# Convicted Firms, Board Composition, and Corporate Social Responsibility in the Post Sarbanes-Oxley Era

Brian K. Harte* and Umesh Kumar

**Abstract**

Convicted firms enhance their corporate reputation using corporate social responsible activities. This measure attracts investors' attention to their firm performance. We investigate convicted Fortune 500 firms during years 1999- 2002 to analyze the relationship between corporate social responsibility and investor response. Results show that investor response for convicted firms has a significant and positive relationship to corporate social responsibility. Further, investors reward convicted firms by higher valuation for adopting CSR practices than that of non-convicted firm. Results also suggest that convicted firms had low CSR initiatives before the enactment of SOX.

## Introduction

Corporate America has long struggled to maintain a positive public image while achieving its overall organizational goals. Due to the nature of business and its primary goal of wealth attainment, external mechanisms of corporate regulation are needed to ensure that firms are operating in a manner that is both ethical and legal. Central to this theme is the corporation's adherence to corporate socially responsible behaviors while promoting strong corporate governance.

Corporate governance can be conceptualized as "the process of supervision and control intended to ensure that a company's managers' act in accordance with the interest of the shareholders (Parkinson, 1993, p. 159)". The concept of corporate governance can be narrowly defined as the relationships between a firm's capital providers and top managers, as mediated by its board of directors (Hart, 1995). This concept involves the institutional processes affecting institutions and the means by which they are controlled/regulated. At the center of this process is the relationship among and between corporate boards and the corporations they serve.

### Corporate Social Responsibility

The term Corporate Social Responsibility (CSR) has no uniformly agreed upon formal definition. However, one definition commonly used and accepted by both academics and the business community was generated by the World Business Council on Sustainable Development (WBCSD). The WBCSD defines CSR as: "The commitment of

* Corresponding Author: Brian K. Harte is an Associate Professor at the State University of New York – Canton. Please address all correspondence to harteb@canton.edu. Umesh Kumar is an Assistant Professor at the State University of New York – Canton.

business to contribute to sustainable economic development, working with employees, their families, the local community and society at large to improve their quality of life (WBCSD, 2000)." Conversely, Bloom and Gundlach (2001) define CSR as: "the obligations of the firm to its stakeholders-people and groups who can affect or who are affected by corporate policies and practices. These obligations go beyond legal requirements and the company's duties to its stakeholders. Moreover, "fulfillment of these obligations is intended to minimize any harm and maximize the long-run beneficial impact of the firm on society" (p. 142).

CSR was first explored in 1972 in the first issue of Business and Society, by Editor Milton Moskowitz. Moskowitz implied that socially responsible firms were good investments based on their social performance (Aupperle, Carroll, & Hatfield, 1985). CSR has over time evolved to the viewpoint that private corporations should align their individual corporate goals with goals of larger society. Moreover, they should take into account how their operational decisions impact their stakeholders, local communities and society at large, thereby, avoiding conflict while maximizing profits. CSR is directly linked to the corporate governance philosophy because a lack of CSR within corporations may prove to spill over into business practices which will ultimately impact organizational decision-making. Understanding how social responsibility impacts corporate behaviors is an important consideration for academicians and business practitioners alike. Indeed, a corporation's ability to meet its corporate goals while meeting societal goals would provide for a mutually beneficial relationship for both parties. However, historically there has not been a balance between the two types of similar yet often competing goals.

**Corporate and Legal Environment**

Internationally, world-wide corruption in 21st century business practices has led to the need for more firm accountability, firm transparency and federal legislation to govern firm behaviors. Despite the fact that entities such as the Organization for Economic Cooperation and Development (OECD), Organization of American States (OSA), European Union (EU), World Trade Organization (WTO), and the World Bank have acknowledged the problem of international corruption and the need for corporate reform; only 29 nations, including the U.S., have agreed to accept ethical principle initiatives to govern ethical behaviors as proposed by the OECD (Ryan, 2005). U.S. national efforts to control firm behaviors have led to greater transparency of corporate boards, CEO/CFO behaviors and firm activities, as a means of gaining compliance.

**Sarbanes-Oxley Act of 2002**

The SOX act has increased maximum penalties for existing white-collar crimes. Additionally, stricter sentencing guidelines have also been enacted to enhance prosecutorial discretion and power to act against acts of corporate fiscal violations (Harvard Law Review, 2003). For example, SOX dramatically increased criminal fines from $5,000 to $100,000 and potential imprisonment from one year to ten years for individuals violating certain Employment Retirement Income Security Act (EIRSA) provisions (Shurtz & Pett, 2004). Alternately, the SOX act provides that a violation of a provision any of the following would subject an individual to criminal prosecution: 1.) knowingly alternating, destroying or falsifying any document (punishable by a fine, imprisonment of up to 20 years, or both), 2.) retaliating or discriminating against and

employee (relief granted in certain cases), 3.) knowingly executing, or attempting to execute a scheme to defraud (punishable by a fine, imprisonment of up to 25 years, or both), 4.) knowingly providing a false certification (punishable by a fine of up to $5 million, imprisonment of up to 20 years, or both) (Shurtz & Pett, 2004). Although criminal violations and punishments possible under the SOX Act have been clearly delineated, very little is known regarding whether or not fear of government reprisals mediates ethically responsible corporate behavior of corporate boards. It should be noted that the SOX act is not meant to rid corporate America of corruption. Rather, its intent is to provide for the early discovery and disclosure of corruption (Oxholm, 2005). Moreover, the primary motive of SOX is to put pressure on corporations to behave both ethically and legally through increasing legal and civil penalties for violations of SOX act provisions.

**Theoretical Underpinnings of the Sarbanes-Oxley Act**

The SOX act as a piece of legislation attempting to stimulate fair and legitimate corporate behavior has theoretical underpinnings that cross a variety of academic disciplines. The passage of the SOX act itself was driven by a desire of legislatures to provide more effective corporate controls on public companies. The SOX act, also known as the Public Company Accounting Reform and Investor Act of 2002, established the Public Company Accounting Oversight Board (PCAOB) charged with overseeing and regulating the accounting activities of corporations. Bergen (2005) identifies the passage of the SOX act as one of the most single important acts of corporate reform since the Security Exchange Act of 1934.

Theoretical implications of the SOX Act are derived from both economic theory and criminal justice theory. Specifically, theoretical applications of the SOX act can be viewed through observance of both agency theory and deterrence theory, respectively.

**Agency theory**

Adam Smith's seminal work, *The Wealth of Nations* (1776) provides the framework for understanding problems associated with managers' separation of ownership and control in matters that involve use of the monies of others, rather than monies of their own. Smith (1776) states "without any intervention of law the private interests and passions of men naturally lead them to divide. . . all the different employments. . . as nearly as possible in the proportion which is most agreeable to the interests of the whole society." Smith's (1776) work provides the basic underpinnings of managers' human desires and life within a capitalistic society. Hence, he purports, managers' will not likely watch over the monies of others (i.e. corporations and other entities) with the same level of vigilance that one would watch over his or her own (Morrison, 2005). In support of this premise, Agency Theory provides a theoretical description of the principle/agent relationship between organizational leaders and the shareholders they serve. This relationship may prove key in understanding how legislation such as the Sarbanes-Oxley act may prove controversial given struggles evident in the principle/agent relationship. For example, under Sarbanes-Oxley shareholders can be viewed as the principles of public companies that have a vested interest in seeing their business prosper. Consequently, corporate board directors also act as agents that have a stake in the economic growth of the corporation. Alternately, executive leaders serve as principles responsible for mediating the relationship between

shareholders, corporate boards, and the corporations themselves. Central to this relationship is the differing relationship that executive managers have in relation to the shareholders, and corporate boards *and* the desire of executive leaders to act in a manner that serves his/her own self-interests. Given the human desire for wealth attainment and expectations placed upon successful executive managers, they may assess potential risks. Thus, weighing the perceived risk of prosecution under Sarbanes-Oxley with the perceived benefits gained through non-compliance.

**Recent Studies in Corporate Social Responsibility and Corporate Governance**

In a recent empirical study of corporate social responsibility and corporate governance, Ibrahim, Howard and Angelidis (2003) found that 307 board members (198 outside and 109 inside directors) indicated that outside directors exhibit greater concern about the discretionary component of corporate responsibility and a weaker orientation toward economic performance (N=307). Understanding the need for discretionary decision-making may prove vital for corporations within each respective industry. Additionally, this research may prove valuable in understanding the significance of firm decision making and its value on corporate socially responsible behaviors. Moreover, Tench, Bowd, and Jones, (2005) describe Corporate Social Responsibility as "corporations being held accountable by explicit or inferred social contracts with internal or external stakeholders obeying the laws and legislation of government and operating in an ethical manner that exceeds statutory requirements" (p. 4). The SOX act, therefore, is an attempt to enforce compliance of organizational actions within corporations by setting clearly defined provisions and consequences for failure to comply with these provisions. Likewise, the internal contracts that exist within corporations may govern their behaviors while also promoting corporate social responsibility. However, these contracts may or may not conform with social contracts and expectations of society-at-large.

**Corporate Social Responsibility and Corporate Governance Research**

Aupperle, Hatfield & Carroll (1985; 1983) performed an empirical test through a four part CSR survey. The authors surveyed 241 *Forbes 500* listed CEOs using 171 statements pertaining to CSR (N=241). Their statistical analysis supported their model: 1) by confirming that there are four empirically interrelated, but conceptually independent components of CSR; and 2) by giving tentative support to the relative weightings assigned to each of the four components. Additionally, Pinkston & Carroll (1996) performed a similar survey among top managers in 591 U.S. subsidiaries of multinational chemical companies with headquarters in England, France, Germany, Japan, Sweden, Switzerland and the U.S. The authors' aggregated findings confirmed Carroll's four-part weighted model but also showed Germany and Sweden to be exceptions to their model as proposed. Moreover, legal responsibilities were ranked the highest priority, economic, ethical, and philanthropic aspects ranked second, third and fourth, respectively. Comparing this research with Aupperle, Hatfield & Carroll's (1985) findings revealed that in the intervening ten years the gap between the relative weightings of economic and legal responsibilities had decreased, while ethical responsibilities appeared to be increasing, and philanthropic responsibilities decreasing in importance (Pinkston & Carroll, 1996). Similarly, an empirical survey of Carroll's CSR Pyramid of a sample of 503 large Black-owned businesses in the U.S found that, the economic component was rated as most important. Additionally, ethical responsibilities were prioritized above legal

responsibilities, and there was differential between philanthropic and legal responsibilities (although this finding was relatively small) (Edmondson & Carroll, 1999).

**The Impact of SOX implementation on Corporations**

The corporate world has had mixed reactions to the enactment of the SOX act. Indeed, the need for stronger ethical practices based on the frequency of corporate acts of irresponsibility and/or unethical and illegal behavior has sparked the need for more corporate accountability. This need is evident through acts of corporate corruption indicating a need for a stronger adherence to both CSR and corporate ethics. Moreover, understanding antecedents to corporate corruption could assist legislators, corporate boards, and corporate CEO's in understanding antecedents to corruption and corrupt corporate practices. Although the need for a higher degree of ethical behavior is evident, corporate codes of conduct and professional codes of ethics are not, and have not been substitutes for ethics (Raiborn & Schorg, 2004, p. 11)". It is important to recognize that policies and procedures, in and of themselves, will not ensure corporate compliance. Enforcement of policy, however, based on deterrence theory, should deter future acts of corruption. Perhaps central to this issue, is the individual firm's adherence to government regulations and standards and investment in promoting corporate socially responsible behaviors.

The legislation of ethics is not a new corporate compliance strategy. Coercive systems attempting to maintain corporate controls have historically utilized punishment to obtain behavioral compliance and overall systems compliance (Weaver & Trevino, 1999). Oversight of firms to ensure compliance and ethical business conduct may prove imperative in promoting strong CSR behaviors.

**Corporate Social Responsibility, Ethical and Legal Corporate Behavior**

Ethical and legal corporate behaviors are clearly overlapping themes comprising Corporate Social Responsibility. Pinkston and Carroll (1996) identified economic, ethical, and philanthropic responsibilities as organizational considerations influencing all corporations. These considerations in their totality forge a CSR focus that may prove to impact the overall operations of corporations and their organizational governance. Likewise, corporations are bound by rules, regulations and guidelines to govern their activities. Therefore, identifying antecedents to illegal corporate behaviors of corporations within their respective industries may prove beneficial in further describing factors influencing corporate ethics impacted by SOX.

The ability to understand firms at risk of committing illegal acts could greatly assist corporate board of directors in providing best practices in corporate governance. The U.S. ranks as the 20th least corrupt country out of 180 countries surveyed by businessmen and analysts (Global Corruption Report, 2008). However, unethical corporate practices such as those demonstrated by CEOs and CFOs in companies such as WorldCom and Tyco International have invoked a cry for stronger corporate governance by the general public. Moreover, due to incidents of national corruption and public pressures insisting on the need for further CEO/CFO accountability, the U.S. federal government developed further legislation to strictly govern corporate fiscal behaviors. The enactment of the Sarbanes-Oxley Act of 2002 (SOX) was an attempt to assist

corporate governance boards to more effectively govern CEO/CFO corporate behaviors consistent with federal regulations and recognized acceptable and fair business standards.

**Illegal Firm Behaviors Examined**

The decision of organizational actors to adhere to methods of corporate governance and SOX Act provisions may prove highly dependent on what is considered appropriate behavior within a specific industry. The number one goal of any business is to maximize profits. However, the efforts taken by individual firms to achieve this ends may result in unethical and/or illegal actions on the part of firms. Therefore, organizations that function by a code of "succeed at any cost" may be promoting a culture of unethical and illegal behavior. Ethical and legal firm behavior therefore, may prove to be specifically linked to a firm's adherence to corporate governance and legislative provisions indicating that businesses should not only behave legally, but also socially responsibly.

**Problem Statement**

The Sarbanes-Oxley Act of 2002 is intended to impact behaviors of corporations and specifically, their corporate boards. However, little is known regarding if restructuring of corporate boards, in light of SOX has significantly impacted CSR behaviors. Moreover, the direct effects of SOX enactment on the behavior of previously convicted Fortune 500 has not been clearly established.

**Hypotheses Development**

We hypothesize that board size and its composition do not influence socially responsible behavior among firms. We predict that convicted Fortune 500 firms would exhibit a high degree of sustainable activity in the Post-SOX era. Over time, corporate social responsibility has become main ingredient of a firm to demonstrate deep commitment to the society. However, it becomes imperative for a convicted firm to engage more socially responsible behavior to remain competitive and visible to its stakeholders. In the following section, we define our data sampling, definition of variables, and methodology to analyze the hypotheses.

**Data Sampling and Empirical Analysis**

*Data Source*

This sample is comprised of firms previously convicted for their illegal corporate behavior during years 1991 to 2002. We use the *LexisNexis (legal search engine)*, and other public domain sources to identify these firm. We select only firms who were part of the Fortune 500 firms during 1991-2002. We could collect the data for only 50 convicted firms from the Fortune 500 firms for our analysis during the specified period. To form our analysis, we create a control group of matched firms using standard procedure of industry and firm size. Hence, we have a sample of 100 firms. We obtain the firm specific data for these 100 firms from Damodaran online website[1]. Our study uses annual data from 1999 to 2009. The directors' data is hand collected from the SEC - EDGAR website. Corporate social behavior data is collected from the firm's annual report using

[1] http://pages.stern.nyu.edu/~adamodar/New_Home_Page/data.html

content analysis. We search the words such as 1.) corporate social responsibility, 2.) CSR, 3.) social responsibility, 4.) socially responsible, 5.) corporate sustainability, and 6.) corporate citizenship. Based on their frequency of these terms in the annual report, we create a CSR index for the sample firms. The sustainable activity is represented by the Dow Jones Sustainability United States Index in our analysis[2]. This index is based on assessing their sustainable activities of the firms such as corporate governance, human resources development, climate change concerns, energy savings etc. The annual financial data is winsorized at the 1 and 99 percentiles to mitigate the influence of outliers.

Our main dependent variable is corporate social responsibility of a firm. CSR index and Log Sustainability Index represent the corporate social responsible behavior of a firm. We use size of the board and its composition as primary independent variables to analyze the effect of board size on the corporate social responsibility of the Fortune 500 convicted firms. Further, we control for the firm specific behavior using logarithmic value of total sales, ratio of intangible assets to total assets, logarithmic value of the firms ratio of book value of debt to capital of a firm and the stock's return volatility of a firm.

*Descriptive Analysis*

As a first analysis, we study the differences in the measures of convicted and non-convicted firms. Table 1 summarizes the descriptive statistics of the variables analyzed in the paper. The corporate social responsible behavior as represented by CSR index is higher for non-convicted firms (9.560) than that of convicted firms (6.898). The board size and its composition are similar for both categories of firms. We find that non-convicted firms are less risky (0.331) and have lower book debt to capital (0.390). However, the convicted firms have higher revenue (9.534). The descriptive evidence suggests that a firm having lower commitment to responsible corporate behavior is more likely to indulge in illegal behavior resulting higher riskiness for the firm itself.

Table 2 presents the correlation statistics. We find that the corporate responsible behavior indicator is positively related board size, independent director, revenue, and firm value. As expected, it is negatively related to firm riskiness (-0.124). The illegal corporate behavior has very low positive association (0.065) with the board size. Our main focus in this paper is the analysis of the corporate social responsibility indicators and board size. A visual illustration of their relationship is presented in Figure 1. Panel A of figure 1 suggests that board size does not have much association with the corporate socially responsible behavior of a firm. Similarly, the panel B of figure 1 suggests that sustainable activity does not get influenced by the board size or its composition. However, it is important to analyze such association in a statistical analysis to confirm this suggestion. Hence, we use the estimates of following multivariate regression model to analyze the data:

$$Y_{it} = \alpha_i + \sum_{j=1}^{J} \beta_j Dir_{j,it} + \sum_{k=1}^{K} \gamma_k C_{k,it} + \varepsilon_{it}$$

where $Y_{it}$ is either Corporate Social Responsible behavior or Sustainable Activity for firm i in year t, $Dir_{it}$ is a vector that consists of either the board size or the

[2] http://www.sustainability-index.com/07_htmle/data/djsina.html

composition of directors in the board derived from the SEC filings, and $C_{it}$ is a vector of firm control variables.

*Empirical Analysis*

Table 3 reports the results from the above regression model. First, we analyze the relationship between CSR index and firm specific variables in Model 1-3. We find the firm specific variables results consistent with the literature. The negative and significant relationship between corporate social responsibility and book debt to capital suggests that more socially concerned firms have low debt. The positive relations with the firm value and revenue that the firms benefit by the higher valuation and sales. The negative relations with the intangible assets suggest that the firms are conservative in reporting the intangible assets in their annual report. Model 4-6 suggests that board size is negatively related to CSR index though not strongly significant. It suggests that board size is not a detriment factor for adopting best practices of good social behaviors for firms.

The Sarbanes-Oxley Act has a meaningful influence over firms to embed a strong culture of corporate social and sustainable activities. Therefore, we analyze the board size effect in pre-post SOX period. The regression results are presented in the table 4. We find the similar results for the board size. However, when we analyze the results in the background of convicted firms, we find that bigger board size of convicted firms (coefficient -0.038; *t*-3.14) have low commitment to the good socially responsible behavior.

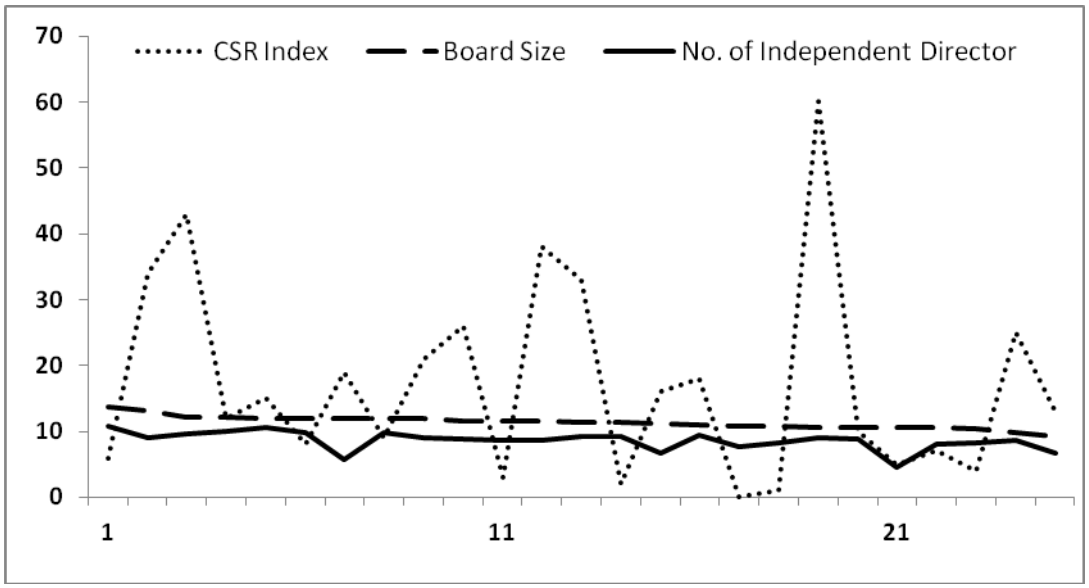
Sustainable activity is the part of good social behavior of a firm. As expected, the results show no statistical relationship between the board size and sustainable activity (table 5 results). Similar to the results of table 4, the conviction of a firm does not affect sustainable activity in most cases whether the board is a large or small (table 6 results). However, the SOX require the firms to be more sensitive to the sustainable activity. The results show that in post SOX period, the board (coefficient 0.016; *t*-13.51) is more active in pursuing the sustainable activity for the firms as mandated in the legislation. Overall, these results are consistent with our hypotheses that board size and its composition do not influence socially responsible behavior among firms while convicted Fortune 500 firms engage in more sustainable activity in the Post-SOX era.

## Conclusions

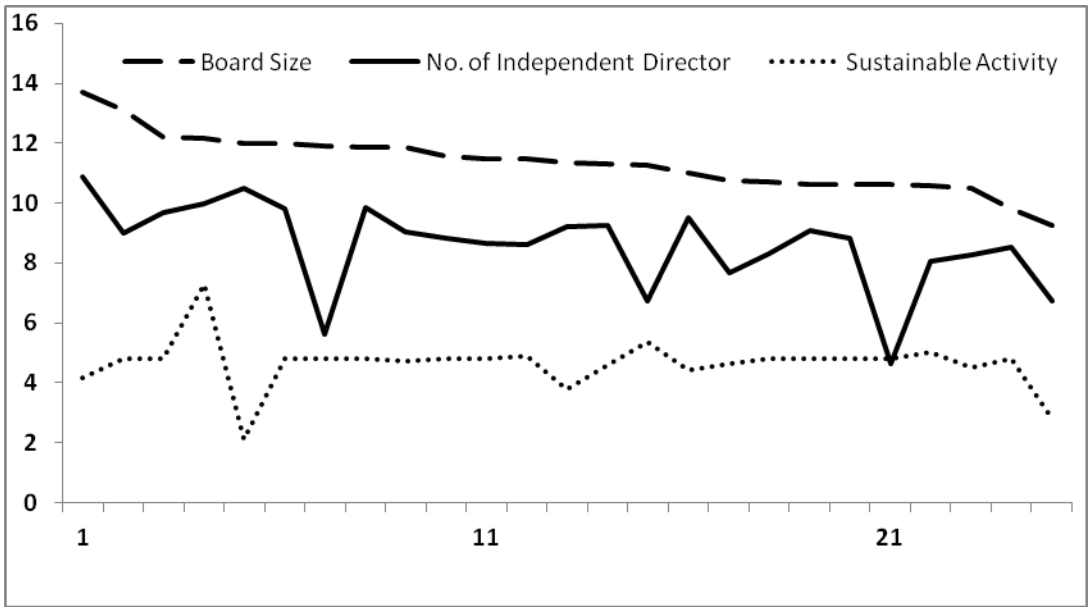
This research examines the relationship between board size and its composition and corporate social responsible behavior of convicted Fortune 500 firms. The empirical results show that board size and its composition do not have significant influence on the convicted Fortune 500 firms to engage in corporate social responsible behaviors. However, convicted firms tend to show more socially responsible behavior after the enactment of SOX act.

## References

**Panel A: Corporate Social Responsibility and Board Size**




**Panel B: Sustainable Activity and Board Size**




## Figure 1: Relationship of Social Responsibility and Board Size

Panel A illustrates the relationship between board size and number of independent directors with the corporate social responsibility of the firms. Similarly, panel B shows the relationship between board size and number of independent directors with the sustainable activity of the firms.

## Table 1: Summary Statistics

This table presents descriptive statistics of variables examined for convicted and non-convicted firms. Panel A shows the results for convicted firms while panel B exhibits for non-convicted firms. *CSR Index* is based on the corporate social behavior data collected from the firm's annual report using content analysis. *Log Sustainability Index* is the logarithmic value of the Dow Jones Sustainability United States Index. Board Size represents all directors of the board. *Number of Executive Director* is the number of all executive directors serving on the board. *Number of Non-Executive Director* is the number of all non-executive directors on the board. Similarly, *Number of Independent Director* is the number of all independent directors on the board. *Log Revenue* is the logarithmic value of total sales of a firm. *Intangible Assets to Total Assets* is the ratio of intangible assets to total assets of a firm. *Log Firm Value* is the logarithmic value of the firms. *Book Debt to Capital* is the ratio of book value of debt to capital of a firm. *Firm Riskiness* is the stock's return volatility of a firm.

**Panel A: Convicted Firms Summary Statistics**

| Variables | N | Mean | Median | Standard Deviation | Minimum | Maximum |
|---|---|---|---|---|---|---|
| CSR Index | 455 | 6.898 | 2.000 | 11.175 | 0.000 | 43.000 |
| Log Sustainability Index | 451 | 4.710 | 4.717 | 0.156 | 4.391 | 4.924 |
| Board Size | 359 | 11.421 | 11.000 | 2.536 | 2.000 | 19.000 |
| Number of Executive Director | 359 | 1.515 | 1.000 | 0.825 | 1.000 | 5.000 |
| Number of Non-Executive Director | 359 | 1.928 | 1.000 | 1.343 | 1.000 | 8.000 |
| Number of Independent Director | 359 | 8.657 | 9.000 | 2.497 | 1.000 | 16.000 |
| Log Revenue | 396 | 9.534 | 9.607 | 1.464 | 6.612 | 12.527 |
| Intangible Assets to Total Assets | 362 | 0.200 | 0.143 | 0.189 | 0.000 | 0.713 |
| Log Firm Value | 449 | 9.807 | 9.796 | 1.628 | 3.450 | 13.008 |
| Book Debt to Capital | 429 | 0.409 | 0.378 | 0.201 | 0.000 | 1.095 |
| Firm Riskiness | 435 | 0.394 | 0.319 | 0.269 | 0.000 | 1.795 |

**Panel B: Non-Convicted Firms Summary Statistics**

| Variables | N | Mean | Median | Standard Deviation | Minimum | Maximum |
|---|---|---|---|---|---|---|
| CSR Index | 466 | 9.560 | 3.000 | 12.795 | 0.000 | 60.000 |
| Log Sustainability Index | 466 | 4.708 | 4.717 | 0.155 | 4.391 | 4.924 |
| Board Size | 377 | 11.085 | 11.000 | 2.610 | 1.000 | 21.000 |
| Number of Executive Director | 377 | 1.699 | 1.000 | 1.049 | 1.000 | 8.000 |
| Number of Non-Executive Director | 377 | 1.929 | 1.000 | 1.203 | 1.000 | 7.000 |
| Number of Independent Director | 377 | 8.328 | 8.000 | 2.516 | 1.000 | 17.000 |
| Log Revenue | 398 | 8.826 | 9.220 | 1.648 | 2.734 | 12.392 |
| Intangible Assets to Total Assets | 370 | 0.198 | 0.121 | 0.222 | 0.000 | 1.000 |
| Log Firm Value | 464 | 9.216 | 9.697 | 1.850 | 3.450 | 12.197 |
| Book Debt to Capital | 444 | 0.390 | 0.388 | 0.235 | 0.000 | 1.631 |
| Firm Riskiness | 444 | 0.331 | 0.288 | 0.213 | 0.000 | 1.793 |

## Table 2: Correlation Statistics

This table presents the correlation coefficients between the corporate social responsibility indicators, board size, and control variables. *Illegal Corporate Behavior* is the binary indicator for convicted (1) and non-convicted (0) firms. Other variables are defined in Table 1 legend.

| Variables | CSR Index | Log Sustainability Index | Board Size | Illegal Corporate Behavior | Log Revenue | Intangible Assets to Total Assets | Log Firm Value | Book Debt to Capital | Firm Riskiness |
|---|---|---|---|---|---|---|---|---|---|
| **CSR Index** | 1.000 | | | | | | | | |
| **Log Sustainability Index** | 0.002 | 1.000 | | | | | | | |
| **Board Size** | 0.096 | -0.021 | 1.000 | | | | | | |
| **Illegal Corporate Behavior** | -0.106 | 0.008 | 0.065 | 1.000 | | | | | |
| **Log Revenue** | 0.301 | 0.035 | 0.395 | 0.222 | 1.000 | | | | |
| **Intangible Assets to Total Assets** | -0.117 | 0.077 | -0.153 | 0.005 | -0.274 | 1.000 | | | |
| **Log Firm Value** | 0.303 | -0.003 | 0.461 | 0.167 | 0.850 | -0.113 | 1.000 | | |
| **Book Debt to Capital** | -0.131 | -0.063 | 0.029 | 0.043 | 0.007 | -0.164 | 0.058 | 1.000 | |
| **Firm Riskiness** | -0.124 | -0.127 | -0.224 | 0.130 | -0.329 | 0.014 | -0.313 | 0.293 | 1.000 |

## Table 3: Corporate Social Responsibility and Board Size

This table presents results of the multivariate analysis of CSR Index representing corporate social responsible behavior and board size composition. It reports the estimates of the pooled OLS regression. The regression models present the effect of entire board and its categories on corporate social responsible behavior after controlling for firm factors. We use firm factors such as Log Revenue, Intangible Assets to Total Assets, Log Firm Value, Book Debt to Capital, and Firm Riskiness. The variables are defined in Table 1 legend. The estimates of regression models are reported in the upper part. Numbers in parentheses are *t*-statistics.

| **Variables** | **Corporate Social Responsible Behavior as Dependent Variable** | | | | | |
|---|---|---|---|---|---|---|
| | **Model 1** | **Model 2** | **Model 3** | **Model 4** | **Model 5** | **Model 6** |
| Board Size | | | | **-0.048** | **-0.049** | **-0.048** |
| | | | | **(-1.92)** | **(-1.95)** | **(-1.89)** |
| Non-Executive Director (%) | | | | | | 0.032 |
| | | | | | | (0.07) |
| Independent Director (%) | | | | | -0.139 | |
| | | | | | (-0.38) | |
| Log Revenue | | | 0.027 | **0.226** | **0.230** | **0.227** |
| | | | (0.49) | **(3.52)** | **(3.53)** | **(3.51)** |
| Intangible Assets to Total Assets | | **-0.807** | **-0.873** | **-1.321** | **-1.334** | **-1.322** |
| | | **(-3.63)** | **(-3.71)** | **(-4.82)** | **(-4.83)** | **(-4.82)** |
| Log Firm Value | **0.216** | **0.213** | **0.194** | **0.208** | **0.208** | **0.209** |
| | **(8.95)** | **(7.62)** | **(3.65)** | **(3.33)** | **(3.33)** | **(3.32)** |
| Book Debt to Capital | **0.843** | **-0.937** | **-0.877** | **-0.708** | **-0.709** | **-0.709** |
| | **(-4.43)** | **(-4.41)** | **(-4.07)** | **(-2.92)** | **(-2.92)** | **(-2.92)** |
| Firm Riskiness | 0.152 | 0.171 | 0.119 | 0.315 | 0.300 | 0.313 |
| | (0.77) | (0.80) | (0.54) | (1.05) | (0.99) | (1.04) |
| Intercept | **-0.918** | **-0.683** | **-0.714** | **-2.241** | **-2.145** | **-2.246** |
| | **(-3.50)** | **(-2.16)** | **(-2.01)** | **(-4.89)** | **(-4.89)** | **(-4.83)** |
| *Adj.R* Square | 0.11 | 0.13 | 0.13 | 0.20 | 0.20 | 0.20 |
| Number of Observations | 841 | 672 | 651 | 565 | 565 | 565 |

## Table 4: Corporate Social Responsibility and Board Size in Pre-Post Sox Era

This table presents results of the multivariate analysis of CSR Index representing corporate social responsible behavior and board size. It reports the estimates of the pooled OLS regression during pre and post Sarbanes-Oxley Era. *Illegal Corporate Behavior* is the binary indicator for convicted (1) and non-convicted (0) firms. *SOX* is the binary indicator for pre-post SOX (0, 1) era. The regression models present the effect of board size and interaction terms on corporate social responsible behavior after controlling for firm factors. We use firm factors such as Log Revenue, Intangible Assets to Total Assets, Log Firm Value, Book Debt to Capital, and Firm Riskiness. Other variables are defined in Table 1 legend. The estimates of regression models are reported in the upper part. Numbers in parentheses are ***t***-statistics.

| **Variables** | **Corporate Social Responsible Behavior as Dependent Variable** | | | |
|---|---|---|---|---|
| | **Model 1** | **Model 2** | **Model 3** | **Model 4** |
| Board Size | **-0.051**<br>**(-2.03)** | **-0.043**<br>**(-1.74)** | **-0.045**<br>**(-1.78)** | -0.025<br>(-0.99) |
| Illegal Corporate Behavior*Board Size | | | | **-0.038**<br>**(-4.42)** |
| SOX*Board Size | | | -0.010<br>(-0.95) | |
| Illegal Corporate Behavior | | **-0.441**<br>**(-4.54)** | | |
| SOX | -0.122<br>(-1.03) | | | |
| Log Revenue | **0.232**<br>**(3.59)** | **0.270**<br>**(4.22)** | **0.231**<br>**(3.58)** | **0.262**<br>**(4.11)** |
| Intangible Assets to Total Assets | **-1.306**<br>**(-4.77)** | **-1.246**<br>**(-4.62)** | **-1.304**<br>**(-4.76)** | **-1.243**<br>**(-4.61)** |
| Intercept | **-2.103**<br>**(-4.40)** | **-2.485**<br>**(-5.47)** | **-2.195**<br>**(-4.76)** | **-2.705**<br>**(-5.84)** |
| *Adj.R* Square | 0.20 | 0.23 | 0.20 | 0.23 |
| Number of Observations | 565 | 565 | 565 | 565 |

## Table 5: Sustainable Activity and Board Size

This table presents results of the multivariate analysis of sustainable activity and board size composition. It reports the estimates of the pooled OLS regression. The regression models present the effect of entire board and its categories on sustainable activity after controlling for firm factors. We use firm factors such as Log Revenue, Intangible Assets to Total Assets, Log Firm Value, Book Debt to Capital, and Firm Riskiness. The variables are defined in Table 1 legend. The estimates of regression models are reported in the upper part. Numbers in parentheses are *t*-statistics.

| **Variables** | **Sustainable Activity as Dependent Variable** | | | | | |
|---|---|---|---|---|---|---|
| | **Model 1** | **Model 2** | **Model 3** | **Model 4** | **Model 5** | **Model 6** |
| Board Size | | | | -0.005 | -0.004 | -0.004 |
| | | | | (-1.35) | (-1.07) | (-1.06) |
| Non-Executive Director (%) | | | | | | -0.084 |
| | | | | | | (-1.35) |
| Independent Director (%) | | | | | **0.088** | |
| | | | | | **(1.76)** | |
| Log Revenue | | | **0.017** | **0.018** | **0.016** | **0.017** |
| | | | **(2.15)** | **(2.02)** | **(1.76)** | **(1.92)** |
| Intangible Assets to Total Assets | | 0.038 | **0.049** | 0.051 | 0.060 | 0.054 |
| | | (1.22) | **(1.48)** | (1.36) | (1.58) | (1.44) |
| Log Firm Value | -0.003 | -0.004 | **-0.019** | **-0.020** | **-0.020** | **-0.021** |
| | (-0.94) | (-0.94) | **(-2.58)** | **(-2.30)** | **(-2.32)** | **(-2.42)** |
| Book Debt to Capital | -0.020 | -0.007 | -0.011 | **-0.030** | -0.029 | -0.028 |
| | (-0.77) | (-0.23) | (-0.38) | **(-0.89)** | (-0.87) | (-0.82) |
| Firm Riskiness | **-0.087** | **-0.130** | **-0.132** | **-0.214** | **-0.205** | **-0.209** |
| | **(-3.30)** | **(-4.35)** | **(-4.31)** | **(-5.17)** | **(-4.91)** | **(-5.01)** |
| Intercept | **4.775** | **4.763** | **4.758** | **4.840** | **4.779** | **4.853** |
| | **(134.63)** | **(107.25)** | **(96.09)** | **(76.39)** | **(66.29)** | **(75.75)** |
| *Adj.R* Square | 0.01 | 0.03 | 0.04 | 0.06 | 0.06 | 0.06 |
| Number of Observations | 843 | 674 | 653 | 565 | 565 | 565 |

## Table 6: Sustainable Activity and Board Size in Pre-Post SOX Era

This table presents results of the multivariate analysis of sustainable activity and board size. It reports the estimates of the pooled OLS regression during pre and post Sarbanes-Oxley Era. *Illegal Corporate Behavior* is the binary indicator for convicted (1) and non-convicted (0) firms. *SOX* is the binary indicator for pre-post SOX (0, 1) era. The regression models present the effect of board size and interaction terms on corporate social responsible behavior after controlling for firm factors. We use firm factors such as Log Revenue and Intangible Assets to Total Assets. Other variables are defined in Table 1 legend. The estimates of regression models are reported in the upper part. Numbers in parentheses are ***t***-statistics.

| **Variables** | **Sustainable Activity as Dependent Variable** | | | |
|---|---|---|---|---|
| | **Model 1** | **Model 2** | **Model 3** | **Model 4** |
| Board Size | 0.001<br>(0.22) | -0.005<br>(-1.37) | **-0.010**<br>**(-3.25)** | -0.005<br>(-1.41) |
| Illegal Corporate Behavior*Board Size | | | | 0.001<br>(0.46) |
| SOX*Board Size | | | **0.016**<br>**(13.51)** | |
| Illegal Corporate Behavior | | 0.006<br>(0.44) | | |
| SOX | **0.197**<br>**(14.12)** | | | |
| Log Revenue | 0.009<br>(1.11) | **0.170**<br>**(1.93)** | 0.010<br>(1.22) | **0.017**<br>**(1.95)** |
| Intangible Assets to Total Assets | 0.029<br>(0.88) | 0.050<br>(1.33) | 0.024<br>(0.73) | 0.050<br>(1.33) |
| Intercept | **4.616**<br>**(81.47)** | **4.843**<br>**(75.85)** | **4.760**<br>**(86.00)** | **4.846**<br>**(74.46)** |
| *Adj.R* Square | 0.31 | 0.06 | 0.29 | 0.06 |
| Number of Observations | 565 | 565 | 565 | 565 |