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Hedge Fund Ownership and Auditor-Client Contracting In U.S. Firms

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HEDGE FUND OWNERSHIP AND AUDITOR-CLIENT CONTRACTING IN U.S. FIRMS

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ABSTRACT

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Hedge funds have grown rapidly in the last two decades, from managing assets worth approximately $600 billion in 2003 to over $3 trillion in 2017. As hedge funds themselves have grown, so too have concerns about their involvement with publicly traded companies and their effect on various stakeholders and the economy. Although Critics claim that hedge fund activism creates a short-term focus, shifting funds out of expansion and research and development and into distributions to shareholders, proponents argue that hedge fund activism helps boards overcome management incompetence and counter passive investors. Academic research is mixed on the long-term effects of hedge fund activism and few studies have examined the relationship between hedge fund ownership and the external audit process.

The purpose of this study is to investigate whether hedge fund ownership affects auditor-client contracting. Specifically, the study examines the relationships between hedge fund ownership and (1) audit fees, (2) audit lag, (3) issuance of going concern opinions, and (4) auditor resignation.

This research is an archival study. The sample consists of publicly listed firms incorporated in the U.S. for the period 2005-2017 containing 30,047 firm-year

observations. The results show that hedge fund ownership (both the number of hedge fund owners and the percentage owned) has a highly significant, negative relationship with audit lag. This finding indicates auditors perceive clients with hedge fund owners to decrease audit risk. Results also show that hedge funds increase audit fees. In additional analysis, however, this positive association is shown to be driven by increased audit effort, not the presence of hedge funds. These results suggest that hedge fund owners decrease perceived audit risk and are willing to pay higher audit fees for higher quality audits.

No significant association was found between issuance of a first going concern opinion or auditor turnover and hedge fund ownership. These results should be interesting for politicians, regulators, auditors, investors, and for future research.

Keywords: hedge funds, audit fees, audit lag, audit risk, auditor turnover, going concern opinions

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CHAPTER 1

INTRODUCTION

The purpose of this study is to examine whether hedge fund ownership of publicly traded companies affects auditor-client contracting. The growth of hedge funds has been rapid. For example, hedge funds managed approximately $600 billion of assets in 2003 (SEC, 2003). By 2017, hedge funds managed more than $3 trillion in assets worldwide (Herbst-Bayliss, 2017; Williamson, 2018). As hedge fund asset management has risen over the last twenty years (Cheffins & Armour, 2011; Gillan & Starks, 2007), so have the concerns regarding the effects of hedge funds on publicly traded companies, stakeholders, and the U. S. economy (Coffee Jr. & Palia, 2016).

The main concern expressed by critics is that hedge funds create a short-term focus. That is, they focus on shifting funds out of long-term spending and into distributions to shareholders (Monga, Benoit, & Francis, 2015; Sharfman, 2015). For example, then U.S. Senator Hillary Clinton described hedge funds as "cut and run shareholders" during a speech at New York University (Sorkin, 2015). Before that, the President of the Federal Reserve Bank of New York cautioned that hedge funds "present a source of potential risk to the financial system" in a 2004 speech at the National Conference on the Securities Industry (Geithner, 2004).

Not everyone, however, feels that hedge fund involvement is detrimental to other stakeholders and the economy. A recent opinion piece in *The Harbus*

contends that hedge funds play a vital role in the market. The author makes the case that activists push management and the Board of Directors (Board) into taking strategic actions in underperforming firms and counter the "apathy" of passive investors (Liou, 2018). Hedge fund interventions that incorporate Board seats can help decrease a firm's agency problems and the rise of hedge fund activism has spurred institutions into more active roles in their investments (Christie, 2018).

Academic research also disputes the contention that hedge fund activism promotes short-term gains at the expense of long-term value. Studies by Bebchuk, Brav, and Jiang (2015) and Goodwin, Singh, Slipetz, and Rao (2014) found no evidence that the positive returns from hedge fund activism reversed themselves in the five years after intervention. Sharfman (2015) contends that hedge funds actually create long-term value by providing Boards with an alternate point of view from management to consider when making decisions. Hedge fund intervention can also improve operating performance (Clifford, 2008) and improve debt restructuring in financially distressed firms (Lim, 2015).

The debate about the value of hedge fund ownership on their investees and other stakeholders (such as employees, customers, suppliers, and the government (Freeman, 1984)), is clearly illustrated by the following quote:

> Activist hedge funds, writes The Economist in its cover story of February 7, 2015, are "a breath of fresh air" and "good for the public company." They offer firms a "new lease on life." They are "a force for good." They are "capitalism's unlikely heroes," even "saviors." The argument is absurd for at least seven reasons. (Denning, 2015)

Denning's (2015) article, as quoted above, goes on to describe the seven reasons hedge fund activists are not "saviors." Broadly, he argues that hedge funds have a short-term focus and their goal is to create value for shareholders only (not creating value for customers and the economy). The result of their intervention is managers adopt a short-term time horizon (reducing staff and benefits to staff, reducing spending on research and development, and increasing debt) to increase share price and take management attention away from company operations to defensive strategies to fend off hedge fund activism. They frequently induce share buybacks in the companies they own and, finally, hedge funds contribute to the promotion of financial gains over providing goods and services. Hedge funds tend to be "financial engineers" who lack the interest and understanding of the "real task of management" (innovation and creating value for customers).

This view of hedge fund activism is shared by Martin Lipton, a founding partner of a law firm specializing in topics that affect corporate strategy and policy:

> "the attacks and the efforts by companies to adopt short-term strategies to avoid becoming a target [of hedge funds] have had very serious adverse effects on the companies, their long-term shareholders, and the American economy" (Lipton, 2013).

Voicing her concerns, corporate law scholar Lynn Stout (2012) wrote that acceding to activist shareholders' demands:

> "causes corporate managers to focus myopically on short-term earnings reports at the expense of long-term performance; discourages investment and innovation; harms employees, customers, and communities; and causes companies to indulge in reckless, sociopathic, and socially irresponsible behaviors" (p. 7).

Some lawmakers were concerned enough about hedge funds to introduce a Senate bill that would require additional disclosures to the SEC (Baldwin, 2017).

In addition to the studies already mentioned, academic research on hedge fund ownership provides evidence of positive effects of hedge fund ownership and firm outcomes. Specifically, research provides evidence of a positive relationship between hedge fund ownership and abnormal returns (Becht, Franks, Mayer, & Rossi, 2009; Karpoff, Malatesta, & Walkling, 1996; Strickland, Wiles, & Zenner, 1996; Wahal, 1996) and operating performance (Becht et al., 2009; Del Guercio, Seery, & Woidtke, 2008; Gillan & Starks, 2007). Although research overall has shown that activism has a negative effect on managers, it can produce benefits to shareholders. For example, it is associated with decreased CEO pay and increased CEO turnover, but activism can also lead to gains in productivity, divestiture of underperforming assets, and positive excess stock returns (e.g. Brav, Jiang, Partnoy, & Thomas, 2008; Edmans & Holderness, 2017; Klein & Zur, 2009) as well as increasing upper management and boards of directors effectiveness (Bebchuk, 2013; Boyson & Mooradian, 2011). Activism also results in improved corporate tax efficiency, increased accounting conservatism and the threat of hedge fund activism may cause managers to increase voluntary disclosures (e.g., Bourveau & Schoenfeld, 2017; Cheng, Huang, & Li, 2015; Cheng, Huang, Yinghua Li, & Stanfield, 2012).

One area of research, however, that has remained largely unexplored is the effect of hedge fund ownership on the audit engagement.[1] The few studies that have examined the relationship between hedge funds and auditors have focused on the effects of auditing

[1] Most studies on shareholders and external auditors have focused on the auditor ratification process, looking at against and abstaining votes as a measure of satisfaction with the auditor. See, as examples, Dao, Mishra, & Raghunandan, 2008; Dao, Raghunandan, & Rama, 2012; Hermanson, Krishnan, & Zhongxia, 2009; Li-Lin, Raghunandan, & Rama, 2009.

on the hedge funds themselves.[2] For example, Liang (2003) found a significant, positive difference in reporting quality between audited versus non-audited hedge funds, emphasizing the importance of quality audits. Patton, Ramadorai, and Streatfield (2011) found that hedge funds that revised previously reported financial statements significantly underperformed hedge funds that never revised, suggesting that audited hedge funds are beneficial to investors. Similarly, Jylha's (2012) study on misreporting found that hedge funds managed by a registered investment advisor and hedge funds that were members of a large group of funds (two groups more likely to be audited) were less likely to overstate their performance.

Using a sample of 30,047 firm-year observations for the years 2005-2017, I examine the association between hedge fund ownership and audit outcomes; specifically, audit lag, audit fees, auditor turnover, and the issuance of going concern opinions. The results of the study show that hedge fund ownership is significantly, negatively associated with audit lag and significantly, positively associated with audit fees. These results appear to contradict each other as the decrease in audit lag supports the viewpoint that auditors consider hedge fund ownership to decrease engagement risk, while the increase in audit fees supports the viewpoint that hedge fund ownership increases engagement risk. Taken together, hedge fund ownership is associated with a shorter audit completion time, but higher audit fees. In an additional analysis, I investigated this contradiction by testing the interaction between hedge funds and audit effort on audit fees. The results of that analysis showed that the presence of hedge funds was not responsible for the increase in audit fees, rather that is was the interaction between hedge

[2] In a concurrent paper, Guo et al. (2018) investigate the relation between specific categories of activist investors, not just hedge funds, and audit outcomes.

funds and audit effort. This suggests that hedge funds are willing to pay more for audits to achieve higher audit quality. Overall, the results of these two tests indicate that auditors consider hedge fund ownership of clients decreases their perceived engagement risk.

Results of the examination of hedge fund ownership and going concern opinions and auditor turnover yielded no statistically significant results. Likewise, an additional analysis of hedge funds and the issuance of material weaknesses in internal controls over financial reporting also yielded no statistically significant results.

Audits are an integral part of the financial reporting process. They help mitigate the agency problems between investors and managers by reducing information asymmetry levels between these parties and, thus, are an important component of financial reporting quality (DeFond & Zhang, 2014; Knechel, Krishnan, Pevzner, Shefchik, & Velury, 2013). This study helps fill the gap in the literature by increasing information about hedge funds and auditors through their relationship with the external audit process in companies owned by hedge funds.

The results of this study could have implications for multiple interested parties. Politicians, regulators, corporate law experts, and business leaders concerned about the effects of hedge fund activism on publicly traded companies will be interested in the effects on the external audit process and, thereby, the financial reporting quality of publicly traded companies. Likewise, proponents of hedge fund involvement, the hedge fund managers themselves and other business leaders will be interested in the answer to the same question. For regulators, the U.S. Securities Exchange Commission's (SEC) recent Release (SEC, 2015) shows concerns the SEC has over the relationship between

shareholders and the external auditor, so this study may address some of their concerns. Finally, there is a growing body of academic research related to shareholder activism and hedge funds in particular. This study will answer Denes et al.'s (2017) call for more studies on the effects of hedge fund activism on non-financial stakeholders and will add to the academic discussion surrounding the growing the presence of activist hedge funds in the market.

The remainder of this manuscript is organized as follows: Chapter 2 reviews the literature and proposes hypotheses. Chapter 3 describes the research design that will be used to test the relationship between activists and audit quality and the data collection method for the proposed sample. Chapter 4 presents the results of hypothesis testing and an additional analysis. Chapter 5 colludes with a summary of the results, potential limitations, and implications of the findings.

CHAPTER 2

BACKGROUND LITERATURE AND HYPOTHESES DEVELOPMENT

Shareholder Activism

Shareholder activism in the United States can be traced back to 1942 when the SEC adopted a rule (the precursor to today's rule 14a-8) that allowed shareholders to file proposals that could be put to a vote (Gillan & Starks, 2007). Any shareholder can potentially be an activist shareholder. Activist shareholders can be defined as investors who, dissatisfied with the company's performance, seek to bring about changes in the company through multiple measures including: voting against director nominations (Del Guercio et al., 2008), influencing top management through private discussions (Becht et al., 2009; Carleton, Nelson, & Weisbach, 1998; Smith, 1996), and proxy filings at the company's annual shareholders meeting (Denes et al., 2017).

Until the 1970's, activists were mostly individual investors or groups of individual shareholders that banded together to increase their power (Gillan & Starks, 2007). A primary example of an investor group was the United Shareholders Association, founded by T. Boone Pickens, which operated from 1986 to 1993 and submitted over 163 proposals to 50 target firms from 1991-1993 (Strickland et al., 1996). Institutional investors came to the forefront in the 1980's, beginning with public pension funds. This mirrors the rise in ownership by institutions of publicly traded companies, which increased from an average of 10% of U.S. equities in 1953 to over 70% by 2006 (Gillan

& Starks, 2007). Even more so than individuals, institutions can exert power over a firm's management on many subjects (Brickley, Lease, & Smith Jr., 1988; Carleton et al., 1998; Wahal, 1996). Institutional investors are powerful because they rely on shared information and proxy analyses, which allows them to concentrate their votes (Bethel & Gillan, 2002). As activists, these institutions tend to focus on corporate governance and environmental issues (Gifford, 2010) and their involvement has been found to increase shareholder wealth (Jarrell & Poulsen, 1987; Opler & Sokobin, 1995). Institutions that are known to be activist investors include: pension funds (CalPERS (Smith, 1996) and TIAA-CREF (Carleton et al., 1998)), investment managers (Hermes UKFF (Becht et al., 2009)), mutual funds, and hedge funds (Gillan & Starks, 2007).

Goals and Outcomes of Shareholder Activism

The aim of activist shareholders is to bring about substantial changes in the targeted companies (Becht et al., 2009) with an end goal of increasing shareholder value overall to make a profit (Sharfman, 2015). Such changes can include everything from encouraging management to sell underperforming assets or divisions or increase payouts to shareholders to replacing executives with others more inclined to implement the desired changes (Becht et al., 2009). Activist shareholders specifically push for CEO turnover (Benoit, 2017; Benoit & Lublin, 2014; Brav et al., 2008; Del Guercio et al., 2008), lower CEO compensation (Ertimur, Ferri, & Muslu, 2011; Ertimur, Sletten, & Sunder, 2014), divestiture of assets (Bethel, Liebeskind, & Opler, 1998; Salvaterra, 2017), separation of CEO and chair of the board of directors (Daily & Dalton, 1997), and, sometimes, sale of the company itself (Berk & Whitten, 2017).

Board of director replacement (Benoit & Lublin, 2014; Berk & Whitten, 2017) is another outcome of shareholder activism. Replacing board members, however, does not always help activists achieve their goal of increasing firm value. Akyol et al. (2012) found that increased shareholder activism in the form of director nominations decreased shareholder wealth overall. Other studies on the nominations of directors by shareholders have yielded mixed results, with too much power in the hands of shareholders leading to decreased firm value (Larcker, Ormazabal, & Taylor, 2011), while tighter restrictions on the shareholders allowed to nominate leading to positive results (Campbell, Campbell, Sirmon, Bierman, & Tuggle, 2012). Studies outside of director nominations have found that agency problems are mitigated by shareholder voting on control events and important items, but excessive voting on items by shareholders leads to inefficiencies (Easterbrook & Fischel, 1983; Pound, 1991).

Because activists achieve their goal of substantial company change mostly through private negotiations, rather than proxy filings (Becht et al., 2009; Carleton et al., 1998; Smith, 1996), they are able to avoid inefficiencies caused by excessive voting. The United Shareholders Association, for example, only used proxy filings when negotiations with management failed (Strickland et al., 1996) as the cost of bringing items to the proxy stage has an average estimated cost to the shareholder of $10.7 million per proxy contest (Gantchev, 2013). The benefits of activist proposals have been fairly low, only yielding abnormal positive returns around the announcement date of 0.36% (Renneboog & Szilagyi, 2011) to 1.31% (Cuñat, Gine, & Guadalupe, 2012). Private negotiations yielded similar results to proxy contests with abnormal returns around the announcement

of negotiations of 0.98% (English, Smythe, & McNeil, 2004) to 1.86% (Wahal, 1996), making a proxy contest rarely worth the expense of fighting it.

The long-term effects of activism have yielded mixed results. Smith (1996) found positive, long-term stock returns for the targets of CalPERS' activism and Opler and Sokobin (1997) found the same results for the companies listed on the Council of Institutional Investors' Focus List. In contrast, Del Guercio and Hawkins (1999) and Prevost and Rao (2000) found no significant abnormal returns, either positive or negative, to targets of activist negotiations in the long-term. In terms of effects on the firms themselves, most research on activist shareholders has found no significant relationship between activists and the operating performance of their targets (Carleton et al., 1998; Del Guercio & Hawkins, 1999; Karpoff et al., 1996; Strickland et al., 1996). One exception is Del Guercio et al.'s (2008) study on the effects of institutional investors and operating performance, which found increased return on assets in the three years following activist intervention. An analysis of shareholder activism over a 30 year period yielded two important pieces of information: activism on the whole has been more successful at attaining desired results in recent years and the type of activist is important to attaining those results (Denes et al., 2017).

Hedge Fund Activism as a Special Case of Shareholder Activism

A hedge fund is a type of activist investor that has risen to prominence in the last two decades (Cheffins & Armour, 2011). A hedge fund is an investment fund typically characterized by higher risk and uncertain investment strategies. Because unlike mutual funds hedge funds are generally much less regulated (SEC, 2013a), only accredited

investors[3] are permitted to invest in hedge funds and they are prohibited by the SEC from advertising to the general public, although many of them are registered with the SEC[4], allowing them to have a lower minimum investment and an unlimited number of investors ("Hedge Fund Definition," n.d.). Mutual funds and pension funds are usually bound by their charters to not use leverage or derivative instruments. Hedge funds, in contrast, often use options and leverage to increase effective ownership in their targets (Hu & Black, 2007). Unlike mutual funds, hedge funds can also short securities (SEC, 2013a).

The beginnings of hedge fund activism can be traced back to the 1980's when institutional investments in publicly traded companies began to rise and a few private investment funds began activist campaigns. By the 1990's, hedge funds were becoming a part of the investment scene, but they were not as active as they are today (Cheffins & Armour, 2011). At the beginning of the 1990's, the SEC reports that there were around 300 hedge funds operating in the U.S. managing approximately $40 billion dollars in assets (approximately $70 billion adjusted for inflation), compared with the $1.6 trillion managed by mutual funds (SEC, 2003). In 2003, the number of hedge funds had grown to between 6,000 and 7,000, managing roughly $600-650 billion in assets (SEC, 2003) (approximately $800-865 billion adjusted for inflation) and by 2017 hedge funds were managing $3.2 trillion worldwide[5] (Williamson, 2018). Hedge funds that engaged in

[3] The SEC considers individuals with high net worth and/or high income to be accredited investors (SEC, 2013b).
[4] Unregistered hedge funds are not subject to all the regulations that protect investors, including disclosure requirements, although they are subject to fraud regulations. Hedge fund managers managing more than $25 million in assets must file Form ADV with the SEC to become registered and file public reports (SEC, 2013a).
[5] In general, hedge fund holdings have increased steadily since 2004, but fell after the 2008 Financial Crisis (Barclay Hedge, n.d.). Different time periods will be addressed in sensitivity analysis.

shareholder activism also increased during this period with $100 billion in assets ($121 billion adjusted for inflation) being managed by activist funds in 2006 (Barr, 2006). Greenwood and Schor's (2009) study on 13D filings announcing an intention to influence management and 5% ownership showed a similar trend. Only 10 such filings occurred in 1994, eight of them by hedge funds, while 153 occurred in 2005, 141 of them filed by hedge funds.

Unlike mutual funds, hedge funds are not required to maintain high levels of diversification, nor are they required to maintain sufficient liquidity to allow withdrawals from their shareholders (Aragon, Ergun, Getmansky, & Girardi, 2017). In fact, hedge funds often require notice well in advance of any withdrawals as they tend to keep investor capital locked in investments for extended periods of time (Aragon, 2007; Bhide, 1993; Coffee, 1991). The compensation structure for hedge fund managers is also different from that of mutual and pension funds. Managers of hedge funds typically receive a fee of 20% of their fund's annualized returns, while mutual and pension fund managers are compensated in a less performance-driven manner. It makes sense then, that although the cost of activism is high, the potential payoff for hedge fund managers is also high, thereby compensating the managers for their increased risk and efforts (Clifford, 2008).

Because the compensation structure of hedge funds rewards managers for their performance, hedge funds engage in performance-driven activism. Performance-driven activism pushes for significant changes in the corporation's operations in order to increase the market price of a company's stock. This is in contrast to the non-performance-driven activism which focuses mainly on a company's executive

compensation and governance issues (Rose & Sharfman, 2014), although hedge funds can also engage in non-performance changes as part of their campaign of company changes (Cheffins & Armour, 2011).

In addition to being performance-driven, hedge funds differ from mutual funds and pension funds in that they are offensive, rather than defensive (Cheffins & Armour, 2011). When pension and mutual funds engage in performance-driven activism, it occurs only when the companies in which they are already invested begin to underperform or their shares begin to drop in the market (Kahan & Rock, 2007). Hedge funds, in contrast, seek out corporations that are already underperforming and purchase a significant number of shares (around five to ten percent of shares outstanding) with the aim of improving company performance (Cheffins & Armour, 2011). To this end, hedge funds actively campaign for changes that will increase the performance of their companies and the share price (Brav et al., 2008; Clifford, 2008).

Before pushing for changes, however, the activists must acquire shares in publicly traded companies. Certain characteristics are more attractive to activists and companies become targets of activism by underperforming or being undervalued in the market (Gillan & Starks, 2007; Strickland, Wiles, & Zenner, 1996; Wahal, 1996). The usual target of these activists is the poor performer (Becht et al., 2009; Gillan & Starks, 2007; Wahal, 1996), that is, companies underperforming in both their industry and the market in general (Strickland et al., 1996). These targeted companies also exhibit low insider ownership and high institutional ownership (Gillan & Starks, 2007). Companies can also be targeted due to poor governance structure (Gillan & Starks, 2007), such as the United Shareholders Association's tendency to focus on companies with policies limiting

shareholder input and plans not tying top management pay to firm performance (Strickland et al., 1996).

Because the changes pushed by activists can be drastic, companies do not always wish to become targets of activism. One successful way that companies have made themselves less desirable to hedge funds is to increase the number of disclosures they make (Bourveau & Schoenfeld, 2017). As disclosures decrease information asymmetry and, therefore, allow the market to better price their shares, they become less of a target for activists, who prefer undervalued companies and information opaqueness (Bourveau & Schoenfeld, 2017).

Results of Hedge Fund Activism

Although research has shown that agency problems can be mitigated through concentrated ownership by reducing information asymmetries between management and shareholders and through increasing access to insider information (Jensen & Meckling, 1976), some have expressed concerns that shareholder involvement leads to opportunism, politicking, and use of influence by activist investors for personal gain (Adegbite, Amaeshi, & Amao, 2012).

The most prevailing argument against the involvement of activist shareholders is that they induce short-termism in companies, which:

> "… refers to companies taking actions that are profitable in the short term but value-decreasing in the long term, such as increasing near-term earnings by cutting research that would pay off later on. Activist investors with short investment horizons, it is argued, seek actions that boost short-term stock price at the expense of long-term value and often succeed in pressuring companies to take such actions." (Bebchuk, 2013, p. 1638-1639)

This short-term approach, according to critics, leads companies to maximize earnings at the expense of research and development and capital investment (Lipton, 2013). As well as concerns over reductions in research and development, concerns have been voiced that hedge funds exhibit patterns of behavior that also include increased payouts to shareholders and leverage (Coffee Jr. & Palia, 2016).

Despite the concerns expressed, academic research has found little evidence that hedge fund intervention promotes short-term gains at the expense of long-term value. Boyson and Mooradian (2011) found that hedge fund activism improves the long-term operating performance of targets and their short-term stock performance. These results were most dramatic in firms where hedge funds focused on changes in governance and reducing excess cash. In addition, hedge funds themselves benefitted from aggressive activism by performing better than hedge funds using less aggressive tactics. Target firms experience increases in payout, operating performance, and higher CEO turnover (Brav et al., 2008) and hedge fund intervention leads to increases in leverage and improvement in value (Carrothers, 2017).

Market reaction to hedge fund intervention is significant and positive around the date of the Schedule 13D filing and these significant positive returns continue into the subsequent year (Klein & Zur, 2009). The abnormal return around the announcement of activism is approximately seven percent, with no reversal during the subsequent year (Brav et al., 2008). Bebchuk, Brav, and Jiang (2015) found no evidence that activist interventions are followed by short-term gains in performance that come at the expense of long-term performance in the five years following intervention. They also find no evidence that the initial positive stock-price spike accompanying is followed by negative

abnormal returns in the long term nor the contention that the exit of the hedge fund is followed by abnormal long-term negative returns.

Goodwin, Singh, Slipetz, and Rao (2014) also found no evidence in their study that target firms experienced a reversal of positive results during the five-year period following intervention. In addition, target firms that granted a Board seat to a hedge fund had positive abnormal returns during the five-year period following activist joining the target firm Board. Further, target firms increased return on assets (ROA) and other operating measures and market value relative to book value after intervention. Bushee (1998) did find, however, that institutions with high portfolio turnover were associated with lower spending on research and development, while long-term institutional investors were associated with increased spending on research and development. While no similar research exists on hedge funds, the short time horizon of hedge fund ownership (the average length of ownership is 20 months (Brav et al., 2008)) would put them in the same group as transient institutional investors. Bushee's (1998) findings, however, only hold for institutions with high levels of ownership and hedge funds only average just over nine percent ownership (Coffee Jr. & Palia, 2016), so those finding might not be applicable to hedge funds.

Cremers, Giambora, Seps, and Wang (2015), on the other hand, contests the results of studies where researchers have found that hedge funds create long-term value. Their research supports the idea that the improvements seen in targeted firms are the result of selection bias, that is, hedge funds target firms that are already underperforming. Using a matched-pair analysis of targets versus non-targets, they found that non-targets performed better in the long-term than targeted companies.

Sharfman (2015), however, contends that hedge funds do create long-term value by providing recommendations to the Board for improving managerial inefficiency and signaling that its executive management team may be making inefficient decisions. The Board is then able to review and question the direction management is taking the company, choosing which advice the company should take: management, hedge funds, or a combination of both. It is important to note here that hedge funds as activists frequently push for the separation of CEO and Board Chair (Daily & Dalton, 1997), increasing Board independence from management.

Extant studies examine the effects of increased hedge fund ownership on target firms' accounting quality. For example, Cheng, Huang, and Li (Cheng et al., 2015) found target firms exhibit increases in conditional accounting conservatism after hedge fund intervention. The increases are limited to circumstances in which hedge funds have relatively higher ownership and hold their investments for at least one year, allowing sufficient amount of time to exert their monitoring effects. Firms targeted by hedge funds earn higher excess stock returns and experience greater improvements in operating performance than firms targeted by the same hedge funds for passive purposes (Clifford, 2008). Activist hedge funds can create value by enabling a higher probability of completing prepackaged restructurings, faster restructurings, and greater debt reduction in financially distressed firms (Lim, 2015).

Hypotheses Development

Agency problems occur in corporations when the owners of the corporation, shareholders, are not the managers and so are not responsible for the daily operations of the company (Jensen and Meckling, 1976). Because the owners and managers have

conflicting interests and, due to information asymmetry between managers and investors, this leads to conflict between the two groups (Eisenhardt, 1989). Due to these conflicting interests, the firm's audit committee is responsible for hiring an independent third party (U.S. House of Representatives, Committee on Financial Services, 2002) to give an opinion on the financial statements and mitigate the effects of the agency problem (Simunic, 1984). The external audit process, therefore, is an important part of financial reporting quality and important to outside shareholders (DeFond & Zhang, 2014).

Audit risk.

The audit process is not without risk to the external auditor. Prior literature identifies three risks auditors face for each engagement[6] (DeFond, Lim, & Zang, 2016; Knechel & Vanstraelen, 2007). There is the risk that the auditor will issue an incorrect audit opinion, i.e., give an unqualified opinion on a set of financial statements that are materially misstated, known as audit risk. In addition to audit risk, auditors face client risk, i.e. the risk that the client will become insolvent, and thus the auditor could be entangled in the bankruptcy-related litigation which could have negative reputational effects on the auditor. The third risk faced by auditors is their own business or engagement risk, the risk that performing the audit will open the audit firm up to potential losses, either directly through litigation or indirectly through client loss from loss of reputation (DeFond et al., 2016). Even the largest accounting firms can be damaged from litigation or loss of reputation (DeFond & Zhang, 2014). In fact, the largest firms, the Big

[6] PCAOB standards only identify audit risk to be the risk of giving an incorrect opinion on materially misstated financial statements, modeled as audit risk = inherent risk * control risk (PCAOB, 2016). Academic research, however, expands the concept of audit risk to include the risks to themselves faced by auditors as a result of conducting an audit.

4, may be at the highest risk for loss of reputation because they have the highest reputation, and, therefore, the most to lose (DeAngelo, 1981; Dye, 1993).

To mitigate these risks, auditors employ various strategies to reduce the chances of litigation and reputational losses (DeFond & Zhang, 2014). Reputation is important to auditors because the loss of reputation results in the loss of clients (Barton, 2005; Chen & Jian, 2007; Jensen, 2006; J. Weber, Willenborg, & Zhang, 2008). An extreme example of the effect of reputation loss is the case of accounting firm Arthur Andersen. After the Enron fraud was revealed, most of its clients switched to a different accounting firm, almost all to another member of what we now call the Big 4 (Blouin, Grein, & Rountree, 2007). Arthur Andersen also faced criminal and civil charges in regards to its actions in Enron's accounting falsifications (Barton, 2005).

Although the case of Arthur Andersen is unique, every accounting firm faces the potential loss of clients through loss of reputation and loss of money through litigation. Litigation against accounting firms has risen steadily since the 1980's (Giroux & Cassell, 2011) with a dramatic increase in lawsuits after SOX implementation (Udeh & Epps, 2013). In addition to litigation, audit firms of publicly traded companies risk fines and sanctions, including deregistration, from the PCAOB (Huber, 2013). Nagy's (2014) study shows that accounting firms disclosed by the PCAOB as having low quality control lose a significant amount of market share. Deloitte's 2007 sanctions from its 2003 audit of Ligand Pharmaceuticals cost the accounting firm $1,000,000 in fines (PCAOB, 2007) and damaged its ability to retain clients and attract new ones (Boone, Khurana, & Raman, 2015). The stock market also reacts negatively to PCAOB sanctions as shown by the

market share decline in Deloitte's audit clients after its 2007 sanctions (Dee, Lulseged, & Zhang, 2011).

The perceived effects of hedge fund ownership on audit engagement risk

Large shareholders in general, and blockholders, defined as outside owners with five percent or more ownership (Jarrell & Poulsen, 1987), in particular, are associated with pressures to manage earnings, which increases auditor risk (Abbott, Parker, & Peters, 2006). Hedge funds' average ownership in targeted companies is just over nine percent (Coffee Jr. & Palia, 2016), making the majority of them blockholders. Because there is an association between block ownership and earnings management, I expect block ownership by hedge funds to increase audit engagement risk.

When companies are targeted by activist shareholders, the market takes notice as demonstrated by the increase in abnormal returns around the date of announcement (Becht et al., 2009; Strickland et al., 1996; Wahal, 1996). In addition, hedge fund activism is under scrutiny from U.S. senators (Baldwin, 2017; Michaels, 2017) and others concerned about the short-term nature of this kind of activism and the effects on the U.S. economy through publicly traded companies (Cheffins & Armour, 2011; Kahan & Rock, 2007). This increased scrutiny from analysts and regulators when hedge funds buy blocks in companies may increase audit engagement risk because the auditors want to protect their reputation[7].

Not all characteristics of hedge fund ownership, however, may increase auditor engagement risk. While hedge funds are known for pressuring management and the board

[7] Notably, hedge funds themselves sued Arthur Andersen over investment losses related to the Enron collapse (Bloomberg News, 2002)

of directors into making drastic changes to the company (Becht et al., 2009), such as divesting underperforming assets (Salvaterra, 2017) or selling the company itself (Becht et al., 2009; Berk & Whitten, 2017), ownership of publicly traded companies by hedge funds increases conditional conservatism when hedge fund ownership is relatively high compared to the average and when the hedge funds remain owners for at least one year (Cheng et al., 2015). Audit clients associated with more conservative accounting are viewed as less risky clients by auditors (DeFond et al., 2016) as measured by lower audit fees, fewer going concern opinions, and fewer auditor resignations. If higher hedge fund ownership increases accounting conservatism, I expect auditor engagement risk to decrease in the presence of block ownership by hedge funds.

Lack of trust in management integrity also affects auditor engagement risk. When auditors perceive that management integrity is below normal levels, they assess higher engagement risk and respond accordingly (Beaulieu, 2001; Bedard & Johnstone, 2004). Auditors perceive audit engagement risk to be lower when trust in management is higher, such as when social capital is high (Jha & Chen, 2015). Hedge fund intervention increases CEO turnover (Brav et al., 2008), CFO turnover (Cheng et al., 2015), lowers CEO compensation (Ertimur et al., 2011), and increases board independence by separating the board chair and CEO (Daily & Dalton, 1997), which increase oversight in regards to upper management. Studies suggest that shareholders in general, and those owning 5% or more of a company's stock in particular, can restrain managers and aid in effective control of the corporation by its owners (Shleifer & Vishny, 1986), thus mitigating agency problems. Hedge fund ownership could, therefore, increase auditor confidence in management integrity and decrease auditor engagement risk.

Auditors use their clients' overall financial condition to assess engagement risk (Pratt & Stice, 1994). Although the targets of hedge funds are underperformers (Gillan & Starks, 2007), prior research provides evidence that hedge fund activism is associated with higher operating performance (Brav et al., 2008; Denes et al., 2017), improvements in return on assets (Clifford, 2008), and faster restructuring and greater debt reduction in financially distressed firms (Lim, 2015) after targeting. Given that hedge fund intervention improves the financial condition of targeted firms, I expect a decrease in auditor engagement risk.

Auditor response to risk.

If hedge fund ownership of clients affects engagement risk, there should be an effect on the strategies auditors use to mitigate said risk. The first way that auditors may respond to engagement risk is to increase audit effort. Auditors may increase audit effort in order to reduce the likelihood of undetected errors (Hillegeist, 1999; Lobo & Zhao, 2013) and thus reduce audit engagement risk. I use audit report lag as a proxy for audit effort because prior research suggests that audit report lags are related to the amount of work performed in the audit engagement (Knechel & Payne, 2001; Knechel, Rouse, & Schelleman, 2009).

If hedge funds induce a short-term focus and higher scrutiny from regulators, politicians, and analysts which increases audit engagement risk, I expect a positive relation between audit report lag and hedge fund ownership. However, if hedge fund ownership acts to increase conservatism, ensure management integrity, and improve the financial condition of targeted firms, then I expect lower engagement risk. Thus, I would

expect a negative relation between audit report lag and hedge fund ownership. Given the competing arguments presented, I present my first hypothesis in null form:

H1: *There is no association between audit report lag and hedge fund ownership.*

The next strategy that auditors may use to mitigate risk is in audit pricing. The seminal work by Simunic (1980) models audit fees as a function of effort and risk. If higher audit effort does not reduce engagement risk to acceptable levels, the auditor may charge a risk premium in order to pass some of the risk on to the client (Bedard & Johnstone, 2004; Bell, Landsman, & Shackelford, 2001; Morgan & Stocken, 1998; Pratt & Stice, 1994). Thus, if clients with higher hedge fund ownership impose more risk, I expect hedge fund ownership to be associated with higher fees. As mentioned previously, however, hedge fund ownership may impose lower audit risk by decreasing auditor business risk through damage to reputation or litigation through increases to accounting conservatism and management integrity. Therefore, I present my second hypothesis in null form:

H2: *There is no association between audit fees paid to external auditors and hedge fund ownership.*

The third strategy auditors can employ to limit engagement risk is to decrease the threshold for issuing a going concern opinion (GCO). Studies have found that issuing GCOs to financially distressed clients lowers auditor litigation risk and settlements imposed from litigation (Fargher & Jiang, 2008). It also lowers the risk of audit failure, from the point of view of public opinion, thereby keeping auditor reputation intact (Kaplan & Williams, 2013). If hedge fund ownership induces a short-term focus that may

hinder long term performance, then I expect a positive relationship between hedge fund ownership and the issuance of a GCO. However, if hedge fund ownership increases the probability and speed of restructuring, increases debt reduction in financially distressed firms (Lim, 2015) and improves firm performance (Boyson & Mooradian, 2011), there will be a corresponding decrease in GCOs issued to financially distressed clients owned by hedge funds. Therefore, I posit the following hypothesis in null form:

H3: *There is no association between the issuance of a GCO and hedge fund ownership.*

The final strategy that can be employed by auditors to mitigate engagement risk is to resign from the engagement. Auditors resign from clients when litigation risk is too high or if there is a mismatch between the auditor and the client (Shu, 2000). Further, Ghosh and Tang (2015) found that auditors consider more than just litigation risk when deciding to resign from a client. They found that client business risk and audit risk were also taken into consideration by external auditors when deciding to retain an audit client. Therefore, if hedge fund ownership of clients decreases business, litigation, or audit risk, I expect to see fewer auditor changes.

The choice to stay, however, is not just the purview of the external auditor. Given that hedge fund ownership can influence the Board by replacing members with related parties (Benoit, 2017; Berk & Whitten, 2017), the decision to keep or replace the current auditor is affected through influence on the audit committee (Giroux & Cassell, 2011) and management, who still have an effect on auditor selection after SOX implementation (Dhaliwal, Lamoreaux, Lennox, & Mauler, 2015).

With the potential of hedge funds to influence auditor retention through Board replacement and influence over management and the potential for auditors to view hedge fund ownership as affecting engagement risk, I propose the following non-directional hypothesis:

H4: *There is no association between auditor change and hedge fund ownership*.

CHAPTER 3

RESEARCH DESIGN AND SAMPLE SELECTION

Empirical Models

Hedge fund ownership.

To test my hypotheses, I estimate OLS regressions in which the main right-hand side variable of interest is hedge fund ownership of publicly traded companies at *t-1* (where *t* is the balance sheet date). I measure the level of hedge fund ownership in targeted companies in two different ways. First, HF_OWNED is defined as the percentage of outstanding shares owned by hedge fund activists (Agrawal & Mandelker, 1990; Bushee, 1998; Farrar & Girton, 1981) at the time *t-1*. Second, HF_NUM is measured as the total number of hedge funds with block ownership in the audited firm at the time *t-1* (Gavin, 2012). Consistent with previous research, I have defined a block shareholder as an outside investor owning 5% or more of the company (Holderness & Sheehan, 1985; Jarrell & Poulsen, 1987; Mikkelson & Ruback, 1985). The definitions of all variables can be found in Table 1.

Table 1
Variable Definitions

Variable Name	Variable Definition
Panel A: Dependent Variables	
AUDIT_FEES	Natural log of audit fees paid by firm at time *t*
LAG	Time elapsed between the balance sheet date and the signature date of the audit report
FIRSTGCO	Indicator variable set to one if the firm received its first going concern opinion form its auditor this fiscal year, otherwise zero
TURNOVER	Indicator variable set to one the firm changed auditors since the previous audit report, otherwise zero
MATWEAK	Indicator variable set to 1 if the firm has a reported material weakness in time *t*
Panel B: Test Variables	
HF_OWNED	Percentage of outstanding shares owned by hedge fund activists at the time *t-1*
HF_NUM	Total number of hedge funds with block ownership in the audited firm at the time *t-1*
Panel C: Control Variables	
AGE	The number of years the firm has been in the Compustat database
AGGLOSS	Indicator variable set to one if the firm incurs an aggregate loss across years *t-1* and *t*, otherwise zero
LAG	Time elapsed between the balance sheet date and the date of the audit report at time *t-1*
BIG4	Indicator variable set to one if the firm's auditor was a member of the "Big4" accounting firms, otherwise zero
BUSSEG	Natural log of one plus the number of the firm's business segments at the end of the fiscal year
BUSY	Indicator variable set to one if the firm's fiscal year ends in December, otherwise zero

	Table 1-Cont'd
CASH	Cash and cash equivalents as a percentage of total assets at *t-1*
CFVOL	Standard deviation of operating cash flows divided by total assets from fiscal year *t-5* to *t-1*.
DISCOPS	Indicator variable set to one if the firm reported discontinued operations for the fiscal year, otherwise, zero
EXTRA	Indicator variable set to one if the firm reported an extraordinary item for the fiscal year, otherwise zero
FILE404	Indicator variable set to one if the firm filed a SOX report, otherwise zero
FOREIGN	Indicator variable set to one if the firm has foreign operations, otherwise zero
GEOSEG	Natural log of one plus the number of firm's geographic segments at the end of the fiscal year
GROWTH	Firm's growth rate for sales
INST_OWNED	Percentage of outstanding shares held by institutional investors at time *t-1*
INVESTMENT	Firm's total investment securities (including both short and long-term as well as cash and cash equivalents) divided by its total assets
LEVERAGE	Firm's total liabilities divided by total assets
LIQUIDITY	Firm's current assets divided by its current liabilities
LOSS	Indicator variable set to one if firm's net income for the fiscal year was negative, otherwise zero
MATWEAK	Indicator variable set to one if the firm received a SOX404 internal control weakness opinion from its auditor, otherwise zero
MERGER	Indicator variable set to one if the firm had merger or acquisition activities during the fiscal year, otherwise zero

Table 1-Cont'd

MISTATE	Indicator variable set to one if the firm's current financial statement is restated in a later period, otherwise zero
NEW_FINANCE	Indicator variable set to one if the firm issued new debt or equity in the subsequent fiscal year, otherwise zero
OCF	Firm's operating cash flow divided by total assets
PRIORWEAK	Indicator variable set to one if the firm had a reported material weakness in internal controls in the previous year, otherwise zero
RECINV	Sum of firm's receivables and inventory divided by total assets at firm year-end
RESTATE	Indicator variable set to one if the firm announced a financial restatement during the fiscal year, otherwise zero
RESTRUCTURE	Indicator variable set to one if the firm had restructuring activities during the fiscal year, otherwise zero
ROA	Firm's net income divided by total assets
SIZE	Natural log of firm's total assets
SPECIAL	Indicator variable set to one if the firm reported a special item for the fiscal year, otherwise zero
STOCK_ RETURN	Firm's stock return for the current fiscal year
TURNOVER	Indicator variable set to one the firm changed auditors since the previous audit report, otherwise zero
ZSCORE	Firm's bankruptcy score based on Altman (1968)
ΔLEVERAGE	Change in firm leverage from *t-1* to year *t*
YEAR	Dummy variable for each year
INDUSTRY	Dummy variable for each two-digit SIC

Audit fees and lag.

To test Hypotheses 1 and 2, I estimate the following OLS regressions:

$$AUDIT\_FEES_t \text{ or } LAG_t = \beta_0 + \beta_1(HF\_OWNED_{t-1} \text{ or } HF\_NUM_{t-1}) + \beta_2 SIZE_{t-1} + \beta_3 LEVERAGE_{t-1} + \beta_4 RECINV_{t-1} + \beta_5 ROA_{t-1} + \beta_6 LOSS_{t-1} + \beta_7 GEOSEG_{t-1} + \beta_8 BUSSEG_{t-1} + \beta_9 CFVOL_{t-1} + \beta_{10} FOREIGN_{t-1} + \beta_{11} MERGER_{t-1} + \beta_{12} RESTRUCTURE_{t-1} + \beta_{13} DISCOPS_{t-1} + \beta_{14} EXTRA_{t-1} + \beta_{15} SPECIAL_{t-1} + \beta_{16} BIG4_{t-1} + \beta_{17} BUSY_{t-1} + \beta_{18} MATWEAK_{t-1} + \beta_{19} RESTATE_{t-1} + \beta_{20} MISTATE_{t-1} + \beta_{21} TURNOVER_{t-1} + YEAR \text{ and } INDUSTRY \text{ } DUMMIES + \varepsilon_{it} \quad (1)$$

The dependent variable in the regression equation 1 is Lag (H1) or Fees (H2). AUDIT_FEES is measured as the natural log of audit fees for the fiscal year and LAG is measured as the time elapsed between the balance sheet date and the date of the audit report per Audit Analytics (Ashton, Willingham, & Elliott, 1987). A positive (negative) β_1 will indicate that hedge fund ownership is associated with higher (lower) AUDIT_FEES/LAG. To control for common time and industry variation I also include industry and year fixed effects in the regressions. The variables of interest are HF_NUM and HF_OWNED and are measured as previously described.

Control variables are informed from prior literature, particularly Hay et al.'s (2006) meta-analyses of audit fee literature, which includes controls for size, leverage, profitability, auditor size, and client complexity, and prior research on audit fees (Beck & Mauldin, 2014; Sharma, Tanyi, & Litt, 2017; Stewart, Kent, & Routledge, 2016). All control variables will be measured at *t-1*, unless stated otherwise.

I control for SIZE, which is the largest determinant of audit fees (Hay et al., 2006) and is expected to have a positive relationship (Simunic, 1980). For LAG, however, SIZE is expected to have a negative relationship as larger companies have better internal control structures and more access to resources (Abernathy, Barnes, Stefaniak, and Weisbarth, 2017). SIZE is measured as the natural log of the firm's total assets. It is expected that a more complex client will be more difficult to audit and require more time and fees. Complexity is proxied in this study by GEOSEG, BUSSEG, and FOREIGN. GEOSEG is measured as the natural log plus one of the number of firm's geographic segments at the end of the fiscal year. BUSSEG is the natural log plus one of the number of the firm's business segments at the end of the fiscal year. FOREIGN is an indicator variable set to one if the firm has foreign operations, otherwise zero. I expect a positive association between complexity measures and audit fees/lag.

Profitability is a measure of financial risk to auditors. LEVERAGE is the firm's total liabilities divided by total assets. LOSS is an indicator variable set to one if firm's net income for the fiscal year was negative, otherwise zero. LEVERAGE, LOSS, and SRVOL are all expected to increase financial risk, so are expected to have a positive relationship with audit fees and lag. ROA is measured as the firm's net income divided by total assets. CFVOL is the standard deviation of operating cash flows divided by total assets from fiscal year *t-5* to *t-1*. Higher ROA decreases financial risk, so is expected to have a negative relationship with audit fees and lag, while CFVOL increases financial risk and is expected to have a positive relationship.

Certain accounts are considered to be inherently riskier than others and require more time to audit. The two most often cited as difficult to audit are receivables and

inventory. RECINV is the sum of firm's receivables and inventory divided by total assets at firm year-end and is expected to increase audit fees and lag. Additional reporting items will also require extra work on the part of the auditor. EXTRA is an indicator variable set to one if the firm reported an extraordinary item for the fiscal year, otherwise zero. SPECIAL is an indicator variable set to one if the firm reported a special item for the fiscal year, otherwise zero.

Changes in the client itself or its operations are also expected to increase fees and lag. MERGER is an indicator variable set to one if the firm had merger or acquisition activities during the fiscal year, otherwise zero. RESTRUCTURE is an indicator variable set to one if the firm had restructuring activities during the fiscal year, otherwise zero. DISCOPS will be an indicator variable set to one if the firm reported discontinued operations for the fiscal year, otherwise zero.

The quality of the audit firm is expected to be associated with higher fees and members of the BIG 4 accounting firms are expected to produce the highest quality audits (DeAngelo, 1981), however, it is expected to have a negative association with audit lag because those firms have more resources and larger, more experienced staff (Abernathy et al., 2017). BIG4 is an indicator variable set to one if the firm's auditor was a member of the "Big4" accounting firms, otherwise zero. A change in auditors is also expected to increase fees and lag due to the need for increased audit procedures for the new auditor. TURNOVER is an indicator variable set to one the firm changed auditors since the previous audit report, otherwise zero.

Lack of effective internal controls over financial reporting are expected to create more work for auditors and, therefore, increase fees and lag. MATWEAK is an indicator

variable set to one if the firm received a SOX 404 internal control weakness opinion from its auditor, otherwise zero, and is expected to increase audit fees. Restatements from prior years or misstatements are also expected increase audit fees and lag as they are expected to increase auditor effort. RESTATE is an indicator variable set to one if the firm announced a financial restatement during the fiscal year, otherwise zero. MISTATE is an indicator variable set to one if the firm's current financial statement is restated in a later period, otherwise zero.

Many companies in the U.S. have the same fiscal year-end creating a busy season for auditors. An audit conducted during the busy season is expected to have a positive association with audit fees due to overtime required by auditors, but a negative association with lag. BUSY is an indicator variable set to one if the firm's fiscal year ends in December, otherwise zero.

Going concern opinions.

To test Hypothesis 3, that hedge fund ownership affects the rate going concern opinions are issues, the following model adapted from DeFond and Zhang (2014) is used:

$$FIRSTGCO = \beta_0 + \beta_1(HF\_OWNED_{t-1} \text{ or } HF\_NUM_{t-1}) + \beta_2 SIZE_{t-1} + \beta_3 AGE_{t-1} + \beta_4 BIG4_{t-1} + \beta_5 LEVERAGE_{t-1} + \beta_6 \Delta LEVERAGE_t + \beta_7 ZSCORE_{t-1} + \beta_8 OCF_{t-1} + \beta_9 LAG_{t-1} + \beta_{10} LIQUIDITY_{t-1} + \beta_{11} LOSS_{t-1} + \beta_{12} STOCK\_RETURN_t + \beta_{13} GROWTH_t + \beta_{14} INVESTMENT_t + \beta_{15} NEW\_FINANCE_{t-1} + YEAR \text{ and } INDUSTRY \text{ DUMMIES} + \varepsilon_{it} \quad (2)$$

Where FIRSTGCO is an indicator variable equal to 1 if the corporation received a going concern opinion. The variables of interest are HF_NUM and HF_OWNED and are

measured as previously described. A positive (negative) β_1 will indicate that hedge fund ownership increases (decreases) FIRSTGCO. I also include industry and year fixed effects in the regressions.

Consistent with prior research, control variables for going concern opinions include measurements of growth and financial health of the firm (Carson et al., 2013a). All control variables will be measured at *t-1*, unless stated otherwise.

Less profitable companies have been found to be more likely to receive a GCO. ΔLEVERAGE is measured as the change in firm leverage from *t-1* to year *t* and is expected to have a positive relationship with the issuance of a GCO. LEVERAGE and LOSS are expected to have a positive relationship with FIRSTGCO. OCF is the firm's operating cash flow divided by total assets. LIQUIDITY is measured as the firm's current assets divided by its current liabilities. STOCK_RETURN is the firm's stock return for the current fiscal year. All three measurements, OCF, LIQUIDITY, and STOCK_RETURN, are expected to have an inverse relationship with FIRSTGCO. Likelihood of bankruptcy has also been shown to affect the issuance of a GCO and is measured here as ZSCORE. ZSCORE will be the firm's bankruptcy score based on Altman (1968) and is expected to have a negative relation with GCO. GROWTH is the firm's growth rate for sales. INVESTMENT is measured as the firm's total investment securities (including both short and long-term as well as cash and cash equivalents) divided by its total assets. GROWTH and INVESTMENT are both expected to have a negative relationship with FIRSTGCO. NEW_FINANCE is an indicator variable set to one if the firm issued new debt or equity in the subsequent fiscal year, otherwise zero, and is expected to have a positive relationship with FIRSTGCO.

Larger and older firms are less likely to receive a GCO, so SIZE and AGE are expected to have a negative relationship with FIRSTGCO. AGE is the number of years the firm has been in the Compustat database. Clients of auditors that are members of one of the Big 4 accounting firms are less likely to receive a GCO as they tend to be in better financial condition, so BIG4 is expected to have a negative relationship with FIRSTGCO. The longer it takes an auditor to issue an opinion, however, the more likely it is that a GCO will be issued, so LAG is expected to be positively associated with FIRSTGCO.

All other variables will be measured as previously described.

Auditor turnover.

Finally, I measure response to risk for the audit firm for Hypothesis 4 using the variable of auditor change. The model for auditor turnover is a modified version of equation 1 and is adapted from Landsman et al.'s (2009) and Kim and Park's (2014) studies on auditor switching:

$$TURNOVER_t = \beta_0 + \beta_1(HF\_OWNED_{t-1} \text{ or } HF\_NUM_{t-1}) + \beta_2 SIZE_{t-1} + \beta_3 LEVERAGE_{t-1} + \beta_4 RECINV_{t-1} + \beta_5 ROA_{t-1} + \beta_6 LOSS_{t-1} + \beta_7 GEOSEG_{t-1} + \beta_8 BUSSEG_{t-1} + \beta_9 CFVOL_{t-1} + \beta_{10} FOREIGN_{t-1} + \beta_{11} MERGER_{t-1} + \beta_{12} RESTRUCTURE_{t-1} + \beta_{13} DISCOPS_{t-1} + \beta_{14} EXTRA_{t-1} + \beta_{15} SPECIAL_{t-1} + \beta_{16} BIG4_{t-1} + \beta_{17} BUSY_{t-1} + \beta_{18} MATWEAK_{t-1} + \beta_{19} RESTATE_{t-1} + \beta_{20} MISTATE_{t-1} + \text{YEAR and INDUSTRY DUMMIES} + \varepsilon_{it} \quad (3)$$

I also include industry and year fixed effects in the regressions. TURNOVER is an indicator variable equal to 1 if the firm changed auditors during the year. The variables of interest are HF_NUM and HF_OWNED and are measured as previously described. A

positive (negative) β_1 will indicate that hedge fund ownership increases (decreases) TURNOVER.

The costs of changing auditors is higher for larger clients (DeAngelo, 1981), so SIZE is expected to be negatively associated with auditor turnover. Clients of Big 4 accounting firms are also expected to turn over less often, so BIG4 is expected to be negatively associated with TURNOVER.

Profitable companies pose less financial risk to the auditor (Bedard & Johnstone, 2004). I expect firms with high ROA to be negatively associated with auditor change and high LEVERAGE and LOSS to be positively associated. Firms are more likely to change auditors after mergers or acquisitions if the merged firm has a different auditor, therefore, MERGER is expected to be positively associated with turnover. Similarly, firms with other major changes are also expected to change auditors more often, so RESTRUCTURE, DISCOPS, and CFVOL are expected to be positively associated with auditor turnover.

More complicated or difficult audits are expected to increase auditor turnover. Complication and difficulty are measured by RECINV, GEOSEG, BUSSEG, FOREIGN, EXTRA, SPECIAL, RESTATE, and MISSTATE. Audits with internal control weaknesses are also expected to increase auditor turnover, so MATWEAK is expected to be positively associated with turnover.

All other variables will be measured as previously described.

Additional Analysis

Internal control weaknesses.

Increased audit effort is also associated with increased reporting of material weaknesses in internal control over financial reporting (Rice & Weber, 2012). SOX requires auditors of publicly traded companies to give an opinion on the effectiveness of internal controls over financial reporting and to disclose material weaknesses in internal controls under Section 404 (U.S. House of Representatives, Committee on Financial Services, 2002). The increased efforts of the auditors of companies owned by hedge funds, therefore, are expected to increase the reporting of material weaknesses under Section 404.

To test the effect of hedge fund ownership on internal control weakness, I use the following regression based on Ge, Koester, and McVay (2017):

$$MATWEAK_t = \beta_0 + \beta_1(HF\_OWNED_{t-1} \text{ or } HF\_NUM_{t-1}) + \beta_2 SIZE_{t-1} + \beta_3 GEOSEG_{t-1} + \beta_4 BUSSEG_{t-1} + \beta_5 RESTATE_{t-1} + \beta_6 AGE_{t-1} + \beta_7 INST\_OWNED_{t-1} + \beta_8 CASH_{t-1} + \beta_9 PRIORWEAK_{t} + \beta_{10} AGG\_LOSS_{t-1,t} + \text{YEAR and INDUSTRY DUMMIES} + \varepsilon_{it}$$

The control variables for MATWEAK and their associated directions have been documented by prior research (Ashbaugh-Skaife, Collins, Kinney, & Lafond, 2009; Doyle, Ge, & McVay, 2007; Ge et al., 2017; Ge & McVay, 2005). A firm's financial condition has been shown to affect internal controls. AGGLOSS is defined as 1 if a firm incurs an aggregate loss across years *t-1* and *t* and is expected to increase MATWEAK. CASH is measured as cash and cash equivalents as a percentage of total assets and is

expected to decrease MATWEAK. SIZE and AGE are also expected to decrease material weaknesses in internal control.

Having previously reported weaknesses in internal control increases the likelihood of material weaknesses at time *t*. PRIORWEAK is defined as 1 if a firm had a reported material weakness in internal controls in the previous year. The complexity of operations and financial reporting quality also increase the likelihood of material weaknesses, so GEOSEG, BUSSEG, and RESTATE are expected to increase MATWEAK. Being owned by financial institutions has been shown to decrease material weaknesses in internal control. INST_OWNED is defined as the mean percentage of outstanding shares held by institutional investors.

All other variables are measured as previously described. I also include industry and year fixed effects in the regressions. MATWEAK will be an indicator variable set to 1 if the firm has a reported material weakness in time *t*. Both measurements of the independent variable of interest are expected to increase MATWEAK.

For all models previously described, outliers are identified using the Stata program “bacon” (Weber, 2010) and removed. Standard errors are clustered by both firm and fiscal year.

Sample Selection

Sample selection begins with all publicly traded US firms from 2005 to 2017 with data available in Compustat Capital IQ. The sample begins in 2005 because it is after SOX implementation and is the first year hedge fund information is available from Capital IQ. I obtain information pertaining to auditors, audit opinions, and audit fees from

Audit Analytics and company financial data from Compustat. I used data from Capital IQ to identify companies with hedge fund ownership.

Panel A of Table 2 shows the sample selection process. I start my sample selection with 71,554 firm year observations with total asset data available. Due to inherent regulatory and institutional differences, I exclude firms in the financial industry (SIC 6000-SIC 6999). I eliminate 22,853 firm year observations that were missing data in Audit Analytics. Most of these observations were missing internal control opinions data in Audit Analytics. The sample was further reduced by 18,564 firm year observations due to missing control variables data from Compustat. The final sample comprises 30,047 firm year observations covering 5,737 individual companies between 2005 and 2017.Panel B of Table 2 shows the distribution of sample observations by fiscal year. Year observations as a percentage of total observations ranged from 10.40% in 2005 down to 4.61% in 2017, mirroring the decrease in U.S. listed companies since the 1990's (Bloomberg Editorial Board, 2018). The breakdown of industries represented by one-digit SIC can be found in Panel C of Table 2. The largest industry represented was manufacturing, machinery, and electronics at 33.30% of the total population, due not only to number of observations, but also to completeness of data, while health, legal, educational services, and other was the smallest at 5.81%.

Sample Descriptive Statistics

Table 3 reports the descriptive statistics for the dependent variables AUDIT_FEES, LAG, $TURNOVER_t$, and $MATWEAK_t$. The average (median) amount firms paid for an audit (AUDIT_FEES) was $899,864.97 ($955,509.51), and the average number of days between the balance sheet date and the issuance of the audit report

Table 2
Sample Selection

Panel A: Sample Selection

Firm-years in Compustat 2005-2017	71,554
Firm-years missing Audit Analytics data	(22,853)
Firm-years missing firm control variables data	(18,564)
Final Sample	30,047
Total Firms	5,737

Panel B: Sample by Year

Year	N	%
2005	3,125	10.40
2006	2,916	9.70
2007	2,702	8.99
2008	2,561	8.52
2009	2,461	8.19
2010	2,368	7.88
2011	2,302	7.66
2012	2,130	7.09
2013	2,191	7.29
2014	2,093	6.97
2015	1,973	6.57
2016	1,840	6.12
2017	1,385	4.61
Final Sample	30,047	100.00

Panel C: Industry Comparison

Industry (One-Digit SIC)	N	%
0-1 (Agriculture, mining, oil and construction)	1,939	6.45
2 (Food, tobacco, textiles, paper and chemicals)	4,845	16.12
3 (Manufacturing, machinery and electronics)	10,006	33.30
4 (Transportation and communications)	3,859	12.84
5 (Wholesale and retail)	3,242	10.79
7 (Services)	4,411	14.68
8-9 (Health, legal, educational services and other)	1,745	5.81
	30,047	100.00

Table 3
Descriptive Statistics-Full Sample

	Mean	Median	S.D.	Q1	Q3	N
Dependent Variables						
LAG	4.21	4.19	0.28	4.04	4.32	29,530
AUDIT_FEES	13.71	13.77	1.31	12.84	14.57	29,035
$TURNOVER_t$	0.08	0	0.27	0	0	30,047
$MATWEAK_t$	0.05	0	0.21	0	0	29,390
Test Variables						
HF_NUM	0.20	0	0.53	0	0	30,047
HF_OWNED	1.95	0	5.97	0	0	30,047
Audit Control Variables						
BIG4	0.70	1	0.46	0	1	30,047
BUSY	0.66	1	0.47	0	1	30,047
$MATWEAK_{t-1}$	0.05	0	0.23	0	0	30,047
PRIORWEAK	0.04	0	0.2	0	0	30,047
$TURNOVER_{t-1}$	0.08	0	0.27	0	0	30,047
Firm Control Variables						
AGE	23.49	18	15.6	11	32	30,047
AGGLOSS	0.32	0	0.47	0	1	30,047
BUSSEG	2.28	2.1	0.84	2.1	2.95	30,047
CASH	0.20	0.13	0.21	0.04	0.3	30,047
CFVOL	0.08	0.05	0.13	0.03	0.08	30,047
DISCOPS	0.18	0	0.39	0	0	30,047
EXTRA	0.01	0	0.11	0	0	30,047
FOREIGN	0.50	0	0.5	0	1	30,047
GEOSEG	1.84	1.69	0.76	1	2.39	30,047
INST_OWNED	38.16	28.91	37.21	0	76.58	30,047
LEVERAGE	0.47	0.47	0.22	0.29	0.63	30,047
ΔLEVERAGE	0.06	-0.99	0.4	-0.08	0.11	30,047
LOSS	0.31	0	0.46	0	1	30,047
MERGER	0.18	0	0.39	0	0	30,047
MISTATE	0.11	0	0.31	0	0	30,047
RECINV	0.26	0.24	0.19	0.11	0.38	30,047
RESTATE	0.13	0	0.33	0	0	30,047
RESTRUCTURE	0.31	0	0.46	0	1	30,047
ROA	-0.02	0.04	0.25	-0.03	0.08	30,047
SIZE	6.06	6.03	2.19	4.51	7.58	30,047
SPECIAL	0.67	1	0.47	0	1	30,047

(LAG) was 67. Approximately eight percent of firm year observations changed auditors from the previous fiscal year (TURNOVER) and approximately five percent of firm years reported an internal control material weakness ($MATWEAK_t$).

The number of hedge funds averaged 0.20 (HF_NUM) and they owned nearly two percent of outstanding shares (HF_OWNED). The Big 4 accounting firms (BIG4) audited approximately 70% of the observations with eight percent changing auditors from one fiscal year to the next ($TURNOVER_{t-1}$). Approximately 66% of firms had a fiscal year end of December 31 (BUSY).The average length of time firms have been listed in Compustat was 23.49[8] years (AGE) while total assets averaged $157,000,000 (SIZE). Institutions owned 38.16% of stock outstanding on average (INST_OWNED). Nearly one-third (31%) of firms reported a loss during the fiscal year (LOSS) and 32% experienced an aggregate loss over the current and previous fiscal years (AGGLOSS). Cash and cash equivalents totaled 20% of total assets (CASH) with firms reporting average cash flow volatility over the previous five fiscal years of 0.08 (CFVOL). The average return on assets was -0.02 (ROA) while the average receivables to inventory ratio was 26% (RECINV). Total liabilities as a percentage of total assets averaged 47% (LEVERAGE) while the change in leverage from the previous fiscal year to the current was 0.06 (ΔLEVERAGE).

Approximately 18% of firm years reported a merger (MERGER) and 31% underwent restructuring (RESTRUCTURE), while 18% reported discontinued operations (DISCOPS). One-half of firm years had sales outside the United States (FOREIGN) with

[8] Average age of original observations of 71,554 is 19 years, indicating my sample may be biased towards more mature firms. This is addressed as a limitation in my conclusion.

an average of 2.32 geographic segments (GEOSEG) and 3.6 business segments (BUSSEG). Just over two-thirds (67%) of firm years reported special items (SPECIAL) and one percent reported extraordinary items (EXTRA). Eleven percent of year observations contained a misstatement (MISTATE), while 13% had financial statements restated at a later date (RESTATE).

My tests for Hypothesis 3 are limited to financially distressed firms, which, consistent with prior research (Carson et al., 2013) are companies that report either a net loss or negative cash flows in the fiscal year. This sample is a subset of the primary sample and consists of 13,854 firm year observations. Table 4 reports the descriptive statistics for the dependent variable FIRSTGCO. Approximately six percent of firm year observations reported a first time going concern opinion (FIRSTGCO).

The subset of financially distressed firms had higher average hedge fund ownership (HF_NUM= 0.29 and HF_OWNED= 2.91), the Big 4 accounting firms audited fewer (BIG4= 0.54), and audit lag was higher (LAG= 76) than the main sample. As expected, firms on average had a relatively low Altman Zscore (ZSCORE= 2.43), negative stock returns of approximately fifteen percent (STOCK_RETURN), and negative operating cash flows (OCF= -0.12), however, the firms, on average, had a healthy acid test ratio (LIQUIDITY= 3.52) and sales growth (GROWTH= 1.88). Compared to the main sample of firms, the financially distressed firms were smaller (SIZE= 4.74) and younger (AGE= 16.33) with a similar amount of leverage (LEVERAGE= 0.47), but a higher change in leverage from the previous fiscal year (ΔLEVERAGE= 0.21). Firm investments made up just over a third of total assets (INVESTMENT= 0.36) and a little less than half had new

Table 4

Descriptive Statistics-Financially Distressed Firms

	Mean	Median	S.D.	Q1	Q3	N
Dependent Variables						
FIRSTGCO	0.06	0.24	0	0	0	12,294
Test Variables						
HF_NUM	0.29	0.65	0	0	0	12,294
HF_OWNED	2.91	7.63	0	0	0	12,294
Audit Control Variables						
BIG4	0.54	0.50	1	0	1	12,294
LAG	4.33	0.30	4.32	4.13	4.49	12,294
Firm Control Variables						
AGE	16.33	12.54	13.00	7.00	21.00	12,294
GROWTH	1.88	58.08	0.02	0.14	0.24	12,294
INVESTMENT	0.36	0.41	0.2	0.05	0.55	12,294
LEVERAGE	0.47	0.25	0.46	0.27	0.66	12,294
LIQUIDITY	3.52	6.21	2.14	1.34	3.83	12,294
LOSS	0.91	0.29	1	1	1	12,294
NEW_FINANCE	0.42	0.49	0	0	1	12,294
OCF	-0.12	0.34	-0.02	0.16	0.05	12,294
SIZE	4.74	2.11	4.61	3.26	6.08	12,294
STOCK_RETURN	-0.15	0.42	-0.19	-0.47	0.12	12,294
ZSCORE	2.43	21.31	2.07	0.05	4.00	12,294
ΔLEVERAGE	0.21	1.13	0.06	-0.06	0.27	12,294

financing during the fiscal year (NEW_FINANCE= 0.42).

Correlations

Table 5 contains the Pearson correlation matrix for all variables used in the main regressions for Hypotheses 1 through 4. Correlations with a significance at or below five percent are highlighted in bold. Correlations above 0.80 would suggest multicollinearity may be a problem (Kennedy, 2008). There are numerous significant correlations, however, only one correlation is large enough to raise concerns of multicollinearity. There is a correlation of 0.86 between the number of hedge funds (HF_NUM) and the total ownership by hedge funds (HF_OWNED). This concern is mitigated, however, because no regressions were performed with both of these variables included. LOSS and AGGLOSS had a correlation of 0.781, which is reasonable given that a loss in one fiscal year is likely to be correlated to an overall loss in a two-year period. All other correlations are below the threshold of 0.80. In addition, variance inflation factors (VIF) were used to assess the magnitude of multi-collinearity and ranged from 1.02 to 2.88[9]. These factors are well below the recommended score of 10 (Kennedy, 2008).

[9] VIF were calculated on the audit fees and audit lag models only. The audit fees and lag models used OLS regression, while all other regressions were probit as they had dichotomous dependent variables.

Table 5

Pearson Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
HF_NUM (1)	1.000																		
HF_OWNED (2)	**0.860**	1.000																	
AGE (3)	**-0.086**	**-0.074**	1.000																
AGGLOSS (4)	**0.153**	**0.148**	**-0.250**	1.000															
BIG4 (5)	**-0.060**	**-0.072**	**0.107**	**-0.189**	1.000														
BUSSEG (6)	**-0.094**	**-0.082**	**0.210**	**-0.135**	**0.170**	1.000													
GEOSEG (7)	-0.036	**-0.056**	**0.081**	-0.035	**0.158**	**0.085**	1.000												
BUSY (8)	0.006	0.003	-0.044	0.029	**0.064**	0.024	-0.002	1.000											
CASH (9)	**0.101**	**0.076**	**-0.264**	**0.220**	**-0.065**	**-0.230**	**0.075**	-0.012	1.000										
CFVOL (10)	**0.073**	**0.078**	**-0.193**	**0.243**	**-0.216**	**-0.125**	**-0.097**	0.048	**0.311**	1.000									
DISCOPS (11)	0.016	0.022	**0.156**	0.020	**0.077**	**0.173**	0.014	0.041	**-0.124**	**-0.064**	1.000								
EXTRA (12)	-0.022	-0.022	0.039	-0.011	0.038	**0.086**	-0.003	0.010	-0.039	-0.023	**0.066**	1.000							
FOREIGN (13)	-0.042	**-0.063**	**0.113**	**-0.096**	**0.243**	**0.076**	**0.644**	0.011	0.026	**-0.144**	0.025	-0.004	1.000						
GROWTH (14)	0.000	-0.004	**-0.106**	0.036	-0.031	-0.013	-0.041	0.040	**0.081**	**0.179**	**-0.078**	0.001	**-0.051**	1.000					
INST_OWNED (15)	**0.109**	**0.059**	**0.243**	**-0.241**	**0.308**	0.043	**0.171**	0.030	**-0.103**	**-0.183**	**0.052**	-0.010	**0.230**	-0.041	1.000				
INVESTMENT (16)	**0.089**	**0.065**	**-0.248**	**0.200**	-0.028	**-0.210**	**0.066**	-0.008	**0.423**	**0.260**	**-0.123**	-0.030	0.021	**0.075**	**-0.080**	1.000			
LEVERAGE (17)	-0.012	-0.001	**0.173**	0.034	**0.164**	**0.134**	**-0.083**	**0.113**	**-0.432**	**-0.102**	**0.154**	**0.051**	-0.007	-0.011	**0.054**	**-0.419**	1.000		
ΔLEVERAGE (18)	0.021	0.011	**-0.065**	**0.133**	-0.029	-0.029	-0.007	-0.001	0.018	0.018	-0.033	-0.006	-0.018	**0.070**	-0.033	0.026	**0.089**	1.000	
LIQUIDITY (19)	0.050	0.039	**-0.100**	**0.068**	**-0.113**	**-0.134**	0.026	-0.044	**0.502**	**0.100**	**-0.090**	-0.032	-0.045	0.011	**-0.061**	**0.498**	**-0.488**	-0.043	1.000
LOSS (20)	**0.141**	**0.137**	**-0.237**	**0.781**	**-0.177**	**-0.142**	-0.042	0.030	**0.209**	**0.236**	0.007	-0.006	**-0.095**	-0.014	**-0.226**	**0.191**	0.019	**0.178**	**0.076**
MATWEAK$_{t-1}$ (21)	-0.003	-0.009	**-0.054**	**0.053**	0.029	0.032	0.036	0.002	-0.005	0.011	0.035	0.035	0.028	0.006	-0.041	0.001	0.026	0.018	-0.028
MERGER (22)	0.010	-0.006	0.044	**-0.067**	**0.114**	**-0.088**	**0.140**	0.045	**-0.093**	**-0.093**	0.011	-0.023	**0.190**	0.020	**0.170**	**-0.088**	**0.068**	**0.056**	**-0.065**
MISTATE (23)	-0.016	-0.017	-0.016	0.010	**0.053**	0.039	0.026	-0.014	-0.037	0.002	0.028	0.019	0.013	0.000	-0.021	-0.031	**0.053**	0.003	-0.041
NEW_FINANCE (24)	**-0.058**	-0.044	**0.170**	**-0.100**	**0.132**	**0.147**	0.000	**0.092**	**-0.426**	**-0.142**	**0.111**	0.038	0.028	0.010	**0.126**	**-0.395**	**0.423**	**0.090**	**-0.247**
OCF (25)	**-0.100**	**-0.104**	**0.134**	**-0.437**	**0.168**	**0.099**	**0.062**	-0.034	**-0.252**	**-0.373**	-0.007	0.014	**0.116**	**-0.052**	**0.183**	**-0.218**	-0.003	**-0.158**	**-0.082**
PRIORWEAK (26)	0.020	0.017	-0.042	**0.066**	0.000	0.028	0.036	0.001	0.003	0.004	0.041	0.039	0.038	-0.013	-0.038	0.006	0.013	0.001	-0.014
RECINV (27)	0.028	0.036	**0.065**	-0.038	**-0.173**	0.043	**0.119**	**-0.177**	**-0.266**	-0.038	-0.022	-0.017	**0.083**	**-0.054**	-0.035	**-0.279**	0.017	-0.030	**-0.052**
RESTATE (28)	-0.006	-0.009	-0.015	0.007	-0.001	0.042	-0.012	0.018	-0.005	0.008	0.009	0.005	-0.014	0.003	-0.026	0.001	0.008	0.008	-0.014
RESTRUCTURE (29)	0.018	0.007	**0.109**	**0.061**	**0.212**	**0.093**	**0.291**	0.010	-0.028	**-0.097**	**0.126**	0.009	**0.334**	**-0.089**	**0.137**	-0.029	**0.132**	0.003	**-0.075**
ROA (30)	**-0.091**	**-0.098**	**0.167**	**-0.519**	**0.144**	**0.102**	**0.073**	-0.037	**-0.197**	**-0.325**	0.008	0.018	**0.109**	-0.022	**0.171**	**-0.164**	-0.050	**-0.270**	-0.016
SIZE (31)	**-0.135**	**-0.139**	**0.375**	**-0.366**	**0.587**	**0.243**	**0.195**	**0.105**	**-0.325**	**-0.360**	**0.150**	**0.071**	**0.313**	-0.047	**0.474**	**-0.264**	**0.339**	**-0.059**	**-0.235**
SPECIAL (32)	0.020	0.007	**0.054**	**0.060**	**0.200**	**0.083**	**0.184**	0.044	**-0.102**	**-0.081**	**0.116**	0.031	**0.232**	-0.036	**0.127**	**-0.096**	**0.169**	0.030	**-0.123**
STOCK_RETURN (33)	0.014	0.014	-0.036	**0.074**	-0.049	-0.027	0.001	0.006	0.032	0.046	0.002	-0.006	-0.009	0.020	**-0.051**	0.020	0.009	-0.023	0.000
TURNOVER$_{t-1}$ (34)	0.017	0.025	**-0.066**	**0.096**	**-0.154**	-0.028	-0.042	-0.017	0.036	**0.090**	-0.010	-0.009	**-0.072**	0.007	**-0.119**	0.022	-0.038	0.028	0.037
ZSCORE (35)	-0.021	-0.037	-0.011	**-0.203**	0.039	-0.024	0.031	**-0.054**	**0.142**	**-0.079**	**-0.061**	-0.011	0.033	0.029	**0.092**	**0.168**	**-0.363**	**-0.122**	**0.425**

Correlations significant at or below the 0.05 level (2-tailed) are in bold.

Table 5-Cont'd

Pearson Correlation Matrix

	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
LOSS (20)	1.000															
$MATWEAK_{t-1}$ (21)	**0.063**	1.000														
MERGER (22)	-0.047	-0.007	1.000													
MISTATE (23)	0.007	**0.135**	0.011	1.000												
NEW_FINANCE (24)	**-0.086**	0.010	**0.120**	0.033	1.000											
OCF (25)	**-0.450**	-0.019	**0.058**	0.005	**0.065**	1.000										
PRIORWEAK (26)	**0.061**	**0.265**	-0.017	0.037	0.000	-0.009	1.000									
RECINV (27)	**-0.058**	-0.006	**-0.061**	-0.005	-0.032	0.009	0.002	1.000								
RESTATE (28)	0.007	**0.062**	-0.030	0.027	0.012	-0.015	0.046	0.008	1.000							
RESTRUCTURE (29)	**0.062**	0.034	**0.177**	0.040	**0.069**	0.008	0.043	0.003	-0.009	1.000						
ROA (30)	**-0.557**	-0.026	**0.054**	-0.002	**0.060**	**0.670**	-0.023	**0.079**	-0.010	-0.024	1.000					
SIZE (31)	**-0.342**	0.010	**0.221**	0.033	**0.343**	**0.337**	0.004	**-0.229**	-0.026	**0.269**	**0.310**	1.000				
SPECIAL (32)	**0.067**	**0.054**	**0.320**	0.043	**0.138**	0.015	0.048	**-0.070**	-0.006	**0.460**	-0.035	**0.282**	1.000			
STOCK_RETURN (33)	**0.050**	0.003	-0.020	0.011	-0.004	**-0.071**	0.002	-0.010	0.009	0.016	-0.048	**-0.057**	0.006	1.000		
$TURNOVER_{t-1}$ (34)	**0.092**	**0.062**	-0.039	0.031	-0.041	**-0.094**	0.047	0.049	-0.004	**-0.052**	**-0.084**	**-0.199**	-0.043	0.019	1.000	
ZSCORE (35)	**-0.204**	-0.016	-0.016	-0.020	**-0.145**	**0.342**	-0.012	0.028	0.012	**-0.088**	**0.340**	0.039	**-0.118**	**-0.062**	-0.028	1.000

Correlations significant at or below the 0.05 level (2-tailed) are in bold.

CHAPTER 4

RESULTS

Multivariate Analysis

Results of Hypothesis 1

Table 6 reports the results of the regression model for Hypothesis 1, where the dependent variable was audit lag (LAG) and was executed as an OLS regression. Hypothesis 1 predicted that there is no association between the number of hedge or the percentage ownership of hedge funds and audit lag. The results indicate, however, that there is a negative, significant relationship between audit lag and the number of hedge fund owners (coef. -0.009; p=0.002) at the 1% level and the percentage of hedge fund ownership (coef. -0.000; p=0.058) at the 10% level. Coefficients for fiscal year and industry variables are included in the regression models but not reported in the tables to conserve space[10]. The null of Hypothesis 1 is, therefore, rejected. This finding indicates that firms with hedge funds as owners have shorter lag time between the issuance of the audit report and the balance sheet date. This suggests that auditors are more efficient in their audit and that hedge fund ownership does not appear to increase risk for auditors. This supports the viewpoint that external auditors consider hedge fund ownership of clients to decrease audit engagement risk.

[10] As robustness tests, the models were also run with standard errors clustered by firm and clustered by both firm and year. The results were similar to the results presented in Tables 6-10.

Table 6

Test of Hypothesis 1: Audit Lag and Hedge Fund Ownership

See Table 1 for variable definitions. Outliers have been removed. Firm and industry fixed effects are included but not tabulated.

	Predicted	LAG				LAG			
	Sign	Coef.	t-stat	p-value		Coef.	t-stat	p-value	
HF_NUM	?	-0.009	-3.13	0.002	***				
HF_OWNED	?					0.000	-1.9	0.058	*
SIZE	-	-0.059	-60.01	0.000	***	-0.059	-59.89	0.000	***
LEVERAGE	+	0.000	0.85	0.394		0.000	0.87	0.385	
ΔLEVERAGE	+	0.001	2.73	0.006	***	0.001	2.72	0.006	***
RECINV	+	0.062	6.59	0.000	***	0.062	6.58	0.000	***
ROA	-	0.000	-2.34	0.019	**	0.000	-2.35	0.019	**
LOSS	+	0.061	18.26	0.000	***	0.061	18.17	0.000	***
GEOSEG	+	-0.001	-0.56	0.572		-0.001	-0.57	0.569	
BUSSEG	+	0.006	2.64	0.008	***	0.006	2.64	0.008	***
CFVOL	+	0.002	1.6	0.111		0.002	1.63	0.103	
FOREIGN	+	-0.010	-2.37	0.018	**	-0.009	-2.35	0.019	**
MERGER	+	0.002	0.44	0.661		0.002	0.45	0.652	
RESTRUCTURE	+	-0.008	-2.14	0.033	**	-0.008	-2.17	0.030	**
DISCOPS	+	0.007	1.93	0.053	*	0.007	1.9	0.057	*
EXTRA	+	0.008	0.62	0.533		0.008	0.62	0.533	
SPECIAL	+	0.021	6.15	0.000	***	0.021	6.11	0.000	***
BIG4	-	-0.057	-14.1	0.000	***	-0.057	-14.16	0.000	***
BUSY	-	-0.011	-3.33	0.001	***	-0.011	-3.36	0.001	***
MATWEAK	+	0.085	13.32	0.000	***	0.085	13.3	0.000	***
RESTATE	+	0.005	1.07	0.028	**	0.005	1.05	0.029	**
MISTATE	+	0.093	20.58	0.000	***	0.093	20.59	0.000	***
TURNOVER	+	0.019	3.61	0.000	***	0.019	3.62	0.000	***
Intercept		4.743	236.92	0.000	***	4.742	3.62	0.000	***
Years		Included				Included			
Indutries		Included				Included			
Observations		29,530				29,530			
Adjusted R^2		0.395				0.395			
F-statistic		213	***			212.89	***		

*, **, *** Denote significance at the p<0.10, p<0.05, and p<0.01 levels, respect ively.
The p-values are one-tailed for variables with a direct ional expected sign and two-tailed otherwise.

Control variables for the LAG model are significant with the exceptions of GEOSEG (p=0.572 and 0.569), CFVOL (p=0.111 and 0.103), MERGER (p=0.661 and 0.652), and EXTRA (p=0.533 and 0.533). Directions of coefficients of control variables are consistent with prior literature in direction of association, except for GEOSEG, FOREIGN, and RESTRUCTURE.

Results of Hypothesis 2

Table 7 reports the results of the regression model for Hypothesis 2, where the dependent variable was audit fees (AUDIT_FEES) and was executed as an OLS regression.

Hypothesis 2 predicted that there is no association between the number of hedge funds or the percentage ownership of hedge funds and audit fees. The results indicate, however, that there is a positive, significant relationship between audit fees and the number of hedge fund owners (coef. 0.027; $p<0.001$) and the percentage of hedge fund ownership (coef. 0.002; $p<0.001$). The null of Hypothesis 2 is, therefore, rejected. This finding indicates that firms with hedge funds as owners incur higher audit fees. This supports the viewpoint that external auditors consider hedge fund ownership of clients to increase auditor engagement risk and that audit firms are charging a risk premium to clients with hedge fund owners, thereby increasing the cost of the audit. Taken together with the findings from Hypothesis 1, the results suggest that hedge fund ownership increases the amount charged by auditors per audit, but decreases the length of time spent on an audit. One possibility is that audit firms are putting more and/or higher level personnel on an audit with hedge fund owners, which would increase the amount

Table 7

Test of Hypothesis 2: Audit Fees and Hedge Fund Ownership

See Table 1 for variable definitions. Outliers have been removed. Firm and industry fixed effects are included but not tabulated.

	Predicted	AUDIT_FEES			AUDIT_FEES		
	Sign	Coef.	t-stat	p-value	Coef.	t-stat	p-value
HF_NUM	?	0.027	4.69	0.000 ***			
HF_OWNED	?				0.002	4.42	0.000 ***
SIZE	+	0.450	217.04	0.000 ***	0.450	216.99	0.000 ***
LEVERAGE	+	0.001	9.12	0.000 ***	0.001	9.12	0.000 ***
ΔLEVERAGE	+	0.009	7.05	0.000 ***	0.009	7.05	0.000 ***
RECINV	+	0.295	14.95	0.000 ***	0.295	14.92	0.000 ***
ROA	-	0.000	1.07	0.284	0.000	1.07	0.286
LOSS	+	0.128	17.93	0.000 ***	0.128	17.95	0.000 ***
GEOSEG	+	0.125	22.54	0.000 ***	0.125	22.56	0.000 ***
BUSSEG	+	0.094	20.1	0.000 ***	0.094	20.06	0.000 ***
CFVOL	+	0.033	13.54	0.000 ***	0.033	13.52	0.000 ***
FOREIGN	+	0.224	26.44	0.000 ***	0.224	26.43	0.000 ***
MERGER	+	0.039	4.51	0.000 ***	0.039	4.52	0.000 ***
RESTRUCTURE	+	0.096	12.45	0.000 ***	0.096	12.46	0.000 ***
DISCOPS	+	0.114	14.47	0.000 ***	0.114	14.49	0.000 ***
EXTRA	+	0.068	2.52	0.012 **	0.068	2.53	0.011 **
SPECIAL	+	0.085	11.45	0.000 ***	0.085	11.48	0.000 ***
BIG4	+	0.337	39.42	0.000 ***	0.338	39.48	0.000 ***
BUSY	+	0.049	7.3	0.000 ***	0.049	7.32	0.000 ***
MATWEAK	+	0.338	25.13	0.000 ***	0.338	25.16	0.000 ***
RESTATE	+	0.048	5.3	0.000 ***	0.048	5.33	0.000 ***
MISTATE	+	0.073	7.65	0.000 ***	0.073	7.64	0.000 ***
TURNOVER	+	-0.023	-2.06	0.039 *	-0.023	-2.09	0.037 *
Intercept		9.588	226.62	0.000 ***	9.588	226.65	0.000 ***
Years		Included			Included		
Industries		Included			Included		
Observations		29,035			29,035		
Adjusted R^2		0.864			0.864		
F-statistic		2027.16 ***			2026.96 ***		

*, **, *** Denote significance at the p<0.10, p<0.05, and p<0.01 levels, respect ively.
The p-values are one-tailed for variables with a direct ional expected sign and two-tailed otherwise.

charged by increasing the number of hours spent, but could cause the audit to be finished more quickly. Another possibility is that auditors are spending more overtime on clients with hedge fund owners with the same results as above. I have conducted an additional analysis of the interaction between hedge funds, audit lag, and audit fees in the next section to investigate the potential reason for higher audit fees.

Control variables for the AUDIT_FEES model are significant with the with the exception of ROA (p=0.284 and 0.286), most likely due to the significance of the variable LOSS in the model. Directions of coefficients of control variables are consistent with prior literature in direction of association, except for auditor change (TURNOVER).

Additional analysis of effort versus risk premium on audit fees

To investigate whether auditors are responding to hedge funds by instituting a risk premium or expending greater effort, I examined how hedge funds and effort interact in relation to audit fees. Because audit lag is a common proxy for audit effort, I created an interaction term between hedge fund ownership and audit lag. If the interaction term has a positive (negative) association with audit fees, then there is evidence to suggest that auditors expend more (less) effort when hedge funds are present.

The results of this additional analysis can be found in Table 8. As can be seen from the results, the interaction of hedge fund ownership and audit lag (HF_NUM*LAG and HF_OWN*LAG) is positive and significant at the 5% level. Interestingly, by adding the interaction term, the association between hedge funds and audit fees is now negative and significant at the 10% level. These results indicate having hedge funds as owners decreases the perceived risk to auditors, however, the interaction term is associated with

Table 8

Additional Analysis: Effort Versus Risk Premium

See Table 1 for variable definitions. Outliers have been removed. Firm and industry fixed effects are included but not tabulated.

	Predicted	AUDIT_FEES			AUDIT_FEES		
	Sign	Coef.	t-stat	p-value	Coef.	t-stat	p-value
HF_NUM	?	-0.170	-1.8	0.071 *			
HF_OWNED	?				-0.015	-1.87	0.062 *
LAG	?	0.049	3.76	0.000 ***	0.050	3.82	0.000 ***
HF_NUM*LAG	?	0.046	2.1	0.036 **			
HF_OWN*LAG	?				0.004	2.16	0.031 **
SIZE	+	0.453	206.79	0.000 ***	0.453	206.85	0.000 ***
LEVERAGE	+	0.001	9.19	0.000 ***	0.001	9.19	0.000 ***
ΔLEVERAGE	+	0.009	6.97	0.000 ***	0.009	6.98	0.000 ***
RECINV	+	0.290	14.74	0.000 ***	0.290	14.74	0.000 ***
ROA	-	0.000	-1.02	0.309	0.000	-1.01	0.313
LOSS	+	0.128	18.02	0.000 ***	0.129	18.07	0.000 ***
GEOSEG	+	0.124	22.34	0.000 ***	0.124	22.36	0.000 ***
BUSSEG	+	0.093	19.96	0.000 ***	0.093	19.92	0.000 ***
CFVOL	+	0.033	13.5	0.000 ***	0.033	13.47	0.000 ***
FOREIGN	+	0.228	27.04	0.000 ***	0.228	27.03	0.000 ***
MERGER	+	0.033	3.85	0.000 ***	0.033	3.84	0.000 ***
RESTRUCTURE	+	0.095	12.42	0.000 ***	0.095	12.42	0.000 ***
DISCOPS	+	0.117	14.9	0.000 ***	0.117	14.91	0.000 ***
EXTRA	+	0.065	2.42	0.015 **	0.065	2.42	0.015 **
SPECIAL	+	0.086	11.63	0.000 ***	0.086	11.67	0.000 ***
BIG4	+	0.341	39.79	0.000 ***	0.341	39.85	0.000 ***
BUSY	+	0.052	7.9	0.000 ***	0.053	7.92	0.000 ***
MATWEAK	+	0.402	27.48	0.000 ***	0.404	27.57	0.000 ***
RESTATE	+	0.055	6.08	0.000 ***	0.055	6.11	0.000 ***
MISTATE	+	0.048	5.02	0.000 ***	0.048	5.01	0.000 ***
TURNOVER	+	-0.014	-1.24	0.213	-0.014	-1.27	0.206
Intercept		9.333	124.84	0.000 ***	9.333	125.55	0.000 ***
Years		Included			Included		
Industries		Included			Included		
Observations		29,035			29,035		
Adjusted R^2		0.865			0.865		
F-statistic		2001.60 ***			2001.52 ***		

*, **, *** Denote significance at the p<0.10, p<0.05, and p<0.01 levels, respect ively.
The p-values are one-tailed for variables with a direct ional expected sign and two-tailed otherwise.

higher audit fees suggesting that hedge funds are willing to pay higher fees for audits. This is consistent with the concept that audit fees are a function of demand and that well informed, independent governance demands higher audit quality (Hay et al., 2006).

Results of Hypothesis 3

Table 9 reports the results of the regression model for Hypothesis 3, where the dependent variable was issuance of a first going concern opinion (FIRSTGCO) and was executed as a PROBIT regression. Following Carson et al. (2013), I restrict the sample to financially distressed firms with negative net income or operating cash flow. The regression for the test variable of HF_NUM was statically significant with a chi-squared of 1516.60 and a pseudo R^2 of 0.262 ($p<0.001$), consistent with prior literature (Krishnan and Yang 2009). The regression for the test variable of HF_OWNED was also statically significant with a chi-squared of 1521.64 and a pseudo R^2 of 0.263 ($p<0.001$). The areas under ROC are 0.872 and 0.873 for HF_NUM and HF_OWNED, respectively, which means my model does well at predicting the issuance of a first going concern opinion (Hosemer & Lemeshow, 2013). Hypothesis 3 predicted that there is no association between the number of hedge funds or the percentage ownership of hedge funds and the issuance of a first going concern opinion. The results indicate that there is no significant relationship between a first going concern opinion and the number of hedge fund owners (coef. -0.042; p=0.340) and the percentage of hedge fund ownership (coef. -0.003; p=0.305). The results, therefore, fail to provide support for rejecting the null of Hypothesis 3. The results of Hypothesis 3 indicate that auditors do not perceive hedge fund ownership to affect auditor engagement risk.

Control variables for the FIRSTGCO model are consistent in significance and

Table 9

Test of Hypothesis 3: First Going Concern Opinion and Hedge Fund Ownership

See Table 1 for variable definitions. Outliers have been removed. Firm and industry fixed effects are included but not tabulated.

	Predicted	FIRSTGCO				FIRSTGCO			
	Sign	Coef.	z-stat	p-value		Coef.	z-stat	p-value	
HF_NUM	?	-0.042	-0.95	0.340					
HF_OWNED	?					-0.003	-1.03	0.305	
SIZE	-	-0.196	-11.94	0.000	***	-0.197	-11.99	0.000	***
AGE	-	-0.011	-4.78	0.000	***	-0.011	-4.79	0.000	***
BIG4	-	0.040	0.7	0.487		0.039	0.67	0.500	
LEVERAGE	+	0.597	5.83	0.000	***	0.597	5.82	0.000	***
ΔLEVERAGE	+	-0.013	-0.89	0.371		-0.013	-0.9	0.366	
ZSCORE	-	-0.349	-1.7	0.090	*	-0.665	-1.7	0.088	*
OCF	-	-0.504	-9.96	0.000	***	-0.507	-10.02	0.000	***
LAG	+	0.557	8.91	0.000	***	0.557	8.89	0.000	***
LIQUIDITY	-	-0.032	-3.69	0.000	***	-0.033	-3.71	0.000	***
LOSS	+	0.367	3.87	0.000	***	0.366	3.87	0.000	***
STOCK_RETURN	-	-0.631	-10.81	0.000	***	-0.632	-10.83	0.000	***
GROWTH	-	0.000	2.01	0.044	**	0.000	2.01	0.044	**
INVESTMENT	-	-0.338	-4.22	0.000	***	-0.341	-4.26	0.000	***
NEW_FINANCE	+	0.094	1.94	0.052	*	0.093	1.92	0.055	*
Intercept		-2.856	-5.97	0.000	***	-2.847	-5.95	0.000	***
Years		Included				Included			
Industries		Included				Included			
Observations		12,294				12,294			
LR Chi-square		1519.6	***			1521.64	***		
Pseudo R^2		0.262				0.263			
Area under ROC		0.872				0.873			

*, **, *** Denote significance at the p<0.10, p<0.05, and p<0.01 levels, respect ively.
The p-values are one-tailed for variables with a direct ional expected sign and two-tailed otherwise.

directions of coefficients with prior literature (Blay, Geiger, & North, 2011) with a few exceptions. All control variables were significant with the with the exception of BIG4 (p=0.487 and 0.500) and ΔLEVERAGE (p=0.371 and 0.366). Directions of coefficients of control variables are consistent, except for BIG4, ΔLEVERAGE, and GROWTH.

Results of Testing Hypothesis 4

Table 10 reports the results of the regression model for Hypothesis 4, where the dependent variable was a change in auditor (TURNOVER) and was executed as a PROBIT regression. The regression for the test variable of HF_NUM was statically significant with a chi-squared of 1,823 and a pseudo R^2 of 0.106 ($p<0.001$), consistent with prior literature (Krishnan and Yang 2009). The regression for the test variable of HF_OWNED was also statically significant with a chi-squared of 1,824 and a pseudo R^2 of 0.106 ($p<0.001$). The areas under ROC are 0.749 and 0.751 for HF_NUM and HF_OWNED, respectively, which means my model does fairly well at explaining auditor turnover (Hosemer & Lemeshow, 2013). Hypothesis 4 predicted that there is no association between the number of hedge funds or the percentage ownership of hedge funds and auditor turnover. The results indicate that there is no significant relationship between auditor turnover and the number of hedge fund owners (coef. 0.005; p=0.80) and the percentage of hedge fund ownership (coef. 0.0001; p=0.317). The null of Hypothesis 4 is, therefore, not rejected[11]. The results of Hypothesis 4 indicate that auditors do not perceive hedge fund ownership to affect auditor engagement risk, however, it should be noted that auditor resignation is an extreme reaction to engagement risk.

[11] As a robustness test, the auditor turnover model was run controlling for audit fees with similar results, not presented for brevity.

Table 10

Test of Hypothesis 4: Auditor Turnover and Hedge Fund Ownership

See Table 1 for variable definitions. Outliers have been removed. Firm and industry fixed effects are included but not tabulated.

	Predicted	TURNOVER			TURNOVER		
	Sign	Coef.	z-stat	p-value	Coef.	z-stat	p-value
HF_NUM	?	0.005	0.25	0.800			
HF_OWNED	?				0.002	1	0.317
SIZE	-	-0.057	-7.43	0.000 ***	-0.057	-7.37	0.000 ***
LEVERAGE	+	0.000	-1.12	0.026 **	0.000	-1.1	0.027 **
RECINV	+	0.021	0.31	0.075 *	0.020	0.29	0.077 *
ROA	-	0.001	1.19	0.232	0.001	1.19	0.234
LOSS	+	0.071	2.73	0.006 **	0.070	2.69	0.007 **
GEOSEG	+	0.043	2.13	0.033 **	0.044	2.13	0.033 **
BUSSEG	+	0.024	1.33	0.182	0.024	1.31	0.189
CFVOL	+	0.012	2.24	0.025 **	0.012	2.24	0.025 **
FOREIGN	+	-0.005	-0.15	0.883	-0.004	-0.13	0.894
MERGER	+	0.014	-0.39	0.069 *	0.013	-0.37	0.071 *
RESTRUCTURE	+	0.053	-1.72	0.086 *	0.053	-1.73	0.083 *
DISCOPS	+	0.063	2.09	0.037 **	0.063	2.07	0.039 **
EXTRA	+	-0.041	-0.4	0.692	-0.041	-0.39	0.693
SPECIAL	+	0.065	2.39	0.017 **	0.064	2.38	0.017 **
BIG4	-	-0.676	-22.77	0.000 ***	-0.676	-22.78	0.000 ***
BUSY	+	0.005	0.22	0.829	0.005	0.21	0.832
MATWEAK	+	0.348	7.85	0.0000 ***	0.349	7.86	0.000 ***
RESTATE	+	0.042	1.26	0.021 **	0.042	1.26	0.021 **
MISTATE	+	0.005	0.14	0.089 *	0.005	0.15	0.088 *
Intercept		-0.446	-2.06	0.039 *	-0.448	-2.07	0.038 *
Years		Included			Included		
Industries		Included			Included		
Observations		30,047			30,047		
LR Chi-square		1823 ***			1824 ***		
Pseudo R^2		0.106			0.106		
Area under ROC		0.749			0.751		

*, **, *** Denote significance at the p<0.10, p<0.05, and p<0.01 levels, respect ively.
The p-values are one-tailed for variables with a direct ional expected sign and two-tailed otherwise.

Control variables for the TURNOVER model are significant with the exceptions of ROA (p=0.232 and 0.234), BUSSEG (p=0.182 and 0.189), FOREIGN (p=0.883 and 0.894), EXTRA (p=0.692 and 0.693), and BUSY (p=0.829 and 0.832). Directions of coefficients of control variables are consistent with prior literature in direction of association, except for ROA, FOREIGN, and EXTRA.

Results of Additional Analysis

Table 11 reports the results of the regression model for the additional analysis, where the dependent variable was MATWEAK and was executed as a probit regression. The regression for the test variable of HF_NUM was statically significant with a chi-squared of 991.6 and a pseudo R^2 of 0.189 ($p<0.001$), consistent with prior literature (Krishnan and Yang 2009). The regression for the test variable of HF_OWNED was also statically significant with a chi-squared of 992.92 and a pseudo R^2 of 0.19 ($p<0.001$). The areas under ROC are 0.763 and 0.765 for HF_NUM and HF_OWNED, respectively, which means my model does fairly well at predicting the issuance of a first going concern opinion (Hosemer & Lemeshow, 2013). The additional analysis investigated whether or not the number of hedge or the percentage ownership of hedge funds is associated with the issuance of material weaknesses in internal control. The results indicate that there is no significant relationship between the issuance of material weaknesses and the number of hedge fund owners (coef. 0.009; p=0.741) and the percentage of hedge fund ownership (coef. -0.003; p=0.24). The results of the additional analysis indicate that the propensity to issue material control weakness is not associated with hedge fund ownership.

Control variables for the MATWEAK model are significant with the with the

Table 11

Test of Additional Analysis: Material Weaknesses and Hedge Fund Ownership

See Table 1 for variable definitions. Outliers have been removed. Firm and industry fixed effects are included but not tabulated.

	Predicted	MATWEAK			MATWEAK		
	Sign	Coef.	z-stat	p-value	Coef.	z-stat	p-value
HF_NUM	?	0.009	0.33	0.741			
HF_OWNED	?				-0.003	-1.17	0.240
SIZE	-	0.037	4.36	0.000 ***	0.035	4.18	0.000 ***
GEOSEG	+	0.147	6.92	0.000 ***	0.147	6.89	0.000 ***
BUSSEG	+	0.056	2.57	0.010 **	0.057	2.62	0.009 **
RESTATE	+	0.122	3.21	0.001 ***	0.122	3.21	0.001 ***
AGE	-	-0.007	-6.57	0.000 ***	-0.007	-6.62	0.000 ***
INST_OWNED	-	-0.002	-3.4	0.001 ***	-0.001	-3.18	0.001 ***
CASH	-	-0.096	-1.31	0.191	-0.095	-1.3	0.194
PRIORWEAK	+	0.773	16.09	0.000 ***	0.775	16.14	0.000 ***
AGGLOSS	+	0.121	3.95	0.000 ***	0.125	4.08	0.000 ***
Intercept		-2.150	-12.69	0.000 ***	-2.131	-12.56	0.000 ***
Years		Included			Included		
Industries		Included			Included		
Observations		29,390			29,390		
LR Chi-square		991.6 ***			991.6 ***		
Pseudo R^2		0.189			0.190		
Area under ROC		0.763			0.765		

*, **, *** Denote significance at the p<0.10, p<0.05, and p<0.01 levels, respectively.
The p-values are one-tailed for variables with a direct ional expected sign and two-tailed otherwise.

exception of CASH (p=0.191 and 0.194). Directions of coefficients of control variables are consistent with prior literature in direction of association, except for SIZE.

CHAPTER 5

CONCLUSION

The rapid rise of hedge fund activism over the last twenty years has given rise to concerns about the effects of hedge funds on publicly traded companies, stakeholders, and the U. S. economy (Coffee Jr. & Palia, 2016). The main concern is that hedge funds focus on shifting funds out of long-term spending and into distributions to shareholders (Monga et al., 2015; Sharfman, 2015). Proponents, however, contend that hedge funds push management into taking strategic actions to aid performance, counter passive investors (Liou, 2018) and decrease a firm's agency problems (Christie, 2018).

Academic research supports the contention that hedge fund activism can lead to favorable outcomes for companies. Studies by Bebchuk, Brav, and Jiang (2015) and Goodwin, Singh, Slipetz, and Rao (2014) found no evidence that positive returns from hedge fund activism reversed themselves after intervention, suggesting long term improvements in firm performance. Sharfman (2015) contends that hedge funds create value by providing Boards with an alternate viewpoint from management for decision making. Further research provides evidence that hedge fund intervention improves operating performance (Clifford, 2008) and debt restructuring in financially distressed firms (Lim, 2015).

In this study, I investigate the effect of hedge fund ownership on the audit engagement by examining whether hedge fund ownership of publicly traded companies

affects auditor-client contracting. Performing audits creates risk for the external auditor (DeFond et al., 2016; Knechel & Vanstraelen, 2007). There is the risk of giving an incorrect audit opinion, the risk of client insolvency, and the risk of loss, both through loss of reputation and from litigation (DeFond et al., 2016). If external auditors consider hedge fund ownership to increase risk , they will take measures to decrease the risk (DeFond & Zhang, 2014).

I find no evidence consistent with this notion. However, When examining the impact of hedge fund ownership and audit lag, the results show that firms with hedge fund ownership have shorter lag time between the issuance of the audit report and the balance sheet date. This result suggests that hedge fund ownership decreases perceived audit risk.

I also find that clients with hedge fund owners pay higher audit fees. There is a positive, significant relationship between audit fees and the number of hedge fund owners and the percentage of hedge fund ownership. In an additional analysis of audit fees and hedge funds, however, I discovered that the increase in audit fees was driven not by the presence of hedge funds, but by greater auditor effort. Once effort was included, the relationship between audit fees and hedge funds became negative, indicating that hedge funds reduce perceived audit risk. These results can be interpreted as hedge funds being willing to pay more for higher quality audits.

Auditors can also reduce risk by lowering the threshold for issuing a going concern opinion (Fargher & Jiang, 2008) or by leaving the client (Shu, 2000). My research found no association between the issuance of a first going concern opinion and hedge fund ownership. Further, the research did not fund any significant association

between auditor turnover and hedge fund ownership. The results indicate that there is no significant relationship between a first going concern opinion nor auditor turnover and the number of hedge fund owners and the percentage of hedge fund ownership. The results indicate that auditors do not perceive hedge fund ownership to affect auditor engagement risk.

For an additional analysis, the study examined the relationship between hedge fund ownership and the likelihood of internal control material weakness. The results indicate that there is no significant relationship between the issuance of material weaknesses and hedge fund ownership.

One potential area for future research is the relationship between hedge fund ownership and non-audit services. Beck and Wu's (2006) study suggests that NAS can either increase or decrease auditor engagement risk, depending on the amount of NAS charged to clients. They posit that lower NAS fees are a result of auditor perceived reduction in risk and, therefore, an increase in audit quality. This research has shown that hedge fund ownership is associated with higher audit fees, but has not explored any relationship with other fees paid by audit clients.

There are potential limitations to the study that must be considered. First, the sample consists of only U.S. publicly traded firms with data gathered from public data sources. As such, the results may not be generalizable to smaller firms, private firms, or firms located outside the U.S. Second, there may be missing or incomplete data due to the use of archival data from secondary sources. The average age of the firms in my sample is greater than the average age of the full set of observation from Compustat, so my

testing is biased towards more mature firms and may not be generalizable to younger firms. Finally, the study may suffer from unobservable and potentially omitted variables.

The results of this study add to the growing academic literature on the role of hedge funds in the capital markets and their effects on nonfinancial stakeholders. In addition, the results will be of interest to politicians, regulators, and business leaders who have expressed concerns about the effects of hedge fund involvement in publicly traded companies. Likewise, hedge fund managers, certain business leaders, and other proponents of hedge fund activism will be interested in the effect of hedge fund ownership on the external audit process and, by extension, financial reporting quality.

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