0.002117487**	
t Critical one-tail	1.648831425		2.336097913	

Figure 7: t-test of Sharpe Ratios at time T

The first results observed on the day of the activist event being announced and featured in Figure 7 show a p value of 0.002117487. From this we can deduct that at both levels of significance (α = 0.05 and α = 0.01) we have sufficient evidence to reject the null hypothesis and that significant evidence exists that the Sharpe ratio of the returns on companies with have been subject to an activist event are great than to the Sharpe ratio of the market at the same time period.

Level of significance	α = 0.05		α = 0.01	
	Stock Sharpe T+1	Market Sharpe T+1	Stock Sharpe T+1	Market Sharpe T+1
Mean	0.046644137	-0.001005067	0.046644137	-0.001005067
Variance	0.023236334	0.001217282	0.023236334	0.001217282
Observations	360	360	360	360
Hypothesized Mean Difference	0		0	
df	397		397	
t Stat	5.781431004		5.781431004	
P(T<=t) one-tail	**0.000000008**		**0.000000008**	
t Critical one-tail	1.648700863		2.335777406	

Figure 8: t-test of Sharpe Ratios at time T+1

Moving to the results one day out from the activist event (T+1) we can see that the p value observed here is very low at 0.000000008. With this p value we have evidence at both the $\alpha = 0.05$ and $\alpha = 0.01$ to reject the null hypothesis. The research suggest that there is significant evidence to indicate that the Sharpe ratio on returns on companies which have been subject to an activist event the day previous is greater than the Sharpe ratio of the market over the same time period.

Level of significance	α = 0.05		α = 0.01	
	Stock Sharpe T+7	Market Sharpe T+7	Stock Sharpe T+7	Market Sharpe T+7
Mean	0.084943498	0.002515508	0.084943498	0.002515508
Variance	0.259778793	0.001743941	0.259778793	0.001743941
Observations	360	360	360	360
Hypothesized Mean Difference	0		0	
df	364		364	
t Stat	3.058237695		3.058237695	
P(T<=t) one-tail	**0.001195602**		**0.001195602**	
t Critical one-tail	1.649050545		2.336635892	

Figure 9: t-test of Sharpe Ratios at time T+7

Level of significance	α = 0.05		α = 0.01	
	Stock Sharpe T+14	Market Sharpe T +14	Stock Sharpe T+14	Market Sharpe T +14
Mean	0.067008174	0.003582538	0.067008174	0.003582538
Variance	0.051025813	0.001552732	0.051025813	0.001552732
Observations	360	360	360	360
Hypothesized Mean Difference	0		0	
df	381		381	
t Stat	5.248217244		5.248217244	
P(T<=t) one-tail	**0.000000128**		**0.000000128**	
t Critical one-tail	1.648862822		2.336174995	

Figure 10: t-test of Sharpe Ratios at time T+14

Level of significance	α = 0.05		α = 0.01	
	Stock Sharpe T+30	Market Sharpe T+30	Stock Sharpe T+30	Market Sharpe T+30
Mean	0.086131511	0.003751769	0.086131511	0.003751769
Variance	0.099751243	0.001726212	0.099751243	0.001726212
Observations	360	360	360	360
Hypothesized Mean Difference	0		0	
df	371		371	
t Stat	4.906670479		4.906670479	
P(T<=t) one-tail	**0.000000695**		**0.000000695**	
t Critical one-tail	1.648971159		2.336440975	

Figure 11: t-test of Sharpe Ratios at time T+30

Level of significance	α = 0.05		α = 0.01	
	Stock Sharpe T+ 90	Market Sharpe T+90	Stock Sharpe T+ 90	Market Sharpe T+90
Mean	0.118483495	0.00073721	0.118483495	0.00073721
Variance	0.247432948	0.001631635	0.247432948	0.001631635
Observations	360	360	360	360
Hypothesized Mean Difference	0		0	
df	364		364	
t Stat	4.476540092		4.476540092	
P(T<=t) one-tail	**0.000005081**		**0.000005081**	
t Critical one-tail	1.649050545		2.336635892	

Figure 12: t-test of Sharpe Ratios at time T+90

Finally, for this data set, we will outline the results of the remaining 4 time frames as presented in Figure 9, Figure 10, Figure 11 & Figure 12 above. We have grouped these results together as they all 4 sets of results exhibit similar results and mirror the results of the previous two time frames. As we can see the p values generated for the 4 time frames T +7, T+ 14, T + 30 and T + 90 are 0.001195602, 0.000000128, 0.000000695 and 0.000005081 respectively. For all 4 results there exists sufficient evidence at both $\alpha = 0.05$ and $\alpha = 0.01$ levels of significance to reject the null hypothesis. The research can thus infer with a high degree of confidence that the Sharpe ratio on returns of companies that have been subject to an activist event in the last 7, 14, 30 or 90 days is not the same as the Sharpe ratio observed on the market over the same time frames. Rejection of the null hypothesis gives us confidence that the Sharpe ratio for the returns on companies that have been subject to an activist event is greater than the Sharpe ratio of returns on the market.

In summary, the results for this data set are conclusive across all of the 6 time frames at both a 95% confidence interval ($\alpha = 0.05$) and a 99% confidence interval ($\alpha = 0.01$). The results clearly demonstrate that significant evidence exists to reject the null hypothesis that the Sharpe ratio of returns on activist events was no different to the Sharpe ratio of returns on the market when observed at the same time intervals. To conclude the results, the next section of the research will outline the results of the t-tests on the returns and Sharpe Ratio for the final data set. In this data set we look at the returns and Sharpe ratio on companies which have been subject to a single activist event in the 2008 – 2018 time frame, when compared with the returns on those companies which have been subject to more than one activist even in the stated period.

Results: T – Test of Returns and Sharpe Ratio of Single and Multiple Activist Event Stock

The purpose of this test was to examine the effect of multiple activist events on a company, and to investigate if those companies which have had multiple activist events during the time period of the research have had 1) greater returns or 2) greater Sharpe ratio that those companies who have only been subject to a single activist event. As outlined in the research design, having considered the entire data sample this element of the research sub divides the data into two distinct subsets. Subset A contains all events

which have been subject to a single activist event over the 11 year period. Subset A consists of 155 events. Subset B contains all companies which have been subject to 1 or more activist events over the period of research. Subset B consists of 205 events over 76 target companies. The results of comparing the returns and Sharpe ratios on single event companies with those of multiple event companies are outlined below.

Hypothesis tested:

$H1_0$: Returns on a single activist event company's stock = Returns on a multiple event company's stock

$H1_A$: Returns on a single activist event company's stock > Returns on a multiple event company's stock

and

$H2_0$: Sharpe Ratio of Returns on a single activist event company's stock = Sharpe Ratio of Returns on a multiple event company's stock

$H2_A$: Sharpe Ratio of Returns on a single activist event company's stock < Sharpe Ratio of Returns on a multiple event company's stock

Level of Significance	α = 0.05		α = 0.01	
	Stock Return Day T Single Event	Stock Return Day T Multiple Events	Stock Return Day T Single Event	Stock Return Day T Multiple Events
Mean	0.003645415	0.008081764	0.003645415	0.008081764
Variance	0.002700627	0.002269155	0.002700627	0.002269155
Observations	155	205	155	205
Hypothesized Mean Difference	0		0	
df	316		316	
t Stat	-0.831114284		-0.831114284	
P(T<=t) one-tail	**0.203268305**		**0.203268305**	
t Critical one-tail	1.649689935		2.338206235	

Figure 13: t-test of returns at time T (Single v Multiple Events)

Figure 13 presents the results obtained from the t-test on the returns on the day of the activist event for both single event stocks and multiple event stocks. A p value of 0.203268305 deduces that the result is significant at the α = 0.05 level but not at the α = 0.01 level. We can reject the null hypothesis at the α = 0.05 level but not at the α = 0.01 level.

Level of Significance	α = 0.05		α = 0.01	
	Stock Return Day T + 1 Single Event	Stock Return Day T + 1 Multiple Events	Stock Return Day T+ 1 Single Event	Stock Return Day T+ 1 Multiple Events
Mean	0.011038777	0.013312189	0.011038777	0.013312189
Variance	0.003193649	0.002399155	0.003193649	0.002399155
Observations	155	205	155	205
Hypothesized Mean Difference	0		0	
df	304		304	
t Stat	-0.399969818		-0.399969818	
P(T<=t) one-tail	**0.34472982**		**0.34472982**	
t Critical one-tail	1.649881428		2.338676697	

Figure 14: t-test of returns at time T+1 (Single v Multiple Events)

For 1 day post the activist event there is no evidence at either the $\alpha = 0.05$ or the $\alpha = 0.01$ level to reject the null hypothesis. A p value of 0.34472982 as illustrated in Figure 14 determines this. At this time frame (T+1) in the data there is no evidence to suggest that the returns on stock that has been subject to a single activist event are any different to the returns on stock that has been subject to more than 1 activist event.

Level of Significance	**α = 0.05**		**α = 0.01**	
	Stock Return Day T + 7 Single Event	**Stock Return Day T + 7 Multiple Events**	**Stock Return Day T+ 7 Single Event**	**Stock Return Day T+ 7 Multiple Events**
Mean	0.01481979	0.027523333	0.01481979	0.027523333
Variance	0.004130867	0.02797503	0.004130867	0.02797503
Observations	155	205	155	205
Hypothesized Mean Difference	0		0	
df	277		277	
t Stat	-0.994669506		-0.994669506	
P(T<=t) one-tail	**0.16038256**		**0.16038256**	
t Critical one-tail	1.650373154		2.339885098	

Figure 15: t-test of returns at time T+7 (Single v Multiple Events)

The results observed for this test at T+7 as shown in Figure 15 above are similar to those results observed at the time T (Figure 13) above. A p value of 0.16038256 indicates that there is no evidence at either significance level to reject the null hypothesis.

Level of Significance	**α = 0.05**		**α = 0.01**	
	Stock Return Day T + 14 Single Event	**Stock Return Day T + 14 Multiple Events**	**Stock Return Day T+ 14 Single Event**	**Stock Return Day T+ 14 Multiple Events**
Mean	0.019551377	0.018565854	0.019551377	0.018565854
Variance	0.006430549	0.005500444	0.006430549	0.005500444
Observations	155	205	155	205
Hypothesized Mean Difference	0		0	
df	317		317	
t Stat	0.119233031		0.119233031	
P(T<=t) one-tail	**0.452583132**		**0.452583132**	
t Critical one-tail	1.649674634		2.338168646	

Figure 16: t-test of returns at time T+14 (Single v Multiple Events)

Level of Significance	α = 0.05		α = 0.01	
	Stock Return Day T + 30 Single Event	Stock Return Day T + 30 Multiple Events	Stock Return Day T+ 30 Single Event	Stock Return Day T+ 30 Multiple Events
Mean	0.019836663	0.023344331	0.019836663	0.023344331
Variance	0.010979513	0.008309581	0.010979513	0.008309581
Observations	155	205	155	205
Hypothesized Mean Difference	0		0	
df	305		305	
t Stat	-0.33237944		-0.33237944	
P(T<=t) one-tail	**0.36991554**		**0.36991554**	
t Critical one-tail	1.649864893		2.338636071	

Figure 17: t-test of returns at time T+30 (Single v Multiple Events)

Next we will consider the results at day T+14 and T+30 as outlined in Figure 16 and 17. The interpretation of these results is discussed together due to their similarity. P values of 0.452583132 and 0.36991554 at levels of significance α = 0.05 and α = 0.01 respectively demonstrate no evidence that permits rejection of the null hypotheses. Therefore at T+14 and T+30 we do not reject the null hypotheses and deduce that there is no evidence to suggest that there is any difference in the returns on single event target companies than those on multiple activist event companies.

Level of Significance	α = 0.05		α = 0.01	
	Stock Return Day T + 90 Single Event	Stock Return Day T + 90 Multiple Events	Stock Return Day T+ 90 Single Event	Stock Return Day T+ 90 Multiple Events
Mean	0.022194182	0.016762204	0.022194182	0.016762204
Variance	0.024176427	0.026355166	0.024176427	0.026355166
Observations	155	205	155	205
Hypothesized Mean Difference	0		0	
df	339		339	
t Stat	0.322023325		0.322023325	
P(T<=t) one-tail	**0.373816754**		**0.373816754**	
t Critical one-tail	1.649360905		2.337398037	

Figure 18: t-test of returns at time T+90 (Single v Multiple Events)

Finally, for the results 90 days out from the activist event (T+90), we find similar results as recorded at all preceding time frames where a p value of 0.373816754 means that we

have no evidence that permits rejection of the null hypothesis at either the $\alpha = 0.05$ level or $\alpha = 0.01$ level.

To summarise this section of the results we note that at the $\alpha = 0.05$ level of significance we have observed compounding results over the 6 time frames at both levels of significance where we fail to reject the null hypothesis that returns on a single activist event company's stock are no different to returns on a multiple event company's stock. We will now turn to the results of the tests of the Sharpe ratios of single event companies tested against the Sharpe ratios of companies who have been subject to multiple activist events during the period of the research. Considering the results obtained above we would not expect to see any conflicting results for the Sharpe Ratio

Having outlined the results of the testing of the returns on single activist event stock when compared with the returns on stock which has been subject to multiple activist events the research now moves to the final section of results. The results of the t-test of the Sharpe ratios for each of these data sets over the 6 time periods are presented below. The hypothesis tested is outlined as follows and Figures 19, 20, 21, 22, 23 and 24 present the summary statistics

$H2_0$: Sharpe Ratio of Returns on a single activist event company's stock = Sharpe Ratio of Returns on a multiple event company's stock

$H2_A$: Sharpe Ratio of Returns on a single activist event company's stock > Sharpe Ratio of Returns on a multiple event company's stock

Level of Significance	α = 0.05		α = 0.01	
	Sharpe Ratio Day T Single Event	Sharpe Ratio Day T Multiple Events	Sharpe Ratio Day T Single Event	Sharpe Ratio Day T Multiple Events
Mean	0.026090053	0.025602434	0.026090053	0.025602434
Variance	0.026465285	0.021328381	0.026465285	0.021328381
Observations	155	205	155	205
Hypothesized Mean Difference	0		0	
df	312		312	
t Stat	0.029416058		0.029416058	
P(T<=t) one-tail	**0.488275787**		**0.488275787**	
t Critical one-tail	1.649752124		2.338359015	

Figure 19: t-test of Sharpe Ratio at time T (Single v Multiple Events)

Level of Significance	α = 0.05		α = 0.01	
	Sharpe Ratio Day T +1 Single Event	Sharpe Ratio Day T +1 Multiple Events	Sharpe Ratio Day T +1 Single Event	Sharpe Ratio Day T +1 Multiple Events
Mean	0.050389187	0.043812513	0.050389187	0.043812513
Variance	0.028235548	0.019557608	0.028235548	0.019557608
Observations	155	205	155	205
Hypothesized Mean Difference	0		0	
df	296		296	
t Stat	0.394749644		0.394749644	
P(T<=t) one-tail	**0.346655974**		**0.346655974**	
t Critical one-tail	1.650017743		2.33901164	

Figure 20: t-test of Sharpe Ratio at time T+1 (Single v Multiple Events)

Level of Significance	α = 0.05		α = 0.01	
	Sharpe Ratio Day T + 7 Single Event	Sharpe Ratio Day T + 7 Multiple Events	Sharpe Ratio Day T + 7 Single Event	Sharpe Ratio Day T + 7 Multiple Events
Mean	0.061694932	0.102521682	0.061694932	0.102521682
Variance	0.035928824	0.42931582	0.035928824	0.42931582
Observations	155	205	155	205
Hypothesized Mean Difference	0		0	
df	248		248	
t Stat	-0.84652124		-0.84652124	
P(T<=t) one-tail	**0.199039063**		**0.199039063**	
t Critical one-tail	1.651021013		2.341477904	

Figure 21: t-test of Sharpe Ratio at time T+7 (Single v Multiple Events)

Level of Significance	α = 0.05		α = 0.01	
	Sharpe Ratio Day T + 14 Single Event	Sharpe Ratio Day T + 14 Multiple Events	Sharpe Ratio Day T + 14 Single Event	Sharpe Ratio Day T + 14 Multiple Events
Mean	0.067853347	0.06636914	0.067853347	0.06636914
Variance	0.049851145	0.052161746	0.049851145	0.052161746
Observations	155	205	155	205
Hypothesized Mean Difference	0		0	
df	336		336	
t Stat	0.061838312		0.061838312	
P(T<=t) one-tail	**0.47536418**		**0.47536418**	
t Critical one-tail	1.64940126		2.337497151	

Figure 22: t-test of Sharpe Ratio at time T+14 (Single v Multiple Events)

Level of Significance	α = 0.05		α = 0.01	
	Sharpe Ratio Day T + 30 Single Event	Sharpe Ratio Day T + 30 Multiple Events	Sharpe Ratio Day T + 30 Single Event	Sharpe Ratio Day T + 30 Multiple Events
Mean	0.076127564	0.093695471	0.076127564	0.093695471
Variance	0.109530965	0.092723955	0.109530965	0.092723955
Observations	155	205	155	205
Hypothesized Mean Difference	0		0	
df	316		316	
t Stat	-0.516042128		-0.516042128	
P(T<=t) one-tail	**0.303092937**		**0.303092937**	
t Critical one-tail	1.649689935		2.338206235	

Figure 23: t-test of Sharpe Ratio at time T+30 (Single v Multiple Events)

Level of Significance	α = 0.05		α = 0.01	
	Sharpe Ratio Day T + 90 Single Event	Sharpe Ratio Day T + 90 Multiple Events	Sharpe Ratio Day T + 90 Single Event	Sharpe Ratio Day T + 90 Multiple Events
Mean	0.106100819	0.127846006	0.106100819	0.127846006
Variance	0.223209121	0.266727881	0.223209121	0.266727881
Observations	155	205	155	205
Hypothesized Mean Difference	0		0	
df	345		345	
t Stat	-0.415331748		-0.415331748	
P(T<=t) one-tail	**0.339078624**		**0.339078624**	
t Critical one-tail	1.649282305		2.337205004	

Figure 24: t-test of Sharpe Ratio at time T +90 (Single v Multiple Events)

Finally, the results of the analysis of the Sharpe ratio for single and multiple activist event companies will be considered together across all 6 time frames due to the results obtained. Presented in Figures 19 – 24 above we can see the p values generated for the 6 time frames are 0.48827579, 0.34665597, 0.19903906, 0.47536418, 0.30309294 and 0.33907862 respectively. For all 6 time frames, results at $\alpha = 0.01$ level of significance indicate that no evidence exists which would allow the research to reject the null hypothesis. We therefore fail to reject the null hypothesis at $\alpha = 0.01$ for all time frames. The research can thus infer with a high degree of confidence that the Sharpe ratio on returns of companies that have been subject to single activist event are no different than the Sharpe ratio of those companies which have been subject to more than one activist event. When we lower the level of significance to $\alpha = 0.05$ we observe similar results also. Having presented the results of the analysis undertaken above the next section of the research will discuss the results and the research findings in the context of the literature review

Summary of Results and Observations

The author will now summarise the findings of the research and consider the outcomes prior to reaching a conclusion on the research question. The research question being examined had three elements as outlined previously:

- Do activist events add any value to the shareholders of the companies targeted?
- Do activist events add any value above the market returns?
- Do activist events add value above the market return when the returns are adjusted for risk?

The research considered all of the above across two datasets. Firstly, the entire dataset collated of activist events for the period 2008 – 2018. Secondly, in relation to those companies which were part of the collated data set but subdivided into two separate datasets for testing. Dataset A and dataset B comprised of companies which were subject to single activist events in the period (Dataset A) and companies that were subject to more than one activist event in the period (Dataset B). For ease of reference we will

summarise the basic mean values observed across each of the time frames and also the results of the hypothesis testing in the following tables:

Time	Mean Returns of Target Stock	Mean Returns of Market
T	0.6172%	0.007%
T+1	1.2333%	-0.114%
T+7	2.2054%	0.000%
T+14	1.8990%	0.072%
T+30	2.1834%	0.087%
T+90	1.9101%	0.037%

Table 2: Summary of mean Returns Observed

Time	Mean Sharpe of Target Stock	Mean Sharpe of Market
T	2.5812%	0.218%
T+1	4.6644%	-0.101%
T+7	8.4943%	0.252%
T+14	6.7008%	0.358%
T+30	9.9751%	0.375%
T+90	11.8483%	0.074%

Table 3: Summary of mean Sharpe Ratios Observed

Ho: Returns on Target Stock = Return on Market			
Time	p value	α = 0.05	α = 0.01
T	0.0113144	Reject	Do not Reject
T+1	0.0000013	Reject	Reject
T+7	0.0010578	Reject	Reject
T+14	0.0000059	Reject	Reject
T+30	0.0000318	Reject	Reject
T+90	0.0133972	Reject	Do not Reject

Table 4: Summary of T Test Results of Returns on Target Stock and Returns on Market

Ho: Sharpe of Target Stock = Sharpe of Market			
Time	p value	α = 0.05	α = 0.01
T	0.0021175	Reject	Reject
T+1	0.0000000	Reject	Reject
T+7	0.0011956	Reject	Reject
T+14	0.0000001	Reject	Reject
T+30	0.0000007	Reject	Reject
T+90	0.0000051	Reject	Reject

Table 5: Summary of T Test Results of Sharpe Ratio of Target Stock Returns and Sharpe Ratio of Market Returns

Ho: Returns of Single Event Stock v Returns of Multiple Event Stock			
Time	p value	α = 0.05	α = 0.01
T	0.20326831	Do not Reject	Do not Reject
T+1	0.34472982	Do not Reject	Do not Reject
T+7	0.1603826	Do not Reject	Do not Reject
T+14	0.45258313	Do not Reject	Do not Reject
T+30	0.36991554	Do not Reject	Do not Reject
T+90	0.37381675	Do not Reject	Do not Reject

Table 6: Summary of T Test Results of Returns on Single Event Stock and Returns on Multiple Event Stock

Ho: Sharpe Ratio of Single Event Returns v Sharpe Ratio of Multiple Event Returns			
Time	p value	α = 0.05	α = 0.01
T	0.4882758	Do not Reject	Do not Reject
T+1	0.3466560	Do not Reject	Do not Reject
T+7	0.1990391	Do not Reject	Do not Reject
T+14	0.4753642	Do not Reject	Do not Reject
T+30	0.3030929	Do not Reject	Do not Reject
T+90	0.3390786	Do not Reject	Do not Reject

Table 7: Summary of T Test Results of Sharpe Ratio of Target Stock Returns and Sharpe Ratio of Market Returns

Tables 2 and 3 present the mean returns and Sharpe ratios observed across the entire dataset for each individual time frame. We can see in Table 2 that the largest mean return on activist stock was at time T+7 (2.2054%) while interestingly the returns for same time frame on the market were 0%. Across all timeframes the return on the activist stock was greater than the market. Moving to table 3 and the observed means of the Sharpe ratios. Similar to the returns in Table 2, the Sharpe ratios of the activist stock across all time frames exceed the market Sharpe. What is interesting about the data in this table is the extent of which the Sharpe Ratio exceeds the market. The highest Sharpe ratio observed on the market was 0.375% (T+30) however the lowest Sharpe ratio observed was 2.5812% (T). A comparison of the Sharpe ratios at T+90 in Table 3, show that activist stock appears to have a +11.77% return over the market for the same period. These basic metrics of returns appear to indicate that activism has added to the returns for shareholders.

If we turn now to the t-tests undertaken to examine if the observations are statistically significant. Considering the results outlined in Table 4, the first set of analyses examined the returns experienced on the target firm stock after an activist event and returns obtained on the STOXX 600 over the same time period. Whilst the analysis did not identify conclusive evidence across all time frames there was significant evidence to say that in the event window from 1 day to 30 days after an activist event the returns were greater than the market. There is evidence to say that this may extend to 90 days however it is not as significant. These results are in contrast to the absence of any impact of activism on performance reported by Filatotchev and Dotsenko (2013). As outlined in the literature review varying results have been reported around the stock performance post activist event. Denes *et al.* (2015) find no indications of a relationship between a particular form of activism, shareholder proposals, and share values. In contrast to this, Prevost and Rao (2000) find negative share price change. However, the findings of the current study do not support this research.

Comparisons with previous research must be interpreted with caution. As outlined in the literature review, the heterogeneity of sources of previous research have been across type of activism (Karpoff 2011 and Brav *et al.,* 2008), category of activist (Klein and Zur, 2011; Becht *et al.,* 2008) and narrow specific geographical regions (Filatotchev and

Dotsenko, 2013 and Ingley *et al*. 2010), which can dilute the utility of comparison with the results obtained in this research.

Turning to the next set of results outlined in Table 5. These results concerned the Sharpe ratio on the returns of activist stock and the Sharpe ratio of returns on the market. As outlined, consistent results were obtained across all time frames and at both levels of significance. It is an interesting result to observe considering the results were not as conclusive when we measured returns only (Table 4). Using the risk adjusted measure has yielded strong results that activist sock provide higher returns than the market post activist event. Some research has suggested that activism manifests as a result of underperforming returns (Brav *et al.* 2008) and if that is the case then this research provides strong evidence of that changing immediately upon the time of activism. The incredibly low p values observed across all time frames to T+90 indicate that returns to shareholders are not short-lived.

In the final section of testing the research considered the previously measured metrics of returns and Sharpe ratio but in the context of single and multiple activism companies. Of the data set of 360 collated 205 of these events represent events on companies that have been subject to more than one activist event as described in the methodology chapter. In total there are 76 target companies which have been subject to one or more activist event. The findings of this section of the research are concurrent across all 6 time frames and the two metrics or returns and Sharpe ratio. No evidence was found that would suggest any difference in returns or Sharpe ratio for companies which have been subject to more than a single activist event. Considering the research observed 76 of these companies and 205 events, perhaps the frequency of increased share value and operating performance as suggested by Denes *et al.* (2015) as a motive for activism is not as apparent as first postulated. Perhaps these results might support the comments of Nordén and Strand (2011) that activism, and in this case repeated or additional activism may have groundings not in performance but in personal standings and status of the activist.

The findings of the research have been encouraging. From a returns perspective the research has presented significant evidence that activism results in greater returns to the shareholders in the short to medium term post activist event. The observation of the Sharpe ratio was introduced in this research as a new metric in the research of activism.

The results were constant when measured and considering the importance of the Sharpe ratio as a performance measure the findings may help in further understanding the impact of activism on returns. Despite these promising results questions remain regarding the impact of activism on a target.

This research consciously reviewed activism on European listed companies only and wanted to draw on as much data as possible which resulted in a long time period for the event study. As outlined, the data available after 6 years + became limited. Future research might benefit from the increased interest (and subsequent documentation) of activism, to provide an even more robust dataset for further study. There is abundant room for further research on this data library alone. The data did capture the activist involved and the demands of the activist. These variables could be considered for further research on this particular area.

The author is hopeful that the results and inferences of this research will aid investors, academia, activists and market participants in understanding activism in Europe and the impact that activism may have on investments held. Activism, as a word, can illicit negative connotations, however this research demonstrates that activism may actually prove to be a positive addition if increased returns to the investor are experienced.

Chapter 6: Conclusion

The primary purpose of this research was to examine shareholder activism from a European perspective with a specific focus on the performance of the company post activism. The research was undertaken with the aim of assessing activism in its broadest sense as much of the past research has been heterogeneous in approach and thus the results have been varied and inconsistent. This paper aimed to address the gap in the current research in order to provide a collective metric to enable further stratified research into European activism, and particularly into performance post activist event.

The paper gives a detailed analysis over the past 11 years and has shown that returns on stock that has been subject to an activist event can be greater than the returns available on the market in the short and medium term. Additionally when the returns were adjusted for risk, by use of the Sharpe ratio, the results across all time frames indicated returns greater than the market, peaking at an excess of +11%. Surprisingly the most obvious finding to emerge from the research was the lack of evidence to suggest that multiple activist events had any equivalent multiple effect on the returns. Taken together, these finding suggest a role for activism for investors seeking return.

An issue that was not addressed in this research was the measure of the individual impact of the various activists. Was any one activist more prominent or successful? A further study could asses this. An additional uncontrolled factor is the possibility that there were additional activist events which were not captured by the methodology utilised. Considering the paucity of events (31 of 360) recorded in the first 4 years of the study (2008 – 2011) there may be additional data to influence the findings of this research.

The importance of shareholder activism not only for investors, boards of directors, corporations and corporate managers, but also for the macro environment, is underscored by the documented rise of activism in Europe combined with the global shareholder empowerment movement. Shareholders seeking returns should no longer consider the ‘corporate gadflies’ tag that has overshadowed activist investors for years. This study has revealed that returns can be increased by activism. At a time when the U.S Treasury yield curve has inverted, Brexit is in its eleventh hour and reports of the European stronghold,

Germany, tipping in to recession this new understanding of activism on a macro level in Europe should provide positive reading for activists, investors and boards of directors alike. In reference to Alchain and Demsetz' (1972) rhetorical question: perhaps the monitor will now welcome a monitor.

References

Agrawal, A. and Knoeber, C. A. . (2012) 'Corporate Governance and Firm Performance' In: Shughart II C.R. and Shughart II W.F. *Oxford Handbook in Managerial Economics*. NY: Oxford University Press.

Alchian, A.A. and Demsetz, H. (1972) 'Production, Information Costs, and Economic Organization', *The American Economic Review*, (5), p. 777.

Barber, Brad M., 2007, Monitoring the monitor: Evaluating CalPERS' activism. The *Journal of Investing* Winter: 66-80

Becht, M., Franks, J., Mayer, C., and Rossi, S. (2008) 'Returns to Shareholder Activism: Evidence from a Clinical Study of the Hermes UK Focus Fund', *Review of Financial Studies*, 23(3), pp. 3093–3129. doi: 10.1093/rfs/hhn054.ra

Black Bernard S., 1998, 'Shareholder activism and corporate governance in the United States'. *The New Palgrave Dictionary of Economics and the Law*, Peter Newman, ed., Vol. 3, 459-465.

Bodie, Z, Kane, A, Marcus, AJ & Bodie, Z 2011, *Investments and portfolio management*, 9th edn. London: McGraw-Hill Irwin.

Brav, A., Jiang, W., Partnoy, F. and Thomas, R. (2008) 'The Returns to Hedge Fund Activism', *Financial Analysts Journal*, 64(6), pp. 45–61. doi: 10.2469/faj.v64.n6.7.

Buchanan, B., Netter, J., Pouslon, A. and Yang, T. (2012). Shareholder proposal rules and practice: evidence from a comparison of the United States and United Kingdom. *American Business Law Journal*. Winter Vol. 49 (Issue 4), p.739.

Cuñat, V., Gine, M., and Guadalupe, M., (2012) 'The vote is cast: The effect of corporate governance on shareholder value, *The Journal of Finance* 67: 1943-1977

DeFusco, R. A., McLeavey, D., Pinto, J and Runkle, D. (2007) *Quantitative investment analysis*. 2nd edn New Jersey: John Wiley (CFA Institute Investment Series)

Denes, M.R., Karpoff, J.M. and McWilliams, V.B.(2015) 'Thirty years of shareholder activism: A survey of empirical research', *Journal of Corporate Finance*, Vol. 44, 2017, 405-424

Fairfax, L. M. (2019) 'From Apathy to Activism: The Emergence, Impact, and Future of Shareholder Activism as the New Corporate Governance Norm', *Boston University Law Review*, 99(3), pp. 1301–1345. Available at: http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,cookie,shib&db=a9h&AN=136835276&site=eds-live&scope=site (Accessed: 17 August 2019).

Filatotchev, I. and Dotsenko, O. (2013) 'Shareholder activism in the UK: types of activists, forms of activism, and their impact on a target's performance', *Journal of Management & Governance*, (1), p. 5. doi: 10.1007/s10997-013-9266-5.

Gantchev, N., Gredil, O. and Jotikasthira, C. (2016). Governance under the gun: Spillover effects of hedge fund activism. University of North Carolina at Chapel Hill working paper

Goranova, M. and Ryan, L. V. (2014) 'Shareholder Activism: A Multidisciplinary Review', *Journal of Management*, 40(5), pp. 1230–1268. doi: 10.1177/0149206313515519.

Gupta, V. K., Han, S., Mortal, C., Silveri, S.D. and Turban, D.B. (2018) 'Do women CEOs face greater threat of shareholder activism compared to male CEOs? A role congruity perspective', *Journal of Applied Psychology*, (2), p.228

Ingley, C., Mueller, J. and Cocks, G. (2011) 'The financial crisis, investor activists and corporate strategy: will this mean shareholders in the boardroom?', *Journal of Management & Governance*, 15(4), pp. 557–587. doi: 10.1007/s10997-010-9130-9.

Judge, W. Q., Gaur, A. and Muller-Kahle, M. I. (2010) ' Antecedents of shareholder activism in target firms: evidence from a multi - country study', *Corporate Governance: an International Review, Forthcoming.* Available at SSRN: https://ssrn.com/abstract=1480788

Karpoff, J. (2011). The Impact of Shareholder Activism on Target Companies: A Survey of Empirical Findings

Klein, A. and Zur, E. (2011) 'The Impact of Hedge Fund Activism on the Target Firm's Existing Bondholders', *Review of Financial Studies*, 24(5), pp. 1735–1771. doi: 10.1093/rfs/hhr016.

Klein, A. and Zur, E.(2009). Entrepreneurial Shareholder Activism: Hedge Funds and Other Private Investors. *The Journal of Finance*. 64, 187-229. doi:10.1111/j.1540-6261.2008.01432.x

Lazard. (2018). *Lazards Review of Shareholder Activism.* Available: https://www.lazard.com/media/450655/lazards-review-of-shareholder-activism-1h-2018.pdf. [Last accessed 3rd Jan 2019].

Ledoit, O. and Wolf, M. (2008) 'Robust performance hypothesis testing with the Sharpe ratio', *Journal of Empirical Finance*, 15(2008), pp.850-859

Lind, D. A., Wathen, S. A. and Marchal, W. G. (2013) *Basic statistics for business and economics*. McGraw-Hill/Irwin. Available at:

http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,cookie,shib&db=cat05743a&AN=nci.29645&site=eds-live&scope=site (Accessed: 17 August 2019).

MacKinlay, A. C. (1997) 'Event Studies in Economics and Finance', *Journal of Economic Literature*, 35(1), pp. 13–39. Available at: http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,cookie,shib&db=bth&AN=9704153582&site=eds-live&scope=site (Accessed: 17 August 2019).

Marquardt, C. and Wiedman, C. (2016) 'Can shareholder activism improve gender diversity on corporate boards?', *Corporate Governance: An International Review*, p. 443. doi: 10.1111/corg.12170.

Mihov, A. (2015). Predisclosure Accumulations by Activist Investors and Price Impact of Trading . *Review of Finance*. 20 (1), 231–263.

Monks, Robert A. G. and Minow, N (1991). *Power and Accountability* . New York : Robert Monks at Stephanie P.

Nesbitt, S. L. (2001) 'The "CalPERS Effect" on targeted company share prices', *NACD Directorship*, 27(5), p. 1. Available at: http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,cookie,shib&db=bth&AN=4494913&site=eds-live&scope=site&custid=ncirlib [Accessed: 28 January 2019].

Nordén, L. and Strand, T. (2011) 'Shareholder activism among portfolio managers: rational decisions or 15 minutes of fame?', *Journal of Management & Governance*, 15(3), pp. 375–391. doi: 10.1007/s10997-009-9114-9.

O'Shea, T. L. (2013) *Essential statistics for researchers*. Tadhg L. O'Shea. Available at: http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,cookie,shib&db=cat05743a&AN=nci.18895&site=eds-live&scope=site (Accessed: 17 August 2019)

Oranburg, S. C. (2015) 'A little birdie said: how Twitter is disrupting shareholder activism', *Fordham Journal of Corporate & Financial Law*, (3), p. 695. Available at: http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,cookie,shib&db=edsgao&AN=edsgcl.431508176&site=eds-live&scope=site&custid=ncirlib [Accessed: 27 January 2019].

Pound, J. (1992) 'Raiders, targets and politics: The History And Future Of American Corporate Control. *Journal of Applied Corporate Finance*, 5: 6-18. doi:10.1111/j.1745-6622.1992.tb00222.x

Prevost, A. K. and Rao, R.P. (2000) 'Of what value are shareholder proposals sponsored by public pension funds?', *Journal of Business*, 73, pp.177-204

Rajyalakshmi, K. (2014) 'Shareholder Activism', *Parikalpana: KIIT Journal of Management*, 10(1), pp. 23–36. Available at:

http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,cookie,shib&db=bth&AN=94091766&site=eds-live&scope=site&custid=ncirlib [Accessed: 3 January 2019].

Raval, A. and Thompson, J. (2018) 'Investors push power companies to end coal use by 2030', *Financial Times*, 20 December.
Available at: https://www.ft.com/content/1c65952e-03a4-11e9-99df-6183d3002ee1 [Accessed 27 January 2019]

Renneboog, L. and Szilagyi, G., (2011) 'The role of shareholder proposals in corporate governance', *Journal of Corporate Finance* 17: 167 -188

Ryan, B., Scapens, R. W. and Theobald, M. (2002) *Research method and methodology in finance and accounting*. Thomson Learning. Available at: http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,cookie,shib&db=cat05743a&AN=nci.16718&site=eds-live&scope=site (Accessed: 17 August 2019).

Schulte Roth & Zabel. (2018). *Shareholder Activism Insight report.* Available: https://www.srz.com/resources/2018-shareholder-activism-insight-report.html. [Last accessed 3rd Jan 2019]

Sjöström, E. (2008) 'Shareholder activism for corporate social responsibility: what do we know?', *Sustainable Development*, 16(3), pp. 141–154. doi: 10.1002/sd.361.

Strickland D., Wiles, K. and Zenner, M. (1996) 'A requiem for the USA: Is Small Shareholder Monitoring Effective?' *Journal of Financial Economics*,40, pp.319-338.

Sudarsanam, S. and Broadhurst, T. (2012) 'Corporate governance convergence in Germany through shareholder activism: Impact of the Deutsche Boerse bid for London Stock Exchange', *Journal of Management & Governance*, 16(2), pp. 235–268. doi: 10.1007/s10997-010-9141-6.

Thomas, R.S. and Cotter, J.F. (2007) 'Shareholder proposals in the new millennium: Shareholder support, board response, and market reaction', *Journal of Corporate Finance,* Vol 13(2-3),pp. 368-391

Travis, J.T., (1999) 'Exploring the constructs of evaluative criteria for interpretivist research' in *Proceedings pf the 10th Australasian Conference on Information Systems*, Victoria University of Wellington, 1-3 December 1999

Venkiteshwaran, V., Iyer, S. R. and Rao, R. P. (2010) 'Is Carl Icahn Good for Long-Term Shareholders? A Case Study in Shareholder Activism', *Journal of Applied Corporate Finance*, 22(4), pp. 45–57. doi: 10.1111/j.1745-6622.2010.00301.x.

Wahal, S. (1996) 'Pension Fund Activism and Firm Performance', *Journal of Financial & Quantitative Analysis*, 31(1), pp. 1–23.

Wilson, J. (2010) *Essentials of Business Research: A Guide to Doing Your Research Project.* London: SAGE Publications

Wu, YiLin, (2004), The impact if public opinion on board structure changes, director career progression, and CEO turnover: Evidence from CalPERS' corporate governance program. *Journal of Corporate Finance* 10:199-227

Zhu, H. (2013). The Preventive Effect of Hedge Fund Activism, University of Oklahoma Job Market Paper

Appendix A

Submission of Thesis to Norma Smurfit Library, National College of Ireland

Student name: Patricia Cullen

Student number: 17107610

School: Business

Course: Finance

Degree to be awarded: MSc

Title of Thesis: A measure of the impact of activism on the returns to shareholders of the target companies: A European perspective 2008 - 2018

One hard bound copy of your thesis will be lodged in the Norma Smurfit Library and will be available for consultation. The electronic copy will be accessible in TRAP (http://trap.ncirl.ie/), the National College of Ireland's Institutional Repository. In accordance with normal academic library practice all theses lodged in the National College of Ireland Institutional Repository (TRAP) are made available on open access.
I agree to a hard bound copy of my thesis being available for consultation in the library. I also agree to an electronic copy of my thesis being made publicly available on the National College of Ireland's Institutional Repository TRAP.

Signature of Candidate: _____

For completion by the School:

The aforementioned thesis was received by: _____

Date: _____

This signed form must be appended to all hard bound and electronic copies of your thesis submitted to your school.