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# **Corporate Fraud and Litigation Risk in Financial Distress: An Empirical Study on SEC's Enforcements against Public Traded Companies after the Financial Crisis of 2007-08**

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## Abstract

The financial crisis of 2007-08 puts in question the capability of market regulators to act on behalf of investors to guarantee that the information available is accurate and reliable. In this study, we research 45 firms that have been enforced by the SEC between 2010-2013 for alleged corporate misconduct. We find that fraud firms experience non-significant negative abnormal returns prior to SEC's announcement, however after the event day, the abnormal returns are positive. We also find significant increases in the mean residuals bid-ask spreads, meaning that after the event, fraud firms became riskier, leading investors to demand higher returns which increases eventual financial distress costs. Finally, we study the governance characteristics for 32 fraud firms and 32 control firms (non-enforced) one year prior to SEC's enforcement and the following four years (2009-2016) finding that fraud firms have slightly poorer governance. Outside directors dominate the board of directors for both groups, fraud firms have larger boards and more board meetings. Moreover, the majority of CEOs are also Chairman of the board for both groups, blockownership increases and institutional ownership decreases for both the groups and director's compensation is affected by regulators activity, as it can affect future returns.

Our results show that fraud firms are identical to non-fraud firms, financial crime has become more complexed and regulators are slow to identify and judge corporate misconduct. On the other hand, fraud firms are quicker to make the proper adjustments in their structures, becoming more identical to non-fraud firms.

## Resumo

A crise financeira de 2007-08 questiona a capacidade das entidades reguladoras de actuar em prol dos investidores de forma a garantir informação credível e confiável. Investigámos 45 empresas processadas pela SEC entre 2010 e 2013 por gestão danosa. Descobrimos que as empresas fraudulentas registam retornos anormais negativos antes da divulgação da SEC, no entanto depois do dia do anúncio, as empresas registam retornos anormais positivos. Também descobrimos mudanças significativas nas médias dos residuals bid-ask spreads, significando que o risco empresarial aumenta, levando os investidores a requerer taxas de retorno maiores para os seus investimentos, criando possíveis dificuldades financeiras no futuro. Finalmente, estudámos as características de governo para 32 empresas fraudulentas e 32 empresas de controle (sem processos judiciais) um ano antes da divulgação da SEC e quatro anos a seguir (2009 a 2016) descobrindo que as empresas fraudulentas possuem pior governo. Directores independentes dominam o conselho administrativo para ambos os grupos, empresas fraudulentas têm conselhos maiores e mais reuniões. Além disso, a maioria dos CEOs são também presidentes do conselho, grandes acionistas aumentam e acionistas institucionais diminuem a sua participação para ambos os grupos e a compensação dos directores é afectada pelas acções judiciais dos reguladores, pois afectam retornos futuros.

Os nossos resultados evidenciam que as empresas fraudulentas e não fraudulentas são idênticas, pois os crimes financeiros estão mais complexos e os reguladores são lentos a actuar. Por outro lado, as empresas fraudulentas fazem ajustes rapidamente à sua estrutura de forma a ficarem mais parecidas com as empresas não fraudulentas.

**Keywords:** SEC, Regulatory Enforcements, Governance, Abnormal Returns, Bid-ask spreads

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## **1. Introduction**

Market regulators, like the Securities and Exchange Commission (SEC), have the role to regulate stocks, bonds and other securities with the purpose to provide accurate and meaningful information to investors and maintain investor's hope in the financial markets. However, 1929-30 crisis and more recently the financial crisis of 2007-08 put people wondering the efficiency of these entities as regulators. Both financial crises have similar causes and patterns that we can look at, to predict future crises. Eingner and Umlauf (2015) state that the 1920's period is characterized by economic prosperity and fraud likewise in the period before the Financial Crisis of 2007-08.

The period before The Great Financial Crisis of 2007-2008 and Great Depression (1929-1933) is marked by a rising in the housing market, financial innovation, deregulation and private debt, mostly in mortgage debt, which contributed for the subprime bubble (Eingner and Umlauf 2015). On the other hand, it is also marked by fraud. Charles Ponzi, through his fraudulent business scheme in the 1920s, embezzled his investors in twenty million dollars, just like Bernie Madoff decades after. The aftermath of both financial crises is somehow identical: Strong failure of the banking system due to repayment or refinancing problems and decline in housing prices which led to an increase in default rates, and a decline in consuming spending which led businesses to slow down and employment increase (Eingner and Umlauf 2015).

The costs of corporate fraud and fraudulent bankruptcy are a real problem of the modern business. Every two years, the Association of Certified Fraud Examiners (ACFE) publishes a report on Occupational Fraud and Abuse. In 2016, it analysed 2127 cases which resulted in a total loss of 6.3 billion dollars, with an average loss of 2.7 million dollars per case. Asset misappropriation is the most common form of occupational fraud (83% of the cases), however with the smallest median loss of \$125.000. On the other hand, financial statement fraud is the least form of occupational fraud (< 10% of the case) but with a median loss of \$975.000. Hence, it is imperative to study the costs associated with litigation risk on companies in financial distress and illegal activities.

This paper aims to examine the theoretical and empirical relationship between management fraudulent activities and the impact of SEC's enforcements in public traded fraudulent firms after the Financial Crisis of 2007-08. Our main research objectives are: 1) to examine either or not investors see fraud firms as riskier for their investments 2) if firm's returns are negatively affected by regulatory penalties and finally 3) if governance mechanisms are weaker for fraud firms than for non-fraud firms.

Our results suggest that fraud firm's returns are not significantly affected by regulatory enforcements although they become riskier, leading investors to demand higher returns which increases eventual financial distress costs and that fraud firm's governance are identical to non-fraud firms, making it harder and harder for regulators to foresee criminal financial practises.

## **2. Literature Review**

“Everything rises and falls on leadership”<sup>1</sup>. The recent financial crisis and its aftermath has shown, above all, the results of poor management decisions leading to fraudulent bankruptcies, illegal activities and the cost of legal proceedings. Research in corporate governance and financial regulation has been gaining awareness in the last decades, as they play an extreme role in order to reduce fraudulent activities by monitoring and controlling, therefore helping reduce costs for companies in distress.

Jensen and Meckling (1976) in their theory of the firm defend that firms are simply legal fictions which create relationships through contracts. This includes external contracts with firms, non-profit institutions (hospitals, universities, foundations), financial institutions (banks and insurance companies) and governmental bodies (cities, states, federal government, government enterprises and so on). On the other hand, internal contracts, are made between managers, employees, equity holders and debtholders. Firms enter in financial distress when they have trouble meeting its debt obligations, therefore violating contracts previously made, increasing in this way the likelihood of bankruptcy.

### **2.1 Agency Problems**

Agency relationship can be defined as a contract between one or more persons where the principal engages another person (the agent) to perform some service in their behalf despite agent’s own interests (Jensen and Meckling, 1976). The relationship between managers and shareholders fits in this definition. Assuming that both parties are utility maximizers, this is, that both individuals tend to maximize their own general well being, there is good reasons for management not to always act in the best interest of the stockholders, which economists call: an agency problem. Agency problems arise when managers face the ethical dilemma of acting according to their own interest or shareholders’ interests. To mitigate the cost of these problems (agency costs) shareholders give incentives to managers to motivate them to behave according to their interests and incur in monitoring costs to observe and sometimes restrict managers’ actions

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<sup>1</sup>Maxwell, J. C. (2007). *The 21 irrefutable laws of leadership: Follow them and people will follow you*

### 2.1.1 Ownership

Jensen and Meckling (1976) study the agency costs arising from the of separation of ownership and control in a firm between managers, stockholders and debtholders. They argue that equity holders (manager-owner) are residual claimants and as their ownership falls, the probability to use firm's resources into their own benefit rises, in form of perquisites (jets, cars, etc...). Agency costs between managers and debtholders rises when firms want to take advantage of investment opportunities without losing ownership. They do not find high leveraged firms, as over borrowing stimulates managers to do risky investments. Debtholders include covenants to limit management's actions and protect themselves from incentive effects. Covenants can impose constrains on dividends, firm's operations, minimum economic and financial ratios therefore reducing firm's profitability by limiting investments in some projects. Finally, high leveraged firms face the possibility of missing debt obligations, leading to bankruptcy and reorganization costs. Jensen and Meckling (1976) conclude that firm structure should be an equilibrium between outside debt and equity thereby reducing agency costs.

Board of directors is the highest internal control mechanism in a firm, which role is to "run board meetings and oversee the process of hiring, firing, evaluating, and compensating the CEO" (Jensen, 1993), enhancing corporate governance. Gilson (1990) classifies the directors as: outsiders (no relationship with the firm other than their role as directors), insiders (member of the management team) and quasi-insiders (weak relationship, but not managers – retired managers, relatives to current managers and lawyers). As a firm grows, its demands for specialized board services might also grow. Jensen (1993) and Yermack (1996) argue that larger boards experience stronger deficiency of internal control mechanisms in restructuring or redirecting their businesses than smaller boards. Furthermore, Coles et al. (2008) propose that complex firms (large size, high leveraged or well diversified across industries) perform better with very large or very small boards. Morck et al. (1988) and McConnell and Servaes (1990) study the relationship between inside ownership and performance for American firms. They show that the majority of board members do not own a large percentage of the firm and performance increases as management ownership increases in a range between 0% and 25%. These results suggest

that an increase in inside ownership reflect a convergence of managers' and shareholders' interests.

Managers are concerned about their performance and its reward mechanism (Fama, 1980). Warner et al. (1988) find that the probability of changes in top management is inversely related to stock performance arguing that managers are hold accountable for stock performance. Furthermore, if the rewarding system is not attractive, best managers are the first ones to leave the firm. In order to mitigate this, the board of directors gives incentives to managers, such as performance bonuses, salary revisions and stock options. Jensen and Murphy (1990) show that pay-to-performance incentives to CEOs are relatively low and the majority comes from owning firm's stocks, however such are small and declining, being consistent with Morck et al. results (1988). Core et al. (1999) find a negative relation between CEO's ownership and CEO's compensation and find no evidence that outside directors are more effective in monitoring than inside directors.

The hypothesis that outside directors promote shareholders' interests is debatable. Several studies in the outside directors (Brickley, Coles, and Terry, 1994; Byrd and Hickman, 1992) show the importance in the outcome of takeover bids and stock performance as the firm applies anti-takeover devices, such as, poison pills. They conclude that firms that have significant outside directors on their boards experience, on average, positive abnormal returns suggesting that outside directors serve shareholders' interests in control contest events. However, Byrd and Hickman (1992) argue that outside directors should not own a great fraction of the company (> 60%) as it shows a negative effect in shareholder wealth. Overall, a board that is dominated by outside directors could impose ineffective limitations to management and shareholders' benefits when managers own a small fraction of firm's stocks.

Financial distressed firms experience lower performance than its competitors (Opler and Titman, 1994) which leads to management restructures and board turnovers. Gilson (1990) shows that, on average, only 43% of CEOs remain within their firms until the conclusion of the bankruptcy or debt restructure. The majority of the board directors also tend to leave when the CEO resigns (51%), shifting control to creditors and blockholders (owns at least 5% of the shares). Gilson and Vetsuypens (1993) conclude that nearly one-third of the CEOs are replaced after one year around the default and experience a cut in their bonuses and compensations.

### 2.1.2 Liquidity

Jensen (1986) in his free cash flow hypothesis studies the level of excess cash that management should be allowed to use to fund all good projects (positive NPV) and to use it to reduce agency costs. Excess cash flows can be used to increase dividends or engage in share repurchases, reducing management likelihood to invest in low-return projects or use resources for their own interests. Why would managers invest in projects that damage firm value? Malmendier and Tate (2005) show that CEOs are overconfident in their past investments and struggle to change their investment policies to new opportunities. Other reason is that managers prefer to run large firms than small firms, growing its size beyond optimal, making it larger but not more profitable (Jensen, 1986). Hardford, Mansi, and Maxwell (2008) find that weaker governance firms hold lower cash reserves, invest less in R&D and engage more in share repurchase, being a more flexible mechanism of increasing shareholder value. On the other hand, stronger governance firms choose to increase dividends, signalling financial health and a long-term commitment since capital markets punish dividends cuts (Jensen, 1986; Kothari et al., 2009).

DeAngelo et al. (2002) study in the bankruptcy process of L.A. Gear shows the importance of liquid assets (capability of turning assets into money) in managerial decisions. High liquid assets provided the firm with the internal funds to compensate six years of ongoing losses, meet debt payments and buying time and giving incentives for managers to finance losing operations, without the need for external funding. Therefore, highly liquid firms give incentives to managers to postpone imperative changes when the company is underperforming. Weiss and Wruck (1998) study the bankruptcy process of Eastern Airlines which resulted in a loss of two billion dollars, representing a devaluation of 50% of its market value at the filing for Chapter 11. They state that managers of distressed firms with liquid assets such as cash or planes, occur in a serious temptation to prolong firm's survival, even though it can result in value destruction, even more if difficult decisions such as downsizing or closing the business are required.

### 2.1.3 Information Asymmetry

Managers, stockholders and creditors may not always have the same information. Therefore, corporate disclosure plays a critical role in reducing information asymmetry, agency conflicts between managers and investors and contributes for the efficient market hypothesis (EMH) which states that stock prices incorporates all information, being impossible to outperform the market. Firms disclose information through regulatory laws (financial reports and other regulatory filings) and by voluntary communications (management forecasts, analysts' reports, conference calls and press releases). Eng and Mak (2003) show that larger firms have greater voluntary disclosure and it increases in firms where managers have low ownership. On the other hand, low leveraged firms disclose less information (Eng and Mak., 2003; Ali et al., 2014), as debt is seen as a controlling mechanism of the free cash flow problem (Jensen, 1986). More recently, Bertomeu and Magee (2015) find that firms that issue securities to the general public, which are obliged to mandatory disclosure, disclose meaningless information and it encourages managers' interests not to disclose bad information as a means to maximize current market prices.

Financial analysts are valuable intermediaries in the capital markets by providing forecast about future prospects, recommendations to investors to buy, sell or hold the stock (Lang and Lundholm, 1996; Healy, Palepu, 2001). Lang and Lundholm (1996) results show that companies with forthcoming disclosures have greater analysts following which leads to having a large pooled funds that might be linked to a reduction in the cost of capital. Amiram et al. (2016) show that earnings announcements and management forecasts increase information asymmetry, at the announcement, between unsophisticated and sophisticated investors, as it includes information that is new for both type of investors. On the other hand, they conclude that analyst forecasts reduces information asymmetry at announcement as it contains valuable information only to unsophisticated investors. However, this gap between unsophisticated and sophisticated investors endures for a short period of time, fading away ten days after the announcement.

In their review, Healy and Palepu (2001) state that financial reporting and disclosure contribute for the mitigation of agency costs. However, there are certain downfalls on disclosing information. Research in disclosing information shows that firms have incentives not to disclose information as their competitors also receive the information, reducing their competitive position therefore making financing costlier (Healy and Palepu ,2001). Kothari

et al. (2009) show that managers tend, on average, to delay the release of bad news to investors and leak good news early due to positive stock movements. This is consistent in their findings where the market reaction to good news is weaker than the reaction to bad news. Moreover, managers of distressed firms tend to delay the release of bad news because of career concerns. Hence, managers are successful in withholding bad news from investors, until it becomes inevitable from coming out (Kothari et al., 2009). Lehman Brothers bankruptcy and others bankruptcies in the recent financial crisis are internally connected by the ability of managers in withholding bad news from the general public.

## **2.2 Financial Fraud**

### 2.2.1 Overview

The general understanding about crime is “misleading and incorrect” (Sutherland, 1940). His view is that the most serious crimes are not committed by the poor or delinquent but by the respected and well-known business leaders. In his speech on December 27, 1939 in the fifty-second annual meeting of the American Sociological Society, he unveiled a new class of crime: “white collar crime”. Sutherland (1940) defines that white collar crime is expressed most frequently in the form of “Misrepresentation in financial statements of corporations manipulation in the stock exchange, commercial bribery, bribery of public officials directly or indirectly in order to secure favourable contracts and legislation, misrepresentation in advertising and salesmanship, embezzlement and misapplication of funds, short weights and measures and misgrading of commodities, tax frauds, misapplication of funds in receiverships and bankruptcies.” Yu (2013) defines fraud as “firm’s or its manager’s misconduct behaviour, which causes material value loss to shareholders or stakeholders (e.g., creditors, customers, and suppliers) and which may trigger regulatory and/or legal enforcements”.

The Great Depression (1929-1933), Dot.com bubble in 2001 and the most recent Financial Crisis of 2007-2009 have grabbed researchers’ attention to study the causes and aftermaths of financial crises. The period before the three financial crisis are somehow identical: plentiful liquidity in capital markets, an increase in financial innovation and a rising complexity of the financial products which weakened regulation and encouraged firms to increase their leverage (Carmassi, Gros and Micossi, 2009; Pauly, 2009; Eingner

and Umlauf 2015). Eisingner and Umlauf, 2015 show that the prices in the housing market increased exponentially, creating a market-bubble, before the crisis of 1929 and 2007. They also suggest that when the housing prices starts to decline, it can be seen as a pre-event of a financial crisis. While the period before the financial crisis is a period of growth is also a period of fraud (Eisingner and Umlauf, 2015). Charles Ponzi in 1920's was able to embezzle his investors in nearly 20 million dollars through his complexed businesses schemes. Enron in 2001 filed for bankruptcy under the Chapter 11, losing its total value, from \$90 a share in mid-2000 to under a \$1 in 2001, due to unreported losses (Benston and Hartgraves, 2002).

Why would managers engage in fraudulent activities if it turns out to be damaging for the firm? Albrecht et al. (2006) show three elements that are present in any kind of fraudulent act: (1) perceived pressure, (2) perceived opportunity and (3) some way to rationalize fraud as acceptable. Perceived pressure is mostly related to the financial need to report better results than the real ones. Perceived opportunity is when managers find an opportunity to engage in fraudulent activities with low probability of getting caught (weak board of directors or poor internal control mechanisms). Finally, management can come up with some rationalization on why to enter into fraudulent activities: "we needed to keep the price of stocks high"; "all companies use aggressive accounting practises"; "is for the good of the firm").

Every two years, the Association of Certified Fraud Examiners (ACFE) publishes a report on Occupational Fraud and Abuse. In 2016, it analysed 2127 cases which resulted in a total loss of 6.3 billion dollars, with an average loss of 2.7 million dollars per case. Asset misappropriation is the most common form of occupational fraud (83% of the cases), however with the smallest median loss of \$125,000. On the other hand, financial statement fraud is the least form of occupational fraud (< 10% of the case) but with a median loss of \$975,000.

### 2.2.2 Corporate Governance

Managers will not always act in the best interests of the shareholders (Jensen and Meckling, 1976). Managers tend to be overconfident in their investments (Malmendier and Tate 2005), make the company larger but not more profitable (Jensen, 1986) and disclose good news earlier and hold bad news (Kothari et al., 2009). In order to motivate managers to act in shareholders' interests, improving corporate governance and resolve agency

problems, the board can give incentives in the form of bonuses, performance rewards and shares of the company. If all of these mechanisms were created to control the management, how can it enrol in fraudulent activities?

Fraud and non-fraud firms possess different patterns. Several studies find that the fraud firms have very deficient governance mechanisms (Beasley, 1996; Beasley et al., 1999; Aharony et al., 2015; C. Liu et al., 2016). The Board of directors in fraud firms is equally represented by outside and inside directors as in non-fraud firms it is dominated by outside directors, adding one outside member to the board reduces the likelihood of fraud and small boards are more efficient in monitoring management decisions than large boards (Beasley, 1996), being consistent with Jensen (1993). Beasley et al. (1999) study fraud firms in three industries (technology, healthcare and financial services), finding that fraud firms have less independent audit committee and meetings with the auditing team, leading to an ineffective and misinformed board.

There is a negative correlation between fraudulent activities and institutional ownership (Roychowdhury, 2006). Aharony et al. (2015) finds that corporate lawsuits result in an increase of CEO turnover, decrease in CEO wages and trigger early departure of inside and outside directors, confirming Gilson (1990) hypothesis that outside directors' main motivation to serve in the board derives from the reputation they build as expert monitors and that lawsuit can damage their reputation. Moreover, Brochet and Srinivasan (2014) argues that only 11% of independent directors are account as defendants in the lawsuits of the companies they used to serve. Finally, C. Liu et al. (2016) find that after the lawsuits CEOs struggle to find job and if they stay in the sued company, they assist to an increase in the number of outside directors. These findings are consistent with the idea that managers will hold bad news (in this case, fraudulent activities) due to their self-interests, mostly career prospects (Kothari et al., 2009).

### 2.2.3 Regulation & Causes

The Securities and Exchange Commission (SEC) was formed in 1934 as a result of the financial crisis of 1929 to regulate stocks, bonds and other securities with the hope to

restore investor confidence in the capital markets. It has the purpose to provide accurate and meaningful information to investors, through the Act's disclosure requirements (operating history, profits in recent periods, financial position and so forth) in order to influence investment decisions, as stated: "to provide full and fair disclosure of the character of securities sold in interstate commerce and foreign commerce and through the mails, and to prevent fraud in the sale thereof, and for other purposes."<sup>2</sup> It also regulates the security transactions on the secondary market. SEC's main goal is to ensure financial transparency and accuracy, reducing fraud and manipulation and therefore contribute for the efficient market hypothesis.

In the aftermath of the Dot.com bubble with the crashes and frauds of Enron, WorldCom and other companies, the Sarbanes-Oxley Act (SOX) of 2002 was created with the goal to restore investor's confidence in the securities markets. Ribstein (2002) states that this is the most important Act since the acts that formed the SEC, concerning fraud and corporate governance mechanisms. However, creating laws that rely in increasing penalties and monitoring power by independent directors and auditors, who have low-level of access to private information, has been seen as an inefficient way to deal with corporate fraud through the seventy years of SEC's existence. Cohen et al. (2008) finds that accrual-based earnings management decreased and real earnings management increased after the SOX passage, implying not a decrease in fraud but a shift on the methods used by firms that are harder to detect confirming that "white collar crime" can be committed through several different ways (Sutherland, 1940).

Managers often feel pressured to meet analysts' earnings forecasts and investor's recommendations, because they are concerned about their performance and they are hold accountable for stock performance (Fama, 1980; Warner et al., 1988). Ribstein (2002) in its review of regulation defends that large public companies' managers need more monitoring in areas such as "insider transactions, compensation and selection and supervision of auditors." He, X. Tian (2013) conclude that analysts exert pressure on managers to meet short-term goals (e.g. earning targets) sacrificing long-term firm value by not investing in innovative, riskier projects (destruction of firm innovation). McVay et al. (2006) evidence that managerial incentives are a key driver for managers to intentionally meet analyst earnings forecast in order to maintain stock prices steady and sell their shares. Skinner and

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<sup>2</sup>See: <https://www.sec.gov/Article/whatwedo.html>

Sloan (2002) finds that missing analysts' forecasts, even by little, leads to significant drops in stock price, especially in companies with growth opportunities.

Adjusting firm's financial reports to mislead shareholders about the real performance to influence contractual outcomes that otherwise were impossible and get low cost financing, is called earnings management (Dechow et al., 1996; Healy and Wahlen, 1999). Managers can use real activities manipulation and accrual-based earnings in order to manipulate earnings. Accrual-based earnings management is achieved by changing accounting methods, like depreciation methods and shift gains or losses to provisions and accruals accounts. DuCharme et al. (2004) evidence positive increases in abnormal working capital accruals, on average, around stock offers, declining thereafter. Zang (2012) opines that there is a trade-off between the use of real activities manipulation and accrual-based earnings, based on their relative cost. Less competitive and unhealthy firms will engage more in accrual-based earnings management as they experience a higher level of scrutiny. Real activities manipulation is done in three different ways to alter reported earnings therefore avoiding losses: (1) Sales manipulations, by accelerating the timing of sales through aggressive discounts (2) Reduction of variable costs (R&D, advertising and maintenance) and (3) Overproduction to report lower cost of goods sold (COGS) (Roychowdhury, 2006). He shows that when debt, inventories, receivables and growth opportunities are present, the likelihood for manipulation activities increases.

#### 2.2.4 Consequences

The consequences of illegal and fraudulent practises when are made public can be catastrophic. Skinner (1994) argues that managers who fail to meet earnings forecasts, will increase the likelihood of being sued by stockholders, as stock prices' dives, and face costly reputational losses. Skinner (1997) shows some evidence that early disclose of bad news can reduce litigation costs (smaller litigation settlements). Field et.al (2005) imply that large firms have higher securities litigation risk, confirming the "deep pockets" idea that fraud's benefits outrank its costs. Karpoff, Lee and Martin (2008) estimates that firms lose, on average, 38% of their market value when misconduct news are reported.

Stockholders' lawsuits are typically brought under SEC's regulation, which states that providing misleading information (e.g. earnings management) is an illicit act. SEC penalizes fraud firms through its accounting-based enforcement actions in the Accounting

and Auditing Enforcement Releases (AAERs). Dechow et al. (1996) finds that fraud companies experience, on the day of earnings announcement: on average, a decline of 9% in their stock prices, increase in risk (bid-ask spreads) which results in investors demanding higher returns and higher cost of debt, and significant loss of analysts following. Farber (2005) states that fraud firms experience negative abnormal returns and negative raw returns in three years following fraud detection, compared to non-fraud companies. In short-window studies, Feroz, Park and Pastena (1991) analyse 224 AAER, finding an average loss of 7.5%, one-day prior to SEC's disclosure. Palmore et al. (2004) find that firms obliged to restate their reports, suffer an average decrease of 9.2%, over a 2-day window. Karpoff, Lee and Martin (2008) examine 231 firms which were subject to class-action lawsuits, who conclude that that legal penalties and its consequences (investor's adjustment to faulty information) explain 1/3 of firms' market loss. Therefore, a significant loss (2/3) is due to reputational losses.

Reputational Losses arise when “customers, suppliers, providers of financial capital, and other related parties revise their terms of trade once a firm's willingness to act opportunistically is revealed” which leads to loss of sales, lower negotiation power with suppliers, loss of business opportunities, and an increase in risk and return rates demanded by investors (Murphy et al., 2009). Karpoff and Lott (1993) states that legal penalties only represent 6.5% of firm's loss, indicating that 93.5% is due to reputational costs. Karpoff, Lee and Martin (2008) study 585 SEC's enforcement (1978-2002), reporting on average, abnormal returns of -8.85% for filing announcements and -4.04% for settlement announcements. They conclude that reputation costs represent a significant fraction (2/3) of the firm's total losses.

Litigation and reputational costs and their aftermath can be destructive for firms and managers. Leuz et al. (2006) finds evidence between litigation risk and “going dark” or going private. Firms with weak financial health, low probability to survive in the future and in financial distress go dark, getting delisted or trade in the Over-The-Counter market (OTC), expecting less disclosure requirements and lower cost of capital. Going private leads to a restructure in ownership, more concentrated in managers and private investors (e.g. Private Equities) and usually leads to an increase of the level of debt (e.g. LBO). Furthermore, Leuz et al. (2006) finds that companies with weak governance, high levels of excess cash are more likely to go dark. Finally, Fich and Shivdasani (2009) conclude that

strong corporate governance will more likely fire sued directors which markets view as good news (positive returns when sued directors leave the firm) and the probability of director resigning is positively depending on SEC's settlement amounts.

### **3. Methodology**

#### **3.1 Fraud Sample**

The observations are drawn from the Securities Enforcement Empirical Database (SEED). SEED is a data base created by the cooperation between NYU Pollack Center for Law & Business and Cornerstone Research, that tracks SEC's enforcement actions against public traded companies and its subsidiaries in Accounting and Auditing Enforcement Releases (AAERs), beginning of the fiscal year of 2010.

The procedures used to obtain the fraud firms sample are summarized in Panel A of Table 1. I retrieved a total of 608 AAERs. I began to eliminate 396 AAERs that were not enforced in the period of 2010-2013 with the purpose to study the causes and changes in the fraud companies in terms of corporate governance variables, risk and performance, 3 years prior and 3 years after SEC's enforcement (Dechow et al., 1996). I eliminate 86 AAERs taken against subsidiaries and 58 AAERs against companies which were delisted, not trading in NASDAQ or NYSE and taken private (Merged, Acquired or Liquidated) until 31-12-2016. I exclude companies in which the legal enforcement amount is zero (15), companies which are enforced more than one time, choosing the most recent (3) and firms that do not have complete fiscal information in The Center for Research in Security Prices (CRSP) between three years prior and three years after the enforcement date (5). This results in a final sample of 45 companies.

Panel B of Table 1 shows that fraud firms are widely dispersed among industries, without any clusters of firms in any industry in specific. Panel C of Table 1 indicates that 69 percent of the frauds involve Foreign Corrupt Practices Act (i.e., includes mainly fraudulent acts related to accounting manipulation strategies with the goal to increase sales, to hide actual losses and provide better financial and economical ratios). Panel D demonstrates that the number of cases analysed per year are nearly identical and that SEC's enforcement median was the highest in the first year of analysis (twelve million dollars), decreasing to five and a half million dollars in the last year of analysis (2013).

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**TABLE 1**

**Fraud Sample Selection, Fraud Firm Characteristics, and Control Group**

**Panel A: Sample Selection of 45 firms subject to enforcement actions by the SEC between 2010 and 2013**

Accounting and Auditing Enforcement Releases in the Securities Enforcement Empirical Database (SEED)	608
less AAERs outside the scope of analysis period (before 2010 and after 2013)	396
less AAERs against subsidiaries firms not listed in NASDAQ or NYSE and firms that got delisted, bankrupt or taken private in the period (2007-2016)	144
less AAERs which enforcements amount is zero, duplicated	18
less firms lacking fiscal information in CRSP for the period (2007-2016)	5
Final Sample	45

**Panel B: Distribution of Fraud Firms by SIC Code**

<b>Two-Digit SIC Code</b>	<b>Industry Description</b>	<b>N° of Firms</b>
13	Oil and Gas Extraction	5
20	Food and kindred Products	3
23	Apparel	1
28	Chemicals	4
29	Petroleum Refining	2
33	Primary Metal Industries	1
34	Fabricating Metals	2
35	Machinery and Computer Equipment	1
36	Electrical	2
37	Transportation Equipment	2
38	Measurement Instruments	5
44	Water Transportation	1
49	Electric, Gas, Sanitary Services	1
51	Wholesale Goods	1
59	Miscellaneous Retail	1
60	Depository Institutions	2
61	Nondepository Credit Institution	2
63	Insurance	1
64	Insurance Agents, Brokers and Services	1
73	Business Services	3
80	Health Services	1
87	Engineering, Accounting, Research, Management Services	1
99	Miscellaneous	2

**Panel C: Fraud-Specific Statistics**

<b><u>Allegation Type</u></b>	<b><u>Number of firms</u></b>	<b><u>Percentage Total</u></b>
Foreign Corrupt Practices Act	31	69
Issuer Reporting and Disclosure	14	31

**Panel D: Fraud Size**

	<b><u>2010</u></b>	<b><u>2011</u></b>	<b><u>2012</u></b>	<b><u>2013</u></b>
Number of cases	13	12	8	12
Median fraud amount (in millions \$)	12	3.88	5.50	5.51

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## 3.2 Control Sample

To study the effects of SEC's enforcements in fraudulent firms, it is also imperative to study how non-fraud firms (firms not enforced by SEC between 2007-2016) react to SEC's investigation disclosure. Therefore, we choose companies that have similar size (measured by Total Assets), Sales (Net Sales), Market Value and that are within the same industry (2-SIC code) and stock exchange (NYSE and NASDAQ). Table 2 demonstrates that there are no significant differences in the means and medians of our fraud and control group. The variables were taken from Wharton Research Data Services (WRDS).

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**TABLE 2**

**Matching Statistics for Fraud and Control Group**

<b>Variable</b>	<b>Fraud Firm mean (in millions)</b>	<b>Control Firm mean (in million)</b>	<b>t stat</b>	<b>Fraud Firm median (in millions)</b>	<b>Control Firm median (in million)</b>	<b>p-value</b>
Total Assets	144,451	117,840	0.99	14,994	15,340	0.16
Net Sales	31,207	27,372	1.15	8,566	11,101	0.29
Market Value	40,244	45,918	-1.02	8,516	12,056	

---

Fraud firms are matched with control firm on the basis of year, net sales, size (Total Assets), Market Value, and SIC code. The t-statistic is for the difference between means of the matched pairs. The p-value is for the Wilcoxon matched-pairs signed-rank test.

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## 3.3 Variables

### 3.3.1 Abnormal Returns

In order to study the impacts of certain episode in financial markets, one should conduct an event study to analytically understand its effects and realize if it derives from the efficient market hypothesis (EMH). Considering a Semi-Strong Market Efficiency hypothesis – stock prices incorporate all market and public information available – there should be no presence of abnormal returns (AR) which is a EMH anomaly.

Taking this into account, if one is able to prove the presence of unpredictable returns in a given stock or index by a significant event or changes in regulatory activity, such as SEC's

enforcements, then one could determine the power of the event, only if the ARs are statistically significant. Ultimately, an event study aims to study the impacts of a certain event on firm's market value. Initially, one should start by describing the event in question, the time-period subject to analysis (number of days surrounding the event day – event window) and the estimation period, used to estimate the parameters.

The events under analysis respects to SEC's enforcements dates against US public traded companies between 2010 and 2013. The event windows used to retrieve the abnormal returns are 21 days around the event dates [-10,10] (period from  $T_1$  to  $T_2$ ), 7 days [-3,3] (period from  $T_2$  to  $T_3$ ) and 1 day prior to the event [-1,0] (period from  $T_3$  to  $T_4$ ), following Murphy et al. (2009) methodology. The estimation window respects to 250 daily returns before the beginning of the event window (period from  $T_0$  to  $T_1$ ), thus we have an acceptable basis to calculate the relevant parameters in order to guarantee that “estimators for the parameters of the normal return model are not influenced by the returns around the event” (MacKinlay, 1997).

The formula for the Abnormal Returns is the following:

$$AR_{it} = R_{it} - E(R_{it}|X_t) \quad (1)$$

Where  $AR_{it}$ ,  $R_{it}$  and  $E(R_{it}|X_t)$  are the abnormal, actual and normal returns over period  $t$ .  $X_t$  is the known information to calculate the normal return model. The actual return relates to the rate return on stock  $i$  over day  $t$  whereas the expected normal return is statistically calculated with the available data. In order to calculate the normal returns, we need to choose a statistical model in which returns follows a set of statistical assumptions. We are going to use the market model since it assumes a linear relation between market's return and firm's returns as well as resolving the sensitivity of results based on CAPM restrictions. Thus, to measure the Normal Returns Model the following formula was applied for the estimation window:

$$R_{it} = \alpha + \beta R_{mt} + \varepsilon_{it} \quad (2)$$

Since the abnormal returns computations are not included in the estimation window, the parameters  $\hat{\alpha}$  and  $\hat{\beta}$  are not residuals in the OLS. Therefore, abnormal returns can be calculated as followed:

$$AR_{it} = R_{it} - \hat{\alpha} - \hat{\beta}R_{mt} \quad (3)$$

To get a broader understanding of the results, we use an index portfolio method, value-weighted returns (market returns as S&P 500 composite index) in computing the cumulative abnormal returns (CAR):

$$AR_t = \frac{1}{N} \sum_{i=1}^N AR_{it} \quad (4)$$

$$CAR[T_1, T_2] = \sum_{T_1}^{T_2} AR_t \quad (5)$$

The statistical significance of all the variables are calculated using a cross-sectional standard error, t-statistics for the mean abnormal returns.

### 3.3.2 Changes in Risk

SEC's investigation disclosure and the following enforcements on firms due to alleged illegal activities can, not only affect share returns but also the cost of acquiring new funds – cost of capital. Bid-ask spreads movements can be used as a proxy to investigate whether investors of enforced firms demand higher returns *ex post* (Dechow et al., 1996) as firm's risk increases due to eventual litigation risk which can result in significant distress costs, mainly related to reputation losses and business deterioration (loss of key employees, clients and good investing opportunities).

Following Dechow et al. (1996) approach we obtain the daily bid-ask spread data for the 90 firms (45 fraudulent and 45 in the control group) from CRSP. We also retrieve directly from CRSP both daily price and volume as they are important variables in explaining bid-ask spreads' behaviour. Although the number of market makers is an important variable, it was not possible to collect the data. Our event period respects to forty days before SEC's enforcement announcement and forty days after the announcement, [-40,40]. Our estimation window respects to 200 trading days before the beginning of the event in order to calculate the parameters  $\alpha$  and  $\beta$  for each company through the following formula:

$$Bid\_ask\ spread_i = \alpha_0 + \beta_1 Volume_i + \beta_2 Price_i \quad (6)$$

Where for firm  $i$ :

$$Volume_i = \log \text{ of } \frac{\text{bid-ask}}{(\text{bid+ask})/2}$$

$$Price_i = \log \text{ of bid price}$$

From each regression we get the predicted values of  $\alpha_0$ ,  $\beta_1$  and  $\beta_2$  which are going to be used in the following equation to calculate the predicted bid-ask spreads for each firm  $i$  on day  $t$  relative to SEC's enforcement day:

$$PredictedBid\_ask\ spread_{it} = \alpha_0 + \hat{\beta}_1 Volume_{it} + \hat{\beta}_2 Price_{it} \quad (7)$$

The difference between the actual bid-ask spread for firm  $i$  on day  $t$  and the predicted bid-ask spread for firm  $i$  on day  $t$  is calculated to determine the residual bid-ask spreads.

### 3.3.3 Governance Changes

Event studies are used to study market episodes such as changes in regulation. Studying the magnitude of stock returns and changes in risk (bid-ask spreads) related to SEC's enforcements against fraudulent firms is important, however short-windowed. Thus, it is imperative to study the characteristics of the enforced and control group firms with the goal to understand and spot the main differences in key corporate governance mechanisms in these two groups of firms which could valuably contribute in discovering certain patterns of illegal conduct within businesses and improve SEC's timing in detecting white-collar crime activity.

In prior research (Beasley et al., 1999 and Farber, 2005) fraud firms show, in general, a weaker corporate governance structure than non-fraud firms, in several key areas before SEC's announcement. However, research also shows that fraud firms tend to improve their governance *ex post*, becoming more similar to the control firms (non-fraud). To analyse the changes in corporate governance, we retrieve for each firm its Environmental, Social and Governance report (ESG) from Thompson Reuters Eikon.

We were able to retrieve governance information between one-year prior (Initial) to the event and four years after the Initial (Final) for 32 fraud firms matching the number of firms for our control group. This gives us a sample of 64 companies between the years 2009-2016. Following Farber (2005) methodology we collect the following governance variables

from Thompson Reuters Eikon: Size of the board of directors (*#BoardSize*), number of board meetings per year (*#BoardMet*), proportion of outside directors in the board (*OutsideDir%*), number of outside directors (*#OutsideDir*) calculated as *OutsideDir%* times *#BoardSize*, percentage of firms where the CEO also occupies the position as chairman of the board (*CEO=CHAIRMAN%*) and the total compensation per director (*Compensation*). *CEO=CHAIRMAN%* is a dummy variable where if the CEO is also chairman of the board turns the value of 1 otherwise 0. From Thomson Reuters Institutional (13f) Holdings we collect the following variables: percentage of outstanding shares held by blockholders (*Block%*) and the percentage of institutional ownership (*InstOwn%*).

#### **4. Results & Discussion**

All things considered, one would expect that regulatory sanctions by SEC would evidently affect negatively stocks' returns, positively firms' risk and empower mainly, fraud firms to implement essential changes in their corporate governance mechanisms. Therefore, we predict that fraud firms experience negative CARs around the event, become riskier for investors (positive changes in residuals bid-ask spreads) and has poorer governance mechanism than non-fraud firms. On the other side, one would expect that the control group, which operates in the same industry, would benefit from this event, seeing its share price soar (positive CARs), as its competitors incur in several costs (e.g. amount of the legal penalty and reputational losses). Moreover, one could expect smaller changes in the control group risk as it experiences some spillover effect from the event. Finally, one could expect that non-fraud firms have stronger corporate governance than fraud firms in order to prevent illegal practises by their management.

##### **4.1 Event Study Results**

The study concentrates on the 21-day event window [-10,10] to better capture the magnitude of share price movement in a wider time period before and after fraud announcement than a 3-day window. Cumulative abnormal returns are shown, followed by a summarizing section for the other event windows (3-day window and 1-day window), both for fraud firms and control group computed using value-weighted index.

Figure 1 presents a plot of the cumulative abnormal returns. The plot indicates that before the event [-10, -1] fraud firms experience, on average, CAR of -0.39%, recording a maximum loss on day -4 (-0.69%). On the day of the event, fraud firms record, on average, a negative CAR of -0.18%. These results imply that there is a leakage of information prior to the official fraud announcement. Nevertheless, from [+1, +10] fraud firms experience, on average, a positive CAR of 0.36%, with the maximum on day +7 (0.78%). These results suggest that after SEC's enforcement and knowing the value of the settlement amount, investors start believing again in the company. Moreover, since our sample is based on AAERs for big public traded companies for a period after the financial crisis of 2007-08, we can conclude that regulators act late and ineffectively in the use of their powers and that legal penalties does not affect significantly firm's returns. Furthermore, at this time, big companies already did the necessary adjustments in their businesses to prevent being caught and have switch to more advanced and innovative ways of committing financial fraud. Overall, fraud firms in the 21-day window, the only day with significant losses, is at the first day of the event window (-10) with an average loss of -0.36% at a level of significance of 5% ( $t = -2.14$ ).

For the control group, we discover a medium negative correlation of -0.47 between the two groups for the 21-day event window. Moreover, the control group evidences, on average, positive CAR of 0.17% before the event [-10, -1], recording a maximum gain on day -3 (0.62%). This evidences that investors in non-fraud firms benefit, in the short-run, with their competitors being sued. On the day of the event, control firms record, on average, a positive CAR of 0.30%. However, after the event day [+1, +10] control firms record, on average, negative CAR of -0.08%, recording a minimum of -0.41% in the last day of the event window. These results imply that big corporations being legally enforced, not only affects them but also other players in the same industry – spillover effect. Overall, control firms in the 21-day window, the only day with significant losses, is at the first day of the event window (-10) with an average loss of -0.34% at a level of significance of 10% ( $t = -1.93$ ).

FIGURE 1

**Cumulative Abnormal Return**

Cumulative abnormal return (CAR) of fraud and control group over 21-day event window

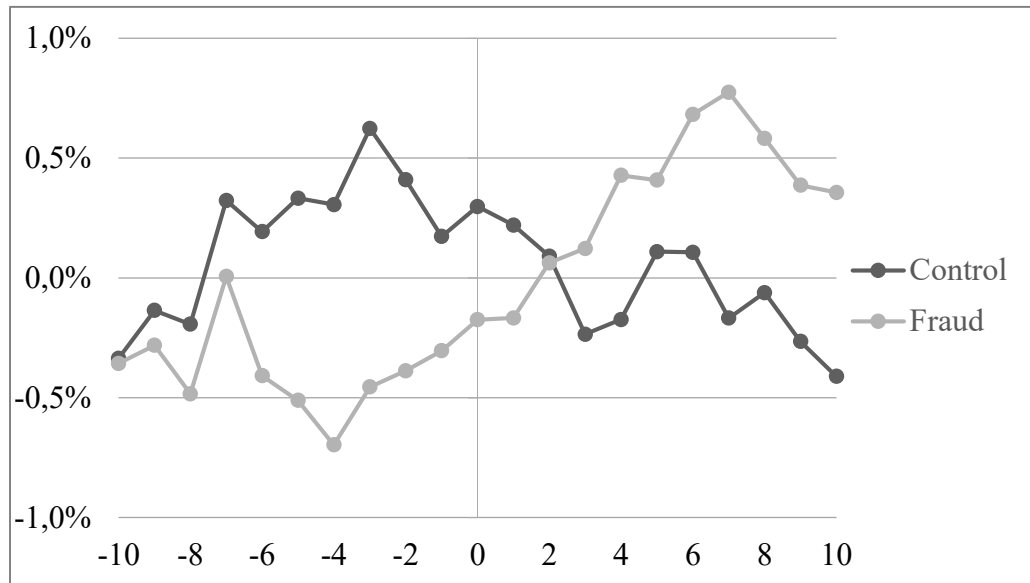


Table 3 presents the summary statistics for the other two event windows: 7-day and 2-day window. For both event windows, we conclude that CARs are not statistically significant and that mean CARs signals changes for both groups. As the event window becomes narrower around the event day, fraud firms experience positive CARs as control firms experience, on average negative CARs. However, fraud firms tend to have wider range of CARs for all event windows. These results are consistent with previous research that legal enforcements are not significant for firm's loss.

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**TABLE 3****Summary Statistics: Fraud and Control firms CARs**

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<i>Panel A: Fraud Companies</i>				
	<b>Mean</b>	<b>Min</b>	<b>Max</b>	<b>t-stat</b>
CAR (-1;0)	0.15%	-5.57%	6.71%	0.52
CAR (-3;+3)	0.49%	-13.34%	11.43%	-1.00
CAR (-10;+10)	-0.02%	-19.48%	19.74%	-0.31

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<i>Panel B: Control Companies</i>				
	<b>Mean</b>	<b>Min</b>	<b>Max</b>	<b>t-stat</b>
CAR (-1;0)	-0.13%	-5.90%	4.57%	-0.67
CAR (-3;+3)	-0.01%	-8.74%	10.94%	0.1
CAR (-10;+10)	0.06%	-17.36%	17.83%	0.02

---

**4.2 Residual bid-ask spread – Changes in Firm’s Risk**

The study concentrates in the changes in the means of the residuals bid-ask spreads forty days before SEC’s announcement [-40, -1] and forty days after [+1, +40]. Figure 2 and Figure 3 presents two plots of the changes in the residuals bid-ask spread for fraud and control firms, respectively and the average for the both. Furthermore, Table 4 presents the summary statistics for the mean changes of the residuals bid-ask spread.

Figure 2 presents a plot of the residual bid-ask spreads for the fraud sample. The plot indicates that prior to SEC’s enforcement date and thereafter [-40, +40], the average residual bid-ask spread is negative (-0.03). Cross-sectional analysis, indicates that we have thirty-four days where fraud firms experience statistically significant changes in risk. Three days at a level of significance of 10%, sixteen days at a level of significance of 5% and fifteen days at a level of significance of 1%. Prior to announcement [-40, -1], the average residual bid-ask spread is negative (-0.04). However, after the announcement [+1, +40] the average residual bid-ask spread is negative but bigger (-0.027). Moreover, this changes in the means residual bid-ask spread are statistically significant at a level of 1% ( $t = 3.23$ ). These results are consistent with previous research, implying that investors after regulatory enforcements, see fraud firms as riskier, demanding higher returns on their investment therefore exercising more pressure on management to provide better results in the future.

FIGURE 2

**Residual bid-ask spreads – Fraud firms**

Residual bid-ask spreads for fraud firms around the SEC’s enforcement. The straight lines are the mean residual bid-ask spread prior and after the enforcement (excluding day 0).

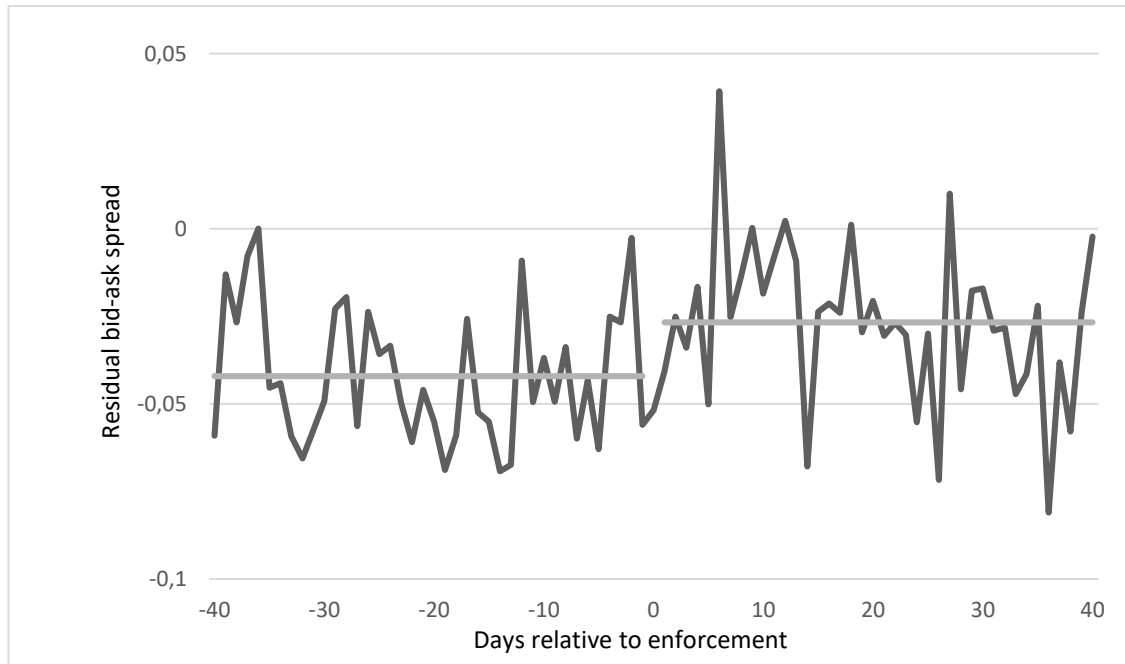


Figure 3 presents a plot of the residual bid-ask spreads for the control sample. The plot indicates that prior to SEC’s enforcement date and thereafter [-40, +40], the average residual bid-ask spread is negative (-0.11). Cross-sectional analysis, indicates that we only have one day (-31) where control firms experience statistically significant changes in risk at a level of significance of 10%. Prior to announcement [-40, -1], the average residual bid-ask spread is negative (-0.12). However, after the announcement [+1, +40] the average residual bid-ask spread is negative but bigger (-0.11). Moreover, this changes in the means residual bid-ask spread are not statistically significant ( $t = 1.37$ ). These results are consistent with previous research, implying that non-fraud firms are seen as less risky by investors. On the other hand, control firms became non-significantly riskier as they are affected by the significant positive changes in risk of the fraud companies, proving that there is some spillover effect between firms that operate in the same industry.

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**FIGURE 3****Residual bid-ask spreads – Control firms**

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Residual bid-ask spreads for control firms around the SEC's enforcement. The straight lines are the mean residual bid-ask spread prior and after the enforcement (excluding day 0).

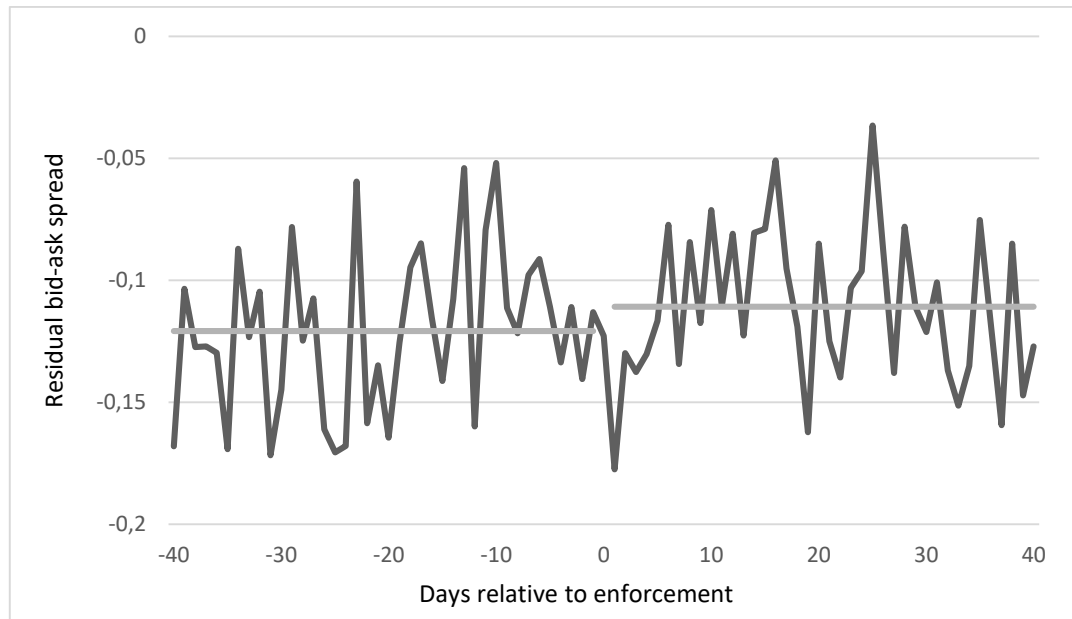


Table 4 presents the summary statistics for the changes in mean residual bid-ask spreads for fraud and control firms. Furthermore, Table 4 presents the R-squared value of the predicted bid-ask spreads model in which, our values are lower than previous research.

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**TABLE 4****Summary Statistics: Residual bid-ask spreads for fraud and control firms**

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<i>Panel A: Fraud Companies</i>			
	<i>Mean</i>	<i>Min</i>	<i>Max</i>
[- 1, - 40]	-0.04	-0.07	0.00
[+1, +40]	-0.03	-0.08	0.04
(t-stat)	(3.23)***		
R-squared	0.31		
<i>Panel B: Control Companies</i>			
[- 1,- 40]	-0.12	-0.17	-0.05
[+1,+40]	-0.11	-0.18	-0.04
(t-stat)	(1.37)		
R-squared	0.18		

\*, \*\*, \*\*\* Significant at the 10 percent, 5 percent and 1 percent levels, based on differences in means

### 4.3 Governance Changes

The study concentrates on analysing the mean changes in key corporate governance variables, one year prior to SEC's enforcement (Initial Year) and the following four years being the four year the last year of the period analysis (Final Year) with the goal to understand either or not governance is important in controlling corporate criminal acts. Table 5 provides tests of significance in governance changes variables for 32 matching pairs of fraud and control firms. The mean changes for the governance variables are measured with the Initial Year as basis.

Table 5, Panel A, provides evidence that the board of directors' characteristics are, in general, identical for fraud and control firms. Fraud and control firms' boards are highly controlled by outside directors, however control firms have higher percentage of outside directors (*OutsideDir%*) in their boards, have smaller board size (*#BoardSize*) and have less board meetings (*#BoardMet*) than fraud firms for all the period analysis. These results are consistent with previous research which states that firms' management decisions with smaller boards are easier to be monitored. The mean changes in governance variables during the analysis are not statistically significant for any of the variables. However, at the last year of the analysis period, both fraud and control firms have increased the percentage of outside directors and fraud firms have increased the average number of board meetings, from 8.69 to 9.4. Overall, we find that, contrary to previous research, independent directors were not better monitors than inside directors in the Financial Crisis of 2007-08 and afterwards. One possible explanation for the incapacity of outside directors to monitor criminal management decisions tends with the innovative and more complexed mechanisms of financial misconduct, unveiled during and after the recent Financial Crisis which were normally large and complexed schemes with a multitude of different players.

Table 5, Panel B, provides evidence that in the year prior to SEC's enforcement, on average, 56.23 percent of CEOs of fraud firms are also the board's chairman (*CEO=CHAIRMAN%*). Interestingly we find that the percentage of CEOs of control firms who also are board's chairman is higher (78.13) and the mean difference between fraud and control firms is statistically significant at a 10% level confidence ( $t = -1.89$ ). During the analysis period, we see significant changes in *CEO=CHAIRMAN%*, except for year 1. In the final year, there is no significant differences between fraud and control firms regarding

*CEO=CHAIRMAN%*. This gives us enlightenment that it is not because managers also possess the position of chairman that they can manipulate or influence the board to act on behalf on their own interests, refuting previous research.

**TABLE 5**

**Univariate Comparisons of Board of Director and Other Governance Variables**

**Panel A: Board of Directors Characteristics**

<u>Variables</u>	<u>Firm</u>	<u>Year</u>					
		<u>Initial</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>Final</u>
<i>OutsideDir%</i>	Fraud	81.43	1.50	2.21	2.22	1.73	83.16
	Control	83.15	-0.06	1.01	0.49	1.76	84.91
	(t-stat)	(-0.61)	(1.16)	(0.86)	(0.99)	(-0.02)	(-0.64)
# <i>OutsideDir</i>	Fraud	9.38	-0.13	-0.16	-0.09	-0.09	9.28
	Control	9.31	-0.03	0.03	0.25	0.13	9.44
	(t-stat)	(0.1)	(-0.28)	(-0.46)	(-0.71)	(-0.50)	(-0.28)
# <i>BoardSize</i>	Fraud	11.53	-0.09	-0.31	-0.25	-0.19	11.34
	Control	11.22	0.03	-0.03	0.25	0.00	11.22
	(t-stat)	(0.52)	(-0.48)	(-0.71)	(-1.14)	(-0.44)	(0.23)
# <i>BoardMet</i>	Fraud	8.69	0.66	-0.09	0.15	1.05	9.4
	Control	8.25	0.19	-0.50	0.06	-0.16	8.09
	(t-stat)	(0.55)	(0.64)	(0.51)	(0.04)	(1.00)	(1.53)

**Panel B: Other Governance Variables**

<i>CEO=CHAIRMAN%</i>	Fraud	56.25	-3.13	9.38	12.50	9.38	65.63
	Control	78.13	-3.13	-6.25	-6.25	-9.38	68.75
	(t-stat)	(-1.89)*	(0.00)	(1.91)*	(2.17)**	(2.17)**	(-0.26)
<i>Block%</i>	Fraud	12.02	0.76	4.34	5.99	10.17	22.20
	Control	13.24	3.17	5.08	7.86	9.14	22.38
	(t-stat)	(-0.39)	(-1.04)	(-0.22)	(-0.61)	(0.29)	(-0.05)
<i>InstOwn%</i>	Fraud	0.61	-0.01	-0.02	-0.04	-0.05	0.56
	Control	0.76	-0.01	-0.03	-0.05	-0.09	0.68
	(t-stat)	(-3.06)***	(0.27)	(0.30)	(0.36)	(1.86)*	(-2.48)**
<i>Compensation</i>	Fraud	2,600,041	-5,365	34,731	89,359	474,677	3,074,719
	Control	2,308,468	384,415	542,605	734,982	726,780	3,035,248
	(t-stat)	(0.95)	(-1.46)	(-1.81)*	(-2.45)**	(-0.98)	(0.12)

\*, \*\*, \*\*\* Significant at the 10 percent, 5 percent and 1 percent levels, based on differences in means for the 32 matched pairs

Panel B of Table 5 also indicates that for control and fraud firms, the percentage of blockowners, who holds more than 5% of shares outstanding (*Block%*), is identical and increases for all the years in the analysis period. We also find that the percentage of institutional ownership (*InstOwn%*) is significantly lower, at a confidence level of 1%, in fraud firms one year prior to the regulatory enforcement ( $t = -3.06$ ). The mean changes in *InstOwn%* are negative for all the period analysis, however only significant at a confidence level of 10% in the year 4 ( $t = 1.86$ ). However, the mean changes in *InstOwn%* between fraud and control firms have decreased, still being significant at a confidence level of 5% ( $t = -2.48$ ) at the Final Year. Finally, we discover that one year prior to legal enforcement, the mean directors' compensation (*Compensation*) is not statistically significant, being higher in fraud firms. However, in year 1 the mean changes in *Compensation* are negative for the fraud firms, confirming that criminal conduct affects directors' compensation, however not significantly. Year 2 and 3 in our period analysis records a significant positive changes in directors' compensation at a confidence level of 10% ( $t = -1.81$ ) and 5% ( $t = -2.45$ ), respectively. In the Final year of our analysis period, we conclude that there are no significant differences in *Compensation* between fraud and control firms, however there is some evidence that directors' compensation is affected by corporate misconduct.

In sum, we find that one year prior to SEC's enforcement, fraud firms and control firms were somehow identical, however fraud firms present slightly poorer corporate governance. The mean percentage of outside directors in fraud firm's board is lesser than in control firms, the mean board size is larger for fraud firms, mean institutional ownership is significantly lower in fraud firms and mean director's compensation is negatively affected only in the year of SEC's investigation disclosure and following enforcement, being quickly fixed for the following years. Furthermore, we find evidence that in the following years, fraud firms make necessary changes in their governance mechanisms in order to restore their reputation thereby restoring investors' confidence therefore while becoming more similar to non-fraud firms which have stronger corporate governance.

## 5. Conclusion

This study gives enlightenment on the relationship between corporate fraud and regulatory sanctions, and how it affects firm's returns, firm's risk in the short-run. Moreover, for the long-run, it studies the mean changes in governance variables applied by the enforced firms in order to prevent same actions in the future. It uses a sample of 45 firms enforced by the SEC from 2010 to 2013, to study the changes in stock returns and changes in risk. For the mean changes in governance variables, our sample is 32 matched-paired firms (fraud and control groups), and it studies from one year prior to SEC's enforcement year and the four years after, which gives us a sample between 2009 to 2016.

This study reveals that legal penalties do not affect significantly firm's returns, which is consistent with Murphy et al. (2009) results. Some plausible reasons for it can be related with the sample retrieved where most of the firms are big size firms, consistent with Field et.al (2005) "deep pockets" idea that large firms have higher litigation risk because fraud's benefits outrank its costs. Also the period in analysis, period after the recent financial crisis, companies may have already implemented imperative changes in their business, and market regulators' inefficiency in finding out criminal financial activity. This study also finds that firm's risk (residual bid-ask spreads) significantly increases ( $t = 3.23$ ) for fraud firms after regulatory enforcements as investors perceive enforced firms as riskier than non-fraud firms, demanding higher returns on its investments, which is consistent with previous research (Dechow et al., 1996; Murphy et al., 2009).

Finally, this study shows that fraud and non-fraud firms are somehow identical in terms of their corporate governance mechanisms. Board of directors' variables are very similar between fraud and non-fraud firms which is contrary to previous research, that outside directors are better monitors of management decisions. Plausible reasons for these results can be that the financial crisis of 2007-08 was characterized by very complexed schemes, with complexed financial instruments involved that nobody fully understood the real consequences of those decision. Furthermore, the integration of external important players, like rating agencies, banks and even the government could have helped in rationalizing fraudulent management decisions, "if everybody does it" (Albrecht et al. 2006). Moreover, the study shows that director's compensation is affected by legal penalties and that fraud firms in the following years after SEC's enforcement tend to improve their governance variables, by becoming more similar to their non-fraud firms.

This study contributes to the accounting literature. It adds knowledge of the link between financial fraud, litigation risk and their impact on firm's financial distress costs. It also sheds light on the inefficiency of market regulators (SEC), during and after the recent financial crisis, in investigating and prosecuting financial misconduct, and that financial fraud did not decrease but have become more complexed and harder to be detected (Cohen et al., 2008).

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## 7. Appendix

**TABLE 6**

<b>Defendant Name</b>	<b>Date</b>	<b>Allegation Type</b>	<b>Payment Volume (\$)</b>
Archer-Daniels-Midland Company	20-Dec-2013	Foreign Corrupt Practices Act	36 467 366
Assurant, Inc.	21-Jan-2010	Issuer Reporting and Disclosure	3 500 000
Alliance One International, Inc.	06-Aug-2010	Foreign Corrupt Practices Act	10 000 000
Aon Corporation	20-Dec-2011	Foreign Corrupt Practices Act	14 545 020
Ball Corporation	24-Mar-2011	Foreign Corrupt Practices Act	300 000
BP p.l.c.	15-Nov-2012	Issuer Reporting and Disclosure	525 000 000
Citigroup Inc.	29-Jul-2010	Issuer Reporting and Disclosure	75 000 001
Capital One Financial Corporation	24-Apr-2013	Issuer Reporting and Disclosure	3 500 000
Diebold, Inc.	22-Oct-2013	Foreign Corrupt Practices Act	22 972 942
Deutsche Telekom, AG	29-Dec-2011	Foreign Corrupt Practices Act	4 000 000
ENI, S.p.A.	07-Jul-2010	Foreign Corrupt Practices Act	125 000 000
NIC Inc.	12-Jan-2011	Issuer Reporting and Disclosure	500 000
Fifth Third Bancorp	04-Dec-2013	Issuer Reporting and Disclosure	6 500 000
Technip	28-Jun-2010	Foreign Corrupt Practices Act	98 000 000
General Electric Company	27-Jul-2010	Foreign Corrupt Practices Act	23 478 614
Healthsouth Corp.	26-Jul-2010	Issuer Reporting and Disclosure	100 000 000
Huron Consulting Group Inc.	19-Jul-2012	Issuer Reporting and Disclosure	1 066 335
International Business Machines	18-Mar-2011	Foreign Corrupt Practices Act	10 000 000
Innospec, Inc.	18-Mar-2010	Foreign Corrupt Practices Act	60 071 613
Johnson & Johnson	08-Apr-2011	Foreign Corrupt Practices Act	48 666 316
JPMorgan Chase & Co.	19-Sep-2013	Issuer Reporting and Disclosure	200 000 000
Eli Lilly and Company	20-Dec-2012	Foreign Corrupt Practices Act	29 398 734
Medifast, Inc.	18-Sep-2013	Issuer Reporting and Disclosure	200 000
Maxwell Technologies Inc.	31-Jan-2011	Foreign Corrupt Practices Act	6 350 890
Noble Corporation	04-Nov-2010	Foreign Corrupt Practices Act	5 576 998
Office Depot, Inc.	21-Oct-2010	Issuer Reporting and Disclosure	1 000 000
Orthofix International N.V.	10-Jul-2012	Foreign Corrupt Practices Act	5 225 701
Oracle Corporation	16-Aug-2012	Foreign Corrupt Practices Act	2 000 000
PACCAR Inc	03-Jun-2013	Issuer Reporting and Disclosure	225 000
Pfizer Inc.	07-Aug-2012	Foreign Corrupt Practices Act	26 339 945
Koninklijke Philips Electronics	05-Apr-2013	Foreign Corrupt Practices Act	4 515 178
Parker Drilling Company	16-Apr-2013	Foreign Corrupt Practices Act	4 090 818
Transocean Inc.	04-Nov-2010	Foreign Corrupt Practices Act	7 265 080
Ralph Lauren Corp.	22-Apr-2013	Foreign Corrupt Practices Act	734 846
Rockwell Automation, Inc.	03-May-2011	Foreign Corrupt Practices Act	2 761 091
Raytheon Corporation	25-Jun-2010	Issuer Reporting and Disclosure	12 000 000
Smith & Nephew PLC	06-Feb-2012	Foreign Corrupt Practices Act	5 426 799
Stryker Corporation	24-Oct-2013	Foreign Corrupt Practices Act	13 283 523

Tidewater Inc.	04-Nov-2010	Foreign Corrupt Practices Act	11 321 362
Thor Industries, Inc.	13-May-2011	Issuer Reporting and Disclosure	1 000 000
Tenaris S.A.	17-May-2011	Foreign Corrupt Practices Act	5 428 338
Tyson Foods, Inc.	10-Feb-2011	Foreign Corrupt Practices Act	1 214 477
Weatherford International plc	26-Nov-2013	Foreign Corrupt Practices Act	65 612 360
Watts Water Technologies, Inc.	13-Oct-2011	Foreign Corrupt Practices Act	3 776 606
Biomet Inc.	26-Mar-2012	Foreign Corrupt Practices Act	5 575 731