Sued or Glued – How To Compensate The CEO?[1]

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Abstract

We show that granting option incentives to the chief executive officer (CEO) is controversial. For shareholders it involves a trade-off. Although it aligns interests and induces to exerting more effort (the CEO is "glued"), stock options also trigger problematic behavior such as increasing firm risk. We show that dispersed minority shareholders will resort to class-action lawsuits as an ex post governance mechanism and thereby pose a disciplining threat on management "to behave". They do so when other governance mechanisms have failed or are unavailable. If CEOs have too many options in place, they must be determined by insiders and governance mechanisms. Our finding of higher performance volatility of "sued" firms is in line with CEOs increasing firm risk. Consistent with the literature, we show that entrenchment variables increase the CEOs bargaining position for the use of option incentives. Consequences of this component is a higher probability of shareholders taking action in the form of filing a lawsuit. We show that lawsuits are ex-post effective in disciplining the CEO. Not only does it increase the likelihood of shareholders becoming dissident, it also increases the potential severity of a lawsuit. This effect is attenuated by the introduction of the Sarbanes-Oxley Act. We interpret that this introduction of heightened personal liability for managers poses as an additional external threat for the CEO to pursue his fiduciary duties and a reduced need for lawsuits.

Keywords: shareholder litigation, monitoring, CEO compensation, stock option incentives

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1 Introduction

Equity-based compensation for chief executive officers (CEOs) gives incentives to act in the interest of shareholders but at the same time provides incentives for taking risks and manipulation of accounting numbers and stock prices. Executive stock options are particularly controversial due to their non-linear payoff and recent occurrences of manipulation. Hence, performance-sensitive compensation undoubtedly involves a trade-off between costs and benefits. The clear benefits are the alignment of CEOs' incentives with shareholders' interests. We refer to this notion as the CEO being "glued" to the interests of shareholders. The costs of equity-based compensation are tendencies towards short-termism, incentives to take excessive risks, be involved into stock price manipulation and in the worst case to commit securities fraud. Since this is not in shareholders' interests, we argue that shareholders can ex-post counter this behavior via class-action lawsuits – with its mere threat being a disciplining force and monitoring mechanism ex-ante. Managers fear this threat of being "sued" due to reputational costs, personal damages and a decreasing wealth due to his equity-aligned pay package. We argue that minority shareholders use class-action lawsuits as a monitoring mechanism on the one hand and on the other hand as a way to influence and change the prevalent governance structure of the company. The critical question is therefore which situations of managerial risk taking trigger litigation. When is it likely to occur, given that managers are able to manipulate the board themselves (Shivdasani and Yermack, 1999)? What are the consequences of granting too many stock options? How are shareholders able to exert monitoring and changes in corporate governance, which ones are likely to use which mechanisms and has this changed after Sarbanes-Oxley? This paper addresses these questions. We state that the mere threat of a class-action lawsuit is a way in which shareholders can control CEOs in order to *not* engage in problematic behavior. In addition, the personal liability for managers section of the Sarbanes-Oxley Act has introduced an additional disciplining threat "to behave", which reduces the demand for class-action lawsuits to step in, since CEOs are less likely to take on risks.

The threat of class-action lawsuits is available to minority shareholders as a monitoring mechanism working against managerial self-dealing. Shleifer and Vishny (1997) describe corporate governance per se as the key mechanism ensuring providers of capital a proper return on their investment. External governance mechanisms such as the market for corporate control force managers to deliver shareholder value in order not to be taken over and thereby not lose their jobs. This threat can however be countered by managerial entrenchment in the

form of takeover defenses, which has been shown empirically (Comment and Schwert, 1995). Hence, management would still act in its own interest and can thus benefit from perquisites, high levels of executive compensation and private benefits of control (Yermack, 2006a). An *internal* governance mechanism in itself is the CEO's compensation scheme, which aims at ensuring management for shareholder value and alignment. Monitoring mechanisms available to blockholders are inducing pressure on management in the form of shareholder activism – also called "voice" (Edmans, 2008). Since ownership is sufficiently high, the blockholder can equally threaten the equity-aligned CEO with selling the stock – this is called "exit". Both actions are performed by institutional investors, who become active in terms of shareholder proposals (Gillan and Starks, 1999) or who simply "vote with their feet". By construction, these actions are not available to dispersed shareholders with small ownership stakes – at least their credibility and impact is dwarfed by blockholders' actions. As a result small investors have two alternatives according to Becht, Bolton, and Röell (2003). On the one hand, a proxy fight as one mechanism, which allows rebellious shareholders to remove corporate boards protected by takeover defenses, is seldom observed (Mulherin and Poulsen, 1998). On the other hand, shareholder suits have recently received mounting awareness. Shareholder suits (or class-action lawsuits) can be initiated by at least one shareholder, if shares had been bought at allegedly inflated prices and stock market performance was consequently poor and contrary to management's (positive) statements. In 1995, the Private Securities Litigation Reform Act (PSLRA) has been put into place, which enables (private) shareholders to allege any violation of 10(b)-5 of the 1934 Securities Exchange Act. This rule proscribes, among other things, "the intent to deceive, manipulate, or defraud with misstatements of material fact made in connection to financial condition, solvency and profitability." In this paper we argue that the threat of a class-action lawsuits is a monitoring mechanism in case prior governance mechanisms have failed or are not available. A similar yet more extreme and radical implicit incentive for the CEO "to behave" is the threat of being fired. In order for this threat to be credible it needs to be observed but not frequently. We find this situation for both class-action lawsuits and CEO turnover. Further lending credibility, the PSLRA in 1995 has heightened pleading requirements for plaintiffs to discourage frivolous lawsuits, which are triggered by lawyers' incentives rather than shareholders' (Johnson, Nelson, and Pritchard, 2007).

We start with briefly reviewing the existing literature on CEO equity-based compensation, stock options and discuss the role of class-action lawsuits as a potential corporate governance mechanism and disciplining threat. We address whether CEO equity-based incentives

determined by insiders tackle problems of moral hazard and create alignment (whether they "glue") or whether they induce risk-taking (which makes managers being "sued" by shareholders – the outsiders). In the following we are going to address three research questions.

In a first step, we seek to address whether stock option compensation is driven by bad boards and entrenchment within the firm or rather by economic factors. In particular we will be focusing on elements of managerial entrenchment and director powers. We borrow from previous findings in the field of contract theory and incentives. Anecdotal evidence and academic research have widely established that the behavior of CEOs with respect to incentives can at least be termed "problematic". Further given insiders' ability to exploit bad governance and manipulate the board, we hypothesize corporate governance variables to have a significant incremental explanatory power in explaining their pay-for-performance sensitivity. We argue that if too many options are put in place for the CEO, they must be driven by insiders and managerial entrenchment.

As a second step we analyze the consequences of insider-determined option incentive schemes with respect to the occurrence of class-action lawsuits acting as a disciplining threat to managers. We assume that class-action lawsuits are a governance mechanism available to dispersed shareholders due to the unavailability of alternatives and argue that excessive reliance on stock option compensation schemes induces perverse incentives of increasing firm risk. Shareholders observe this and counter this behavior by suing the firm and managers. Since institutional investors can resort to different mechanisms, lawsuits are an instrument for small shareholders. We hypothesize that the likelihood of class-action lawsuits is highest when there are too many stock options, which are driven by bad corporate governance.

Finally we examine whether the demand for class-action lawsuits to act as a disciplining threat to CEOs is time-varying. The passage of the Sarbanes-Oxley Act in 2002 has introduced higher personal penalties for CEOs being alleged of securities fraud. Inarguably, the enforcement of the Act has changed the institutional and legislative landscape for corporations and managers. For that reason we hypothesize that adverse CEO behavior triggered by short-term sensitivity of stock options is *less* likely to occur in the post-Sarbanes Oxley period. The reasoning is that the introduced personal liability of directors and officers poses an additional threat forcing CEOs to manage in shareholders' interests in order not to be sued. Hence (minority-) shareholders will be less likely to use class-action lawsuits after Sarbanes Oxley and have to resort less often to litigation in order to influence governance structures.

By combining two strands of research our paper contributes to the existing literature on shareholder litigation and CEO compensation. We interpret class-action lawsuits as governance mechanism available to minority shareholders in order to monitor the CEO and to initiate changes in governance. To the best of our knowledge, no prior research has yet focused on equity-based incentives predicted from insiders as a trigger for managerial risk-taking and malfeasance that small shareholders can counter. Insiders set their own pay-for-performance sensitivity and exploit bad governance, which induces risk-taking at stakeholders' detriment. Our findings document that elements of managerial power and bad governance bear a significant incremental explanatory power in determining CEO equity-based incentive levels. These governance-predicted levels of option-incentives exhibit a strongly positive influence on the probability of becoming subject to a class-action lawsuit and thus shareholders to take action. Assuming the manager is aligned with equity implies that he inevitably cares about the stock price and is thus "punished" ex post. Thus our paper rejects the claim of Armour, Black, Cheffins, and Nolan (2007), who state that lawsuits in the US are comparatively ineffective in enforcing private law. We state that they are at least successful in disciplining the equity-aligned manager ex-post, which we show due to negative announcement effects irrespective of the type and legitimacy of the allegation. Not only does this component of equity-incentives affect the likelihood of being sued, it also drives the severity of lawsuits in terms of the number of allegations that the corporation faces. This has important implications for shareholders, policymakers and external monitors in designing CEO incentive schemes. We emphasize the relevance of class-action lawsuits as an available governance tool and monitoring mechanism for small investors. A further contribution is that this effect is significantly *less* pronounced after the Sarbanes-Oxley Act (*SOX*) has introduced higher personal penalties for directors being eventually convicted of financial fraud. We complement Chhaochharia and Grinstein (2007), who point out a positive valuation effect of *SOX*. Despite being criticized for being increasingly burdensome for companies to comply to *SOX*, we hence present a benefit. A disciplining mechanism of Sections XIII, IX and XI, which impose higher penalties for financial fraud and insider trading committed by directors and officers. We conclude that *SOX* offers an additional external disciplining threat for managers engaging in excessive risk taking triggered by out of equilibrium incentives and entrenched boards.

In the context of Gompers, Ishii, and Metrick (2003) our paper offers an additional explanation for the higher valuation of well-governed companies. Badly governed companies with entrenched managers and ill-defined compensation schemes could simply face a higher

litigation risk. Karpoff, Lee, and Martin (2008a & b) show that class-action lawsuits and possible SEC enforcement actions have materially adverse effects for managers and the companies as well. We stress the role of the US as a market of dispersed ownership as opposed to governance regimes of concentrated ownership, where the management monitoring function is located differently. Therefore minority shareholders can resort to the option of class-action lawsuits in order to influence the governance structure and to counter adverse CEO behavior.

We organize this paper as follows. Section two motivates our research and positions our paper in the literature. We offer three research questions. In section three we present our data and the methodology. Section four documents empirical findings on abnormal returns experienced in class-action lawsuit filings. At the end of section four we show that CEO equity incentive levels induced by corporate governance mechanisms have an especially pronounced effect for the option part of equity incentives. Since these results are time-varying, section five discusses them in the light of Sarbanes-Oxley. Finally, section six concludes.

2 Motivation: Executive Compensation and Class-Action Lawsuits

2.1 Executive Compensation

Management compensation lies at the heart of the principal-agent conflict in corporate governance. Since Jensen and Meckling's (1976) seminal paper on the theory of the firm and managers' incentives, research on incentives and contracting have mostly centered around equity-based remuneration. Managers themselves are not the owners of the corporation that they steer; therefore their objectives have to be aligned with shareholders', who are the ultimate owners. In another seminal paper, Jensen and Murphy (1990) argue that CEOs do not have enough incentives and state that more equity incentives need to be provided for CEOs to exert optimal effort. In the authors' view, the relation between pay and performance is simply too small to provide significant incentives for the manager. In the recent past, executive stock options have become increasingly popular since they tie management compensation to the degree of wealth creation for shareholders. Hall and Liebman (1998) and Core and Guay (2002) have hitherto pointed out that equity incentives and in particular stock options are the dominant component of CEOs' pay packages. In essence, we observe trends in CEO pay.

Stock option compensation is popular for several reasons. From the firm's perspective, it offers a favorable accounting treatment compared to cash-based compensation. From the manager's perspective, capital gains from equity based compensation are taxed to a lower

extent as personal income derived from a regular salary. Moreover, equity compensation (either via stocks, stock options or a combination of both) can be a powerful incentive for tying management compensation to shareholder wealth creation. This is confirmed empirically by Core and Larcker (2002), who document a significant increase in performance and valuation of firms of firms adopting mandatory stock option plans – so called "target ownership plans". Kato, Lemmon, Luo, and Schallheim (2005) conclude that the introduction of executive stock options in Japan has brought significant improvements in terms of operating performance. Thus, well-designed incentive plans are "consistent with the creation of shareholder value" (p. 460). Not only because of this, Coffee (2005) points at institutional investors putting pressure on firms to adopt stock option plans.

The compensation with stock options however comes at a significant potential cost to the firm. If management is able to manipulate stock prices, compensation via stock options will create a new incentive problem rather than solving one. It induces to manipulate earnings ("cook the books"), to time the release of material company information and forecasts, to benefit from inside knowledge and to select investments that increase the short-term stock price (Brenner, Sundaram, and Yermack, 2000). This allegedly problematic behavior of CEOs has been shown empirically. Yermack (1997) proves that management is able to manipulate the timing of option grants and can time the flow of good and bad news prior to the option grant (Aboody and Kasznik, 2000).

Given these conflicting perspectives on the use of stock options, who should determine the CEO's option incentives? Core, Holthausen, and Larcker (1999) have found that in poor corporate governance structures, managers can set their own remuneration packages, which ultimately lead to inferior performance. With the use of survey data, Géczy, Minton, and Schrand (2007) further establish that poorly governed companies induce excess managerial risk-taking since managers' equity-based compensation can be seen as a call option on the firm's assets, where the value of the option increases with volatility. The authors find that directors of companies with a high governance index[2] tend to engage more into speculative trading – instead of hedging – for their own benefits rather than the company's. They note that a distinctive feature of "speculating firms" versus "non-speculators" is the use of short-term equity incentives. However, this does not mean that outsiders by convention have to decide on remuneration. Eventually managers are insiders and shareholders are too dispersed to monitor

[2] The so-called "G-index" was compiled by Gompers, Ishii, and Metrick (2003) and enumerates 24 entrenching and shareholder unfriendly provisions.

and face free-rider problems. Possibly they are also too uninformed to set the CEO's compensation (Hermalin and Weisbach, 2003). Moreover, Burkart, Gromb, and Panunzi (1997) argue theoretically that excessive monitoring by blockholders reduces managerial discretion, which at the same time also reduces managerial effort exerted. So from this perspective, there is an additional trade-off involved between granting discretion and tight monitoring in setting CEO pay. If managers exploit the discretion that is granted by outsiders, either blockholders react via "voice" or "exit" or minority shareholders (not having this at their disposal) step in via class-action lawsuits. We examine whether lawsuits provide a credible and effective mechanism in disciplining management ex ante and punishing ex post.

Given prior research, our point of departure is the following. We assume a situation of information asymmetry between shareholders and management, i.e. the CEO is aware of his insider position, which he exploits to let his board decide on his compensation. This is in line with prior research, which concludes that CEOs behave strategically (Yermack, 1997; Core, Holthausen, and Larcker, 1999). Shivdasani and Yermack (1999) have already shown empirically that the CEO is actively involved in the selection of new board members. Hermalin and Weisbach (2003) also stress the board of directors to be an "endogenously chosen institution". According to Bertrand and Mullainathan (2000a), there are two theoretical mechanisms influencing CEO pay. There is a "simple contracting rule" and the phenomenon of "skimming" (Crystal, 1991). The basic mechanics are as follows. In theory, shareholders set management compensation and incentives for the CEO – perhaps via the board of directors (the "contracting rule"). This is done to solve the moral hazard problem caused by the generally low ownership stake of the CEO. However, the skimming view prescribes that the CEO can manipulate the board, the compensation committee and install entrenching devices, which accommodate his self-determined total compensation. The best way to avoid shareholders noticing self-serving compensation levels is to make them as performance-sensitive as possible. As long as the firm is doing well, shareholders are less likely to notice large pay packages. This argument is in line with Povel, Singh, and Winton's (2007) argument that managerial incentives for earnings manipulation are largest when the firm is doing well, because monitoring by shareholders is lower. Hence shareholders face another trade-off of close monitoring and managerial discretion. Inside managers are assumed to know most about the firm, the business operations and strategy and thus are likely to perform better and need not be monitored as vigilantly. Shareholders eventually become complacent about the CEO's pay package. That CEOs assume their malfeasance to remain unnoticed might be potentially explained by personal

overconfidence (Malmendier and Tate, 2005) or by their past achievements and their personal status[3].

2.2 Shareholder Litigation and Class-Action Lawsuits

A closer look at the United States' institutional environment reveals that the occurrence of shareholder litigation and the use of incentives are intertwined. Historically, shareholder litigation is more prevalent in the US than in other financial markets. Even though studies differ, each shows a rapid increase in financial statement restatements. One important characteristic that contrasts the US as a regime of dispersed share ownership to concentrated stock market regimes is a stronger reliance on variable compensation such as executive stock options and equity sharing programs (Coffee, 2005). On the one hand, this has increased the 2001 mean CEO pay[4] to four times the level of the beginning 1990s but on the other hand it has also led to a focus on managing for short-term equity value (Hall, 2003). It is often argued that institutional investors pressure firms to adopt stock option programs because they see it as the only remedy to align managers with shareholders and thereby reduce agency costs. This however can be done too aggressively since managers can always report high earnings growth and projections. As soon as they notice that their reported growth is unsustainable in reality, they can "exercise their options and bail out" (Coffee, 2005, p. 204) before admitting failures to the investing public. At this point shareholders take action by suing the firm. Recent developments in financial markets have accelerated the occurrence of class-action lawsuits. The burst of the internet bubble has resulted in a large number of dissident and discontent shareholders. Allegations during this time period were clustered in inflated stock prices, shareholder wealth-destroying mergers and acquisitions, false IPO prospectuses and managerial insider trading. After 2001, cases of Enron, Tyco, WorldCom, Global Crossing and Adelphia resulted in a large number of governance-related lawsuits. More recent observations include the option-backdating scandals in 2006 and recently excessive risk-taking in the subprime crisis. According to The Economist (19 December 2007), class-action lawsuits were filed on an "annual pace of around 270 between August and October 2007". In this setting we note that the US as a system of dispersed ownership plays a special role. In fact, class-action lawsuits are predominantly *initially* filed by individual rather than institutional investors[5]. We stress that

[3] In another paper, Malmendier and Tate (2007) call potentially overconfident CEOs "Superstar CEOs"
[4] CEO compensation of the S&P 500 industrial companies; including cash and equity; in 2001 the equity component of total CEO pay constituted 66%.
[5] A random sample of 128 firms in our sample of class-action lawsuit firms yields that 82% of the lawsuits were filed by individual investors with the remainder being initiated by pension funds, trustees and other companies.

this governance mechanism will be particularly important in systems of dispersed ownership with many minority shareholders.

In order to investigate the potential for managerial malfeasance we use the occurrence of class-action lawsuits as a proxy for a governance mechanisms, whose threat disciplines management. Prior researchers have used de-facto earnings restatements (Dechow, Sloan, and Sweeney, 1996) and accounting violations (Agrawal and Chadha, 2005) in order to investigate managerial wrongdoing. In our view this bears the disadvantage that earnings restatements need not necessarily be managers' bad intentions, just like accounting violations can be accidental and thus a function of business complexity. Finally, Bergstresser and Philippon (2006) relate CEO incentives to earnings manipulation in the form of abnormal accruals. Our approach is different in several ways. Shareholder suits bear the advantage that they resemble an important corporate governance mechanism for minority shareholders, which can serve as a threat to discipline self-serving managers and as a device to change prevalent governance. Since shareholders take the corporation to court in times of decreasing share price performance, we can interpret their activism as suspicion of bad governance, which triggered highly powered option incentives inducing managers to take risks. Therefore, we will treat the occurrence of shareholder litigation as disciplining governance mechanism subsequent to managerial malfeasance, an increase in firm risk or noticeable activities taken by management, which lead to dissident shareholders filing a lawsuit.

Fich and Shivdasani (2007) use the filing of a class-action lawsuit with subsequent "Accounting and Auditing Enforcement Release" (*AAER)* investigations in order to proxy for reputational damages of interlocked directors. By construction, their sample includes the ex-post particularly severe cases of shareholder litigation. Peng and Röell (2008) in their paper investigate only cases of stock price manipulation. We take a different approach. Our research sample will include *all* filings (which have not been voluntarily dismissed within one week) against listed corporations, for which we are able to obtain governance and financial data and executive compensation elements. We do this because we would like to focus on the disciplining force of a filing – irrespective of whether the allegations are legitimate or well-founded.

2.3 Testable Hypotheses

We start with the assumption of information asymmetry between managers shareholders. CEOs act as insiders and are able to exploit private information and strategically act in

their own potential self-interest. Myers and Majluf (1984) demonstrate that managers' corporate finance decisions reflect their inside information to outside equity markets. We first hypothesize in the light of recent empirical and anecdotal evidence that CEOs variable compensation is largely set by insiders and bad corporate governance. This way we empirically test whether the skimming theory rather than the simple contracting rule holds. Second, we hypothesize firms focusing excessively on a large sensitivity to equity value to are more likely to trigger shareholder litigation due to potential excess risk-taking for private benefits. Speaking in the notion, which was initially raised, we test for whether the "sued" rather than the "glued" hypothesis of executive compensation holds. In essence this boils down to shareholder being more likely to intervene via a lawsuit upon noticing that CEO compensation as a governance mechanism was out-of-equilibrium. The sample of class-action lawsuits allows for a natural experiment of what triggers situations of managerial risk-taking and misconduct. We expect lawsuits as a governance and monitoring mechanisms to step in as soon as pay-for-performance sensitivity (as governance mechanism in the first place) has failed. Our third hypothesis focuses on the need for class-action lawsuits as an outside threat for managers over time. Our time period allows us to compare a period with lower personal liabilities and potential penalties for fraudulent CEOs. Thus we argue that after the Sarbanes-Oxley Act introduction, we will observe a weaker effect of equity incentives on the probability of being sued.

3 Data and Methodology

3.1 Class-action lawsuit data

We obtain information on class-action lawsuits from the website of Stanford Law School, which – in collaboration with Cornerstone Research[6] – compiles data on filing date, number and identification of lead plaintiffs, trial outcome (if applicable) and reason for shareholders suing the company. Since the initiation of the Private Securities Litigation Reform Act of 1995, shareholders have the right to take managers to court upon violation of the Securities Exchange Act of 1934. Violations like these typically are the dissemination of false and misleading statements, artificial stock price inflation (for the purposes of accelerating mergers and takeovers and benefiting in IPOs and SEOs at the expense of new shareholders), accounting violations, insider trading or even governance problems. Since 1996 the database includes more than 2600 companies, which are listed on the *NYSE*, *AMEX* or the *NASDAQ*. The database also includes private and *OTC*-traded companies as well as foreign issuers (who

[6] This database is publicly available via http://securities.stanford.edu

consequently also fall under US securities law regulations). Unlike Fich and Shivdasani (2007), we decide to *not* exclude class-action lawsuits related to insider trading since we consider governance- and compensation-related cases to be particularly relevant to our study. We hand-collect case by case information and identify seven main reasons for shareholders going to court against the corporation. These reasons are listed in Table I below. Please note that these allegations are not mutually exclusive. We also identify whether a so-called "triggering event" has preceded the class-action lawsuit filing. We classify triggering events as events, where a material correction of management's earnings forecasts took place *before* the filing date of the class-action lawsuit. Alternative triggering events can be the initiation of an *SEC* investigation, self-disclosure of accounting problems, resignation of CEO, CFO or severe problems in the auditing process. In our final sample of 643 companies, a triggering event preceded the filing in over 55% of the cases. Thus, we already observe that a sizeable portion of the initiated shareholder suits in fact should have come unexpected to the market.

-Insert Table I about here-

As can be seen in our table, we observe some clustering in the types of allegation. Failure to disclose or the dissemination of false and/or misleading information belong to the most prominent allegations. Typically both actions are performed with the motive of share price manipulation. Observing more than 90 cases of insider trading confirms the study of Aboody and Kasznik (2000) and Yermack (1997), who conclude that CEOs strategically time the issuance of information according to the exercise date of their options. Allegations of insider trading in our sample typically include statements such as "management reaping proceeds from own equity (options) holdings and taking advantage of their inside information before releasing adverse facts to the public". The average number of allegations per class-action lawsuit between 1996 and 2007 is 2.15, the maximum number of allegations is six[7]. Class-action lawsuits typically emerge when shareholders are notoriously discontent with stock market performance or if they feel they had bought shares at inflated stock prices. In Panel B we stress that shareholder litigation is likely to be initiated by private and minority shareholders. If we investigate the number of class-action lawsuits per year in our database next to the major stock market indices' performances, we note an intriguing pattern.

-Insert Figure I about here-

[7] On 6 May 2005, a class-action lawsuit was filed against the internet company findwhat.com (f.k.a. Miva). Reference to the number of allegations can be found at: http://securities.stanford.edu/1034/FWHT05_01/

In times of rising stock prices, shareholders appear to be indifferent about managers' potential wrongdoing. This is in line with the paper by Povel, Singh, and Winton (2007), who noted that managers' incentives to commit fraud are highest in times of good stock price performance. This is due to the fact that shareholders' vigilance and monitoring incentives are lower in upstate markets and higher in downstate markets. After 2000 however, we note a sharp increase in the number of class-actions, which follows the declining stock market. This might also be partly due to prominent governance failures and accounting scandals since then. We also observe the increase in the number of shareholder litigation in the very recent past, which is attributable to the subprime crisis. Previously there have also been a sizeable amount of class-action lawsuits related to the option backdating scandal, which was revealed in 2006. Since 2000 several firms have restated their earnings in order to put right the wrongful accounting that followed backdating (The Economist, 20 July 2006)[8]. Note that typically management is sued with a small time lag upon revelation of negative news (triggering events). The average time between a triggering event and class-action lawsuit filing is 90 days (median 28). For 310 companies in the sample this duration is basically zero since there was no triggering event reported. In order to investigate influences of corporate governance and compensation elements on class-action lawsuits, we construct two samples for which we find sufficient data. Our further databases are outlined in the next section.

3.2 Governance data, financial control variables and equity incentives

Our second data source stems from RiskMetrics Group[9], which compiles annual corporate governance information on all companies in the S&P 1500 in the United States. Hence, we investigate a broad index, which spans all types of industries and sectors. Data is purely descriptive and neither rating- nor weighting algorithms are included. Subscribers to RiskMetrics' database are predominantly institutional investors but also academic institutions, where the database has been used extensively for research purposes. The governance variables are composed of board characteristics, elements of board composition and variables of takeover defenses, and entrenchment mechanisms. Our list of governance variables can be found in our Appendix A whereas for most definitions we also refer to Appendix A of Gompers, Ishii, and Metrick (2003). We control for financial-, firm- and case-specific factors with data from CompuStat. Our inclusion of control variables is based on prior research by Peng and Röell

[8] In the article "Dates from Hell", The Economist has put forward that in mid 2006 up to 60 firms were subject to SEC investigation for their timing of executive stock options.

[9] This database was formerly known as the Investor Responsibility Research Centre (IRRC) and was among others the foundation of "Corporate Governance and Equity Prices" by Gompers, Ishii, and Metrick (2003).

(2008), Fich and Shivdasani (2007), Agrawal and Chadha (2005) and Dechow, Sloan, and Sweeney (1996). Our database on executive compensation is from Standard and Poors ExecuComp. The variable of equity-based incentives can be interpreted as follows. Assume the CEO holds a portfolio of stocks and stock options the company that he manages. How much does the value of this portfolio change with a one percent change in stock price of the firm? We subdivide this variable into the equity-only-, the stock-option only- and the total portfolio value part. We take the natural logarithm of this value for distributional convenience. Please refer to Core and Guay (2002) to find a detailed description on the construction of equity incentives.

3.3 Methodology

Our analysis takes place in several stages. We will first conduct an event study on the filing date of a class-action lawsuit. Our estimation procedure will follow standard methodology of Brown and Warner (1980) with three additional Fama-French factors. The inclusion of *HML*, *SMB* and *Momentum* (*UMD*) allows us to draw inferences on the types of companies, which are sued due to their exposures to the risk factors during the estimation window. We will further extract six different cumulative abnormal return windows for each class-action lawsuit firm in our sample.

In a next step, we regress the level of equity incentives (total wealth, stock option or stocks only) on economic factors and governance variables. In the sense of the simple contracting view of CEO compensation, only economic and financial variables should have a significant effect on the level of equity incentives.

$$EI_{it} = \alpha_i + \sum_{j=1}^{J} \beta_j Gov_{j,it} + \sum_{k=1}^{K} \gamma_k C_{k,it-1} + \varepsilon_{it}, \qquad (1)$$

Where EI_{it} equals the level of equity incentives (total equity incentives, stock based equity incentives or stock option equity incentives) and $Gov_{j,it}$ equals a set of governance variables as shown in Appendix A. $C_{k,it-1}$ is a vector of control variables (also lagged by at least one period), which are shown in Appendix B. From this regression, we predict the level of "excess" CEO equity incentives, which are determined by corporate governance variables only. We compute these for every CEO in our sample for every year. With this methodology we follow Core, Holthausen, and Larcker (1999). We use governance-determined equity incentives (via stock and/or stock options) in order to proxy for managers' propensity for risk-taking and potential to manipulate the stock price (their own performance benchmark). Each predicted

variable follows from a set of governance variables. In total, our prediction model will generate three different levels of equity based incentives for each CEO in each year. Our focus will be the stock option component of the following model.

$$EIpred_i = \sum \hat{\beta}_j \, Governance_i \tag{2}$$

As can be seen, $EIpred_i$ is the predicted level of equity incentives from governance variables. We distinguish our approach from other authors (Bergstresser and Philippon, 2006), who use the raw level of equity incentives or the residual from the regression. We are thus able to isolate the component, which is driven by insiders and "bad boards". These predicted values will enter into a next stage regression, when we estimate the probability of being sued from the financial and control variables and the *predicted* equity incentives. We distinguish between total equity incentives, stock holdings incentives, and stock option incentives. Next we will investigate in how far insider-driven equity incentives trigger the occurrence of class-action lawsuit. For that purpose we estimate the conditional probability of being sued. Our control sample is constituted by the universe of RiskMetrics-rated firms in the sample, which were not sued in that respective year and the year before. We adopt a binary probit model of the following form

$$Prob(Y = 1|x) = \frac{e^{x\prime\beta}}{1+e^{x\prime\beta}}, \tag{3}$$

where $Y = 1$ if a class-action lawsuit was filed against the firm and 0 otherwise. x is a vector of the equity-based incentive variables, control variables and β is the vector of parameters. Control variables are lagged by at least one period just like the variable of equity-based incentives. Our estimation method is maximum likelihood and we control for year- and industry effects. In order to retain model parsimony, we opt for the Fama-French 12-industry classification. This approach has already been used before by Panetta, Pagano and Zingales (1998) for firms' decisions to go public versus staying private.

4 Empirical Analysis

4.1 Descriptive statistics

We begin our analysis by univariately comparing two different samples. One is constituted by the class-action lawsuit sample, which we outlined in Section 3, whereas our control sample is made up of the universe of RiskMetrics-rated (S&P 1500) companies, which have

not been sued in that respective year and the year before. Descriptive statistics of our sample can be found in the table below.

-Insert Table II about here-

Restricting the analysis to firm characteristics and operating performance we note several things. Firms being involved in class-action lawsuits are significantly larger, both in terms of total assets and sales revenue. We also note a slightly better operating performance in terms of three-year sales growth but a significantly worse stock price performance over the prior calendar year. Firms in the class-action sample are also significantly more likely to have engaged in a major new equity issuance (more than 10% increase in stockholders' equity) in the prior calendar year. This is in line with shareholders' allegations of managers exploiting overvalued share prices in order to reap personal benefits in seasoned equity offers or to use the inflated stock as an "acquisition currency". The latter allegation would be in line with managers' tendency to engage in empire-building activities. Firms hardly differ in terms of operational performance or investment behavior, as cash flow to total assets, return on assets and trailing three year capital expenditures relative to total assets, respectively, hardly differ among the two groups. Focusing on the governance variables, we note that the samples do not display strong differences. Most importantly the G-Score (the number of entrenching and shareholder-unfriendly provisions) is in fact lower (meaning more shareholder rights) for class-action lawsuit firms. However, sued firms are more likely to have suffered from so-called "governance incidents". Director and Officer holding of voting rights is significantly higher in the control sample and well above 5% for both samples. Ofek and Yermack (2000) note that in more than half of America's corporations' directors own less than 5% combined of the firm's outstanding shares.

Most important differences between the class-action sample and the control sample are however in the sensitivity of the CEOs' wealth to changes in the stock price of the company. This proxies in our setting the extent to which the CEO would benefit from an artificial inflation in the share price of the company. The level of equity incentives is significantly higher for all three measures of equity incentives. We distinguish between total equity incentives, equity incentives derived from the CEOs' stock portfolio and financial incentives derived from the option portfolio. For all three variables, we note statistically significant differences in both mean and median values. An exponential transformation of e.g. mean values of total equity incentives of 6.39 and 5.48 (for class-action and control sample, respectively) results in

a total wealth change of the CEO of US$ 599,922 and US$ 239,846, respectively for a 1% change in the stock price. For the stock option part we find US$ 211,896 and US$ 79,154, hence almost three times higher.

4.2 Announcement returns of class-action lawsuit filings

Prior research has established that the announcement of a class-action lawsuit filing leads to a negative return on the event date. The magnitude varies though depending on which types of lawsuits are included. Karpoff, Lee, and Martin (2008b) state that the initiation of class-action lawsuits is usually preceded by triggering events. Their event study on these triggering events yielded an abnormal return of -25.24%, the subsequent class-action lawsuit was -7% and further criminal (SEC) investigation announcements result in -14.4%. Fich and Shivdasani (2007) in their sample find two-day cumulative and announcement day abnormal returns ranging between -5.95% and -3.25%, respectively. These can even be lower depending on whether an *AAER* was issued or the settlement amount has been in the top quartile. In our sample at hand, we basically only distinguish between the type and the number of allegations that were released from shareholders. We investigate equally weighted[10] cumulative abnormal returns over different event periods.

-Insert Table III about here-

We generally distinguish between six different event windows, which are in columns (2) to (7). Since average abnormal returns are likely to be affected by extreme values (upward or downward), we also report median values in parentheses. In Panel A, we can observe that "illegal business practices" show most negative abnormal returns in all settings except for long term performance *(0,+40)*. Notable is that apparently firms seem to recover and most of the negative abnormal returns occur in the period shortly before the event. Allegations, which are governance- or compensation related (similar for "insider trading") also result in a non-trivial negative announcement return. We explain these findings by shareholders losing confidence in the firm they invest in as soon as corporate governance failures or managers taking advantage of private knowledge is revealed to the investing public. In Panel B we note that for several event windows the stock price reaction to an increasingly severe lawsuit (proxied by the number of allegations brought forward) becomes more negative. From that we conclude

[10] We conducted the same analysis using value-weighted returns and results do not materially differ from our equally weighted numbers.

that a more negative stock price reaction with more allegations brought forward could yield harsher personal consequences for the CEO and for the firm.

In order to determine which allegations drive the return during our event periods, we conducted a cross-sectional regression of our event window cumulative abnormal returns on a number of control variables and dummies of the types of allegations with "stock price manipulations" as the base level. Results are reported in the table below.

-Insert Table IV about here-

Findings from Panel A confirm our initial result from descriptive statistics of "illegal business practices" displaying the most negative event period abnormal returns. Allegations of "insider trading" only bear negative announcement returns for longer time periods. In Panel B we report descriptive statistic for the subsample of firms, which only face one allegation, which was brought forward by shareholders. Thus, we are able to isolate the allegations from each other and can discriminate more easily. Note that there is no case, where allegations centre on SEO/IPO- or acquisition-related activities only since these typically come together with stock price manipulation or false and misleading statements. Still, the same picture emerges: a highly significant negative announcement return of allegations involving illegal business practices. These firms constitute approximately one third of our class-action sample. We stress that this type of allegation represents a particularly severe form of increasing firm risk.

4.3 Quarterly Performance Volatility Between Groups

We noted in Table II that companies facing a class-action lawsuit had superior past operating performance. If CEOs and directors have had an incentive to inflate stock prices by issuing materially false information, failed to disclose adverse events, take on irresponsible project risk or manipulated accounting numbers, this should result in higher performance volatility. Typically on triggering event dates, true performance is revealed, which adjusts the stock price back to fundamental levels from its heavily inflated levels. Managers holding a substantial amount of stock options have an incentive to increase the volatility of performance. Therefore we analyze the firms' past operating and stock price performance and volatility in greater detail. We use CompuStat quarterly files and data from Standard and Poors ExecuComp in order to investigate how class-action lawsuit firms' prior operating performance volatility compares to our control sample. The results are show in Table V below.

-Insert Table V about here-

In Panel A we report variables from CompuStat Quarterly files of the 12 quarters prior to the class-action lawsuit filing. Thus, this also incorporates the period long before the mean date of the triggering event. Here, the *stock price*, *earnings per share (EPS)* and *price-earnings (PE-) ratios* of the class-action group bear a significantly higher volatility than the control group both for mean and median values (except for *EPS*). Hence both operating performance as well as stock market performance are more volatile for sued companies compared to our control sample of non-sued S&P1500 firms. This observation is reinforced by the 60 month stock price volatility in Panel B. This value stems from S&P ExecuComp and is the baseline for the calculation of the CEO stock option value. Since a call option's value increases with volatility we can also easily see the CEO's motives for increasing the company's performance volatility. The remaining values in Panel B confirm the operating performance patterns, which we already observed in Table II. Companies, which were subsequently sued displayed substantially larger growth in sales, operating performance and net income. We stress our findings from Table II that these two types of companies do *not* differ significantly in terms of firm age, so that the possibility of young aspiring high-growth companies can be ruled out. Hence, from the inspection of raw data we can already confirm that firms who are sued by their shareholders had superior operating performance but were subject to higher risk taking prior to the filing date. Allegedly, performance levels were forged or earnings forecasts and revenue recognition turned out to be too aggressive. These values are robust to controlling for industry effects (univariate sorts relative to the Fama-French 12 industry median values) since class-action lawsuits might tend to cluster in specific sectors, which focus on growth prospects and largely intangible assets.

4.4 Who *and* What *Determines Equity Incentives?*

As a next step, we will reveal, whether equity incentives are determined by insiders and corporate governance mechanisms. In the simple contracting perspective, shareholders determine managers' compensation levels and equity incentives (through the board of directors). Under these circumstances, corporate governance must not have any significant incremental explanatory power over financial- and firm characteristics. If we observe that governance variables and board characteristics determine large portions of equity incentives, then we interpret this as evidence of the "skimming view" of executive compensation. Effectively, we will test whether shareholders eventually should care about stock option incentives as long as it is not driven by managerial entrenchment. In the regression below, we make use of OLS

with heteroskedasticity consistent standard errors, controlling for year- and industry effects, holding constant a rich set of financial- and control variables.

-Insert Table VI about here-

We motivate our inclusion of control variables (economic factors) and governance variables the following way. Variables like firm size (*log TA*) and book-to-market (*log M/B*) have already been shown in Core, Holthausen and Larcker (1999) to have a significantly positive impact on equity incentives. We also control for *firm age* and institutional ownership (*IO*), prior operating performance (return on assets, *ROA*) and whether the firm is a dividend paying firm. In accordance with the literature we define institutional ownership as follows:

$$IO_{it} = \sum_{i=1}^{N_i} s_{ijt}, \tag{4}$$

Where s_{ijt} is the share *s* that the institutional money manager *j* holds in company *i* at time *t*. Our governance variables of interest are the following. As shown by Stulz (1988, 1990) the relationship between inside ownership and firm value is in theory curvilinear. With low managerial ownership, interests are not fully aligned with shareholders' and managers act on their own behalf. If managerial ownership increases beyond a certain threshold, alignment becomes entrenchment. Even further increasing managerial ownership makes managers close to entrepreneurs where money spent on perquisites harms them in increasing proportion. We therefore complement the level of aggregate *DOHoldings* with a quadratic term to capture non-linearity. Similar to the variable *IO*, we define *DOHoldings* as:

$$DOHoldings_{it} = \sum_{i=1}^{N_j} v_{ijt}, \tag{5}$$

Where v_{ijt} represents the fraction of voting rights *v* that the director or officer *j* holds in firm *i* at time *t*. A further governance variable is *board size*. Yermack (1995) has shown that companies with larger boards are worth less on the stock market so that we expect a significant effect for this variable as well. Measures of CEO power (*CEO duality* and *director indemnification contracts*) and extraordinary remuneration (*severance agreements* and *golden parachutes*) help to augment the CEO's bargaining position and are thus expected to be a significant determinant in the grant of equity incentives.

In the analysis above we regress both the total level of equity incentives (*model (1)*) as well as the two components thereof, namely stock equity incentives *(2)* and stock option incentives *(3)*, on a number of economic and governance variables. As expected, economic va-

riables have a significant effect on equity-based incentives of the CEOs in the sample. Firm size as well as the market-to-book ratio have a significantly positive effect on the level of equity incentives of the CEO. The same holds for the three-year trailing stock price performance (*change in price 3Y*). We proxy for *firm age* with the first listing date on *CRSP* and observe a negative and significant effect with respect to regressions *(1)* and *(2)* but not in *(3)*. What appears surprising is that prior corporate investment (*CAPEX/TA3Y*) activity is also significantly positively related to equity-based incentives. This relates to a study by Grinstein and Hribar (2004). In their paper the authors analyze that weak boards grant significant bonuses to their CEOs contingent on their M&A and investment activity. These bonuses do not depend on M&A performance. However, this finding only holds for regression models *(1)* and *(2)*. Observing a significantly positive coefficient for the percentage of institutional ownership (*IO*) on option incentives confirms the argument by Coffee (2005). In his paper he explains the strong reliance on stock option compensation of America's CEOs by institutional pressures to do so.

If we turn to governance characteristics, we observe that numerous variables contribute to explaining the level of equity incentives. We note that *CEO duality* has a strongly positive effect on equity incentives in all three specifications. The same holds for a *classified board* having a significantly positive effect in all three regression models. These findings also support Faleye's (2007) conclusion that managers use classified boards to grant themselves a higher pay-for-performance sensitivity. Bates, Becher, and Lemmon (2007) argue that institutional investors and joint shareholder initiatives are increasingly opposing the adoption of classified boards. The percentage of independent directors on the board and total number of committees has a negative effect on the level of equity incentives. For regression *(3)* however, this effect is reversed. Remarkably, the *diversity percentage* of the board also has a significant effect: the influence is positive for stock option incentives and negative overall. We also note the significance of *severance payments* and *golden parachutes*. With those already in place, they both reduce equity incentives and increase stock option incentives. It is also quite astonishing to find numerous state legislations exhibiting a significant influence on pay-for-performance sensitivity. The *Delaware* incorporation effect[11] (Daines, 2001) is apparently also present for executive compensation. Similarly, *director indemnification contracts* signifi-

[11] In his paper, Robert Daines establishes robust evidence that Delaware firms are valued significantly *higher* than other firms. He explains this finding by the surprising evidence that Delaware companies are more likely to receive takeover bids, even though Delaware legislation is known to be particularly protective for incumbent management.

cantly increase the level of equity incentives, even though this finding is only mildly significant for stock option incentives. These contracts indemnify directors and officers from certain legal expenses arising from their misconduct. The respective cost of this to shareholders can be seen as a quality for corporate governance (Core, 1997, 2000). A further intriguing result can be found for a company's *G-index*. This can be observed in column *(3)*, which means that high G-index (weak shareholder rights) firms grant significantly more option incentives to their CEOs than low *G-index* firms (strong shareholder rights). Judging from the additional explanatory power (*incremental adjusted* R^2 from governance variables) of the model, we conclude that governance mechanisms contribute to the level of equity incentives *in excess* of firm and economic determinants. Therefore, CEO pay-for-performance sensitivity is to some extent determined from insiders. The question, that arises is about the consequences for shareholders and for the firm itself.

4.5 The Consequences of Insider Determined Equity Incentives

In order to test our second hypothesis we predict the level of equity incentives in excess of economic and control variables. We will use this governance-implied portion of performance-sensitive compensation in order to evaluate the probability of facing a class-action lawsuit. Core, Holthausen, and Larcker (1999) use the predicted level of excess cash and variable compensation to investigate future operating- and stock price performance. Our paper takes a different point of view. We argue that high insider- and governance-driven option incentives trigger shareholder litigation and hence investors' attempt to monitor the managers after prior governance mechanisms have failed or are unavailable.

-Insert Table VII about here-

We generally observe offsetting effects of stock- and stock-option-based equity incentives. The negative coefficient of *equity incentives stock* and the significantly positive coefficient of *equity incentives options* imply that the overall equity incentive coefficient is insignificant. Being overall negative hints at stock-based incentives dominating CEOs' pay-for-performance sensitivity. Driven by the full set of governance variables from Table VI, we see that excess stock option equity incentives, which are set by corporate governance mechanisms and the board itself positively affect the likelihood of being sued below the 5% level (z-stat 2.31). The opposite holds for stock only equity incentives. Here the significance level is close to 10%. This means that the levels of incentives and variable compensation that directors set

themselves apparently increase their level of risk-taking, which can lead to allegations of securities fraud due to shareholders ambition to discipline the CEO ex-post.

In order to take the analysis a step further we also conducted a poisson integer count data regression of the number of allegations (i.e. to proxy for the severity of the allegations and the likelihood of the allegations being well-founded), which are brought forward by shareholders on the same set of control-, governance- and CEO equity-based incentive variables. In doing so, we test whether not only the likelihood of a lawsuit is affected by option incentives but also its potential severity. We proxy for this by the number of allegations brought forward by shareholders. This makes sense because the more allegations there are the higher the chances are that the manager is also sued personally for e.g. insider trading. Moreover, it might increase the potential final settlement. A Poisson regression model is a generalized linear model with a "log" link function and Poisson distributed errors[12]. This model attributes to a count response variable Y a Poisson distribution whose expected value depends on predictor variables x in the following way:

$$log\mathrm{E}[Y_{it} \mid x_{it}] = \beta_i x_{it} \tag{6}$$

where x_{it} is a vector of regressors describing the characteristics of an observation unit i (a company or executive compensation variable) during a given time period t, and Y_{it} is the observed event count (number of allegations) for unit i in the class-action lawsuit filing. Our variables also have a significant explanatory power if we go beyond analyzing whether a firm becomes sued or not; it also determines the potential magnitude of the class-action lawsuit measured by the number of allegations brought forward by shareholders.

-Insert Table VIII about here-

In Table VIII we observe that not only the likelihood of being sued by shareholders is increased but also the severity of a potential class-action lawsuit is higher in firms with high option equity incentives triggered by bad governance mechanisms. That means if strong option incentives induce managers to act for personal benefits, then the severity of class-action lawsuit allegations also increases and possibly also personal consequences for managers. The potential severity of class-action lawsuit proxied by the number of allegations[13] might in fact also lead to higher chances of success and possible legal enforcement. Karpoff, Lee, and Mar-

[12] See Greene (2003) for details
[13] We also conducted a Tobit regression with a censored dependent variable. The results do not materially differ.

tin (2008b) show that the personal consequences for managers after regulatory enforcement (by the SEC and the DOJ) are material. 93% of the managers lose their jobs, experience reputational damages and forgo significant amounts of future labor income. We conclude from this that threats evolving from potential class-action lawsuits are credible.

We have observed that CEOs' option incentives combined with insider influenced boards indeed increase the probability of being subject to shareholder litigation. Therefore the necessity for shareholders to discipline the managers via the threat of a lawsuit and to take influence via the actual filing is higher with larger option incentives. Given that in most cases class-action lawsuits allege managerial malfeasance, the question that arises is in how far managers can be held personally liable. The analysis of our third hypothesis seeks to answer this. We analyze whether the driving force of equity-based incentives differs in the pre-*SOX* versus the post-*SOX* period. We add an interaction term of a post-*SOX* dummy together with the level of equity incentives in our three measurements. We conduct the same regression as in Table VII and report the results in the table below.

-Insert Table IX about here-

We include the same financial control variables as in Tables VII and VIII. Our results imply that we cannot reject our third hypothesis of *SOX* attenuating the need for class-action lawsuits to discipline CEOs. Our interaction term of stock option incentives with a post-SOX dummy (i.e. 2002-2007) is negative and very close to the 10% significance (t-stat: 1.63) whereas the pre-*SOX* stock option incentives variable is positive and highly significant.

5 Does Sarbanes-Oxley Discipline Managers Ex-Ante?

Too many option incentives determined by insiders and bad governance trigger managerial risk taking. Shareholders can counteract this behavior by suing the firm and thus bringing in a further disciplining governance mechanism. Departing from the question about the consequences of "too many" stock options and letting insiders determine them, we focus on the determinants of equity incentives on the aggregate, the stock-only and the option-only component. We find that insiders combined with entrenchment variables determine the level of stock option incentives to a significant extent, lending support to the skimming theory of executive compensation. The consequences of too many stock options set by bad boards is that shareholders counter allegedly high levels of risk taking via class-action lawsuits. For minority shareholders and private investors this is a key corporate governance mechanism,

whose mere threat disciplines management ex ante. The necessity for this to take place diminishes after the introduction of SOX's increased personal liabilities for directors and officers, thus providing an additional external disciplining force.

It seems necessary to study whether Sarbanes-Oxley works given the results of our analysis. We interpret our finding as a new external disciplining mechanism for managers since the introduced personal liability in cases of misconduct poses an additional threat. Personal liability and thus the need for class-action lawsuits as a monitoring device was altered after the introduction of *SOX* in 2002. Sections XIII, IX and XI impose higher penalties for financial fraud and insider trading committed by directors and officers. Before 2002 managers were still sued but were not personally liable to the same extent as after 2002. Chhaochharia and Grinstein (2007) analyze the impact of *SOX* introduction for companies, which were subject to insider trading before. Stock market valuation responded favorably for those companies, whereas subsequent abnormal return performance was as expected lower than the benchmark due to a decrease in inherent risk. If shareholders can hold CEOs liable to a higher extent for financial fraud and can demand parts of their personal wealth, we find CEOs' incentives for financial fraud and to profit from option incentives are *weaker* in the post-*SOX* period. This is simply because the mere threat of a class-action lawsuit and the accompanying potential severity for the manager is *higher* after 2002 and therefore poses an additional disciplining mechanism.

Given our results we can also start discussing whether shareholders should actually care about CEOs' level of stock options and whether it makes a difference for them how the CEO is compensated. Our results indicate that as long as shareholders have the opportunity to counteract adverse CEO actions and these disciplining mechanisms are effective, they have sufficient opportunities to correct other governance- and managerial failures ex post. The more the CEO's wealth is dependent on the stock price, the more he will be "punished" ex post for misbehavior and risk taking. Our paper rejects the statement of Armour, Black, Cheffins, and Nolan (2008), which state that class-action lawsuit are ineffective. Our paper has a different argument by stating that the mere filing of a lawsuit hurts the equity-aligned CEO by depressing the stock price – irrespective of the legitimacy of the allegations and who eventually pays the settlement. We find that shareholders do take action at firms, which have experienced a highly volatile performance due to managerial risk-taking triggered by stock options and bad boards. In their empirical analysis of firms facing SEC enforcement subsequent to

class-action lawsuits, Karpoff, Lee, and Martin (2008a) find that consequences for managerial misconduct can be quite severe. Moreover, the authors find a striking result with respect to Sarbanes-Oxley's effect on personal penalties for managers. The authors find that in only 5% of the cases SOX's provisions needed to be invoked for the legal penalty concluding that "firms' internal governance […] worked to penalize much financial misrepresentation even before the 2002 Sarbanes-Oxley Act" (p.214). Effectively, the authors' argument boils down to that *if* managers "get caught" for financial misrepresentation, legislation hardly has to make use of SOX's provision. Our paper argues differently. In our view already *the ex-ante threat* of increased personal liability works to make CEOs less manipulative and risk-seeking due to their option incentives. We stress that our sample rules out any conclusions on whether allegations are well founded or whether managers of the firms have eventually been found guilty. We treat the mere occurrence as a threat from shareholders and as countervailing governance mechanism.

Our event study also stresses the credibility of the filing of lawsuits by highlighting the abnormal stock price impact for the equity-aligned manager. Note that we have not discriminated between ex-post meritorious lawsuits and unfounded allegations but included *all* filings. Class-action lawsuits resemble shareholders' ambition to discipline managers and to correct managerial failure by suing the firm. This is triggered by taking risks in the form of higher performance volatility. Hence, shareholders can punish the CEO ex post for possible shirking or manipulation. That CEOs indeed tend to select and design their *own* board, which sets compensation and incentive schemes has already been shown empirically by Shivdasani and Yermack (1999) and Hermalin and Weisbach (2003). Directors and officers can take risks and increase the volatility of the firm's share price to either benefit from a value-increase in their option portfolio or to derive non-pecuniary benefits from "speculating and taking a view" (Géczy, Minton, and Schrand, 2007, p. 2407). In their unique survey on corporations' use of derivatives for the sake of speculating to "take a view" the authors find distinctive characteristics of speculating firms versus non-speculating ones. The authors document that compensation arrangements are significantly different for managers taking a view compared to CEOs speculating infrequently. Hence, CEOs and CFOs of speculating firms have an interest of increasing the volatility of the firm's share price if their level of equity-based incentive is high.

Taking class-action lawsuits as a proxy for managers' risk-taking propensity and potential for managerial malfeasance also bears further implications, namely consequences for

the firm in terms of valuation and expected returns. With increased firm risk investors will ultimately discount the firm's future cash flows at a higher rate, which leads to a lower valuation in the medium- and long-term. Our results of executive compensation triggering class-action lawsuit adds to the findings of Gompers, Ishii, and Metrick (2003). In their paper, well governed companies are valued higher, perform better operationally and invest more efficiently. Complementing this, we can state that well governed companies have better designed incentive schemes for CEOs, which reduces shareholder litigation risk.

Our paper does not take a view on whether the occurrence of class-action lawsuits as a governance mechanism of last resort to minority shareholders and a way to correct prior governance failures and high insider driven option incentives represents optimal contracting or is a consequence of rent-seeking behavior by CEOs. The answer to this ultimately depends on how costly class-action lawsuits are. Here the costs comprise the monitoring costs for the small shareholder, direct costs of the filing and attorney fees and eventually also, whether lawsuits result out of poor performance or as a correction of out-of-equilibrium incentives and governance failures. In the latter case we might consider it to be optimal contracting whereas the former situation points at CEOs' rent-seeking behavior.

6 Conclusion

Our analysis started off with shareholders facing a trade-off in the grant of stock options to CEOs. Having too *few* options does not give the right incentives to exert optimal effort whereas having too *many* options gives incentives "to do bad" in the form of irresponsible project risks, timing information to the market and eventually manipulating numbers to inflate stock prices. An additional trade-off is involved in the question of who determines the incentives. Outside shareholders often lack the sophistication so that incentives are determined by insiders themselves. Inside directors are usually the most informed with the cost of them being able to exploit their inside knowledge. Ample empirical and anecdotal evidence has shown that CEOs tend to engage in problematic behavior. Shareholders are too diffuse in order to coordinate on the CEO's pay package and his incentives with the consequences of them usually voting with management whereas shareholder proposals have low success rates either. The cost of this is a managerial propensity to take risks and to profit from inside information. Our findings are affirmative of the "skimming theory" of CEO compensation. Our paper answers the question of the consequences of these insider-driven equity incentives and we focus on the stock option part.

Class-action lawsuits are an available tool to (minority-) shareholders and a sufficiently credible threat that they can exert to discipline managers in order not to behave adversely. The stock market reacts negatively around the event date depending on the nature of the allegations and is more punishing the more allegations are asserted. This way, the filing provides a credible threat for the equity-aligned manager ex ante. Our observation of shareholders noticing CEOs' excess risk taking behavior means that they counteract this in the form of class-action lawsuits – the "sued" issue, which punishes CEOs ex-post. Given that variable CEO compensation via options has been acknowledged to align managers with equity holders – the "glued" issue – our paper confirms that it potentially creates another problem. It increases managerial propensity to manage for short-term equity prices due to options' leverage and non-linearity in the payoff. Managers act strategically in issuing and releasing information to the public in order to reap insider profits.

Will shareholders actually care given that they can counteract this behavior and can rely on Sarbanes-Oxley's personal liability threat as an additional mechanism? If the filing of a lawsuit is costless, excessive stock option incentives should not matter. The question on whether shareholders *should* actually care about the option incentives depends on the actual direct and indirect costs of lawsuits. Returning to restricted stock as a means of compensation could be an alternative mechanism given its negative effect on the likelihood of being sued.

Appendix A:

Corporate Governance Variables from RiskMetrics and Thomson Reuters

Note: for a detailed description of the variables listed under the "RiskMetrics Governance" section, please refer to Appendix A of Gompers, Ishii, and Metrick (2003).

#	*variable*	*full name*	*Definition*	*source*
1	DEL	Delaware incorporation	dummy variable 1=yes	RiskMetrics Governance
2	SUMCOM	Sum of committees	Total board committees	self-constructed
3	INCID	corporate "incidents"	sum of 6, 8, and 9	self-constructed
4	DIVRAT	Diversity ratio	Diverse board members relative to board size	self-constructed
5	BDSIZE	board size	number of bd members	RiskMetrics board & committees
6	LEGALPRO	litigation disclosed	dummy variable 1=yes	Risk Metrics board & committees
7	EMPREPS	employee representatives on board	dummy variable 1=yes	Risk Metrics board & committees
8	REALEST	real estate transactions disclosed	dummy variable 1=yes	Risk Metrics board & committees
9	OTHERFIN	third party transactions disclosed	dummy variable 1=yes	Risk Metrics board & committees
10	PCTONBD	% independent bd members	percentage 0-1	Risk Metrics board & committees
11	DUALCEO	Combined chair/CEO	dummy variable 1=yes	Risk Metrics board & committees
12	LEADDIR	lead director	dummy variable 1=yes	Risk Metrics board & committees
13	numbdmtgs	number of board meetings	board meetings last FY	Risk Metrics board & committees
14	DOholdings	D&O holdings of voting stock	percentage 0-1	RiskMetrics Directors
15	cboard	classified board	dummy variable 1=yes	RiskMetrics Governance
16	dirindc	director indemnification contracts	dummy variable 1=yes	RiskMetrics Governance
17	gindex	Governance Index (Gompers et. al)	number 0 - 24	RiskMetrics Governance
18	Severance	severance payments	dummy variable 1=yes	RiskMetrics Governance
19	IO	Instit. Ownership	Percentage 0-1	ThomsonReuters 13F
20	Firm age	First CRSP listing date	In Years	CRSP
21	goldenpar	golden parachute disclosed	dummy variable 1=yes	RiskMetrics Governance

Appendix B:

Financial and Control Variables from CompuStat and CRSP

name	*full name*	*description and definition*
MB	Market to book ratio	market-to-book ratio as the market value of the firm's equity (item 25*item 199) at the end of the year plus the difference between the book value of the firm's assets (item 6) and the book value of the firm's equity (item 60) at the end of the year, divided by the book value of the firm's assets (item 6) at the end of the year
ROA	Return on assets	operating income before depreciation (item 13) plus the decrease in receivables (item 2), the decrease in inventory (item 3), the increase in current liabilities (item 72), and the decrease in other current assets (item 68), divided by the average of beginning- and ending-year book value of total assets (item 6)
ACCR	Total accruals	The change in accounts receivable (item 2), plus the change in inventories (item 3), plus the change in other current assets (item 68). From this we subtract the change in accounts payable (item 70), plus the change in other current liabilities (item 72). After subtracting depreciation (item 178) we scale by total assets
LEV	leverage	Short plus long term debt (items 9 and 34) scaled by total assets (item 6)
Cashdiv	cash dividends	sum of preferred and ordinary cash dividends (item 19 and 21, respectively)
DIV	dividend dummy	dummy equals 1 if variable "cashdiv" is larger than zero
deltasales	average trailing 3 year sales growth	change in total sales (item 12)
deltaSP	average change in share price	change in fiscal year end share price (item 199)
deltacash	average change in cash	change in cash and short term investments (item 1)
TA	book value of total assets	book value of balance sheet total assets (item 6)
TS	total sales	book value of balance sheet total assets (item 12)
Equity	Equity issue dummy	equals 1 if the change in number of shares outstanding in the prior year was larger than 10%
CAPX3y	3 year average capital expenditures	average of capital expenditures over the last three years (item 128)
Earn	earnings	earnings is measured as operating income after depreciation (75);
CF	earnings - accruals	cash flow is earnings minus accruals, scaled by TA

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Table I: Descriptive Statistics
Number and Types of Class-Action Lawsuits between 1996 and 2007

Note: Panel A of this table shows the sample size of our analysis. The different types of allegation stem from the case by case information on the website of Stanford Law School (http://securities.stanford.edu) and Cornerstone Research. In this table, inclusion criteria have been the availability of common sample data for governance and executive compensation on the concerned companies. Allegations have been coded according to the information listed in the "original complaint allegations" section on above mentioned website. Panel B shows identities of the persons of the first identified complaint, which is based on a random sample of 128 firms (~20% of our total sample).

Panel A: Types of Allegations brought forward

Year	Annual # of class-action lawsuits	stock price manipulation	accounting fraud / errors in financial statements	illegal business practices	insider trading of directors & officers	False / misleading statements/ failure to disclose	SEO-/IPO-/ Acquisition-related	Governance-/ compensation related
1996	21	5	6	3	4	18	3	1
1997	41	21	4	19	12	28	4	6
1998	38	20	6	10	9	23	8	5
1999	64	36	8	19	14	47	13	8
2000	49	32	4	13	7	35	10	6
2001	55	32	8	10	21	44	15	8
2002	90	49	8	34	13	42	12	15
2003	71	36	18	26	6	35	3	11
2004	65	25	17	24	7	40	9	14
2005	68	35	9	31	14	40	6	24
2006	33	19	1	18	11	12	3	14
2007	48	21	6	13	9	27	4	12
Total	**643**	**331**	**95**	**220**	**127**	**391**	**90**	**124**

Panel B: Identities of plaintiffs who first filed the lawsuit

1996-2007	Individual Investor	Pension Funds	Trusts/ Trustees	Institutions/ Other Firms
	81.25% (104)	10.16% (13)	3.91% (5)	3.91% (5)

Figure 1: Relation to stock markets

In the figure below we graphically depict the number of class-action lawsuits together with stock market movements of the US. Both stock market indices are scaled to 100. Annual numbers of class-actions are from Table I, where the inclusion criteria for our database are also explained.

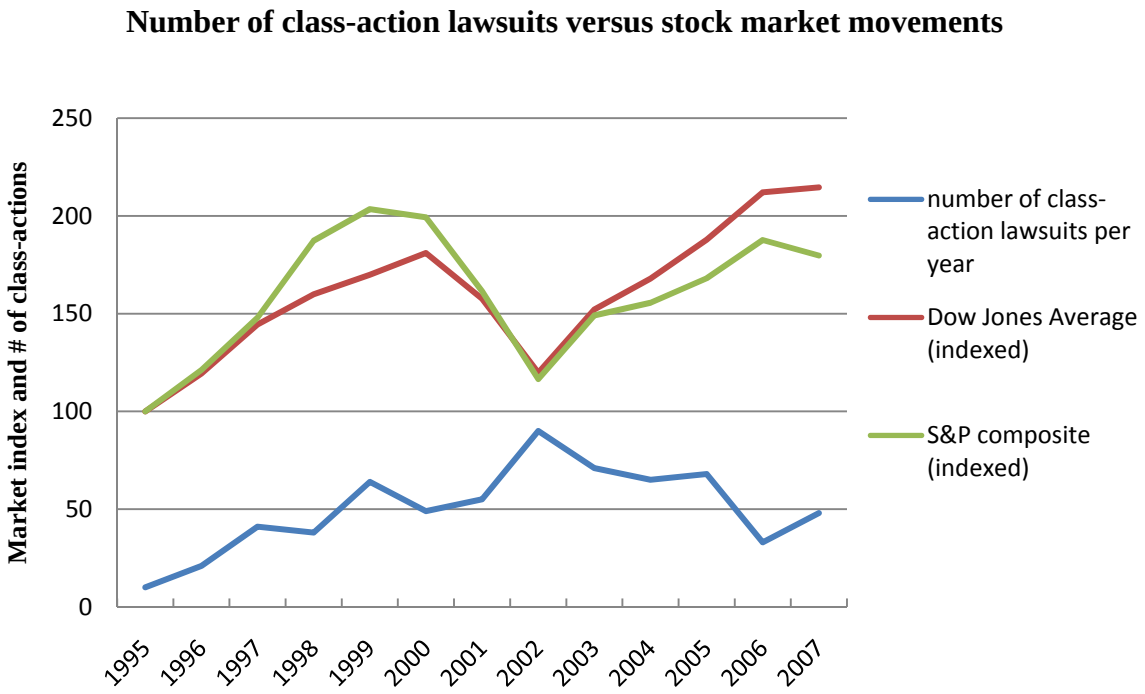

Table II: Summary Statistics

Univariate Comparisons between the two groups

In this table we include companies from the S&P1500, which are rated by RiskMetrics between 1996 and 2006. We show control and governance variables for later stage probit- and Poisson regressions. All variables are as defined in Appendix A and B. Equity incentives resembles the logarirthm of the absolute change in the CEO's portfolio wealth for a 1% change in the company's stock price. For details on the construction of the equity incentives measure we refer to Core and Guay (1999, 2002). *Total Assets* and *Sales* are measured in thousands of US Dollars, whereas *leverage*, *dividend dummy*, *change in sales* and, *change in stock price*, *equity issuance dummy*, *3-year CAPX/TA* and *institutional ownership* are measured in percentages. The *equity incentives* figure measures the logarithm of the absolute change in the value of the CEOs total, stock-only and option-only portfolio. Governance variables of *diversity*, *perc. Independent board*, *CEO duality*, *lead director presence*, *D&O holdings*, *classified board presence*, *director indemnification*, *severance agreements* and *golden parachutes* are measured in percentages. Due to missing CompuStat or RiskMetrics information the sample size varies between the variables.

	Class-Action Group				**Control Group (non sued firms)**				**Differences**	
Firm Variables	*Mean*	*Median*	*Std Dev*	*nobs*	*Mean*	*Median*	*Std Dev*	*nobs*	*t-stat*	*Wilcoxon*
Market to Book	2.7929	1.8280	2.9325	494	2.4799	1.5871	16.2970	22232	0.4267	-3.9423***
Return on Assets	20.35%	20.71%	24.27%	455	18.79%	18.27%	35.35%	20231	0.9338	1.8831*
Total Accruals	-0.0293	-0.0320	0.1096	447	-0.0351	-0.0365	0.1477	19940	0.8200	1.9077*
Leverage	38.67%	35.74%	30.48%	496	35.70%	34.58%	93.67%	22989	0.2166	2.0699**
Dividend dummy	52.93%	100.00%	49.96%	495	57.88%	100.00%	49.38%	22238	-2.2050**	-1.8863*
change in sales	14.97%	12.20%	24.25%	468	12.25%	9.67%	19.28%	21221	3.0026***	2.3501**
change in stock price	-33.29%	-22.78%	49.20%	496	-0.11%	3.97%	42.59%	21896	-17.0091***	-17.5941***
Total Assets (TA)	$41,012.48	$3,683.97	$147,813.90	498	$9,600.06	$1,116.23	$51,375.25	23074	12.5697***	12.2744***
Total Sales	$10,767.21	$2,579.31	$21,100.01	498	$3,815.64	$865.00	$12,139.95	23073	12.3817***	12.7443***
Equity Issuance dummy	31.92%	0.00%	46.66%	495	22.86%	0.00%	41.99%	22350	4.7359***	3.4533***
3Year CAPX/TA	5.89%	4.72%	5.40%	477	6.62%	4.77%	7.84%	22278	-2.0362**	0.9320
Cash Flow/TA	11.71%	11.74%	14.67%	447	11.85%	12.70%	62.18%	19938	-0.0469	-2.5711**
Firm Age	23.80	16.00	19.40	485	23.11	17.00	18.63	26779	0.8146	-0.2502
Inst. Ownership	63.01%	64.18%	19.67%	430	59.78%	63.08%	23.32%	20364	2.8538***	2.0079**

Table II continued

Governance Variables										
# of committees	3.7623	4.0000	1.0242	446	3.7448	4.0000	0.9639	16245	0.3773	0.6455
Governance incidents	0.5448	0.0000	0.7353	446	0.4345	0.0000	0.6918	16245	3.3165***	3.0250***
Diversity Ratio	15.23%	14.29%	12.75%	446	13.52%	11.11%	12.87%	16245	2.7705***	3.2594***
Board Size	9.9081	9.0000	3.2833	446	9.5811	9.0000	2.8244	16245	2.4007**	1.5832
Percent Indep. Board	55.30%	62.50%	28.39%	446	54.86%	62.50%	28.64%	16245	0.3186	0.3145
CEO Duality?	72.20%	100.00%	44.85%	446	69.53%	100.00%	46.03%	16245	1.2085	0.9628
Lead Director?	14.13%	0.00%	34.87%	446	20.26%	0.00%	40.20%	16245	-3.1924***	-2.2153**
No of board meetings	6.6527	5.0000	5.7276	446	6.5307	6.0000	5.5282	16201	0.4594	-0.1568
D&O holdings	7.72%	3.60%	11.64%	431	10.54%	5.00%	15.66%	15885	-3.7186***	-5.0948***
classified board?	50.23%	100.00%	50.06%	430	59.51%	100.00%	49.09%	18263	-3.8712***	-3.2929***
Director indemnification?	9.30%	0.00%	29.08%	430	9.83%	0.00%	29.78%	18263	-0.3662	-0.1888
G-Index	8.9512	9.0000	2.6107	430	9.1791	9.0000	2.6693	18263	-1.7508*	-1.7461*
Severance agreements?	11.63%	0.00%	32.09%	430	8.10%	0.00%	27.29%	18263	2.6353***	1.2511
Golden Parachutes?	61.82%	100.00%	48.64%	406	65.14%	100.00%	47.65%	17931	-1.3882	-1.1463
Equity Incentives										
Total Equity Incentives	6.3968	6.4507	1.5814	358	5.4800	5.4854	1.6754	14783	10.2441***	10.1782***
Equity Incentives *Stocks*	4.8399	4.9534	2.4438	358	4.1886	4.2994	2.2830	14783	5.3246***	5.5999***
Equity Incentives *Options*	5.3561	5.5427	1.9491	358	4.3714	4.6128	1.8933	14783	9.7166***	10.7091***

Table III: Cumulative Average Abnormal Returns (Equally Weighted)

Panel A in the table below investigates the same abnormal return windows for the seven types of allegations, which have already been defined in Table I. Note that these types of allegations are not mutually exclusive. We look at these further in Table IV. For the event study, we required an estimation period window of at least 60 trading days and a maximum of 255 for the estimation of R_m-R_f, *HML*, *SMB*, and *Momentum* coefficients. Day 0 is defined as the day of the class-action lawsuit filing. In Panel B we distinguish between the number of allegations that have been filed in the lawsuit. Median values are reported in parentheses.

Panel A: abnormal return per allegation type

type of allegation brought forward	*(-1,+1)*	*(-1,0)*	*(0,+1)*	*(-5,+5)*	*(-10,+10)*	*(0,+40)*	N
Average of all	*-4.33%*	*-3.86%*	*-2.03%*	*-8.52%*	*-11.57%*	*0.16%*	*648*
allegations	*(-1.07%)*	*(-0.89%)*	*(-0.63%)*	*(-4.22%)*	*(-5.74%)*	*(1.07%)*	
Stock price	-5.17%	-4.65%	-2.53%	-8.80%	-13.46%	-1.17%	327
manipulation	(-1.49%)	(-1.17%)	(-0.85%)	(-4.52%)	(-7.71%)	(0.29%)	
Accounting	-2.99%	-2.43%	-1.11%	-5.69%	-6.44%	0.45%	92
Fraud	(-0.43%)	(-0.58%)	(0.11%)	(-3.44%)	(-3.80%)	(1.02%)	
Illegal Business	-6.87%	-5.95%	-3.56%	-12.64%	-14.17%	0.20%	217
Practices	(-2.41%)	(-1.89%)	(-1.30%)	(-6.12%)	(-7.29%)	(2.62%)	
Insider	-4.91%	-4.39%	-2.23%	-9.44%	-14.22%	-1.28%	127
Trading	(-1.42%)	(-1.46%)	(-0.32%)	(-4.20%)	(-5.26%)	(1.19%)	
False/misleading	-3.86%	-3.86%	-1.71%	-8.79%	-12.96%	-0.97%	392
statements	(-0.67%)	(-0.83%)	(-0.56%)	(-4.00%)	(-6.92%)	(-0.28%)	
SEO/IPO/	-2.78%	-2.90%	-1.26%	-2.64%	-3.94%	1.33%	92
Acquisition related	(-0.31%)	(-0.87%)	(-0.59%)	(-1.30%)	(-2.14%)	(0.88%)	
Governance	-4.58%	-3.73%	-1.55%	-9.42%	-10.65%	-1.90%	128
Problems	(-1.00%)	(-0.82%)	(-0.45%)	(-3.30%)	(-4.43%)	(1.38%)	

Panel B: average abnormal returns per total number of allegations brought forward

total # of allegations brought forward	*(-1,+1)*	*(-1,0)*	*(0,+1)*	*(-5,+5)*	*(-10,+10)*	*(0,+40)*	N
1	-2.92%	-2.37%	-1.73%	-7.35%	-9.42%	4.01%	167
	(-0.32%)	(-0.27%)	(-0.42%)	(-3.56%)	(-4.75%)	(1.64%)	
2	-4.47%	-3.97%	-1.95%	-8.61%	-11.76%	-0.67%	268
	(-1.34%)	(-1.19%)	(-0.79%)	(-4.63%)	(-6.54%)	(1.01%)	
3	-5.83%	-5.28%	-2.54%	-9.52%	-13.74%	-1.80%	169
	(-1.74%)	(-1.49%)	(-0.45%)	(-4.23%)	(-6.79%)	(0.98%)	
4	-3.20%	-2.77%	-2.22%	-9.28%	-11.42%	-1.56%	34
	(-0.95%)	(-0.50%)	(-0.92%)	(-3.66%)	(-3.91%)	(0.77%)	
5	-5.38%	-9.19%	-1.68%	-10.43%	-9.82%	-4.88%	5
	(0.70%)	(-0.12%)	(-0.19%)	(-3.77%)	(-5.25%)	(-2.89%)	

Table IV: Cross-sectional regressions and single allegations

In Panel A below we report coefficients from a cross-sectional regressions of the abnormal returns from the six different event windows. We control for *return on assets (ROA), growth opportunities (Log MB), size (Log TA), change in sales over the prior calendar year, change in stock price over the calendar fiscal year*, whether the firm is a *dividend paying firm*, and for *industry* (Fama-French 12) and *year effects*. T-statistics are reported in parentheses and significance is indicated with *, **, and *** for the 10, 5, and 1% level, respectively. In Panel B we restrict our sample to those firms only facing one allegation to isolate the effects.

Panel A: Cross-sectional regression of cumulative abnormal return over different event windows on control variables

type of allegation	*(-1,+1)*	*(-1,0)*	*(0,+1)*	*(-5,+5)*	*(-10,+10)*	*(0,+40)*	*N*
Base: Stock price manipulation							
Accounting	0.0042	0.0012	0.0093	0.0109	(0.0222	0.0080	512
Fraud	(0.2189)	(0.0679)	(0.7112)	(0.3352)	(0.5972)	(0.1808)	
Illegal Business	-0.0296**	-0.0328***	-0.0132	-0.0593***	-0.0300	-0.0192	512
Practices	(-2.2757)	(-2.7609)	(-1.4916)	(-2.6914)	(-1.1885)	(-0.6431)	
Insider	0.0175	0.0107	0.0175*	-0.0056	-0.0304	-0.0036	512
Trading	(1.2037)	(0.8062)	(1.7680)	(-0.2256)	(-1.0778)	(-0.1087)	
False/misleading	-0.0001	-0.0154	0.0077	-0.0297	-0.0516**	-0.0137	512
statements	(-0.0077)	(-1.2380)	(0.8285)	(-1.2861)	(-1.9556)	(-0.4374)	
SEO/IPO/	-0.0013	-0.0091	-0.0020	0.0443	0.0759**	0.0325	512
Acquisition rel.	(-0.0782)	(-0.5954)	(-0.1771)	(1.5628)	(2.3395)	(0.8469)	
Governance	-0.0025	-0.0077	0.0119	-0.0199	-0.0119	-0.0157	512
Problems	(-0.1657)	(-0.5521)	(1.1458)	(-0.7649)	(-0.3994)	(-0.4460)	

Panel B: average CARs of subsample of firms with only one allegation (total n = 167)

type of allegation	*(-1,+1)*	*(-1,0)*	*(0,+1)*	*(-5,+5)*	*(-10,+10)*	*(0,+40)*	*N*
Stock price	-3.43%	-0.83%	-4.88%	-10.21%	-12.93%	14.82%	13
manipulation	(-3.51%)	(-1.17%)	(-2.86%)	(-6.68%)	(-8.48%)	(-5.43%)	
Accounting	0.28%	0.42%	0.50%	-2.60%	-2.93%	4.01%	28
Fraud	(0.30%)	(0.04%)	(0.48%)	(-4.24%)	(-2.12%)	(0.71%)	
Illegal Business	-8.14%	-6.76%	-3.54%	-15.91%	-13.06%	-2.61%	20
Practices	(-2.08%)	(-0.84%)	(-0.52%)	(-5.77%)	(-5.99%)	(1.10%)	
Insider	-2.27%	-1.05%	-3.56%	7.34%	-13.38%	2.54%	1
Trading	(-2.27%)	(-1.05%)	(-3.56%)	(7.34%)	(-13.38%)	(2.54%)	
False/misleading	-2.42%	-2.53%	-1.32%	-6.76%	-10.20%	4.72%	96
statements	(0.23%)	(0.02%)	(-0.29%)	(-1.74%)	(-4.37%)	(2.46%)	
SEO/IPO/	NA	NA	NA	NA	NA	NA	0
Acquisition rel.	NA	NA	NA	NA	NA	NA	
Governance	-6.32%	-1.97%	-4.62%	-6.70%	-7.45%	-5.30%	8
Problems	(-2.55%)	(-0.94%)	(-2.27%)	(-6.09%)	(-8.25%)	(3.81%)	

Table V: Performance Volatility Differences Class-Action Sample vs. Control Group

In the table below we compute the differences between mean and median values of the class action lawsuit operating performance variables and the control group and test for significant differences. Test for mean values is via t-statistic whereas tests for differences in medians is via the Wilcoxon test statistic. Panel A's datasources is CompuStat quarterly and self-computed whereas Panel B makes use of readily computed variables from Standard and Poors ExecuComp. *EPS* abbreviates earnings per share, whereas *ROA* stands for return on assets and is computed as explained in Appendix A. Significance at the 10, 5 and 1% level is indicated by *, **, and ***, respectively.

	Class-Action Sample				**Control Group (non sued firms)**				**Differences**	
Panel A: Variables from CompuStat	*Mean*	*Median*	*Std. Dev.*	*Nobs*	*Mean*	*Median*	*Std. Dev.*	*Nobs*	*t-stat*	*Wilcoxon*
Volatility of 12 quarter stock price	31.20%	24.40%	28.65%	480	26.76%	21.23%	26.45%	19482	3.6246***	5.7514***
Volatility of 12 quarter EPS	50.96%	25.08%	122.91%	581	49.48%	21.55%	464.65%	24668	0.0764	3.1074***
Volatility of 12 quarter ROA	2.03%	1.11%	3.22%	327	2.06%	1.13%	12.50%	15884	0.0469	0.0851
Volatility of 12 quarter PE ratio	176.16%	67.11%	314.50%	523	145.25%	60.74%	245.78%	22798	2.8241***	2.1726**
Panel B: Variables from ExecuComp										
3-year sales growth	20.51%	12.13%	38.47%	479	14.50%	9.81%	31.50%	18315	4.0943***	3.4338***
5-year sales growth	20.80%	12.83%	34.43%	476	15.13%	10.05%	30.27%	18249	4.0213***	3.8679***
3-year operating income growth	24.30%	14.62%	57.12%	413	16.45%	11.05%	36.98%	16383	4.1934***	3.0147***
5-year operating income growth	21.54%	14.56%	40.17%	407	16.19%	11.29%	28.60%	15895	3.6837***	2.923***
3-year net income growth	27.16%	18.29%	72.73%	299	21.40%	14.31%	46.98%	12589	2.0644**	2.2096**
5-year net income growth	22.22%	17.96%	31.08%	271	18.81%	13.97%	29.71%	11171	1.8687*	3.1553***
3-year EPS growth	22.08%	14.49%	75.31%	296	17.97%	12.74%	42.06%	12500	1.6221*	1.3184
5-year EPS growth	16.16%	14.44%	24.39%	268	14.93%	11.90%	24.09%	11043	0.8281	1.9115*
3-year shareholder return	14.85%	13.05%	35.20%	461	13.21%	11.00%	35.83%	17639	0.9697	1.67*
5-year shareholder return	13.84%	13.01%	26.66%	439	11.75%	11.13%	20.57%	16601	2.0899**	1.8679*
60 month stock price volatility	48.66%	40.80%	31.62%	461	42.50%	36.40%	24.70%	17593	5.2479***	4.2949***

Table VI: Economic and Governance Determinants of Equity Incentives

Note: the table below shows results of three different ordinary least squares regression models. (1) regresses equity incentives of the CEO's option and stock portfolio on economic determinants, firm characteristics, board characteristics, board compensation and director powers elements. Equity incentives (*equity incentives total*) are defined as the change in wealth of the CEO's portfolio for a 1% change in the firm's stock price. For details on the variable construction please refer to Core and Guay (1999, 2002). Model (2) performs the same regression with equity incentives of the CEO's stock portfolio (*equity incentives stock*) as the dependent variable, whereas model (3) has the CEO's option portfolio (*equity inc. options*) as regressant. Standard errors are adjusted for heteroskedasticity using White's method (1980). All models adjust for industry and time effects; the coefficients are omitted from the output for practical reasons. For the abbreviations of the variables, please refer to Appendix A. Significance at the 10, 5, and 1% level is indicated by *, **, and ***, respectively.

	(1) Equity incentives Total		**(2) Equity incentives Stock**		**(3) Equity incentives Options**	
	coefficient	*S.E.*	*coefficient*	*SE*	*coefficient*	*S.E.*
intercept	0.8105***	(0.1439)	0.3419	(0.2390)	-2.1953***	(0.1653)
Economic determinants						
LOG(TA)	0.6528***	(0.0112)	0.6285***	(0.0206)	0.5724***	(0.0158)
LOG(MB)	1.1796***	(0.0347)	1.1391***	(0.0622)	0.7837***	(0.0473)
Cash Flow/TA	0.4157***	(0.1228)	0.2829	(0.2065)	0.2599*	(0.1493)
Return on Assets	-0.3730***	(0.0937)	-0.0673	(0.1778)	-0.5364***	(0.1177)
Dividend payer	-0.3103***	(0.0280)	0.0349	(0.0511)	-0.5490***	(0.0385)
Change in sales	0.0632	(0.1065)	-0.0314	(0.1940)	0.2650**	(0.1284)
Change in price3YR	0.0052***	(0.0006)	0.0042***	(0.0012)	0.0088***	(0.0008)
CAPEX/TA3YR	0.6284**	(0.2432)	1.0994**	(0.4312)	0.4617	(0.3638)
Firm Age	-0.0058***	(0.0007)	-0.0100***	(0.0012)	-0.0010	(0.0009)
Institutional Own.%	-0.2938***	(0.0833)	-0.9346***	(0.1386)	0.9160***	(0.0940)
Governance factors						
Gov. incidents	0.0925***	(0.0211)	0.1509***	(0.0368)	0.0183	(0.0255)
GINDEX	0.0168***	(0.0060)	0.0299***	(0.0099)	0.0011	(0.0078)
D&O Holdings	0.0302***	(0.0019)	0.0411***	(0.0030)	-0.0092***	(0.0019)
$(D\&O\ Holdings)^2$	-0.0001***	(0.0000)	-0.0002***	(0.0000)	0.0000***	(0.0000)
Indep. Directors%	-0.0036***	(0.0009)	-0.0048***	(0.0017)	0.0062***	(0.0012)
# of committees	-0.0860***	(0.0165)	-0.1033***	(0.0272)	0.0613***	(0.0203)
Diversity %	-0.2059**	(0.1017)	-0.3429**	(0.1737)	0.2556*	(0.1354)
Board size	-0.0480***	(0.0063)	-0.0525***	(0.0110)	0.0104	(0.0086)
Class. Board	0.0662**	(0.0269)	0.1177**	(0.0465)	0.1528***	(0.0353)
Dual CEO?	0.6665***	(0.0267)	1.1527***	(0.0478)	0.0951***	(0.0342)
Lead Director?	-0.1220***	(0.0316)	-0.2133***	(0.0543)	0.0288	(0.0437)
Delaware Firm?	-0.0039	(0.0240)	-0.1287***	(0.0432)	0.1889***	(0.0306)
Golden Parachute?	-0.0171	(0.0298)	-0.3897***	(0.0503)	0.5559***	(0.0373)
Severance Pay?	0.0116	(0.0459)	-0.3564***	(0.0839)	0.3859***	(0.0580)
Director Indemn.?	0.1581***	(0.0369)	0.2586***	(0.0646)	0.0826*	(0.0453)
ASQR full model	0.5722		0.3376		0.4836	
ASQR economic det.	0.4753		0.2317		0.4446	
incremental ASQR	*0.0968*		*0.1059*		*0.0390*	
Nobs	9120		9120		9120	

Table VII: Governance-Induced Equity Incentives

Note: the table below shows results three binary probit regression models per panel, where the dependent variable always equals one if a class-action lawsuit (CA) was initiated in this year against company *i* and zero otherwise. Our estimation method is maximum likelihood. All models have the same set of economic determinant to predict the probability of becoming subject to a class-action lawsuit. We predict *equity incentives* as the incremental part of equity incentives that is explained by governance variables in excess of economic determinants. Z-statistics are based on cluster robust covariances according to Huber/White. The models include year and industry fixed effects but coefficients are not reported for practical reasons. Statistical significance at the 10, 5, and 1% level is indicated by *, **, and ***, respectively.

	Probit: CA yes/no		**Probit: CA yes/no**		**Probit: CA yes/no**	
	coefficient	*S.E.*	*coefficient*	*SE*	*coefficient*	*S.E.*
intercept	-3.7095***	(0.2339)	-3.7262***	(0.2275)	-3.5440***	(0.2468)
Accruals	-0.1692	(0.6118)	-0.1625	(0.6123)	-0.1576	(0.6068)
Return on Assets	0.0309	(0.3467)	0.0305	(0.3468)	0.0221	(0.3456)
LOG(M/B)	0.1602**	(0.0643)	0.1604**	(0.0643)	0.1718***	(0.0644)
LOG(TA)	0.1719***	(0.0179)	0.1711***	(0.0176)	0.1687***	(0.0175)
Cash Flow/TA	-0.3124	(0.4361)	-0.3096	(0.4362)	-0.3257	(0.4307)
Dividend pay	-0.1689***	(0.0619)	-0.1678***	(0.0620)	-0.1740***	(0.0620)
Equity issue	-0.1268*	(0.0701)	-0.1265*	(0.0701)	-0.1271*	(0.0700)
Change in sales	0.0045**	(0.0021)	0.0045**	(0.0021)	0.0047**	(0.0021)
Change in price	-0.0107***	(0.0009)	-0.0107***	(0.0009)	-0.0108***	(0.0009)
CAPEX/TA3Y	-0.5442	(0.6438)	-0.5315	(0.6441)	-0.4656	(0.6447)
Equity incentives total	-0.0266	(0.0496)				
Equity incentives stock			-0.0310	(0.0318)		
Equity incentives options					0.1448**	(0.0648)
McFadden R^2	*0.1510*		*0.1512*		*0.1523*	
Nobs	*11961*		*11961*		*11961*	

Table VIII: Severity of Class-Action Lawsuits

Note: the table below shows results three integer count regression models per panel, where the dependent variable always equals the number of allegations brought forward in the class-action lawsuit against company i. It ranges from zero to six. Our estimation method is maximum likelihood. All models have the same set of economic determinant to predict the severity of a class-action lawsuit. We predict *equity incentives* as the incremental part of equity incentives that is explained by governance variables in excess of economic determinants. We distinguish between equity incentives predicted by all governance variables. Z-statistics are based on cluster robust covariances according to Huber/White. The models include year and industry fixed effects but coefficients are not reported for practical reasons. Statistical significance at the 10, 5, and 1% level is indicated by *, **, and ***, respectively.

Equity incentives predicted from all governance variables						
	Poisson: # allegations		**Poisson: # allegations**		**Poisson: # allegations**	
	coefficient	*S.E.*	*Coefficient*	*S.E.*	*Coefficient*	*S.E.*
intercept	-6.3788***	(0.3704)	-6.3558***	(0.3613)	-5.9550***	(0.3841)
Accruals	0.3536	(0.7630)	0.3768	(0.7630)	0.3662	(0.7595)
Return on Assets	-0.0388	(0.3599)	-0.0401	(0.3598)	-0.0426	(0.3591)
LOG(M/B)	0.1927**	(0.0854)	0.1903**	(0.0853)	0.2097**	(0.0854)
LOG(TA)	0.2978***	(0.0254)	0.2939***	(0.0248)	0.2848***	(0.0245)
Cash Flow/TA	0.2315	(0.5502)	0.2432	(0.5506)	0.2134	(0.5456)
Dividend pay	-0.3629***	(0.0906)	-0.3616***	(0.0907)	-0.3721***	(0.0907)
Equity issue	-0.2161**	(0.0954)	-0.2151**	(0.0954)	-0.2162**	(0.0953)
Change in sales	1.0727***	(0.2515)	1.0866***	(0.2519)	1.1340***	(0.2511)
Change in price	-1.6990***	(0.0857)	-1.6990***	(0.0857)	-1.7097***	(0.0859)
CAPEX/TA3Y	-0.2182	(0.9318)	-0.2189	(0.9328)	-0.1232	(0.9382)
Equity incentives total	0.0121	(0.0762)				
Equity incentives stock			-0.0207	(0.0486)		
Equity incentives options					0.3033***	(0.0986)
McFadden R^2	*0.1309*		*0.1309*		*0.1324*	
Nobs	*11961*		*11961*		*11961*	

Table IX: Equity incentives pre- and post Sarbanes-Oxley

In the table below we perform the same regression as in Table VI. Here we incorporate a dummy, which equals 1 if the observation lies in the post Sarbanes-Oxley Period (i.e. 2002 and later) and 0 otherwise. We interact this variable with the level of equity incentives defined by our three measurements. The control variables are the same as in the analyses above. Z-statistics are based on cluster robust covariances according to Huber/White. The models include year and industry fixed effects but coefficients are not reported for practical reasons. Statistical significance at the 10, 5, and 1% level is indicated by *, **, and ***, respectively.

Equity incentives predicted from all governance variables						
	Probit: CA yes/no		**Probit: CA yes/no**		**Probit: CA yes/no**	
	coefficient	*S.E.*	*coefficient*	*S.E.*	*coefficient*	*S.E.*
intercept	-3.2923***	(0.1753)	-3.3388***	(0.1701)	-3.0649***	(0.1894)
Accruals	-0.3042	(0.5834)	-0.3073	(0.5871)	-0.2452	(0.5853)
Return on Assets	0.0398	(0.3308)	0.0626	(0.3352)	0.0441	(0.3355)
LOG(M/B)	0.1552**	(0.0617)	0.1537**	(0.0622)	0.1681***	(0.0623)
LOG(TA)	0.1736***	(0.0176)	0.1720***	(0.0173)	0.1673***	(0.0173)
Cash Flow/TA	-0.3881	(0.4209)	-0.3906	(0.4238)	-0.3946	(0.4181)
Dividend pay	-0.1952***	(0.0612)	-0.1808***	(0.0618)	-0.1945***	(0.0615)
Equity issue	-0.1350**	(0.0694)	-0.1265*	(0.0695)	-0.1274*	(0.0695)
Change in sales	0.0034*	(0.0021)	0.0036*	(0.0021)	0.0039*	(0.0021)
Change in price	-0.0101***	(0.0008)	-0.0103***	(0.0008)	-0.0103***	(0.0008)
CAPEX/TA3Y	-0.8597	(0.6291)	-0.6660	(0.6267)	-0.5960	(0.6410)
Equity incentives total	-0.0036	(0.0603)				
Equity incentives total*SOX	-0.0955	(0.0934)				
Equity incentives stock			0.0080	(0.0395)		
Equity incentives stock*SOX			-0.0869**	(0.0430)		
Equity incentives options					0.2413***	(0.0696)
Equity incentives options*SOX					-0.0773*	(0.0519)
McFadden R^2	*0.1399*		*0.1410*		*0.1429*	
Nobs	*11961*		*11961*		*11961*	