

Corporate Social Responsibility and the Board of Directors

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Abstract

What is the relationship between social responsibility and corporate governance? To shed light on this issue, I examine whether and how positive and negative social responsibility events relate to characteristics of a firm's board of directors. In doing so, I rely on a panel data set of 2417 publicly listed US firms between 1999 and 2007 for which I observe the occurrence of social responsibility events and director characteristics. When boards include a higher fraction of inside and experienced directors, negative events are less frequent. In line with experimental evidence that women are more concerned with altruism, I also document that firms with a higher fraction of women on the board show more pro-social behavior. Finally, when more directors have no equity ownership, positive events are less frequent.

JEL-Classification: G3, D21, L2, L21, M14

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In 2007 Working Mother magazine included Abbott on its list of the 100 Best Workplaces for working mothers for the eighth year.

In July 2001, the Tulsa World reported that a tank containing a toxic gas at a chemical processing plant of Air Products & Chemicals, Inc. ruptured, prompting an evacuation of plant employees and surrounding businesses in Tulsa, Oklahoma. The accident sent 100 people to area hospitals for treatment and observation. All were released shortly after the incident.

Source: Kinder, Lydenberg and Domini Research and Analytics Inc.

1 Introduction

A recent survey by the Economist Intelligence Unit suggests that more and more boards of directors are involved in corporate social responsibility issues. The survey finds that

”high-performing companies put a much greater emphasis on social and environmental considerations at [the] board level, while poorly performing firms [...] are far more likely to have nobody in charge.”²

In addition, there is anecdotal evidence that boards increasingly shape a firm’s attitude towards social responsibility. Consider, for instance, the case of automotive supplier ArvinMeritor Inc. The firm has created an *Environmental and Social Responsibility Committee*, whose charter states that the committee

”shall advise management and the Board of Directors [...] and shall recommend to management and the Board of Directors, [...] new or revised policies and practices on: 1) employee relations, [...]; 2) the protection and enhancement of the environment and energy resources; 3) product integrity and safety; 4) employee health and safety; and 5) community and civic relations including programs and contributions to health, educational, cultural and other social institutions.”³

²*Doing good: Business and the sustainability challenge*, Economist Intelligence Unit, 2008

³http://media.corporate-ir.net/media_files/NYS/ARM/corpgov/Env&soc_charter.pdf

The present paper intends to further our understanding of whether and how social responsibility is related to the characteristics of a corporation's board of directors.

Corporate social responsibility is a fuzzy concept and definitions tend to vary. The European Commission defines it as "a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis"⁴. Heal (2005) takes a broader view and defines corporate social responsibility as corporate actions aimed at reducing externalized costs. Generally speaking, corporate social responsibility is concerned with how companies handle social and environmental issues (e.g. ensuring the wellbeing of communities and employees or minimizing pollution).

A methodological difficulty in studying social responsibility is that it remains hard to measure. First, there are no legally binding reporting standards. Second, overall measures of how the welfare of stakeholders is affected by corporate actions do not exist. Third, firm choices regarding social responsibility are not observable. Given the apparent difficulty in constructing viable measures of stakeholder welfare, I focus on output measures in the form of publicly observable social responsibility events.

The output measures of responsible and irresponsible firm behavior are constructed from *Kinder, Lydenberg and Domini Research and Analytics Inc's (KLD) STATS*⁵ database. In order to quantify a firm's social responsibility, KLD relies to a large extent on publicly observable events (e.g. newspaper articles, NGO reports, regulatory reports or company rankings). For instance, in 2007, *Working Mother magazine*⁶ published a ranking which put *Abott Inc*⁷ among the 100 best workplaces for working mothers in the United States. The occurrence of this event caused KLD to generate a positive employee relations indicator for the company. In contrast, a newspaper article published in the *Tulsa World* about an explosion at a plant of *Air Products Inc*⁸ led KLD's analysts to generate a negative environmental indicator.

⁴See http://europa.eu/legislation_summaries/employment_and_social_policy/employment_rights_and_work_organisation/n26034_en

⁵STATS stands for Statistical Tool for Analyzing Trends in Social and Environmental Performance. The database contains about 80 binary negative and positive indicators (Concerns and Strengths) belonging to seven different issue areas (community, employee relations, environment, product, human rights, diversity, and corporate governance). On a sidenote, KLD has very recently been acquired by the Riskmetrics Group, a leading provider of risk management solutions and corporate governance data.

⁶A periodical concerned with the labor market participation of mothers. See <http://www.workingmother.com/>

⁷<http://www.abbott.com>

⁸<http://www.airproducts.com>

Even though the indicators are not always related to the occurrence of publicly observable incidents, I argue that the majority refer to cases when third parties report about responsible or irresponsible firm behavior. In order to justify this new way of looking at KLD's data, the appendix⁹ provides numerous examples illustrating the relationship between KLD's indicators and the occurrence of firm specific events.

I construct two event count variables by individually summing positive and negative indicators per firm and year. I then match the two dependent variables with data from the CRSP, Compustat North America and the Thomson I/B/E/S databases. I obtain data on director characteristics from the IRRC director and The Corporate Library's Board Analyst databases. The final sample consists of 8,684 firm-year observations between 1999 and 2007.

Positive and negative events differ fundamentally. While positive events frequently refer to explicit company decisions aimed at increasing stakeholder welfare (e.g. the provision of family benefits to employees or the decision to allocate resources to corporate philanthropy), negative events often reflect insufficient managerial care. For instance, an environmental accident with negative implications for employees or communities is not voluntarily initiated by the manager, but more likely the result of a prolonged period of inadequate plant maintenance. Hence, there are good reasons to expect that positive and negative events will depend rather differently on the same set of board characteristics.

Since the dependent variables are non-negative integer valued, I rely on the Poisson regression model. Zhou (2001) argues that managerial ownership is a slowly moving variable. Similar to managerial ownership, the structure of boards also tends to change little from year to year in a given company. This implies that fixed effects estimation is unlikely to detect significant a relationship between social responsibility and a specific board characteristic even if one should exist. Therefore, I focus on cross-sectional instead of within firm variation.

In order to identify board characteristics which could be linked to a firm's social responsibility, I review the literature on the board of directors (see Hermalin and Weisbach (2003) or Adams et al. (2009)). Some of the attributes I examine are gender, length of tenure and whether the director is a current employee of the company.

Inside directors' primary function is to provide firm specific information to outside directors (see Fama and Jensen (1983), Adams and Ferreira (2007), Harris and Raviv (2008), Raheja (2005) or Masulis and Mobbs (2009)). By

⁹See section A of the appendix.

sharing information about a firm's risks and opportunities, the presence of insiders can improve corporate governance. I entertain two hypotheses about the relationship between social responsibility and the presence of inside directors: the first view argues that corporate social responsibility is the result of managerial entrenchment. Under this view, companies with a higher fraction of insiders on the board should show higher incidence of positive events because managers use corporate social responsibility as an entrenchment strategy (e.g. building strong relationships with communities or non governmental organizations). Under a competing hypothesis, better information provision by insiders about the internal workings of the company results in more prudent corporate governance. According to this line of reasoning, the presence of corporate insiders is likely to reduce the risk of accidents and stakeholder initiated lawsuits (lower incidence of negative events).

I find that companies with higher insider representation show lower incidence of negative events. More specifically, firms with a higher fraction of inside directors show less environmental, employee and community related concerns. By contrast, the incidence of positive events is not significantly related to the presence of inside directors, lending more support to the information as opposed to the entrenchment view.

Experimental research concerned with gender differences in preferences (see Croson and Gneezy (2009)) suggests that firms with more female directors might show more other regarding behavior. In line with this evidence, I find that companies with higher female board representation have higher incidence of positive social responsibility. By contrast, negative events are not related to the presence of more female directors. The latter finding is consistent with an interpretation emphasizing that gender differences with respect to risk propensity do not exist in managerial populations (see Johnson and Powell (1994)).

In order to address causality, I instrument the fraction of female directors by the ratio of the female to male employment-population rate in the state the company is headquartered. I use non-linear two stage least squares estimation methods to examine whether causality runs from higher female board representation to higher social responsibility. Unfortunately, the analysis does not allow to establish that higher female board representation causes firms to act in a more socially responsible way.

The next attribute I study is director tenure. There are different views as to how directors' incentives change with tenure. Some argue that high director tenure can result in management friendliness or managerial entrenchment. In contrast, research in organizational behavior shows that organizational commitment increases with tenure (see Salancik (1977) or Buchanan (1974)). A third view, unrelated to incentives, stresses that tenure is a proxy

for director expertise (see Vafeas (2003) or Vance (1983)).

When board members include a higher fraction of highly tenured directors (service in excess of 15 years), negative events are less frequent. By contrast, positive events are not associated with the percentage of highly tenured directors. These findings lend more support to the view that companies with more experienced directors act more prudently (less negative events), as opposed to the view that high director tenure results in management friendliness (more positive events).

Further examinations show that negative events are only significantly related to highly tenured inside, but not highly tenured outside directors. This finding underlines the importance of both high tenure and strong firm affiliation as director attributes of companies which pursue and achieve long-term corporate objectives (lower incidence of negative events).

The corporate governance literature stresses the role of outside directors in monitoring managers. If social responsibility is the result of diverting cash and attention from more important strategic issues, firms with stronger internal control mechanisms should show lower incidence of positive events. Yet, after controlling for a variety of other factors, I find no significant relationship between board independence and social responsibility.

Assuming that characteristics other than the board influence a company's social responsibility, I also examine the relationship between events and several general firm characteristics such as size, visibility, profitability, firm-specific risk, leverage or liquidity.

Some argue that large industrial accidents can be the result of inadequate managerial care. I proxy for a firm's size by computing the natural logarithm of its number of employees. Consistent with the argument, companies with more employees show higher incidence of negative events.

Theories highlighting that firms engage in corporate social responsibility for reputational reasons (see Frank (2003), Montgomery and Ramus (2003), Turban and Greening (1997), Albinger and Freeman (2000)) suggest that events should also be related to a firm's visibility. I construct a proxy for a firm's visibility by calculating the number of financial analysts following a firm in a given year. Positive events are positively related to the number of financial analysts, indicating that more visible companies engage in social responsibility in order to attract better employees and a new breed of green consumers and investors.

Surprisingly, sales intensive companies show significantly lower incidence of positive events. While this is inconsistent with the view that sales intensive companies should be more concerned with the public eye, the finding is consistent with an interpretation stressing that sales intensive companies are likely to be operating in low margin (high competition) sectors.

Finally, companies with higher asset tangibility show higher incidence of positive events. A potential explanation is that companies with high asset tangibility (more plants and property) have more scope for increasing their environmental efficiency by, for instance, saving energy.

There is a growing literature on stakeholder relations. On the theoretical side, Tirole (2001) argues that focusing on shareholder value instead of attending to stakeholders provides more focus and sharper incentives to managers, suggesting that an enlarged fiduciary duty towards stakeholders increases agency problems. By contrast, Allen et al. (2009) come to the conclusion that under certain circumstances firms concerned with the welfare of stakeholders (e.g. suppliers or employees) can be more valuable than companies which are shareholder oriented only. Jensen (2001) discusses stakeholder and shareholder value theory and argues in favor of a single valued objective function.

On the empirical side, Barnea and Rubin (2005) find evidence that affiliated shareholders have an incentive to increase corporate social responsibility expenditures beyond what is optimal for the firm. My paper is different from theirs since they do not consider the role of the board. In contrast to my paper, Kacperczyk (2009) focuses on external control mechanisms by examining how exogenous shifts in power from shareholders to stakeholders affect social responsibility. Johnson and Greening (1999) and Webb (2004) are probably the most closely related papers. The first paper studies the effects of corporate governance and institutional ownership types on corporate social performance, while the second paper focuses on the board of directors. My paper differs from these papers inasmuch as I examine the relationship for a larger sample of firms and for a larger variety of director characteristics.

This study is also related to the literature examining the impact of social responsibility on profitability. A meta-analysis by Margolis et al. (2007) finds that the average effect is positive but small. Edmans (2008) provides evidence that investing in companies with high employee satisfaction generates significant four factor alpha. Derwall et al. (2005) show that better environmental efficiency generates positive long term excess returns. Kempf et al. (2007) and Statman et al. (2009) study the impact of KLD's social screens on investment performance and find positively screened portfolios to outperform. My study differs from this literature since I use social responsibility as the dependent variable. The present paper is also related to Chatterji et al. (2009), who show that KLD's negative ratings are fairly good summaries of past environmental performance. By contrast, positive ratings do not predict future pollution levels or compliance violations.

The rest of the paper is organized as follows. Section two develops the main hypotheses. Section three describes the sources of the data and intro-

duces the main variables. In section four, I conduct the empirical analysis before concluding in section five.

2 Hypothesis development

Even though there is disagreement as to whether boards matter for the financial performance of a company (see Bhagat and Black (2001), Hermalin and Weisbach (1991), Yermack (1996)) there is no doubt that boards with different characteristics will take different actions and decisions (see Weisbach (1988) or Coles et al. (2008) and references therein).

The empirical and theoretical corporate finance literature stresses two fundamental functions of the board. First, the board has the duty to oversee and thus monitor managerial actions. Second, the board is supposed to advise managers in formulating a corporation's strategy.

One aspect of the advising function is to consider a company's impact on the welfare of its natural stakeholders. For instance, the board of directors will have a substantial influence on the decision to support local communities or the extent to which a firm chooses to provide non- and/or monetary benefits to its workforce (e.g. child-care, elder care, fitness centers and other work/life benefits). Likewise, it seems plausible that director characteristics such as experience or expertise will impact the ability of a company to manage its (social) risks effectively (e.g. avoiding environmental contamination and workforce safety violations, managing its pension and retirement liabilities responsibly, etc.).

While there has been extensive research on the relationship between the board of directors and a firm's financial performance, the potential empirical linkage between social responsibility and the board has been examined to a much lesser extent in the economics and finance literature. This is why I study director attributes which have been considered in studies dealing with traditional corporate governance issues, and examine how these relate to a firm's social responsibility. The main attributes I consider are director tenure (see Vafeas (2003)), gender (see Adams and Ferreira (2009)) and whether the director is an insider (see Rosenstein and Wyatt (1997)). I also control for a variety of other director characteristics such as low equity ownership (see Shivdasani (1993)), the number of other directorships (see Ferris et al. (2003) and Fich and Shivdasani (2006)) and director independence (see Weisbach (1988)).

2.1 Inside directors

Two divergent views regarding inside directors coexist. Agency oriented theorists highlight that inside directors are likely to be under the influence of the CEO (see Weisbach (1988) or Hermalin and Weisbach (1998)). In contrast, Fama and Jensen (1983) were early to argue that, next to the CEO, executive board members are the main source of firm specific information. Different views about the role of inside directors imply different predictions concerning the relationship between inside directors and a firm's social responsibility.

2.1.1 Entrenchment hypothesis

Some see a high fraction of inside directors as a sign of managerial or CEO entrenchment. Due to career concerns, inside directors will not be critical enough vis à vis the CEO. Hence, boards characterized by a high fraction of inside directors are regarded as indicating poor internal governance.

***Entrenchment hypothesis:** Under the entrenchment hypothesis, boards with more inside directors reflect weaker internal control mechanisms. If corporate social responsibility results from managerial entrenchment, companies with more insiders on the board will divert resources towards socially responsible strategies, suggesting that companies with high insider board representation should show higher incidence of positive events.*

2.1.2 Information hypothesis

Contrasting the entrenchment view of inside directors, there is growing theoretical and empirical research analyzing more thoroughly the role of inside directors. This research focuses on the duty of inside directors to provide firm-specific information in order to improve the board's decisions (see Adams and Ferreira (2007), Harris and Raviv (2008) or Raheja (2005)). On the empirical side, Ravina and Sapienza (2009) show that inside directors are better informed about the quality of a firm's investment projects by providing evidence that insiders make better returns on informed trading than independent directors. Also, Klein (1998) shows that having more insiders on a board's finance and investment committee is associated with higher stock returns. Masulis and Mobbs (2009) focus on independent insiders, current employees holding other outside directorships, and show that firms with independent inside directors have better operating performance and higher

market-to-book ratios

Information hypothesis: *Under the information hypothesis, boards with higher insider representation are better informed about the operational risks and opportunities of a firm. A higher fraction of insiders enhances the provision of firm specific information, resulting in lower incidence of negative events (e.g. workplace safety related issues or environmental accidents).*

2.2 Female directors

2.2.1 Gender differences in risk propensity hypothesis

Experimental research concerned with gender differences in preferences shows that women are more risk averse than men. However, this difference does not hold for managerial populations (see Powell and Ansic (1997)). Hence, female and male directors should not differ with respect to corporate risk taking.

Risk propensity hypothesis: *If negative social outcomes are the result of excessive corporate risk taking, outcomes of negative social responsibility should not be related to a board's gender diversity because male and female managers do not show significant differences with respect to risk propensity.*

2.2.2 Gender differences in other regarding preferences hypothesis

In contrast, experimental research concerned with social preferences shows that women are more sensitive to social signals (see Croson and Gneezy (2009)). Güth et al. (2007) find that women are significantly more likely to propose a three-way equal split in a three-way ultimatum game indicating that women show more altruism. In addition, women (in anonymity) give almost twice as much as men in dictator games where the proposer divides a pie (see Eckel and Grossman (1998)). These findings suggest that women are more concerned with equity, which could imply that companies with more female directors treat stakeholders (e.g. local communities) differently.

Other regarding preferences hypothesis: *Companies with more gender diverse boards are expected to engage in more pro-social behavior (e.g. charity, pro-bono community work), suggesting that positive social responsibility events should be increasing in the fraction of female board members.*

2.3 Director Tenure

Another important attribute characterizing directors is their length of service. There are different views as to how board members' incentives to monitor and advise evolve with tenure.

2.3.1 Management friendliness hypothesis

Some argue that a director's closeness to a firm's management or CEO increases with tenure. Captured directors can lack critical thinking, which can result in inferior corporate governance.

***Management friendliness hypothesis:** Under the management friendliness hypothesis, companies with more highly tenured directors have worse internal control mechanisms because directors are captured by the firm's management or the CEO. If corporate social responsibility is the result of poor governance, it follows that companies with more highly tenured directors should show higher incidence of positive events.*

2.3.2 Experience hypothesis

On the contrary, tenure of directors can also indicate a director's experience, skill and expertise. Vance (1983) argues that forcing seasoned directors to retire is a waste of experience and knowledge, suggesting that more senior board members may have a positive effect on corporate governance. For instance, highly tenured directors can be more willing to confront a CEO as opposed to newer and younger ones. Moreover, an efficient market for directorships suggests a long-term survival of the most skilled directors, implying that senior directors remain on the board because of their competence, and not because of managerial or CEO affiliation.

***Experience hypothesis:** Under the experience hypothesis, director tenure reflects higher director expertise. Seasoned directors use their know-how to reduce the risk of incidents with negative implications for stakeholder welfare (e.g. accidents). Thus, companies with more experienced directors should show lower incidence of negative events.*

2.3.3 Commitment hypothesis

Research in organizational behavior shows that high tenure can increase organizational commitment (see Salancik (1977); Sheldon (1971)). Buchanan (1974) provides evidence that managers with a long career at a company

show more willingness to expend effort towards achieving the company's goals. Higher commitment might be the result of monetary (holding undiversified portfolios of company stock) and non-monetary concerns (reputation, off-work related investments such as the employment choices of the spouse, schooling and housing choices as well as social relationships). In a similar spirit Vafeas (2003) finds that senior directors have significantly higher equity ownership and tend to join the board at significantly younger ages than average board members. These findings suggest that highly tenured board members stay on the board in order to protect their own wealth and that they might care more about the success of the company.

***Commitment hypothesis:** Under the commitment hypothesis, companies with more highly tenured board members take a long-term view with respect to corporate governance. This is because they are more likely to have incentives in line with the long-term interests of the firm, resulting in lower incidence of negative events.*

3 Data and variable definitions

3.1 Sample

In order to construct the sample of firms, I impose four screening criteria on the data. First, the firm needs to be included in the *Kinder, Lydenberg and Domini (KLD) STATS* database between 1998 and 2007. KLD is a specialized information intermediary, which quantifies the social responsibility of publicly listed firms in the United States. Before 2001, KLD covered all companies belonging to the SP500 universe. After 2001, KLD enlarged their coverage to the Russell1000 and subsequently to the majority of Russell3000 firms. The database resembles an unbalanced panel. Second, I require stock market data to be available from the Center for Research in Security Prices for at least two consecutive years between 1998 and 2007. Third, the Thomson Reuters I/B/E/S database must contain at least one earnings forecast for the company in the same two consecutive years. Fourth, accounting and income statement data must be available for all required data items in the Fundamentals Annual Compustat North America database.

Next, I collect data regarding a company's directors. Joining The Corporate Library's Board Analyst and the IRRC/Riskmetrics Directors databases, I construct a sample of 125,110 director-firm-year observations for which all four screening criteria are satisfied. I retain data on active directors only.

Since the observational unit of this study is the firm, director characteristics are collapsed by calculating several board characteristics at the firm level (e.g. percentage of fully independent directors or total sum of directors).

I choose to lag all explanatory variables once, resulting in the loss of one degree of freedom and yielding a final sample of 8,684 firm-year observations (1999-2007).

3.2 Dependent variables: Corporate Social Responsibility

3.2.1 KLD's classification

In order to construct my measures of corporate social responsibility, I rely on data and definitions from U.S. based social investment research firm *Kinder, Lydenberg and Domini Research and Analytics Inc*¹⁰. KLD is widely considered to be the standard source of data for empirical research concerned with corporate social responsibility. The *KLD STATS* dataset includes about 80 positive and negative binary social indicators (*Strengths* and *Concerns*) from seven qualitative issue areas:

- Corporate Governance
- Community
- Diversity
- Employee Relations
- Environment
- Human Rights
- Product

I include indicators from the *Corporate Governance* issue area which do not measure traditional corporate governance¹¹. The *Community* issue area relates mainly to charitable giving, volunteer work, housing support initiatives to economically disadvantaged community members as well as support for local primary and secondary schools. Negative indicators capture disrespectful treatment of indigenous peoples and controversies about a firm's

¹⁰<http://www.kld.com>

¹¹The appendix contains examples of corporate governance indicators which are concerned with social responsibility issues.

impact on the quality of life of community members. The main themes of the *Diversity* issue area are the treatment of gay and lesbian employees and a company's track record of being a superior employer for disabled people. *Employee Relations* deal with the welfare and safety of a company's workforce (e.g. superior retirement benefits or health and safety issues). *Environmental* indicators examine whether the company's production technology is environmentally friendly (e.g. substantial emissions, use of ozone depleting and agricultural chemicals, clean energy, recycled raw materials, voluntary pollution prevention). The extent to which a firm's products and services are environmentally beneficial is also relevant (e.g. products aimed at reducing green house gas emissions or services aimed at increasing the energy efficiency of corporations). The negative dimension is mainly concerned with regulatory problems and liabilities due to hazardous waste sites. Respect of labor standards in emerging countries is captured by the *Human Rights* category, whereas the *Product* category is concerned with product safety issues. Some researchers exclude the *Product* area from the analysis. In contrast, I choose to include certain aspects of it because some of the negative indicators measure irresponsible corporate actions¹² The positive dimension of the *Product* category is more directly related to CSR in the sense that it covers issues such as providing specialty products with notable social benefits to the economically disadvantaged (e.g. providing products to low-income families).

3.2.2 Social indicators as event counts

In order to better understand the data, it is important to comprehend how it is compiled. KLD employs analysts who monitor firms with respect to their social responsibility. The analysts use diverse sources of public and private information (e.g. individual press searches or company interviews). They single out events concerned with a firm's social responsibility, which are classified according to 80 rating definitions.

Given the way KLD tracks firm behavior, I assume that the *KLD's STATS* database is a collection of event counts. This argument is supported by observing that rating definitions often commence by phrases like "*The company has recently been involved in...*" or "*The company has implemented...*"¹³. In the following, two examples of such corporate events are provided:

Example 1 (Negative event):

In September 2006, Cablevision agreed to pay \$400,000 in back

¹²The appendix provides several examples.

¹³see *KLD STATS manual* at <http://wrds.wharton.upenn.edu/>

wages to settle a lawsuit alleging that the company failed to fully compensate 1,000 call center employees for time worked. According to the suit, the company did not pay the employees for preparation time before their shifts or for calls that extended beyond the end of their shifts. The company also failed to pay overtime when total hours worked exceeded 40 in a week.

Example 2 (Positive Event):

In September 2006, Citigroup's Smith Barney division announced that it will tie manager pay to hiring and retaining women and minority brokers. The program will be launched in 2007 and will also include mentoring for women and minority managers. Smith Barney has previously faced allegations of discrimination from brokers.

I construct two dependent count variables, one measuring social responsibility and the other measuring social irresponsibility, by individually summing positive and negative indicators by firm and year.¹⁴

Figures (1) and (2) provide histograms of the event count variables.

[Figures (1) and (2) about here.]

Table 1 provides descriptive statistics of the dependent variables. Each firm is involved in approximately 1.3 negative and 1.5 positive events per year.

[Table (1) about here.]

3.3 Board of directors

The IRRC/Riskmetrics directors and the Corporate Library's Board Analyst databases provide extensive information on firms' board members. The information is collected from firms' annual proxy statements (SEC Form 14A)¹⁵. Directors are classified as being either fully independent, when the

¹⁴I sum all of KLD's indicators, except the following ones, which I exclude from the analysis: CGOV-str-C: Ownership Strength; CGOV-con-F: Ownership Concern; CGOV-con-G: Accounting Concern; CGOV-con-X: Other Corporate Governance Concern; CGOV-str-a: Limited compensation; CGOV-con-b: High compensation; DIV-str-A: The company's chief executive officer is a woman or a member of a minority group; DIV-STR-B: Promotion; DIV-str-C: Board of Directors; DIV-con-B: Non representation; PRO-str-A: Quality Strength; PRO-str-B: R&D/Innovation

¹⁵<http://www.sec.gov/answers/proxy.htm>

directors have no apparent relationship with the company, and as insiders, when they are current employees of the firm. If they are neither classified as fully independent nor as insiders, they are assumed to have some sort of fiduciary relationship with the company (e.g. banking, legal or consulting). I retain information on directors' age, gender, tenure, share¹⁶ ownership. I also record the number of other directorships held and whether the director is a CEO of a publicly listed company. I then calculate equity ownership as the ratio of owned shares and the number of outstanding shares at the firm's fiscal year end (CSHO) as reported in the Fundamentals Annual Compustat North America database.

[Table 2 about here.]

Table 2 provides summary statistics for important director attributes. Approximately 18 % of the directors are insiders and 69 % are fully independent. Women directors make up about 10 % of the director-sample. 29 % of the directors are CEOs at other companies and, on average, a director holds 2 other directorships. The average equity ownership is about 0.72 % and the average director is about 60 years old. Approximately 12.2 % of all directors do not own any shares of the company they oversee.

[Table 3 about here.]

I now calculate board characteristics at the firm level. Table 3 provides summary statistics of board characteristics. The average board size is 9.5. Each board is, on average, composed of 6.58 fully independent, approximately 2 inside and one female director. These figures are similar in magnitude to those reported by Coles et al. (2008). I define a director to be highly tenured if his service on the board exceeds 15 years¹⁷. On average, each board has about 1.5 highly tenured board members and 1.8 board members holding 4 or more other directorships. Each board has about one member over the age of 70. I also obtain the number of outside and inside directors with tenure exceeding 15 years and the number of inside directors with tenure lower than 8 and higher than 8 years. In the empirical analysis, I use board characteristics in the form of fractions (e.g. fraction of fully independent directors). Relying on sums yields identical results, and board size (i.e. total number of directors) is not found to play a significant role.

¹⁶The number of shares of company stock owned by a given director as reported in the most recent proxy, excluding: stock options; shares held in charitable trusts; shares held by other members of the director's household; shares held by an entity that are deemed beneficially owned because the director is employed by the entity; and shares held solely as a trustee.

¹⁷Approximately 15 % of all directors in the director sample have tenure exceeding 15 years.

3.4 Control variables

3.4.1 Size

First, I hypothesize that a firm's social responsibility should be related to the number of its employees. I interpret the number of employees as a proxy for the size of a company's operations. Firms with larger operations are expected to be more prone to environmental accidents or problems with workplace safety. For instance, Biais et al. (2009) argue that firms take socially inadequate levels of risk because a manager's risk prevention effort is unobservable. Industrial risks in their framework are similar to the events studied in the present paper because both large industrial risks and social responsibility events occur quite infrequently (approximately once per year). I measure the size of a company's operations by including the natural logarithm of a company's employees (Compustat item EMP) as an explanatory variable. In unreported regressions I control for size by using the logarithm of a firm's market value (debt plus equity) and the logarithm of total assets (AT). The main results do not depend on which size measure is chosen.

Second, a firm's visibility should shape its stakeholder relations. More visible companies might try to attract a new breed of green consumers and therefore implement socially responsible business strategies. Likewise, companies might be inclined to signal their social responsibility in order to attract more productive employees. Survey evidence by Frank (2003) shows that employees are more interested in working for responsible companies and are also willing to accept discounts in pay¹⁸. Hong et al. (2001) suggest that the number of financial analysts proxies for the rate of a company's information flow. They find that the lower a firm's analyst coverage, the slower firm-specific information moves across the investing public. I proxy for the visibility of a company by using the number of financial analysts following a firm as documented in the Thomson Institutional Brokers Estimate System (I/B/E/S).

I also include a measure of asset tangibility in the regressions in order to account for characteristics of the firm's production function. Asset tangibility is expected to be relevant since it measures to what extent the company's business depends on machinery or large industrial complexes. Companies with higher asset tangibility are expected to impose significantly more negative externalities on their natural stakeholders. Yet, companies with higher asset tangibility might also have potentially higher benefits from increasing production efficiencies by adopting environmentally responsible strate-

¹⁸See also the recent Kelly Global Workforce Index survey of 100,000 employees in 34 different countries (<http://www.kellyglobal.net>).

gies (e.g. reducing waste, pollution or their energy use). I measure asset tangibility as the ratio of net property plant and equipment (PPENT) to total assets (AT).

3.4.2 Return on Assets, Retentions and Firm Value

I control for three different dimensions of profitability, two accounting, and one valuation based. I am interested in studying whether past operating income has an impact on current social responsibility. I calculate return on assets as the ratio of operating income before depreciation (OIBDP) to total assets (AT). Higher operating income could result in increased plant maintenance and one might expect economically stronger companies to show lower incidence of negative events.

The fraction of earnings a company retains is another potential determinant of a firm's social responsibility. Internally generated funds might be channeled towards investments resulting in higher workplace safety. Furthermore, the cumulative nature of retentions makes it a good measure of a firm's long term economic performance. I scale retained earnings (RE) by total assets (AT) and hypothesize that companies with higher long term profitability (higher retentions) are less likely to be involved in negative events.

Since return on assets and retentions are backward looking, I also include a forward looking measure of financial performance in the analysis. The valuation based measure of company performance is the ratio of book assets to market value of assets, which I calculate according to Fama and French (2001)¹⁹. Underperforming companies (high book to market ratios) are expected to show higher incidence of negative events. Since book to market proxies for a firm's investment opportunities, a negative association between social responsibility and the book to market ratio would suggest that companies with less profitable investment opportunities show worse stakeholder relations.

¹⁹Preferred Stock is equal to Preferred Stock Liquidating Value (PSTKL) [or first available of Preferred Stock Redemption Value (PSTKRV), or Preferred Stock Par Value (PSTK)]. Book Equity is equal to Stockholder's Equity (SEQ) [or first available of Common Equity (CEQ) + Preferred Stock Par Value (PSTK) or Assets (AT) - Liabilities (LT)] - Preferred Stock + Balance Sheet Deferred Taxes and Investment Tax Credit (TXDITC) (if available) - Post Retirement Asset (PRBA) (if available). Market Equity is Stock Price at fiscal year end (PRCC_F) times shares outstanding (CSHO). The market value of the firm is assets (AT) - Book Equity + Market Equity. Book to market ratio is calculated as the ratio of Compustat item AT and the market value of the firm (MV).

3.4.3 Idiosyncratic firm risk

In order to control for overall firm risk, I estimate a market model and compute the root mean square error of the market model residual²⁰.

3.4.4 Liquidity

The availability of short term funds is also expected to be relevant for a firm's social responsibility. It might be the case that companies with more cash and short term investments are more inclined to channel these funds towards socially responsible activities (e.g. charity, childcare, elder care, fitness centers, etc.). In contrast, cash constrained companies (low liquidity) are expected to devote substantially fewer resources towards increasing stakeholder welfare and maintaining machinery. Hence, one would expect high liquidity companies to show higher incidence of positive and lower incidence of negative events. Liquidity is calculated as cash and short term investments (CSHO) divided by total assets (TA).

3.4.5 Other control variables

Leverage is controlled for by calculating the ratio of long term debt (DLLT) and debt in current liabilities (DLLC) to total assets (AT). Leverage changes a firm's contracting environment through additional constraints imposed by debt covenants and is likely to affect firm choices regarding social responsibility.

A firm's sales dependence is measured by its turnover ratio, that is net sales (SALE) divided by total assets (AT). It might be the case that companies particularly dependent on sales try to avoid bad press in terms of negative events for reputational reasons.

I also control for company age, which I approximate by the number of years the company has been included in the CRSP database²¹. Older companies might have less well maintained machinery and more social liabilities (e.g. hazardous waste sites, under funded pension plans), suggesting that negative events should be increasing in age. Older companies could show

²⁰Daily idiosyncratic risk is given by the root mean square error of the residual resulting from a CAPM market model regression using one year's daily return data. Since this study examines social responsibility at a yearly horizon, daily firm specific risk is scaled by a time factor ($\sqrt{255}$) in order to obtain a measure of yearly firm specific risk. Similar scalings of the root mean square error have been applied by French et al. (1987) or more recently by Fu (2009).

²¹Jovanovic and Rousseau (2001) find that the time between a firm's foundation and its IPO has fallen dramatically over the last fifty years, making the post IPO age a reasonable proxy for a firm's overall age.

lower incidence of positive events because of more conservative managerial and organizational structures.

I also include the ratio of capital expenditures (CAPEX) to total assets and the dividend payout ratio, defined as common dividends (DVC) divided by net income (NI), in the analysis.

Industry differences, which are likely to play an important role, are controlled for by including two-digit primary SIC code dummies.

In order to account for persistence in the dependent variables and control for firm specificities, I include lagged values of the dependent variables as explanatory variables in the regression. Cameron and Trivedi (1998)²² suggest that including lagged values of the dependent variable in a Pooled Poisson Regression Model is a computationally convenient way of controlling for firm specific effects whenever the dependent variable is persistent. Since the dependent variables are highly serially correlated (about 90 %), I argue that firm specific effects are partially controlled for by including the number of last year's events.

In unreported regressions, I also test the impact of lagged advertising (XAD) and lagged R&D expenses (XRD) scaled by total assets on the occurrence of events. I do not find a significant relationship between events and either variable. Table 4 provides univariate statistics for all control variables used in the study.

[Table 4 about here.]

4 Empirical Analysis

I start the analysis by separating the firm-year observations conditional on whether the firm is involved in only negative or only positive events in a given year. Even though this amounts to ignoring about 50 % of the firm-year observations used in the multivariate analysis, the procedure allows previewing some of the main results. Table 5 provides mean values for selected explanatory variables and mean difference tests comparing firms with high (only positive events in a given year) and firms with low social responsibility (only negative events in a given year). Separating firm-year observations in this manner does not preclude a firm from being classified as socially responsible in one and as socially irresponsible in another year. The univariate analysis conveys that firms with low social responsibility tend to be larger in terms of employees. Furthermore, companies with higher social responsibility are

²²see pp. 294

more visible as indicated by a significantly higher number of financial analysts following socially responsible firms. The univariate analysis also suggests that socially irresponsible companies are less profitable (higher book to market ratios, lower return on assets and lower retentions). Finally, socially irresponsible companies seem to be older.

[Table 5 about here.]

Turning to board characteristics, the mean difference tests show that socially irresponsible companies have a lower fraction of female board members. Furthermore, active CEOs, inside directors and highly tenured directors (15 years of tenure or more) are also less represented on the board of socially irresponsible companies.

Zhou (2001) provides evidence that governance characteristics such as managerial ownership change slowly over time. It is argued that relying on within variation might not allow detecting the effect of a specific governance characteristic on financial performance even if one should exist. This is why I focus on cross-sectional variation in studying the relationship between a firm's board of directors and its social responsibility, and do not rely on more sophisticated estimation techniques such as (dynamic) fixed effects models.

Since the dependent variables are discrete and place probability mass on nonnegative integer values only, the classical linear regression model does not apply. The natural stochastic model for counts is a Poisson point process and the standard model for count data is the Poisson regression model. Cameron and Trivedi (1998) provide a broad overview of models for count data.

4.1 Board of directors

In order to address the question of whether corporate social responsibility is related to a firm's board characteristics, I start by individually regressing positive and negative events on lagged board characteristics and a set of lagged control variables (including lagged values of the dependent variable). I also include industry-specific intercepts according to the first two digits of the Standard Industrial Classification and a set of year fixed effects. Standard errors are clustered at the firm level. The results are reported in table 6.

[Table 6 about here.]

4.1.1 Inside directors

Entrenchment hypothesis Under the *entrenchment hypothesis*, companies with a higher fraction of inside directors are likely to suffer from managerial entrenchment. Company insiders divert resources towards socially

responsible activities, because they derive private benefits from being associated with a green company. In short, socially responsible behavior is the result of agency problems, and managers use good relations with the stakeholders as an entrenchment strategy. Firms with higher insider representation should therefore show higher incidence of positive events. Contrary to this view, positive events are not significantly related to the presence of more inside directors on the board (see coefficient estimate for inside directors in equation (2) of table 6). Thus, there is little support for the view that company insiders use socially responsible business strategies as an entrenchment device.

Information hypothesis In contrast, firms with a higher fraction of inside directors show significantly lower incidence of negative events (see column (1) of table 6). This finding is consistent with an information oriented interpretation according to which insiders' provision of firm-specific information improves corporate decision making by reducing the risks the company imposes on stakeholders.

[Table 7 about here.]

In order to disentangle the effect of informed and entrenched insiders, I introduce a dummy variable which indicates whether the board is classified. I interact the fraction of inside directors with the classified board dummy. Companies with a classified board are more likely to suffer from managerial entrenchment, and the effect of insiders is expected to depend on whether management is entrenched or not. Column (2) in table 7 reports selected coefficients from an equation including the interaction term. All previously employed control variables and all other board characteristics are included in the equation. Even though the interaction term is not statistically significant, the positive sign suggests that the relationship between negative events and inside directors is less pronounced in companies whose directors are likely to be entrenched. The relationship for entrenched directors is given by the sum of the coefficient estimate for the interaction term and that for inside directors. In contrast, the effect of inside directors in firms which are less likely to suffer from entrenchment becomes stronger and more significant once I control for the possibility of entrenched insiders (both the coefficient estimate and the t-statistic for percentage of inside directors increase in column (2) of table 7).

In a further step, I examine whether companies with more experienced inside directors show lower incidence of negative events by separating inside

directors into experienced and inexperienced ones. Experienced inside directors are those with above average (8 years), and inexperienced ones with below average tenure. First, I replace the fraction of inside directors with the percentage of inside directors with above average tenure (equation (3) of table 7). Second, I replace the fraction of inside directors with the fraction of inside directors with below average tenure (equation (4) of table 7). While there is a statistically significantly negative relationship between negative events and experienced inside directors (see column (3) of table 7), the coefficient estimate for inexperienced inside directors is not statistically significant (column (4) of table 7). This finding suggests that, above all, social responsibility is higher in firms whose directors have a combination of experience and strong company affiliation.

Identification

4.1.2 Director tenure

Management friendliness hypothesis Under the *management friendliness hypothesis*, internal control mechanisms are weaker the more highly tenured directors sit on a board. If social responsibility results from agency problems, the *management friendliness hypothesis* suggests that companies with more highly tenured board members should show significantly higher incidence of positive events. Yet, column (2) of table 6 shows that positive events are unrelated to the percentage of highly tenured board members. This finding lends little support to the view that corporate social responsibility is higher in firms in which the board of directors is likely to be more friendly towards the management of the company.

Experience and commitment hypotheses In contrast, the incidence of negative events is lower for firms with a larger fraction of highly tenured board members (see column (1) of table 6). The finding that firms with more experienced directors show less social irresponsibility is consistent with two interpretations: on the one hand, it might be the case that directors with higher tenure rely on their experience in order to reduce the risks the company imposes on stakeholders. According to this line of reasoning, the presence of more experienced directors can reduce the likelihood of negative incidents such as environmental accidents or workplace safety violations because experienced directors are better risk managers. On the other hand, it might be the case that extended tenure increases the directors' commitment towards the organization. With increasing tenure, directors develop a long term interest in the success of the firm. This interest can be due to monetary

and/or non-monetary reasons. The personal wealth of highly tenured directors is likely to depend to a larger extent on the firm's success because highly tenured directors have higher equity ownership (see Vafeas (2003)). Also, directors might be more inclined to fulfil their statutory duty by exercising due care and skill because the quality of life choices (e.g. social networks, spouse's employment, kid's schooling choices, etc.) depends more strongly on the director's employment status the higher his or her tenure. Therefore, more senior directors might provide higher effort towards achieving company goals. This line of thought is also consistent with the empirical evidence that negative events are less frequent for firms whose inside directors have above average tenure.

Taken as a whole, the negative relationship between negative events and the presence of experienced directors lends more support to the *experience* and *commitment hypotheses* as opposed to the *management friendliness* view.

[Table 8 about here.]

In a last step, I examine whether the incidence of negative events depends more strongly on the presence of highly tenured (service exceeding 15 years) inside or highly tenured outside directors. The results from two regressions, one including the fraction of highly tenured inside and the other the percentage of highly tenured outside directors are reported in columns (3) and (4) of table 8. The coefficient estimate for highly tenured outside directors is not statistically significantly different from zero, suggesting that companies with boards populated by more highly tenured outside directors do not show significantly lower social irresponsibility. In contrast, companies with more highly tenured inside directors seem to have statistically significantly better stakeholder relations (statistically significantly negative coefficient estimate for inside directors with high tenure). This result underlines, once again, the idea that firms whose directors are more experienced and have a strong affiliation with the firm show corporate behavior which is less harmful to stakeholders.

4.1.3 Female directors

Risk propensity hypothesis The incidence of negative events is not found to be significantly related to the percentage of female board members (see equation (1) of table 6), lending support to the *risk propensity hypothesis*. According to this argument, the absence of differences in risk propensity between female and male managers is a potential explanation for why negative events do not depend on the presence of women directors.

Other regarding preferences hypothesis In contrast, incidence of positive events is found to be higher for companies with a higher presence of female directors (see column (2) of table 6). This is consistent with experimental evidence showing that women are more concerned with inequality. Hence, the results indicate that companies with more women on the board pay more attention to the welfare of a firm’s natural stakeholders (e.g. communities, employees or the environment).

Addressing causality: Non-linear two stage least squares It is not clear whether the presence of female directors causes social responsibility to be higher, or whether socially responsible companies are more likely to have a higher fraction of female directors for other reasons (e.g. unobserved firm heterogeneity). If the fraction of female directors is endogenous, the error term in the regression equation for positive social responsibility events is correlated with both the explanatory variables and the dependent variable. In this situation, maximum likelihood estimates of the coefficients are inconsistent. One way to control for unobserved heterogeneity is to include firm fixed effects. If, however, the main variation in the endogenous explanatory variable is between rather than within firms, fixed effects estimation is likely to have little statistical power. An alternative way of obtaining consistent estimates is to rely on instrumental variables as a source of exogenous variation.

A methodological difficulty in the present situation is that the dependent variable is non-negative integer valued. This implies that standard two stage least squares methods do not apply. Two different solutions exist: The first solution relies on a control function approach in which the second stage Poisson regression includes both the endogenous explanatory variable and the regression residual from a first stage regression. The first stage regression needs to include all explanatory variables from the second stage regression and at least one exogenous instrument. Standard errors should be bootstrapped because the equation includes a generated regressor. The second solution to the problem is to use a Generalized Methods of Moments estimator proposed by Mullahy (1997)²³. I rely on both procedures in order to test whether there is a causal link between social responsibility and the presence of more women on the board.

My instrument is based on gender specific employment statistics in the state the company is headquartered. I obtain the location of a company’s headquarter (state and county) from Compustat²⁴. Employment statistics by

²³For a detailed discussion see for example Wooldridge (2002) pp. 663-666.

²⁴Compustat reports only the current location of a company’s headquarter. I assume,

state and gender are taken from the Bureau for Labor Statistics Local Area Unemployment Program²⁵. For each state, I calculate female employment-population rate (*fem_empl*) as the ratio of employed women to total female non-institutional population²⁶ of the state. I repeat the same procedure for men in order to obtain the male employment-population rate (*male_empl*) by state. The instrument is the ratio of female to male employment-population rates, which measures the relative importance of women in the workforce of a state. If the female employment-population rate is high relative to the male rate, it is more likely that a higher fraction of women serve on boards of companies headquartered in that specific state. This is the first requirement for my measure to be a valid instrument, i.e., a causal relationship between the ratio of female to male employment-population rates and the endogenous explanatory variable. Consistent with this argument, the correlation is positive (about 15 %) and statistically significant at the 0.001 significance level. Secondly, there should be no association between the error of the equation for positive social responsibility events²⁷ and the instrument, aside from the indirect route via the endogenous explanatory variable (fraction of women on the board). In order to *casually* test this requirement, I add the instrument as an additional explanatory variable to a regression of positive events on all lagged control variables, all lagged board characteristics as well as time and industry dummies. In this regression, the coefficient estimate for the instrument is not statistically significantly different from zero (see column (2) of table 9).

Column (1) of table 9 shows the coefficient estimate for the ratio of female to male employment-population rate (the instrument) resulting from the first stage OLS regression of the endogenous explanatory variable (Percentage of women on the board of directors) on the instrument, all lagged board characteristics except the fraction of women directors and all lagged control variables. The first stage regression also contains industry and time dummies. Consistent with the argument that whenever women are relatively more important in the state's workforce, the effect of the instrument on the percentage of female board members is positive and statistically significant. Statistical significance of the instrument in the first stage regression does not depend on whether standard errors are clustered at the firm or state level. I

however, that relocations have a negligible effect on the estimates.

²⁵<http://www.bls.gov/lau>

²⁶Female non-institutional population consists of all women 16 years of age and older who are not inmates of institutions (e.g. correctional and mental facilities or homes for the aged)

²⁷This equation is sometimes called the "structural" equation in simultaneous equation modeling.

compute the residual from the first stage regression.

Column (1) of table 10 reports coefficient estimates from a pooled Poisson regression of the number of positive events on all lagged board characteristics (including the percentage of female board members), lagged control variables as well as industry and time effects. This model corresponds to the model reported in column (2) of table 6. Column (2) shows second-stage estimates for the control function approach with clustered standard errors. Column (3) reports estimates for the control function approach with bootstrapped standard errors accounting for within firm correlation of the residual. Column (4) reports parameter estimates using the approach proposed by Mullahy (1997).

Column (4) continues to show a statistically significant causal impact of the percentage of women directors on the incidence of positive events, whereas the control function approach (columns (2) and (3)) does not show a causal link between female directors and the incidence of positive events. Thus, the statistical evidence is inconclusive about whether higher female board representation causes social responsibility, or whether the reverse is the case.

4.1.4 Other board characteristics

I also examine to what extent social responsibility events depend on a set of other director characteristics. I find a negative relationship (marginally significant at the 10% significance level) between positive events and the fraction of directors owning zero shares of the company's common stock (see equation (2) of table 6). In contrast, neither positive nor negative events are significantly related to the percentage of fully independent directors. Examining the relationship between events and the number of directors with multiple directorships yields inconclusive results. Both the number of positive and the number of negative events depend positively on the presence of directors holding four or more other directorships. Events are not significantly related to the fraction of directors who are active CEOs.

4.2 Control variables

In order to examine the relationship between social responsibility events and general firm characteristics, I run a second set of regressions in which I exclude board characteristics. The results are reported in Table 11.

[Table 11 about here.]

Profitability and Value The regression results confirm the univariate evidence that, cross-sectionally, less valuable and less profitable companies show significantly higher social irresponsibility in subsequent years (see column (1) of table 11). Negative social responsibility events are decreasing in lagged return on assets (significant at the 0.05 level), decreasing in lagged retentions (significant at the 0.01 level) and increasing in the lagged book to market ratio (significant at the 0.01 level). This finding suggests that overvalued and less profitable companies also show higher social irresponsibility. In contrast, positive events are unrelated to past profitability (see column 2 in table 11).

The asymmetric response of positive and negative events with respect to past profitability is consistent with event study evidence in Krüger (2009) showing that positive events do not bring about significant abnormal returns, whereas the occurrence of negative events does significantly reduce shareholder value in the short run.

Size Size turns out to be strongly related to the occurrence of social responsibility events. Even though both positive and negative events are increasing with the number of employees (proxy for the size of a firm's operations) and the number of financial analysts (proxy for its visibility), a closer look at the coefficient estimates reveals that positive and negative events respond rather differently to size. Consistent with the theoretical argument that a manager's risk prevention effort can decrease with the scale of a company's operations (see Biais et al. (2009)), negative events depend more strongly on the number of employees than positive ones (larger coefficient estimate and substantially higher t-statistic for the natural logarithm of employees in column (1) of table 11 than in column (2)). In contrast, the sensitivity with respect to the number of financial analysts is more pronounced for positive than for negative events (higher t-statistic and larger coefficient estimate for the number of financial analysts in column (2) than in column (1)). The finding that positive events depend to a larger degree on the number of financial analysts is consistent with an interpretation that more visible companies engage in more socially responsible behavior.

Firm-specific risk Evidence that positive events are decreasing with idiosyncratic risk (see column (2) of table 11) is consistent with an agency view. Fama and Jensen (1983) argue that agency costs are increasing in a firm's stock volatility. Since idiosyncratic risk is highly correlated with stock volatility, the inverse relationship between positive events and idiosyncratic risk suggests that firms in which the agency problem is more severe show lower social responsibility. Another interpretation in line with this finding

is one stressing that investment decreases in firm-specific risk (see DeMarzo et al. (2009) and Panousi and Papanikolaou (2008)). Hence, companies with lower investment appear to show lower social responsibility. This argument is also supported by an almost statistically significant coefficient for the book to market ratio, which proxies for a firm's investment opportunity set (see column (2) in table 11).

Age Social responsibility is decreasing with the age of a company (see columns (1) and (2) of table 11). Older companies tend to be involved in less positive and more negative events. Since some of the positive events measure to what extent a company caters to its gay and lesbian workforce, a potential interpretation is that conservative organizational and management structures lead to less progressive company behavior. The positive relationship between negative events and age is most likely driven by factors such as inadequate maintenance of outdated machinery or lower energy efficiency of older industrial complexes.

Other control variables Positive events are found to be increasing in liquidity, consistent with an interpretation that companies with more cash are able to allocate more resources to activities aimed at increasing stakeholder welfare. Surprisingly, sales intensive companies show lower social responsibility. An interpretation consistent with this finding is one highlighting that sales intensive companies are likely to be operating low margin businesses. Cost pressure in low margin businesses can, in turn, lead to corner cutting with respect to maintenance, explaining why positive events are decreasing with the sales dependence of a company. Positive events are decreasing with a firm's capital expenditures. As argued by Berman et al. (1999), the negative association between positive events and capital expenditures might be explained by companies' investments in automation. More intensive use of capital goods can make workers redundant, thereby worsening a firm's employee relations. Companies with more positive events in the past seem to have lower incidence of negative events in subsequent periods, suggesting that whenever companies engage in policies aimed at increasing social responsibility, the incidence of negative events in subsequent years decreases. By contrast, the incidence of positive events is not significantly related to the number of past negative events, suggesting that firms do not try to offset social irresponsibility by increasing the likelihood of positive events. Firms with higher asset tangibility show higher social responsibility. This is potentially explained by the idea that companies have more scope to improve environmental efficiency, the more companies rely on fixed assets such as

large industrial complexes. Finally, social responsibility is not related to a firm's dividend payout ratio.

5 Concluding remarks

In this paper, I have examined the cross sectional relationship between positive and negative social responsibility events and a set of lagged board characteristics (e.g. independence, gender, age, tenure, etc.).

Firms with a higher fraction of women directors show higher incidence of positive events, whereas firms overseen by directors with no equity ownership are subject to less positive events. On the contrary, negative events are less frequent for firms whose boards are made up of a higher fraction of experienced and inside directors (current employees). In particular, companies whose directors have a combination of both strong firm affiliation and high tenure (experienced insiders) show significantly lower incidence of negative events.

The positive relation between female directors and social responsibility is consistent with experimental evidence showing that women are more inequality averse and have more pronounced other regarding preferences (higher altruism). Women directors seem to care more about the welfare of a firm's natural stakeholders, and higher gender diversity of the board translates into corporate behavior benefiting communities and the workforce (e.g. higher corporate giving, more pro-bono activities or higher organizational diversity). Unfortunately, non-linear two stage least squares methods yield mixed results as to whether the link between a board's gender diversity and social responsibility is a causal one.

The most interesting finding of this study is presumably the evidence that companies with a higher fraction of inside directors, and in particular inside directors with substantial tenure, show lower incidence of negative social outcomes. It seems as if companies in which experienced inside directors have a material bearing on corporate decisions are relieved from short-termism and might engage in more prudent long-term oriented corporate strategies.

The evidence is also consistent with research in sociology and organizational behavior, suggesting that organizational commitment increases with tenure. Directors with higher tenure might work harder because they have a more pronounced long term interest in the success of the firm and care about the wellbeing of employees.

Another competing interpretation for the negative correlation between the fraction of inside directors and the incidence of negative events is one that underlines the importance of firm-specific information. The informa-

tion interpretation suggests that higher insider representation on the board results in higher provision of firm-specific information to other board members, which ultimately leads to more thoughtful and vigilant board decisions (better risk management).

The paper also documents the relationship between events and a number of general firm characteristics. In line with event study evidence in Krüger (2009), events of positive social responsibility are not significantly related to past profitability. In contrast, negative events are more frequent the lower the firm's past profitability (return on assets and retentions) and the higher its lagged book to market ratio. The negative relationship between social irresponsibility and profitability suggests that more profitable companies are also more socially responsible.

Consistent with an argument that in larger companies there is simply more scope for accidents and other incidents with negative implications for stakeholder welfare, negative events are strongly increasing in the number of employees. In contrast, the occurrence of positive events depends to a much lesser extent on the number of employees, but is more strongly related to the visibility of a company: firms with higher analyst coverage are more often involved in positive events. This evidence suggests that companies engage in social responsibility in order to attract consumers, employees and investors.

To the best of my knowledge, the empirical corporate governance literature is only starting to explore potential differences regarding inside directors (see Masulis and Mobbs (2009)). An interesting follow up to this study would be to examine to what extent experienced inside directors impact a firm's financial performance. The finding that events of negative social responsibility are, on average, shareholder value decreasing (see Krüger (2009)) hints that there might be an empirical relationship between the presence of experienced inside directors and a firm's financial performance.

Finally, family firms have a significantly larger fraction of board members with high tenure. Furthermore, board members belonging to the founding family are more likely to be classified as being company insiders. In addition, some argue that family firms with their more long term oriented approach to governance show more loyalty to stakeholders such as employees or customers. Taken as a whole, this anecdotal evidence suggests that another fruitful avenue of research would be to examine whether family firms turn out to be more socially responsible than the average firm.

References

- Adams, R., Hermalin, B. E., and Weisbach, M. S. (2009). The role of boards of directors in corporate governance: A conceptual framework and survey. forthcoming in the *Journal of Economic Literature*.
- Adams, R. B. and Ferreira, D. (2007). A theory of friendly boards. *Journal of Finance*, 62(1):217–250.
- Adams, R. B. and Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. forthcoming in the *Journal of Financial Economics*.
- Albinger, H. and Freeman, S. (2000). Corporate social performance and attractiveness as an employer to different job seeking populations. *Journal of Business Ethics*, 28(3):243–253.
- Allen, F., Carletti, E., and Marquez, R. (2009). Stakeholder Capitalism, Corporate Governance and Firm Value. ECO2009/10, Economics Working Papers, mimeo, European University Institute.
- Barnea, A. and Rubin, A. (2005). Corporate social responsibility as a conflict between owners. Research Papers.
- Berman, S., Wicks, A., Kotha, S., and Jones, T. (1999). Does stakeholder orientation matter? The relationship between stakeholder management models and firm financial performance. *Academy of Management Journal*, pages 488–506.
- Bhagat, S. and Black, B. (2001). Non-Correlation between Board Independence and Long-Term Firm Performance, The. *Journal of Corporation Law*, 27:231.
- Biais, B., Mariotti, T., Rochet, J., and Villeneuve, S. (2009). Large Risks, Limited Liability and Dynamic Moral Hazard. forthcoming *Econometrica*.
- Buchanan, B. (1974). Building organizational commitment: The socialization of managers in work organizations. *Administrative Science Quarterly*, pages 533–546.
- Cameron, A. and Trivedi, P. (1998). *Regression Analysis of Count Data*. Cambridge University Press.

- Chatterji, A. K., Levine, D. I., and Toffel, M. W. (2009). How Well Do Social Ratings Actually Measure Corporate Social Responsibility? *Journal of Economics & Management Strategy*, 18(1):125–169.
- Coles, J. L., Daniel, N. D., and Naveen, L. (2008). Boards: Does one size fit all. *Journal of Financial Economics*, 87(2):329–356.
- Crosen, R. and Gneezy, U. (2009). Gender differences in preferences. *Journal of Economic Literature*, 47(2):448–474.
- DeMarzo, P., Fishman, M., He, Z., and Wang, N. (2009). Dynamic agency and the q theory of investment. Technical report, Working paper, Stanford University, Northwestern University, and Columbia University.
- Derwall, J., Guenster, N., Bauer, R., and Koedijk, K. (2005). The eco-efficiency premium puzzle. *Financial Analysts Journal*, 61(2):51–63.
- Eckel, C. C. and Grossman, P. J. (1998). Are Women Less Selfish Than Men? Evidence from Dictator Experiments. *Economic Journal*, 108(448):726–35.
- Edmans, A. (2008). Does the stock market fully value intangibles? employee satisfaction and equity prices. Working paper, the Wharton School, University of Pennsylvania.
- Fama, E. and Jensen, M. (1983). Separation of ownership and control. *The Journal of Law and Economics*, 26(2):301.
- Ferris, S., Jagannathan, M., and Pritchard, A. (2003). Too busy to mind the business? Monitoring by directors with multiple board appointments. *Journal of Finance*, 58(3):1087–1112.
- Fich, E. and Shivdasani, A. (2006). Are busy boards effective monitors. *Journal of Finance*, 61(2):689–724.
- Frank, R. H. (2003). *Ethical dilemmas in Competitive Environments*. Princeton University Press.
- French, K., Schwert, G., and Stambaugh, R. (1987). Expected stock returns and volatility. *Journal of Financial Economics*, 19(1):3–29.
- Fu, F. (2009). Idiosyncratic risk and the cross-section of expected stock returns. *Journal of Financial Economics*, 91(1):24–37.
- Güth, W., Schmidt, C., and Sutter, M. (2007). Bargaining outside the lab - a newspaper experiment of a three-person ultimatum game. *Economic Journal*, 117(518):449–469.

- Harris, M. and Raviv, A. (2008). A theory of board control and size. *Review of Financial Studies*, 21(4):1797–1832.
- Heal, G. (2005). Corporate social responsibility: An economic and financial framework. *The Geneva Papers*, 30(3):387–409.
- Hermalin, B. and Weisbach, M. (1991). The effects of board composition and direct incentives on firm performance. *Financial management*, 20(4):101–112.
- Hermalin, B. and Weisbach, M. (1998). Endogenously chosen boards of directors and their monitoring of the CEO. *American Economic Review*, 88(1):96–118.
- Hermalin, B. and Weisbach, M. (2003). "Boards of directors as an endogenously determined institution: A survey of the economic literature". *Economic Policy Review*, 9(1):7–26.
- Hong, H., Lim, T., and Stein, J. (2001). Bad news travels slowly: Size, analyst coverage, and the profitability of momentum strategies. *Journal of Finance*, 55(1):265–295.
- Jensen, M. C. (2001). Value maximization, stakeholder theory, and the corporate objective function. *Journal of Applied Corporate Finance*, 14(3):8–21.
- Johnson, J. and Powell, P. (1994). Decision making, risk and gender: are managers different? *British Journal of Management*, 5(2):123–138.
- Johnson, R. and Greening, D. (1999). The effects of corporate governance and institutional ownership types on corporate social performance. *Academy of Management Journal*, 42(5):564–576.
- Jovanovic, B. and Rousseau, P. L. (2001). Why wait? a century of life before ipo. *American Economic Review*, 91(2):336–341.
- Kacperczyk, A. (2009). With greater power comes greater responsibility? takeover protection and corporate attention to stakeholders. Forthcoming in *Strategic Management Journal*.
- Kempf, A., Osthoff, P., and Platz, A. (2007). The Effect of Socially Responsible Investing on Portfolio Performance. *European Financial Management*, 13(5):908–922.
- Klein, A. (1998). Firm Performance and Board Committee Structure 1. *The Journal of Law and Economics*, 41(1):275–304.

- Krüger, P. (2009). Stakeholder Information and Shareholder Value. mimeo, Toulouse School of Economics.
- Margolis, J., Elfenbein, H., and Walsh, J. (2007). Does it pay to be good? a meta-analysis and redirection of research on the relationship between corporate social and financial performance. mimeo, Ross School of Business - University of Michigan.
- Masulis, R. W. and Mobbs, H. S. (2009). Are All Inside Directors the Same? Do They Entrench CEOs or Facilitate More Informed Board Decisions? Finance Working Paper 241/2009, ECGI.
- Montgomery, D. B. and Ramus, C. A. (2003). Corporate social responsibility reputation effects on mba job choice. Research Papers.
- Mullahy, J. (1997). Instrumental-Variable Estimation of Count Data Models: Applications to Models of Cigarette Smoking Behavior. *Review of Economics and Statistics*, 79(4):586–593.
- Panousi, V. and Papanikolaou, D. (2008). Investment, Idiosyncratic Risk, and Ownership. Technical report, working paper.
- Powell, M. and Ansic, D. (1997). Gender differences in risk behaviour in financial decision-making: An experimental analysis. *Journal of Economic Psychology*, 18(6):605–628.
- Raheja, C. (2005). Determinants of board size and composition: A theory of corporate boards. *Journal of Financial and Quantitative Analysis*, 40(2):283–306.
- Ravina, E. and Sapienza, P. (2009). What do independent directors know? evidence from their trading. *forthcoming in the Review of Financial Studies*.
- Rosenstein, S. and Wyatt, J. (1997). Inside directors, board effectiveness, and shareholder wealth. *Journal of Financial Economics*, 44(2):229–250.
- Salancik, G. (1977). Commitment and the control of organizational behavior and belief. *New directions in organizational behavior*, 1:54.
- Sheldon, M. (1971). Investments and involvements as mechanisms producing commitment to the organization. *Administrative Science Quarterly*, 16:143–150.

- Shivdasani, A. (1993). Board composition, ownership structure, and hostile takeovers. *Journal of Accounting and Economics*, 16(1-3):167–198.
- Statman, M., Glushkov, D., and Investors, B. (2009). The wages of social responsibility. *Financial Analysts Journal*, 65(4):774–800.
- Tirole, J. (2001). Corporate Governance. *Econometrica*, 69(1):1–35.
- Turban, D. and Greening, D. (1997). Corporate social performance and organizational attractiveness to prospective employees. *Academy of Management Journal*, pages 658–672.
- Vafeas, N. (2003). Length of Board Tenure and Outside Director Independence. *Journal of Business Finance & Accounting*, 30(7-8):1043–1064.
- Vance, S. (1983). *Corporate leadership: Boards, directors, and strategy*. McGraw-Hill Companies.
- Webb, E. (2004). An examination of socially responsible firms’ board structure. *Journal of Management and Governance*, 8(3):255–277.
- Weisbach, M. S. (1988). Outside directors and ceo turnover. *Journal of Financial Economics*, 20(1-2):431–460.
- Wooldridge, J. (2002). *Econometric analysis of cross section and panel data*. The MIT press.
- Yermack, D. (1996). Higher market valuation of companies with a small board of directors. *Journal of Financial Economics*, 40(2):185–211.
- Zhou, X. (2001). Understanding the determinants of managerial ownership and the link between ownership and performance: comment. *Journal of Financial Economics*, 62(3):559–571.

A Relationship between indicators and events

Community: All concerns and strengths

Positive Events (Strengths):

In June 2007, Corporate Philanthropy Report noted that Avis Budget Group made direct corporate contributions to community and charitable organizations in areas where the company has operations.

In 2002 the Avon Foundation announced that it would disburse \$30 million in grants to fund programs at leading public health agencies, national cancer centers, and community-based organizations.

Negative Events (Concerns):

In January 2007, Inner City Press / Fair Finance Watch, a nonprofit organization that has made predatory lending one of its areas of action, protested Bank of America's planned acquisition of U.S. Trust. The group cited discriminatory lending practices to minorities.

In March 2007, the Chicago Tribune reported that eight people were hospitalized following a chemical spill at an Ashland distribution plant in Willow Springs, Illinois.

Corporate Governance: Some concerns and strengths

Positive Events (Strengths):²⁸

In August 2004, AEP released a report assessing the actions it is taking to mitigate the economic impact of regulatory requirements, competitive pressures, and public expectations to significantly reduce carbon dioxide and other emissions. The report, created by a subcommittee of the company's board of directors, was produced at the request of shareholders.

In February 2005, the Center for Political Accountability (CPA) reported that the company had a publicly available policy on political donations and disclosed the individual or department responsible for such contributions. The Center for Political Accountability is a non-partisan, non-profit advocacy group whose mission is to bring political transparency and accountability to corporate political spending.

²⁸cgov-str-d: Transparency Strength ; cgov-str-e: Political Accountability Strength; cgov-str-x: Other Strength

In October 2007, AbitibiBowater created a board level Environmental, Health and Safety Committee, which has the responsibility of reviewing the company's policies, management systems and performance pertaining to environmental and occupational safety matters.

Negative Events (Concerns):²⁹

In March 2007, Bed Bath & Beyond was named in Ceres top 10 worst firms for climate change. Ceres, an investor coalition group, reported that the company had been unresponsive to shareholder requests that it disclose strategies and performance on energy efficiency and other climate related issues.

In February 2005, the Center for Political Accountability (CPA) reported that the company did not have a publicly available policy on political donations or on internal responsibility for such involvement.

Diversity: All concerns and strengths

Positive Events (Strengths):

In 2004 the company's supplier diversity program was recognized by the Minority Enterprise Development organization with a Helping Hands Award.

A 2007 survey by Careers & the disABLED magazine ranked Agilent Technologies 13th among 50 companies with the best reputation for employing and accommodating the disabled.

Negative Events (Concerns):

In April 2004, the Reverend Jesse Jackson criticized Coca-Cola at its annual shareholder meeting for not doing enough on minority employment practices following the settlement of racial discrimination suit in 2000 (see Diversity: Controversies), particularly noting the resignation of Deval Patrick as general counsel in 2004. He also alleged that spending with minority-owned advertising agencies and consulting firms had fallen substantially.

In June 2008, a gay rights group urged consumers to boycott Heinz products after the company decided to stop running a mayonnaise commercial that depicted two men kissing. The gay rights group contended that Heinz's actions were homophobic. Heinz pulled the ad at the advice of the Advertisement Standards Authority, which claimed that it had received a high number of complaints from viewers.

²⁹cgov-con-h: Transparency Concerns; cgov-con-i: Political Accountability Concern

Employee Relations: All concerns and strengths

Positive Events (Strengths):

In May 2006, Peabody Energy's unionized mine workers represented by the United Mine Workers of America (UMWA) praised the company for revising its code of ethics to include a pledge to let workers freely choose to unionize and to provide safe working conditions.

In February 2005, the Guardian reported that the approximately 113,000 employees at Wal-Mart's Asda subsidiary in the U.K. had virtually all received bonuses.

Negative Events (Concerns):

In 2004, the U.S. Occupational Safety and Health Administration (OSHA) penalized the company's facility in Pittsburgh, Pennsylvania \$4,500 for a serious health and safety violation.

In January 2008, an employee at Blue Ridge surface mine in Letcher County, Kentucky died after his truck rolled down a slope below a dumping point. In April 2008, the Office of Mine Safety and Licensing said that Cumberland River Coal, an Arch subsidiary, could have prevented the accident if it had followed state laws on safety barriers at dump sites.

Environment: All concerns and strengths

Positive Events (Strengths):

In March 2007, The Colorado Division of Minerals and Geology (CDMG) and the Colorado Mining Association (CMA) recognized Arch Coal subsidiary Mountain Coal Company's West Elk Mine for its voluntary contributions to Colorado's Pollution Prevention Program including the development of an employee health and safety plan for all employees.

In October 2005, the company was honored by the Interstate Oil and Gas Compact Commission (IOGCC) for its environmental stewardship, specifically for spending over \$900,000 to clean up oil and gas well sites neglected by previous owners, reroute roads to protect natural artifacts, and fund a cultural artifact project.

Negative Events (Concerns):

In September 2005, the Ministry of Justice of the Province of Quebec (MOJ) cited the company's Bowater Canadian Forest Products subsidiary in connection with effluent water quality of the company's mill in Dolbeau, Quebec.

In May 2006, the Political Economy Research Institute (PERI) included ADM on its Toxic 100, a list of the top 100 corporate air polluters in the U.S. ADM ranked tenth on the Toxic 100, which is based on the quantity and toxicity of hundreds of chemicals released into the air.

Human Rights: All concerns and strengths

Negative Events (Strengths):

In February 2007, two Swiss charities alleged that factory workers faced low wages and health risks in factories in China, Thailand, and the Philippines that supplied five companies, including Apple.

Positive Events (Strengths):

In October 2003, the U.S. Department of the Interior recognized Peabody Energy for its interaction, communication and involvement with the surrounding landowners and the local community at its Black Mesa and Kayenta Mines in Arizona, which operate on Navajo and Hopi land.

Product: Some concerns and strengths

Negative Events (Concerns)³⁰:

In October 2007, in two separate incidences, the federal Consumer Product Safety Commission requested that Family Dollar Stores recall children's toys. The Commission requested that 142,000 children's Halloween pails, and 380,000, Chinese made, "Galaxy Warriors" toy figurines be recalled because they were found to contain excessive levels of lead in their paint.

In February 2007, Allstate settled a 2001 Texas redlining lawsuit. The lawsuit contended that the company had routinely charged minority customers higher insurance premiums or had refused to insure certain areas whose residents were predominantly Hispanic and/or African American.

³⁰pro-con-a: Product Safety Concern; pro-con-d: Marketing and Contracting Controversy

Positive Events (Strengths)³¹:

In 2001 Home Depot hired a safety officer and 130 safety managers to monitor compliance with new safety procedures, banned the use of forklifts for stocking merchandise during regular hours, and took steps to secure merchandise to keep it from falling.

³¹pro-str-x: Other Product Strength

B Tables and graphs

Figure 1 – Histogram of positive events (all firm–year observations)

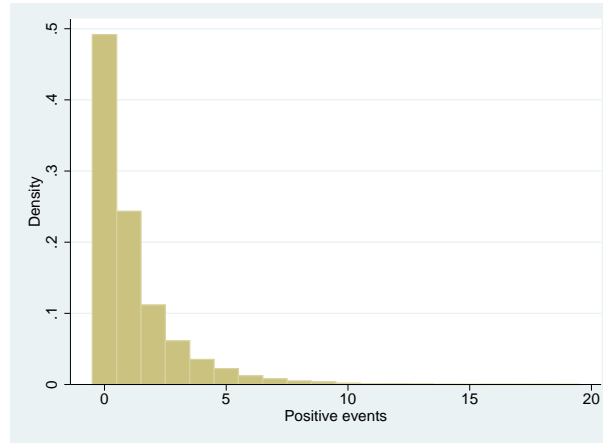


Figure 2 – Histogram of negative events (all firm–year observations)

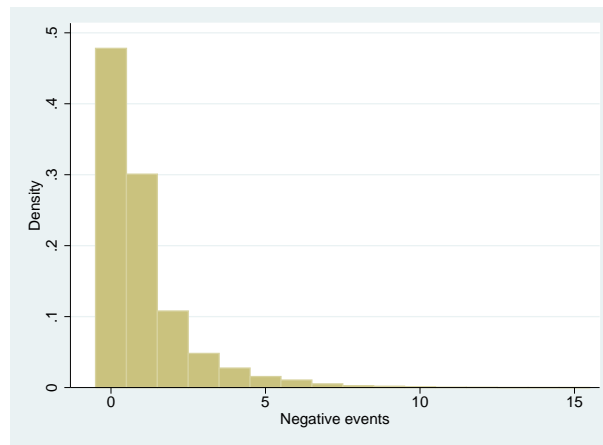


Table 1 – This table provides descriptive statistics of the two dependent variables.

	Mean	Stand. Dev.	5th percentile	Median	95th percentile
Negative Events	1.349	1.715	0	1	5
Positive Events	1.535	2.125	0	1	6
Observations	8684				

Table 2 – This table provides descriptive statistics for the director sample resulting from merging The Corporate Library’s Board Analyst and the IRRC/Riskmetrics Director databases. Director data between 2001 and 2007 is taken from The Corporate Library and prior to 2001 from IRRC. Both data providers use SEC proxy statements to construct their databases. The sample contains 125,110 director-firm-year observations and provides information about the director’s gender and its company affiliation. Furthermore, it provides information about the director’s age, her or his ownership stake in the firm, her or his tenure and the number of additional directorships held. Fully independent directors are all directors who are neither current nor former employees of the company and individuals which do not have a fiduciary relation with the firm (e.g. bankers, consultants or lawyers). Inside directors are current employees of the company. A director is assumed to be an active CEO whenever his or her job title is CEO. Ownership is the number of shares the director holds as reported in the last proxy (excluding: stock options; shares held in charitable trusts; shares held by other members of the director’s household; shares held by an entity that are deemed beneficially owned because the director is employed by the entity; and shares held solely as a trustee) divided by shares outstanding (CSHO). Inside director, Fully independent director, Female director, Active CEO and Director owning zero shares of the company are dummy variables indicating whether the attribute applies for the director-firm-year observation. Thus, the mean column yields the percentage of directors with a certain characteristic in the director-firm-year sample.

	Mean	Stand. Dev.	5th percentile	Median	95th percentile
Inside director (=1 if yes)	0.184	0.387	0	0	1
Fully independent director (=1 if yes)	0.695	0.460	0	1	1
Female director (=1 if yes)	0.107	0.309	0	0	1
Active CEO (=1 if yes)	0.293	0.455	0	0	1
Director owning zero shares of the company (=1 if yes)	0.122	0.327	0	0	1
Director equity ownership in % of common equity outstanding.	0.722	3.791	0	0.0140	2.519
Director age	59.52	8.678	45	60	73
Director tenure	8.453	7.917	1	6	24
Number of other directorships	2.083	1.612	0	2	5
Observations	125,110				

Table 3 – This table provides descriptive statistics of board characteristics for the sample firms obtained by calculating board characteristics (individual sums and fractions) from the director sample. Fully independent directors are all directors who are neither current nor former employees of the company and individuals which do not have a fiduciary relation with the firm (e.g. bankers, consultants or lawyers). Inside directors are current employees of the company. A director is assumed to be an active CEO whenever his or her job title is CEO. All variables are lagged once.

	Mean	Stand. Dev.	5th percentile	Median	95th percentile
Sum of all fully independent directors.	6.581	2.453	3	6	11
Sum of inside directors.	1.778	1.079	1	1	4
Sum of female directors.	1.049	0.947	0	1	3
Sum of all directors with tenure exceeding 15 years.	1.479	1.664	0	1	5
Sum of directors with more than 4 corporate (public) directorships.	1.808	1.842	0	1	5
Sum of directors who are active CEOs.	3.069	2.395	1	2	8
Sum of all directors over the age of 70.	0.828	1.159	0	0	3
Sum of directors who own zero shares of the company's common stock.	1.168	1.730	0	1	5
Total sum of directors.	9.539	2.614	6	9	14
Percentage of all fully independent directors.	0.687	0.162	0.400	0.714	0.900
Percentage of inside directors.	0.192	0.107	0.0833	0.167	0.412
Percentage of female directors.	0.105	0.0926	0	0.100	0.273
Percentage of directors with tenure exceeding 15 years.	0.154	0.171	0	0.111	0.500
Percentage of directors with more than 4 corporate (public) directorships.	0.185	0.176	0	0.143	0.500
Percentage of directors who are active CEOs.	0.322	0.219	0.100	0.273	1
Percentage of all directors over the age of 70.	0.0871	0.120	0	0	0.333
Percentage of directors owning zero shares of the company's common stock.	0.136	0.198	0	0.0625	0.571
Observations	8684				

Table 4 – This table provides descriptive statistics for general firm characteristics of the sample firms. The sample consists of 8,684 firm-year observations between 1999 and 2007 for 2,417 different firms. The sample is an unbalanced panel. All variables are lagged once. Companies are included in the sample if they are contained in the KLD STATS database for at least two consecutive years between 1998 and 2007 and if all necessary data items from the Fundamentals Annual Compustat North America, the CRSP and the Thomson Financial I/B/E/S databases are available for the same years. $\log(\text{employees})$ is $\log(\text{EM})$. The number of financial analysts following a firm is given by the number of different brokers with at least one earnings forecast in a given year as documented in the Thomson I/B/E/S database. Asset tangibility is property plant and equipment (PPENT) scaled by total assets (AT). Return on Assets is operating income before depreciation (OIBDP) divided by total assets (AT). Book to Market is calculated according to Fama and French (2001). Retentions are retained earnings (RE) scaled by total assets (AT). Dividends are common dividends (DVC) scaled by total assets (AT). Leverage is (LT Debt + Debt in Current Liabilities) (DLLT+DLLC) to total assets (AT). Liquidity is (Cash + Short Term Investments) (CHE) to total assets (AT). Sales are net sales (SALE) divided by total assets (AT). Capital Expenditures are capital expenditures (CAPX) scaled by total assets (AT). Age is the number of years a firm has been available in the CRSP database. Annualized Idiosyncratic Firm Risk is the scaled root mean square error of a market model regression using daily return data.

	Mean	Stand. Dev.	5th percentile	Median	95th percentile
Lagged Negative Events	1.212	1.637	0	1	4
Lagged Positive Events	1.409	1.990	0	1	5
$\log(\text{Employees})$	1.943	1.605	-0.644	1.932	4.605
Number of Financial Analysts	84.36	67.02	11	67	217
Asset Tangibility	0.266	0.227	0.0107	0.200	0.735
Return on Assets	0.133	0.107	0.0143	0.128	0.291
Book to Market	0.629	0.262	0.207	0.630	1.024
Retentions	0.141	1.128	-0.485	0.219	0.718
Dividends	0.177	7.690	-0.0137	0.0672	0.831
Leverage	0.230	0.189	0	0.216	0.555
Liquidity	0.145	0.174	0.00456	0.0708	0.536
Sales	0.997	0.765	0.0797	0.839	2.524
Capital Expenditures	0.0504	0.0518	0.00201	0.0364	0.146
Age	26.27	20.02	5	20	75
Annualized Idiosyncratic Firm Risk	0.330	0.150	0.146	0.302	0.613
Observations	8684				

Table 5 – This table provides mean values and mean difference tests for some of the explanatory variables calculated using a subsample of firm-year observations. All variables are lagged once. The first column provides mean values of selected explanatory variables using 1,777 firm-year observations for which only negative events are observed. The second column contains mean values using 2,007 firm-year observations for which only positive events are observed. Thus, column (1) describes characteristics of socially responsible, and column (2) of socially irresponsible firms. Column three uses firm-year-observations for both socially responsible and irresponsible firms (3,784 firm-year observations). This analysis does not use firm-year observations for which neither positive nor negative events are observed. I also discard firm-year observations for which the firm is involved in both positive and negative events. Mean difference account for unequal variance.

	(1) Only negative events	(2) Only positive events	(1)-(2) Total
Lagged Negative Events	1.438	0.133	0.826
Lagged Positive Events	0.0807	1.775	-1.698***
log(Employees)	1.701	1.528	0.174**
Number of Financial Analysts	64.26	81.78	-17.70***
Leverage	0.249	0.195	0.223
Retentions	0.0817	0.216	0.145
Return on Assets	0.128	0.145	0.136
Book to Market	0.661	0.557	0.612
Capital Expenditures	0.0520	0.0472	0.0497
Liquidity	0.131	0.181	0.154
Age	24.64	21.69	23.25
Percentage of all fully independent directors.	0.670	0.677	0.673
Percentage of inside directors.	0.193	0.207	0.200
Percentage of female directors.	0.0842	0.108	0.0955
Percentage of directors with tenure exceeding 15 years.	0.154	0.167	0.160
Percentage of directors with more than 4 corporate (public) directorships.	0.167	0.158	0.163
Percentage of directors who are active CEOs.	0.299	0.333	0.315
Percentage of all directors over the age of 70.	0.0979	0.0914	0.0948
Percentage of directors owning zero shares of the company's common stock.	0.152	0.146	0.149
Observations	1,777	2,007	3,784

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6 – This table reports selected coefficient estimates from cross sectional Poisson regressions in which the sum of positive events and the sum of negative events are regressed on board characteristics, all control variables described in table 4 and a set of time and industry dummies. All explanatory variables are lagged once. In equation (1), the dependent variable is the sum of negative events and in equation (2) the sum of positive events. Standard errors are clustered at the firm level. Fully independent directors are all directors who are neither current nor former employees of the company and individuals who do not have a fiduciary relation with the firm (e.g. bankers, consultants or lawyers). Inside directors are current employees of the company. A director is assumed to be an active CEO whenever his or her job title is CEO. Standard errors are clustered at the firm level.

	(1)	(2)
	Negative Events	Positive Events
Percentage of all fully independent directors.	0.0013 (0.01)	0.1826 (1.62)
Percentage of inside directors.	-0.4997*** (-3.23)	-0.2630 (-1.53)
Percentage of female directors.	0.1054 (0.76)	0.9756*** (5.90)
Percentage of directors with tenure exceeding 15 years.	-0.2556*** (-2.77)	-0.0377 (-0.31)
Percentage of directors with more than 4 corporate (public) directorships.	0.1634** (2.20)	0.3037*** (3.42)
Percentage of directors who are active CEOs.	0.0086 (0.11)	0.0972 (0.97)
Percentage of all directors over the age of 70.	0.0632 (0.60)	-0.0853 (-0.56)
Percentage of directors owning zero shares of the company's common stock.	-0.0424 (-0.79)	-0.1265* (-1.72)
Control Variables	YES	YES
Time Dummies	YES	YES
Industry Dummies	YES	YES
Observations	8684	8684
Pseudo R^2	0.335	0.385

t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 7 – All four equations include all control variables described in table 4, all other board characteristics, time and industry dummies. All explanatory variables are lagged once. Equation (1) is identical to model (1) in table 6 and contains all previously discussed board characteristics. In equation (2), I distinguish between entrenched and non-entrenched boards by interacting the percentage of inside directors with a dummy variable indicating whether the board has a classified structure. In equations (3) and (4), I replace the fraction of inside directors on a board by the fraction of inside directors having above or below average tenure (8 years) respectively.

	(1)	(2)	(3)	(4)
	Negative Events	Negative Events	Negative Events	Negative Events
Percentage of inside directors.	-0.500*** (-3.23)	-0.622*** (-3.55)		
Percentage of inside directors*Classified Board		0.142 (1.06)		
Percentage of inside directors with tenure exceeding 8 years.			-0.414*** (-2.96)	
Percentage of inside directors with tenure below 8 years.				-0.0338 (-0.26)
Control Variables	YES	YES	YES	YES
Other board characteristics	YES	YES	YES	YES
Time Dummies	YES	YES	YES	YES
Industry Dummies	YES	YES	YES	YES
Observations	8684	7986	8684	8684
Pseudo R^2	0.335	0.336	0.335	0.334

t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 8 – Again, the equations contain all control variables described in table 4, all other board characteristics, time and industry dummies. All explanatory variables are lagged once. Equation (1) is identical to model (1) in table 6 and contains all previously discussed board characteristics. In equation (2), I interact the percentage of directors with tenure exceeding 15 years with a dummy variable indicating whether the board has a classified structure. In equations (3) and (4), I distinguish between inside and fully independent directors with tenure exceeding 15 years.

	(1) Negative Events	(2) Negative Events	(3) Negative Events	(4) Negative Events
Percentage of directors with tenure exceeding 15 years.	-0.256*** (-2.77)	-0.323*** (-2.63)		
Percentage of directors with tenure exceeding 15 years*Classified Board		0.00912 (0.74)		
Percentage of inside directors with tenure exceeding 15 years.			-0.571*** (-2.86)	
Percentage of fully independent directors with tenure exceeding 15 years.				-0.199 (-1.51)
Control Variables	YES	YES	YES	YES
Other board characteristics	YES	YES	YES	YES
Time Dummies	YES	YES	YES	YES
Industry Dummies	YES	YES	YES	YES
Observations	8684	7986	8688	8688
Pseudo R^2	0.335	0.336	0.335	0.334

t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 9 – Equation (1) is the linear projection of the endogenous explanatory variable (fraction of female directors) on the instrument, all control variables (see table 4), all board characteristics except the fraction of female board members as well as time and industry dummies. All explanatory variables are lagged once. The instrument is the ratio of female to male employment-population rates in the state the company is headquartered. Female employment-population rate is defined as the ratio of employed women to total female non-institutional population in the state. Male employment-population rate is calculated using male employment and male non-institutional population. Equation (2) is a cross sectional Poisson regression of the number of positive events on all control variables, all lagged board characteristics, time and industry dummies as well as the instrument.

	(1)	(2)
	Percentage of female directors.	Positive Events
Ratio of female to male employment-population rate	0.184*** (3.54)	0.585 (1.22)
Control Variables	YES	YES
Other Board Characteristics	YES	YES
Time Dummies	YES	YES
Industry Dummies	YES	YES
Observations	8660	8660

t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 10 – Equation (1) shows coefficient estimates from a cross sectional Poisson regression of the number of positive events on all control variables, all board characteristics as well industry and time dummies. All explanatory variables are lagged once. Standard errors are clustered at the firm level. This model is identical to equation (1) of table 6. In equations (2) to (4), I use the ratio of female to male employment-population rates in the state the company is headquartered as an instrument for the fraction of female directors (see section 4.1.3 for details on how I construct the instrument). Equations (2) and (3) use the control function approach in which the second stage Poisson regression is augmented by the residuals from a first stage OLS regression of the fraction of female board members on the instrument, all control variables, all board characteristics except the fraction of female directors as well as time and industry dummies. Standard errors are clustered at the firm level. Equation (3) is the same model with bootstrapped standard errors accounting for within firm correlation of the error term. Equation (4) provides non-linear two stage least squares estimates by relying the GMM approach proposed by Mullahy (1997).

	(1) Positive Events	(2) Positive Events	(3) Positive Events	(4) Positive Events
Percentage of female directors.	0.976*** (5.90)	4.137 (1.61)	4.137 (1.17)	5.661* (1.69)
Residual from first stage regression		-3.169 (-1.22)	-3.169 (-0.90)	
Percentage of all fully independent directors.	0.183 (1.62)	-0.00347 (-0.02)	-0.00347 (-0.02)	-0.129 (-0.60)
Percentage of inside directors.	-0.263 (-1.53)	-0.165 (-0.95)	-0.165 (-0.82)	-0.212 (-1.08)
Percentage of directors with tenure exceeding 15 years.	-0.0377 (-0.31)	0.111 (0.67)	0.111 (0.52)	0.124 (0.57)
Percentage of directors with more than 4 corporate (public) directorships.	0.304*** (3.42)	0.288*** (3.22)	0.288*** (2.86)	0.400*** (3.66)
Percentage of directors who are active CEOs.	0.0972 (0.97)	0.145 (1.35)	0.145 (1.21)	0.0360 (0.25)
Percentage of all directors over the age of 70.	-0.0853 (-0.56)	0.00930 (0.05)	0.00930 (0.04)	0.0119 (0.07)
Percentage of directors owning zero shares of the company's common stock.	-0.127* (-1.72)	-0.0609 (-0.70)	-0.0609 (-0.56)	0.175 (1.58)
Control Variables	YES	YES	YES	YES
Time Dummies	YES	YES	YES	YES
Industry Dummies	YES	YES	YES	YES
Observations	8684	8660	8684	8660
Pseudo R^2	0.385	0.386		
Standard Error	cluster	cluster	clustered bootstrap	bootstrap

t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 11 – This table reports the results from cross sectional Poisson regressions in which the sum of positive events and the sum of negative events are regressed on a set of lagged control variables, lagged values of the dependent variables and a set of time and industry dummies. In equation (1), the dependent variable is the sum of negative events and in equation (2) the sum of positive events. Standard errors are clustered at the firm level. Both regression equations include lagged values of the dependent variable as explanatory variables.

$\log(\text{employees})$ is $\log(\text{EM})$. The number of financial analysts following a firm is given by the number of different brokers with at least one earnings forecast in a given year as documented in the Thomson I/B/E/S database. Asset tangibility is property plant and equipment (PPENT) scaled by total assets (AT). Return on Assets is operating income before depreciation (OIBDP) divided by total assets (AT). Book to Market is calculated according to Fama and French (2001) (see appendix). Retentions are retained earnings (RE) scaled by total assets (AT). Dividends are common dividends (DVC) scaled by total assets (AT). Leverage is $(\text{LT Debt} + \text{Debt in Current Liabilities})$ (DLLT+DLLC) to total assets (AT). Liquidity is $(\text{Cash} + \text{Short Term Investments})$ (CHE) to total assets (AT). Capital Expenditures are capital expenditures (CAPX) scaled by total assets (AT). Sales are net sales (SALE) divided by total assets (AT). Age is the number of years a firm has been included in the CRSP database.

	(1) Negative Events	(2) Positive Events
Lagged Negative Events	0.254*** (20.63)	-0.0143 (-1.42)
Lagged Positive Events	-0.0209*** (-2.81)	0.258*** (21.66)
$\log(\text{Employees})$	0.174*** (12.61)	0.0769*** (4.81)
Number of Financial Analysts	0.000665*** (2.83)	0.00159*** (4.39)
Asset Tangibility	0.169 (1.59)	0.328** (2.46)
Return on Assets	-0.390** (-2.41)	-0.00470 (-0.02)
Book to Market	0.275*** (3.66)	-0.129 (-1.64)
Retentions	-0.0312*** (-3.97)	-0.0114 (-1.54)
Dividends	-0.0000761 (-0.08)	-0.000150 (-0.10)
Leverage	0.159* (1.93)	-0.100 (-0.91)
Liquidity	-0.157 (-1.31)	0.337*** (2.79)
Sales	0.0464 (1.60)	-0.0547* (-1.70)
Capital Expenditures	-0.676 (-1.53)	-1.099** (-2.48)
Age	0.00121* (1.76)	-0.00215** (-2.12)
Annualized Idiosyncratic Firm Risk	0.0795 (0.91)	-0.331*** (-2.69)
52		
Time Dummies	Yes	Yes
Industry Dummies	Yes	Yes
Observations	8684	8684
Pseudo R^2	0.333	0.380

t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$