HEC MONTRÉAL
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Social Responsibility, Ethics, and Lawsuits : Three Essays on Corporate Wrongdoing and Do-gooding

par
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Three Essays on Corporate Wrongdoing and Do-gooding

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Résumé

Cette thèse de doctorat se compose de trois articles en finance d'entreprise. Chaque article constitue un chapitre explorant les différentes conséquences d'un certain comportement illégal en entreprise. Les deux premiers chapitres utilisent des données sur tous les recours collectifs intentés par le gouvernement fédéral américain depuis l'adoption de la *Private Securities Litigation Reform Act* de 1995. Le troisième chapitre utilise une base de données originale rassemblant toutes les mesures d'exécution pour violation de la *Foreign Corrupt Practices Act (FCPA)* des États-Unis. Le premier article, intitulé «Corporate Social Responsibility and Litigation Risk», cherche à savoir si la politique de responsabilité sociale d'entreprise (RSE) peut réduire la probabilité qu'une entreprise soit visée par un poursuite en recours collectif. Je montre des preuves solides qu'une performance RSE plus élevée réduit la probabilité qu'une poursuite en recours collectif en valeurs mobilières soit déposée. L'analyse montre également qu'une performance RSE positive réduit la pénalité de marché lorsqu'une entreprise divulgue une fraude potentielle. Le deuxième article, «Securities Class Actions and Informed Trading in the Options Market», démontre l'existence d'activités de négociation suspectes sur le marché des options avant les révélations de fraude qui déclenchent une poursuite en recours collectif. Le dernier article, «The Market Cost of Unethical Conduct: Revealing Differing Market Reactions to Employee and Firm Indictments for Foreign Corrupt Practices Act Violations», examine la réaction du marché boursier aux actes d'accusation d'entreprise pour violation à la loi FCPA. À l'aide de la méthodologie de l'étude d'événements, rien n'indique que le marché réagisse aux inculpations de corruption envers la société mère ou ses filiales. En revanche, il y a une réaction du marché statistiquement significative et négative lorsque les employés de l'entreprise sont nommés dans l'action coercitive.

Mots-clés Recours collectif, responsabilité sociale d'entreprise, valeur de l'entreprise, produits dérivés, corruption

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Abstract

This doctoral thesis consists of three independent essays in corporate finance. Each essay represents a chapter that explores the various outcomes of illegal and unethical corporate behavior. Chapter 1 and Chapter 2 utilize data on all U.S. federally filed securities class action lawsuits since the passage of the Private Securities Litigation Reform Act of 1995. Chapter 3 uses an original hand-collected dataset of all enforcement actions for violation of the U.S. Foreign Corrupt Practices Act (FCPA). The first essay, *Corporate Social Responsibility and Litigation Risk*, investigates whether firm-level corporate social responsibility (CSR) can reduce the probability of a securities class action lawsuit filed. I provide robust evidence that improvements in the firm-level CSR score reduce the probability of a securities class action lawsuit filed. The analysis also shows that a positive CSR score reduces the size of the negative market reaction following announcements of possible corporate fraud. The second essay, *Securities Class Actions and Informed Trading in the Options Market*, demonstrates the existence of suspicious trading activity in the options market prior to revelations of possible fraud that trigger a securities class action lawsuit filing. The third essay, *The Market Cost of Unethical Conduct: Revealing Differing Market Reactions to Employee and Firm Indictments for Foreign Corrupt Practices Act Violations*, investigates how the market reacts to the news of enforcement actions issued for violations of the FCPA. Using event study methodology, the results highlight that there are is no abnormal market reaction when enforcement actions against a firm and/or its subsidiary are issued. However, enforcement actions against firm employees result in an abnormally negative market reaction that is significant after controlling for various firm-level and case-level characteristics.

Keywords Securities class action, corporate social responsibility, firm value, options, bribery

Research methods Econometrics

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List of acronyms

2SLS Two-stage least squares

2SPLS Two-stage probability least squares

CAR Cumulative abnormal return

CSR Corporate social responsibility

DOJ Department of Justice

FCPA Foreign Corrupt Practices Act

LPM Linear probability model

OLS Ordinary least squares

PSLRA Private Securities Litigation Reform Act

PSM Propensity score matching

SCA Securities class action

SEC Securities and Exchange Commission

SRI Socially responsible investing

STA Suspicious trading activity

To mama and papa.

Everything I have to be proud of in my life is the result of your endless love and sacrifice.

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General Introduction

This doctoral thesis consists of three independent papers in corporate finance on the topic of illegal and unethical corporate behavior. The papers are self-contained and each written with the purpose of being published as a separate article in academic journals.

The first paper, *Corporate Social Responsibility and Litigation Risk*, investigates the impact of corporate social performance on the probability of securities litigation. Any publicly listed firm trading on a U.S. stock exchange is subject to the risk of being named in a securities class action lawsuit. These lawsuits are filed when shareholders suspect that management committed fraud that allowed the firm stock to trade at an artificially inflated price. Securities class action lawsuits can be easily triggered and carry direct and indirect costs that have a significant impact on firm value. I am the first to study whether firm-level corporate social responsibility (CSR) can help reduce the probability of having a securities lawsuit filed.

CSR is the integration of social and environmental concerns in business operations that goes beyond legal or regulatory requirements. The risk management perspective argues that firms voluntarily choose to invest in socially responsible initiatives as a strategic tool to build up reputation, trust, and goodwill. This reputation can help hedge against the negative reaction of regulators and stakeholders following corporate malfeasance. In the context of securities class action lawsuits, firms that have a strong moral reputation as being responsible corporate citizens are more likely to be given the "benefit of the doubt" by the investment community when suspicions of corporate fraud arise. This forgiveness by shareholders can translate into a reduced probability of a securities class action lawsuit filed.

The results of my paper confirm that firm-level CSR reduces the probability of a securities class action lawsuit filed. Using a two-stage least square framework to correct for the endogenous nature of investment in CSR, I find robust evidence that an improvement in the firm-level CSR

score has a negative and statistically significant impact on the probability of a securities class action lawsuit filed. I also show evidence that firms with a positive CSR score experience a less negative market reaction when news of suspected corporate fraud is disclosed. Since securities lawsuits are usually triggered by a large negative market reaction, the evidence of a less negative market reaction is a possible explanation for why firms with better social performance are less likely to be named in a securities lawsuit. The findings of this paper show that firms strategically invest in CSR in order to hedge against future negative corporate events.

The second paper, *Securities Class Actions and Informed Trading in the Options Market*, investigates whether there is suspicious trading activity in the options market prior to corporate revelations of possible fraud that trigger the filing of a securities class action lawsuit. Securities class action lawsuits are initiated when there is a suspicion of corporate fraud. This suspicion arises when there is a disclosure that causes shareholders to question the validity of firm financial statements and reassess the value of the firm. Such disclosures are typically accompanied by an abnormally large and negative market reaction. Prior knowledge of a disclosure presents an opportunity to profit from the upcoming large stock price decline.

A recent stream of literature documents the existence of informed trading in the options market prior to various corporate events. This paper contributes to that stream of literature by demonstrating the existence of suspicious trading activity in the options market prior to a previously unexplored event: the corporate disclosures of possible fraud. Using four popularized measures of informed trading in the options market, we document robust evidence of suspicious trading activity indicative of informed trading before large negative market declines that trigger a securities class action lawsuit. We show that these measures predict upcoming fraud disclosure events in the cross section of all stocks covered by the OptionMetrics database from 1996 to 2014. These findings highlight that fraudulent activity inside a firm increases the likelihood of other illegal activity.

The third paper, *The Market Cost of Unethical Conduct: Revealing Differing Market Reactions to Employee and Firm Indictments for Foreign Corrupt Practices Act Violations*, investigates how shareholders react to the news of enforcement actions issued against firms and its employees for violations of the Foreign Corrupt Practices Act (FCPA). The FCPA was enacted in 1977 and prohibits the payment of bribes to foreign officials in the interest of obtaining or retaining business by any companies operating in the United States. Firms and its employees who violate this law can be prosecuted by the U.S. Securities and Exchange Commission and the U.S. Department of

Justice. However, the financial benefits to firms and shareholders from violating the FCPA in order to gain favorable business overseas can outweigh the costs of potential future litigation. Therefore, we test whether the market penalizes corrupt acts that are actually designed to increase shareholder profits.

Using an original, hand-collected dataset of all FCPA enforcement actions from 1978 to 2015, I show that the market does not react abnormally to the news of a firm or a subsidiary indicted for violations of the FCPA. However, we find that FCPA enforcement actions brought against firm employees result in a negative and statistically significant abnormal market reaction. This result is robust to the inclusion of various case features, firm-characteristics, as well as industry and year fixed effects. Our findings highlight that the defendant type in an enforcement action plays a significant role in how shareholders react to news of corruption charges.

The remainder of this thesis consists of the three papers introduced above, each of which comprises a separate chapter.

Chapter 1

Corporate Social Responsibility and Litigation Risk

Abstract

Securities litigation is costly and can impact all publicly traded firms. This paper investigates whether corporate social responsibility (CSR) helps reduce the litigation risk of a firm. I hypothesize that firms strategically invest in CSR to build moral capital, which can reduce the probability of securities litigation. Using two-stage least squares to correct for the endogeneity of CSR investment, I find robust evidence that CSR reduces the probability of a securities class action lawsuit filed. I confirm my findings using a propensity score matched sample of sued and control firms. In addition, I show that a higher CSR score reduces the size of the abnormal market reaction following the revelation of suspected fraud. These findings show that strategic philanthropy can reduce the costs related to securities litigation, which helps preserve firm wealth.

JEL classifications: D21, G32, G34, K22, M14
Keywords: Corporate social responsibility, securities class action, litigation risk, firm value

1.1 Introduction

Why do profit-oriented firms voluntarily choose to disburse company resources towards socially responsible initiatives, commonly characterized as corporate social responsibility (CSR)?[1] Existing theory suggests that such action is a form of strategic philanthropy that must translate into financial performance. The risk management perspective asserts that investment in CSR can hedge the risk of further regulation or stakeholder activism aimed at reducing firm value following a negative corporate event (Baron, 2001). CSR provides "insurance-like" protection by generating moral capital (Godfrey, 2005). Moral capital encourages stakeholders to believe that a negative event is the result of managerial error or bad luck rather than intentional wrongdoing. This belief helps mitigate the propensity and severity of sanctions, preserving firm value and shareholder wealth. I test this theory by investigating whether CSR is a strategic tool that helps preserve firm value by reducing firm litigation risk.

I hypothesize that CSR can reduce the probability of a firm having a securities class action lawsuit filed. Securities lawsuits are filed alleging that the company caused its stock to become overpriced by intentionally failing to disclose material information or distributing misleading or false information.[2] In essence, a firm named in a securities lawsuit is accused of fraud. I focus on securities class action lawsuits for several reasons.

First, securities class action lawsuits are characterized by high uncertainty and information asymmetry between stakeholders and firms. Lawsuits are filed when a firm is suspected of committing an offense. An offense only occurs when a bad act is accompanied by a bad mind. Moral capital provides counterfactual evidence against the determination of a bad mind (Godfrey, 2005). Therefore, when suspicions of fraud arise and ambiguity is high, moral capital encourages stakeholders to default to the belief that the intentions are honest. This belief helps reduce market sanctions and discourages the filing of a securities lawsuit. As a result, examining securities class action lawsuits provides an ideal setting to investigate the power of moral capital to sway stake-

[1] CSR is defined as the integration of social and environmental concerns in business operations and interactions with stakeholders that goes beyond legal or regulatory requirements (Flammer, 2015). CSR issues include preservation of the environment, improvement in labor welfare, protection of human rights, contribution to the society, and pursuit of product safety.

[2] Most securities class action lawsuits are filed under the anti-fraud provision of the Securities Exchange Act of 1934 (Section 10(b) and Rule 10b-5), which prohibits the omission of material facts, dissemination of false information, or the use of any manipulative device in connections with the purchase or sale of any security (Bajaj et al., 2002). Lawsuits are also filed for misrepresentation or omissions in registration statements (Section 11), prospectuses (Section 12(a)(2)), and/or other SEC filings.

holders when there is ambiguity of intent.

Second, all publicly listed firms in the United States face high securities litigation risk. Any publicly traded firm that experiences an unexpected or substantial stock price drop is likely subject to a lawsuit (Alexander, 1991; Field et al., 2005). The revelation of an error in a financial statement, a failure to disclose information, or an adjustment to asset values can raise suspicions of fraud and trigger the filing of a securities lawsuit (Francis et al., 1994). Lawsuits can also be filed as part of an industry trend or as an outcome of law firms trying to extract settlements from cash rich companies (Dyck et al., 2013; Strahan, 1998). Therefore, taking strategic action to reduce this risk is worthwhile for any publicly traded firm.

Third, securities lawsuits are costly and have a direct impact on firm value. The costs include attorney fees, legal fines, settlement payouts, litigation insurance premiums, and reputational penalties. In most cases, the reputation penalty is the most damaging outcome of corporate litigation. The reputation penalty reflects investors' expectation of lost revenue and higher operating costs following a trust-destroying event (Klein and Leffler, 1981; Jarrell and Peltzman, 1985).[3] The costs from lost reputation represent over two-thirds of the loss in market value of a firm suspected of fraud (Karpoff et al., 2008, 2005; Karpoff and Lott, 1993). Thus, the naming of a firm in a securities lawsuit can be significantly damaging to shareholder wealth.

I exploit a firm-level measure of CSR to conduct my analysis. I obtain data on CSR from the KLD Research and Analytics (KLD) database for the period of 2005 to 2015.[4] This database is one of the most widely used measures of firm-level CSR in the literature.[5] The analysts at KLD rate the CSR performance of firms across seven different stakeholder issue areas. Within each area, a set of binary indicator variables capture a firm's positive (strengths) and negative (concerns) CSR activities. I create a firm-year adjusted CSR score based on the methodology of Deng et al. (2013). I use this measure to investigate whether there exists a relationship between CSR and securities class action litigation.

There are several empirical challenges associated with estimating a relation between CSR and

[3]Revenue is lost if customers abandon a firm because they feel an increased probability of being cheated in their transactions. Higher operating costs arise from an increase in the cost of capital or trade credit because input suppliers are less trusting of the firm and require a higher risk premium (Lin et al., 2013; Murphy et al., 2009). The reputation of fraud can lead to greater regulatory scrutiny and higher probability of litigation in the future (Karpoff et al., 2008; Gande and Lewis, 2009).

[4]MSCI acquired KLD in 2010 and this database may now be referred to as the MSCI ESG KLD STATS database. In this analysis we will continue to refer to it as KLD.

[5]See Krüger (2015), Deng et al. (2013), Cahan et al. (2015), Kotchen and Moon (2012).

securities litigation risk. First, if CSR helps reduce the probability of a securities class action lawsuit, then firms facing greater litigation risk are more likely to improve their CSR. Second, there may be unobservable factors that explain investment in CSR and the probability of a lawsuit. I use two-stage least squares (2SLS) and propensity score matching (PSM) to address the potential endogeneity problems of reverse causality and omitted variable bias. I follow the methodology of Chintrakarn et al. (2017) and use the average CSR score of neighboring firms as my instrumental variable. Chintrakarn et al. (2017) show that an individual firm's CSR is highly influenced by the CSR of neighboring firms in the same 3-digit zipcode. At the same time, neighboring firm CSR should have no impact on the litigation risk of an individual firm.

I begin my empirical analysis by first showing that firms improve their CSR score when the risk of securities litigation increases. Gande and Lewis (2009) show that litigation concentration in an industry is a strong indicator of actual litigation risk. I use a panel dataset of all KLD covered U.S. firms with available CSR score data between 2005 and 2015. I find that as the number of securities lawsuits in an industry increases, there is a statistically significant increase in the CSR score of industry peer firms the following year. The results are robust to controlling for numerous firm characteristics and the inclusion of industry and year fixed effects. These findings suggest that management believes that a more socially responsible image is valuable for the firm when litigation risk increases.

Next, I test if CSR actually helps reduce the probability of a securities class action lawsuit filed. First, using the full sample of KLD covered firms, I find strong evidence that an increase in the CSR score decreases the probability of a securities lawsuit. The results are robust to various specifications, the use of an instrumental variable for the CSR choice, and the inclusion of industry and year fixed effects. Second, I address the concern that lawsuit firms are intrinsically different from non-lawsuit firms by repeating my analysis using only firms that have been named in a securities lawsuit at any point in time between 1996 and 2016.[6] In this sample of firms, I show that CSR has a negative impact on the probability of a securities lawsuit filed. In fact, the economic effect of the reduction in probability is larger for the sample of sued firms. A one point increase in

[6]I use the 1996 cutoff because it is the year following the passage of the Private Securities Litigation Reform Act (PSLRA) of 1995. This law was designed to reduce the incidence of frivolous lawsuits be changing the discovery requirements. These changes made it more difficult to initiate a securities lawsuit. There is an agreement in the literature that the lawsuit filing trends pre- and post-PSLRA differ. Including the period pre-PSLRA would add bias to my sample choice by potentially including firms that would not characteristically be named in a securities lawsuit after the passage of the PSLRA.

the firm-level CSR score reduces the probability of having a securities lawsuit filed by up to 15.5 percentage points.

To add further validity to my findings, I repeat my analysis using a matched sample of firms. First, I use propensity score matching to build a control sample of firms with a similar probability to experience a securities lawsuit. I compute my propensity score based on factors that have been shown to impact the probability of a securities lawsuit filing (Gande and Lewis, 2009). Second, I build a control sample of firms with a similar ex ante probability to commit financial fraud based on the measure of Dechow et al. (2011). Both matched sample results support previous findings that CSR reduces the probability of a securities lawsuit filed. These findings provide evidence for the risk management hypothesis by showing that CSR can be a strategic tool that helps preserve firm value by reducing the probability of costly securities litigation.

Lastly, I investigate whether investment in CSR affects other securities litigation related events. In the sample of firms that have a securities class action lawsuit filed between 2005 and 2015, I find that firms with a positive CSR score experience a less negative market reaction when news of possible fraud is revealed. This reduced market reaction is also one possible explanation for why higher rated CSR firms have a lower probability of a lawsuit filed. If the initial revelation of fraud does not generate a substantial stock price decline, shareholder losses are minor and filing a lawsuit becomes less worthwhile. I also test if the firm-level CSR score affects the probability of having a securities lawsuit dismissed. I find no evidence that CSR helps increase the probability of securities lawsuit dismissed. The lack of relationship suggests that a securities lawsuit was never filed in the cases where the moral capital built through a positive CSR reputation played a role. Once a lawsuit is filed, the outcome is based on other factors and not firm social performance. The lack of relationship between CSR and the probability of dismissal also helps explains why I find no evidence of a CSR effect on the market reaction following the announcement of a securities lawsuit filing.

This study contributes to the strategic CSR literature and the securities litigation literature in several ways. First, to my knowledge, this is the first study to examine if CSR has an impact on the probability of a firm having a securities lawsuit filed. Koh et al. (2014) propose that CSR investment has *ex ante* insurance value for firms that face high litigation risk, but they do not explicitly test whether investment in CSR indeed reduces this risk. My study provides evidence that the insurance value of CSR can be observed through its ability to reduce the probability of a

securities class action lawsuit filed. Second, the findings in this study complement the strategic perspective of CSR. Not all are convinced that a relationship between CSR and firm value exists. In fact, Tirole (2001) and Bénabou and Tirole (2010) contend that CSR is simply the manifestation of agency problems inside the firm and is initiated at the expense of shareholder wealth. If CSR is a result of an agency problem, then more investment in CSR, as captured by a higher CSR score, would more likely increase the probability of a securities lawsuit filed. Shareholders would view the higher CSR investment as an additional signal of unethical firm behavior, which would increase their suspicions of fraud. However, the observed negative relationship between CSR and lawsuit probability suggests that this investment is a strategic choice that can translate into firm value. Third, many of the existing studies do not address the possible biases associated with studying the endogeneity of CSR. Through implementing a 2SLS framework and controlling for firm-level characteristics, I provide evidence of a causal relationship between CSR and firm value. Lastly, I contribute to the literature on how firm disclosure policies impact the probability of securities litigation. CSR investment can be viewed as a form of non-financial disclosure that sends a signal regarding firm ethics and trustworthiness. I show evidence that firms strategically invest in CSR when litigation risk is high in order to help reduce the probability of securities lawsuits.

This paper is organized as follows. Section 1.2 presents the existing literature and testable hypotheses. Section 1.3 describes the data, provides descriptive statistics for the variables of interest, and outlines the empirical methodology. Section 1.4 presents the empirical analysis and discusses the results. Section 1.5 concludes.

1.2 Existing Literature and Hypotheses Development

1.2.1 Securities Class Action Lawsuits and Firm Outcomes

Securities class action lawsuits are initiated when there is suspicion of fraud. These lawsuits are brought by shareholders against the corporation, its officers and directors, and others on behalf of a group of investors who have suffered an economic loss in a security as the result of some violation of securities laws by the issuer (Ryan and Simmons, 2013).[7] The trigger for the filing

[7]Most securities lawsuits are filed under the anti-fraud provision of the Securities Exchange Act of 1934 (Section 10(b) and Rule 10b-5), which prohibits the omission of material facts, dissemination of false information, or the use of any manipulative device in connections with the purchase or sale of any security. Lawsuits are also filed for misrepresentation or omissions in registration statements (Section 11), prospectuses (Section 12(a)(2)), and/or other Securities

of a securities lawsuit occurs when there is an information disclosure that leads to an unexpected and negative stock price decline. This unexpected drop in price makes shareholders suspicious that management misled investors either through the failure to disclose material information or through the distribution of misleading or false information. If shareholders believe this behavior was malicious, they file a securities lawsuit in order to recuperate damages. On average, about one-third of securities class action lawsuits are dismissed and two-thirds are settled with class members granted relief in the form of financial recovery through a monetary settlement (Bajaj et al., 2002; Ryan and Simmons, 2013).

Securities litigation carries both direct and indirect costs for the firm. The direct costs include the legal fines, attorney fees, and increased insurance premiums resulting from the filing of the lawsuit. The indirect costs include what has been coined in the literature as the "reputation penalty". The reputation penalty is the present value of the expected loss in future cash flows from the corporate misconduct. Klein and Leffler (1981) and Jarrell and Peltzman (1985) suggest that reputational penalties arise when customers, suppliers, providers of financial capital, and other related parties revise their terms of trade after the revelation of corporate opportunistic behavior.

There are a number of papers that highlight the costs to firms alleged to have engaged in fraud that triggers a securities lawsuit. Karpoff et al. (2008) find that, on average, firms lose 41 % of their market value when news of financial fraud is revealed. The authors estimate that 66.6% of the loss reflects the reputation penalty, 8.8% reflects the legal costs, and the remainder is the recalculation of financial information based on newly disclosed information. Karpoff and Lott (1993) find that the reputation penalty reflects over 90% of the loss in shareholder value for firms engaged in various forms of criminal fraud and less than 10% reflects the legal costs. Murphy et al. (2009) highlight that firms suspected of corporate misconduct experience a decrease in earnings and an increase in risk measures following the allegation. Lin et al. (2013) find that the increase in risk is reflected in the increased cost of credit for firms named in a securities class action lawsuit; whereas, Arena and Julio (2015) show that firms with higher exposure to litigation risk hold more cash on their balance sheets to avoid raising external capital following the initiation of a securities lawsuit. Lastly, Gande and Lewis (2009) find that the costs of securities litigation not only affects the equity value of the sued firm but also peer firms in the same industry. The authors find that the filing of a securities lawsuit against a firm in the same 4-digit SIC code industry results in a

and Exchange Commission (SEC) filings.

statistically significant decline in equity value of all other firms in the same industry.

The papers summarized above highlight the significant financial cost of securities litigation to firms. These costs are worrisome considering the high litigation risk faced by publicly traded firms in the U.S. Numerous papers have looked at firm-level disclosure policies as a channel by which to help reduce the risk of securities litigation.[8] In this paper, I look at firm-level investment in CSR as a form of strategic non-financial disclosure that improves firm reputation, which can help reduce the probability of a firm named in a securities lawsuit.

1.2.2 Corporate Social Responsibility as Reputation Insurance

CSR is the integration of social and environmental concerns in business operations and interactions with stakeholders that goes beyond legal or regulatory requirements (Flammer, 2015). CSR issues include preservation of the environment, improvement in labor welfare, protection of human rights, contribution to society, and pursuit of product safety. Investment in these issues is viewed as a strategic choice that in some form translates into financial performance. The majority of the existing literature suggests that CSR investment improves financial performance.[9] However, a newly emergent stream of literature suggests that investment CSR initiates is part of a risk management strategy designed to help preserve firm value following negative corporate events. The risk management perspective posits that the positive reputation built through investment in CSR can protect relational assets by moderating the negative assessment of stakeholders (Godfrey, 2005).

Investment in CSR improves a firm's social reputation and characterizes it as more trustworthy and ethical. Contract theory views firms linked to shareholders and stakeholders through a nexus of explicit and implicit contracts. Firms that engage in socially responsible activities commit themselves to implicit contracts with stakeholders on a voluntary basis. Committing to an implicit contract sends a strong signal of trustworthiness, since the reputational costs of failing to honor an implicit contract tend to be much higher than the rewards. In fact, Andreozzi (2010) argues that CSR investment acts as a signal of a code of ethics that firms send in a system of repeated interactions. As a result, firms that voluntary choose to commit to such contracts are likely to be perceived as more trustworthy and less likely to cheat. Examining how trust impacts the reaction

[8] Skinner (1994), Francis et al. (1994), Field et al. (2005), Rogers and Van Buskirk (2009), Fernandes et al. (2010)

[9] Edmans (2011), Deng et al. (2013), Krüger (2015), Flammer (2015), Ferrell et al. (2016), Servaes and Tamayo (2013), Dimson et al. (2015).

to earnings news, Jung et al. (2016) show that investors consider the information disclosed by firms with positive CSR scores as more trustworthy compared to firms with negative CSR scores. Cheng et al. (2014) show that engagement in CSR sends a positive signal of transparency and trust, which helps reduce firm-level capital constraints. While, El Ghoul et al. (2011) and Dhaliwal et al. (2011) show that firms with a positive CSR reputation have access to cheaper equity financing due to their perceived lower risk. Lastly, firms that display altruistic behavior such as promoting diversity, investing in the local community, and environmental conservation, signal that firm management is not completely self-interested but is instead considerate of firm activity on others (Godfrey et al., 2009). Hoi et al. (2013) suggest that the commitment by firms to a culture of more ethical consideration of others signals a constrain on the involvement in unethical activities.

Godfrey (2005) theorizes that the attributes of a positive CSR reputation are particularly important when negative corporate events occur. The positive CSR reputation breeds what Godfrey (2005) defines as moral capital. In the context of corporate wrongdoing, moral capital acts as a form of insurance to help mitigate the propensity for negative sanctions. Specifically, it helps increase the likelihood of positive attributions from stakeholders because they hold more goodwill towards firms with large moral capital reserves. As a result, stakeholders are more likely to temper their negative judgement and desire for sanctions for firms with a positive CSR reputation. Godfrey et al. (2009) and Minor and Morgan (2011) show evidence in support of the risk-management motivation for CSR. Their results suggest that improving a firm's positive CSR reputation offers some degree of insurance protection against the risk of market, political, regulatory, and social sanctions when negative corporate events occur.

1.2.3 Litigation Risk and Corporate Social Responsibility

Dyck et al. (2013) estimate that approximately 14.5% of publicly-traded firms engage in fraud in any given year. However, only 3.3% of firms are actually prosecuted in some type of legal action. This suggests that the majority of fraud-committing firms are either able to reduce the probability of detection or reduce the likelihood of investigation. Investment in CSR can be viewed as a mechanism through which corporate executives build a moral corporate reputation to hide fraudulent behavior and reduce the probability of fraud detection. Kotchen and Moon (2012) suggest that firms with a positive corporate reputation encourage regulators to "look the other

way." Indeed, Hemingway and Maclagan (2004) and Kim et al. (2015) hypothesize that firms utilize CSR activities as a way to mask corporate wrongdoing. In fact, Kim et al. (2015) find that the CSR score of fraud firms increases during the period when fraud is committed compared to a matched sample of non-fraud firms. This evidence suggests that fraud committing firms use CSR to reduce the probability of detection and subsequent litigation.

Alternatively, stakeholders assign punishment based on the perceived state of mind and intentions of the offender and firms with a positive CSR image are more likely to experience mild or even no sanctions. Securities lawsuits are filed stating that a firm intentionally deceived investors by engaging in fraudulent behavior. However, a positive CSR reputation can encourage stakeholders to view events suggestive of fraud as the result of a one-time error and not an intentional act to deceive. Therefore, when there is a belief in a lack of intent, the motivation to file a lawsuit is likely to be lower. In addition, proving that a firm strategically mislead or lied to investors may be more difficult when its CSR reputation signals an honest and trusting relationship with stakeholders. If this is the case, plaintiffs may simply avoid filing suits against firms with a strong CSR reputation because of the additional time, effort and cost it would require to prove intent (Baker and Griffith, 2009). Koh et al. (2014) argue that investment inCSR is a valuable strategy for firms facing high securities litigation risk. The authors show that in the sample of firms with a high risk of securities litigation, CSR has a positive effect on firm value due to its *ex ante* insurance against the risk of securities lawsuits. However, the authors do not explicitly test whether CSR reduces the probability of securities class action lawsuits.

The risk management perspective suggests that firms, as a pre-emptive strategy, will build up a positive CSR reputation in order to insure against the risk of severe sanctions when negative events occur. To provide empirical evidence on the relationship between CSR and securities litigation risk, I propose two testable hypotheses. First, an increase in firm-level litigation risk should lead to a subsequent increase in the firm-level CSR score as management invests more aggressively in CSR as part of a risk management strategy. Second, assuming that the strategic investment in CSR initiatives generates positive moral capital, firms with higher CSR scores should have a lower probability of having a securities lawsuit filed due to the reduced assessment of intentional fraud.

Hypothesis 1: *All else equal, an increase in the litigation risk of a firm has a positive effect on the CSR score of the firm.*

Hypothesis 2: *All else equal, an increase in the CSR score of a firm has a negative effect on the probability of the firm being named in a securities class action lawsuit.*

1.3 Data and Methodology

1.3.1 Sample Construction

I use several databases to construct my analysis sample. First, I start with the panel of all firms rated by the Kinder, Lydenberg, and Domini (KLD) database from 2005 to 2015. KLD rates the 3,000 largest (by market capitalization) publicly traded U.S. companies along various dimensions of corporate social responsibility.[10] One issue with the KLD database is that firms drop in and out over time. I remove all firms that do not have at least two years of consecutive CSR data and any firm not listed in the COMPUSTAT and CRSP databases.

Second, I gather securities class action lawsuit data from Stanford's Securities Class Action Clearinghouse (SCAC) database for all lawsuits filed between January 1, 1996 and December 31, 2016.[11] For each case, I gather information on lead defendant(s), the class period start and end dates, class action file date, and outcome of the lawsuit. The initial sample includes 3,711 securities class actions against 3,332 publicly traded firms from 1996 to 2016.[12] I exclude all lawsuits related to cross-listed firms, merger and acquisitions (M&A), and lawsuits filed against third parties such as underwriters and/or auditors. These filters leave me with a final sample of 2,960 federal securities class actions filed against 2,471 publicly traded U.S. firms over the period of 1996 to 2016.

I match my sample of securities class actions to the sample of KLD covered firms. I define sued firms as any firm named in a securities class action over the 1996 to 2016 period. In the

[10] KLD has been rating firm-level CSR since 1991. KLD is the most widely used database in the CSR literature, being used to capture firm-level CSR in over 40 peer-reviewed articles. KLD scores are available for S&P 500 companies starting in 1991. However, coverage of the Russell 3000 firms only started in 2003. Data availability and analysis requirements have this paper using KLD CSR data starting in 2005.

[11] The SCAC database lists all federal securities class action lawsuits filed against a firm and/or its management after the passage of the Private Securities Litigation Reform Act (PSLRA) of 1995. The PSLRA was passed to reduce the incidence of frivolous lawsuits by making it more difficult to initiate securities litigation. The PSLRA heightened the pleading requirements and increased the burden of evidence plaintiffs must provide to file a securities lawsuit alleging corporate fraud.

[12] This excludes all firms that are not publicly traded, such as partnerships and sole proprietorships, mutual funds, unit trusts and other investment organizations, real estate investment trusts (REITs), municipalities, and any state or federal government entities; or individuals and other entities. Cases where the defendant firm is listed on OTC Bulletin Boards/Pink Sheets are also excluded.

sample 3,195 CSR rated firms, 991 have had a securities lawsuit brought against them. Next, I match securities lawsuits filed from 2006 to 2016 with the KLD data, resulting in 679 cases with available CSR data prior to the lawsuit filing. Table 1.2 shows the distribution of lawsuits and the number of firms covered across years.

The average probability of a firm being targeted by what is often regarded as a "standard" securities class action is approximately 3.0%. In my sample, each year, on average, 2.45% of KLD-covered firms are named in a securities class action lawsuit. Although the number is slightly lower than the average across all firms, it still suggests that the sample of KLD covered firms face a similar probability of securities litigation as all publicly traded companies in the U.S.

1.3.2 Corporate Social Responsibility

I construct a firm-level CSR score using the KLD database. KLD rates firms along six dimensions of corporate social responsibility: community, diversity, employee relations, environment, human rights, and product. KLD also rates firms on corporate governance, but this category does not reflect the social performance of a firm. Within each dimension, KLD provides a binary indicator (either a zero or one) for various "strength" and "concern" categories. Strength categories include positive CSR policies and concern categories include negative CSR policies. For example, in the community dimension, KLD assigns a one in the "Charitable Giving" strength category if a company has consistently given over 1.5% of trailing three-year net earnings before taxes to charity. In the employee relations dimension, KLD assigns a one in the "Health and Safety Concern" category if the company has recently paid substantial fines or civil penalties for willful violations of employee health and safety standards or been involved in major health and safety controversies.

I compute the CSR score for each firm-year observation based on the methodology of Deng et al. (2013). Over the period of 2005 to 2015, the total number of strength and concern categories varies across the issue areas.[13] This variability over time makes adding up categories across issue areas for each firm-year problematic. Deng et al. (2013) address this problem by computing an adjusted CSR score. I first compute an adjusted CSR score for each issue area. This is equal to

[13]Environment has 5 (7) strength (concern) categories in 2005 and 16 (7) strength (concern) categories in 2015. Community has 7 (4) strength (concern) categories in 2005 and 1 (1) strength (concern) categories in 2015. Human rights has 3 (7) strength (concern) categories in 2005 and 2 (3) strength (concern) categories in 2015. Employee relations has 3 (5) strength (concern) categories in 2005 and 9 (6) strength (concern) categories in 2015. Diversity has 8 (3) strength (concern) categories in 2005 and 2 (2) strength (concern) categories in 2015.

the adjusted strength score minus the adjusted concern score. To compute the adjusted strength (concern) score within each issue area, I sum the strength (concern) indicators and divide by the total number of strength (concern) categories. I take the difference between the adjusted strength score and the adjusted concern score to get an issue area adjusted CSR score. A higher adjusted CSR score indicates more CSR strengths than concerns for a firm in a given year. To get an overall firm-year adjusted CSR score, I sum the adjusted CSR scores across the issue areas. For each firm-year observation the CSR score is equal to the total adjusted strength score minus the total adjusted concern score.

Following Servaes and Tamayo (2013) and Kim et al. (2015), I compute an overall *CSR score* across five issue areas: community, diversity, employee relations, environment, and human rights.[14] Servaes and Tamayo (2013) argue that the product category, which relates to product quality, safety, and innovation, should not be a measure of corporate social responsibility. I also exclude the corporate governance category because it does not measure CSR and it is reasonable to assume that firms sued for fraudulent behavior are likely to have poorer corporate governance rankings, which would bias the CSR measure. I also add up all the adjusted strength scores across the five issue areas to obtain an overall *CSR Strengths score* and add up the adjusted concern scores to get an overall *CSR Concerns score*. Table 1.1 defines the CSR measures.

Table 1.3 provides summary statistics of the the various CSR measures for the sample of KLD-covered firms. The overall CSR score is left skewed, suggesting that the average firm has more CSR concerns than strengths. This is supported by the fact that at least half of the firms do not have any positive CSR initiatives as demonstrated by a median CSR strengths score of zero. However, the concerns score is much higher, with half of the sample of firms having a CSR concerns score higher than the sample average. Table 1.3 also shows the adjusted score within each of the five issue areas that comprise the overall CSR score. Stakeholder oriented issue areas (such as employee relations and diversity) are more negatively skewed, while third-party oriented issue areas (such as environment, community, and human rights) are more normally distributed, with an average overall score of zero.

[14] In unreported results, I repeat the analysis using an overall adjusted CSR score that includes the product issue area. The findings are qualitatively similar.

1.3.3 Litigation Risk Measures

I construct a number of lawsuit related measures to capture the litigation risk of a given firm. First, I compute a measure of industry-specific litigation intensity, *LITINT*, equal to the count of the number of class action lawsuits filed against firms in the same four-digit SIC code industry in a given calendar year. Gande and Lewis (2009) show that securities lawsuits follow an industry trend and that the filing of a securities lawsuit in a specific industry increases the probability of a securities lawsuit for all other firms in the same industry. Following Gande and Lewis (2009), I also compute a squared term of litigation intensity (*LITINT Sq.*) to capture any possible nonlinearities related to the industry-specific litigation risk of a given firm. Second, I construct an indicator variable, *Prior*, equal to one if a firm had a securities lawsuit filed at any time between 1996 and the observation year, and zero otherwise. Gande and Lewis (2009) and Field et al. (2005) show that past litigation activity has a significantly positive effect on the likelihood of future litigation. Third, my main dependent variable, *Lawsuit*, is an indicator equal to one if a firm is named in a securities lawsuit in a given year and zero otherwise.

1.3.4 Other Characteristics

I obtain data on various firm characteristics that have been shown to relate to litigation risk and CSR investment. I control for *firm size* using the logged value of market capitalization, computed based on end of year price and number of shares outstanding. Firm size is an important explanatory variable for both CSR investment and litigation risk because it proxies for whether a firm has "deep pockets." Larger firms have greater visibility and access to more financial resources. There is belief that larger firms are more likely to settle a lawsuit fast rather than drag out the litigation in the public eye. This belief makes larger firms more likely targets for securities class action lawsuits. I measure *leverage* (total liabilities scaled by total assets) to control for the availability of resources to invest in CSR as well as payout lawsuit settlements. Leverage is also a widely used measures for agency problems within the firm because it signals how much discretion management has over investments.

Additional firm-specific controls include the return-on-assets (ROA), market value to book value ratio (M/B), dividend payout, and firm age. The descriptions of these measures are presented in Table 1.1. I also measure several security related measure that have been shown to relate

to litigation risk by Field et al. (2005) and Gande and Lewis (2009). *Prior stock return* is the cumulative raw stock return over a one year period before the lawsuit filing date. *Stock volatility* is the standard deviation of daily returns over a one year period before the lawsuit filing date. Lastly, *stock turnover* is the total number of shares traded over the one year period before the lawsuit filing date scaled by the average number of shares outstanding.

Using the Dechow et al. (2011) methodology I compute a firm-specific annual *F-score* that captures the ex ante probability of a firm engaging in financial fraud. I use this measure to match my sample of sued firms to non-sued firms. This allows me to assume that the two samples of firms have a similar probability of committing fraud and experiencing a potential lawsuit. The F-score measure is computed as the predicted probability of a firm engaging in financial fraud over the unconditional expectation of total number of lawsuits divided by the total number of firms.[15]

1.3.5 Descriptive Statistics

Table 1.4 presents descriptive statistics for the sample of CSR rated firms. The sample statistics are also broken down between *sued* (firms that have been named in a federal securities class action lawsuit at any time between 1996 and 2016) and *non-sued* (firms that have not been named in a federal securities class action lawsuit at any time between 1996 and 2016) firms. Several features are worth noting. Sued firms differ from non-sued firms in all three CSR measures. Sued firms have a more positive overall adjusted CSR score. Sued firms also have both a higher adjusted CSR strengths score and higher adjusted CSR concerns score. The higher concerns score is suggestive that a negative CSR image has more weight in shareholder minds than a positive one. The higher strengths score can either be the byproduct of more CSR investment to hide the bad behavior, as suggested by Kim et al. (2015), or the result of more CSR investment following the lawsuit period in order to improve a tarnished reputation.

Regarding characteristics related to lawsuit probability, the differences between the sued and non-sued samples are in line with the literature. Sued firms come from more litigious industries, with the difference of *LITINT* significant at both the mean and median of the two samples. Sued

[15]The probability of fraud (*F-score*) is computed as follows. First, I compute the predicted value using the Dechow et al. (2011) estimated coefficients: $Predicted\_value = -7.893 + 0.79 \times rsst\_acc + 2.518 \times d\_rec + 1.191 \times d\_inv + 1.979 \times \%soft\_at + 0.171 \times d\_cs - 0.932 \times d\_roa + 1.029 \times issue$, where *rsst_acc* is total accruals, *d_rec* change in receivables, *d_inv* change in inventory, *d_cs* change in cash sales, *d_roa* change in return on assets, *%soft_at* is percentage of soft assets, and *issue* is an indicator equal to one if a firm issues equity or debt and zero otherwise. Second, I compute the ex ante probability of financial fraud as $p(fraud) = exp(Predicted\_value)/(1 + exp(Predicted\_value))$.

firms are also larger as captured by both market capitalization and total assets and have lower leverage, which is in line with the notion that cash rich companies are often the target of securities lawsuits for easy pay outs (Arena and Julio, 2015). Finally, table 1.4 shows that the non-sued firms actually have a statistically higher probability of committing financial fraud, which is suggestive that these firms are not necessarily more ethical but are better than hiding fraudulent behavior.

1.3.6 Methodology

Firms voluntarily choose to invest in CSR initiatives or abstain from irresponsible CSR activities. This voluntary choice presents a problem for any analysis testing the impact of CSR due to the worry of omitting variables that explain the CSR choice. In addition, the risk management perspective argues that firms will strategically invest in CSR as insurance against negative events. I hypothesize that a higher CSR score will help reduce of the probability of securities litigation. However, if a more positive CSR image can help reduce the risk of litigation, then firms facing higher litigation risk are more likely to invest in CSR. This reverse causality introduces a possible endogeneity problem in my analysis.

I use 2SLS regression analysis to correct for the potential endogeneity problem. I look for an instrumental variable that is highly correlated with CSR but does not influence lawsuit probability, except through CSR. Chintrakarn et al. (2017) show that the CSR score of a given firm is positively influenced by the behavior of its neighbors. I use the average CSR score of firms in the same 3-digit zip code as the instrumental variable for the CSR score of my observation firm. There are several channels for why there is a strong peer-effect for geographically proximate firms. First, local competition for investors and employees would motivate a firm to maintain CSR standards in line with neighboring firms. CSR is usually viewed positively by local investors. Investors may view a firm negatively if it has CSR policies weaker than surrounding firms or choose to invest in nearby companies with stronger CSR. The same effect would exist for attracting the best labor force from the surrounding area. As a result, a firm is likely to consider the CSR policies of surrounding firms when formulating its CSR policy. Second, local managers and executives are likely to turn to peers for ideas about strategies or mimic behavior as a result of direct contact.[16] The effect of

[16]Studies suggest that social interactions with peers have tangible effects on a variety of activities such as charitable actions (Marquis et al., 2007), political contributions (Mizruchi, 1989), acquisition decisions (Haunschild, 1993), corporate borrowing (Mizruchi and Stearns, 1994), and adoption of anti-takeover provisions (Davis and Greve, 1997).

local competition and peer-effects is likely to force the CSR policies of geographically proximate firms to be similar. This suggests that the average CSR score of surrounding firms is likely to be positively correlated with a given firm's CSR score, which satisfies the relevance condition of an instrumental variable. In addition, since the USPS assigns zip codes based on mail delivery efficiency and not any firm or litigation risk factors, this instrument is unlikely to be correlated with the probability of a lawsuit, which satisfies the exclusion condition of an instrumental variable.

I construct the instrumental variable as follows. First, I compute the average CSR score of all firms in the same 3-digit zip code as the headquarters of the observation firm for each year in my sample. I exclude the score of the observation firm in the calculation of the average CSR. Next, I count the number of firms with a CSR ranking in each 3-digit zip code. In the case when a 3-digit zip code has less than ten firms, I compute an average CSR score of firms in the surrounding 2-digit zip code and substitute that as my instrument measure.

A noteworthy benefit of the 3-digit zip code measure is that it captures multiple effects. First, it captures the influence of surrounding firm CSR activities. Second, it captures the political influence on firms operating in more stakeholder oriented regions. Prior literature finds that state political orientation has an impact on CSR investment (Deng et al., 2013; Di Giuli and Kostovetsky, 2014). The argument is that in more democratic states individuals place greater value on social and environmental issues, and firms located in democratic states will engage more in CSR activities. Therefore, companies that are headquartered in democratic states have a higher probability of investing in CSR to satisfy local stakeholders. Prior studies have used state political orientation as an instrument for firm-level CSR. Although this measure should also not be correlated with firm-level litigation risk, the variability of a state's political orientation over time is limited. Using the score of surrounding firms as my instrument allows me to exploit the variation in CSR across zip codes and time.[17]

[17] I repeat my analysis using alternative instruments for CSR. First, I use two measures of state political orientation in a given year: (1) the percentage of votes that went to the democratic presidential nominee in the previous federal election in the state where the firm is headquartered, and (2) 0.5 time the percentage of senators who are Democrats plus 0.5 times the percentage of congressman who are Democrats in the state where the firm is headquartered. The results are qualitatively similar. Second, I use the proportion of charitable contributions in a given year in the state where the firm is headquartered. Due to data availability, this analysis only covers the period from 2005 to 2012. However, the results are qualitatively similar.

1.4 Empirical Results

1.4.1 Does litigation risk impact CSR?

I start by analyzing the relationship between litigation risk and CSR performance. Gande and Lewis (2009) and Field et al. (2005) find that the litigation environment affects the likelihood that a firm experiences a lawsuit. The authors show that firms operating in industries with heightened litigation activity are more likely to be sued. Gande and Lewis (2009) also find that a firm is significantly more likely to be sued if it was previously a defendant in a lawsuit. If management believes that CSR performance has an impact on litigation risk, then we should observe improvements in CSR performance measures as factors that may increase the litigation risk of a firm increase.

Table 1.5 presents regression results of the impact of litigation activity in year $t-1$ on CSR performance in year t for the entire panel of CSR rated firms. The dependent variable is a measure of CSR performance and four different variables to capture litigation risk are the key explanatory variables. I also include the control variables discussed in Subsection 1.3.4 as well as industry and year fixed effects. Columns 1 and 2 show the impact of litigation factors on the overall CSR score measure. I find that as the litigation intensity in an industry goes up, the firms in the same industry have an improvement in their overall CSR score the following year. Columns 3 through 6 show that this improvement stems from both an increase in CSR strengths and a decrease in CSR concerns, both of which are significant at the 1% level once controlling for firm- and litigation-related factors.

The coefficient for the squared term of the litigation intensity measure is statistically significant in all specifications, but zero in economic terms. The negative effect in columns 1 through 4 suggests decreasing returns to CSR investments, consistent with the agency view of CSR. Specifically, that the choice to direct resources towards CSR initiatives may be viewed negatively if shareholders suspect agency problems within the firm. In fact, Krüger (2015) finds that news of CSR investments is received negatively by the market among low-leverage and high-liquidity firms, two common measures of possible agency problems.

Looking at the impact of past litigation, as indicated by the *prior* measure, I find that firms with previous litigation have higher CSR strength scores. This is consistent with evidence from Kotchen and Moon (2012) that firms try to improve their reputation by investing more in CSR initiatives following events of wrongdoing. Overall, Table 1.5 shows that an increase in litigation

risk leads to better CSR performance. This suggests that management holds some belief that CSR performance can help reduce the risk of litigation.

1.4.2 Does CSR deter litigation?

This section examines whether firm-level CSR has an impact on the probability of a securities lawsuit filed. Hypothesis 2 states that a higher CSR score will reduce the probability of a securities lawsuit. However, the results in the previous section suggest that the litigation environment influences the CSR investment strategy of a firm. This implies that the CSR investment choice is likely related to litigation risk, which can result in a potential endogeneity problem. Specifically, if firms that have better CSR are less likely to be sued, then firms with a higher probability of a lawsuit are more likely to invest in CSR. This simultaneous relationship between litigation risk and CSR biases an ordinary least squares (OLS) framework. I address the endogeneity problem by implementing a 2SLS model as well as using a matched sample approach.

Full sample analysis

I first run my analysis for the entire panel dataset of CSR rated firms. The dependent variable, *lawsuit*, is a binary variable equal to one if a firm is named in an securities lawsuit in a given year and zero otherwise. The key independent variable is the overall CSR score. I include the litigation related factors from the analysis in Subsection 1.4.1, the controls as outlined in Subsection 1.3.4, and year and industry fixed effects. Explanatory terms are lagged one year to see how performance in year t impacts the probability of a lawsuit in year $t+1$.

Table 1.6 reports the results using the overall CSR score as the key explanatory variable. I first estimate a simple OLS regression. Column 1 shows that the coefficient estimate of CSR is negative and statistically significant at the 5% level. Next, I estimate a 2SLS model. Column 2 reports the first-stage regression results and Column 3 the second-stage regression results. In the first-stage, I use the overall CSR score as the dependent variable and the instrumental variable discussed in Subsection 1.3.6 as the key independent variable. As expected, the coefficient of the instrumental variable, average CSR score of firms in the same 3-digit zip code, is positive and statistically significant. Column 3 reports the results of the second-stage regression where the dependent variable is the binary indicator *lawsuit* and key explanatory is the predicted value of

CSR. After controlling for firm- and litigation-related factors, I find that the coefficient estimate on the predicted CSR score is negative and statistically significant at the 1% level.

Columns 4 and 6 reestimate the regressions in Columns 1 and 3 using probit. Column 4 shows that the coefficient estimate of the CSR score is negative and statistically significant at the 5% level, where a one point increase in the firm-level CSR score reduces the probability of a lawsuit filed by 0.3 percentage points. Performing the analysis using two-stage probability least squares (2SPLS), I also find that the coefficient estimate for the predicted CSR score is negative and statistically significant at the 1% level. The second stage 2SPLS indicate a stronger relationship between CSR and lawsuit probability, where a one point increase in the CSR score leads to a 6.6 percentage point decline in the probability of a securities lawsuit filed. The results in Table 1.6 point to a negative and statistically significant relationship between CSR and securities lawsuit probability.

Securities class action sample analysis

A noteworthy concern in this analysis is that the sample of firms that have never experienced a lawsuit are fundamentally different from the firms named in securities lawsuits. Firms with better ethics and a lower probability of having a lawsuit filed may also invest more resources in CSR initiatives. Even though I use 2SLS to correct for the possible bias of unobservables and reverse causality, my measures of CSR the year before the lawsuit can simply be capturing the fact that firms with better CSR are never at risk of a lawsuit. To address this concern, I reduce my analysis sample to only firms that have been named in a securities lawsuit at any time between 1996 and 2016. This means that any firm that was listed as a defendant in a class action complaint available at the SCAC database is included in the sample. I include all firm-years with available CSR data for this sample of firms. I repeat the analysis from the previous subsection on the sued sample of firms.

Table 1.7 confirms the findings from the full sample of KLD-rated firms. In all four specifications there is a statistically significant and negative relationship between CSR and lawsuit probability. In fact, the value of CSR for the sample of sued firms is greater than for all KLD-rated firms. After correcting for possible endogeneity, the results of the 2SPLS regression (Column 6) indicate that a one point increase in the CSR score reduces the probability of a securities lawsuit filed by 15.5 percentage points.

Matched sample analysis

In this subsection I provide further evidence to support my previous findings by performing the analysis using a matched sample of firms. I create two samples of matched firms. The *Match 1* sample uses propensity score matching to select control (*non-sued*) firms with a similar probability to be sued. The propensity score is the probability of a firm being in the *sued* group (firms that have had a securities lawsuit filed), given firm-specific baseline characteristics. I compute the propensity score for each firm using a logistic regression, where the dependent variable is a binary indicator equal to one if a firm was ever named in a securities lawsuit and predictors are firm-specific characteristics related to the probability of a lawsuit. Therefore, two firms with identical propensity score values can be considered to have the same propensity to be sued.

I select matching covariates based on factors that have been shown to influence a firm's propensity to be sued. These include firm size (measured by market capitalization), leverage, return-on-assets, prior stock return, stock volatility, and stock turnover. Each sued firm, in the year before the lawsuit, is matched by propensity score to a firm that has never experienced a lawsuit. I use one-to-one nearest neighbor matching, with a caliper of 0.05, and no replacement. Each sued firm is matched to its nearest neighbor with the closest propensity score that falls within a distance of 0.05. Sued firms that have no nearest neighbor within the specified caliper are excluded from the sample. All matching is done on a firm-year and industry basis. This means that for each sued firm, the pool of potential matches in the control sample only includes firms with the same two-digit SIC code within the same year. This helps ensure that we account for any industry or time related effects.

The *Match 2* sample selects control firms with a similar ex ante probability of financial fraud. I compute the Dechow et al. (2011) *F-score*, which is an estimated probit model that captures the ex ante probability of a firm committing financial fraud.[18] For each sued firm, I choose a non-sued firm with the closest absolute distance in the predicted probability within the same two-digit SIC code and calendar year. I employ a one-to-one matching method and caliper the matches to within

[18]The probability of fraud (*F-score* is computed using the following procedure. First, I compute the predicted value using the Dechow et al. (2011) estimated coefficients: $Predicted\_value = -7.893 + 0.79 \times rsst\_acc + 2.518 \times d\_rec + 1.191 \times d\_inv + 1.979 \times \%soft\_at + 0.171 \times d\_cs - 0.932 \times d\_roa + 1.029 \times issue$, where *rsst_acc* is total accruals, *d_rec* change in receivables, *d_inv* change in inventory, *d_cs* change in cash sales, *d_roa* change in return on assets, $\%soft\_at$ is percentage of soft assets, and *issue* is an indicator equal to one if a firm issues equity or debt and zero otherwise. Second, I compute the ex ante probability of financial fraud as $p(fraud) = exp(Predicted\_value)/(1 + exp(Predicted\_value))$.

two standard deviations of the average F-score. Sued firms without a match are excluded.

Table 1.8 reports results for the two matched samples of sued and non-sued firms. Column 1 shows that an increase in the CSR score reduces the probability of a securities lawsuit filed in the matched sample of firms with a similar propensity to be sued. The use of the matched sample, by design, alleviates the concern of potential unobservables but the problem of reverse causality may still exist. Columns 2 and 3 report the results from a 2SLS where I instrument CSR by the average CSR score of firms in the same 3-digit zip code. However, I make one adjustment to this instrument and include the CSR score of the given firm in my calculation of the average score. I do this for multiple reasons. First, I find that for the sample of matched firms, the original instrument that excluded a given firm from the calculation of the average firm was no longer significant. Second, because I include a minimum requirement of having at least ten firms in the calculation, after which I use the average of the 2-digit zip code, there is a lower concern that the inclusion of my firm would capture its influence on the score of its neighbors. In fact, Chintrakarn et al. (2017) find that inclusion of the actual firm in the average CSR score of neighboring firms does not bias results if the number of firms in the neighborhood sample is at least ten.

Columns 2 and 3 report the first stage and second stage of the 2SLS regression for the propensity to be sued sample. The coefficient for the instrument is positive and highly significant. Column 3 shows the results of the second stage regression using the instrumented value of CSR. Like the results of the OLS model in Column 1, overall CSR score has a negative impact on the probability of a lawsuit and the effect is statistically significant at the 10% level. Columns 4 through 6 show results for the matched sample of firms with a similar probability to commit fraud. The magnitude of the coefficients and significance is similar to the Match 1 sample. The first stage shows that the instrument is positive and statistically significant. The second stage, Column 6, shows that an increase in the firm-level CSR score has a negative and statistically significant impact on the probability of a securities lawsuit filed.

Overall, the findings in the matched sample confirm that CSR has a negative impact on the probability of a securities class action lawsuit filed. The results using the matched sample address both the potential problems of reverse causality and omitted variable bias. The findings also provide the best possible comparison of the effect of CSR on firms with a similar probability to be sued.

Components of CSR

In this subsection, I examine the various components of aggregate CSR to shed more light on which CSR policies help reduce the probability of securities litigation. First, I examine CSR strengths and concerns separately. The ability of firms to manage CSR strengths and concerns can differ. CSR strengths are more likely to by impacted by corporate efforts and managerial decisions and CSR concerns are likely to be the consequence of firm operations. For example, a firm can improve its community strength score by providing more donations, while environmental concerns are driven by existing corporate operations. Additionally, CSR strengths may generate more corporate publicity and be more valuable for building the social reputation of a firm. Consequently, if firms try to use CSR to reduce the probability of securities litigation, the reduction in probability is more likely to be manifested through an increase in CSR strengths and not a reduction in CSR concerns.

I sum adjusted strength and concern scores across the five categories of employee, diversity, environment, community, and human rights. Table 1.9 presents OLS regression results of CSR strengths and concerns on a dependent variable equal to one if a firm has a securities lawsuit filed in a given year. I use an OLS regression to ensure that I can include all possible observations. However, estimates from a probit regression produce the same findings. In both the sample of KLD covered firms and the sample of SCAC covered firms, the results show that it is the CSR strengths score that impacts the probability of a securities lawsuit files. An increase in the firm-level CSR strength score has a negative and statistically significant impact on the probability of a securities lawsuit filed. Changes in the firm-level CSR concerns score has no statistically significant impact on the probability of a securities lawsuit.

Second, I differentiate between stakeholder and third-party CSR. Godfrey et al. (2009) find that firms that actively engage in socially responsible activities targeted at secondary stakeholders suffer from a lower decline in firm value following negative legal or regulatory actions. CSR activities can target various groups. CSR activities related to employee relations and corporate diversity focus on the direct stakeholders of the company. CSR activities related to the environment and local community are directed at third party stakeholders. I classify the five categories included in my aggregate measure of CSR into two groups and construct two new CSR measures. *CSR-Stakeholder* is the sum of the aggregate diversity and employee group scores, and *CSR-ThirdParty*

is the sum of community, environment, and human rights scores. I regress these two measures on my securities class action indicator variable for two observation samples. Table 1.10 shows that it is improvements in the CSR-stakeholder measure that drives the previous results. The findings in Table 1.10 also suggest that firms that invest more in their employees possibly discourage the violation of securities laws that are likely to trigger a securities lawsuit.

1.4.3 CSR and Other Securities Class Action Related Outcomes

In this section, I investigate whether CSR has an impact on other factors related to securities litigation. First, I examine whether CSR reduces the size of the abnormal market reaction at the time of the fraud revelation and the filing of the securities class action lawsuit. Next, I test whether firms with better CSR have a higher probability of having a securities lawsuit dismissed. I use the sample of sued firms with available CSR data to investigate these relationships.

Announcement Returns

I use announcement day returns to investigate whether CSR performance can mitigate the size of the market reaction at the revelation of suspected fraud and the filing of a securities lawsuit. Figure 1.1 shows the important events in the securities litigation timeline. The majority of securities class action lawsuits are initiated after an announcement or disclosure that leads to an unexpected decline in the price of the stock. This *trigger event* raises suspicion of potential fraud and if shareholder believe that some type of intentional violation occurred they file a securities class action lawsuit. Nearly all lawsuits are either settled or dismissed. However, in the meantime other enforcement actions can be initiated by the SEC and/or DOJ.

I use traditional event study methodology (MacKinlay, 1997; Brown and Warner, 1985) to compute abnormal returns around two announcement events: trigger date and lawsuit file date. I use the market model to compute the cumulative abnormal return (CAR) for the event window $[-1, +1]$ and $[-10, +10]$ for each event date. I use the larger event window to ensure I capture the effect of CSR on the returns. I imagine that in the immediate days surrounding the news of the fraud or lawsuit the market may not price in the social performance of the firm. However, once more immediate indicators are priced, then other factors regarding the firm, such as its social responsibility image, will be included into expectations and reflected in the returns.

Figure 1.2 shows the distribution of the CARs for event windows $[-1,+1]$ and $[-10,+10]$ for the disclosure (trigger) date and the lawsuit file date. The figure shows the existence of some large outliers for both event windows and event dates. I winsorize all CAR values at the 1st and 99th percentile to eliminate the effect of outliers. I perform the analysis on both the raw and winsorized data for robustness.

Disclosure Event Date: The trigger date is essentially the disclosure of possible fraud. The size of the market reaction around the disclosure date is composed of several factors. The correction of firm value based on new financials, the expectation of litigation and its related costs, and the reputation penalty. CSR can impact two of those factors. First, if my hypothesis holds, firms with a positive CSR reputation have a lower probability of having a lawsuit filed which would be reflected in the size of the market reaction. More socially responsible firms are likely to be given the benefit of the doubt regarding whether a disclosure is intentional fraud or the result of a one-time error. Believing that an event is not fraud would reduce the expectation of the likelihood that a lawsuit would be filed. Second, the reputation penalty reflects the present value of the expected loss in future cash flows from the corporate wrongdoing. In the case of fraud, there would be an expectation of an increase in operating expenses due to an increased cost of capital or trade credit due to the higher risk premium of the firm. It is also likely to include the increased costs related to possible other regulatory scrutiny or loss in contracts from the tarnished reputation. A firm with a more positive CSR reputation is likely to suffer less from these events, which would be reflected in the size of the market reaction.

Figure 1.3 shows the distribution of disclosure event date CARs split between firms with a positive CSR score the year before the announcement and those with a CSR score of zero or less the year before the announcement. All four figures show that the CARs of firms with a positive CSR score are skewed to the right. The figures suggest that a positive CSR image is associated with a more positive market reaction to news of potential fraud.

Table 1.11 tests for statistical differences between the returns of firms with a positive CSR score the year before the announcement and those with a zero or negative CSR score. Firms with a positive CSR score at the time of the fraud announcement have a statistically significant lower loss in market value over both the $[-1,+1]$ and $[-10,+10]$ event windows. The statistical difference is significant for both the raw and winsorized CARs.

I test the impact of CSR on announcement day returns in a multivariate framework that controls for both firm, market, industry, and time effects. Table 1.12 presents estimates from multivariate regressions using either the raw or winsorized CAR as the dependent variable and various measures of CSR as the key independent variable. Columns 1 and 5 of Panel A show that the overall adjusted CSR score has a positive but not statistically significant effect on abnormal returns. However, when I break down the score between CSR strengths and concerns, I find that a one point increase in the CSR strengths score leads to a three percentage point improvement in the size of the negative market reaction over both the $[-1,+1]$ and $[-10,+10]$ event window. This effect is statistically significant at the 95% and 90% confidence level for the $[-10,+10]$ and $[-1,+1]$ event window, respectively.

I show evidence that the static CSR score has a positive relationship with the size of the negative market reaction around potential fraud disclosure events. I also investigate whether a change in the CSR score is related to the size of the market reaction. I compute the ΔCSR score as the difference between the CSR score in year t and year t-1. I find that an improvement in the overall CSR score reduces the size of the negative market reaction by four percentage points in the the 3-day event window and six percentage points in the 21-day window, with both coefficients statistically significant. The magnitude of the effect increases once I break down the CSR score between the change in CSR strengths and change in CSR concerns. A one point improvement in the CSR strengths score reduces the size of the negative market reaction by ten (five) percentage points in the 21- (3-) day event window surrounding the disclosure of possible fraud.

Panel B of Table 1.12 repeats the analysis from Panel A using winsorized CARs. I find no statistically significant effect of the overall CSR score on the $[-1,+1]$ event window returns but there is a positive and statistically significant effect of the overall CSR score on the $[-10,+10]$ event window returns once I control for outliers. A one point increase in the overall adjusted CSR score leads to a three percentage point improvement in the negative market reaction surrounding the disclosure of a possible fraud event. A breakdown of the CSR score once again confirms that the driving force behind the positive effect is improvements in the CSR strengths score. Tests using the winsorized data confirm that improvements in the overall CSR score stemming from CSR strengths leads to a larger decline in the size of the negative market reaction. The larger magnitude of the coefficients for the change in CSR variable suggests that the market has a more positive reaction towards firms that show improvement in socially responsible initiatives. This

also suggests that there is a relativity component in how the market reacts to CSR and that firms with significant improvements gain more favor. One possible explanation is that new investments in CSR initiatives gain more publicity compared to ongoing engagement. The increased publicity makes CSR more valuable at the time of the market reaction.

Lawsuit Filed Event Date: Shareholders file a securities class action lawsuit under the anti-fraud provision of the Securities Exchange Act of 1934, which prohibits the omission of material facts, dissemination of false information, or the use of any manipulative device in connections with the purchase or sale of any security. The market reaction at the time of the lawsuit filing consists of the expectation of upcoming legal costs and whether additional enforcement actions will be initiated. I compute the CARs for the $[-1,+1]$ and $[-10,+10]$ event windows around the securities lawsuit filing date.

Figure 1.4 shows the distribution of lawsuit file date CARs split between firms with a positive CSR score the year before the event date and firms with a zero or negative CSR score the year before the event date. There is no indication that a positive CSR score results is associated with a more positive market reaction to the news of a securities lawsuit filed. This is true for both the shorter and longer event day window.

Table 1.13 tests for statistical differences between firms with a positive CSR score and those with a zero or negative CSR score the year before the securities lawsuit file date. Firms with a positive CSR score have an average negative market reaction that is lower than the sample of firms with a negative CSR score. However, there is no statistically significant difference in the market reaction between the two samples of firms. There appears to be no impact of CSR on the size of the market reaction when a securities class action lawsuit is filed. I verify these results using a multivariate framework. The results are not reported because there is no impact of CSR on abnormal stock returns surrounding the announcement of a lawsuit filing. This is consistent across all measures of CSR.

Lawsuit Outcome

Lastly, I test whether CSR impacts the probability of a securities class action lawsuit dismissed. The sample of sued firms collected from the SCAC database have a case states outcomes of on-going, dismissed, or settled. I reduce my sample to firms that have an CSR score and have a case

either dismissed or settled as of September 30, 2017. This leaves me with a final sample of 456 securities lawsuits from 2005 to 2015 associated to a CSR-rated firm. Out of the 456 securities lawsuits, 200 are dismissed and 256 are settled.

Table 1.14 shows the results of a probit model where the dependent variable takes the value of one if the lawsuit is dismissed and zero if settled. After controlling for firm, time, and industry specific factors, I find that there is no statistically significant relationship between CSR and securities lawsuit outcome. Column 1 shows that there is no statistically significant impact of CSR performance the year before on the probability of a securities lawsuit dismissed. Column 2 uses an indicator that takes the value of one if the CSR score the year before is positive and zero otherwise. This also shows no statistically significant impact on a lawsuit dismissed. Column 3 uses the mean of the annual CSR score from the year of the disclosure (trigger) date to the year of the lawsuit outcome date. Column 4 uses an indicator that takes the value of one if the mean of the CSR score is positive and zero otherwise. In both cases there is no statistically significant impact of CSR on the probability of a lawsuit dismissed. Finally, column 5 uses the change in the CSR score from the year of the disclosure date to the year of the lawsuit outcome. Column 6 uses an indicator equal to one if the change is positive and zero otherwise. Once again, I find no statistically significant impact of CSR on the lawsuit outcome.

Table 1.14 suggests that there is no value to CSR once a securities lawsuit is filed. Combining these results with those relating to the market reaction when a lawsuit is filed, implies that the value of CSR is only seen prior to the filing of a securities lawsuit. Once a securities lawsuit is filed, the social performance of a firm has no effect on the costs related to the lawsuit outcome. These findings also support the argument that CSR is able to reduce the incidence of frivolous lawsuits and that in the instances where CSR reputation had value, a lawsuit was not filed.

1.5 Conclusion

This paper investigates whether firm-level investment in corporate social responsibility initiatives has an impact on securities litigation risk and related costs. I hypothesize that firms invest strategically in CSR to help reduce the probability of being named in a securities class action lawsuit. I also test whether CSR affects the costs of litigation by reducing the reputation penalty and increasing the probability of a lawsuit dismissed.

CSR investment is an endogenous firm choice and can be related to numerous factors. I show evidence that firms improve CSR image when facing increased probability of securities litigation. This suggests that firm management holds some belief that better CSR can reduce firm-level litigation risk. I use 2SLS and propensity score matching to test whether CSR impacts the probability of a lawsuit filed. I instrument the CSR score of a given firm by the average CSR score of surrounding firms in the same 3-digit zip code. I show that for the sample of all firms covered by the KLD database, a one point increase in the CSR score reduces the probability of a securities lawsuit by 6.6 percentage points. I show robust evidence of this effect for only firms that have been named in a securities lawsuit, and firms matched for their probability to commit fraud and be named in a securities lawsuit. The magnitude of the effect of CSR investment for firms at greater risk of litigation is larger, with a one point increase in the CSR score helping reduce securities litigation probability by 15.5 percentage points.

Examining the abnormal returns surrounding the announcement of fraud and the filing of a lawsuit shows additional benefits to CSR. I find that firms with better CSR scores experience a lower market penalty when fraud is revealed. This finding is suggestive of some goodwill held by shareholders towards more socially responsible firms. I find no evidence that CSR has any impact on the outcome of a lawsuit once it is filed.

The findings of this paper contribute to the strategic philanthropy literature and the risk management perspective of corporate social responsibility. I show that firms strategically invest in CSR to utilize the rewards arising from having a more socially conscious image. This image allows them to be perceived as more ethical and trustworthy. This positive image helps insure firms against sanctions by stakeholders when a negative corporate event occurs. In addition, by highlighting that CSR helps reduce the incidence of costly securities litigation, I provide evidence of an indirect relationship between investment in CSR and firm value.

Tables and Figures

Table 1.1 – Variable Definitions

CSR Variables		
CSR	=	Summation of scaled CSR scores of community, diversity, employee, environment and human rights categories.
CSR-Strength	=	Summation of scaled CSR strength scores of community, diversity, employee, environment and human rights categories.
CSR-Concern	=	Summation of scaled CSR concern scores of community, diversity, employee, environment and human rights categories.
CSR-Stakeholder	=	Summation of scaled CSR scores of diversity and employee categories.
CSR-ThirdParty	=	Summation of scaled CSR scores of community, environment and human rights categories.
ΔCSR	=	Change in CSR score computed as CSR in year t minus CSR score in year $t-1$.
ΔCSR-Strength	=	Change in CSR strength score computed as CSR_Strength in year t minus CSR_Strength score in year $t-1$.
ΔCSR-Concern	=	Change in CSR concern score computed as CSR_Concern in year t minus CSR_Concern score in year $t-1$.
Average 3-Zip CSR	=	The average CSR score of surrounding firms in the same 3 digit zip code.
Litigation Variables		
Lawsuit	=	Dummy variable equal to one if a firm had a security class action filed in a given year.
LITINT	=	Count of the number of securities lawsuits filed against firms in the same 4-digit SIC code industry in a given year.
LITINT Sq.	=	Litigation intensity squared.
Prior	=	Dummy variable equal to one if a firm had a security class action filed in the past, and 0 otherwise.
Control Variables		
SIZE	=	Logged value of market capitalization. Market capitalization is the product of stock price at fiscal year-end and shares outstanding.
Firm age	=	Summation of years from the first COMPUSTAT firm filing year.
Leverage	=	Long-term debt scaled by total assets.
ROA	=	Income before extraordinary expenses scaled by lagged total assets.
Market/Book	=	Ratio of market equity (market capitalization) to book equity.
Dividends	=	Common dividends and preferred dividends scaled by total assets.
Prior Stock Return	=	Cumulative return of stock returns over 365 day period before lawsuit filing year.
Stock Volatility	=	Standard deviation of daily returns over 365 day period before lawsuit filing year.
Stock Turnover	=	Total number of shares traded over one year period before lawsuit filing year scaled by the average number of shares outstanding.
F-Score	=	The *ex ante* probability of a firm committing financial fraud based on the model of Dechow et al. (2011).

Table 1.2 – Distribution of Sample Lawsuits Across KLD Sample

Year	Number of Sample Firms	Number of Sample Lawsuits	Lawsuit % of Sample
2005	2,054	54	2.62
2006	2,191	42	1.92
2007	2,319	64	2.76
2008	2,482	73	2.94
2009	2,569	61	2.37
2010	2,773	61	2.20
2011	2,646	52	1.97
2012	2,521	52	2.06
2013	2,149	56	2.61
2014	2,073	64	3.09
2015	1,933	48	2.48

Sample firms taken from the KLD Research & Analytics database. Sample lawsuits taken from Stanford's Securities Class Action Clearinghouse database. Sample lawsuits represent lawsuits of defendant firms covered by the KLD database.

Table 1.3 – CSR Score Descriptive Statistics

	Mean	SD	Min	P25	Median	P75	Max
CSR	-0.13	0.47	-2.73	-0.40	-0.14	0.06	3.50
CSR Strengths	0.20	0.39	0.00	0.00	0.00	0.19	4.00
CSR Concerns	0.32	0.34	0.00	0.00	0.33	0.53	3.32
Employee Relations	-0.02	0.15	-1.00	0.00	0.00	0.00	0.83
Diversity	-0.13	0.32	-1.00	-0.33	0.00	0.00	1.00
Environment	0.01	0.11	-0.71	0.00	0.00	0.00	0.83
Community	0.00	0.16	-1.00	0.00	0.00	0.00	1.00
Human Rights	0.00	0.09	-0.75	0.00	0.00	0.00	1.00

Corporate social responsibility (CSR) scores computed using data provided by the KLD database from 2005 to 2015. *CSR* is the summation of adjusted CSR scores for the employee, diversity, environment, community, and human rights categories. *CSR strengths* (*concerns*) is the summation of adjusted CSR strengths (concerns) scores for the employee, diversity, environment, community, and human rights categories. *Employee* is the adjusted strength minus concerns score of the employee category. *Diversity* is the adjusted strength minus concerns score of teh diversity category. *Environment* is the adjusted strength minus concerns score of the environment category. *Community* is the adjusted strength minus concerns score of the community category. *Human rights* is the adjusted strengths minus concerns score of the human rights category.

Table 1.4 – Descriptive Statistics

	Full Sample (N = 22,153)		Sued Firms (N = 7,093)		Non-Sued Firms (N = 15,060)		Test of Difference	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
CSR	-0.13	-0.14	-0.06	-0.07	-0.16	-0.17	0.10***	0.10***
CSR Strength	0.20	0.00	0.28	0.11	0.16	0.00	0.13***	0.11***
CSR Concern	0.32	0.33	0.34	0.33	0.31	0.33	0.03***	0.00*
LITINT	0.40	0.00	0.54	0.00	0.33	0.00	0.21***	0.00***
LITINT Sq.	1.84	0.00	2.88	0.00	1.35	0.00	1.54***	0.00***
Market Cap ($bill)	3.93	1.19	5.46	1.53	3.21	1.07	2.25***	0.46***
Totals Assets ($bill)	5.46	1.59	7.35	1.66	4.58	1.56	2.77***	0.09*
Firm Age	23.3	18.0	22.9	17.0	23.4	18.0	-0.44**	-1.00***
Leverage	0.22	0.19	0.22	0.18	0.23	0.20	-0.01***	-0.02***
Market/Book	2.76	2.02	3.01	2.20	2.65	1.94	0.36***	0.25***
ROA	0.03	0.04	0.02	0.04	0.04	0.04	-0.01***	0.00
Dividends	0.01	0.00	0.01	0.00	0.01	0.00	0.00***	0.00***
Returns	0.15	0.15	0.14	0.14	0.15	0.15	0.00	0.00
Volume	0.03	0.02	0.03	0.03	0.03	0.02	0.00***	0.00***
Turnover	5.88	0.00	7.14	0.00	5.29	0.00	1.85***	0.00***
F-Score	0.28	0.25	0.26	0.23	0.28	0.26	-0.03***	-0.03***

Table presents summary statistics for the analysis sample of KLD covered firms. Firms are divided into *sued* and *non-sued* samples. Sued firms are those that have been named in a securities class action lawsuit at any point over the period of January 1, 1996 to Decemeber 31, 2016. Non-sued firms are those that have never been named in a securities class action lawsuit over the period of January 1, 1996 to Decemeber 31, 2016. Securities class action information is taken from the Stanford's Securities Class Action Clearinghouse database. All variables are as defined in Table 1.1. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 1.5 – Impact of Litigation Intensity on Firm CSR Score

	CSR		CSR Strength		CSR Concern	
	(1)	(2)	(3)	(4)	(5)	(6)
LITINT	0.03***	0.03***	0.02**	0.02***	-0.01***	-0.01***
	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)
LITINT Sq.	-0.00***	-0.00***	-0.00*	-0.00***	0.00**	0.00**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Prior	0.15***	0.05	0.20***	0.08**	0.04	0.02
	(0.05)	(0.04)	(0.05)	(0.04)	(0.03)	(0.03)
LITINT*Prior	0.03	0.01	0.05	0.03	0.02	0.02
	(0.02)	(0.02)	(0.03)	(0.02)	(0.01)	(0.01)
Size		0.13***		0.16***		0.03***
		(0.01)		(0.01)		(0.00)
Firm age		0.00***		0.00***		0.00***
		(0.00)		(0.00)		(0.00)
Leverage		-0.02		-0.04		-0.02
		(0.03)		(0.02)		(0.02)
ROA		-0.22***		-0.25***		-0.03
		(0.05)		(0.04)		(0.04)
Market/Book		-0.00		-0.01***		-0.00*
		(0.00)		(0.00)		(0.00)
Dividends		1.78***		1.69***		-0.09
		(0.43)		(0.36)		(0.28)
Returns		-0.10***		-0.11***		-0.01
		(0.01)		(0.01)		(0.01)
Volume		0.33		2.05***		1.72***
		(0.54)		(0.40)		(0.43)
Turnover		0.00		-0.00**		-0.00***
		(0.00)		(0.00)		(0.00)
Industry & Year F.E.	✓	✓	✓	✓	✓	✓
Observations	22,153	22,153	22,153	22,153	22,153	22,153
Adjusted R^2	0.11	0.26	0.08	0.37	0.24	0.25

This table presents regression results of CSR performance measures on litigation related variables and controls. The sample includes all firm-years covered by the KLD database between 2005 and 2015. The dependent variable in Model 1 and 2 is the summation of scaled CSR scores of the community, diversity, employee, environment, and human rights categories. The dependent variable in Model 3 and 4 is the summation of scaled CSR strength scores of the community, diversity, employee, environment, and human rights categories. The dependent variable in Model 5 and 6 is the summation of scaled CSR concern scores of the community, diversity, employee, environment, and human rights categories. Remaining variables are defined in Table 1.1. All explanatory variables are lagged one year. Two-digit standard industry classification code dummies are used to control for industry fixed effects. The numbers in parentheses are standard errors adjusted for heteroskedasticity and clustered at the firm level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 1.6 – Impact of CSR on the Probability of a Securities Class Action Lawsuit Filed (Sample of all KLD-rated Firms)

	OLS	2SLS		Probit	2SPLS	
		First Stage	Second Stage		First Stage	Second Stage
	(1)	(2)	(3)	(4)	(5)	(6)
CSR	-0.00**			-0.08**		
	(0.00)			(0.04)		
				[-0.003]		
Average 3-Zip CSR		0.18***			0.18***	
		(0.05)			(0.05)	
$\widehat{CSR}$			-0.08***			-1.44***
			(0.02)			(0.39)
						[-0.066]
LITINT	0.00	0.03***	0.00	0.04	0.03***	0.05
	(0.00)	(0.01)	(0.00)	(0.03)	(0.01)	(0.04)
LITINT Sq.	-0.00	-0.00***	-0.00	-0.01*	-0.00***	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Prior	0.25***	0.07	0.27***	1.44***	0.07	1.59***
	(0.01)	(0.05)	(0.01)	(0.05)	(0.05)	(0.06)
Size	0.01***	0.14***	0.02***	0.12***	0.14***	0.29***
	(0.00)	(0.01)	(0.00)	(0.02)	(0.01)	(0.06)
Firm age	-0.00***	0.00***	0.00	-0.01***	0.00***	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Leverage	-0.00	-0.02	-0.01	-0.04	-0.02	-0.09
	(0.01)	(0.03)	(0.01)	(0.12)	(0.03)	(0.14)
ROA	0.00	-0.22***	-0.01	0.11	-0.22***	-0.12
	(0.02)	(0.05)	(0.02)	(0.25)	(0.05)	(0.29)
Market/Book	0.00***	-0.01**	0.00***	0.04***	-0.01**	0.04***
	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.01)
Dividends	-0.09	2.11***	0.09	-2.78*	2.11***	0.55
	(0.07)	(0.43)	(0.08)	(1.65)	(0.43)	(1.88)
Returns	-0.02***	-0.10***	-0.03***	-0.37***	-0.10***	-0.66***
	(0.00)	(0.01)	(0.01)	(0.07)	(0.01)	(0.09)
Volume	1.35***	0.14	1.30***	23.89***	0.14	23.15***
	(0.17)	(0.54)	(0.18)	(2.60)	(0.54)	(2.88)
Turnover	0.00***	-0.00	0.00	0.01**	-0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Industry & Year F.E.	✓	✓	✓	✓	✓	✓
Observations	22,153	22,104	18,755	21,499	22,104	18,195
Adjusted R^2/Pseudo R^2	0.10	0.26	0.11	0.20	0.26	0.21

This table presents regression results of *Lawsuit* on CSR score, litigation related variables and controls as defined in Table 1.1. The sample includes all firm-years with available financial data covered by the KLD database between 2005 and 2015. The dependent variable in Models 1, 3, 4, and 6 is an indicator variable that is equal to one if the firm had a securities class action lawsuit filed in a given year and zero otherwise. The sample of securities class action lawsuits is taken from Stanford's SCAC database. The dependent variable in Models 2 and 5 is the adjusted CSR score as defined in Table 1.1. The instrumental variable, average 3-zip CSR score, measures the average CSR score of firms in the same 3-digit zip code as the headquarters of the observation firm in a given year. All explanatory variables are lagged one year. Two-digit standard industry classification code dummies are used to control for industry fixed effects. The numbers in parentheses are standard errors adjusted for heteroskedasticity and clustered at the firm level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 1.7 – Impact of CSR on the Probability of a Securities Class Action Lawsuit Filed (Sample of Only Sued Firms)

	OLS	2SLS		Probit	2SPLS	
		First Stage	Second Stage		First Stage	Second Stage
	(1)	(2)	(3)	(4)	(5)	(6)
CSR	-0.02***			-0.12***		
	(0.00)			(0.04)		
				[-0.016]		
Average 3-Zip CSR		0.25**			0.25**	
		(0.10)			(0.10)	
$\widehat{CSR}$			-0.16***			-1.26***
			(0.04)			(0.35)
						[-0.155]
LITINT	0.00	0.01*	0.00	0.03	0.01*	0.02
	(0.00)	(0.01)	(0.00)	(0.03)	(0.01)	(0.04)
LITINT Sq.	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Prior	0.22***	0.01	0.24***	1.08***	0.01	1.15***
	(0.01)	(0.04)	(0.01)	(0.05)	(0.04)	(0.06)
Size	0.01**	0.15***	0.03***	0.05**	0.15***	0.21***
	(0.00)	(0.01)	(0.01)	(0.02)	(0.01)	(0.06)
Firm age	-0.00***	0.00***	0.00	-0.01***	0.00***	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Leverage	-0.01	0.03	-0.01	-0.06	0.03	-0.06
	(0.02)	(0.05)	(0.02)	(0.12)	(0.05)	(0.14)
ROA	0.06*	-0.19**	0.03	0.42*	-0.19**	0.22
	(0.03)	(0.08)	(0.04)	(0.25)	(0.08)	(0.29)
Market/Book	0.01***	-0.01**	0.00***	0.04***	-0.01**	0.04***
	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.01)
Dividends	0.04	3.93***	0.61**	0.07	3.93***	4.63**
	(0.21)	(0.94)	(0.26)	(1.72)	(0.94)	(2.15)
Returns	-0.05***	-0.13***	-0.09***	-0.37***	-0.13***	-0.66***
	(0.01)	(0.02)	(0.01)	(0.08)	(0.02)	(0.10)
Volume	2.30***	-0.27	2.02***	15.82***	-0.27	14.09***
	(0.43)	(0.96)	(0.45)	(2.87)	(0.96)	(3.17)
Turnover	0.00	-0.00*	-0.00	0.00	-0.00*	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Industry & Year F.E.	✓	✓	✓	✓	✓	✓
Observations	7,093	7,085	6,040	7,070	7,085	6,024
Adjusted R^2/Pseudo R^2	0.07	0.31	0.08	0.12	0.31	0.13

This table presents regression results of *Lawsuit* on CSR score, litigation related variables and controls as defined in Table 1.1. The sample includes only firms that have been named in a securities class action lawsuit between 1996 and 2016 and are covered by the KLD database. The dependent variable in Models 1, 3, 4, and 6 is an indicator variable that is equal to one if the firm had a securities class action lawsuit filed in a given year and zero otherwise. Sample of securities class action lawsuits is gathered from Stanford's SCAC database. The dependent variable in Models 2 and 5 is the adjusted CSR score as defined in Table 1.1. The instrumental variable, average 3-zip CSR score, measures the average CSR score of firms in the same 3-digit zip code as the headquarters of the observation firm in a given year. All explanatory variables are lagged one year. Two-digit standard industry classification code dummies are used to control for industry fixed effects. The numbers in parentheses are standard errors adjusted for heteroskedasticity and clustered at the firm level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 1.8 – Impact of CSR on the Probability of a Securities Class Action Lawsuit Filed (Matched Sample)

	Match 1			Match 2		
	OLS	2SLS		OLS	2SLS	
		First Stage	Second Stage		First Stage	Second Stage
	(1)	(2)	(3)	(4)	(5)	(6)
CSR	-0.05**			-0.06*		
	(0.03)			(0.03)		
Average 3-Zip CSR		0.61***			0.63***	
		(0.07)			(0.07)	
$\widehat{CSR}$			-0.26*			-0.26**
			(0.13)			(0.12)
LITINT	0.00	0.03**	0.01	0.02*	0.00	0.02*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)
LITINT Sq.	-0.00*	-0.00	-0.00**	-0.00**	0.00	-0.00**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Prior	0.57***	0.03	0.59***	0.57***	0.03	0.58***
	(0.03)	(0.05)	(0.03)	(0.03)	(0.05)	(0.03)
Size	0.09***	0.13***	0.13***	0.09***	0.13***	0.13***
	(0.01)	(0.02)	(0.03)	(0.02)	(0.02)	(0.03)
Firm age	-0.00***	0.00	-0.00***	-0.00**	0.00	-0.00**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Leverage	0.05	-0.02	0.03	0.03	-0.05	0.01
	(0.10)	(0.07)	(0.11)	(0.09)	(0.08)	(0.10)
ROA	0.02	-0.17	-0.02	-0.08	-0.03	-0.09
	(0.12)	(0.11)	(0.14)	(0.15)	(0.11)	(0.16)
Market/Book	0.00	-0.01	0.00	0.00	-0.01	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Dividends	0.11	2.73**	0.74	-0.17	2.83***	0.40
	(1.49)	(1.04)	(1.48)	(1.14)	(1.05)	(1.12)
Returns	-0.18***	-0.11***	-0.20***	-0.17***	-0.11***	-0.20***
	(0.03)	(0.02)	(0.03)	(0.04)	(0.03)	(0.04)
Volume	10.55***	-0.31	10.69***	11.66***	0.70	11.90***
	(2.06)	(1.99)	(2.15)	(2.02)	(1.83)	(2.07)
Turnover	0.00	-0.00	0.00	0.00	-0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Industry & Year F.E.	✓	✓	✓	✓	✓	✓
Observations	994	994	994	986	986	986
Adjusted R^2	0.24	0.32	0.25	0.25	0.34	0.25

This table presents regression results of *Lawsuit* on CSR score, litigation related variables and controls as defined in Table 1.1. The dependent variable in Models 1, 3, 4, and 6 is an indicator variable that is equal to one if the firm had a securities class action lawsuit filed in a given year and zero otherwise. Sample of securities class action lawsuits taken from Stanford's SCAC database. The dependent variable in Models 2 and 5 is the adjusted CSR score as defined in Table 1.1. The instrumental variable, average 3-zip CSR score, measures the average CSR score of firms in the same 3-digit zip code as the headquarters of the observation firm in a given year. All explanatory variables are lagged one year. Two-digit standard industry classification code dummies are used to control for industry fixed effects. The numbers in parentheses are standard errors adjusted for heteroskedasticity and clustered at the two-digit SIC code level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 1.9 – Components of CSR and the Probability of a Securities Class Action Lawsuit Filed

	Full KLD Sample			Only Sued Firms		
	(1)	(2)	(3)	(4)	(5)	(6)
CSR Strengths	-0.01***		-0.01***	-0.03***		-0.03***
	(0.00)		(0.00)	(0.01)		(0.01)
CSR Concerns		-0.00	-0.00		-0.00	-0.00
		(0.00)	(0.00)		(0.01)	(0.01)
LITINT	0.00	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
LITINT Sq.	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Prior	0.25***	0.25***	0.25***	0.23***	0.22***	0.23***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Controls	✓	✓	✓	✓	✓	✓
Industry & Year F.E.	✓	✓	✓	✓	✓	✓
Observations	22,153	22,153	22,153	7,104	7,104	7,104
Adjusted R^2	0.10	0.10	0.10	0.08	0.08	0.08

This table presents OLS regression results of *Lawsuit* on CSR score split by strengths and concerns measures, litigation related variables and controls as defined in Table 1.1. Columns 1, 2 and 3 include regression results for the full sample of KLD-rated firms. Columns 4, 5, and 6 include regression results only for the sample of firms that have been named in a federal securities class action lawsuit at any point between 1996 and 2016. The dependent variable is equal to one if the firm had a securities class action lawsuit filed in a given year and zero otherwise. Controls variables include: firm size, firm age, leverage, ROA, market-to-book ratio, dividends, returns, volume and turnover. Sample of securities class action lawsuits taken from Stanford's SCAC database. All explanatory variables are lagged one year. Two-digit standard industry classification code dummies are used to control for industry fixed effects. The numbers in parentheses are standard errors adjusted for heteroskedasticity and clustered at the firm level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 1.10 – Components of CSR and the Probability of a Securities Class Action Lawsuit Filed

	Full KLD Sample			Only Sued Firms		
	(1)	(2)	(3)	(4)	(5)	(6)
CSR-Stakeholder	-0.01**		-0.01*	-0.02***		-0.02***
	(0.00)		(0.00)	(0.01)		(0.01)
CSR-ThirdParty		-0.01	-0.00		-0.02*	-0.01
		(0.00)	(0.00)		(0.01)	(0.01)
LITINT	0.00	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
LITINT Sq.	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Prior	0.25***	0.25***	0.25***	0.22***	0.22***	0.22***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Controls	✓	✓	✓	✓	✓	✓
Industry & Year F.E.	✓	✓	✓	✓	✓	✓
Observations	22,153	22,153	22,153	7,104	7,104	7,104
Adjusted R^2	0.10	0.10	0.10	0.08	0.08	0.08

This table presents OLS regression results of *Lawsuit* on CSR score split by stakeholder oriented CSR and third party oriented CSR, litigation related variables and controls as defined in Table 1.1. *CSR-Stakeholder* is the summation of the adjusted CSR score for the employee relations and diversity categories. *CSR-ThirdParty* is the summation of the adjusted CSR score for the environment, community and human rights categores. Columns 1, 2 and 3 include regression results for the full sample of KLD-rated firms. Columns 4, 5, and 6 include regression results only for the sample of firms that have been named in a federal securities class action lawsuit at any point between 1996 and 2016. The dependent variable is equal to one if the firm had a securities class action lawsuit filed in a given year and zero otherwise. Controls variables include: firm size, firm age, leverage, ROA, market-to-book ratio, dividends, returns, volume and turnover. Sample of securities class action lawsuits taken from Stanford's SCAC database. All explanatory variables are lagged one year. Two-digit standard industry classification code dummies are used to control for industry fixed effects. The numbers in parentheses are standard errors adjusted for heteroskedasticity and clustered at the firm level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Figure 1.1 – Securities Class Action Lawsuit Timeline

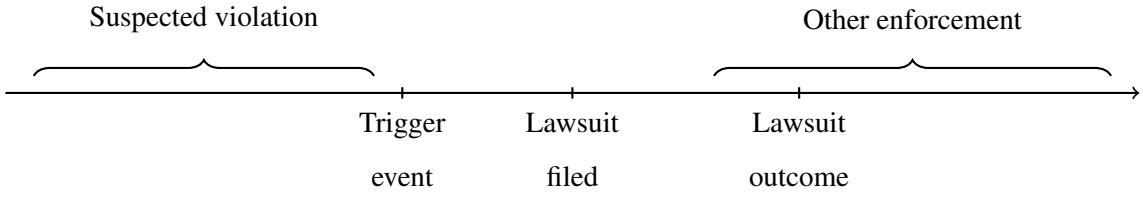

Figure 1.2 – Announcement Event Cumulative Abnormal Returns

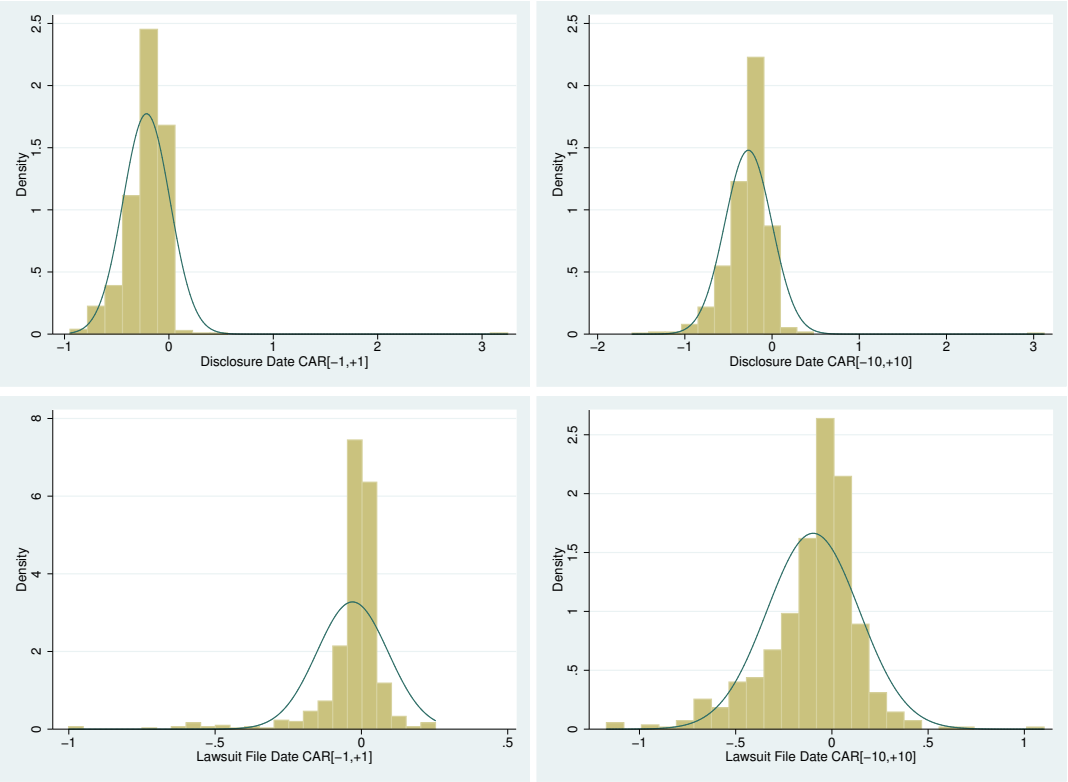

Figure 1.3 – Distribution of Disclosure Event Day Cumulative Abnormal Returns

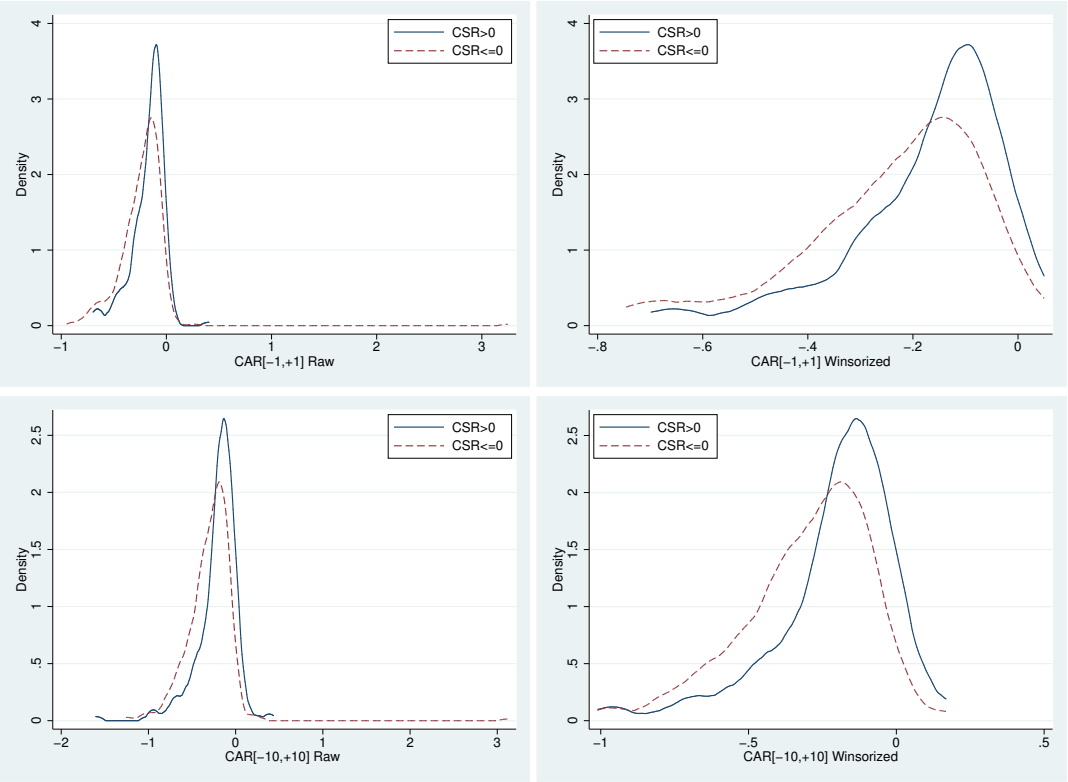

Table 1.11 – Disclosure Event Day Cumulative Abnormal Returns

	Full Sample (N = 604)		$CSR > 0$ (N =181)		$CSR <= 0$ (N = 423)		Test of Difference	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
				Panel A: Raw				
CAR $[-1,+1]$	-0.21	-0.17	-0.17	-0.13	-0.23	-0.20	-0.06***	-0.07***
CAR $[-10,+10]$	-0.27	-0.23	-0.21	-0.16	-0.30	-0.27	-0.09***	-0.10***
				Panel B: Winsorized				
CAR $[-1,+1]$	-0.22	-0.17	-0.17	-0.13	-0.24	-0.20	-0.07***	-0.07***
CAR $[-10,+10]$	-0.28	-0.23	-0.21	-0.16	-0.30	-0.27	-0.10***	-0.10***

Table presents univariate comparison of the cumulative abnormal returns of sued firms for the event windows $[-1,+1]$ and $[-10,+10]$ days surrounding the disclosure of possible fraud. *Panel A* shows results for the raw CARs and *Panel B* shows results for CARs winsorized at the 1st and 99th percentile. The sample consists of firms that have experienced a securities class action lawsuit between 2005 and 2015 and are covered by the KLD database. Samples are split between firms with a positive CSR score the year prior to the event date and a CSR score that was either zero or negative. CARs are estimated using a one factor market model. Market model parameters are estimated using 250 trading days of return data ending 30 days before the event date. The CRSP value-weighted return is used as a proxy for the market return. Disclosure of fraud dates gathered using securities class action lawsuit complaint documents obtained from Stanford's SCAC database. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 1.12 – CSR and Disclosure Event Day Returns

	CAR $[-1,+1]$				CAR $[-10,+10]$			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Raw CAR								
CSR	0.02				0.02			
	(0.01)				(0.01)			
CSR Strengths		0.03*				0.03**		
		(0.01)				(0.01)		
CSR Concerns		-0.00				-0.00		
		(0.02)				(0.02)		
ΔCSR			0.04*				0.06***	
			(0.02)				(0.02)	
ΔCSR Strengths				0.05*				0.10***
				(0.03)				(0.03)
ΔCSR Concern				-0.03				-0.03
				(0.03)				(0.03)
Controls	✓	✓	✓	✓	✓	✓	✓	✓
Industry & Year FE	✓	✓	✓	✓	✓	✓	✓	✓
Observations	522	522	522	522	522	522	522	522
Adjusted R^2	0.22	0.22	0.22	0.22	0.20	0.20	0.20	0.21
Panel B: Winsorized CAR								
CSR	0.02				0.03**			
	(0.01)				(0.01)			
CSR Strengths		0.03*				0.04***		
		(0.01)				(0.01)		
CSR Concerns		-0.00				-0.01		
		(0.01)				(0.02)		
ΔCSR			0.04*				0.06***	
			(0.02)				(0.02)	
ΔCSR Strengths				0.05*				0.09***
				(0.03)				(0.03)
ΔCSR Concern				-0.03				-0.03
				(0.03)				(0.03)
Controls	✓	✓	✓	✓	✓	✓	✓	✓
Industry & Year FE	✓	✓	✓	✓	✓	✓	✓	✓
Observations	522	522	522	522	522	522	522	522
Adjusted R^2	0.24	0.24	0.24	0.24	0.22	0.22	0.22	0.22

This table presents OLS regression results where the dependant variable is either the CAR $[-1,+1]$ or CAR $[-10,+10]$ surrounding the disclosure of possible fraud event date. *Panel A* shows results for the raw CARs and *Panel B* shows results for CARs winsorized at the 1st and 99th percentile. The sample consists of firms that have experienced a securities class action lawsuit between 2005 and 2015 and are covered by the KLD database. CSR measures are as defined in Table 1.1. CARs are estimated using a one factor market model. Market model parameters are estimated using 250 trading days of return data ending 30 days before the fraud disclosure. The CRSP value-weighted return is used as a proxy for the market return. The disclosure of fraud event dates are gathered using securities class action lawsuit complaint documents obtained from the Stanford Class Action Clearinghouse database. Control variables include: LITINT, LITINT Sq., prior, leverage, firm size, ROA, M/B, dividends, prior stock return, stock volume, and stock turnover. All controls are lagged one year and defined in Table 1.1. Two-digit standard industry classification code dummies are used to control for industry fixed effects. The numbers in parentheses are standard errors adjusted for heteroskedasticity and clustered at the two-digit SIC code level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Figure 1.4 – Distribution of Lawsuit Filed Event Day Cumulative Abnormal Returns

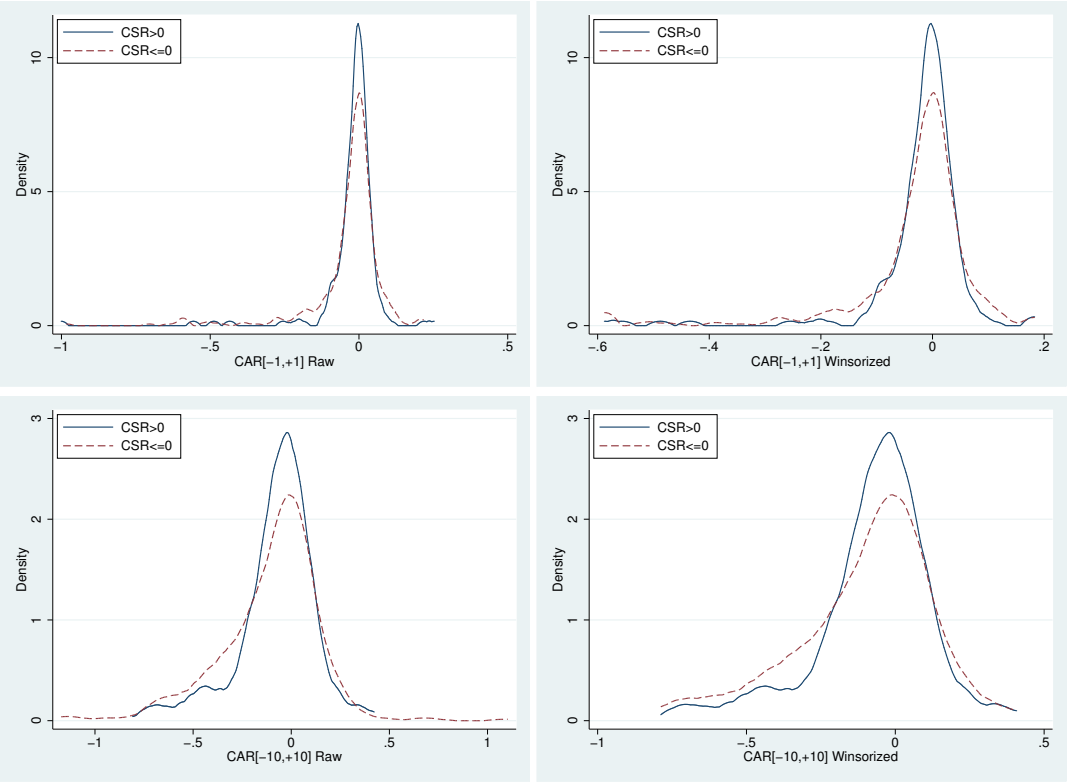

Table 1.13 – Lawsuit Filed Event Day Cumulative Abnormal Returns

	Full Sample (N = 604)		$CSR > 0$ (N =187)		$CSR <= 0$ (N = 417)		Test of Difference	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
				Panel A: Raw				
CAR $[-1,+1]$	-0.03	-0.01	-0.02	-0.01	-0.03	-0.01	-0.01	0.00
CAR $[-10,+10]$	-0.10	-0.06	-0.08	-0.05	-0.11	-0.06	-0.03	-0.01
				Panel B: Winsorized				
CAR $[-1,+1]$	-0.03	-0.01	-0.02	-0.01	-0.03	-0.01	-0.01	0.00
CAR $[-10,+10]$	-0.10	-0.06	-0.08	-0.05	-0.11	-0.06	-0.03	-0.01

Table presents univariate comparison of the cumulative abnormal returns of sued firms for the event windows $[-1,+1]$ and $[-10,+10]$ days surrounding the filing of a securities class action lawsuit. *Panel A* shows results for the raw CARs and *Panel B* shows results for CARs winsorized at the 1st and 99th percentile. The sample consists of firms that have experienced a securities class action lawsuit between 2005 and 2015 and are covered by the KLD database. Samples are split between firms with a positive CSR score the year prior to the event date and a CSR score that was either zero or negative. CARs are estimated using a one factor market model. Market model parameters are estimated using 250 trading days of return data ending 30 days before the event date. The CRSP value-weighted return is used as a proxy for the market return. Lawsuit file dates gathered using securities class action lawsuit complaint documents obtained from Stanford's SCAC database. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 1.14 – CSR and Securities Class Action Lawsuit Outcome

	(1)	(2)	(3)	(4)	(5)	(6)
CSR	-0.01					
	(0.16)					
CSR > 0		0.07				
		(0.12)				
CSR-Average			0.07			
			(0.27)			
CSR-Average > 0				0.23		
				(0.22)		
ΔCSR					0.15	
					(0.22)	
ΔCSR > 0						0.10
						(0.13)
Controls	✓	✓	✓	✓	✓	✓
Industry & Year F.E.	✓	✓	✓	✓	✓	✓
Observations	456	456	456	456	456	456
Pseudo R^2	0.11	0.11	0.11	0.11	0.12	0.11

Table presents the results of a probit regression where the dependent variable is an indicator equal to one if a firm had a securities class action lawsuit dismissed and zero if the case was settled. The sample consists of firms that experienced a securities class action lawsuit between 2005 and 2015, had the lawsuit either dismissed or settled as of September 20, 2017, and are covered by the KLD database. Data on case outcomes taken from Stanford's SCAC database. *CSR* is the firm-level CSR score as defined in Table 1.1. *CSR* > 0 is an indicator variable equal to one if *CSR* is positive and zero otherwise. *CSR-Average* is the average firm-level CSR score from when the disclosure of fraud occured until the lawsuit was either settled of dismissed. *CSR-Average* > 0 is an indicator equal to one if *CSR-Average* is positive and zero otherwise. Δ*CSR* is the change in firm-level CSR score from when the disclosure of fraud occured until the lawsuit was either settled of dismissed. Δ*CSR* > 0 is an indicator equal to one if Δ*CSR* is positive and zero otherwise. Control variables include: LITINT, LITINT Sq., prior, leverage, firm size, ROA, M/B, dividends, prior stock return, stock volume, and stock turnover. All controls are lagged one year and defined in Table 1.1. Two-digit standard industry classification code dummies are used to control for industry fixed effects. The numbers in parentheses are standard errors adjusted for heteroskedasticity and clustered at the two-digit SIC code level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

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Chapter 2

Securities Class Actions and Informed Trading in the Options Market

Co-authored with Gunnar Grass[1]

Abstract

We document suspicious trading activity (STA) in the options market ahead of revelations of fraud that trigger a securities class action filing. Using a battery of informed trading measures we document robust evidence of the existence of STA before fraud revelation events. We apply two propensity score matching techniques to build a control sample of firms with the same probability to have a fraud revealed. The results show that STA is higher among fraud firms than the matched control samples. Our results are consistent with the view that fraudulent activity inside a firm increases the likelihood of illegal trading activity by insiders.

JEL classification: G12, G14, K22, K42
Keywords: Securities class action lawsuits, informed trading, equity options, corporate fraud

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2.1 Introduction

The revelation of suspected corporate fraud is typically associated with a significantly negative stock market reaction. Private knowledge of an upcoming negative shock provides an opportunity for an informed investor to capitalize on this information. Existing literature documents increased insider sales among firms that experience an abnormally large negative market reaction to the revelation of potential fraud (Thevenot, 2012; Agrawal and Cooper, 2015). Theoretical literature argues that informed traders prefer the options market over the stock market due to its higher leverage, liquidity, and the ability to "hide" trades (Easley et al., 1998). Additionally, Easley et al. (1998) and Johnson and So (2012) suggest that the options market is a more attractive venue for investors with information on negative news. A recent stream of studies demonstrate the existence of informed trading in the options market ahead of various corporate events (Roll et al., 2010; Jin et al., 2012; Chan et al., 2015; Augustin et al., 2015b; Lin and Lu, 2015). Our paper contributes to this literature by being the first to investigate if there is informed trading in the options market prior to the revelation of corporate fraud.

Fraud revelation events present an interesting observation sample because by definition they represent a shock to the market and should be unexpected by investors. The stock price prior to these events is unlikely to incorporate information regarding the upcoming revelation because it incorporates the fraudulent/misleading information that has been issued by firm management. Empirical studies demonstrate the ability of informed options trading measures to predict stock returns and signal the presence of informed investors. Pan and Poteshman (2006) show that the put to call trading volume ratio can negatively predict future stock returns. Roll et al. (2010) show that there is a positive relationship between the options to stock volume ratio (O/S) and absolute abnormal returns following an earnings announcement. Johnson and So (2012) show a negative relationship between O/S and negative returns when short sale costs in equity markets are high. Additionally, option measures based on implied volatility, the Cremers and Weinbaum (2010) implied volatility spread and the Xing et al. (2010) implied volatility skew, are shown to predict stock returns. We use these four measure to investigate whether there is suspicious trading activity in the options market ahead of our sample of fraud revelation events.

In accordance with prior literature, we define the revelation of fraud as the event that triggers a securities class action (SCA) lawsuit (Dyck et al., 2010, 2013). The typical circumstances sur-

rounding an SCA lawsuit are as follows. A firm releases unexpected negative information, such as disappointing earnings or an upcoming restatement, and the stock price drops. Shareholders file an SCA lawsuit if there is evidence to suggest that management had the negative information long before it was released, thus violating U.S. securities laws by failing to disclose the information for a period of time called the "class period." Dyck et al. (2010) argue that the security class action system provides strong incentives for attorneys and shareholders to file a lawsuit whenever suspected fraud is revealed making it highly unlikely that a corporate fraud emerges without a subsequent SCA filed. Therefore, the negative information release is our revelation of fraud event because we know *ex post* that it triggered a securities lawsuit.[2]

We hypothesize that there is suspicious trading activity in the options market ahead of news events that trigger an SCA lawsuit. We construct our sample of fraud events from all federally filed securities class action lawsuits listed on the Stanford Securities Class Action Clearinghouse (SCAC) database. We test our hypothesis using options data from the OptionMetrics (OM) database. Our results show that there is suspicious trading activity in the options market prior to revelations of fraud. We find that the put-to-options ratio, options-to-stock volume ratio, and and implied volatility skew have a statistically significant ability to predict upcoming fraud disclosure events in the aggregate cross-section of stocks. We support these findings by testing various subsamples designed to minimize the differences between fraud and non-fraud events. Matching firms on Campbell et al. (2008) distress risk measures, which could influence the options positions investors take and forecast possible fraud, we confirm the existence of suspicious trading activity prior to fraud revelation events using the four informed trading measures. These findings are particularly pronounced for the subsample of matched firms where the fraud is revealed outside a scheduled earnings announcement. This provides further validity that the observed trading is less likely to be speculative and more likely to be informed.

The remainder of this paper is organized as follows. Section 2.2 reviews prior literature and develops our hypotheses. Section 2.3 outlines our data sources, sample selection and details the

[2]It is important to note that this sample of events is more correctly defined as the revelation of *alleged* fraud and even cases that are settled are not definitive indicators of fraud. SCAs that are not dismissed are almost always settled (do not reach a court verdict) because directors and officers' insurance does not pay out if the firm is found guilty of securities fraud. Therefore, to protect executives from personal liability, SCAs settle before reaching a court verdict and settlements typically involve no admission of wrongdoing. Nevertheless, SCAs provide a good sample of corporate misconduct events and include most violations that are later pursued by regulatory bodies such as the Securities and Exchange Commission (SEC) and Department of Justice (DOJ) (Karpoff et al., 2014).

informed trading measures. Section 2.4 and 2.5 present our analysis and results. Section 2.6 concludes.

2.2 Prior Literature and Hypotheses

2.2.1 Securities Class Actions and Firm Value

Securities class action (SCA) lawsuits are brought by shareholders against the corporation, its officers and directors, and others on behalf of a group of investors who suffered an economic loss in a security as the result of fraudulent stock manipulation or other violations of securities laws by the issuer (Ryan and Simmons, 2013). The lawsuits typically involve a plaintiff or a group of plaintiffs that allege the company caused its securities to become overpriced by way of malicious deception or fraud through either the failure to disclose material information or the distribution of misleading or false information to investors. Most securities lawsuits are filed under the anti-fraud provision of the Securities Exchange Act of 1934 (Section 10(b) and Rule 10b-5), which prohibits the omission of material facts, dissemination of false information, or the use of any manipulative device in connections with the purchase or sale of any security (Alexander, 1991). The Appendix outlines in more detail under what claims securities class action lawsuits are filed.

SCAs arise after the market discovers that firm management misled investors through misrepresentation, concealment or nondisclosure of pertinent information that would alter the price of the stock. The discovery of such information results in a substantial decline in firm value. Shortly thereafter, a securities lawsuit is filed alleging that management had the negative information long before it was released and therefore committed fraud and misled investors for a period of time called the "class period." As a result, investors who purchased shares during the class period, when the stock price did not reflect the negative information, and held the shares until the fraud was revealed suffered losses and are eligible for compensation. On average, about one-third of securities class action lawsuits are dismissed and two-thirds are settled with class members granted relief in the form of financial recovery through a monetary settlement (Bajaj et al., 2002; Ryan and Simmons, 2013).

The revelation of corporate fraud and subsequent litigation process has a substantial adverse valuation effect for the firm. Gande and Lewis (2009) and Griffin et al. (2004) find that firms

lose nearly five percent of their market value following the announcement of a securities lawsuit filing. Karpoff et al. (2008) find significantly negative valuation effects at all stages of the fraud disclosure and litigation process. The authors show that the disclosure of fraud leads to an average one-day abnormal return of -25.24 percent, and the filing of a securities lawsuit results in average abnormal returns of -7 percent. Announcements of formal investigations, either by the SEC or DOJ, are associated with abnormal returns averaging -14.4 percent. Cumulatively, Karpoff et al. (2008) estimate an average valuation effect of -41 percent for firms revealed for financial fraud that triggers legal action. The expectation of such value losses, makes these events susceptible to insiders who may have the incentive to trade on their proprietary knowledge in order to avoid the potential losses following the revelation.

2.2.2 Insider Trading Around Corporate Fraud Events

As previously stated, SCA related fraud involves the misrepresentation, concealment or non-disclosure of value relevant information that allows the stock of the suspect company to trade at an artificially inflated price. Discussing the motivation for why management chooses to engage in such behavior is beyond the scope of this paper; however, existing literature has demonstrated that this type of conduct allows for insiders to profit from the proprietary knowledge of such a scheme. In fact, approximately 15 percent of the SCAs filed each year allege some form of insider trading during the class period. The allegation of insider trading is not surprising if insiders recognize the seriousness of the manipulation and expect the eventual revelation of the fraud to result in a strongly negative stock price reaction.

There is no literature that has directly investigated the prevalence of insider trading among firms subject to SCAs. However, there is evidence of insider trading surrounding violations that trigger SCAs. Typical allegations in SCA cases allege misrepresentations in financial documents, false forward-looking statements, GAAP violations, announced restatements, and internal control weaknesses. Johnson et al. (2009) find that top executives sell more stock and exercise more options during the fraud period at firms subject to enforcement actions for accounting fraud. Agrawal and Cooper (2015) find that there are twice as many top managers selling stock during periods of financial misstatement among firms issuing earnings restatements. This pattern of trading is pronounced for more egregious offenses where restatements lead to negative restated earnings, require

the correction of more misstated quarters, and result in a larger stock-price decline following the announcement. Thevenot (2012) shows, using a sample of 224 GAAP violators, that illegal insider trading increases with the expectation of a negative market reaction to the revelation and decreases with the perceived risk of class action litigation and SEC enforcement. In fact, Chen et al. (2013) suggest that insiders avoid selling in the equities market prior to the announcement of negative news due to increased litigation risk. Similarly, Beneish et al. (2012) find evidence that insiders prefer to avoid selling stock before the announcement of bad news. The literature also suggests that management may even engage in earnings management in order to delay the discloser and give cover for the sales (Agrawal and Cooper, 2015). Overall, the existing literature, which has primarily focused on the equities market, shows that firms engaged in fraudulent activity not only commit the crime of misleading investors but also suffer from the illegal activity of insiders attempting to profit from the fraud. Our study contributes to this stream of research by showing that fraudulent firms suffer from informed trading in the options market and that these firms are more prone to this activity compared to a matched sample.

2.2.3 Informed Trading in the Options Market

A new stream of literature documents the presence of informed trading activity in the options market ahead of important events. Roll et al. (2010), Jin et al. (2012), and Cremers et al. (2015) document informed trading activity ahead of earnings announcements. Cao et al. (2005), Chan et al. (2015), and Augustin et al. (2015b) show the presence of informed traders ahead of merger and acquisition (M&A) announcements. Using various types of analyst announcement events, Lin and Lu (2015), Kadan et al. (2014), and Hayunga and Lung (2014) find unique behavior in the options market suggestive of informed trading. Informed trading has also been documented ahead of bankruptcy filings (Ge et al., 2016), the announcement of corporate spin-offs (Augustin et al., 2015a), and macroeconomic news dissemination (Bernile et al., 2016). Additionally, Cremers et al. (2015) and Augustin et al. (2016) not only show the presence of informed trading prior to various news releases but also provide evidence of how informed investor trading strategies vary based on the characteristics of the upcoming event.

Four key informed trading measures have been popularized in the existing literature for their ability to forecast events and future returns. Pan and Poteshman (2006) use the signed *put-to-*

options volume ratio to show that options trading volume contains information regarding future stock returns. Cremers et al. (2015) confirm the predictive power of the put-call ratio for their sample of news events. Roll et al. (2010) compute the ratio of total *options volume to stock volume (O/S)* and show that it significantly increases in the days before an earnings announcement. The authors also find that post-announcement absolute returns are positively related to pre-announcement O/S and can predict absolute returns around earnings announcements, which is suggestive of pre-announcement informed trading in the options market. Johnson and So (2012) also find that the O/S ratio can predict future stock returns and that the relationship between O/S and future returns is negative. The authors argue that this negative relationship results from informed investors' preference for purchasing put options over short selling stocks when they are knowledgeable of an upcoming negative event. Ge et al. (2016) show that the O/S ratio is significantly related to bankruptcy filing returns.

Cremers and Weinbaum (2010) and Xing et al. (2010) show that deviations from put-call parity (*implied volatility spread*) and the volatility smirk (*implied volatility skew*) are informative about future stock returns. Chan et al. (2015) show that the implied volatility spread and implied volatility skew have significant predictive power of announcement returns to acquirers in M&As. Lin and Lu (2015) confirm the informativeness of volatility spread and skew about future returns for a sample of cases examining analyst-related events. Jin et al. (2012) also show that the volatility spread and skew predict short-term returns surrounding earnings announcements and other scheduled corporate events.

2.2.4 Hypotheses Development

There is numerous evidence to suggest why we can expect to find informed trading in the options market prior to fraud revelation events. The management of firms subject to securities litigation demonstrates its willingness to deceive investors. The literature shows that insider trading exists in the equities market among firms with various securities class action related offenses. It even shows that management may strategically manipulate earnings and disclosure to create opportunities for insider trading profits. If we assume that the management of SCA related firms is ethically more corrupt, it is natural to suspect that they would be willing to profit from their proprietary knowledge

by trading in the options market prior to negative news events.[3]

The occurrence of fraud can be considered an indicator of the weak governance mechanisms within the firm. The weak internal controls can be a source of information leakage that allows outside investors to engage in informed trading. For example, if the corporate misconduct is realized by lower ranking employees, their frustration over the deceit and future state of the firm can lead to the leakage of negative information and the decision to profit or hedge against the upcoming firm value decline.

Considering that there is evidence of informed trading for samples of firms that are not noted for illegal behavior, it is natural to suspect that firm management cited for misconduct that deceives shareholders may also be engaged in informed trading. Johnson and So (2012) show that short sale costs will entice investors who are informed with negative information to migrate to the options market and the revelation of fraud is usually associated with a negative market reaction. Therefore, the existing evidence suggests that the options market would be an attractive destination for an informed investor with negative private information on an upcoming event and leads us to our primary hypothesis:

Hypothesis 1: *There is suspicious trading activity in the options market ahead of fraud revelations that trigger a securities class action filing.*

Pan and Poteshman (2006) and Cremers et al. (2015) use signed option volume data to show that the put-to-options volume ratio predicts future stock returns. If investors expect the price of a given firm to decline, we should observe and increase in buyer initiated put trades. Assuming the demand for call options remains constant, informed traders acting on private negative information would cause the put-to-options ratio to increase. Therefore, we hypothesize:

Hypothesis 2: *The put-to-options volume ratio increases ahead of fraud revelations that trigger a securities class action filing.*

[3]This paper does not provide evidence regarding who are the specific agents that trade in the options market prior to fraud revelation events. We only provide evidence that there is suspicious trading activity in the options market prior to these events that is indicative of informed trading. We cannot state who are these informed traders and how they are related to the firm, but can only hypothesize that the private information regarding the upcoming disclosure or the ongoing fraudulent activity was being used by those with first hand knowledge or those to whom this information was leaked. This does not necessarily mean that it is specifically the management trading on this information, and can include outside individuals.

Roll et al. (2010) examine the informativeness of the relative trading total options volume to total stock volume (O/S). A higher O/S ratio indicates higher options trading relative to stock trading and is suggestive of informed trading. Johnson and So (2012) show that there is a negative relationship between the O/S ratio and stock returns. The authors argue that this relationship is driven by short-sale costs in equity markets, making the options market more favorable for informed traders with negative news. Since we know that fraud revelations are associated with negative returns, we predict that:

Hypothesis 3: *The option-to-stock volume increases ahead of fraud revelations that trigger a securities class action filing.*

Cremers and Weinbaum (2010) find that the implied volatility (IV) spread predicts future returns. The IV spread measures the average difference in implied volatilities of matched call and put options with the same strike price and maturity. A larger IV spread means that calls are more expensive than puts, indicating a higher buying pressure on call options. In the case of negative information, put-buying pressure would push the put IVs up and reduce the spread. We capture this prediction in the following hypothesis:

Hypothesis 4: *The volatility spread declines ahead of fraud revelations that trigger a securities class action filing.*

Xing et al. (2010) demonstrate that the shape of the volatility smirk contains information on future stock returns. Consistent with volatility skews reflecting negative information, the volatility skew measures the difference in implied volatilities between out-of-the-money (OTM) put options and at-the-money (ATM) call options. Informed traders prefer buying OTM put options to express their negative information because OTM puts give them the greatest leverage and returns (Jin et al., 2012). If option traders acquire negative news, there will be an increase in buyer-initiated put trades and/or increase in seller-initiated call trades, which will increase the volatility skew. A higher volatility skew reflects a higher demand for OTM put options and suggests an expected decline in the underlying future stock price. We hypothesize that:

Hypothesis 5: *The volatility skew increases ahead of fraud revelations that trigger a securities*

class action filing.

2.3 Data

In this section, we describe the data sources for our study, outline the sample selection procedure, define the informed trading measures, and provide summary statistics.

2.3.1 Securities Class Action Data

We construct our sample of securities class action lawsuits from Stanford's Securities Class Action Clearinghouse (SCAC) database. The SCAC database provides a list of all federal securities class action lawsuits filed after the passage of the Private Securities Litigation Reform Act (PSLRA) of 1995.[4] We obtain copies of all original securities class action complaints for each SCA filed between January 1, 1996 and December 31, 2016. The complaint documents are the starting point for building our sample of fraud revelation events.

Event Date Selection

Each SCA complaint has three noteworthy event dates. The class period start date, class period end date, and the class action file date. The class period is a specific period of time during which the fraud is alleged to have occurred. In the case of SCAs, this represents the period of time during which the firm issued misleading statements or failed to disclose material information. The *class start date* signals when the company first issued an untrue statement of fact or failed to disclose information that renders subsequent statements misleading. The *class end date* signals the end of the class period and alleged information concealment. The *class file date* signals the initiation of an SCA and occurs either the same day as the class end date or anytime over the next three years.

The class end date is typically viewed as the event when the negative information, the fraud disclosure that triggers an SCA filing, is fully revealed to the investing public. However, Karpoff et al. (2014) note that, in some cases, the initial disclosure event can occur earlier than the formally defined dates. Considering our objective, it is important that we use the first public revelation of misconduct. Date staleness can bias our empirical findings because a stale date is likely to capture

[4]The PSLRA was passed to reduce the incidence of frivolous lawsuits by making it more difficult to initiate securities litigation. The PSLRA heightened the pleading requirements and increased the burden of evidence plaintiffs must provide to file a securities lawsuit alleging corporate fraud.

options activity related to existing expectations from prior information disclosure and not informed trading based on exogenous information acquisition. In order to safely argue that our results reveal the presence of informed trading, and not speculative trading based on public information, we need to ensure that the event date is truly the first public revelation of the alleged fraud. We review each court filed class action complaint document and identify the initial revelation date. We define the *revelation date* as the first public disclosure that a firm has provided materially false or misleading information to the public. When we are unable to identify the date of the primary information disclosure that triggers a lawsuit, we use the last day of the class period as the revelation date. The Appendix outlines in detail how we identify and code our sample of revelation date events. In 61 percent of the sample cases the revelation date is equal to the class end date, while in 39 percent of the sample the first public revelation of the fraud occurs prior to the end of the class period.

Sample Selection

We apply a series of filters to arrive at our final sample of fraud events. First, we restrict the sample to cases where the defendant firm is publicly traded and for which daily stock return and trading volume data is available in the Center for Research in Security Prices (CRSP) database.[5] Cases where the defendant firm is listed on OTC Bulletin Boards/Pink Sheets are removed.

Approximately 15 percent of SCAs are filed against third parties, such as underwriters and/or auditors. These lawsuits relate to the wave of class actions filed in the early 2000s against leading investment banks regarding the practice of IPO spinning/laddering and tainted analyst recommendations (Ryan and Simmons, 2013). Additional lawsuits came following the financial crises for the issuance of questionable financial instruments. We remove the cases where only the third party and/or its management is named as a defendant in an SCA. Lawsuits filed against a firm and/or its management for the actions of a third party are included in our sample of events, since such cases directly suggest that the management knew and openly engaged in the fraudulent behavior.

We remove all complaints filed alleging breach of fiduciary duty in relation to a merger and/or acquisition (M&A). In our analysis, we are specifically interested in the instance when fraud is revealed to the market. SCAs filed relating to an M&A have no discernible revelation date and

[5]This excludes all firms that are not publicly traded, such as partnerships and sole proprietorships, mutual funds, unit trusts and other investment organizations, real estate investment trusts (REITs), municipalities, and any state or federal government entities; or individuals and other entities.

using the class period end date is not an acceptable solution. In the majority of M&A related SCAs, the class period end date coincides with the complaint filing date or precedes the filing date by only one or two days. Gande and Lewis (2009) provide evidence that the filing of SCAs is anticipated by the market. Martin et al. (1999) have suggested that plaintiff law firms have an incentive to leak the anticipated filing of a lawsuit to the public in favor of triggering a lower stock price decline, which could increase the potential payout. Including cases where the class end date and class file date coincide can bias our results in support of informed trading when in fact the information is already public.

We remove cases where we could not identify a distinct revelation date that are filed within ten days of the class period end date. Griffin et al. (2004) classify cases as "rapid filing" when the class end date and the filing date occur within one week of each other. These cases can be problematic since they confound the effect of the revelation with the effect of the filing. Rapid filing cases do not present a problem for our analysis when we are able to identify a distinct revelation date because we can assume that the lawsuit filing is entirely reactionary and could not have been planned before the disclosure. However, the cases where we could not identify a revelation date and apply the class end date can have possible information leakage regarding the upcoming class filing. Once we remove these cases, we have a final sample of 2,845 federal securities class actions against 2,424 unique publicly traded firms. This includes both domestic and cross-listed firms.

Sample Characteristics

Table 2.1 presents characteristics for our observation sample of cases from 1996 to 2014. The average class period for the sample of cases is 407 days with a median of 302, indicating that in half the sample of cases the duration of fraud spans for a period of less than one year. There is a notable difference between the mean and median lag between the end of the class period and the lawsuit filing. The high mean is clearly driven by a small sample of cases with an extremely delayed case filing, whereas half the cases are filed within one month of the fraud disclosure. In fact, nearly 20 percent of the cases are filed within 5 days of the stated class period. Approximately 35 percent of all cases allege a GAAP related violation and 20 percent allege violations in the registration documents or prospectus of an equity issuance. Insider trading is cited in nearly 10 percent of our sample cases. The proportion of settled and dismissed cases is in line with the existing evidence

(Bajaj et al., 2002; Ryan and Simmons, 2013). Technology sector firms represent the largest proportion of plaintiffs.

To provide an estimate of the impact of the fraud, we compute two measures used in the SCA literature. The maximum market value (MMV) loss is defined as the change in market capitalization from the trading day with the highest market capitalization during the class period to the trading day immediately following the class period end date. The revelation market value (RMV) loss is the change in market capitalization between one trading day before and one trading day after the class period end date. On average, the maximum unadjusted loss in market value over the class period is 61 percent and the revelation date loss is 21 percent.

2.3.2 Options Data

We gather options data from the OptionMetrics (OM) database. The OM database covers all exchange listed call and put options on U.S. equities. OM provides end of day summary statistics of closing bid and ask quotes, option volume, option Greeks and the implied volatility on each option.[6] Our sample of OM data covers the period of 1996 to 2014. Therefore, we limit our sample of SCA cases to where the revelation date falls between 1996 and 2014. OM data is available for 73 percent of our sample cases.

2.3.3 Informed Trading Measures

We use four measures to investigate the presence of suspicious trading activity ahead of fraud revelations: the put-to-options ratio, options-to-stock trading volume, implied volatility spread, and implied volatility skew.

Put-to-Options Volume Ratio

Our first measure is the Pan and Poteshman (2006) put-to-options volume ratio. We compute it as:

$$PP_{it} = \frac{P_{it}}{P_{it} + C_{it}} \tag{2.1}$$

where for stock i on date t, P_{it} is the total volume of put contracts and C_{it} is the total volume of call contracts. If informed investors expect the price of firm i to decline and act on this information by

[6] OM calculates the underlying implied volatility of an individual option based on binomial trees that account for early exercise of individual stock options and the expected dividends over the life of the option (Jin et al., 2012).

buying put options, keeping all else equal, this should increase the put-call ratio. On the contrary, if informed traders have positive information on stock i we should see an increase in the volume of call options and a decline in the put-call ratio. Since our sample of events is associated with negative news we should observe an increase in the ratio ahead of the fraud announcement.

Options-to-Stock Trading Volume

Following Roll et al. (2010) and Johnson and So (2012), we define the options volume to stock volume (O/S) ratio as total volume of trading on the options market divided by the corresponding total volume of trading in the stock market.

$$O/S_{it} = \frac{OPVOL_{it}}{EQVOL_{it}} \tag{2.2}$$

where $OPVOL_{it}$ is the total volume of options contracts across all strikes for options expiring in the 30 trading days starting five days after the trade date for stock i on date t. $EQVOL_{it}$ is the total share volume of stock i on date t divide by 100 because each option contract reflects 100 shares. Roll et al. (2010) show that over the five days preceding a firm's earnings announcement there is an increase in options trading activity. Although the authors provide evidence that some options traders execute orders in the correct direction of the upcoming earnings surprise, which is suggestive of informed trading, the O/S ratio can be a naive indicator. In an attempt to disentangle whether the change in put or call volume drives our results we also compute the total call volume to equity volume and total put volume to equity volume.

Implied Volatility Spread

Lastly, we examine implied volatilities to capture suspicious options market activity. Following Cremers and Weinbaum (2010), we compute the implied volatility spread (IVS) as the average difference in implied volatilities between call and put options with the same strike price and expiration date across option pairs. Specifically, for every day t and every stock i with put and call options volume on date t, we compute the IVS as

$$IVS_{it} = IV_{it}^{call} - IV_{it}^{put} = \sum_{j=1}^{N_{it}} w_{jt}^{i}(IV_{jt}^{i,call} - IV_{jt}^{i,put}) \tag{2.3}$$

where j refers to matched pairs of put and call options, N_{it} denotes the number of pairs of options for stock i on day t, w_{jt}^{i} are weights, and IV denotes the OM implied volatility. If put options are

more expensive than call options, the implied volatilities of puts will be higher than the implied volatilities of calls, resulting in a negative IV spread. A negative and decreasing IV spread means that investors demand more puts in the expectation that returns of the underlying stock will decline.

Implied Volatility Skew

The implied volatility skew (IVSk) is the difference between the implied volatilities of out-of-the-money (OTM) put options and at-the-money (ATM) call options. The IV skew is considered a proxy for negative price pressure in the options market (Xing et al., 2010). We follow the methodology of Xing et al. (2010) and compute the volatility skew as follows:

$$IVSk_{it} = IV_{it}^{OTM\_Put} - IV_{it}^{ATM\_Call} \tag{2.4}$$

For each stock i define moneyness as the ratio of the strike price to the stock price. OTM put options are defined as having moneyness between 0.80 and 0.95, and for each firm i we select one OTM put that is closest to 0.95. ATM put options are defined as having moneyness between 0.95 and 1.05, and for each firm i we select one ATM call that is closest to 1.

If investors obtain negative news and expect the price to decline they are likely to buy put options to speculate on the potential return or hedge against the price drop. When the demand for OTM puts increases the implied volatilities of OTM put options also increase. Assuming the demand for ATM calls remains constant or increases at a lower rate, the IV skew will increase. An increasing IV skew suggests a higher demand for OTM put options and that investors expect a future decline in the stock price.

Table 2.2 shows summary statistics of the informed trading measures. The differences in means between the fraud and non-fraud sample are significant. Splitting the sample of fraud events between scheduled and unscheduled reveals that the event schedule may have an impact on the informational content of the various informed trading measures. Specifically, that the information of the IV spread and put-to-options ratio can be sensitive to the number of uninformed traders in the market.

2.4 Analysis

2.4.1 Informed Trading Prior to Fraud Revelation Events

We begin our analysis by plotting the informed trading measures prior to our sample of events. Figure 2.1 shows the daily average of the put-to-options ratio over the 100 days prior to the revelation of fraud. There is a distinct increase in directional trading activity prior to the event. The ratio of put to total options volume begins to increase approximately 20 days before the event date and then declines immediately after. This means that the volume of traded put options, which bet on negative price movements, increases relative to call options. As discussed previously, a concern in our sample is the occurrence of both scheduled and unscheduled events. Evidence documents an increase in speculative options activity prior to a scheduled event, i.e. earnings announcement. To disentangle the possible effect of speculation on informed trading measures we divide our sample into *unscheduled* events and *scheduled* events. The scheduled sample includes all fraud revelation events that occur within $[-10, +10]$ trading days of a scheduled earnings announcement. Unscheduled events are events that fall outside that window. When we subsample our events, we see an even more distinct increase in the put to options volume ratio prior to an unscheduled event day revelation.

Figure 2.2 plots the O/S ratio for all three samples. There is a visible increase in options volume prior to the event day, however the primary activity appears to be driven by increase options trading prior to scheduled events. Figure 2.3 and 2.4 plots put and call volume relative to stock volume. Differentiating between put and calls helps us better understand what is driving our observations. For both scheduled and unscheduled events the ratio of put volume to stock volume is noticeably increasing. However, when we look at the ratio of call volume to stock volume for the two subsamples, it is clear that there is no directional trading activity ahead of unscheduled events. The volume of traded call options remains stable. There is a large increase in traded call options before scheduled announcements. Distinguishing between call and put options volume helps suggest the presence of informed traders in the options market for at least the sample of unscheduled events.

Figures 2.5 and 2.6 provide additional evidence of suspicious trading activity. If investors are informed of an upcoming negative event they will increase their demand for put options relative to call options. The higher demand will increase the price and implied volatility of puts and decrease

the implied volatility spread, the difference between call IV and put IV. As observed in Figure 2.5, there is a clear decline in the IV spread over the ten days prior to an unscheduled revelation event, suggesting that puts are in greater demand compared to calls. Figure 2.6 shows an increase in the IV skew for both scheduled and unscheduled events. The increasing IV skew indicates that OTM puts are in greater demand than ATM calls, suggesting option traders are expecting a decline in the price of the underlying stock.

For additional insight we plot the informed trading measures subsampled by scheduled and unscheduled events as well as whether the case is later dismissed or settled. We need to note that our sample of events is correctly defined as "alleged fraud" and some cases may be filed where malicious intent is not definitive. Although the PSLRA made the filing of frivolous lawsuits more difficult and our sample only covers the period after the Act, it would be inaccurate to suggest that all the firms in our sample are equally unethical. In fact, some literature views dismissed cases as frivolous lawsuits suggesting that the probability of informed trading may differ by whether the case is settled or dismissed. If this is true, we should observe a difference in our options measures between settled and dismissed cases. We can note this difference when looking at our P/S and C/S measure as well as the implied volatility spread and skew. The unscheduled events in Figures 2.9 and 2.10 show that all the increased options activity among cases that are settled is only for puts while the ratio of call volume to stock volume remains unchanged. This highlights that for the cases where it is more likely for fraud to have occurred there is an increase in the demand for puts prior to a fraud revelation. The volatility spread and skew confirm this finding. The volatility spread decreases prior to an unscheduled revelation date for the sample of settled cases and the volatility skew increases for the same sample. Therefore, puts in general, and OTM puts specifically, become more expensive prior to the negative event run up, suggestive of informed trading.

2.4.2 Predicting Fraud Revelation Events

The graphical evidence discussed in Section 2.4.1 shows the existence of directional trading activity in the options market that is suggestive of informed trading. The primary concern in our analysis is that we are capturing uninformed speculation. For instance, there is evidence of industry spillover effects surrounding litigation events (Gande and Lewis, 2009). Speculators may bet

that firms in a high litigious industry will be subject to an investigation and purchase put options in preparation for the negative event. The case summary statistics show that lawsuits are concentrated within specific industries and, if the above described scenario is true, this can bias our results. To address this concern we predict fraud events in the aggregate cross-section of all stocks listed in the CRSP database and with available OptionMetrics data.

We use a binomial logistic regression model to test if our informed trading measures predict the revelation of fraud. We perform our analysis on a weekly (versus daily) basis and assume that the marginal probability of a fraud revealed in week $t+1$ follows a logistic distribution and the options activity in week t, captured by our various informed trading measures, is indicative of this probability. The analysis sample includes all stock-days (converted to weekly data) reported in the CRSP database for the period from January 1,1996 to December 31, 2014. The initial sample gives us 4.98 million firm-week observations. We compute weekly informed trading measures for all firm-weeks in our sample. Once we remove all firm-weeks with missing OM informed trading measures we have a panel dataset of 1.96 million firm-week observations for 6,008 unique firms and 992 weeks. We regress each informed trading measure in week t on a binary indicator that equals one if a fraud is revealed in week $t+1$ for each firm-week. We include a set of controls for each firm i in week t. We control for past stock performance using the weekly market adjusted return (*CAR*) of stock i, the market adjusted return over the past six months (*MOM*), and the Amihud (2002) illiquidity ratio (*ILLIQ*). We also include a control for firm size using the log of market capitalization (*SIZE*) and the market-to-book ratio (*MB*).

Table 2.3 reports logit regression results for various specifications of our analysis using the entire sample of firm-week observations and events. The four primary informed trading measures are statistically significant and with the expected sign when examined individually as shown in Columns 1, 2, 4 and 5. An increase in the put-to-options volume and options-to-stock volume in week t is indicative of the probability of fraud revealed in week $t+1$. A decrease in the IV spread and increase in the IV skew is predictive of an upcoming fraud disclosure. Column 3 shows the total options to stock volume measure broken down between put and call options. Both the P/S and C/S are statistically significant and positive. However, the coefficient of the total put volume to stock volume is over two times the size of the coefficient of the total call volume to stock volume. Including all measures together makes us lose the predictive ability of the IV spread, but all other informed trading measures are significant and in the expected direction.

It is well established that options trading activity increases prior to earnings announcements.[7] This activity is not necessarily driven by private information but likely the result of investors speculating regarding the upcoming news release. Panel A and B of Table 2.4 break down the analysis between unscheduled and scheduled events. The sample of unscheduled events, defined as all firm-weeks that do not include an earnings announcement, confirms the predictive power of our informed trading measures. Additionally, we now find that the coefficient estimate of the put-to-stock volume ratio is statistically significant and greater than the call-to-stock volume ratio, suggestive of increased trading in put options ahead of an expected negative news release. The sample of scheduled events includes all firm-weeks for which there is a scheduled earnings release in week $t+1$. The options volume measure coefficients are all significant and positive, while only the IV skew is statistically significant. The subsample of scheduled events highlights the predictive power of our measures in a context when all firms are expected to experience an increase in uninformed speculative options trading.

Fraud revelation events are typically associated with a significant stock price decline. As a consequence, the results presented in Table 2.3 may simply be predicting the expectation of extreme market returns. We address this concern in two ways. First, we examine the predictive power of our options trading measures looking at subsamples of the bottom 25th percentile and bottom 10th percentile of weekly cumulative abnormal returns. Panel A of Table 2.5 presents the logit regression results for the bottom 25th percentile of cumulative abnormal returns. Panel B presents the logit regression results for the bottom 10th percentile of cumulative abnormal returns. The regression results for the subsample of events in the lower percentiles of returns confirms the predictive power of the informed trading measures. In the subsamples of all negative return weeks all informed measures significantly predict an upcoming fraud revelation with the exception of the IV spread.

2.5 Robustness Tests

The decision to violate securities regulation and engage in fraudulent activity is an endogenous decision that is likely affected by the characteristics of the firm. Therefore, key differences can

[7] See Roll et al. (2010), Johnson and So (2012)

exist between firms that choose to engage in fraud and firms that abstain.[8] These differences can potentially impact how investors react to publicly available information and define their options trading strategies. For example, firms that engage in fraud may be doing so because of financial difficulties and are hoping to use the fraud committing period to improve operations. Firms may also use fraud to keep investor expectations high about future growth and revenue if they operate in highly competitive industries. Not controlling for these differences can bias our findings. That is, the observed suspicious trading activity prior to fraud revelations may be due to observable firm and industry characteristics rather than private information from insiders. To address this possible bias we use multiple statistical methods based on propensity scores to correct for any imbalance that may exist between the sample of fraud and non-fraud firms.

2.5.1 Methodology

We apply two propensity score matching techniques to control for the potential bias that the decision within a firm to engage in fraud is not random. The propensity score is the probability of a firm being in the *treated* group (firms that engage in fraud and have an SCA filed), given firm-specific baseline characteristics. We compute the propensity score for each firm using a logistic regression, where the dependent variable is a binary indicator equal to one if the firm has a fraud revealed in a given week and predictors are firm-specific characteristics that could impact the trading strategies of options investors the week before the revelation. Two firms with identical propensity score values can be considered to have the same probability of having a fraud revealed. Using propensity scores we create a control group that is comparable to the treated group in baseline characteristics, which in our case are firm-specific characteristics the week before the fraud is revealed.

We select our matching covariates based on the Campbell et al. (2008) distress risk factors. As stated previously, the decision to commit fraud is potentially motivated by the desire or need to present more favorable financials to investors due to an increased probability of default. The fraud firm may be using the fraud period to try and salvage operations because revealing the truth can result in increased costs that can further aggregate the ability to meet financial obligations. If we

[8]Firms that do not have a securities class action lawsuit filed may also engage in fraud, however this fraud is not revealed. The lack of revelation suggests that even between the firms that have a lawsuit filed and those that do not there is likely to be differences. Perhaps the ones that have no revelation event are better at hiding their behavior or the severity of the fraud makes it easier to keep hidden.

assume that the motivation for fraud is to hide the true financial condition of the firm, then factors that predict financial distress can be significant firm characteristics an investor would consider when forming an options strategy.

We compute the eight Campbell et al. (2008) distress risk factors on a weekly basis following the methodology outlined in their paper. The eight measures include: the ratio of net income to the market-value of total assets of firm i in week t (*NIMTA*), the ratio of total liabilities to the sum of market equity and book liabilities of firm i in week t (*TLMTA*), the ratio of cash and short-term assets to the market-value of total assets of firm i in week t (*CASHMTA*), log of the monthly excess return of firm i in week t relative to the S&P 500 index i week t (*EXRET*), the standard deviation of firm i daily stock return over the previous 3 months as off week t (*SIGMA*), log ratio of the market capitalization of firm i in week t to that of the S&P 500 index in week t (*RSIZE*), market-to-book ratio of firm i in week t (*MB*), and log of the price per share of firm i in week t (*PRICE*). All variables are winsorized at the 5th and 95th percentiles. Panel A of Table 2.6 presents descriptive statistics of the eight measures for the full sample of firm-week observations. Panel B shows the eight measures for the fraud sample and Panel C shows the summary statistics for the propensity score non-fraud matched sample as described below.

We build the samples of fraud and non-fraud firms using two methods: propensity-score *matching* and propensity-score *weighting*.

Matching

Firms that have a fraud revealed are matched by propensity score to firms with no fraud revelation event. We compute the propensity score on a firm-week basis where the dependent variable is an indicator for whether fraud was revealed in a given week and explanatory variables are the eight Campbell et al. (2008) distress risk factors. We use one-to-one nearest neighbor matching, with a caliper of 0.001, and no replacement. This means that each treated firm is matched to its nearest neighbor with the closest propensity score that falls within a distance of 0.001. Firms that have no match within that caliper are excluded from the sample. All matching is done on a firm-week and industry basis. Each treated firm is matched to a control sample firm with the same two-digit SIC code and the same firm-week date. This helps ensure that we account for any industry or time related effects in a given week. We also exclude matching to any firm-weeks that relate to

the period when a class period began for a given firm and the two years after a securities class action was filed. Figure 2.13 shows the distribution of the characteristics of the treated and control matched sample of firms.

Weighting

For robustness we apply a new methodology proposed by Li et al. (2018). This method uses estimated propensity scores to weight observations in the sample to reduce the differences in the characteristics of the treated and control firms. The Li et al. (2018) method weights each individual firm (treated or control) by the probability that it will be assigned to the *opposite* group (control or treated). Therefore, firms that have a low probability of being assigned to the treatment group are assigned a higher weight than those that have a high probability of being treated. This helps balance the characteristics of the observation sample by allowing firms with a low probability of being treated to represent a larger group of similar firms that do not receive the treatment. This new method is similar to inverse probability weighting with the added benefit that the weights are bounded between 0 and 1. It also allows us to use the entire sample of firm-week observations rather than reducing it to only the treated firm with one matched control firm.

To compute the overlap weights we use the same methodology as the propensity score calculation. We use a logistic regression, where the dependent variable is a binary indicator equal to one if the firm has a fraud revealed in a given week and predictors are the eight distress risk indicators. Unlike the matching propensity score calculation, we include two-digit SIC industry indicators and year dummies in our logit regression. We then use the estimated propensity scores to reweigh each observation. The covariates of firms in the fraud group are multiplied by the probability of being assigned to the non-fraud group and the covariates in the non-fraud group are multiplied by the probability of being assigned to the fraud group. Figure 2.14 shows the distribution of the characteristics of the treated and control sample of firms after applying the weighting methodology. Unlike the matched sample, the distribution of the characteristics is not as aligned. This can be explained by the size of the common support area in our propensity score estimates. If the propensity score for treated firms is too low, then applying the weights does not balance covariates as well as a one-to-one matching method when the control sample size is significantly larger. However, it still allows us to estimate our model on a much larger sample with more representative

covariates.

2.5.2 Results

We repeat the analysis from Table 2.3 and Table 2.4 on the matched sample and the weighted sample of firms. Table 2.7 shows the results of predicting fraud events using the propensity score matched sample. Estimates using each of the informed measures individually show that, with the exception of the put-to-options measures, all the remaining indicators are significant and in the expected direction. Columns 6 reports results using all four primary informed trading measures. The results from the matched sample confirm our findings in Section 2.4.2. Column 7 repeats the estimate from Column 6 but replaces the total options-to-stock measure with the breakdown between put and call options. The results are mostly consistent with earlier findings, with the exception of the significance of the put-to-stock ratio only significant at the 10% level.

Table 2.8 splits the analysis between scheduled and unscheduled events. Panel A of Table 2.8 shows that our results are driven by activity in the options market ahead of unscheduled events. All informed trading measures are significant and in the expected direction. Panel B shows that ahead of scheduled events our informed trading measures cannot predict an upcoming fraud revelation. The only significant measure is the total options to stock volume. The inability of these measures to capture informed trading prior to a scheduled event is noteworthy. This suggests that informed traders can hide their activity in the overall increased options trading that occurs prior to an earnings release.

Table 2.9 and Table 2.10 confirm all previous findings using the sample of weighted observations. All informed trading measures, with the exception of the IV spread, are statistically significant and in the expected direction. Additionally, even though we find that the total call to stock volume ratio is positive and significant, the size of the coefficient of the put to stock volume is much larger, suggesting a higher increase in put options compared to call options.

To ensure that our results are the outcome of informed trading and not the prediction of extreme market returns we perform a final robustness check. We create a matched sample of firms based on cumulative market returns the week of the fraud revelation. We match each fraud firm to its nearest neighbor in firm size and cumulative abnormal return. Cumulative abnormal returns are matched within a one year period. Meaning that the nearest matched neighbor in terms of firm

size in a given year must also have had a cumulative abnormal return in a similar magnitude as a fraud firm during any week of the same year. Figure 2.15 shows the distribution of CARs for the matched sample of fraud and non-fraud firms. The matched sample is quite close in both the abnormal returns for the week of the fraud revelation and the week prior. Table 2.11 shows that the put-to-options ratio and O/S ratio are able to forecast an upcoming fraud revelation event. The significance of the O/S ratio in the unscheduled event sample suggests that the increased options volume is not the result of uninformed investors but the likely outcome of informed traders in the options market.

2.6 Conclusion

In this paper, we investigate whether there is informed trading in the options market prior to disclosure events that trigger the filing of a securities class action lawsuit. We call these events revelations of fraud. We hypothesize that firm management that is more willing to violate U.S. securities laws and defraud shareholders may also be more willing to profit from insider knowledge by trading in the options market prior to negative corporate news. The results in this analysis show that there is suspicious trading activity in the options market prior to our sample of events. The suspicious trading activity, as captured by various informed trading measures, is suggestive of informed trading due to the power of the measures to predict an upcoming fraud disclosure. Our results are robust to various specifications and subsamples. Out of the four informed trading measures, we find that the Pan and Poteshman (2006) put options volume to total options volume ratio is the most consistent measure to capture STA indicative of informed trading prior to a fraud revelation event.

Tables and Figures

Table 2.1 – Case Characteristics

Sample firms Subject to SCA Lawsuits from 1996-2014 (N=1,765)					
Variable	Mean	Median	StdDev	P25	P75
Class Period (days)	407	302	364	168	529
Filing Lag (days)	118	33	180	7	177
Rapid File	0.19	0	0.39	0	0
IPO Violation	0.20	0	0.40	0	0
GAAP Violation	0.35	0	0.48	0	1
Insider Trading	0.09	0	0.29	0	0
Settled	0.58	1	0.49	0	1
Dismissed	0.37	0	0.48	0	1
Foreign Firms	0.12	0	0.33	0	0
Finance	0.11	0	0.31	0	0
Technology	0.33	0	0.47	0	1
Maximum MV Change	-0.61	-0.66	0.27	-0.82	-0.44
Revelation MV Change	-0.21	-0.18	0.24	-0.35	-0.06

This table presents case characteristics for the sample of SCA events. The *class period* is the court certified length of time between the start of the corporate wrongdoing and the date when the information was fully released. The *filing lag* is the number of days between the end of the court certified class period and the original securities class action lawsuit filing. *Rapid file* is a dummy equal to one identifying cases where the lawsuit is filed within five days of the end of the class period. *IPO violation* is a dummy variable equal to one if the case alleges violations in the IPO. *GAAP violation* is a dummy variable equal to one if the case alleges a GAAP related violation. *Insider trading* is a dummy variable equal to one if the case alleges insider trading in relation to the SCA violation. *Settle* is the percent of cases that are settled and *dismissed* is the percent of cases that are dismissed. *Foreign firms* is the percent of firms headquartered outside the U.S. and listed on a major stock exchange as an American Depository Receipt (ADR). *Finance* is the percentage of firms in the financial industry and *technology* is the percentage of firms in the technology industry. MMV change is the maximum market value change over the class period calculated as the change in the defendant firm's market capitalization from the trading day with the highest market capitalization during the class period to the trading day after the class period end. RMV change is the revelation day market value change from the day before to the day after the revelation date.

Table 2.2 – Summary Statistics

	Fraud Revelation (t)						No Fraud Sample						Diff
	N	mean	SD	p25	p50	p75	N	mean	SD	p25	p50	p75	(p-value)
PP	1765	0.41	0.22	0.26	0.41	0.55	1.96M	0.33	0.27	0.10	0.29	0.50	0.00
O/S	1689	0.05	0.09	0.01	0.02	0.06	1.65M	0.04	0.09	0.00	0.01	0.04	0.00
P/S	1699	0.03	0.05	0.00	0.01	0.03	1.70M	0.01	0.04	0.00	0.00	0.01	0.00
C/S	1749	0.03	0.05	0.00	0.01	0.03	1.89M	0.02	0.06	0.00	0.01	0.02	0.00
IVSpread	1494	-0.01	0.11	-0.03	0.00	0.02	1.22M	-0.01	0.07	-0.02	0.00	0.01	0.00
IVSkew	1077	0.06	0.14	0.01	0.04	0.08	0.97M	0.04	0.08	0.01	0.03	0.06	0.00
	Fraud Revelation Unscheduled (t)						Fraud Revelation Scheduled (t)						Diff
	N	mean	SD	p25	p50	p75	N	mean	SD	p25	p50	p75	(p-value)
PP	1297	0.37	0.24	0.18	0.35	0.53	441	0.39	0.23	0.21	0.37	0.54	0.09
O/S	1196	0.07	0.16	0.01	0.03	0.08	416	0.07	0.12	0.01	0.03	0.08	0.60
P/S	1213	0.03	0.08	0.00	0.01	0.03	423	0.03	0.06	0.00	0.01	0.03	0.47
C/S	1272	0.04	0.08	0.00	0.01	0.04	432	0.04	0.06	0.00	0.02	0.04	0.89
IVSpread	982	-0.03	0.11	-0.03	-0.01	0.01	365	-0.01	0.10	-0.02	-0.01	0.01	0.02
IVSkew	741	0.07	0.12	0.02	0.04	0.09	290	0.06	0.11	0.02	0.04	0.08	0.22

This table presents summary statistics for informed trading measures the week of fraud revelation ($t+1$) and the week prior to the fraud revelation (t). *PP* is put volume to total options volume in week t. O/S is the ratio of total options volume to stock volume in week t. P/S is the total put volume to stock volume and C/S is the total call volume to stock volume. *IVSpread* is the weighted difference between implied volatility of call and implied volatility of put options with the same strike price and expiration. *IVSkew* is the difference between OTM put and ATM call options. Scheduled is an indicator of whether there is a scheduled earnings announcement during week t. Unscheduled is an indicator of no earnings announcement during week t.

Figure 2.1 – Put Volume to Total Options Volume before Revelation Date

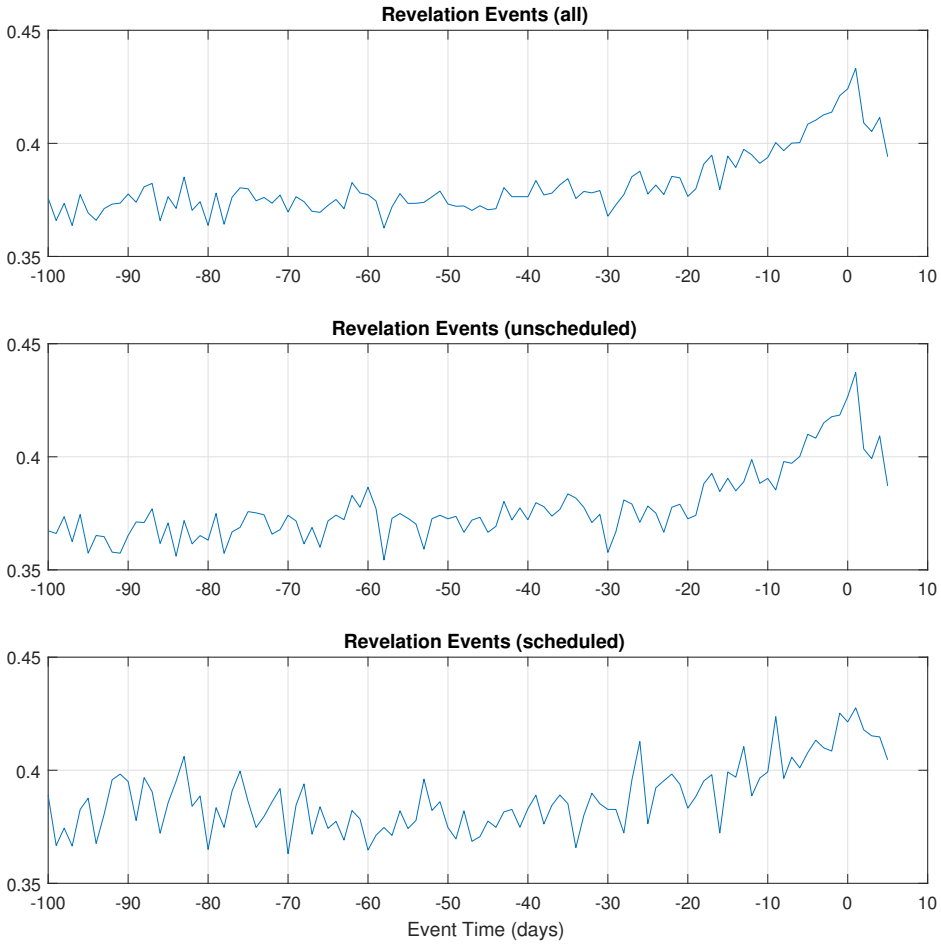


Figure 2.2 – Total Options Volume to Stock Volume before Revelation Date

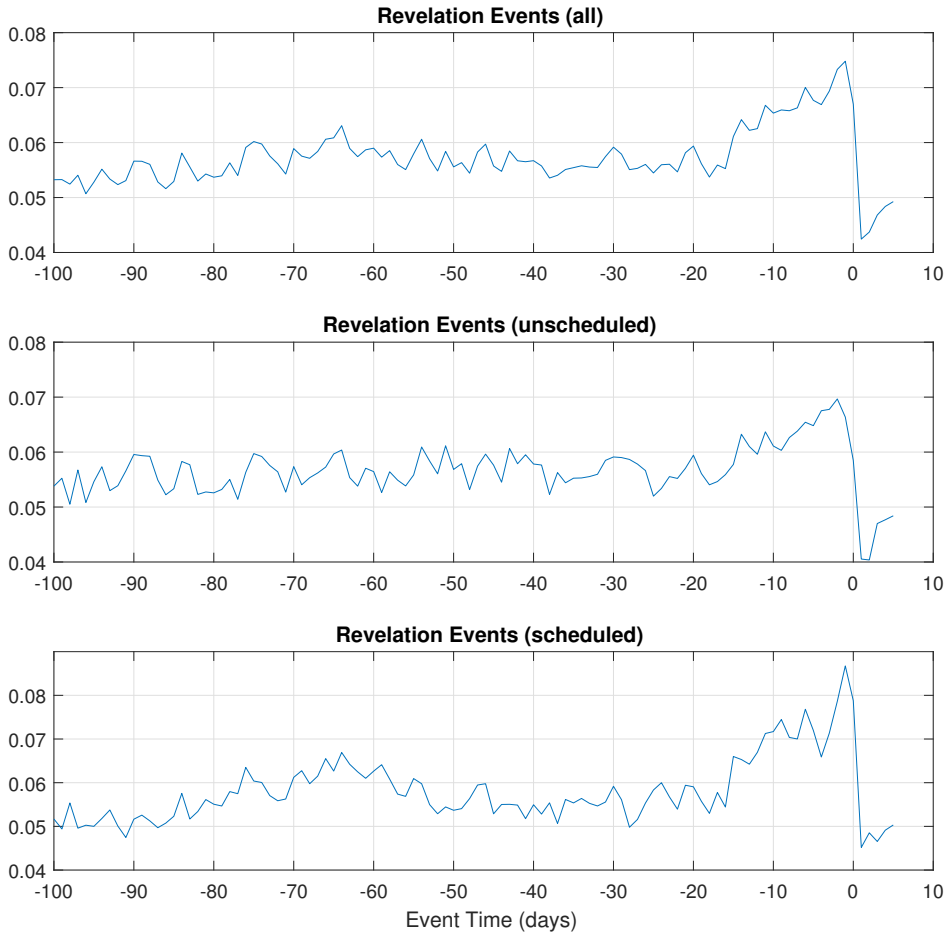


Figure 2.3 – Put Volume to Stock Volume before Revelation Date

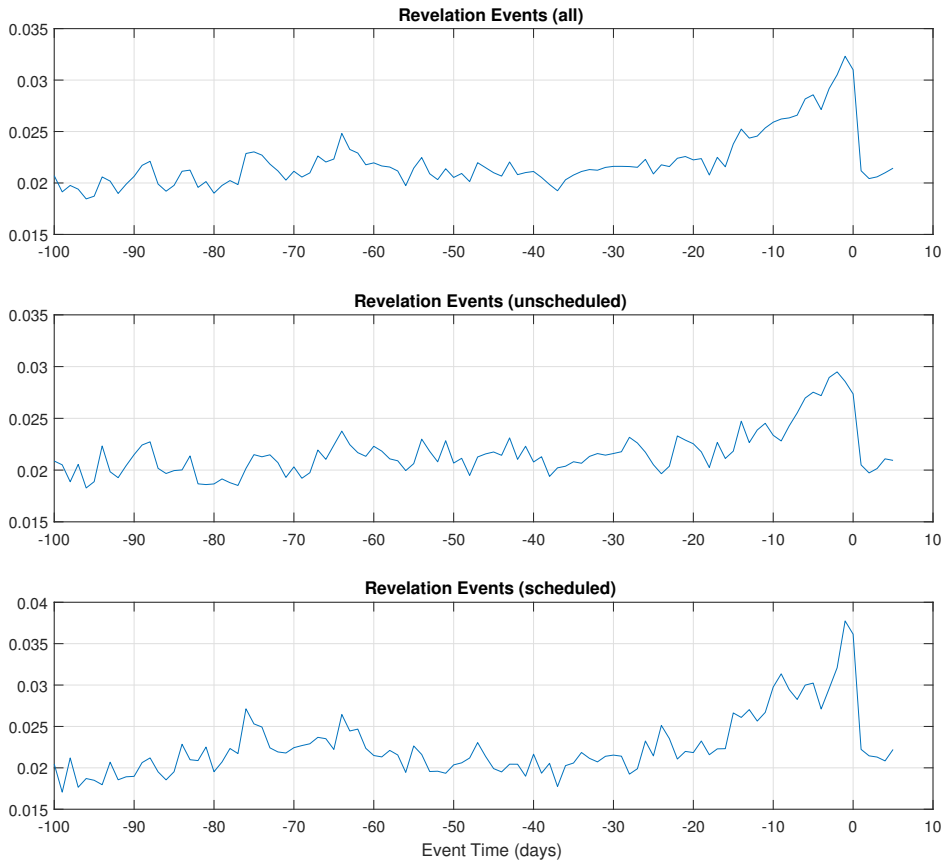


Figure 2.4 – Call Volume to Stock Volume before Revelation Date

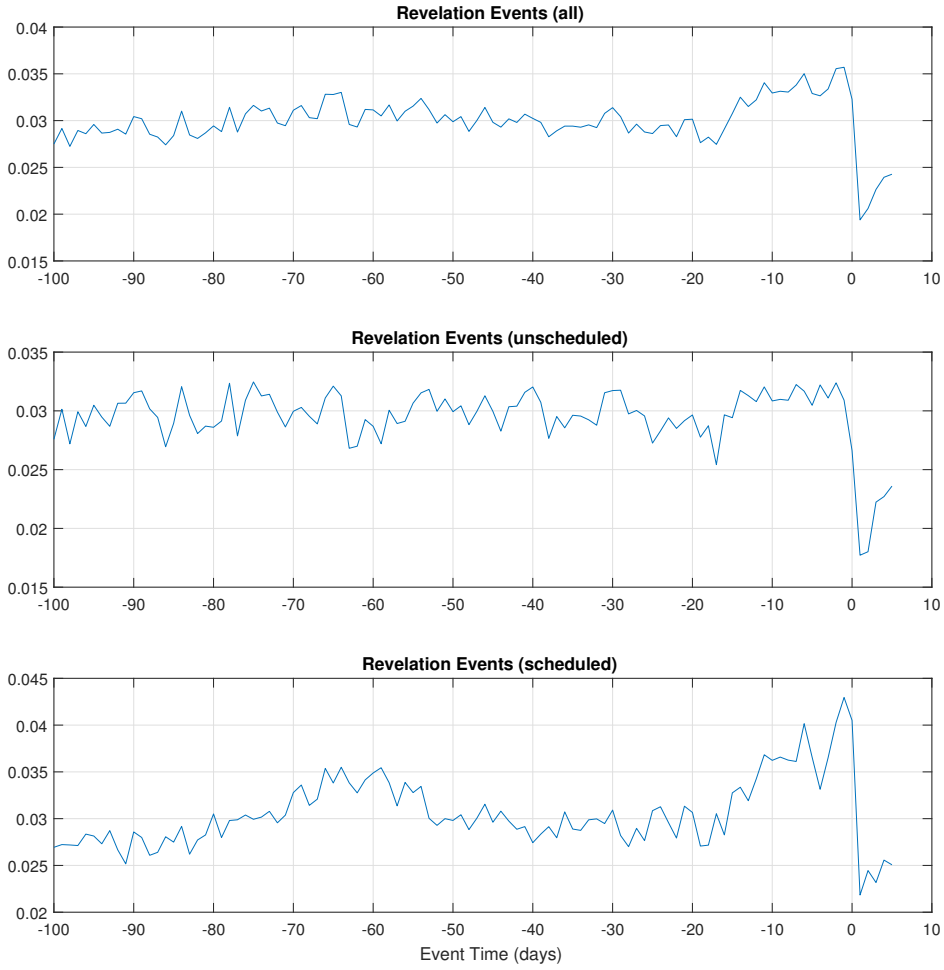


Figure 2.5 – Implied Volatility Spread before Revelation Date

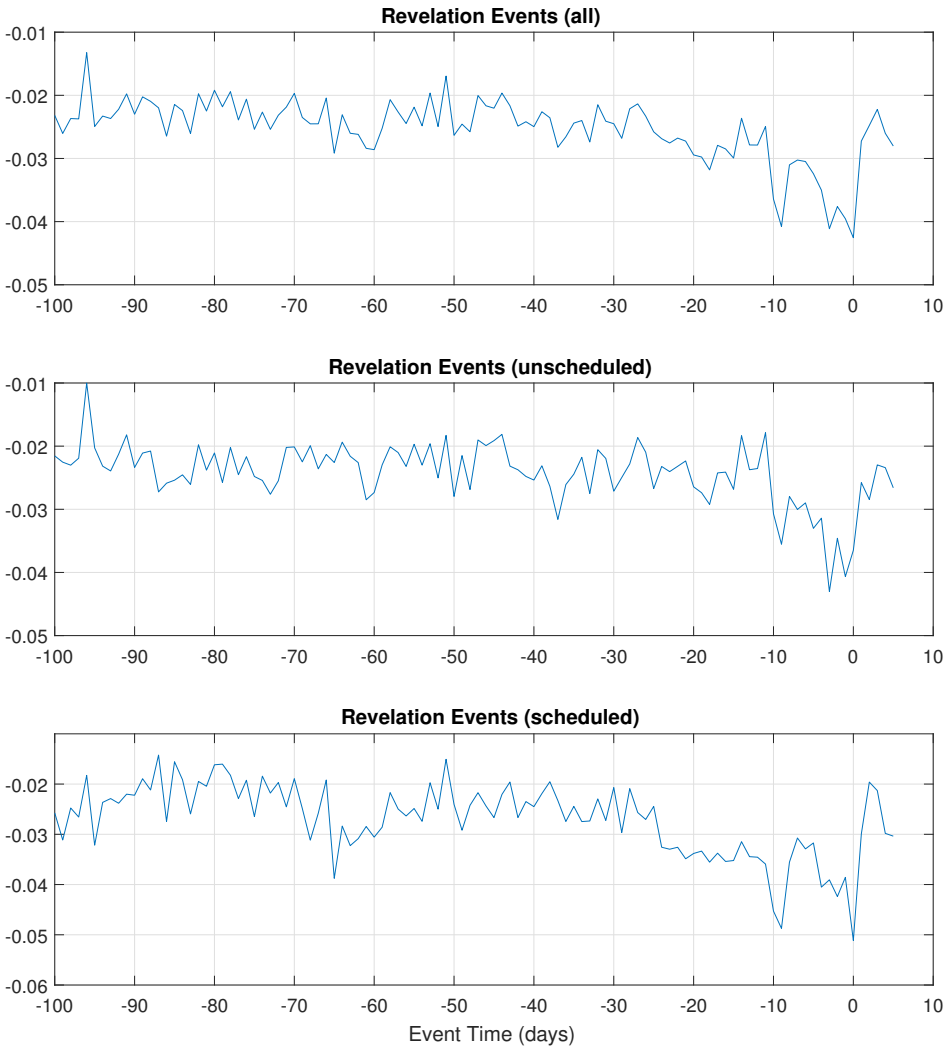


Figure 2.6 – Implied Volatility Skew before Revelation Date

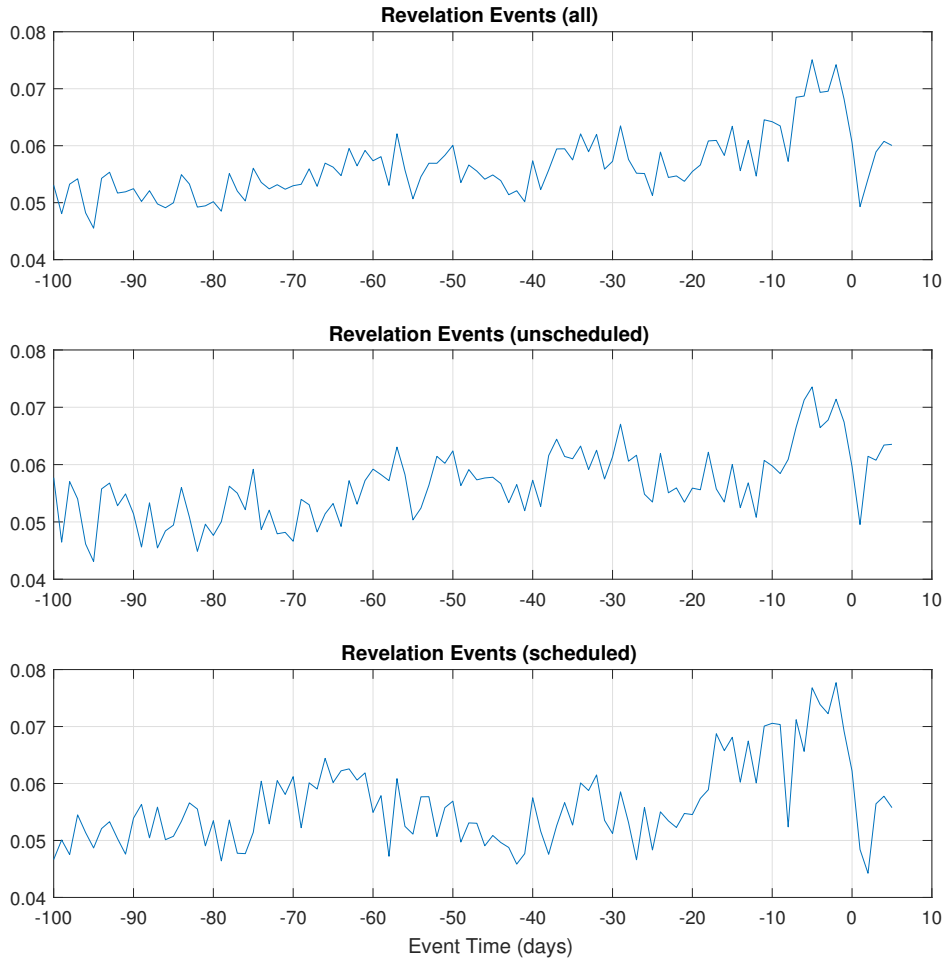


Figure 2.7 – Put Volume to Total Options Volume by Lawsuit Outcome

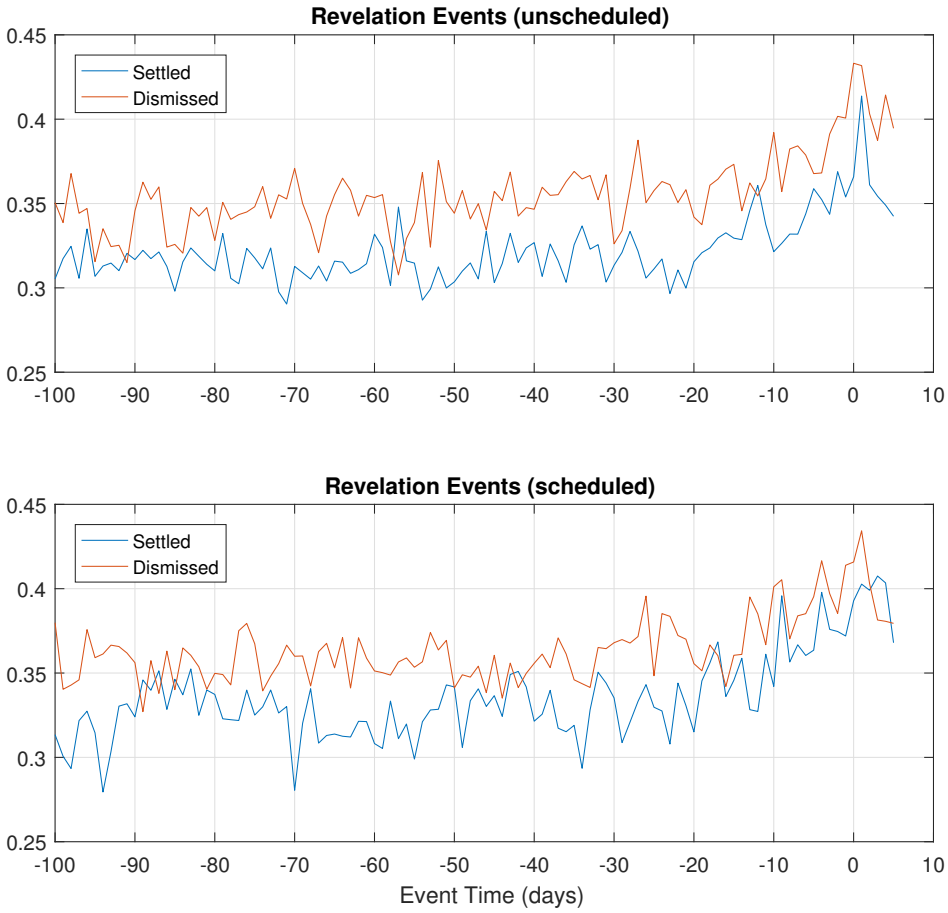


Figure 2.8 – Total Options Volume to Stock Volume by Lawsuit Outcome

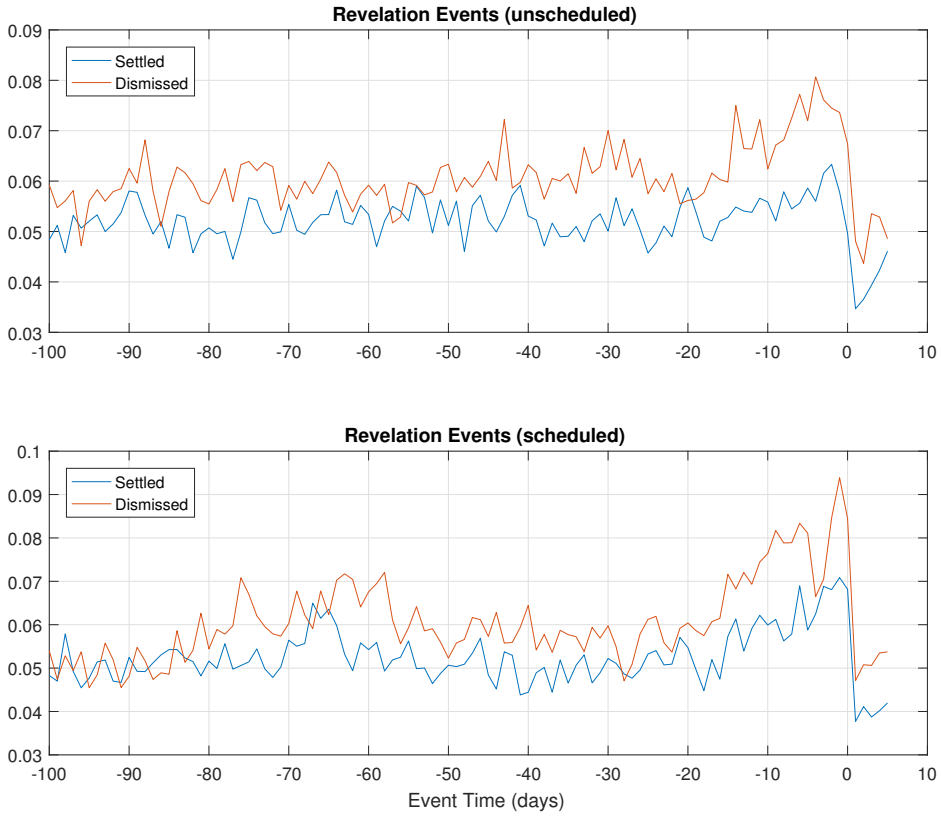


Figure 2.9 – Put Volume to Stock Volume by Lawsuit Outcome

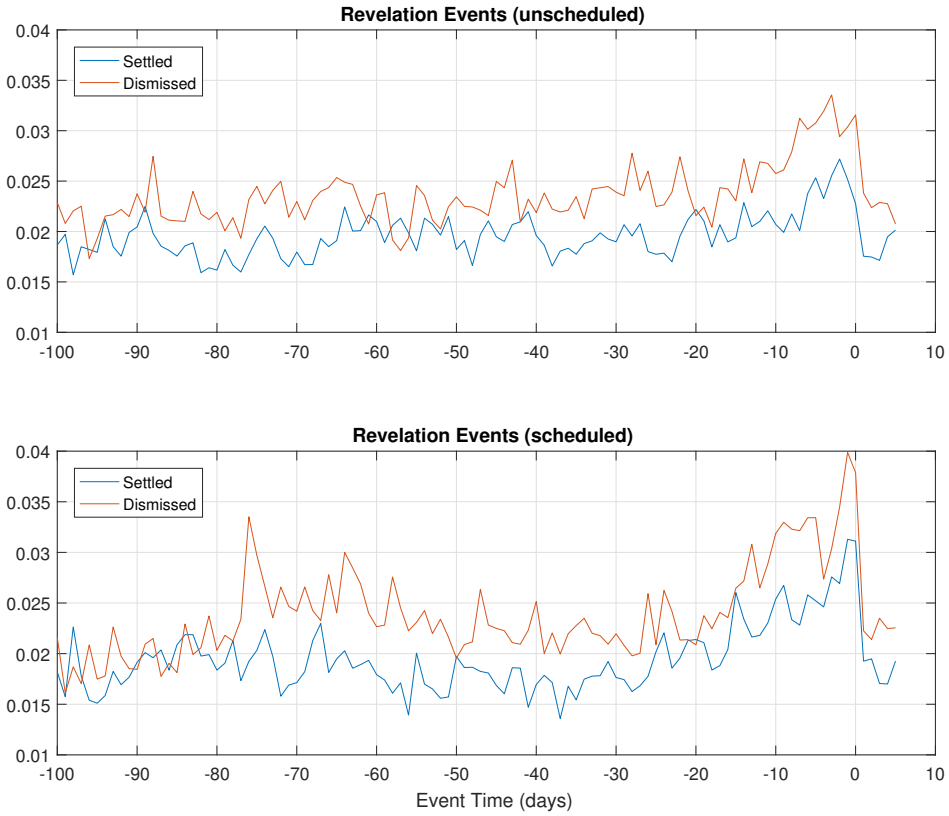


Figure 2.10 – Call Volume to Stock Volume by Lawsuit Outcome

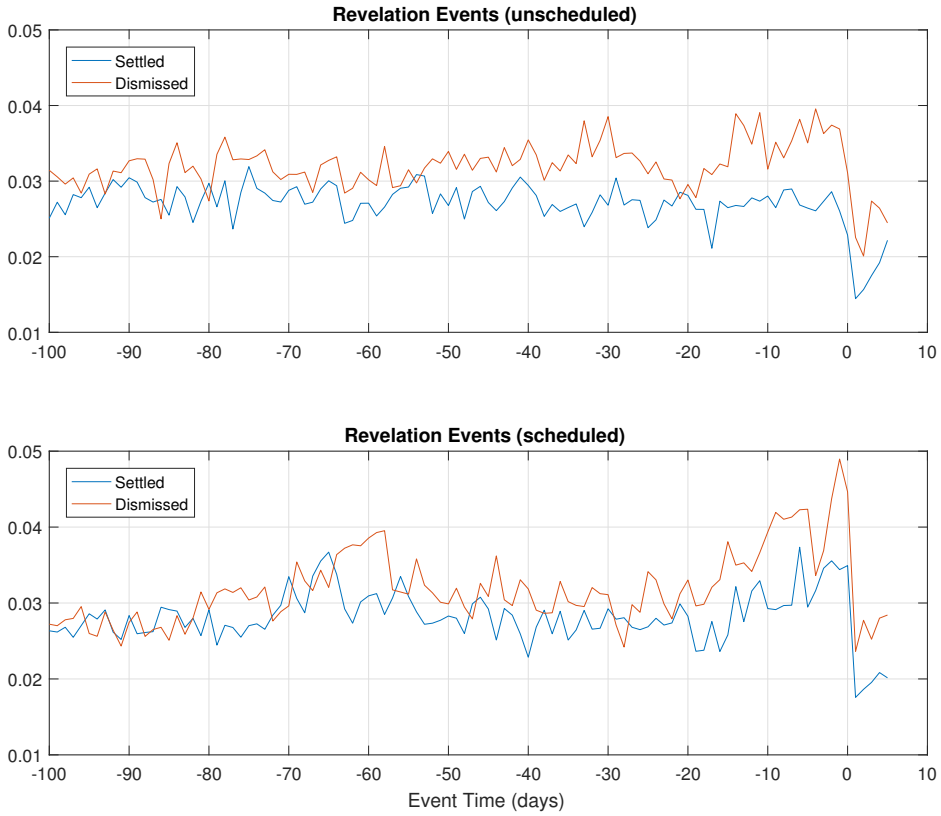


Figure 2.11 – Implied Volatility Spread by Lawsuit Outcome

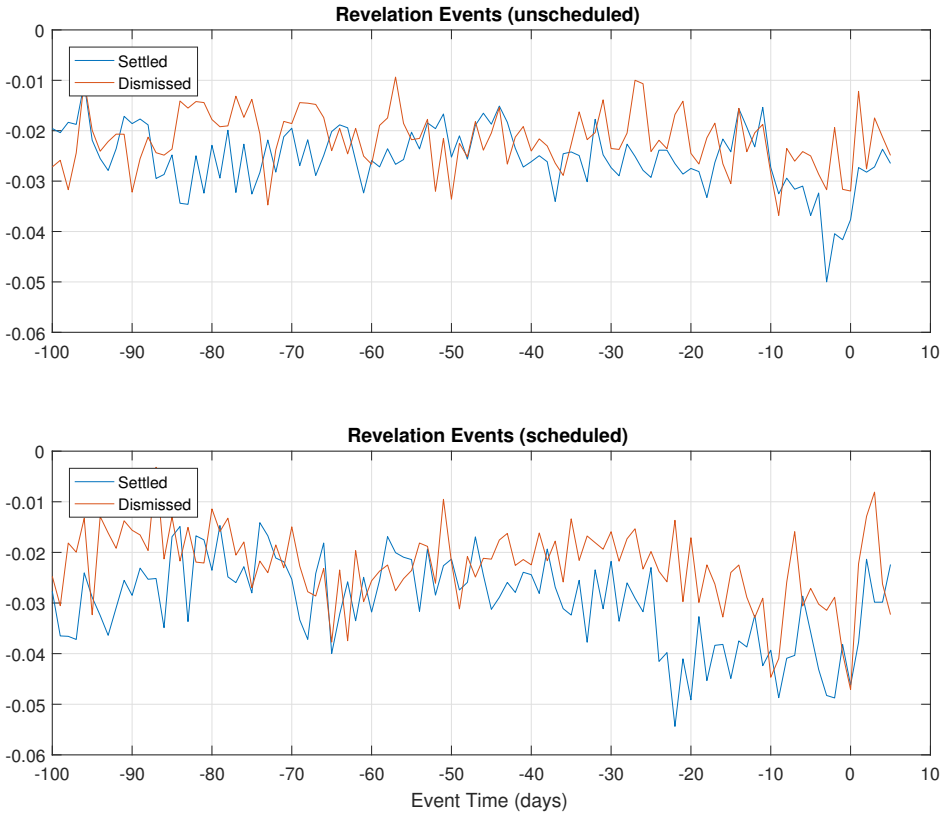


Figure 2.12 – Implied Volatility Skew by Lawsuit Outcome

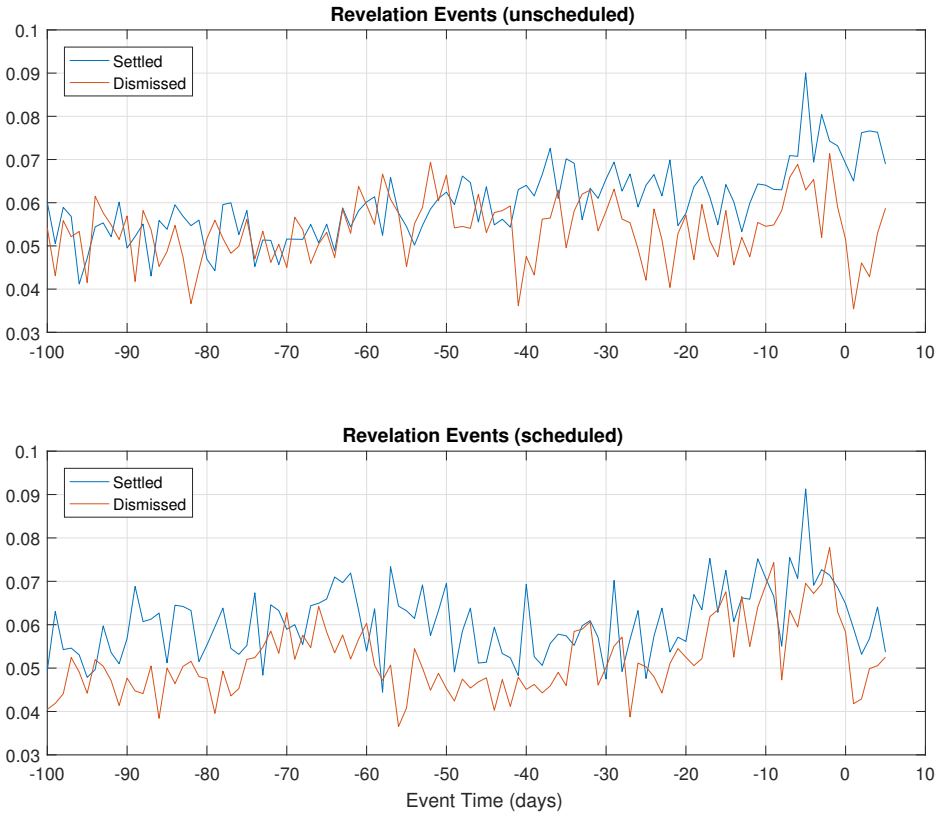


Table 2.3 – Probability of Fraud Revealed

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
PP	0.47***					0.91***	0.75***
	(0.10)					(0.17)	(0.18)
O/S		0.40***				0.34***	
		(0.13)				(0.08)	
P/S			0.69***				1.78***
			(0.15)				(0.26)
C/S			0.31***				0.24***
			(0.07)				(0.05)
IV Spread				-1.67***		0.20	0.29
				(0.18)		(0.40)	(0.41)
IV Skew					2.16***	2.31***	2.25***
					(0.16)	(0.32)	(0.32)
CAR	-0.06***	-0.06***	-0.06***	-0.06***	-0.06***	-0.06***	-0.06***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
SIZE	-0.02	-0.03	-0.04	-0.04	-0.05*	-0.06*	-0.06*
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
ILLIQ	-2.15***	-2.13***	-2.64***	-2.68***	-3.24***	-2.71**	-2.75**
	(0.47)	(0.55)	(0.67)	(0.78)	(1.01)	(1.08)	(1.08)
MOM	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***	-0.00***	-0.00***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
MB	0.16***	0.15***	0.15***	0.15***	0.15***	0.15***	0.14***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Constant	-7.46***	-6.98***	-6.80***	-6.67***	-6.58***	-6.82***	-6.75***
	(0.41)	(0.42)	(0.44)	(0.46)	(0.51)	(0.53)	(0.53)
Observations	1,406,976	1,204,614	1,204,614	916,107	783,856	723,526	723,526

This table reports results from binomial logistic regressions where the dependent variable is an indicator for whether fraud is revealed in week $t+1$. *PP* is put volume to total options volume in week t. O/S is the ratio of total options volume to stock volume in week t. P/S is the total put volume to stock volume and C/S is the total call volume to stock volume in week t. *IVSpread* is the weighted difference between implied volatility of call and implied volatility of put options with the same strike price and expiration in week t. *IVSkew* is the difference between OTM put and ATM call options in week t. Details on the exact calculation of these variables is outlined in Section 2.3.3. Data on fraud revelation dates is gathered using securities class action lawsuit complaint documents obtained from the Stanford Securities Class Action Clearinghouse database. The set of controls include: *CAR* the cumulative weekly adjusted return, *SIZE* the log of market capitalization, *ILLIQ* the Amihud (2002) illiquidity ratio, *MOM* the market adjusted return of stock i over the past six months, and *MB* the market-to-book ratio. The numbers in parentheses are standard errors adjusted for heteroskedasticity and clustered at the two-digit SIC code level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 2.4 – Probability of Fraud Revealed by Event Schedule

	Panel A: Unscheduled Events							Panel B: Scheduled Events						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
PP	0.39***					0.92***	0.77***	0.67***					0.83***	0.70**
	(0.12)					(0.21)	(0.21)	(0.18)					(0.30)	(0.31)
O/S		0.37***				0.32***			1.58*				1.12***	
		(0.10)				(0.06)			(0.81)				(0.30)	
P/S			0.62***				1.72***			3.34***				2.20***
			(0.13)				(0.28)			(0.68)				(0.69)
C/S			0.30***				0.24***			0.96***				0.85***
			(0.06)				(0.05)			(0.25)				(0.23)
IV Spread				-1.76***		0.04	0.11				-1.47***		0.39	0.38
				(0.20)		(0.46)	(0.47)				(0.48)		(1.12)	(1.13)
IV Skew					2.22***	2.23***	2.16***					1.83***	2.16**	2.01**
					(0.18)	(0.38)	(0.39)					(0.43)	(0.84)	(0.83)
CAR	-0.06***	-0.06***	-0.06***	-0.06***	-0.06***	-0.05***	-0.06***	-0.06***	-0.07***	-0.07***	-0.07***	-0.08***	-0.07***	-0.07***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
SIZE	-0.03	-0.04	-0.05	-0.06*	-0.08*	-0.09**	-0.09**	-0.01	-0.02	-0.03	-0.02	-0.03	-0.03	-0.03
	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)	(0.05)	(0.05)	(0.05)	(0.05)	(0.06)	(0.06)	(0.06)
ILLIQ	-1.88***	-1.79***	-2.24***	-2.40***	-2.90**	-2.46**	-2.50**	-3.55***	-3.83***	-3.90***	-4.39***	-5.28**	-4.49*	-4.59*
	(0.49)	(0.60)	(0.74)	(0.90)	(1.14)	(1.24)	(1.24)	(1.32)	(1.31)	(1.34)	(1.69)	(2.27)	(2.37)	(2.40)
MOM	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***	-0.00**	-0.00**	-0.01***	-0.01***	-0.01***	-0.01**	-0.00*	-0.00*	-0.00*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
MB	0.16***	0.14***	0.14***	0.15***	0.16***	0.16***	0.15***	0.16***	0.14***	0.14***	0.15***	0.12***	0.11***	0.11***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)
Constant	-7.55***	-7.06***	-6.90***	-6.72***	-6.58***	-6.80***	-6.74***	-6.16***	-5.68***	-5.67***	-5.49***	-5.43***	-5.81***	-5.76***
	(0.48)	(0.51)	(0.53)	(0.56)	(0.62)	(0.65)	(0.64)	(0.81)	(0.78)	(0.78)	(0.84)	(0.94)	(0.98)	(0.98)
Observations	1,301,258	1,112,987	1,112,987	845,400	723,664	667,677	667,677	105,718	91,627	91,627	70,707	60,192	55,849	55,849

This table reports results from binomial logistic regressions where the dependent variable is an indicator for whether fraud is revealed in week $t+1$. *PP* is put volume to total options volume in week t. O/S is the ratio of total options volume to stock volume in week t. P/S is the total put volume to stock volume and C/S is the total call volume to stock volume in week t. *IVSpread* is the weighted difference between implied volatility of call and implied volatility of put options with the same strike price and expiration in week t. *IVSkew* is the difference between OTM put and ATM call options in week t. Details on the exact calculation of these variables is outlined in Section 2.3.3. Data on fraud revelation dates is gathered using securities class action lawsuit complaint documents obtained from the Stanford Securities Class Action Clearinghouse database. The set of controls include: *CAR* the cumulative weekly adjusted return, *SIZE* the log of market capitalization, *ILLIQ* the Amihud (2002) illiquidity ratio, *MOM* the market adjusted return of stock i over the past six months, and *MB* the market-to-book ratio. The numbers in parentheses are standard errors adjusted for heteroskedasticity and clustered at the two-digit SIC code level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 2.5 – Probability of Fraud Revealed by Cumulative Abnormal Return Percentiles

	Panel A: Bottom 25th Percentile							Panel B: Bottom 10th Percentile						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
PP	0.64***					1.14***	0.92***	0.71***					1.23***	1.06***
	(0.12)					(0.19)	(0.20)	(0.13)					(0.21)	(0.22)
O/S		0.49**				0.40***			1.07				0.49	
		(0.23)				(0.10)			(0.87)				(0.32)	
P/S			2.48**				2.42***			3.04***				1.98***
			(1.10)				(0.35)			(0.30)				(0.40)
C/S			0.30***				0.25***			0.27***				0.29***
			(0.08)				(0.06)			(0.10)				(0.10)
IV Spread				-1.36***		0.66	0.71				-1.30***		0.29	0.37
				(0.20)		(0.49)	(0.50)				(0.24)		(0.55)	(0.55)
IV Skew					1.98***	2.36***	2.14***					1.60***	1.62***	1.44***
					(0.20)	(0.42)	(0.42)					(0.23)	(0.44)	(0.45)
SIZE	0.07**	0.05*	0.04	0.05	0.03	0.02	0.02	0.17***	0.16***	0.15***	0.16***	0.13***	0.12***	0.12***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)
MB	0.12***	0.11***	0.10***	0.11***	0.12***	0.12***	0.11***	0.06***	0.05**	0.04**	0.06***	0.06***	0.07***	0.07***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
CAR	-0.05***	-0.05***	-0.05***	-0.05***	-0.05***	-0.05***	-0.05***	-0.04***	-0.04***	-0.04***	-0.04***	-0.04***	-0.04***	-0.04***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
ILLIQ	-3.21***	-3.62***	-4.07***	-3.98***	-4.47***	-4.12***	-4.11***	-3.21***	-3.69***	-3.78***	-3.98***	-4.82***	-4.22***	-4.20***
	(0.60)	(0.69)	(0.80)	(0.96)	(1.23)	(1.36)	(1.37)	(0.60)	(0.69)	(0.68)	(0.96)	(1.29)	(1.37)	(1.37)
MOM	-0.00***	-0.00***	-0.00***	-0.00***	-0.00***	-0.00***	-0.00***	-0.00***	-0.00***	-0.00***	-0.00***	-0.00***	-0.00***	-0.00***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Constant	-7.22***	-6.70***	-6.51***	-6.54***	-6.44***	-6.74***	-6.62***	-7.53***	-7.04***	-6.99***	-7.01***	-6.71***	-7.09***	-6.99***
	(0.40)	(0.41)	(0.41)	(0.46)	(0.52)	(0.55)	(0.55)	(0.39)	(0.41)	(0.40)	(0.46)	(0.52)	(0.56)	(0.56)
Observations	322,921	275,242	275,242	207,867	171,641	158,970	158,970	117,616	100,556	100,556	75,683	60,323	56,151	56,151

This table reports results from binomial logistic regressions where the dependent variable is an indicator for whether fraud is revealed in week $t+1$. *PP* is put volume to total options volume in week t. O/S is the ratio of total options volume to stock volume in week t. P/S is the total put volume to stock volume and C/S is the total call volume to stock volume in week t. *IVSpread* is the weighted difference between implied volatility of call and implied volatility of put options with the same strike price and expiration in week t. *IVSkew* is the difference between OTM put and ATM call options in week t. Details on the exact calculation of these variables is outlined in Section 2.3.3. Data on fraud revelation dates is gathered using securities class action lawsuit complaint documents obtained from the Stanford Securities Class Action Clearinghouse database. The set of controls include: *CAR* the cumulative weekly adjusted return, *SIZE* the log of market capitalization, *ILLIQ* the Amihud (2002) illiquidity ratio, *MOM* the market adjusted return of stock i over the past six months, and *MB* the market-to-book ratio. The numbers in parentheses are standard errors adjusted for heteroskedasticity and clustered at the two-digit SIC code level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

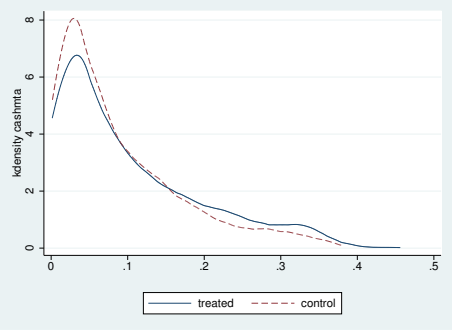
Table 2.6 – Summary Statistics of Firm Characteristics for Matching

	NIMTA	TLMTA	EXRET	RSIZE	SIGMA	CASHMTA	MB	PRICE
Panel A: Entire Data Set (N=1,407,343)								
Mean	0.003	0.348	-0.003	-8.857	0.444	0.090	2.501	2.476
Median	0.006	0.299	0.000	-8.960	0.386	0.056	2.064	2.708
Std Dev	0.015	0.245	0.040	1.491	0.242	0.092	1.568	0.503
Min	-0.119	0.008	-0.185	-12.188	0.129	0.001	0.273	-3.430
Max	0.029	0.942	0.190	-5.147	1.721	0.456	8.176	2.708
Panel B: Fraud Sample (N=964)								
Mean	0.000	0.300	-0.026	-8.811	0.543	0.102	2.843	2.428
Median	0.004	0.211	-0.023	-9.019	0.481	0.069	2.329	2.708
Std Dev	0.016	0.257	0.050	1.592	0.282	0.094	1.772	0.536
Min	-0.072	0.009	-0.185	-11.963	0.131	0.002	0.273	-1.366
Max	0.029	0.942	0.117	-5.573	1.721	0.456	8.003	2.708
Panel C: Matched Non-Fraud Sample (N=964)								
Mean	0.000	0.276	-0.025	-8.916	0.512	0.100	2.980	2.425
Median	0.005	0.204	-0.017	-9.116	0.428	0.066	2.569	2.708
Std Dev	0.017	0.231	0.049	1.556	0.297	0.094	1.808	0.568
Min	-0.105	0.008	-0.185	-12.145	0.132	0.002	0.273	-0.821
Max	0.029	0.942	0.140	-5.279	1.721	0.456	8.003	2.708

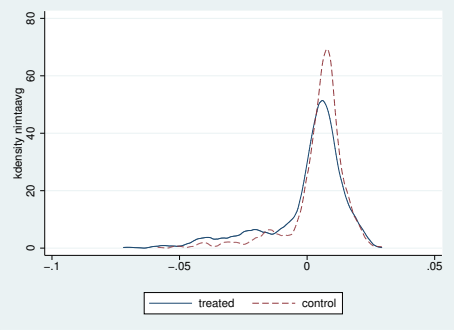
Table presents summary statistics of distress risk covariates used for our fraud to non-fraud sample matching methodology. Distress risk factors are calculated using the methodology outlined in Campbell et al. (2008). The distress distress risk factors are computed on a weekly basis for each firm i following the methodology outlined in Campbell et al. (2008). *NIMTA* is the ratio of net income to the market-value of total assets of firm i in week t. *TLMTA* is the ratio of total liabilities to the sum of market equity and book liabilities of firm i in week t. *CASHMTA* is the ratio of cash and short-term assets to the market-value of total assets of firm i in week t. *EXRET* is the log of the monthly excess return of firm i in week t relative to the S&P 500 index i week t. *SIGMA* is the standard deviation of firm i daily stock return over the previous 3 months as off week t. *RSIZE* is the log ratio of the market capitalization of firm i in week t to that of the S&P 500 index in week t. *MB* is the market-to-book ratio of firm i in week t. *PRICE* is the log of the price per share of firm i in week t. All variables are winsorized at the 5th and 95th percentiles.

Figure 2.13 – Matched Firm Characteristics

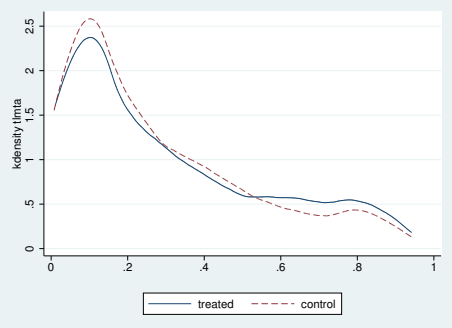
(a) CASHMTA



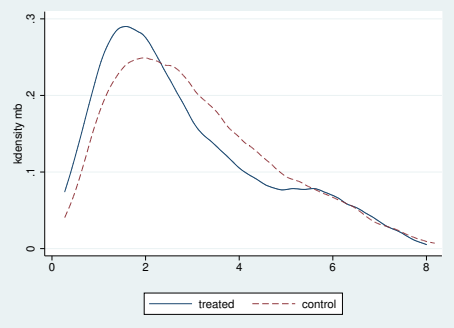
(b) NIMTA



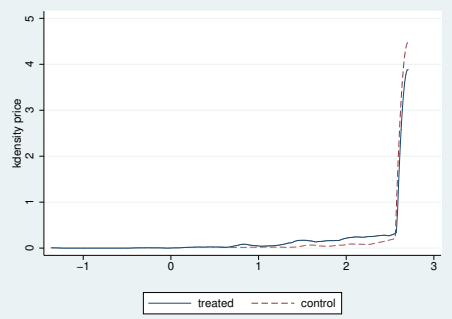
(c) TLMTA



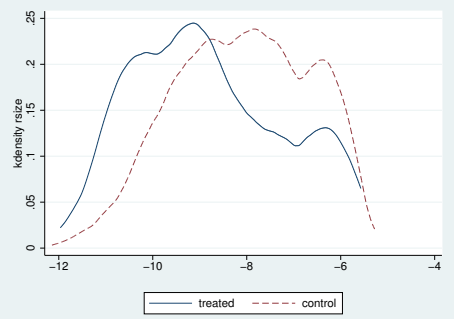
(d) MB



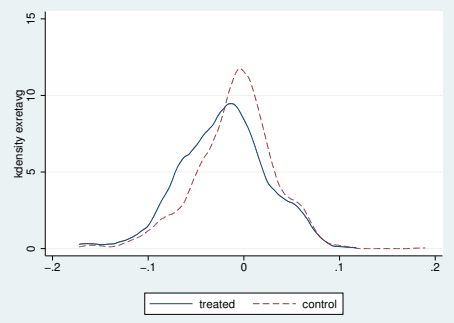
(e) PRICE



(f) RSIZE



(g) EXRET



(h) SIGMA

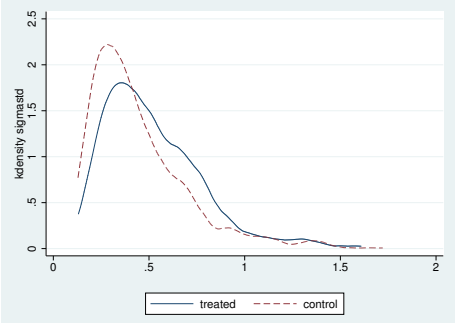
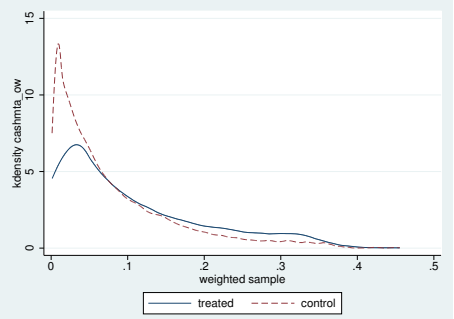
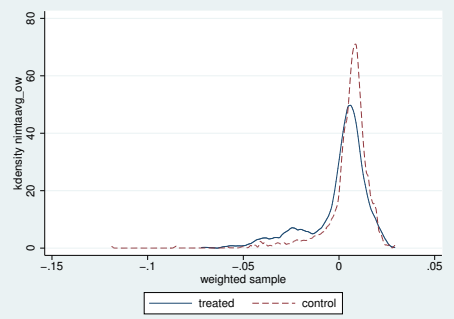


Figure 2.14 – Weighted Firm Characteristics

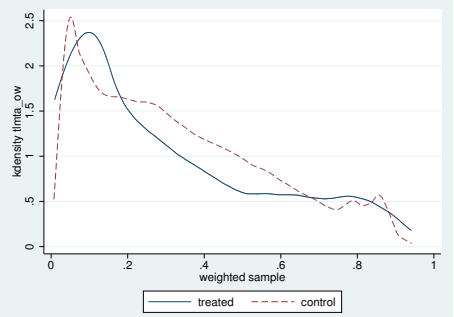
(a) CASHMTA



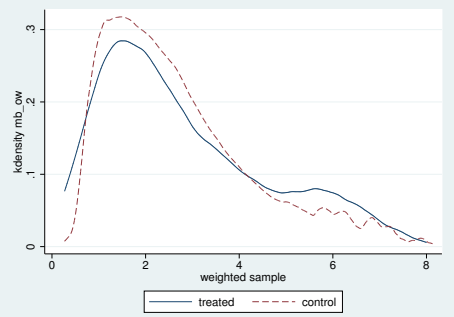
(b) NIMTA



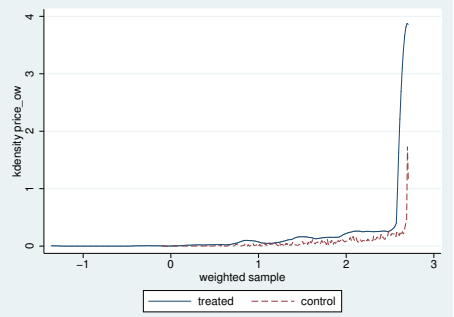
(c) TLMTA



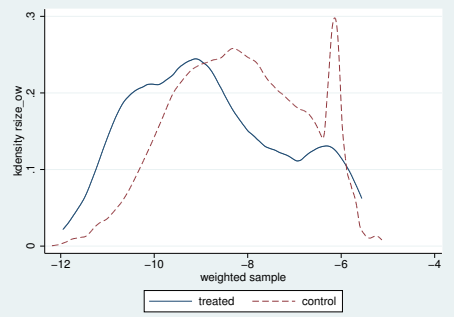
(d) MB



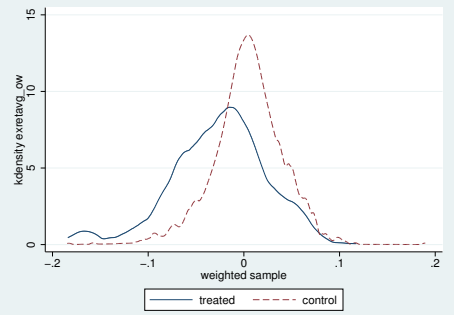
(e) PRICE



(f) RSIZE



(g) EXRET



(h) SIGMA

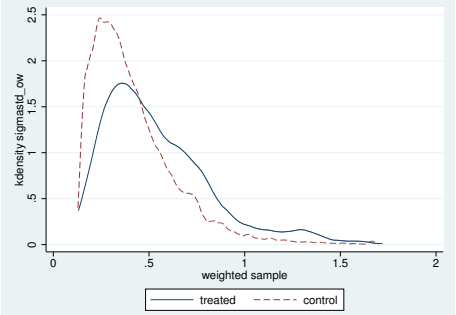


Table 2.7 – Probability of Fraud Revealed (Matched Sample)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
PP	0.24					0.87***	0.83***
	(0.22)					(0.21)	(0.26)
O/S		2.12***				3.22***	
		(0.61)				(0.77)	
P/S			5.40***				3.71*
			(1.89)				(2.13)
C/S			0.01				2.91***
			(0.71)				(0.97)
IV Spread				-2.34***		-0.64	-0.63
				(0.63)		(0.71)	(0.72)
IV Skew					3.90***	3.33***	3.32***
					(0.65)	(0.79)	(0.78)
Constant	3.57***	3.32***	3.37***	2.22***	0.79	0.26	0.28
	(0.48)	(0.49)	(0.49)	(0.51)	(0.58)	(0.58)	(0.55)
Controls	✓	✓	✓	✓	✓	✓	✓
Observations	1,928	1,876	1,876	1,756	1,650	1,626	1,626

This table reports results from binomial logistic regressions where the dependent variable is an indicator for whether fraud is revealed in week $t+1$ for propensity score matched sample of firms. Propensity score is computed using the Campbell et al. (2008) distress risk factors. *PP* is put volume to total options volume in week t. O/S is the ratio of total options volume to stock volume in week t. P/S is the total put volume to stock volume and C/S is the total call volume to stock volume in week t. *IVSpread* is the weighted difference between implied volatility of call and implied volatility of put options with the same strike price and expiration in week t. *IVSkew* is the difference between OTM put and ATM call options in week t. Details on the exact calculation of these variables is outlined in Section 2.3.3. Data on fraud revelation dates is gathered using securities class action lawsuit complaint documents obtained from the Stanford Securities Class Action Clearinghouse database. The set of controls include: *CAR* the cumulative weekly adjusted return, *SIZE* the log of market capitalization, *ILLIQ* the Amihud (2002) illiquidity ratio, *MOM* the market adjusted return of stock *i* over the past six months, and *MB* the market-to-book ratio. The numbers in parentheses are standard errors adjusted for heteroskedasticity and clustered at the two-digit SIC code level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 2.8 – Probability of Fraud Revealed by Event Schedule (Matched Sample)

	Panel A: Unscheduled Events							Panel B: Scheduled Events						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
PP	0.20					0.95***	0.90***	-0.06					0.19	0.52
	(0.23)					(0.24)	(0.27)	(0.71)					(0.85)	(0.90)
O/S		1.80***				2.86***			5.69**				7.73**	
		(0.52)				(0.65)			(2.86)				(3.38)	
P/S			5.10***				3.33*			2.43				3.57
			(1.65)				(1.74)			(6.08)				(6.46)
C/S			-0.29				2.55***			8.25				10.84*
			(0.66)				(0.97)			(6.09)				(6.43)
IV Spread				-2.88***		-1.31*	-1.30*				0.21		1.60	1.56
				(0.61)		(0.68)	(0.69)				(1.09)		(2.05)	(2.06)
IV Skew					4.33***	3.54***	3.54***					1.24	1.25	1.31
					(0.66)	(0.83)	(0.83)					(1.00)	(1.44)	(1.42)
Constant	3.77***	3.51***	3.54***	2.29***	0.81	0.22	0.24	3.31**	2.82*	2.67*	2.37	1.05	0.54	0.30
	(0.44)	(0.43)	(0.44)	(0.51)	(0.60)	(0.70)	(0.69)	(1.38)	(1.52)	(1.60)	(1.67)	(1.78)	(1.75)	(1.84)
Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	1,554	1,516	1,516	1,428	1,352	1,334	1,334	374	360	360	328	298	292	292

This table reports results from binomial logistic regressions where the dependent variable is an indicator for whether fraud is revealed in week $t+1$ for propensity score matched sample of firms. Propensity score is computed using the Campbell et al. (2008) distress risk factors. *PP* is put volume to total options volume in week t. O/S is the ratio of total options volume to stock volume in week t. P/S is the total put volume to stock volume and C/S is the total call volume to stock volume in week t. *IVSpread* is the weighted difference between implied volatility of call and implied volatility of put options with the same strike price and expiration in week t. *IVSkew* is the difference between OTM put and ATM call options in week t. Details on the exact calculation of these variables is outlined in Section 2.3.3. Data on fraud revelation dates is gathered using securities class action lawsuit complaint documents obtained from the Stanford Securities Class Action Clearinghouse database. The set of controls include: *CAR* the cumulative weekly adjusted return, *SIZE* the log of market capitalization, *ILLIQ* the Amihud (2002) illiquidity ratio, *MOM* the market adjusted return of stock i over the past six months, and *MB* the market-to-book ratio. The numbers in parentheses are standard errors adjusted for heteroskedasticity and clustered at the two-digit SIC code level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 2.9 – Probability of Fraud Revealed (Weighted Sample)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
PP	0.50***					0.94***	0.79***
	(0.10)					(0.18)	(0.18)
O/S		0.35***				0.40***	
		(0.08)				(0.07)	
P/S			0.33***				1.72***
			(0.11)				(0.32)
C/S			0.38***				0.30***
			(0.06)				(0.05)
IV Spread				-1.53***		0.22	0.31
				(0.18)		(0.38)	(0.39)
IV Skew					2.04***	2.13***	2.07***
					(0.17)	(0.33)	(0.34)
Constant	-7.52***	-7.36***	-7.36***	-7.39***	-7.23***	-7.45***	-7.41***
	(0.50)	(0.51)	(0.51)	(0.54)	(0.61)	(0.62)	(0.62)
Controls	✓	✓	✓	✓	✓	✓	✓
Observations	1,397,966	1,196,670	1,196,670	907,964	777,070	716,119	716,119

This table reports results from binomial logistic regressions where the dependent variable is an indicator for whether fraud is revealed in week $t+1$ for propensity score weighted sample of firms. Propensity score is computed using the Campbell et al. (2008) distress risk factors. Sample weighting is done using the Li et al. (2018) methodology. *PP* is put volume to total options volume in week t. O/S is the ratio of total options volume to stock volume in week t. P/S is the total put volume to stock volume and C/S is the total call volume to stock volume in week t. *IVSpread* is the weighted difference between implied volatility of call and implied volatility of put options with the same strike price and expiration in week t. *IVSkew* is the difference between OTM put and ATM call options in week t. Details on the exact calculation of these variables is outlined in Section 2.3.3. Data on fraud revelation dates is gathered using securities class action lawsuit complaint documents obtained from the Stanford Securities Class Action Clearinghouse database. The set of controls include: *CAR* the cumulative weekly adjusted return, *SIZE* the log of market capitalization, *ILLIQ* the Amihud (2002) illiquidity ratio, *MOM* the market adjusted return of stock *i* over the past six months, and *MB* the market-to-book ratio. The numbers in parentheses are standard errors adjusted for heteroskedasticity and clustered at the two-digit SIC code level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 2.10 – Probability of Fraud Revealed by Event Schedule (Weighted Sample)

	Panel A: Unscheduled Events							Panel B: Scheduled Events						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
PP	0.45***					1.05***	0.90***	0.64***					0.66**	0.61*
	(0.12)					(0.21)	(0.22)	(0.20)					(0.33)	(0.35)
O/S		0.33***				0.38***			1.56***				1.18***	
		(0.06)				(0.07)			(0.36)				(0.27)	
P/S			0.31***				1.66***			2.97***				1.63*
			(0.08)				(0.37)			(0.61)				(0.94)
C/S			0.36***				0.28***			1.13***				1.03***
			(0.06)				(0.05)			(0.25)				(0.27)
IV Spread				-1.68***		0.05	0.14				-1.07**		0.32	0.32
				(0.22)		(0.45)	(0.46)				(0.42)		(1.03)	(1.03)
IV Skew					2.07***	2.02***	1.97***					1.89***	2.03**	1.98**
					(0.20)	(0.40)	(0.42)					(0.48)	(0.80)	(0.80)
Constant	-7.72***	-7.45***	-7.45***	-7.35***	-7.33***	-7.61***	-7.57***	-6.75***	-6.85***	-6.78***	-7.09***	-6.62***	-6.45***	-6.41***
	(0.58)	(0.60)	(0.60)	(0.64)	(0.73)	(0.75)	(0.76)	(1.16)	(1.16)	(1.16)	(1.21)	(1.26)	(1.24)	(1.24)
Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	1,276,707	1,091,356	1,091,356	827,066	701,356	646,340	646,340	98,551	85,297	85,297	65,822	54,946	50,982	50,982

This table reports results from binomial logistic regressions where the dependent variable is an indicator for whether fraud is revealed in week $t+1$ for propensity score weighted sample of firms. Propensity score is computed using the Campbell et al. (2008) distress risk factors. Sample weighting is done using the Li et al. (2018) methodology. *PP* is put volume to total options volume in week t. O/S is the ratio of total options volume to stock volume in week t. P/S is the total put volume to stock volume and C/S is the total call volume to stock volume in week t. *IVSpread* is the weighted difference between implied volatility of call and implied volatility of put options with the same strike price and expiration in week t. *IVSkew* is the difference between OTM put and ATM call options in week t. Details on the exact calculation of these variables is outlined in Section 2.3.3. Data on fraud revelation dates is gathered using securities class action lawsuit complaint documents obtained from the Stanford Securities Class Action Clearinghouse database. The set of controls include: *CAR* the cumulative weekly adjusted return, *SIZE* the log of market capitalization, *ILLIQ* the Amihud (2002) illiquidity ratio, *MOM* the market adjusted return of stock i over the past six months, and *MB* the market-to-book ratio. The numbers in parentheses are standard errors adjusted for heteroskedasticity and clustered at the two-digit SIC code level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Figure 2.15 – Size and CAR Matched Sample Distribution

(a) CAR $t+1$ (b) CAR t

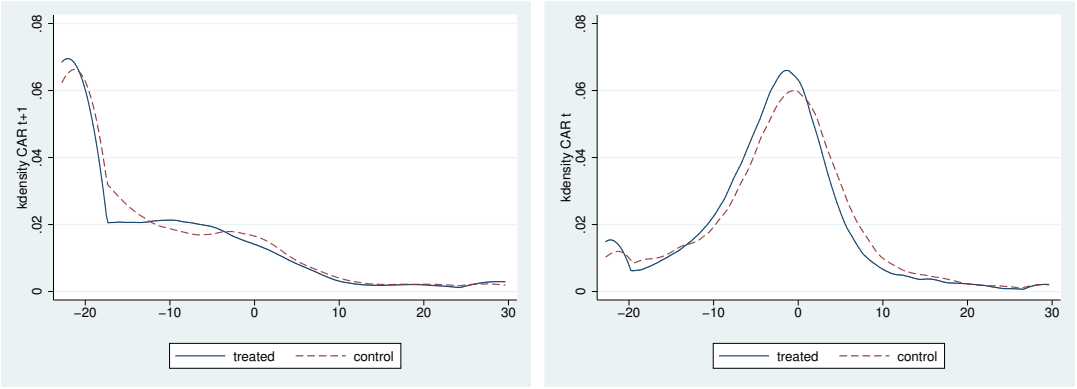


Table 2.11 – Probability of Fraud Revealed (CAR Matched Sample)

	Panel A: All Events		Panel B: Unscheduled Events		Panel C: Scheduled Events	
	(1)	(2)	(3)	(4)	(5)	(6)
PP	1.12***	1.12***	1.12***	1.09***	1.16**	1.15**
	(0.25)	(0.26)	(0.28)	(0.31)	(0.48)	(0.56)
O/S	2.22***		2.38***		1.63	
	(0.80)		(0.91)		(1.35)	
P/S		2.28		2.59*		1.69
		(1.50)		(1.40)		(2.45)
C/S		2.17*		2.21		1.57
		(1.11)		(1.45)		(2.61)
IV Spread	0.08	0.08	-0.05	-0.05	0.46	0.46
	(0.80)	(0.80)	(0.88)	(0.87)	(1.68)	(1.67)
IV Skew	0.07	0.07	-0.20	-0.20	1.04	1.03
	(0.50)	(0.50)	(0.53)	(0.53)	(0.96)	(0.96)
Controls	✓	✓	✓	✓	✓	✓
Observations	1,912	1,912	1,400	1,400	512	512

This table reports results from binomial logistic regressions where the dependent variable is an indicator for whether fraud is revealed in week $t+1$ for propensity score matched sample of firms. Propensity score is computed using firm size and weekly cumulative market adjusted abnormal returns. *PP* is put volume to total options volume in week t. O/S is the ratio of total options volume to stock volume in week t. P/S is the total put volume to stock volume and C/S is the total call volume to stock volume in week t. *IVSpread* is the weighted difference between implied volatility of call and implied volatility of put options with the same strike price and expiration in week t. *IVSkew* is the difference between OTM put and ATM call options in week t. Details on the exact calculation of these variables is outlined in Section 2.3.3. Data on fraud revelation dates is gathered using securities class action lawsuit complaint documents obtained from the Stanford Securities Class Action Clearinghouse database. The set of controls include: *CAR* the cumulative weekly adjusted return, *SIZE* the log of market capitalization, *ILLIQ* the Amihud (2002) illiquidity ratio, *MOM* the market adjusted return of stock i over the past six months, and *MB* the market-to-book ratio. The numbers in parentheses are standard errors adjusted for heteroskedasticity and clustered at the two-digit SIC code level. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

2.7 Appendix

What are securities class actions?

Securities class actions, are class action lawsuits that are brought by shareholders against the corporation, its officers and directors, and others on behalf of a group of investors who have suffered and economic loss in a security as the result of fraudulent stock manipulation or other violations of securities laws by the issuer. Typically these actions involve a plaintiff or a group of plaintiffs that allege a company has caused its securities to become overpriced either from failure to disclose material information to investors or from distribution of misleading or false information to investors. In general, securities class actions allege violations of the anti-fraud provision of the federal securities laws and (Section 10(b) and rule 10b-5 of the Exchange Act), allegations of misrepresentations or omissions in registration statements (Section 11 of the Securities Act), prospectuses (Section 12(a)(2) of the Securities Act), and/or other SEC filings. Class actions are filed to recuperate compensation for those who purchased the stock during the court certified class period. The "class period" is the time frame during which it is believed the alleged fraud or other securities violation(s) artificially inflated the price of the stock in the case.

Section 10(b) and Rule 10b-5 Claims

Most securities class action lawsuits are filed under the anti-fraud provisions under Section 10(b) and Rule 10b-5 of the Exchange Act, which prohibits the omissions of material fact, dissemination of any untrue statement, or the use of any manipulative device in connection with the purchase or sale of any security. Claims are filed under Section 10(b) and Rule 10b-5 if the plaintiff believes the defendant had malicious intent by way of a desire to deceive or commit fraud and these claims can apply in connection to proxy, voting, tender offer, or going private actions as well as basic sales of securities. Rule 10b-5, under Section 10(b), specifically states that:

> "It shall be unlawful for any person, directly or indirectly, by the use of any means or instrumentality of interstate commerce, or of the mails, or of any facility of any national securities exchange (a) to employ any device, scheme, or artifice to defraud; (b) to make any untrue statement of a material fact or to omit to state a material fact necessary in order to make the statements made, in light of circumstances under

which they were made, not misleading; or (c) to engage in any act, practice, or course of business which operates or would operate as a fraud or deceit upon any person, in connection with the purchase or sale of any security."

A violation is committed under Section 10(b) when those individuals who have a duty to disclose but instead knowingly employs a manipulative (defined as exploitative conduct that manipulates the whole market) or deceptive (defined as dishonest conduct such as omitting something investors need in order to make a good decision, including half-truths, instead of full disclosure) devices in connection with the purchase or sale of a security. In the case of such actions that deceive investors or manipulate markets regulated by the SEC the responsible party is liable to any purchasers/sellers of the security, the SEC, or the U.S. Department of Justice.

Section 11, 12(a)(2) or 15 Claims

Many securities class action cases are also filed alleging violations of one or more of Sections 11, 12(a)(2) or 15 of the Securities Act and are filed in connection with security issuance. Cases filed citing violations of Section 11 are alleging fraud in the registration documents in connection with the issuance of a security. Section 11 covers misstatement or omission of material facts that makes registration document misleading. Cases filed alleging violations of Section 12(a)(2) are specifically focused on misstatements or omission of facts in the prospectus itself. Cases filed alleging violations of Section 15 of the Securities Act pertain to the controlling person. While Section 11 and Section 12(a)(2) list a set of liable parties for misstatements and omissions from various registration documents, Section 15 expands this definition to include any controlling persons (officers, controlling shareholders, board members, etc.) who controls the person that manages the questionable company registration documents.

Data Collection

This section details our data collection and coding process.

1. We collect all available data for each securities class action filing listed on the Stanford Class Action Clearinghouse website under "Filings Database." [9] This includes all listed filings starting

[9] http://securities.stanford.edu/filings.html

from 01/01/1996 and ending on 12/31/2016. We collect all data related to the complaint filing and the defendant firm. This includes: company name, case name, case file date, case status, last date of case review, case summary, stated class period start date, stated class period end date, plaintiff(s), defendant(s), company sector, company industry, company headquarters, company ticker symbol, company market and market status, court where complaint was filed, docket number, and presiding judge over the case.

2. We download the official class action complaint(s) for each SCA filing. This includes the first identified complaint and any reference complaint(s) and related district and/or state court filings. The official "Class Action Complaint for Violations of Federal Securities Laws" identifies the plaintiff(s), the defendant(s), class period start date, class period end date, and class action filing date. We verify that the class period start date, class period end date, and class action filing date we collect directly from the SCAC website match the dates listed in the associated complaint document of each SCA.

3. Each complaint document outlines the nature of the case, what sections of the securities code are allegedly violated, and the plaintiff's class action allegations, which includes an outline of all false information dissemination over the specified class period and when the fraud was finally revealed. We identify the "disclosure date," the official date when the negative information revealing the fraud was disclosed, from the complaint documents. We use several methods to determine the disclosure date.

A. We review the "Nature of the Action" section. This section (if included in the complaint) typically acts as a form of executive summary that outlines the key points of the case, including the type of violation and when the market learned about the violation. If the section includes a date for when the fraud was revealed, we code this date as the disclosure date.

B. If the complaint does not specify a disclosure date in the Nature of the Action section, we look for a section in the complaint that is specifically dedicated to outlining when the truth of the violation(s) was revealed. This section exists in approximately 25 percent of the court documents and is identified by have the word "truth" in the title.[10] When a complaint has

[10]Examples of section titles are: Truth Emerges, Truth Comes to Light, Truth is Revealed, Truth Begins to Emerge, etc.

this section, we code all the listed dates that are provided. We take the first listed date as the fraud revelation date for our analysis.

C. If neither the first or second option is available, we examine all the listed dates that fall under the "Allegations" section. This section in the complaint a basically a timeline of all the statements issued by the defendant during the class period that are alleged to be false and/or misleading. If the complaint does not designate a separate section for when the truth is revealed, the allegations section also includes the dates that would be categorized as the disclosure of the violations. We code dates as being disclosure related using several methods. First, we look for code terms to indicate that the date indicates the revelation of negative information. Second, in order to highlight the loss suffered by shareholders following the fraud revelation, the negative information dates listed in the complaint documents are typically accompanied with a value for how much the stock declined following the disclosure of the negative news. Therefore, any date that falls within the class period and is accompanied by a specified negative market decline is coded as a disclosure date.

Using the above three methods we construct our initial sample of disclosure date events. Approximately 60 percent of the complaints have a disclosure date that is equal to the class period end date. The remaining 40 percent of complaints have disclosure dates that occur before the official class period end date.

4. For each disclosure date we also code how the information was revealed. The suspected fraud can be revealed through various channels. The primary method is through a company issued press release. This means that the company issues a statement that is shocking to the market by being inconsistent with what was previously stated. In many instances this occurs in the form of an earnings surprise, guidance downgrade, delayed earnings, restatement announcement, or the disclosure of a lost contract or failed FDA approval. The company violation(s) can also be revealed through a U.S. or foreign news source, U.S. or foreign government agency statement, analyst report, or the filing of SEC forms.

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Chapter 3

The Market Cost of Unethical Conduct: Revealing Differing Market Reactions to Employee and Firm Indictments for Foreign Corrupt Practices Act Violations

Co-authored with Martin Boyer[1]

Abstract

This paper examines the stock market reaction to firm indictments for bribery violations of the Foreign Corrupt Practices Act (FCPA). We use an original, hand-collected sample comprising 166 unique event days of FCPA enforcement actions brought against firms and employees by the Securities and Exchange Commission and the Department of Justice between 1978 and 2015. We contribute to the literature on the effects of illegal and unethical firm activities by examining the impacts of indictments according to defendant types. We study the stock market reaction to indictments naming a firm, its subsidiary, or employee as defendants. We do not find any evidence that the market reacts negatively to indictments for bribery brought against the parent company or its subsidiaries. In contrast, we find a statistically significant and negative market reaction when firm employees are named in the enforcement action. This result holds after controlling for numerous other characteristics of the violation and alternative model specifications. Our findings suggest that shareholders do not penalize firms for bribery unless the enforcement action names an employee.

JEL classification: G14, G38, K22, K42, L51
Keywords: Foreign Corrupt Practices Act, bribery, firm value, event study

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3.1 Introduction

The Foreign Corrupt Practices Act of 1977 (FCPA) prohibits American companies from paying bribes to influence foreign officials in order to obtain or retain business. The FCPA was enacted in the wake of the Watergate political scandal when the United States Securities and Exchange Commission (SEC) discovered that over 400 U.S. firms had paid hundreds of millions of dollars in bribes to foreign government officials to secure business overseas. In order to conceal these payments the bribing firms were falsifying their corporate financial records and deceiving shareholders. The FCPA was enacted by the U.S. Congress as part of a plan to to battle corporate bribery and restore public confidence in the financial integrity of American firms.

There have been a total of 524 enforcement actions issued for FCPA violations from 1978 to 2015. The majority of these actions have been issued over the past ten years. The increase in FCPA enforcement has brought forth the debate about whether such a law inhibits U.S. business operations overseas and imposes unnecessary costs. Opponents of the Act argue that bribery is a necessary part of doing business in more corrupt states as part of the 'grease the wheels' hypothesis (Nguyen and van Dijk, 2012; Lui, 1985). Therefore, by inhibiting U.S. firms from engaging in such behavior, the Act imposes unrealistic constraints that put U.S. firms at a competitive disadvantage in relation to firms that are not subject to anti-bribery regulation. In fact, Zeume (2017) shows that the passage of the U.K. Anti Bribery Act in 2010 resulted in a decrease in firm value for firms subject to the act and an increase in firm value for firms that were not subject to the new regulation.[2] Proponents of the law argue that corruption is pervasive and socially inefficient. Corruption has been blamed for why developing countries have been unable to achieve desired growth levels despite increased investment and the existence of economically valuable growth opportunities (Fisman and Svensson, 2007; Rand and Tarp, 2010).

In this paper, we examine the stock market's reaction to announcements of FCPA violations from 1978 to 2015. This subject is particularly interesting because the act of bribing foreign officials in order to increase firm revenue may not actually be viewed negatively by shareholders. Despite bribery being illegal according to the FCPA, investors may actually view companies that engage in corrupt acts designed to increase shareholder wealth favorably. Assuming the market

[2]Additional evidence by Graham and Stroup (2015) shows that FCPA enforcement actions result in a decrease in cross-border fixed investments by U.S. companies in countries that are subject to FCPA investigations.

serves as a judge of firm behavior, any abnormal returns surrounding FCPA indictments provide insight of how shareholders regard firm corruption. In addition, some literature has suggested that without a stock price reaction the disciplining of managers may not take place because the legal fines are so minor relative to the size of the companies (Davidson et al., 1994; Karpoff and Lott, 1993).

To carry out the analysis, we build an original sample of 166 unique event dates of FCPA indictments of publicly traded firms (including the firms' subsidiaries and employees) listed on a U.S. stock exchange. We gather indictment information from public court documents available on the SEC and DOJ websites. The objective of this study is to investigate empirically how the market reacts to announcements of FCPA violations and identify factors that drive abnormal equity returns. Despite various studies looking at market reactions to corporate illegalities, there has never been any study examining the act of foreign bribery individually.

In the first part of the econometric analysis, we use an event-study methodology to determine if any market value losses are incurred by shareholders in the period surrounding an FCPA enforcement announcement. We find that for the sample of 166 events, there is a negative and statistically significant (at the 90% confidence level) market reaction over the ten days before and ten days after event window. However, although we find that abnormal returns are also negative over the one day before to one day after event window, the abnormal returns are not significant for the full sample of events. These initial results suggests that shareholders may not view FCPA violations negatively.

We contribute with this study by being the first to examine whether the category of the defendant impacts the way shareholders react to FCPA indictment news. FCPA enforcement actions can name the parent company, its subsidiary, and employee of the parent or subsidiary as a defendant in an FCPA action. We break down our sample of events by defendant type and find some interesting results. When we split our sample by defendant type, our results suggest that the negative abnormal market reaction is driven by negative and highly statistically significant cumulative abnormal returns in the sample of enforcement action events when an employee is named as a defendant. In the sample of events where a parent company or subsidiary is named as defendant, we find not statistically significant cumulative abnormal returns for any of the tested event windows.

In the second part of the econometric analysis, we use multivariate regression analysis to examine if certain characteristics of the FCPA cases and the firms charged can explain abnormal

returns. We find further evidence that employee indictments represent a negative abnormal return of -3% (statistically significant at the 5% level) over the three day event window and -7% (statistically significant at the 5% level) over the 21-day event window. These results suggest that the market is sensitive to defendant type and reacts negatively to corruption charges mainly when they are levied against individual employees. We find no evidence of a relationship between the monetary penalties imposed on parent companies and their subsidiaries for violations of the FCPA. This suggests that the size of the penalties is so insignificant relative to the size of the firms that the market does not price these costs into having any significant impact on future cash flows. We also find no robust evidence that the market favors firms that voluntarily disclose violations or punishes firms for repeat violations. Overall, our results suggest that shareholders do not necessarily see bribery as a negative firm activity and only react negatively when the investigation places an actual face to the crime through naming an individual as a defendant in an enforcement action.

A number of studies have investigated the impact of illegal firm behavior on shareholder value. Davidson and Worrell (1988) use a sample of 131 events of "blatant illegalities" from the 1970s and find a one-time downward adjustment of stock returns on the day the news reaches the market.[3] Long and Rao (1995) use a sample of 54 events of unethical conduct as reported in the *Wall Street Journal* for the period of 1989 to 1992. The authors find no significant abnormal returns on the announcement day but observe statistically significant cumulative abnormal returns over a twenty one day observation window surrounding announcements.[4] Reichert et al. (1996) look at both indictment day and resolution day effects of corporate crimes. For a sample of 83 indictments in the period of 1980-1990, the authors find a negative market reaction in the days surrounding the announcement. In this context, Reichert et al. (1996) are one of the only studies to investigate the factors that influence abnormal returns using multivariate analysis. The authors find that firm size reduces the negative returns and that the size of penalties relative to firm size has no impact. Davidson et al. (1994) investigate how indictments for specific corporate crimes impact firm value over the 1965 to 1990 period. The authors find that for the total sample of crime announcements there is no statistically significant abnormal return.[5] However, specific crimes such as bribery, criminal

[3]The authors define "blatant illegalities" as: bribery, including kickbacks and illegal rebates; criminal fraud; tax evasion; illegal political contributions; and criminal antitrust violations, limited to price-fixing and bid-rigging.

[4]Long and Rao (1995) define unethical conduct as cases of: bribery and illegal payments; employee discrimination; environmental pollution; and insider trading.

[5]The authors look at the following categories of corporate crimes: bribery; tax evasion; theft of trade secrets; financial reporting violation; violations with government contracts; kickbacks; criminal fraud; price fixing; security law

fraud, financial reporting violations and price fixing produces abnormal returns. Differentiating by type of crime also reveals that not all abnormal returns are negative and that firms accused of price fixing experience positive abnormal returns on the indictment announcement. The authors suggest that this is because price fixing is so profitable that some shareholders consider it desirable even if the company is caught.

By recognizing that not all corporate crimes are equal, this study contributes to the existing literature on equity performance and illegal firm behavior on several dimensions. First, we focus on one specific form of firm misconduct, foreign corruption. By using FCPA indictments, we build a sample of events with a clearly defined form of firm corruption. Previous studies examining the impact of illegal firm behavior on equity would gather event data based on newspaper announcements, making the sample biased to how the illegal behavior is defined. Second, we examine the effect of indictments by defendant type. Existing studies either do not specify the defendant or only use cases where the parent company is charged. Third, we use multivariate analysis to investigate if different case and firm characteristics can explain the abnormal returns. Lastly, this study examines events for a more current period of 1978 to 2015. Existing studies used events from the 1970s and 1980s. Time can be an important factor since ethical standards and expectations can change. For instance, 85 percent of the FCPA indictments occurred post 1990. If investors feel the marketplace has become more competitive, they may be more forgiving of firms that are willing to break rules to maximize shareholder wealth. On the other hand, if a wave of corporate crimes has made investors more sensitive and less trustworthy, any sign of wrongdoing may be penalized harshly by the market.

The remainder of this paper is organized as follows. Section 3.2 describes the data set and our variables of interest. Section 3.3 outlines the event study methodology and presents results. Section 3.4 investigates the determinants of abnormal returns, and section 3.5 concludes.

3.2 The Data

There have been a total of 524 FCPA enforcement actions from 1978 to 2015.The FCPA applies to all firms (U.S. or foreign) listed on a national securities exchange in the United States. The FCPA also applies to any firms with stock trading in the U.S. over-the-counter market as well

violations; and overcharging customers.

as those required to file SEC reports, such as non-listed firms that have a significant number of unaffiliated shareholders. The FCPA enforcement authority is shared by the SEC and DOJ. The DOJ is responsible for the criminal enforcement of the FCPA and the SEC is responsible for the civil enforcement. Both authorities maintain a list of all actions brought forth against firms and individuals for violations of the FCPA.[6]

3.2.1 Sample of Events

For this study, we hand-collect data on individual FCPA enforcement actions from information published on the SEC and DOJ websites. We remove all enforcement actions that include private firms, firms that are delisted at the time of an indictment announcement or any action where the parent company cannot be identified. We do not limit our sample to only domestic (U.S. incorporated) firms and only exclude cross-listed firms that do not have daily returns data at the time the enforcement action is issued.[7] We also exclude any firms with enforcement actions initiated 30 days before or 30 days after any other significant corporate events.[8] Finally, we use *Factivia* to verify that the enforcement initiation announcement date is the earliest public information available regarding violations of the FCPA. Figure 3.1 shows the distribution of the total number of FCPA enforcement actions per year over the study period and our sample of enforcement actions after applying the above sample selection criteria.

The final observation sample consists of 234 individually issued enforcement actions related to 95 different firms for violations of the FCPA. The 234 actions equate to a final sample of 166 *unique event* dates. A unique event means that if multiple enforcement actions related to the same company are initiated on the same date it is defined as one event. For example, on December 20, 2013 three enforcement actions were issued related to the Archer Daniels Midland Company. One enforcement action was issued by the SEC against Archer Daniels, while the DOJ issued an enforcement action against Archer Daniels and an action against Archer Daniels' subsidiary in the Ukraine. On the given date three enforcement actions were issued but the purpose of our analysis the three actions relate to one unique event date for the Archer Daniels Midland Company.

[6] A list of all enforcement actions can be found on the SEC and DOJ websites under the Foreign Corrupt Practices Act category. The agencies also publish all publicly available court documents of the complaints filed against each defendant.

[7] This includes: Hitachi Ltd., Alstom SA, Allianz SE, Fiat-Chrysler, Volvo AB, and Akzo Nobel

[8] Significant corporate events include: merger or acquisition announcements, other regulatory enforcement actions, bankruptcy filings, and any other significant news related to firm financials.

3.2.2 Features of Cases

The market reaction to news of an FCPA indictment depends on various case-specific factors. We gather information and code the various characteristics of each FCPA case to see how those factors influence the market reaction to news of an FCPA violation.

Defendant Type

An enforcement action for violations of the FCPA can be brought against various parties. The enforcing authorities can charge the *parent* company, a *subsidiary*, and *employee* of the parent or subsidiary.[9] We collect data on each FCPA enforcement action defendant and code each defendant type into one of the three categories. In our sample, 115 of the events include at least one enforcement action naming a parent company, 35 events with an enforcement action naming at least one subsidiary, and 52 events with an enforcement action naming an employee of the parent or subsidiary. We distinguish between defendant type because it is likely to impact the market reaction. The financial impact on the firm varies by the defendant of the enforcement action. In most cases, there is some form of monetary penalty associated with violations of the FCPA. A monetary penalty issued against a parent or subsidiary can have a direct and significant impact on the cash flows of the firm depending on its size. In contrast, a monetary penalty issued against an employee is unlikely to have any significant financial impact and is may also be covered by director's and officer's insurance. Alternatively, the party named in an enforcement action can raise different red flags for shareholders. An employee indictment puts a face to the illegal activity and can make shareholders suspicious of possible other illegal activity occurring in the firm. As a result, the market reaction to the indictment news can result in a higher risk premium assigned to calculating future firm cash flows and value.

Monetary Sanctions

Most, although not all, FCPA violation indictments include some form of monetary sanction. Table 3.1 shows descriptive statistics of the monetary sanctions.[10] The *total sanctions* variable

[9] This includes wholly- and partially-owned subsidiaries as well as directly or indirectly owned subsidiaries.

[10] Sanction amounts are only recorded for parent and subsidiary indictment events. Cases brought against employees in many instances include some form of monetary penalty. However, we assumed that this amount is paid directly by the employee and has no impact on firm financials. Even if it were the case that the firm paid the employee penalties, the values of the fines for individuals are so small compared to firm fines that including them would make no impact on

measures the total value, in US$, ordered to pay by the defendant and includes criminal and/or civil penalties, the disgorgement of profits obtained from the illegal activities, and pre- and post-judgement interest. In our sample, 92% of the cases filed against a parent or subsidiary include some form of monetary penalty and the average total sanction amount paid is US$ 35.56 million, while the median is only US$ 6.72 million. To understand how this amount compares to the size of the firm, we express the total fine as a percentage of firm market value 30 days before the announcement date. On average, the total fines for a given firm for violating the FCPA represents only 0.65% of the market value of the firm. While for half of the actions in our sample the fine represents less than 0.06% of firm market value. This suggests that the already tiny average of less than one percent is driven by the exceptionally large violations and does not represent typical penalties. Considering how small size of the monetary penalties, we do not expect to see a strong relationship between the monetary penalty and abnormal returns. However, if any size fine matters, then we should observe an decrease in abnormal returns as the fine to market value ratio increases.

Other Case Characteristics

The SEC and DOJ can become aware of FCPA violations through multiple channels. One of them is when a firm chooses to voluntarily disclose of a possible violation to prosecuting agencies. The voluntary disclosure and cooperation with investigators is often sited in the complaint documents in a favorable light and often result in the assignment of more lenient penalties. When a firm chooses to voluntarily disclose to authorities it sends a signal that it does not condone the illegal behavior and is attempting to be more transparent in order discourage any future illicit activity. In our sample, 57% of the enforcement actions site that it was initiated through a voluntary disclosure. The market reaction to cases triggered by a voluntary disclosure should carry a less negative market reaction, since they signal the intent of the defendant to be transparent. We construct a variable equal to one if an enforcement action is the result of a *voluntary disclosure* and zero otherwise.

The SEC and DOJ are not the only agencies investigating firms for corruption. Given that firms in our sample engage in corrupt acts worldwide, they often fall under the jurisdiction of other governing bodies which may prosecute them for the violations. We include an indicator, *foreign investigation*, to identify whether the defendant in our sample is also being indicted or investigated by agencies outside the United States. Approximately 16% of the enforcement actions in our

the final results.

sample are associated with other foreign investigation. This can include foreign country agencies or global agencies such as the United Nations. The additional investigations can be a signal of the size of the violation, and further increase the expectations of future legal costs.

We stated earlier that our sample of 166 events represents 234 individually initiated enforcement actions. In our sample, on average, a given event day includes the initiation of more than one enforcement action. An increasing number of enforcement actions initiated on a given day can have an impact on the market reaction. First, it can generate greater media coverage leading to a bigger shareholder reaction. Second, the number of indictments is an indication of the scale of the corruption. If multiple employees, subsidiaries, and the parent are being charged at the same time it signals a widespread problem. We construct a variable named *total enforcement actions* to indicate the number of individual actions issued on a given event day. We expect a higher number of enforcement actions to be associated with a more negative market reaction.

Not only can there be multiple indictments on a given event day, the same firm can find itself under indictment multiple times in the past 40 years. We account for such impact by measuring a firm's reputation by whether the firm or any of its affiliates have been previously charged with FCPA violations. We construct *reputation* as an indicator equal to one if, at the time of the event, the firm had been previously indicted for FCPA violations. Reputation can serve as an indication of future costs, since multiple violations suggest that the firm has not altered its actions and is still willing to engage in illegal activities which can result in additional legal penalties and limit revenue sources. Therefore, the stock market response should depend on the current case but also on previous transgressions.

The DOJ can bring both civil and criminal charges against a defendant, while enforcement actions initiated by the SEC can only be civil or administrative. SEC indictments carry lower monetary penalties and, if convicted, an employee cannot do prison time. DOJ indictments are typically criminal and can include prison time for individuals. DOJ indictments also carry higher monetary penalties and can signal the seriousness of the violation because of the DOJ's involvement. In our sample, 52% of the cases include indictments by the DOJ and 77% by the SEC, with 49% of the events including both an SEC and DOJ action. We construct an indicator variable (*DOJ*) equal to one when the DOJ is involved, and zero otherwise. We expect market reactions to DOJ indictments to be more pronounced.

3.3 Impact of FCPA Indictments on Equity Returns

3.3.1 How should shareholders react to FCPA violations?

FCPA indictments raise questions about firm performance and suggest that a firm's actual, legally-gotten earnings in prior years may have been below what was reported. In order to ensure open, transparent market competition, the FCPA prohibits the payment of bribes to foreign officials in an effort to gain or retain business. Any firm charged with violating the FCPA anti-bribery provision can be presumed to have garnered business it may not have had otherwise. Such charges raise concerns not only about the risks of SEC and DOJ sanctions, but also about these firms' previously reported, and possibly future earnings in the associated foreign markets. The estimated value of business to be obtained in many of these corruption cases runs in the billions of US dollars.[11] As long as the violations go undetected, there are no costs to the offending firms (with the exception of the amounts paid in the bribes), and the firms actually experience higher performance. However, if the violations are discovered, the offending firms will likely face costs such as legal penalties, profit disgorgement, and potential loss of future revenues (Karpoff and Lott, 1993). Consequently, we would expect to see a negative stock price reaction following a firm's indictment under the FCPA.

Importantly, indictments may have negative effects on reputation that surpass the actual dollar amounts of the penalty in the indictment. The revelation of corruption may lead shareholders to question the violator's performance in more than simply the named operations. In particular, conviction for corruption can spill over to other facets of the company. Davidson and Worrell (1988) and Reichert et al. (1996) suggest that the amount of negative reaction among shareholders stems from news about the corporate social irresponsibility, not the actual size of the illegalities, which are often minor relative to firm size. Therefore, if shareholders do not approve of corrupt behavior or doubt other reported earnings, we should observe a negative market reaction surrounding the announcement of FCPA charges. An overly negative market reaction can thus serve as an additional penalty for the wrongdoing and signal to management that such behavior is not acceptable.

Conversely, aspects specific to the FCPA may make it an act worth infringing from the standpoint of wealth maximizing shareholders. Firm managers engaged in enacting foreign corrupt

[11] The following cases had estimated values of over US$ 1 billion in business to be obtained: Archer Daniels Midland; General Electric; IBM; Halliburton and KBR Inc.; Diebold Inc.; Baker Hughes; Total SA; El Paso Corp.; Alcatel-Lucent; Schnitzer Steel; Wilibros Group; Innospec Inc.; Siemens AG; Daimler AG; ABB Ltd.

practices may actually be engaged in profit maximization, which is to the benefit of shareholders. The majority of FCPA violations occur in developing or emerging markets, often ranked poorly according to corruption indices.[12] In countries where corruption is pervasive, it is commonplace to pay bribes to gain market entry or bypass cumbersome bureaucracies, elements of which may have even been put in place for the sole purpose of extracting bribes from those affected (Javorcik and Wei, 2009; Straub, 2008; Shleifer and Vishny, 1993). Bribes and kickbacks may simply reflect a customary part of business practice in these locations (Shleifer and Vishny, 1993; Jeong and Weiner, 2012; Méndez and Sepúlveda, 2006). Consequently, unlike other SEC violations, wealth maximizing shareholders may consider it acceptable for managers to occasionally violate the FCPA, given that it reflects behavior that increases firm performance, since getting caught is the proof that the firm is engaged in profit maximizing enterprises overseas. And given that not all companies that corrupt foreign officials get caught, it is possible that growth-oriented investors would welcome managerial attempts to test the legal limits of the FCPA rather than proceed in a risk-averse manner (Davidson and Worrell, 1988).

3.3.2 Event Study Methodology

To examine stock price behavior surrounding accusations of corruption, we perform a daily event study using the MacKinlay (1997) methodology. We use the market model to compute abnormal returns. The market model relates the observed returns of a given stock to a market portfolio return. For any security i in the sample the market model is

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \tag{3.1}$$

where R_{it} is the return of security i on day t and R_{mt} is the market portfolio return on day t, measured by the CRSP value-weighted market portfolio return. The term $\beta_i R_{mt}$ is the proportion of the return of security i on day t that is due to marketwise factors. The parameter α_i measures the portion of the daily return of security i that is not due to market movements. The prediction error term, ε_{it}, captures the return of security i on day t that is not due to either movements in the market or to the average daily return of the stock. Therefore, ε_{it} captures the deviation of the daily

[12] In our sample, the average corruption perception index (CPI) score for the countries where the violations took place was 38. The CPI is scored on a scale of 0 to 100, ranging between 0 for highly corrupt countries, and 100 for highly clean countries.

return of a stock from what is expected based on Eq. 3.1 and is taken as an unbiased estimate of the financial effects of the event, the abnormal return.

$$AR_{it} = R_{it} - \hat{\alpha}_i - \hat{\beta}_i R_{mt} \tag{3.2}$$

AR_{it} is the abnormal return where $\hat{\alpha}_i$ and $\hat{\beta}_i$ are the estimates of α_i and β_i from Eq.3.1. We use OLS to estimate Eq.3.1 and compute normal returns for the window $[-285; -30]$ in event time. Event time is trading days relative to the indictment date ($t = 0$).

To draw overall inferences about the sample of events the abnormal returns are aggregated through time and across securities. We aggregate abnormal returns for the period of investigation for each security. Define $CAR_{i,[-t,+t]}$ as the cumulative abnormal return of security i for event window $[-t,+t]$. To examine the average loss incurred by shareholders across the sample of events we compute the cumulative average abnormal return for the event window $[-t,+t]$ for the aggregate sample of events, $CAAR_{[-t,+t]}$. We test the null hypothesis that abnormal returns are zero using a standard t-test as done by MacKinlay (1997).

Lastly, we compute the average abnormal shareholder loss ($SL_{[-t,+t]}$) for the specified period surrounding an FCPA indictment announcement. We define shareholder loss as

$$SL_{i,[-t,+t]} = CAR_{i,[-t,+t]} * MV_{i,-30} \tag{3.3}$$

where $CAR_{i,[-t,+t]}$ is the cumulative abnormal return for firm i for the event window $[-t,+t]$, and $MV_{i,-30}$ is the market value of firm i 30 days before the event day, in event time.

3.3.3 Event Study Evidence

Table 3.2 presents the cumulative average abnormal returns (CAAR) for various intervals and their associated test statistics. Panel A reports results for the entire sample of 166 indictment announcements. On average, shareholders suffer a statistically insignificant loss of 0.32% over the three day period of $[-1,+1]$ surrounding an FCPA indictment announcements. There is evidence of a statistically significant loss of 1.15% over the $[-10,+10]$ event window. This loss does appear to represent the run up in negative returns for the 10 days before the event, as highlighted by the statistically significant CAAR over the $[-10,-1]$ event window.

We break down the sample of events by defendant type to see if we observe different market reactions. Panel B shows the the sample of events when only the parent company is named as

the defendant in an enforcement action. The CAARs are not significant for any of the event windows, highlighting that there is no abnormal market reaction to news of a parent company indicted for bribery charges. Panel C shows the sample of events when a subsidiary in named in an enforcement action alongside its parent company.[13] Once again, we find no statistically significant market reaction to news of an indictment of a parent and its subsidiary for FCPA violations. Panel D shows the CAARs of indictment events that name only an employee in the enforcement action. The CAARs are negative and statistically significant at the 99% confidence level. There is a loss in market value of 4.20% over the $[-10,+10]$ event window and 1.40% over the $[-1,+1]$ window. We also see that there are market value losses in the run up to the event and, although not significant, the CAAR for the sample of employee defendant firms is negative for the 10 days after the event. There is also a proportionally larger number of negative returns in the sample of employee defendant events compared to the other samples.

The findings in Table 3.2 suggest that the market reaction to FCPA indictments is conditional on the defendant type. To test if there are indeed statistical differences in abnormal returns between the defendant type groups, split our sample in two as a function of whether the event includes an employee indictment or only a parent and/or subsidiary. We test whether the two samples are statistically different. Table 3.3 shows that there are statistical differences in CAARs between the sample with an employee indicted and no employee. This difference holds when looks at the sample of events that include an employee (whether alone or alongside a parent and/or subsidiary) and is more pronounced when comparing the difference between events with no employee and those with only an employee.

3.3.4 Discussion

The event study analysis presents some interesting findings. The existing literature observes negative and statistically significant abnormal returns around corporate crime announcements. Reichert et al. (1996) use a sample of 83 firm indictments from 1980 to 1990. They find an abnormal negative cumulative stock return of 2.45% over the three-day announcement date event window. Announcement day returns are also negative and statistically significant. Davidson and Worrell

[13] The number of events where only a subsidiary is named as the defendant was less than 10 and we found the sample size too small for any worthwhile conclusions and thus chose to look at enforcements including both the parent and the subsidiary, since it represents entities and outcomes different from an employee defendant.

(1988) use a sample 131 events of announcements of corporate illegalities from the 1970s. The authors find statistically significant negative abnormal returns of 0.87% on the day before the announcement and three day cumulative abnormal returns of -1.11%. Long and Rao (1995) use a sample of 54 firms engaged in unethical conduct from 1989 to 1993 and find no statistically significant daily abnormal returns. The authors nonetheless document significant negative cumulative returns of 2.94% over the $[-10, +10]$ announcement day observation period.

The results from the Davidson et al. (1994) study are the most in accordance with our findings. The authors look at a sample of 535 *Wall Street Journal* announcements of alleged corporate crime over the 1965 to 1990 year period. Examining a subsample of 67 announcements of "bribery" investigation, the authors find that initial reports of bribery result in negative cumulative abnormal returns of 2.98% over the $[-1, +1]$ event window. Announcements of indictments for bribery are associated with negative abnormal returns of 5.44% over the three day window. The findings are all statistically significant at the 1% level. Although we do not know how the authors define bribery or the defendants in the cases, our employee only subsample results are similar to the Davidson et al. (1994) findings.

3.4 How to Explain the Stock Market Response to Indictment Announcements?

In this section, we use multivariate cross-sectional regression analysis to investigate whether specific features of FCPA enforcement actions impact shareholder returns and subsequently result in a loss of market value. Based on the results from the previous section, the primary variable of interest is an indicator equal to one if the defendant is an employee. We use an indicator for only employee to eliminate any confounding effects from announcements where a firm or a subsidiary is charged at the same time (in an alternate specification, it will equal one for any employee indictment). The second variable of interest is the size of the monetary fine. We express the total fine as a percentage of the firm's market value of equity thirty days before the event date in cases where a firm or a subsidiary is charged. We ignore fines imposed on employees because they are typically small to be economically meaningful in comparison to the size of the firm. We run all regressions using industry and year dummies to control for any unexplained industry or time specific effects. Table 3.4 shows that our independent variables are not highly collinear.

3.4.1 Equity Returns

Table 3.5 reports the results from regressing the cumulative abnormal return of event i on the various variables of interest and control over the specified event window of $[-t, +t]$ days. In the sample of all events, there are only two statistically significant variables that help explain the 21-day CAR surrounding the announcement of an FCPA enforcement action. First, we find that the CAR of an enforcement action event naming an employee as a defendant is seven percentage points lower compared to other enforcement events. This result holds after controlling for the numerous other case characteristics we hypothesized could impact abnormal returns, firm-characteristics, and the inclusion of industry and year fixed effects. We also find that the coefficient for the indictment number is positive and a statistically significant explanatory variable for 21-day CARs. The positive coefficient, as expected, highlights that the first announcement of corruption in the firm carries a larger negative market reaction compared to follow-up announcements. Any initial announcement has a higher level of uncertainty and risk that there are more enforcement actions to follow. However, as the number of enforcement actions increases there is lower risk premium in the price and less expectation of unknown future litigation cost. The CAR of the three-day event window confirms that the defendant type is a significant explanatory variable for abnormal returns around an FCPA indictment. We find that the three-day CAR is three percentage points lower for enforcement events naming an employee as a defendant compared to other events in the sample. We do not find that the indictment number has a statistically significant impact on three-day abnormal returns.

Overall, our results show that aside from defendant type, all other case characteristics have no statistically significant impact on abnormal returns for our sample of FCPA indictment events. It is very surprising that we do not find any statistically significant relationship between the market reaction and the monetary sanctions. This result highlights that the size of the sanctions, on average, is too small in comparison to the size of the firm and its expected cash flows. The descriptive statistics in Table 3.1 show that on average the total sanction amount represents only 0.65% of firm market value. And in fact, this number is that high because of several extreme cases, when at least 50% of the monetary sanctions in the sample represent less than 6% of total market value. Table 3.1 also provides descriptive statistics of the revenue generated from paying bribes and the ratio of the sanctions to the revenue. Unfortunately, revenue data was only available for a subset

of the sample firms, but still provides some interesting statistics to consider with regard to the size of the sanctions and the motivation to pay bribes. On average, the total monetary sanctions represent only 38% of the total revenue gained from paying bribes. Therefore, even once firms are indicted for FCPA violations, much of the revenue obtained from paying the bribes is not lost from the penalties imposed in the enforcement actions. Such financial indicators regarding what the monetary penalties for violating the FCPA actually represent provides some explanation for why shareholders may not react negatively to the issuance of FCPA enforcement actions.

Table 3.6 breaks down the sample of all events between first and secondary indictments and repeats the analysis from Table 3.5 for each subsample. In our sample of 166 events there are 40 cases that have multiple indictment dates. For example, in the early 1990s three enforcement actions were issued by the DOJ against the General Electric company for bribes paid in Israel from 1984 to 1990. The first enforcement action was issues in 1992 naming General Electric as the defendant. In 1993, an enforcement action naming the General Electric xxx was issued. In 1994, another enforcement action was issued against another General Electric executive. All three of these enforcement actions relate to the same case. In those instance, we remove all follow up indictments and only include the first one to construct our subsample of only first indictments to further isolate the impact of the very first announcement that a firm is being investigated for FCPA violations. We do this to capture the initial reaction of the investigation. Although news in follow up indictments may differ, the market will have priced many of these expectations at the time of the first announcement.

Panel A of Table 3.6 shows regression results of enforcement action CARs for only the sample of 101 first indictment events. We find that the employee indicator is negative and significant for both the 21-day and 3-day CARs. Suggesting that announcements of enforcement actions against employees result in a statistically lower abnormal return compared to announcements of enforcement actions naming other defendant types. However, the magnitude of the coefficient is slightly smaller in comparison to the full sample results in Table 3.5. Panel B of Table 3.6 shows regression results for a subsample of 61 events that include all follow up indictments in cases that include multiple enforcement action initiation dates. In the subsample of secondary indictments, the coefficient of the indicator for employee defendant is negative and statistically significant for both event window CARs. The magnitude of the coefficient is also notably larger for the sample of secondary indictment events. Breaking down the sample between first and secondary

indictments highlights that there are noteworthy differences in how the market reacts to FCPA violation charges. Overall, we found no statistically significant CAARs for the full sample of events. The only sample of events that showed a negative and statistically significant CAAR is the one that included employees as defendants. Now we see that these abnormal returns are not likely capturing the initial news of the FCPA violation, but are strongly negative even after news of charges against other parties have been announced. These results suggest that shareholders do not necessarily disapprove violations of the FCPA, but they disapprove when specific individuals are named. A possible explanation for this is that once a person is named, there is the belief that the individual did not commit the crime without obtaining some personal financial reward for themselves. In that case, the violation is no longer just about obtaining better revenue for the company but also demonstrates the willingness to engage in illegal activity to increase personal wealth. Therefore, if an employee indictment makes shareholders question managerial ethics and suspect possible other wrongdoing, the market reaction would be more negative to capture the suspicion of other possible fraud.

The multivariate results reinforce earlier findings that an FCPA employee indictment has a negative and statistically significant impact on abnormal returns. To our knowledge, no previous study has differentiated corporate criminal indictments by defendant or estimated the implications of employee indictments in a multivariate regression framework. Our employee effect is similar to the three day equity losses surrounding news of bribery indictments presented by Davidson et al. (1994).

3.4.2 Shareholder Losses

We compute shareholder losses for two reasons. First, shareholder losses provide an actual monetary value of the market reaction. Second, shareholder losses, computed as the market value of equity multiplied by the cumulative abnormal return, allow us to estimate the impact of FCPA indictments using a value-weighted indicator of abnormal returns. Table 3.7 reports the results from regressing the shareholder loss of event i on the variables of interest and control over the specified event window of $[-t,+t]$ days. We repeat the analysis from the previous section to see if our findings hold once we express the equity returns in dollar terms with respect to the size of the firm. The results in Table 3.7 show no significant impact of any enforcement action character-

istics on value-weighted shareholder losses. We find no difference in shareholder losses between parent, subsidiary, or employee only indictments. This suggests that, although the market reacts negatively to news of employee defendants, the overall impact of FCPA violation enforcement actions is insignificant in terms of financial cost. The explanatory power of the remaining variables is also insignificant. These findings highlight that there is no impact of any enforcement action characteristics on the size of the shareholder losses from FCPA violations indictments.

3.5 Conclusion

The findings of this study bring to light that shareholders may not necessarily disapprove of bribery as prohibited by the Foreign Corrupt Practices Act. In fact, opponents of the FCPA argue that bribery is simply a necessary part of doing business in many economies overseas and prohibiting this activity only impairs companies that operate in highly corrupt environments. If we assume that shareholders are the true judge of what is acceptable firm behavior, then observing a limited negative market reaction to announcements of FCPA enforcement suggests that shareholders do not necessarily wish to discourage such activity in the future.

The primary contribution of this study is the results we observe when we differentiate events by defendant type. When we split the events between enforcement actions issued against the parent company, subsidiary, and employee, we find that the negative market reaction is driven by the news of an employee named in an enforcement action, not the parent or subsidiary. The negative market reaction is significant in a multivariate context where we control for various other features of each case, firm characteristics, and industry and year effects. This finding is a noteworthy contribution, since the literature has not investigated if the market differentiates between defendants in its reaction to corporate illegalities.

The distinctly negative reaction to employee indictments compared to firm or subsidiary is interesting and suggests several possible explanations. First, it is possible that the market recognizes that employees are the decision makers and that any illegality within a firm is the product of employee behavior. Therefore, a negative market reaction is a signal to management that current behavior needs to be changed. Second, considering the insignificant market reaction to parent or subsidiary indictments, the market may in fact not disapprove of foreign corruption since it helps increase revenue. However, an employee indictment may suggest that the crime was not done in

the interest of the shareholders but to increase the personal wealth of the employee. In fact, several of the case reports stated that employees were also taking a proportion of the bribes for themselves as payment. In such instances it is not surprising to see that the market would impose a penalty for such behavior. Lastly, an employee indictment can be seen as a signal that the entire organization is corrupt. Most FCPA investigations end at the firm level and only pursue employee indictments in the case of larger violations. Thus, an employee indictment can be viewed as an indicator of deeper problems within the organization and make shareholders question the ethical standing of management. Overall, the results of this study even suggest some interesting policy choices for regulators. If the monetary penalties against illegal acts cannot be increased and continue to represent an insignificant proportion of firm value, the greater enforcement action regulators can achieve is by prosecuting more of the firm employees rather than the firms themselves.

Tables and Figures

Figure 3.1 – Distribution of Enforcement Actions Across Time

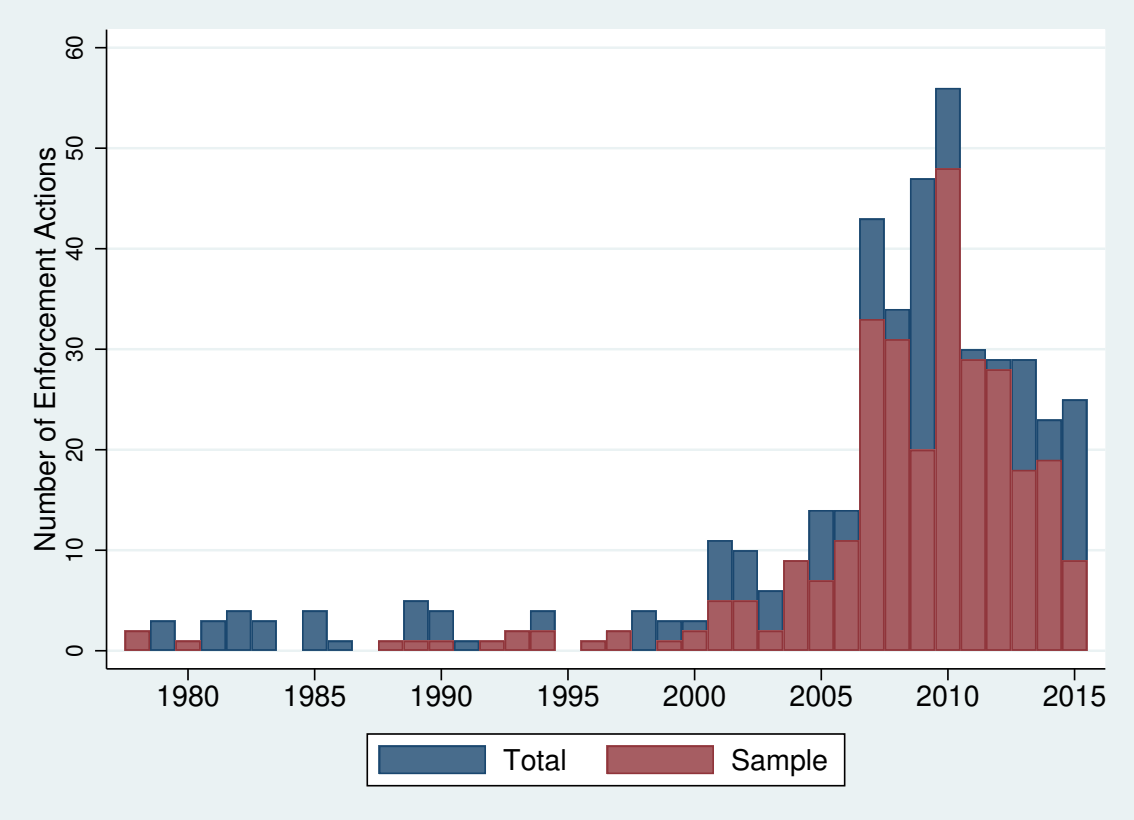

Table 3.1 – Descriptive Statistics for the Sample of Cases

	N	Mean	Median	Std Dev	Min	Max
Financial Indicators						
Total Sanction (millions USD)	125	35.56	6.72	96.52	0.00	800.00
Total Sanction/MV (%)	125	0.65	0.06	1.96	0.00	16.35
Total Bribe (millions USD)	129	21.20	1.91	61.75	0.02	378.00
Total Revenue from Bribe (millions USD)	61	849.19	100.00	1834.81	3.00	6000.00
Total Profit from Bribe (millions USD)	68	35.16	6.12	144.65	0.26	1100.00
Total Sanction/Bribe Ratio	125	6.77	3.13	12.03	0.00	103.35
Total Sanction/Revenue Ratio	61	0.38	0.28	0.36	0.00	1.13
Total Sanction/Profit Ratio	68	1.86	1.55	1.08	0.00	5.20
Other Case Characteristics						
Employee Defendant	166	0.31	0.00	0.47	0.00	1.00
Voluntary Discolure	166	0.57	1.00	0.50	0.00	1.00
Foreign Investigation	166	0.16	0.00	0.37	0.00	1.00
Total Enforcement Actions ($t = 0$)	166	1.41	1.00	0.76	1.00	5.00
DOJ Enforcement Action	166	0.52	1.00	0.50	0.00	1.00
Domestic Firm	166	0.77	1.00	0.42	0.00	1.00
Firm Characteristics						
Total Assets (billions USD)	166	64.30	9.06	150.10	0.04	781.82
Market Value (billions USD)	166	42.26	8.44	77.26	0.01	386.40
Market-to-Book (M/B) Ratio	166	1.64	1.14	2.25	0.13	25.72
Leverage	166	0.17	0.16	0.12	0.00	0.56

This table reports descriptive stats for the sample of 166 FCPA enforcement events from 1978 to 2015. *Total Sanction* is the total monetary value of sanctions against firms and subsidiaries expressed in millions of USD. *Total Sanctions/MV* is the total monetary sanctions against firms and subsidiaries only divided by the market value of equity 30 days before the event day. *Total Bribe* is the total monetary value (expressed in millions of USD) of the bribes paid to foreign officials as reported in the enforcement action. *Total Revenue from Bribe* is the total revenue (expressed in millions of USD) generated from the contracts obtained through payment of the bribes as reported in the enforcement action. *Total Profit from Bribe* is the total profit (expressed in millions of USD) generated from the revenue obtained through payment of the bribes as reported in the enforcement action. *Employee defendant* is an indicator equal to one if an employee is named as the defendant in the enforcement action on the event day, and zero otherwise. *Voluntary Disclosure* is an indicator equal to one if the authorities were made aware of the FCPA violation through a disclosure by management. *Foreign Investigation* is an indicator equal to one if the corruption allegations are also being investigated by authorities outside the United States. *Total Enforcement Actions* is the number of enforcement actions relating to a specific company issued on the event date. *DOJ Enforcement Action* is an indicator equal to one if the FCPA indictment is issued by the Department of Justice, zero otherwise. *Domestic firm* is an indicator equal to one if the parent firm related to the enforcement is incorporated in the United States and zero otherwise. *Total assets* is the total assets of the parent firm related to the enforcement action at the end of the fiscal year prior to the indictment date. *Market value* is the total market value of the parent firm related to the enforcement action at the end of the fiscal year prior to the indictment date. *M/B* is the market-to-book ratio at the end of the fiscal year prior to the indictment date. *Leverage* is total long-term and short-term debt divided by total assets at the end of the fiscal year prior to the indictment date.

Table 3.2 – Cumulative Abnormal Returns Surrounding FCPA Violation Indictments

	$CAAR_{[-10,+10]}$	$CAAR_{[-1,+1]}$	$CAAR_{[-10,-1]}$	$CAAR_{[+1,+10]}$
	Panel A: All Events (n=166)			
$CAAR_{[-t,+t]}$	-1.15*	-0.32	-1.03**	-0.02
t-stat	-1.79	-1.15	-2.06	-0.05
$CAR_{i,t} < 0$	0.58	0.53	0.60	0.54
	Panel B: Parent Only (n=80)			
$CAAR_{[-t,+t]}$	0.05	-0.27	-0.50	0.49
t-stat	0.07	-0.66	-0.69	0.90
$CAR_{i,t} < 0$	0.51	0.54	0.61	0.49
	Panel C: Parent+Subsidiary (n=24)			
$CAAR_{[-t,+t]}$	-1.38	-0.24	-2.18	0.74
t-stat	-0.71	-0.41	-1.45	0.73
$CAR_{i,t} < 0$	0.54	0.50	0.54	0.50
	Panel D: Employee Only (n=41)			
$CAAR_{[-t,+t]}$	-4.20***	-1.40***	-2.43***	-1.06
t-stat	-2.66	-2.78	-2.92	-0.95
$CAR_{i,t} < 0$	0.71	0.61	0.66	0.63

Cumulative average abnormal returns (CAAR), expressed in percent (%), is the cumulative average AR_{it} for days t over specified event window $[-t,+t]$ surrounding an FCPA enforcement announcement. Abnormal returns are estimated with OLS through the period $[-285,-30]$ in event time using the market model parameters and the value-weighted market return. Event time is days relative to the announcement date. Panel A shows CAARs for all events in the observation sample. Panel B shows CAARs for events where only the parent company is named in the enforcement action. Panel C shows CAARs for events where the parent company and its subsidiary is named in the enforcement action. Panel D shows CAARs for events where only an employee is named in the enforcement action. Note: *,**,*** denote statistical significance at the 10%, 5% and 1% level, respectively.

Table 3.3 – Differences in Cumulative Abnormal Returns by Defendant

	No Employee (A)	Employee (B)	Employee Only (C)	Difference in Means (A) – (B)		(A) – (C)	
	CAAR	CAAR	CAAR	Diff	t-stat	Diff	t-stat
$[-10,+10]$	-0.19	-3.26 **	-4.20 ***	3.08**	2.25	4.01***	2.77
$[-1,+1]$	-0.04	-0.93 *	-1.40 ***	0.90	1.50	1.36**	2.26
$[-10,-1]$	-0.75	-1.65**	-2.43***	0.90	0.83	1.68	1.61
$[+1,+10]$	0.47	-1.10	-1.06	1.57*	1.66	1.57	1.35

Table shows the difference in cumulative average abnormal returns (CAAR) between samples with and without employee defendants. CAAR, expressed in percent (%), is the cumulative average AR_{it} for days t over specified event window $[-t,+t]$ surrounding an FCPA enforcement announcement. Abnormal returns are estimated with OLS through the period $[-285,-30]$ in event time using the market model parameters and the value-weighted market return. Event time is days relative to the announcement date. Column A shows the CAARs for the sample of events that include no employee named as a defendant in any of the issued enforcement actions. Column B shows CAARs for the sample of events that include an employee in an enforcement action. Column B shows CAARs for the sample of events that include *only* an employee named in an enforcement action. Note: *,**,*** denote statistical significance at the 10%, 5% and 1% level, respectively.

Table 3.4 – Correlation Coefficients for Variables of Interest

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Employee	1.00									
(2) Parent	-0.55	1.00								
(3) Subsidiary	-0.15	-0.24	1.00							
(4) Total Sanction/MV	-0.16	0.02	0.19	1.00						
(5) Voluntary Disclosure	-0.03	0.02	0.07	-0.09	1.00					
(6) Foreign Investigation	-0.03	-0.03	-0.11	0.04	-0.27	1.00				
(7) Total Enf. Actions	-0.24	-0.19	-0.10	0.15	0.01	0.19	1.00			
(8) Reputation	0.02	-0.15	0.19	-0.07	0.05	0.10	-0.04	1.00		
(9) Indictment Number	0.41	-0.29	0.02	0.13	0.15	0.00	-0.12	0.02	1.00	
(10) DOJ	0.02	-0.35	0.19	0.17	-0.02	0.10	0.41	0.08	-0.06	1.00

This table reports correlation coefficients for the sample of 166 FCPA enforcement events from 1978 to 2015. *Employee* is an indicator equal to one if only an employee is named as the defendant in the enforcement action on the event day, and zero otherwise. *Parent* is an indicator equal to one if only the parent company is named as the defendant in the enforcement action on the event day, and zero otherwise. *Subsidiary* is an indicator equal to one if only a subsidiary is named as the defendant in the enforcement action on the event day, and zero otherwise. *Total Sanctions/MV* is the total monetary sanctions against firms and subsidiaries only divided by the market value of equity 30 days before the event day. *Voluntary Disclosure* is an indicator equal to one if the authorities were made aware of the FCPA violation through a disclosure by management. *Foreign Investigation* is an indicator equal to one if the corruption allegations are also being investigated by authorities outside the United States. *Total Enforcement Actions* is the number of enforcement actions relating to a specific company issued on the event date. *Reputation* is an indicator equal to one if the firm has had prior FCPA violation charges, zero otherwise. *Indictment Number* is an indicator of which enforcement issuance related to a specific case is the event. *DOJ* is an indicator equal to one if the indictment is by the Department of Justice.

Table 3.5 – Enforcement Action Characteristics and Indictment Announcement Abnormal Returns

	(1) $CAR_{[-10,+10]}$	(2) $CAR_{[-10,+10]}$	(3) $CAR_{[-10,+10]}$	(4) $CAR_{[-10,+10]}$	(5) $CAR_{[-10,+10]}$	(6) $CAR_{[-10,+10]}$	(7) $CAR_{[-1,+1]}$	(8) $CAR_{[-1,+1]}$	(9) $CAR_{[-1,+1]}$	(10) $CAR_{[-1,+1]}$	(11) $CAR_{[-1,+1]}$	(12) $CAR_{[-1,+1]}$
Employee	-0.05*					-0.07**	-0.02**					-0.03**
	(0.03)					(0.03)	(0.01)					(0.01)
Parent	0.00					0.01	-0.01					-0.01
	(0.02)					(0.03)	(0.01)					(0.01)
Subsidiary	-0.03					-0.03	0.00					-0.00
	(0.03)					(0.04)	(0.02)					(0.02)
Total Sanctions/MV		0.15				-0.32		0.29**				0.17
		(0.33)				(0.40)		(0.13)				(0.17)
Voluntary Disclosure			0.02			0.01			0.01			0.01
			(0.02)			(0.02)			(0.01)			(0.01)
Foreign Investigation			-0.00			-0.01			0.00			0.00
			(0.02)			(0.02)			(0.01)			(0.01)
Total Enf. Actions				0.01		0.00				0.00		-0.00
				(0.01)		(0.02)				(0.01)		(0.01)
Reputation				-0.02		-0.01				0.00		-0.00
				(0.02)		(0.02)				(0.01)		(0.01)
Indictment Number				0.02**		0.04***				0.00		0.00
				(0.01)		(0.01)				(0.00)		(0.00)
DOJ					-0.01	0.00					0.01	0.00
					(0.02)	(0.02)					(0.01)	(0.01)
Firm Size	0.00	0.00	0.01	0.01	0.00	0.01*	0.00	0.00*	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Leverage	-0.02	-0.01	-0.01	0.03	-0.02	0.01	-0.02	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
M/B	-0.00	-0.00	-0.00	-0.00	-0.00	0.00	0.00	-0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Constant	-0.07	-0.07	-0.10**	-0.15**	-0.06	-0.17**	-0.03	-0.05**	-0.05**	-0.06*	-0.05*	-0.04
	(0.05)	(0.05)	(0.05)	(0.06)	(0.05)	(0.07)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)
Industry F.E.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Year F.E.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	166	166	166	166	166	166	166	166	166	166	166	166
Adjusted R^2	0.01	0.04	0.03	0.01	0.03	0.10	0.06	0.03	0.02	0.01	0.02	0.02

This table reports results from ordinary least square regressions. The dependent variable is the cumulative abnormal returns for $[-t,+t]$ days before/after an enforcement action is announced. Abnormal returns are computed using market model parameters with an estimation window of $[-285,-30]$ before the event day and a value-weighted market return. *Employee* is an indicator equal to one if only an employee is named as the defendant in the enforcement action on the event day, and zero otherwise. *Parent* is an indicator equal to one if only the parent company is named as the defendant in the enforcement action on the event day, and zero otherwise. *Subsidiary* is an indicator equal to one if only a subsidiary is named as the defendant in the enforcement action on the event day, and zero otherwise. *Total Sanctions/MV* is the total monetary sanctions against firms and subsidiaries only divided by the market value of equity 30 days before the event day. *Voluntary Disclosure* is an indicator equal to one if the authorities were made aware of the FCPA violation through a disclosure by management. *Foreign Investigation* is an indicator equal to one if the corruption allegations are also being investigated by authorities outside the United States. *Total Enforcement Actions* is the number of enforcement actions relating to a specific company issued on the event date. *Reputation* is an indicator equal to one if the firm has had prior FCPA violation charges, zero otherwise. *Indictment Number* is an indicator of which enforcement issuance related to a specific case is the event. *DOJ* is an indicator equal to one if the indictment is by the Department of Justice. *Firm Size* is the log of total assets at the end of the fiscal year prior to the indictment date. *Leverage* is total long-term and short-term debt divided by total assets at the end of the fiscal year prior to the indictment date. *M/B* is the market-to-book ratio at the end of the fiscal year prior to the indictment date. Industry fixed effects is done using the Fama-French 12-industry SIC code classification. Heteroskedasticity corrected robust standard errors are shown in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Table 3.6 – Enforcement Action Characteristics and Indictment Announcement Abnormal Returns by Subsample

	Panel A: First Indictments		Panel B: Secondary Indictments	
	(1)	(2)	(3)	(4)
	$CAR_{[-10,+10]}$	$CAR_{[-1,+1]}$	$CAR_{[-10,+10]}$	$CAR_{[-1,+1]}$
Employee	-0.06*	-0.02*	-0.13**	-0.07***
	(0.03)	(0.01)	(0.05)	(0.02)
Parent	0.02	0.01	-0.05	-0.07*
	(0.02)	(0.01)	(0.05)	(0.03)
Subsidiary	-0.01	-0.00	-0.02	-0.01
	(0.04)	(0.01)	(0.07)	(0.05)
Total Sanctions/MV	-1.51	-0.21	-0.30	0.02
	(1.18)	(0.61)	(0.47)	(0.29)
Voluntary Disclosure	0.04**	0.01	-0.01	0.02
	(0.02)	(0.01)	(0.04)	(0.02)
Foreign Investigation	-0.02	-0.00	0.01	0.01
	(0.03)	(0.01)	(0.03)	(0.02)
Total Enf. Actions	0.01	0.00	-0.06**	-0.02
	(0.02)	(0.01)	(0.03)	(0.02)
Reputation	0.00	0.01**	-0.02	-0.02
	(0.02)	(0.01)	(0.02)	(0.01)
DOJ	-0.01	0.01	0.01	-0.01
	(0.02)	(0.01)	(0.03)	(0.01)
Constant	-0.15**	-0.07**	0.07	0.09
	(0.06)	(0.03)	(0.14)	(0.08)
Controls	✓	✓	✓	✓
Industry & Year FE	✓	✓	✓	✓
Observations	105	105	61	61
Adjusted R^2	0.04	0.00	0.23	0.07

This table reports results from ordinary least square regressions. The dependent variable is the cumulative abnormal returns for $[-t,+t]$ days before/after an enforcement action is announced. Abnormal returns are computed using market model parameters with an estimation window of $[-285,-30]$ before the event day and a value-weighted market return. *Employee* is an indicator equal to one if only an employee is named as the defendant in the enforcement action on the event day, and zero otherwise. *Parent* is an indicator equal to one if only the parent company is named as the defendant in the enforcement action on the event day, and zero otherwise. *Subsidiary* is an indicator equal to one if only a subsidiary is named as the defendant in the enforcement action on the event day, and zero otherwise. *Total Sanctions/MV* is the total monetary sanctions against firms and subsidiaries only divided by the market value of equity 30 days before the event day. *Voluntary Disclosure* is an indicator equal to one if the authorities were made aware of the FCPA violation through a disclosure by management. *Foreign Investigation* is an indicator equal to one if the corruption allegations are also being investigated by authorities outside the United States. *Total Enforcement Actions* is the number of enforcement actions relating to a specific company issued on the event date. *Reputation* is an indicator equal to one if the firm has had prior FCPA violation charges, zero otherwise. *DOJ* is an indicator equal to one if the indictment is by the Department of Justice. Controls include: firm size, leverage, and the M/B. Industry fixed effects is done using the Fama-French 12-industry SIC code classification. Heteroskedasticity corrected robust standard errors are shown in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Table 3.7 – Enforcement Action Characteristics and Indictment Announcement Shareholder Losses

	(1) $SL_{[-10,+10]}$	(2) $SL_{[-10,+10]}$	(3) $SL_{[-10,+10]}$	(4) $SL_{[-10,+10]}$	(5) $SL_{[-10,+10]}$	(6) $SL_{[-10,+10]}$	(7) $SL_{[-1,+1]}$	(8) $SL_{[-1,+1]}$	(9) $SL_{[-1,+1]}$	(10) $SL_{[-1,+1]}$	(11) $SL_{[-1,+1]}$	(12) $SL_{[-1,+1]}$
Employee	-1.79					-0.80	-0.39					-0.27
	(1.45)					(1.32)	(0.43)					(0.47)
Parent	-1.27					-0.50	-0.45					-0.40
	(1.11)					(0.89)	(0.36)					(0.38)
Subsidiary	-1.19					-0.99	-0.49					-0.70
	(-1.48)					(-1.60)	(1.06)					(1.15)
Total Sanctions/MV		6.36				24.55		3.13				7.71
		(8.20)				(23.59)		(2.61)				(6.96)
Voluntary Disclosure			1.36			1.34			0.34			0.30
			(1.26)			(1.07)			(0.35)			(0.35)
Foreign Investigation			1.69			0.85			0.27			0.22
			(1.61)			(1.23)			(0.45)			(0.40)
Total Enf. Actions				1.09		0.42				0.15		-0.01
				(1.30)		(1.63)				(0.35)		(0.44)
Reputation				-0.52		-0.41				0.64		0.61
				(1.07)		(1.00)				(0.45)		(0.43)
Indictment Number				0.28		0.29				0.02		-0.02
				(0.46)		(0.52)				(0.17)		(0.17)
DOJ					0.18	0.22					0.05	-0.10
					(0.76)	(1.05)					(0.27)	(0.32)
Constant	0.54	0.50	0.08	-2.59	0.52	-3.90	-0.36	-0.83	-0.98	-0.19	-0.80	0.10
	(2.97)	(3.28)	(3.69)	(4.56)	(3.19)	(5.24)	(1.19)	(1.23)	(1.38)	(1.41)	(1.27)	(1.69)
Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Industry & Year FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	166	166	166	166	166	166	166	166	166	166	166	166
Adjusted R^2	0.10	0.04	0.06	0.06	0.04	0.09	0.01	0.01	0.01	0.03	0.01	0.01

This table reports results from ordinary least square regressions. The dependent variable is the shareholder losses for $[-t,+t]$ days before/after the indictment day. Shareholder losses are computed by multiplying the cumulative abnormal return over specified window $[-t,+t]$ by the market value of equity 30 days before the event. *Employee* is an indicator equal to one if only an employee is named as the defendant in the enforcement action on the event day, and zero otherwise. *Parent* is an indicator equal to one if only the parent company is named as the defendant in the enforcement action on the event day, and zero otherwise. *Subsidiary* is an indicator equal to one if only a subsidiary is named as the defendant in the enforcement action on the event day, and zero otherwise. *Total Sanctions/MV* is the total monetary sanctions against firms and subsidiaries only divided by the market value of equity 30 days before the event day. *Voluntary Disclosure* is an indicator equal to one if the authorities were made aware of the FCPA violation through a disclosure by management. *Foreign Investigation* is an indicator equal to one if the corruption allegations are also being investigated by authorities outside the United States. *Total Enforcement Actions* is the number of enforcement actions relating to a specific company issued on the event date. *Reputation* is an indicator equal to one if the firm has had prior FCPA violation charges, zero otherwise. *Indictment Number* is an indicator of which enforcement issuance related to a specific case is the event. *DOJ* is an indicator equal to one if the indictment is by the Department of Justice. Controls include: firm size, leverage, and the M/B. Industry fixed effects is done using the Fama-French 12-industry SIC code classification. Heteroskedasticity corrected robust standard errors are shown in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

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General Conclusion

The findings of this thesis contribute to several streams of literature related to topics in corporate finance and corporate fraud.

First, evidence in my first chapter contributes to the growing interest and literature of why firms voluntarily choose to invest shareholder profits in socially responsible initiatives. Friedman (1970) stated in a well known *New York Times* essay that the "only social responsibility of a business is to increase its profits." Yet, the scope and scale of profit-oriented firms' investment in socially responsible initiatives has been growing exponentially. I investigate the risk management hypothesis that firms invest in corporate social responsibility (CSR) as a form of strategic insurance against negative corporate events stemming from a tarnished reputation. I show that investment in CSR helps reduce the probability of a firm having a securities class action lawsuit filed, highlighting that such investment appears socially beneficial on the outside but is indeed strategic for the firm. This paper is the first to show empirical evidence that CSR can help reduce securities class action litigation risk.

Second, the results in my second paper provide additional evidence of the existence of informed trading in the options market. The paper uses an original sample of fraud revelation events related to securities class action lawsuits. The analysis shows the presence of suspicious trading activity in the options market prior to the sample of fraud events. Using four common informed trading measures that have been documented to predict upcoming corporate events, I contribute to the existing literature by showing the ability of the measures to forecast fraud events. The paper highlights the existence of additional (undetected) illegal activity inside firms already being cited for other unethical and illegal behavior. The findings of this chapter, in combination with the findings of the first chapter, provide an interesting avenue for future research. Specifically, whether firms that are more prone to engage in illegal activity are also more prone to engage in policies

designed to paint them as better corporate citizens.

Third, using a sample of negative corporate events that have yet to be studied in the literature, I show that not all illegal corporate activity is punished by shareholders through a negative market reaction. In fact, the bribery of foreign officials in order to to gain or retain business overseas, which is a violations of the FCPA, is not regarded negatively by shareholders despite such activity being illegal. In the third chapter of this thesis, I use an original hand-collected sample of FCPA enforcement actions to show there is no abnormal market reaction around FCPA indictment events that name a firm or a subsidiary for engaging in foreign bribery. I also show that the penalties for violating the FCPA are insignificant and have no impact on abnormal returns at the time of their announcement. The study of FCPA enforcement actions does reveal interesting findings that could be of value to regulators. Enforcement actions that name an employee as a defendant have a strongly negative and statistically significant abnormal market reaction during the event announcement period.