

Activist Investment Target Selection:

A Mixed-Method Approach

by

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Abstract

Activist investment funds including Elliott Management, Trian Partners, and Pershing Square Capital Management take significant stakes in companies with goals of creating positive returns for both the firm and its investors. As shareholders of large stakes in various companies, activist investors have the power and ability to urge the board of any given company to take actions such as firing a CEO, merging with another company, divesting its assets, or restructuring. Activist investors will go to great lengths ensure compliance with these suggestions and often release white papers, websites, and presentations to communicate these goals to both the companies themselves and investors in their fund and the target company. Institutional and retail investors alike recognize the power of activist investors and many would find it useful to know if their potential investment would be a likely target for activism.

Despite the value of understanding which firms may be potential targets for activist investment, current research in this area is very limited, meaning that this topic merits further research and investigation. This thesis will use a mixed-method approach to answer its core research goals of creating a list of financial qualities that activist investment targets share at the time of interest and investment. To do so, high-level case studies of Procter & Gamble and Occidental Petroleum were performed in conjunction with analysis of qualitative characteristics of activist investment communications including white papers, press releases, and shareholder letters via Yoshikoder which compiled communications trends across a variety of different word categories including those relating to corporate social responsibility. Observations from these two pieces of analysis were used to perform the quantitative portion of the study using SAS, Excel, and R where quarterly data from 2011 through 2018 was analyzed.

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Introduction and Literature Review

When considering activist investment and its implications, investors recognize that it is useful to know when an activist investor might strike. Activist investors have the power to move markets and act more unpredictably than other market trends and factors. Current academic literature covering activist investment target selection is quite limited and cite few definitive reasons for target selection and criteria. It's difficult to know precisely why or when an activist might strike for multiple reasons, one being that the investment catalyst for an activist investor is self-imposed and impacts the stock price accordingly. This differs greatly from traditional growth or value investment where investors seek out potential catalysts for a stock's success or decline. Considering the relative disadvantage that retail and institutional investors have when compared to activist investors, it is evident that significant upside can be realized if investors are able to predict the onset of the most unpredictable catalyst: the activist investor.

Each fund engaging in activist investment techniques has varying motives for target selection. As stated in McKinsey's 2020 paper, *The Pros and Cons of Activist Investors*, motivation for investment in companies (with varying levels of success) include potential to make changes to M&A activity, strategy, operations, and corporate governance among other reasons (McKinsey). Current research notes that firms that engage in corporate social responsibility (CSR) are more likely to be targeted by activist funds and that the COVID-19 pandemic is changing the way that firms react to potential activist investment via poison pills. Corporate social responsibility is defined as a business model that helps a company be socially accountable to stakeholders and encourages it be conscious of the impact that it is having on economic, social, and environmental levels (Fernando). It also notes that COVID-19 is unique in

the fact that there is no true comparable historical event for investors to benchmark firm performance and activist targeting against. In positive financial times, firms with higher leverage are more likely to be targeted and, in less stable markets, lower-leverage firms are more likely to be targeted.

Outside of analysis on debt and leverage, however, not much research exists that explores factors leading to activist investment. During financial turmoil and unprecedented market volatility, activist investors and retail investors alike struggle to find pockets of value in the market.

Target Leverage

Because activist funds enhance firm value in both certain and uncertain financial times, activism is a trend in investing that is likely to persist. While activism died down during the 2008 financial crisis as firms struggled to stay open, they slowly began to re-emerge and, by 2012, had reached pre-crisis levels of investment (Burkart, 2015).

The paper connects the leverage of hedge fund target firms with macro-economic prospects, noting that the better the prospects, the higher is target fund leverage. When the market is in a good position, target firms have higher debt capacity and, as a result, can engage in a higher level of borrowing, differentiating funds from each other (Burkart, 2015). Debt levels observed in these funds dictate the investment and financing activities they choose to engage in and tend to follow cyclical market trends as a result.

How Will COVID-19 Impact Shareholder Activism?

The COVID-19 pandemic brought an onslaught of market volatility and uncertainty in the financial markets. Many companies traded up to 50% off their 52-week highs with the S&P 500 plunging ~35% from its record highs (Lewis, 2020). Historically, activists have been value investors and focused on smaller, highly challenged companies and, in 2019, close to two thirds of activism campaigns were at companies with market capitalizations of less than \$2 billion (Lewis, 2020).

The paper notes that, at the end of 2019, there were only 171 poison pills in effect at US-incorporated companies which is the lowest number in effect since 2002, a time when there were 2,220 poison pills in effect (Lewis, 2020). While this number is lower than historical highs, 45 poison pills were announced by companies between March 2nd and May 6th 2020 by companies including Occidental Petroleum, Groupon, Barnes & Noble, Hilton, and Spirit Airlines (Eldar, 2020). Additionally, out of the 231 directors placed on company boards by activists, 210 were placed because of settlement agreements with activists and only 21 were placed by a shareholder vote (Lewis, 2020). Comparing the COVID-19 pandemic to previous financial crises may be useful in some aspects: it creates a time period for investors to reference and create predictions off of, assuming that current trends trail historical ones, it gives clues to what federal assistance was given to businesses during similar periods, and it illustrates how investors and companies responded when shown similar threats.

A challenge that has been noted about the COVID-19 pandemic, however, is that the current pandemic exhibits significantly more complexities than crises of years past. The financial crisis of 2008 marked a short period of uncertainty and volatility, but it was able to be resolved relatively quickly with federal intervention and fiscal/monetary tools. The last period where the

entire world was engulfed with the same level of uncertainty was World War II, but investors cannot reasonably use that time period as a benchmark for how stocks will perform during the COVID-19 pandemic (Lewis, 2020). During this time of unprecedented uncertainty, activists may run the risk of appearing tone-deaf when making suggestions to companies facing virus-related headwinds.

Keeping in mind the financial troubles that this pandemic introduced, this thesis will choose to take out the financial noise of the 2020 COVID-19 pandemic. The activist investment landscape has changed significantly since the 2008 financial crisis, so I have decided to focus my study on events of activism from 2012 through 2029. By weeding out the noise from 2008 with the later start date, this study will still be able to conduct a comprehensive analysis covering a short period of evolution in the activist investment space. The pandemic knocked down the markets significantly and, towards the tail end of 2020 and heading into 2021, the markets have seen a significant recovery, with the DJIA hitting all-time highs in February and March 2021, a year after the COVID-19 pandemic began.

Social Responsibility and Activism

Corporate Social Responsibility, or CSR for short, is at the forefront of many business' decision-making processes when deciding on new business ventures and strategic shifts.

Companies believe that these changes will help them be perceived more positively in the public eye, especially for companies that are customer-facing or have had an unsavory or unethical past. Some businesses have been accused of greenwashing, or "conveying a false impression or providing misleading information about how a company's products are more environmentally sound" (Kenton, 2021). While some companies do engage in CSR largely for financial and social

gain, just as many companies engage in socially responsible initiatives because they truly believe it is the right thing to do and because there is legitimate benefit for doing so. In a study of ecological activities and their impact on companies' operating performance performed at Northwestern's Kellogg School of Management, researchers discovered that companies pursuing eco-activities to improve costs, revenues, margins, and profits improved more than companies that did not, noting that "the difference was especially striking in the second year following the announcement [of eco-activities]" (Lys). Social activists may raise concerns about areas including sweatshop labor, greenhouse gas emissions, supply chain discrepancies, etc. which causes the firm to be the target of protests, lawsuits, or boycotts.

The paper *Good Firms, Good Targets* investigates the phenomenon of socially responsible firms and why these firms are targeted by activist investors more than others. It notes that "Belonging to the top tier of the most reputable firms and engaging in reputation-building actions, like announcing prosocial activities, exposes a firm to activist attention, making them more likely targets of boycotts" (King, 2015). Firms often believe that being "liked" and having a positive social image will protect them from shareholder activism, but it often leads to unnecessary press and, in the event of a boycott, more negative media attention for months and years to follow. This leads to additional spending on prosocial activities and CSR spending after boycotts die down and, hence, an improved reputation with heightened activist interest soon to follow. Activists tend to like these kinds of firms because a company's willingness to spend money and resources on CSR initiatives signals high investment in the company's future growth, but these businesses ultimately bolster activists' portfolios with CSR companies that they wouldn't otherwise have in their portfolio.

Beyond traditional CSR initiatives, gender presents another layer of social responsibility consideration for activist investment. In 2018, the Harvard Business Review published a report stating that female CEOs face a greater threat of shareholder activism than those with male CEOs. The study came to this conclusion after aggregating the current research on activism and gender and most research concluded that female-led firms are targeted more frequently, but the papers disagreed on the reasons why. While some investors are gender-blind, others view females more favorably because they consider the additional barriers that these leaders face during their climb to the top and perceive them to be more competent. The third view, however, was favored which stated that investors often have a "think manager, think male" mentality which notes that "academic studies have reported that attributes associated with the manager role (decisiveness, aggression, competitiveness) are often antithetical to those associated with women in our society" (Gupta). Together, the HBR concluded that firms with female CEOs were 50% more likely to be targeted by activists and 60% more likely to be targeted by multiple activists in a "wolf pack" attack of activists.

Together, *Good Firms*, *Good Targets* and the Harvard Business Review's studies conclude that social responsibility is a double-edged sword, particularly when it comes to activist interest. While companies are able to build and repair reputational issues and work towards creating a more positive and socially conscious business, these initiatives seem to attract greater numbers of activist investors.

Problem Statement

Today's investors struggle to find clarity in the markets. Between the 2020 presidential election, COVID-19, and unclear fiscal and monetary policy, investors worldwide are facing the most volatile market since the 2008 financial crisis. In 2008, the VIX, or the market volatility index, reached a high of 80.86. 2020 topped 2008's peak with a year high of 82.69 (MacroTrends, 2020).

Beyond these macroeconomic headwinds, activist investors can bring fear to companies and their management. Paul Singer, the founder and CEO of Elliott Management, is said to be "aggressive, tenacious, and litigious to a fault" and, when companies learn that they are being pursued by Elliott, it feels like "Googling this thing on your arm and it says, 'You're going to die." (Kolhatkar, 2018). However, despite the negative reputation that Singer and his firm often have on Wall Street, stocks tend to pop as soon as Elliott's interest is announced. This trend isn't unique to Elliott, though. In May 2018, Carl Icahn reduced his position in Herbalife citing their "oversubscribed" position with 49.7 million shares and the stock proceeded to close down 9.6% (Kim, 2018).

The cases of Icahn and Singer are just two of many instances where activist investors move the market for retail investors. Given the potential for upside or downside regardless of the activist firm, being able to pinpoint qualities of potential investments would be beneficial for retail investors and institutional investors alike. If investors could find companies likely to be targeted by events of activism through a multifactor financial screen, they would be able to potentially take advantage of these pockets of potential in the markets and yield higher returns for their firm and its stakeholders. What, then, are the financial qualities that companies targeted by activist investment share? How do activists communicate their attitudes

towards potential and existing investments to their investors? This thesis will answer these questions and explore the activist investment landscape as it stands today.

Theoretical Framework

In creating a methodology and framework for this thesis, a variety of different analyses were considered. A mixed-method approach was decided upon because of the opportunities for qualitative and quantitative analysis that it provides. Formally defined, mixed-method research "allow[s] the strengths of one approach to complement the restrictions of another" and combines "qualitative and quantitative components to generate an integrated set of evidence addressing a single research question" (Regnault). For the purposes of this study, three methods will be used: case studies, communications analysis via Yoshikoder, and quantitative research via R and Excel. Specific methods used are outlined in Methodology.

A mixed-method approach resolves several potential limitations of this thesis, the primary being the assertion that a mixture of quantitative and qualitative analysis is needed to perform accurate research in the field of finance. Especially when considering specific equities or the market, the numbers and the "story" of a stock cannot be examined in isolation; the two should be looked at side by side to gain an accurate picture of the situation at hand. Thus, the qualitative and quantitative analysis used in the case studies combined with the qualitative communications analysis and the quantitative data analysis will create clearer, more logical conclusions about what financial characteristics of a company might incite activist investment interest.

Additionally, this study chose to analyze companies with a history of activist investment for the quantitative portion of the analysis. This was decided upon to narrow down the list of companies selected for the analysis and due to the limited amount of FactSet Sharkwatch data available to the researcher. All financial quarters studied in the quantitative analysis portion of the study were from 2011 through 2018. By starting the analysis after the 2008 financial crisis

market collapse and stopping before the early onset impacts of COVID-19 in 2019, the analysis analyzed firm performance and trends in somewhat normal (i.e., non-Black Swan Event) situations. Popularized by professor Nassim Nicholas Taleb, a Black Swan event is "impossible to predict due to their extreme rarity yet have catastrophic consequences" with the 2008 financial crisis being the first event of its kind to occur after the 2007 publication of his book, *The Black Swan: The Impact of the Highly Improbable* (Investopedia). Taleb argues that the 2020 coronavirus pandemic was not a Black Swan because of how supposedly predictable the event was by academics and businesspeople and told Bloomberg, "[he, Bill Gates, Laurie Garrett, and others] issued our warning that, effectively, you should kill it in the egg" (Avishai). While Taleb makes the argument that the pandemic does not qualify as a Black Swan event, this thesis will choose to eliminate 2019 and 2020 from the study so as not to introduce as world-shaking variables as a pandemic into the overall analysis.

Methodology

The research conducted in this thesis takes a multifaceted approach to answering the paper's key question: What financial and qualitative characteristics of companies exist that make it more (or less) likely to be the target of activist investment by firms engaging in various means of activist investment at a point in their financial history? This thesis is separated into three pieces of analysis to create a comprehensive picture of the activist investment landscape as it stands today in addition to its past trends through a mixed-method approach:

- Case study on events of activism
- Discussions with Investor Relations teams and Yoshikoder analysis
- Quantitative analysis using factors found via case studies and communications analysis

Case Studies

To begin analysis of the activist investment landscape, 2 case studies of activist investment were performed. The companies Occidental Petroleum and Procter & Gamble will be used for this portion of the study. This analysis yields a list of potential qualitative measures to be used in the quantitative analysis in later parts of this thesis.

For the case study analysis, firms were selected from different industries and were selected because they were each pursued by a different activist investor. This will create a bigger picture of what activist investors look for in potential investments, shedding light on the differences between the funds themselves. Each case study was selected from a different year to help reduce the probability that similarities found between activist approaches was due to broad, markets-based phenomena impacting multiple companies and industries.

Communications Analysis

In addition to case studies, a comprehensive collection of publicly available letters to shareholders, press releases, and white papers will be analyzed and combined with limited interview-based qualitative data to create a picture of how activists communicate their goals and objectives to shareholders and investor relations at target companies. This aspect of the overall study is limited because few activists and investor relations teams were willing to speak on the subject. A Yoshikoder analysis of key words and phrases from these statements will be used to create a quantitative analysis of word frequencies and key themes in activist communications.

A list of questions was created based on the researcher's personal experiences with activist investment target selection and equity research experience and were framed to potential interview groups in a purely investigative and non-investment-based approach to encourage higher response rates from investor relations teams. Questions asked to investor relations representatives were asked as follows:

- Have you and your team been able to spot oncoming activism in the past? How?
- Is the firm typically defensive against activists and, if so, how do they react?
- How did the activist investors communicate their initial activism?
- How does the firm use technology and analytics to spot potential activism?

Quantitative Analysis

After a deep dive into the qualitative characteristics of activist investment and gathering perspectives from both activists and firms themselves, a quantitative analysis to evaluate the impact of the varying factors on activist interest and investment was performed.

This will be done with a multi-factor model that considers a variety of financial metrics and qualitative measures. R, SAS, and Excel will be used to perform this analysis. Financial data was obtained via Wharton WRDS. Activist investment data was obtained via FactSet Sharkwatch headlines. 2,037 companies' data from 2011 through the end of 2018 was aggregated and used for this portion of the study for a total of 18,877 total quarters analyzed and 9,766 Sharkwatch headlines. Quarterly financial data from 2011 through 2018 was collected for a list of variables outlined in the Quantitative Analysis section of this thesis. After combining the Sharkwatch and WRDS data into one master Excel spreadsheet via SAS that marked a 1 for company quarters containing activist investment headlines, summary data analysis was performed to produce results.

The data was aggregated into one dataset with the second dataset containing Sharkwatch data points. After creating a column in the quarterly data set to indicate whether there was an event of activism via SAS, summary statistics were aggregated for two subsets of data: quarters with activist activity and total quarters in the data set. Logistic regressions were performed in R to assess the relative statistical significance of a select set of variables which compared the quarters with activist activity to the quarters without (UCLA).

Case Studies

Occidental Petroleum

The Occidental Petroleum (OXY) and Icahn Enterprises scuttle of 2019 and 2020 indicates a time at which OXY found itself at a crossroads between what the company wanted to pursue and what activists demanded. Icahn invested in Occidental in early 2019 and has since increased their shares to make up more than 10% of OXY's ownership. Icahn has been vocal in his disapproval of OXY's corporate actions, including a vehement disapproval of the bidding war they engaged in for Anadarko against Chevron in November 2019. He stated that the company was paying an exorbitant price for the company while fully understanding the fragility of the shale market and business model that they would be acquiring via the Anadarko deal. While Icahn warned shareholders that it is "extremely dangerous" to own shares in OXY in November 2019, he still remained one of OXY's largest shareholders despite their high debt load and troublesome corporate governance (Egan, 2019). In March 2020, as oil commodity prices tumbled, Icahn increased his shares to own more than 10% of OXY which came soon after warning shareholders of the danger of owning shares in the company (Lombardo, 2020).

Looking at the financial history of OXY leading up to their activist attack, a 519% decrease in net income was observed from 2018 to 2019, a dramatic decrease compared to the 215% increase in net income observed from 2017 to 2018. From 2017 to 2019, total long-term receivables and other assets increased by 125% with the increase from 2018 to 2019 standing at 198%. Total assets increased 150% year-end from 2018 to 2019, but this is likely due to the Anadarko acquisition that OXY decided to pursue (FactSet, Occidental Petroleum).

Procter & Gamble

In Trian Partners' September 2017 white paper issued to Procter & Gamble (PGE), Trian noted eight key ways that they would like to help PGE regain lost market share: organizing accountability promotion, ensuring that the management's "productivity plan" delivers results, fixing the brand's innovation machine, and developing small and local brands to bolster structure and culture, make M&A a growth strategy, bolster their digital presence, address talent acquisition issues, and improve corporate governance. Trian noted that PGE underperformed relative to peers, specifically stating 150bps of annual organic sales growth under-performance from 2015 through 2017 and 790bps annual under-performance of EPS growth relative to peers over the same time period (Trian Partners, 2017).

Trian additionally stated that PGE suffered loss of market share in a number of countries around the globe in different areas of its business including baby care, fabric and home care, and beauty, grooming, and health care. PGE had not engaged in significant M&A from 2012 through 2017, so Trian suggested that the firm boost their activity in that space as a way of both supporting overall growth and engaging in more regional and targeted growth in parts of the world lagging behind peers. PGE's 2012-2016 cost program saved a total of \$3bn, but sales and profit were not impacted whatsoever and PGE still underperformed relative to peers (Trian Partners, 2017). Net income from 2014 to 2016 declined only 3% across the time period, but a 39% drop occurred from 2014 to 2015 which was subsequently recovered from 2015 to 2016. PGE's cash remained somewhat steady from 2014 through 2016 but experienced a sharp 153% rise from 2016 to 2017 (FactSet, Procter & Gamble).

Communications Analysis

Activist investment requires two parties: corporations ripe for investment and the activists themselves. As noted in the Problem Statement, different activist investment firms seek out different qualities in its potential investments and, in the process of seeking out and performing preliminary diligence on these investments, firms can weed out investments that aren't suitable for its investment strategy and current goals. While many investment ideas that firms choose to not pursue are kept in-house, firms are obligated to inform their investors on which investments they are choosing to pursue and why. Firms like Pershing Square, Elliott Management, Trian Partners, and Third Point make select white papers, shareholder letters, and letters to corporate board public and publish them on either their website or via the Wall Street Journal (Pershing Square, Trian, 10x EBITDA). These papers provide valuable, yet limited, insights into the selection process for activist investments that firms follow through with and initiate activity on.

To gather additional insights on the target selection process, associates and investor relations teams at activist funds were contacted and chose to either not reply to the contact or sent a response stating that they were unable to speak about the topic due to firm regulations. While many of the investor relations teams refused to speak about activism as it relates to their company, a representative from Dow Chemical (NYSE: DOW) agreed to chat about their experiences with activism. When asked about ways that they can detect activists, they discussed the external intelligence monitoring/servicing that they obtain through sources like Nasdaq or Reuters. By monitoring brokerage accounts and overall trading activity on the company's stock, they are able to detect trade patterns similar to that of large hedge funds and activist investors that might potentially be interested in engaging in activist behavior. While they noted that this

information isn't typically 100% correct, it does an excellent job of picking out times at which a large activist might be entering the stock by building up shares pre-attack and, soon thereafter, engaging with management and requesting to speak with the company at industry conferences. Prior to an activist attack in 2008/09, Dow found itself in a precarious financial situation. The company had planned to JV their specialty chemical division with a firm in Kuwait and use the \$9.5 billion in proceeds to buy out specialty chemical company Rohm and Haas for \$18 billion (Gupta). Without the proceeds from the JV, Dow took on significant debt, harming the company and its investors. The CEO reassured shareholders that their dividend would not be cut, but, shortly after, cut the dividend. Investors and the firm itself speculated that a large, pre-existing shareholder reached out to activist investors to help remedy the situation and bring Dow back to what it once was. In light of these events, Third Point, led by Daniel Loeb published a website titled "Broken Promises", citing statements that Dow's CEO had made failed to deliver on. The site was taken down three days after publication. The changes that Third Point suggested were ones that the firm had considered and, because of the activist activity, ended up implementing. Third Point negotiated for board seats and put tremendous pressure on the company to cut costs and suggested other ways to drive shareholder value which benefitted Dow long-term (Sheorey).

The conversation with Dow set the tone for analysis of other aspects of activist communication. The forcefulness with which Third Point approached Dow in their public statement (akin to a white paper) indicates the tone that these companies take in their direct communications with the company and, oftentimes, shareholders access websites and statements such as "Broken Promises" to learn about current company issues and determine how they would like to proceed as a shareholder, particularly in terms of voting.

Because firms themselves weren't willing to discuss past investments, a Yoshikoder analysis was performed using a list of logics to determine common threads among public statements including shareholder letters, white papers, and letters to boards. This was performed with hope that the analysis would produce qualitative results akin to those that would have been obtained via interviews with activist investors. The list of logics was derived from Prof. Klaus Weber's 2011 paper Management Logics: Framing the Case for Social Innovations and was adapted by the Ross School of Business in 2016. This paper suggests that, if company documents are analyzed using lists of categorized logics, guiding principles and key themes can be discovered. These "Management Logics" identify "principles and recipes that are important, coherent, and enduring [to a company and] ... include the personal habits and mental heuristics through which values are put into action" (Weber). Weber's paper focuses on qualitative management principles and themes that can be used to analyze past communications and use those insights to tailor future proposals and communications. Similar principles apply when considering this method's applicability for public statements that activist investors make. These communications combine qualitative and quantitative analysis and often contain key search terms and buzz words that potential and existing investors care about.

The logics included key words and phrases in the following categories. A comprehensive list of the words and word bases used for each category can be found in Figure 1.

- Action: Words relating to potential actions that the activist might suggest the company take
- Attitude: Words relating to how investors or activists feel about a corporate action or activist proposal
- Civic: Words relating to legal processes and actions

- Financial: Words relating to companies' financial standing and positioning
- Industrial: Words relating to mechanical and structural processes and procedures
- Market: Words relating to financial markets and metrics
- Sustainable: Words relating to CSR initiatives and topics

White papers, board letters, and letters to shareholders were aggregated and analyzed using Yoshikoder and word frequencies were calculated. Figure 2, shown below, illustrates the proportion of words falling within each category of logics. Words in the Market category make up 38% of total logics, placing it ahead of Attitude (15.4%), Civic (15.2%), and Financial (13.3%). A comprehensive list of word frequencies within logics can be found in Figure 3 and chart visualizations of word frequencies can be found in Figure 4.

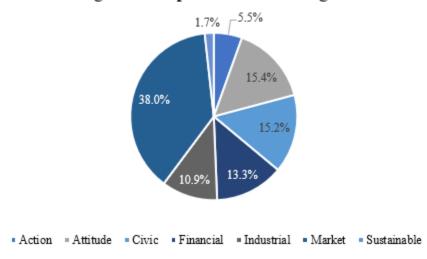


Figure 2: Proportion of Total Logics

This suggests that the outward-facing documents of activist investment funds choose to educate shareholders and stakeholders using words pertinent to the public markets and public eye including macroeconomic and market-related statements. Conversely, words categorized as Sustainable comprise 1.7% of total logics found in the selection of activist statements. As noted

in *Good Firms Good Targets*, activist funds may seek to be invested in socially responsible businesses with established CSR practices, but it is typically not the activists themselves who are making the social change initiatives (King, 2015). While investors are becoming increasingly more interested in socially responsible investments and expectations for greater corporate change become widespread, the direct target market of these papers and public statements largely care about one thing: current issues with a company and how the activist plans to implement change, both of which are driven by financial capital. These documents often encourage the shareholders (the readers of the statements) to vote in favor of the activist firm's proposals on upcoming ballots and, by creating a document that pinpoints financial, legal, and markets-based areas for change while simultaneously persuading the reader through Attitude words, activists hope that their letters will reach both shareholders and the corporations themselves and will influence the changes they believe need to occur.

Quantitative Analysis

For the final portion of the study, a quantitative analysis of data from Wharton WRDS, Compustat, and FactSet Sharkwatch activist investment headlines was performed (Wharton WRDS, FactSet Research Systems). As stated in the Theoretical Framework and Methodology portions of this thesis, quarterly data from 2011 to 2018 was compiled and analyzed. A list of activist investment interest headlines was overlaid on the quarterly financial dataset via SAS and data was filtered into two categories for the preliminary analysis: Activist Interest and Total. Activist Interest quarters were marked with a 1 in a column titled "categ" while quarters without activism were left with no marks in the same column. Based on the trends observed in the case studies and communications analysis, it was hypothesized that companies will have statistically significantly different levels of M&A activity, receivables, revenues, and long-term debt in quarters with activism when compared to the total data set.

The key factors used for quantitative analysis were selected based on characteristics identified via the case studies and communications analysis. They are as follows:

- Acquisition/merger expenditures
- Cash
- Total long-term debt
- Depreciation and amortization
- Dividends
- Net goodwill
- Total invested capital
- Current liabilities
- Total liabilities

- Net income (loss)
- Notes payable
- Special items
- EPS (diluted)
- Restructuring cost basic EPS
- Total receivables
- Retained earnings
- Total revenue
- Write-downs
- Extraordinary items and discontinued operations
- Research and development expense
- Total market value

Summary statistics were aggregated in Excel for activist vs. total quarters and are illustrated in Figure 5. After comparing differences between data sets, standout statistics were selected for further analysis in R. Results of logistic regressions can be found in Figure 6. Statistically significant differences were found in several financial metric categories by analyzing p-value outputs, see Figure 7 below.

Figure 7

	Metrics with statistically significant difference between quarters with activism and quarters without (t = total data set average, a = activist-coded quarter set average)									
Financial Metric P-Value Comparisons										
Acquisition/Merger	0.000443	a>t								
Net Goodwill	0.000376	a>t								
R&D Expense	3.48e-05	a > t								
Special Items	0.040467	a>t								
Retained Earnings	4.12e-05	a > t								
Total Year-End Revenue	3.75e-05	a>t								
Total Receivables	0.001988	t > a								

Discussion

Together, the case studies, communications analysis, and quantitative work yield results applicable to various types of investors. Prior research indicated strong activist interest in socially responsible investments and cited CSR as a reason companies may be more targeted than others. The conclusions drawn from the Yoshikoder analysis, however, show a different side to activist communications. The communications analysis illustrated that words in the Financial, Markets, and Civic categories are more frequently seen in activist letters and communications than Sustainable ones are. It is important to consider the audience of these communications, however, when drawing true conclusions about this portion of the analysis. The letters analyzed are issued primarily to fund investors and are often seen by institutional and retail investors who may be interested in either the activist fund or the target company itself. Investors are putting financial capital in either the fund or the company partially based on these communications, so it is logical that the communications would focus on financial and marketsrelated information to satisfy the financials-focused consumer. However, the lack of sustainable logics raises questions about what the firm feels is most important to both themselves and investors. Based on the communications to these investors, it does not appear that activist investment firms feel CSR to be one of their core reasons for investment or lack thereof.

The quantitative analysis performed yielded results that align with conclusions drawn from the two case studies of OXY and PGE. Merger and acquisition activity stood out in the logistical regressions as being one of the top areas of difference between the total data set and activist-coded quarters which is consistent with the M&A activity either present or suggested for OXY, PGE, and Dow Chemical. It was surprising, however, that variation in debt level was not an area with statistically significant difference between the two groups and that revenues were

higher in activist-coded quarters than the total data set. In qualitative research and case studies, activist investors sought to improve financial standing of companies with revenues being one point of improvement, so this output differed from the initial hypotheses. The p-values for the "Acquisition/Merger" category and "Net Goodwill" categories were similarly trending as well.

Overall, the core hypotheses were found largely to be true. M&A activity, receivables, and revenues were all statistically significantly different in quarters with activism when compared to the total dataset, indicating that there are indeed numerous financial differences and trends for activist-coded quarters. Additionally, the levels of CSR interest stated by activists in the communications analysis was significantly lower than was anticipated based on the trends observed in current literature. The observation of these trends provides a unique opportunity for creation of stock screens and further data analysis by investors. One such screen might aggregate a list of companies with history of activist investment interest and apply a filter which highlights quarters with significantly higher or lower levels of M&A, net goodwill, R&D expense, etc. to flag the company as a potential target for upcoming activist investor action.

Limitations and Further Research

While this thesis explores a variety of areas within activist investment target selection, limitations to the study are present and addressable. The quantitative screen performed only observed companies that have had proven instances of activist interest and action and did not represent a comprehensive sample of companies to simulate a market containing companies both with and without activist investment. This was decided upon to create a smaller, more focused sample set of companies and data and to allow more focused observations on trends to be made. The information gathered from this study would be able to be used by institutional and retail investors alike to create stock screens for variables that were statistically significant (illustrated in the Quantitative Analysis section) for companies that have had instances of activism in the past. This research could be expanded upon in the future by including a significantly larger group of companies and including ones both with and without activist interest and investment.

Additionally, the Yoshikoder analysis was performed only on companies' letters available to the public and does not accurately represent the full sample of letters written by individual activist investors. The activist investment firms themselves were not willing to provide shareholder letters and white papers that are traditionally available only to fund investors. Should future research obtain more privately-issued shareholder letters, white papers, etc., the study would be improved and a more accurate and cohesive portrait of activist communications would be able to be created.

Figures

Figure 1: "Logics" used for Yoshikoder analysis.

Asterisks allow program to find words with similar bases and different endings. Words were selected based on Klaus Weber's *Management Logics* report in addition to trends of interest found through case studies and external reading.

Action	Attitude	Civic	Financial	Industrial	Market	Sustainable
purchase*	underperform*	agencies	EBITDA	efficien*	economic*	clean
reap*	outperform*	agency	Earning*	proficienc*	economy	renew*
seperate*	outstanding	civic*	profit*	professiona*	demand	recyl*
vote	underwhelm*	nonprofit*	dividend*	scientif*	market*	green*
director	lower	civil*	payment	competen*	advertis*	sustainab*
squeeze-	higher	municipal*	debt	mechanic*	trade*	endangered*
out	equal	eqauli*	share	productiv*	stock	greenhouse*
transaction	enthusias*	fair*	repurchase*	effectiv*	bonds	warming*
bid	self-serving	solidar*	investment-	operation*	customer*	ecol*
resign	demand	public	grade	capacity	client*	ecosystem*
add	opportunitistic	approv*	low-cost	budget*	consum*	natur*
abdicate	opportun*	ratif*	short-term	empiric*	buy*	habitat*
join	hidden	govern*	debt	evidence*	exchang*	wildlife*
merge	too good to be	legal*	long-term	waste*	sales	flora*
acquire	true	law*	debt	planning*	profit*	fauna*
deal*	ignore*	council	benchmark	efficac*	revenue*	planet*
propose*	constructive*	board	net return*	quality*	competit*	footprint*
cut	accept*	elect*	revenue*	TQM	rival*	impact*
solicit*	denial	democra*	net income*	six sigma	dow*	environment
	justif*	vote*	cheap	expert*	nasdaq	conservatio*
	better	quorum	expensive	engineer*	gdp	conserve
	worse	nomination*	overpriced	architect*	gnp	preserv*
	positive*	office*	overvalued	perform*	commerc*	pristine*
	negative*	committee*	underpriced	perfect*	ipo	pollut*
	impact	chamber*	undervalued	function*	capital	spoil*
	shock*	county*	value-	measure*	wall street	contamin*
	excite*	state*	destroying	analyt*	price*	toxi*
	hope*	federal*	value-creating	analys*	expensive*	deplete*
	belie*	ballot*	proxy	technic*	sell*	mitigat*
		rule*	proxy card*	technolog*	merge*	epa
		regulat*	proxy vote*	accura*	monopol*	emission*
		tax*	gross margin	precis*	recession*	climate
		patent*	well-	solution	boom	change*
		FDA	capitaliz*	design*	bust	chang* climate
		USDA*	P/E	friction*	cash*	social respons*
		EPA*	earning*	systemat*	fortune	social entrep*
		NIH*	expend*	thorough*	wealth*	social enterpr*
		congress*	expenditures	knowledge*	benchmark*	stakeholder*

				1
senate	_		contract*	restraint*
commission*	margin*	certifi*	entrepeneur*	systemic
FTC*	structur*	minimize*		social good*
rights*	EBITDAX	optima*		social impact*
duty	cash on hand	maximum*		alternative
duti*	price/book	maximal*		energ*
participat*	price/earning*	optimu*		biodegrad*
debate*	NAV	cut* cost		environmental*
deliberat*	capital	reduce* cost		poverty*
compromis*	structure			global health*
policy	*capitalized			economic
policies	•			development*
-				third world*
delegate*				triple
citiz*				bottomline*
principl*				charit*
common				philanthrop*
good*				volunteer*
common				*ethic*
interest*				csg
				esg
-				
politic*				
	commission* FTC* rights* duty duti* participat* debate* deliberat* compromis* policy policies procedur* delegate* citiz* principl* common good* common interest* cooperat* justic*	commission* FTC* rights* duty duti* participat* debate* deliberat* compromis* policy policies procedur* delegate* citiz* principl* common good* common interest* cooperat* justic* margin* structur* EBITDAX cash on hand price/earning* NAV capital structure *capitalized	commission* FTC* structur* rights* duty duti* participat* debate* deliberat* compromis* policy policies procedur* delegate* citiz* principl* common good* common interest* cooperat* justic* margin* structur* minimize* optima* maximum* maximum* optimu* cut* cost reduce* cost	commission* margin* structur* minimize* optima* duti* price/book participat* debate* compromis* policy policies procedur* delegate* citiz* principl* common good* compon interest* cooperat* justic* entrepeneur*

Figure 3: Yoshikoder Outputs by Category. Yoshikoder program sorted through ~9,000 lines of activist-written literature to create categorized lists of words and their frequencies.

Action	
Acquire	28
Add	13
Bid	4
Cut	4
Deal	64
Director	32
Join	1
Merge	5
Propose	24
Purchase	139
Reap	1
Resign	3 28
Solicit	28
Squeeze-out	2
Transaction	118
Vote	59
Total Action Words	524

Attitude	
Accept*	14
Belie*	567
Better	60
Constructive	18
Demand	51
Enthusias*	4
Excite*	7
Equal	17
Hidden	5
Higher	61
Hope	29
Ignore	6
Impact	95
Lower	69
Negative*	57
Opportun*	249
Outperform*	15
Outstanding	61
Self-serving	1
Shock	12
Underperform*	61
worse	7
Total Attitude Words	1466

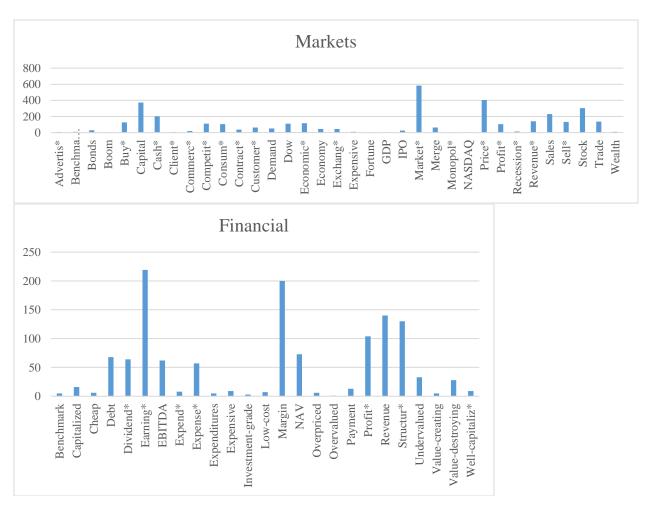
CI. I	
Civic	
Agencies	2
Board	396
Chamber	1
Citiz*	7
Commission	12
Committee	21
Congress*	11
Cooperat*	2
Council	1
County*	1
Debate*	4
Delegate	1
Democra*	18
Duti*	4
Duty	15
Fair*	20
Federal*	37
FTC*	42
Govern*	119
Justic*	6
Law*	35
Legal*	33
Nomination	1
Office*	48
Participat*	27
Patent*	6
Policies	24
Policy	35
Politic*	24
Princip1*	14
Procedur*	3
Ratif*	3
Regulat*	54
Rights*	25
Rule*	29
Senate	2
State*	197
Tax*	89
Vote*	80
Total Civic Words	1449
Total Ciric Words	1442

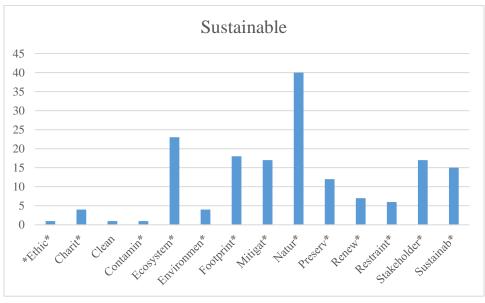
Financial							
Benchmark	5						
Capitalized	16						
Cheap	6						
Debt	68						
Dividend*	64						
Earning*	219						
EBITDA	62						
Expend*	8						
Expense*	57						
Expenditures	5						
Expensive	9						
Investment-grade	5 9 3 7						
Low-cost	7						
Margin	200						
NAV	73						
Overpriced	6						
Overvalued	1						
Payment	13						
Profit*	104						
Revenue	140						
Structur*	130						
Undervalued	33						
Value-creating	5						
Value-destroying	28						
Well-capitaliz*	9						
Total Financial Words	1271						

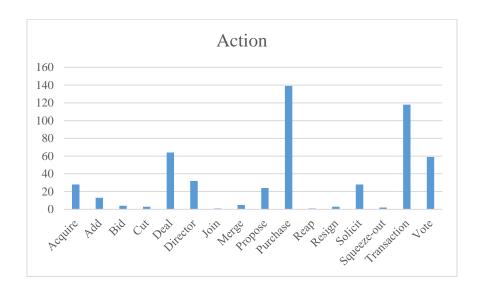
Industrial								
Accura*	19							
Analys*	77							
Analyt*	5							
Architect*	3							
Budget*	5 3 7 8 1							
Capacity	8							
Competen*								
Design*	37							
Effectiv*	60							
Efficac*	2							
Efficien*	42							
Empiric*	1							
Engineer*	10							
Evidence*	11							
Expert*	18							
Friction*	5							
Function*	25							
Knowledge	5 7							
Maximum	7							
Measure*	21							
Minimize*	8							
Operation*	123							
Optima*	3							
Perfect*	4							
Perform*	326							
Planning*	6 8							
Precis*	8							
Productiv*	22							
Professiona*	7							
Qualified	7 4 69							
Quality	69							
Scientif*	2 12							
Solution	12							
Technic*	13							
Technolog*	53							
Thorough*	6							
Waste*	6							
Total Industrial Words	1036							

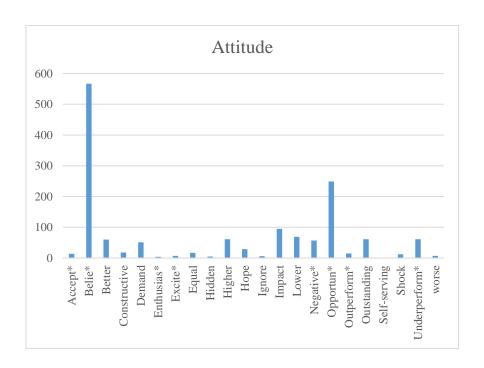
Advertis* 8 Benchmark* 10 Bonds 29 Boom 1 Buy* 127 Capital 373 Cash* 202 Client* 8 Commerc* 19 Competit* 110 Consum* 104 Contract* 37 Customer* 63 Demand 51 Dow 111 Economic* 117 Economic 117 Economic 2 Expensive 9 Fortune 2 GDP 4 IPO 26 Market* 584 Merge 64 Monopol* 1 MASDAQ 3 Price* 405 Profit* 104 Revenue* 140 Sales 230 Sell* 132 Stock 304 Trade 136 Wealth 10		
Benchmark* 10 Bonds 29 Boom 1 Buy* 127 Capital 373 Cash* 202 Client* 8 Commerc* 19 Competit* 110 Consum* 104 Contract* 37 Customer* 63 Demand 51 Dow 111 Economic* 117 Economic* 117 Economy 46 Exchang* 46 Expensive 9 Fortune 2 GDP 4 HPO 26 Market* 584 Merge 64 Monopol* 1 NASDAQ 3 Price* 405 Profit* 104 Recession* 14 Revenue* 14 Revenue* 14 Sales 230 Sell* 152 Stock 304 Trade 154 Wealth 10 Wealth 10	Market	
Bonds 29 Boom		
Boom		
Buy* 127 Capital 373 Cash* 202 Client* 8 Commerc* 19 Competit* 110 Consum* 104 Contract* 37 Costomer* 63 Demand 51 Dow 111 Economic* 117 Economy 46 Exchang* 46 Expensive 9 Fortune 2 GDP 4 HPO 26 Market* 584 Merge 64 Monopol* 1 NASDAQ 3 Price* 405 Profit* 104 Revenue* 144 Sales 230 Sell* 132 Stock 304 Trade 130 Wealth 10		
Capital 373 Cash* 202 Client* 8 Commerc* 19 Competit* 110 Constum* 104 Contract* 37 Customer* 63 Demand 51 Dow 111 Economic* 117 Economy 46 Exchang* 46 Expensive 9 Fortune 2 GDP 4 HPO 26 Market* 584 Merge 64 Monopol* 1 NASDAQ 3 Price* 405 Profit* 104 Revenue* 14 Revenue* 12 Sels* 230 Sell* 132 Stock 304 Trade 136 Wealth 10		
Cash* 202 Client* 88 Commerc* 19 Competit* 110 Consum* 104 Contract* 37 Customer* 63 Demand 51 Dow 111 Economic* 117 Economy 46 Exchang* 46 Expensive 99 Fortune 2 GDP 4 IPO 26 Market* 584 Merge 64 Monopol* 1 NASDAQ 3 Price* 405 Profit* 104 Revenue* 140 Sales 230 Sell* 132 Stock 304 Trade 136 Wealth 10		
Client*		373
Commere* 19 Competi* 110 Competi* 110 Constum* 104 Contract* 37 Customer* 63 Demand 51 Dow 111 Economic* 117 Economy 46 Exchang* 46 Expensive 99 Fortune 2 GDP 4 IPO 26 Market* 584 Merge 64 Monopol* 1 NASDAQ 3 Price* 405 Profit* 104 Revenue* 140 Sales 230 Sell* 152 Stock 304 Trade 136 Wealth 10	Cash*	202
Competit* 110 Consum* 104 Consum* 104 Constact* 37 Customer* 63 Demand 51 Dow 111 Economic* 117 Economic* 46 Exchang* 46 Exchang* 46 Expensive 99 Fortune 2 GDP 4 IPO 26 Market* 584 Merge 64 Monopol* 1 NASDAQ 3 Price* 405 Profit* 104 Recession* 14 Revenue* 140 Sales 230 Scell* 132 Stock 304 Trade 136 Wealth 10	Client*	8
Consum* 104 Contract* 37 Contract* 37 Contract* 37 Demand 51 Dow 111 Economy 46 Exchang* 46 Expensive 9 Fortune 2 GDP 4 IPO 26 Market* 584 Merge 64 Monopol* 1 NASDAQ 3 Price* 405 Profit* 104 Recession* 14 Revenue* 140 Sales 230 Sell* 132 Stock 304 Trade 136 Wealth 10	Commerc*	19
Contract* 37 Customer* 63 Demand 51 Dow 111 Economic* 117 Economy 46 Exchang* 46 Expensive 9 Fortune 2 GDP 4 IPO 26 Market* 58 Merge 64 Monopol* 1 NASDAQ 3 Price* 405 Profit* 104 Revenue* 140 Sales 230 Sell* 132 Stock 304 Trade 136 Wealth 10	Competit*	110
Customer* 63 Demand 51 Dow 111 Economic* 117 Economy 46 Expensive 9 Fortune 2 GDP 4 IPO 26 Market* 584 Merge 64 Monopol* 1 NASDAQ 3 Price* 405 Profit* 104 Recession* 14 Revenue* 140 Sales 230 Sell* 132 Stock 304 Trade 136 Wealth 10	Consum*	104
Demand S1	Contract*	37
Dow	Customer*	63
Economic* 117 Economy 46 Exchang* 46 Expensive 9 Fortune 2 GDP 4 IPO 26 Market* 584 Merge 64 Monopol* 1 NASDAQ 3 Price* 405 Profit* 104 Recession* 14 Revenue* 140 Sales 230 Sell* 132 Stock 304 Trade 136 Wealth 10	Demand	51
Economy 46 Exchang* 46 Exchang* 46 Expensive 9 Fortune 2 GDP 4 IPO 26 Market* 584 Merge 64 Monopol* 1 NASDAQ 3 Price* 405 Profit* 104 Recession* 14 Revenue* 140 Sales 230 Sell* 132 Stock 304 Wealth 10	Dow	111
Exchang* 46 Expensive 99 Fortune 2 GDP 4 IPO 26 Market* 584 Merge 64 Monopol* 1 NASDAQ 3 Price* 405 Profit* 104 Recession* 14 Revenue* 140 Sales 230 Sell* 132 Stock 304 Trade 136 Wealth 10	Economic*	117
Expensive 9 Fortune 2 GDP 4 IPO 26 Market* 584 Merge 64 Monopol* 1 NASDAQ 3 Price* 405 Profit* 104 Recession* 14 Revenue* 140 Sales 230 Sell* 132 Stock 304 Trade 136 Wealth 10	Economy	46
Fortune 2 GDP 4 IPO 26 Market* 584 Merge 64 Monopol* 1 NASDAQ 3 Price* 405 Profit* 104 Recession* 14 Revenue* 140 Sales 230 Sell* 132 Stock 304 Trade 136 Wealth 10	Exchang*	46
Fortune 2 GDP 4 IPO 26 Market* 584 Merge 64 Monopol* 1 NASDAQ 3 Price* 405 Profit* 104 Recession* 14 Revenue* 140 Sales 230 Sell* 132 Stock 304 Trade 136 Wealth 10	Expensive	9
IPO 26 Market* 584 Merge 64 Monopol* 1 NASDAQ 3 Price* 405 Profit* 104 Recession* 14 Revenue* 140 Sales 230 Sell* 132 Stock 304 Trade 136 Wealth 10		2
Market* 584 Merge 64 Monopol* 1 NASDAQ 3 Price* 405 Profit* 104 Recession* 14 Revenue* 140 Sales 230 Sell* 132 Stock 304 Trade 136 Wealth 10	GDP	4
Market* 584 Merge 64 Monopol* 1 NASDAQ 3 Price* 405 Profit* 104 Recession* 14 Revenue* 140 Sales 230 Sell* 132 Stock 304 Trade 136 Wealth 10	IPO	26
Merge 64 Monopol* 1 NASDAQ 3 Price* 405 Profit* 104 Recession* 14 Revenue* 140 Sales 230 Sell* 132 Stock 304 Trade 136 Wealth 10	Market*	
Monopol* 1 NASDAQ 3 Price* 405 Profit* 104 Recession* 144 Revenue* 140 Sales 230 Sell* 132 Stock 304 Trade 136 Wealth 10	Merge	
NASDAQ 3 Price* 405 Priofit* 104 Recession* 14 Revenue* 140 Sales 230 Sell* 132 Stock 304 Trade 136 Wealth 10		1
Price* 405 Profit* 104 Recession* 14 Revenue* 140 Sales 230 Sell* 132 Stock 304 Trade 136 Wealth 10		3
Profit* 104 Recession* 14 Revenue* 140 Sales 230 Sell* 132 Stock 304 Trade 136 Wealth 10		405
Recession* 14 Revenue* 140 Sales 230 Sell* 132 Stock 304 Trade 136 Wealth 10	Profit*	
Sales 230 Sell* 132 Stock 304 Trade 136 Wealth 10		14
Sell* 132 Stock 304 Trade 136 Wealth 10	Revenue*	140
Sell* 132 Stock 304 Trade 136 Wealth 10	Sales	230
Stock 304 Trade 136 Wealth 10	Sell*	
Trade 136 Wealth 10		
Wealth 10		
	Total Market Words	3630

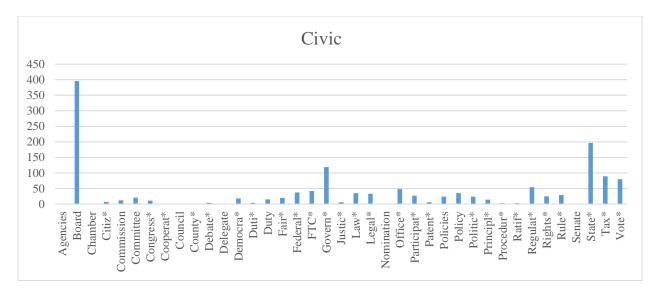
Figure 4: Word Category Visualizations. Each chart illustrates the frequency of words under each category of logics. Numerals on Y-axis of each chart indicate number of times word or word root appeared in sample text.











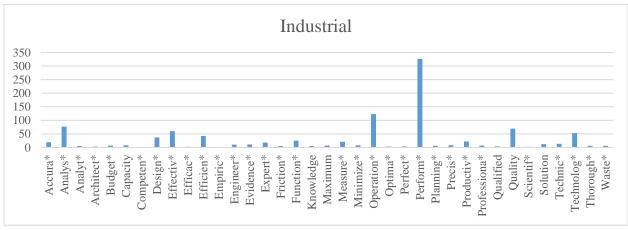


Figure 5: Summary outputs for initial SAS and Excel analysis.

		Quarter	M&A (Pretax)	Cash	Total Long- Term Debt	D&A	Preferred Dividends	Net Goodwill	Total Invested Capital (Quarter)	Total Current Liabilities	Total Liabilities
ctivist (a)	Mean Median Min	2.1 2.0 1.0	4.3 (1.3) -	2,288.3 130.0 -	6,461.7 852.9 (485.0)	172.6 27.6 -	8.7 - -	2,453.1 96.8 -	12,899.4 1,705.5 -	7,400.6 736.2 -	20,775.5 1,863.9 -
•	Max	4.0	-	-	1,951.2	70,483.0	3,160,074.0	6,958.0	10,435.0	82,464.0	94,861.0
Total (t)	Mean Median Min Max	2.4 2.0 1.0 4.0	(6.1) (0.8) (2,227.0) 2,318.0	1,479.8 74.7 - 131,417.0	11,023.3 270.6 - 3,345,848.0	131.7 9.1 (44.9) 6,958.0	14.6 - (380.0) 59,368.0	1,818.7 22.6 - 87,068.0	16,567.2 831.5 (2,694.1) 3,352,823.0	3,586.2 203.5 - 116,866.0	25,253.5 852.7 - 3,394,130.0
<u>ڇ</u>	Mean Median Min Max	0.3 0.0 0.0 0	(10.5) 0.5 (2,227.0) 2,318.0	(808.6) (55.3) - 131,417.0	4,561.6 (582.3) 485.0 3,343,896.8	(40.8) (18.5) (44.9) (63,525.0)	5.9 - (380.0) (3,100,706.0)	(634.4) (74.2) - 80,110.0	3,667.8 (874.0) (2,694.1) 3,342,388.0		4,478.0 (1,011.2) - 3,299,269.0

	Ц	Notes Payable	EPS (Diluted)	Rx Cost EPS (Basic)	Total Receivables	Retained Earnings	Total Revenue		Pretax Writedowns		Acquisitions
Mea Med Min Max	lian	601.3 - - 3,260,517.0	1.2 0.9 (8,826.0) 18,024.0	(0.1) (0.0) (24.3) 44.7	7,673.0 247.6 5.3 237.3	7,453.3 156.2 (3.9) 0.1	3,560.6 335.8 - 3,088,912.0	(0.1) (0.0) (52.2) 74,599.0	(2.9)	(53.2) - (3.0) 0.0	-
Mea Mea Min Max	dian	1,453.4 - - 347,805.0	1.5 0.7 (1,128.1) 1,542.6	(0.1) (0.0) (19.1) 39.7	12,346.1 107.3 - 3,242,138.0	4,083.1 31.9 (133,252.0) 180,777.0	2,405.3 205.0 (1,479.6) 88,293.0	(0.2) (0.0) (13.6) 0.8	(0.9)	(14.8) - (9,024.0) 15,601.9	-
Mea Meo Min Max	dian	852.1 - - - (2,912,712.0)	0.4 (0.2) 7,697.9 (16,481.4)	0.0 - 5.3 (5.0)	4,673.1 (140.3) (5.3) 3,241,900.7	(3,370.3) (124.3) (133,248.1) 180,776.9	(1,155.2) (130.8) (1,479.6) (3,000,619.0)	0.0 38.6	2.1 (9,171.8)	38.4 - (9,021.1) 15,601.9	5.6 - (14,376.0) 37,625.0

		S&P Core Earnings	Special Items	R&D Expense	Total Market Value	Price Close (Quarter)	Price High (Quarter)	Price Low (Quarter)	СарЕх	Net Income (Loss)
Activist (a)	Mean Median Min Max	328.5 23.8 - 11,369.0	(55.0) (4.4) (0.1) 182.214.0	350.9 23.5 (18,112.0) 10,248.9	16,306.5 1,589.8 (10,515.4) 910.0	35.4 14.1 (0.0) 14.006.0	38.5 17.3 0.7 829.383.9	31.6 12.6 0.0 1.699.8	396.8 20.9 (5,602.9) 3,715.0	146.2 7.9 - 151,304.0
Total (t)	Mean Median Min Max	346.2 13.4 (26,682.2) 25,816.7	(51.4) (0.2) (31,310.0) 10,248.9	284.6 6.5 (0.0) 22,620.0	13,477.5 928.7 0.2 1,073,390.5	40.1 15.6 0.0 8,650.0	43.8 18.0 0.0 8,650.0	35.6 13.8 0.0 7,950.0	378.1 10.0 (0.1) 37,985.0	151.8 3.6 (22,769.0) 58,685.0
(t-a)	Mean Median Min Max	17.7 (10.4) (26,682.2) 14,447.7	3.7 4.1 (31,309.9) (171,965.1)	(66.3) (17.0) 18,112.0 12,371.1	(2,828.9) (661.1) 10,515.6 1,072,480.5	4.7 1.5 0.0 (5,356.0)	5.3 0.7 (0.7) (820,733.9)	4.0 1.2 (0.0) 6,250.2	(18.8) (10.9) 5,602.8 34,270.0	5.6 (4.3) (22,769.0) (92,619.0)

Figure 6: Outputs from R Models.

```
Estimate Std. Error z value Pr(>|z|)
(Intercept)
                           -7.992e+02 1.075e+04 -0.074 0.940758
Acquisition_Merger_Pretax 2.431e-03 6.920e-04 3.513 0.000443 ***
                         Estimate Std. Error z value Pr(>|z|)
(Intercept)
                        -4.554e+02 2.286e+01 -19.924 < 2e-16 ***
Long_Term_Debt___Total -3.681e-06 2.934e-06 -1.255 0.209631
                     Estimate Std. Error z value Pr(>|z|)
                   -4.749e+02 2.344e+01 -20.261 < 2e-16 ***
(Intercept)
Cash
                   -2.431e-05 1.364e-05 -1.782 0.074740 .
                                   Estimate Std. Error z value Pr(>|z|)
(Intercept)
                                  -4.622e+02 2.277e+01 -20.296 < 2e-16 ***
Invested_Capital___Total___Quart -1.507e-06 2.277e-06 -0.662 0.507999
                     Estimate Std. Error z value Pr(>|z|)
(Intercept) -4.676e+02 2.362e+01 -19.793 < 2e-16 ***
Goodwill_net_ -4.994e-05 1.404e-05 -3.556 0.000376 ***
                        Estimate Std. Error z value Pr(>|z|)
                      -4.621e+02 2.311e+01 -19.995 < 2e-16 ***
(Intercept)
Market_Value___Total -1.765e-07 7.757e-07 -0.227 0.820048
                                    Estimate Std. Error z value Pr(>|z|)
(Intercept)
                                  -6.227e+02 3.777e+01 -16.487 < 2e-16 ***
Research_and_Development_Expense -1.934e-04 4.671e-05 -4.139 3.48e-05 ***
                     Estimate Std. Error z value Pr(>|z|)
(Intercept)
                   -4.809e+02 2.249e+01 -21.379 < 2e-16 ***
                    9.686e-05 4.727e-05 2.049 0.040467 *
Special_Items
                       Estimate Std. Error z value Pr(>|z|)
                     -4.613e+02 2.264e+01 -20.375 < 2e-16 ***
(Intercept)
Capital_Expenditures -1.006e-05 2.090e-05 -0.482 0.630154
                      Estimate Std. Error z value Pr(>|z|)
(Intercept) -9.184e+02 1.764e+02 -5.207 1.92e-07 ***
Writedowns_Pretax 1.718e-04 3.207e-04 0.535 0.592314
                     Estimate Std. Error z value Pr(>|z|)
                   -4.710e+02 2.309e+01 -20.399 < 2e-16 ***
(Intercept)
Retained_Earnings 2.748e-05 6.701e-06 4.100 4.12e-05 ***
```

```
Estimate Std. Error z value Pr(>|z|)
(Intercept) -4.705e+02 2.263e+01 -20.789 < 2e-16 ***
Earnings_Per_Share___Diluted___f 1.191e-03 3.006e-03 0.396 0.691836
                      Estimate Std. Error z value Pr(>|z|)
                   -4.893e+02 2.332e+01 -20.984 < 2e-16 ***
(Intercept)
Revenue___Total_1 -1.336e-05 3.240e-06 -4.123 3.75e-05 ***
                                     Estimate Std. Error z value Pr(>|z|)
                                   -4.752e+02 2.234e+01 -21.272 < 2e-16 ***
(Intercept)
Dividends___Preferred_Preference 1.925e-05 3.801e-05 0.506 0.612649
                               Estimate Std. Error z value Pr(>|z|)
                             -4.751e+02 2.571e+01 -18.478 < 2e-16 ***
(Intercept)
Current_Liabilities___Total 1.425e-05 1.007e-05 1.415 0.157199
                       Estimate Std. Error z value Pr(>|z|)
(Intercept) -4.667e+02 2.278e+01 -20.486 < 2e-16 ***
Receivables___Total -1.517e-05 4.908e-06 -3.092 0.001988 **
                     Estimate Std. Error z value Pr(>|z|)
                   -4.806e+02 2.325e+01 -20.676 < 2e-16 ***
(Intercept)
Revenue___Total
                   8.441e-06 1.212e-05 0.697 0.486025
                                    Estimate Std. Error z value Pr(>|z|)
                                  -506.80556 59.32611 -8.543 < 2e-16 ***
(Intercept)
Restructuring_Cost_Basic_EPS_Eff -1.07069 0.33717 -3.176 0.001496 **
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