

HAVE BOARDS OF DIRECTORS CHANGED? A STUDY OF THE IMPACT OF  
SARBANES-OXLEY LEGISLATION ON CORPORATE GOVERNANCE

by

Anshila Horton DeClouette

ZHENHU JIN, Ph.D., Faculty Mentor and Chair

JOHN HANNON, D.B.A., Committee Member

CHERYL BULLOCK, Ph.D., Committee Member

William A. Reed, Ph.D., Acting Dean, School of Business & Technology

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Philosophy

Capella University

August 2009

UMI Number: 3369551

### INFORMATION TO USERS

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleed-through, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

UMI<sup>®</sup>

---

UMI Microform 3369551  
Copyright 2009 by ProQuest LLC  
All rights reserved. This microform edition is protected against  
unauthorized copying under Title 17, United States Code.

---

ProQuest LLC  
789 East Eisenhower Parkway  
P.O. Box 1346  
Ann Arbor, MI 48106-1346

© Anshila Horton DeClouette, 2009

## Abstract

The intent of The Sarbanes-Oxley Act of 2002 was to make extensive financial reporting reforms in publicly traded companies that would reduce financial statement misrepresentation or falsification. Although a few sections of the law address board of directors, the impact of the law on certain aspects of corporate governance is not currently known. The purpose of this quantitative research is to determine whether the Sarbanes-Oxley Act of 2002 impacted corporate governance at companies comprising the Dow Jones Industrial Average in terms of structure and composition. Corporate governance is viewed from the perspective of boards of directors. In this research, board structure involves three components: chief executive officer duality (or board leadership structure), board size, and the number and type of committees. Board composition, in this research, is comprised of the ratio of independent directors and the age, gender, race, and functional experience of the board members. In this relational study, variables relating to structure and composition were collected twice--both pre- and post-Sarbanes-Oxley--and compared to determine the law's impact.

This study provides evidence that corporate boards at component companies on the Dow Jones Industrial Average have decreased in average size, have more outside members, have increased in average age, and more are using Governance committees. Additionally, directors on these boards are more likely to be retired or current corporate chief executives or professors in academia and less likely to be on the executive team in academia or on the management team in law, entertainment, or an entrepreneurial pursuit. This study provides no evidence that Sarbanes-Oxley impacted chief executive officer

duality, the number of board committees, or gender and racial demography on boards of directors at Dow Jones Industrial Average component companies.

This investigation contributes to the body of knowledge in that it provides evidence regarding specifically how one law impacted the structure and composition of boards of directors at some of the largest publicly traded companies in the United States. More generally, this research provides some insight into how legislation may impact how large corporations govern themselves.

## Dedication

In the most loving memory of my parents--Fletcher Marcus Horton and Sybil Marie Leger Horton--who, as first-generation college graduates, set the perfect example and instilled the value of education in me and my siblings. Also this dissertation is dedicated to my wonderful husband and soul-mate Gerald E. DeClouette, whose incredible support sustained me through my doctoral journey. Finally, I dedicate this dissertation to my fabulous children--Trent M. DeClouette and Devin J. DeClouette--who often provided the comedic respite needed for a balanced existence.

## Acknowledgments

Completing this doctoral journey was only possible with the love, support, and encouragement of my family, friends, and colleagues. Of particular note is my husband of sixteen years, who often did “my half” so I could pursue my studies and research.

My sincerest gratitude goes to my dissertation committee. I would like to thank my mentor--Dr. Zhenhu Jin--for the forthright manner in which he provides guidance. This saved both time and frustration. Dr. John Hannon served as the intellectual prowess on the committee and his attention to detail is very much appreciated. Committee member Dr. Cheryl Bullock provided the balance needed to insure rigorous research.

Additionally, Capella University is an incredible organization with a staff of academic and career advisors, librarians, and others composed of top-notch professionals. Special mention should be made of Dr. Tracy Morris, Assistant Professor at University of Central Oklahoma, and Matthew Schuelke, graduate student at University of Oklahoma, for their statistical assistance.

## Table of Contents

Acknowledgments	iv
List of Tables	vii
List of Figures	viii
CHAPTER 1. INTRODUCTION	1
Introduction to the Problem	1
Background of the Study	1
Statement of the Problem	3
Purpose of the Study	4
Rationale	4
Research Questions and Hypotheses	5
Significance of the Study	6
Definition of Terms	8
Assumptions and Limitations	12
Nature of the Study	15
Organization of the Remainder of the Study	15
CHAPTER 2. LITERATURE REVIEW	17
Corporate Governance Overview	17
Board Characteristics	26
Index of Large Corporations	42
Sarbanes-Oxley: About the Law	44
Scholarly Discourse on the Sarbanes-Oxley Act of 2002	49
Overview of Prior Research Methodology	51



CHAPTER 3. METHODOLOGY	55
Research Design	56
Sample	56
Instrumentation/Measures	57
Data Collection	59
Data Analysis	63
Validity and Reliability	65
Ethical Considerations	68
CHAPTER 4. RESULTS	69
Descriptive Statistics	69
Hypothesis Testing	82
Conclusion	87
CHAPTER 5. DISCUSSION, IMPLICATIONS, RECOMMENDATIONS	89
Conclusion	93
REFERENCES	95
APPENDIX A. SUMMARY DATA COLLECTION AND CODING SHEET	105
APPENDIX B. PRE-SOX AND POST-SOX MEAN PERCENTAGES AND P-VALUES FOR FUNCTIONAL EXPERIENCE	106

## List of Tables

Table 1. Component Companies of the DJIA as of May 16, 2008	58
Table 2. Pre- and Post- CEO Duality at DJIA Companies	70
Table 3. Pre- and Post-SOX Lead Directors at DJIA Companies	70
Table 4. Committee Types on DJIA Boards	74
Table 5. Pre- and Post-SOX Gender Representation on DJIA Boards	77
Table 6. Functional Experience of Board Directors of DJIA Companies	81
Table 7. Experience Level of Board Directors of DJIA Companies	82
Table 8. McNemar Test Statistics and p-values by Committee	84

## List of Figures

Figure 1. Pre-SOX Distribution of Board Sizes	71
Figure 2. Post-SOX Distribution of Board Sizes	72
Figure 3. Pre-SOX Distribution of Number of Committees	73
Figure 4. Post-SOX Distribution of Number of Committees	73
Figure 5. Pre-SOX Insider Ratio Distribution	75
Figure 6. Post-SOX Insider Ratio Distribution	76
Figure 7. Distribution of Pre-SOX Average Board Member Age	78
Figure 8. Distribution of Post-SOX Average Board Member Age	78
Figure 9. Pre-SOX Non-Caucasian Board Membership	79
Figure 10. Post-SOX Non-Caucasian Board Membership	80

## CHAPTER 1. INTRODUCTION

### Introduction to the Problem

The Sarbanes-Oxley Act of 2002 intended to protect investors from the scandals of the late twentieth century and early twenty-first century. In doing so, it greatly impacted corporate governance at publicly traded companies. The Sarbanes-Oxley Act of 2002 (SOX) is the most comprehensive investor protection legislation in the United States since the Securities and Exchange Act of 1934. The legislation updated the securities laws for modern companies in the contemporary business environment. Many hope it did so without inhibiting the growth and prosperity of businesses. The focus of this research is to determine the impact of SOX on corporate governance at large corporations in terms of the structure and composition of the board of directors.

### Background of the Study

Similar to the business cycles of growth, prosperity, recession, and depression (Boone & Kurtz, 2007), there tend to be “waves” (Clarke, 2004, p. 153; Gray & Clark, 2002, p. 140) or “periodic episodes” (Griffith, 2006, p. 1249) of large scale corporate corruption. Griffith (2006) retells of two industrial era scandals of Jay Cooke in 1873 and Samuel Insull in the 1920s. Both resulted in increased regulation. While Cooke and Insull were wholly independent of one another, other cycles of scandal were part of a larger industry. For example, tobacco in the 1960s, savings and loans in the 1970s, and junk bonds in the 1980s all appeared industry specific.

But the corporate corruption at the end of the twentieth century and in the early 2000's was different because it seemed so pervasive. All at the same time, many unrelated industries were touched by various types of scandals. The industries affected included telecommunications, public accounting, industrial conglomerates, healthcare, mortgage, investment banking, energy and biopharmaceutical. Previously venerated companies, such as Enron, WorldCom, Adelphia, Tyco International, ImClone, Martha Stewart Ominmedia, and HealthSouth, faced shocking allegations of corruption. The ethical transgressions ranged from individual lapses of judgment to defective corporate cultures and involved embezzlement, insider trading, and financial statement falsification (Fombrun & Foss, 2004; Smith & Walter, 2006).

Before the scandals became widely known, the financial system was widely regarded as having considerable checks-and-balances embedded throughout. Such controls included state laws, federal agency requirements, Self Regulating Organization (SRO) requirements, financial statement audits, professional licensure standards, and the fiduciary responsibility of boards of directors. Viewed comprehensively, a strong argument could have been made that such widespread, economy-crippling scandal was unlikely. Yet Kaiser (2005) contends the fact massive failures such as Enron, WorldCom, Tyco, and HealthSouth did occur reflects directly on many of the afore-mentioned gatekeepers.

Each of the scandals occurred in the upper echelon and involved collusion. Edgar Schein (1983) asserts that founders are critical in developing organizational culture. Disgrace at WorldCom, Enron, Adelphia, and HealthSouth all involved their founders. Wells (2006) cites a study that notes the lack of internal controls--a focus of SOX--is not

behind most failures, it is the executives overriding such controls. The study further cites over-involvement of the executive and under-involvement of the board. Removing the ability to override the controls with an involved, liable board seems to be a key factor.

The resulting meltdown in the financial markets led to legislation that garnered bipartisan sponsorship from both arms of the legislative branch and was signed into law by the President of the United States on July 30, 2002. The Public Company Accounting Reform and Investor Protection Act of 2002 is commonly referred to as the Sarbanes-Oxley Act of 2002 ("Sarbanes-Oxley Act of 2002," 2002). It is the most comprehensive federal securities legislation since the Securities and Exchange Commission (SEC) was created in the 1930s (Brown, 2006; Smith & Walter, 2006). The Law was hastily enacted because of the scale and expanse of the corruption as well as investor outrage.

### Statement of the Problem

At its simplest, SOX mandates certain levels of independence within boards of directors. While there is nothing to study in determining if boards have met this legal requirement, there are two fundamental ways in which conforming to this legislation may have impacted other aspects of the board in terms of its structure and composition. It is apparent the law intended to impact the function of the board by mandating it be more independent and more accountable; and, in doing so, the structure and composition of the board may have also changed.

Although SOX is required of all publicly traded companies, the momentum for the law came from the failures of two very large corporations. Since the inception of the law, some requirements have been scaled back for smaller companies (Dodwell, 2008);

but very large companies, such as those that make up the Dow Jones Industrial Average (DJIA) continue to be held to the original requirements.

The problem to be addressed in this investigation can be summarized as follows: from the perspectives of structure and composition, did the Sarbanes-Oxley Act of 2002 impact boards of directors, and consequently corporate governance, at companies included in the Dow Jones Industrial Average?

### Purpose of the Study

The purpose of this research is to examine the ways boards of directors at companies included in the Dow Jones Industrial Average have been impacted by the Sarbanes-Oxley legislation. This researcher seeks to broaden the knowledge base of two well-researched aspects of board of director characteristics--its structure and composition.

More specifically, this investigation addresses the following objectives.

1. Determine whether board structure of DJIA companies has changed in terms of characteristics such as CEO duality, board size, and number and type of committees.
2. Determine whether board composition of DJIA companies has changed in terms of characteristics such as the ratio of inside and outside members as well as board demographics, such as gender, age, race, and functional experience.

### Rationale

This study is being conducted to determine the impact of the Sarbanes-Oxley legislation on board structure and composition at companies included in the DJIA. This investigation may support or refute previous theories about how this Law, in particular,

or regulation, in general, would impact boards. For instance, Pearce & Zahra (1992) cite S. C. Vance's 1983 work in discussing how board reforms historically result in an increase in the size of boards and in more representation by outside directors. As a result of SOX, Nadler et al. (2006) states many companies have restricted the number of outside boards on which their CEO could sit. Concerned with conflicts of interest and personal liability, fewer lawyers serve on the boards of their clients (Kostal, 2006). Because fewer CEOs and lawyers are serving on boards, this may indicate boards have had to recruit talent through nontraditional means and the composition of the board may have changed as a result. Because of SOX reforms, the size of the boards had been expected to decrease, rather than increase as Vance's work suggests. Additionally, outside representation on boards of directors was expected to increase. Such theories will be tested in this research.

This study will contribute to the existing body of knowledge because it will confirm or disprove theories relating to how SOX would impact the structure and composition of boards of directors. Furthermore, this research will apply such theories to a very specific set of companies--those included in the Dow Jones Industrial Average as of May 16, 2008. This will expand the existing literature by providing empirical evidence of how the largest companies may be impacted by regulation such as Sarbanes-Oxley.

### Research Questions and Hypotheses

Five key questions-- of structure and composition--become evident in addressing the afore-mentioned problem statement. These questions are noted as follows:



1. Has the structure of boards at companies included in the DJIA changed in terms of CEO duality since the SOX legislation?
2. Has the structure of boards at DJIA companies changed in terms of size since SOX?
3. In terms of structure, do boards of directors at DJIA companies have the same number and type of committees as before SOX?
4. From the perspective of composition, has the ratio of inside and outside directors changed on boards of directors at companies included in the DJIA since the Sarbanes-Oxley Act?
5. Has the composition of boards of directors at DJIA companies changed in terms of demographics such as gender, age, race, and functional experience since SOX enactment?

The above research questions result in the following five non-directional

hypotheses:

H<sub>1</sub>: The structure of boards of directors in DJIA component companies have not changed, in terms of CEO duality, since the enactment of SOX.

H<sub>2</sub>: The structure of boards of directors at corporations included in the DJIA is the same, in terms of size, as before the SOX legislation.

H<sub>3</sub>: The structure of boards of directors at DJIA component companies has remained the same in terms of the number and type of committees since SOX.

H<sub>4</sub>: The composition of boards at companies listed in the DJIA is the same in terms of the ratio of inside and outside directors since SOX enactment.

H<sub>5</sub>: The composition of boards of directors at DJIA firms is no more diverse in terms of gender, age, race, and functional experience than before SOX enactment.

### Significance of the Study

The structure and composition of boards of directors in U.S. companies has long been a subject of study. Zahra and Pearce (1989) observe that research on board

composition accounts for the majority of research on boards of directors, mainly in pursuit of evaluating board performance (Daily & Dalton, 1992, 1993; Dalton, Daily, Ellstrand, & Johnson, 1998; Kang & Zardkoohi, 2005; Rhoades, Rechner, & Sundaramurthy, 2000; Wolf, 2007). This study updates and expands the research of many of these scholars and focuses on Dow Jones component companies.

Elements of this study have been conducted in different countries: Van der Walt, Ingley, Shergill, and Townsend (2006) examined board configuration in New Zealand, Truong (2006) studied board composition in Australia, Abdullah (2006) researched board structure in distressed Malaysian firms, and Rose (2006) researched composition in Danish enterprises. Voordeckers, Van Gils, and Van den Heuvel (2007) investigated board composition in small and medium sized family-controlled, privately-held Belgium firms and Brammer, Millington, and Pavelin (2007) study gender and ethnic diversity in United Kingdom (UK) companies. This investigation will include the board characteristics of those studies, but limit the focus to U.S. companies that are components of the DJIA.

The Branson (2007) study compares pre- and post- SOX proxy statements for the years of 2001 and 2005, but limits demography to gender diversity. In reviewing Branson's work, Broome (2008) notes that 2005 may not have been enough time for the changes to manifest. This research significantly broadens the board attributes studied and allows for three more years. Branson (2007) recognizes a gap in the literature as it relates to board demography and reveals that women directors were previously largely recruited from non-corporate positions; however, the statistics were beginning to change by 2005. This study will update Branson's research to determine if that trend continues. This

examination will fill the gap by redefining the term *functional experience*. This investigation may also reveal if a higher proportion of directors are still at the top of the organizational hierarchy and if a greater percentage are from outside of the corporate environment since the enactment of SOX.

This research is important because, in general, it will demonstrate the ways regulation has the potential to fundamentally change how Dow Jones corporations govern themselves. In particular, this investigation will contribute to the extant knowledge by providing evidence of the structural and compositional impact SOX has had on boards of directors at the 30 companies listed on the Dow Jones Industrial Index. It will contribute to the existing knowledge and could provide important information to legislators considering future regulations.

### Definition of Terms

In conducting this research, certain operational definitions must be clarified. Such terms to be explained are corporate governance, pre- and post-SOX, differentiating the various characteristics in composition and structure, and dissecting the terms *insider*, *outsider*, and *independent*.

#### *Corporate Governance*

Corporate Governance has been described in many ways and Stimson (2005) rightly notes there is no “universal” (p. 25) definition. Although Blair (1995) espouses a broad definition of corporate governance, she also recognizes its narrow application to the “structure and functioning of boards of directors” (p. 3). In fact, Blair (1995) cites the board of directors as the “single most important corporate governance mechanism” (p.

77). Similarly, Fombrun (2006) states, “The primary corporate governance mechanism is the board of directors” (p. 267). Therefore, for the purposes of this study, corporate governance more narrowly refers to the board of directors.

#### *Pre- and Post-SOX*

This study is a comparative analysis of corporate governance, in which various aspects of boards of directors are examined both before and after passage of the Sarbanes-Oxley Act of 2002. For purposes of this study, pre-SOX is the proxy statement issued by the company in the year 2001 and post-SOX is the proxy statement issued in the year 2007. Exact dates are not given because each company studied has different fiscal years and issues proxy statements in conjunction with their annual report (determined by the fiscal year).

#### *Composition and Structure*

Composition and structure are heavily researched topics in corporate governance. However, the scholars studying these aspects of boards of directors often define these terms differently. Therefore, it is necessary to specify exactly how each term will be operationalized in this investigation. Pearce and Zahra (1992) discuss composition in terms of size and type, the latter of which indicates whether the board member is an insider or an outsider. The term insider in this study conforms with many aspects of the very narrow definition outlined by Rhoades et al. (2000) that includes employees, former employees of the firm, consultants, lawyers, and relatives. The only aspect of the Rhoades et al. (2000) definition not included herewith is the directors appointed during the current CEOs tenure. All other aspects of the Rhoades definition align with the definition of independence in Section 301 of the Sarbanes-Oxley Act; that is, the director

does not “accept any consulting, advisory, or other compensatory fee from the issuer” and cannot “be an affiliated person of the issuer or any subsidiary thereof” (2002).

In this investigation, composition does include type--insider and outsider--as defined by Pearce and Zahra (1992), but broadens the definition to include other aspects of board demography, such as experience levels, professional background, gender, race, and age as discussed by Westphal and Zajac (1995). Zahra and Pearce (1989) specifically identify “director’s experience” and “functional background” as components of board “characteristics” (p. 292). Westphal and Zajac (1995) considered the work of numerous scholars in developing three core areas of functional expertise: output, throughput, and peripheral functions. In this research, functional expertise considers the director’s position and type of organization: Corporate, Non-Profit, Government/Military, Entrepreneurial/Entertainment, Academic, or Law. Because of increased personal liability and workload, potential candidates are declining more offers to board directorships since SOX (Kostal, 2006). This researcher’s revised definition of functional expertise may help provide more precise evidence of changes in director experience levels and type.

Board size is a component of structure in this research, rather than Pearce and Zahra’s composition. Daily and Dalton (1993) discuss board structure in terms of composition and size. Jones (1986) defines structure as “board size, proportion of outside directors, number of attorneys, and existence of an audit committee” ( pp. 349 – 350). Yet, structure in this investigation excludes composition, but includes the size as well as the number and type of committees (Zahra, 1989) and whether the chief executive officer and the board chair are separate.

### *Insider, Outsider, and Independent*

In considering the inconclusive evidence on the impact of inside or outside dominated boards on performance, one must recognize the varying operational definitions incorporated into these studies. Daily and Dalton (1994) recognize the disparity in approach to investigating the insider/outsider phenomenon. Terms such as insider, outsider, and independent fill the scholarly and practitioner literature. Insider clearly references a member of the company's executive management who serves on its board of directors. Pfeffer (1972) expands the definition of insiders to be "directors that are either current members of management or retired or former managers of for the same organization" (p. 224). Bhagat and Black (1999) and Kesner (1988) define insiders similarly.

Kesner et. al. (1986) and Hamilton (2000) both define outsiders as directors who are not members of the company's management. But Hambrick and Jackson (2000) go further by stating independent, outside directors are not part of law or consulting firms or commercial banks. Lee and Carlson (2007) utilize a very strict definition of director independence adopted from the Investor Responsibility Research Center that also excludes interlocking directorships and directors whose employer receives charitable donation from the company. Another stringent definition is that independent directors were appointed prior to the current CEO's tenure and, therefore, are in no way indebted to that CEO (Daily & Dalton, 1994).

Much of the debate equates an outsider with independence, using the terms interchangeably. Over the years, this has not been the case with board members who were

not company employees but were consultants or had some other arrangement with the company. Such situations can compromise the independent thinking of a board member.

The Sarbanes-Oxley Act defines director independence in section 301 as a combination of some of the foregoing. Section 301 notes that directors must be independent, other than the relationship of being a director. Consulting or advisory roles are explicitly prohibited. This research uses the term outsider as SOX uses the term independent.

### Assumptions and Limitations

Research of this magnitude is often based upon certain belief and understandings that inform the research. This study includes such as assumptions. Because research could be a never-ending process, narrowing the scope was necessary. As a result, certain limitations must be noted. The assumptions and limitation of this research follow.

### *Governance Focus and Type of Company*

The scholarly discourse on corporate governance has been global. Official reports of governance practices from Canada, the UK, South Africa, Australia, France, Belgium, and Italy have all influenced the debate (Branson, 2007; du Plessis, 2005). Fombrun (2006) lists 26 national corporate governance codes from 23 countries, the first of which were published by Ireland and Mexico in 1999. Branson (2007) cites Korea as being the first country to enact a law, in 2000, regarding corporate governance in publicly traded companies. Although, historically, there are distinctly different models of governance around the world, there is recent evidence of convergence of best practices (Branson,

2007; Davis, 2001). Despite this trend, the discussion of corporate governance in this text shall refer only to its practice in the United States (U.S.).

While many private companies, governmental agencies, and not-for-profit organizations, and institutions of higher learning have voluntarily complied with various aspects of the Law (Brountas, 2004; Eaton, 2007; Reed, 2005; Sinnett, 2003), this study investigation limits the population companies that are included in the DJIA. Therefore, this study does not consider private companies, nonprofit organizations or governmental agencies.

#### *Stock Index*

This research is limited to the 30 companies included in the Dow Jones Industrial Average (DJIA) as of May 16, 2008. These companies represent the largest companies publicly traded in the U.S. in terms of stock market capitalization and represent various industries. Because of the specific nature of the DJIA, the potential to generalize beyond largely capitalized stocks is limited.

#### *Other Contributing Factors*

The business environment at the time of the massive corporate failures was such that other organizations – specifically the stock exchanges and the SEC - changed rules in anticipation of, or possibly to thwart, legislation. Companies being studied trade in the open market and consideration must be made regarding the requirements of the listing exchanges, to which these companies must belong. The stock or listing exchanges are also referred to as Self-Regulating Organizations (SROs). Although SOX was enacted with great speed, the SROs were able to implement changes quicker. Although some SOX requirements are more extreme than either the listing exchanges or state law



(Brown, 2006), some SRO rules are more restrictive than the Law. Since publicly traded companies must abide by SOX regulation and SRO rules that are often similar in nature, it would be futile to attempt to isolate which exactly caused such changes. Yet, it is necessary to control for these other contributing factors that may affect the board's structure or composition.

It is important to understand, though, that legislation such as SOX merely outline the requirement and are not prescriptive in nature. The Law does not include guidelines on how to best comply. Many companies looked to SROs and other policy setting organizations for guidance on implementing the Law's mandates. The SEC and the SOX-created Public Company Accounting Oversight Board are partial enforcers of the Act's provisions.

Klein (2003) acknowledges the impact of SROs, in conjunction with SOX, on the composition of corporate boards. The New York Stock Exchange (NYSE) and the National Association of Securities Dealers Automatic Quotation System (NASDAQ)--both SROs--require independent directors to hold regular sessions without management (Nadler, 2006). Some require the nominating committee on boards to be fully independent (Branson, 2007; Hamilton, 2000; Kaiser, 2005). This has made boards less likely to be heavily influenced by a chief executive officer with concentrated powers. Louis & Jian (2006) discuss the combined impacts of SOX, the SEC, and SROs on audit committees. This means the effects of SRO changes will need to be controlled in investigating the ways in which SOX impacted corporate governance.

### *Time as a Research Factor*

Since the study incorporates time as a concept by comparing governance practices both before and after the enactment of SOX, companies included in the population must have been consistently publicly traded before 2002 and consistently thereafter until the post-SOX sample is pulled. This does limit the companies for inclusion in this investigation.

### Nature of the Study

This research incorporates a quantitative, non-experimental methodology in which secondary data is collected, analyzed, and described longitudinally using two data points: pre- and post-SOX. Furthermore, this study is explanatory and descriptive, as opposed to exploratory (Arbnor and Bjerke, 1997; Robson, 2006). Few governance studies are of an exploratory nature as is the Louis and Jian (2006) study. Cooper and Schindler (2006) would consider this research to be a “formal study” (p. 139) because research questions have been pre-determined and hypotheses developed. This examination is similar to the Hambrick and Jackson (2000), Branson (2007), and Wolf (2007) studies in that it includes descriptive elements and utilizes more than one date for data collection of the same companies.

### Organization of the Remainder of the Study

This investigation will continue with a Literature Review in chapter 2, where the extant literature that impacts this study is discussed. The Research Methodology of this study is explained in chapter 3. Chapter 4 outlines the Results of the empirical tests

performed with relevant data analysis. And chapter 5 is the Conclusion of the study, which includes how this research is accretive to the body of knowledge as well as areas in which the knowledge can be continued further.

## CHAPTER 2. LITERATURE REVIEW

To adequately respond to the research question regarding what ways corporate governance has changed since SOX in terms of structure and composition, one must understand four key issues: corporate governance overview, the characteristics of corporate governance prior to the Law, what the legislation itself requires as it relates to corporate governance, and some key perspectives regarding SOX.

### Corporate Governance Overview

As long as there have been companies, there has been corporate governance. And as long as proprietor-owners no longer run the company, corporate governance becomes more complex (Berle, 1933). What follows is a discussion of the definition of corporate governance, basic business theories as they relate to corporate governance, and contributors to governance theory.

### *Defining Corporate Governance*

Defining corporate governance has been a challenge. The Australian Securities Exchange (ASX) specifically states corporate governance is “the system by which companies are directed and managed” (2003, p. 3). du Plessis et al. (2005) regard this and other such definitions as too generic to be helpful. Blair (1995) describes corporate governance from a holistic perspective that includes a “whole set of legal, cultural, and institutional arrangements that determine what publicly traded corporations can do, who

controls them, how that control is exercised, and how the risks and returns from the activities they undertake are allocated” (1995, p. 3).

Stimson (2005), along with other scholars such as Thomas Clarke (1993), points to an internationally recognized understanding of corporate governance set forth by the Organization for Economic Co-operation and Development (OECD). The OECD broadly discusses corporate governance in terms of relationships involving “company’s management, its board, its shareholders and other stakeholders” (OECD, 2004, p. 11). The statement goes on to state corporate governance “provides the structure through which objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined” (2004, p. 11). In fact, in describing corporate governance, Branson (2007) analogizes governance as a solar system--with the board of directors as the sun.

The idea of corporations being overseen by a board of directors has its roots in colonial times as owners found managers for their enterprises (Lorsch, 1989). Legal scholars, in particular, refer to this as a fiduciary relationship (Berle, 1933; Nadler, 2006).

### *Business Theories*

There are several theories, originating from different disciplines, influencing the corporate governance debate. The most important include agency, organizational, resource, and stakeholder theories.

## *Agency Theory*

Before the U.S. industrial era of business, many company founders still managed their enterprises. But as time progressed, the companies grew in size and complexity; and ownership became more dispersed and professional managers began operating companies. Therefore, shareholder-owners delegate the management of their companies to agents or managers (Rhoades, 2000). This highly edited summary is widely known as *agency theory* (Berle, 1932), of which U.S. business and corporate governance knowledge is largely based. Agency theory is also commonly known as *stockholder theory*, paying homage to shareholder primacy (Dent, 2005; du Plessis, 2005; Lorsch, 1989) and the commonly held Western view of corporate purpose being to maximize shareholder value (Berle, 1932; Carter, 2003; Friedman, 1970; Zahra, 1989). Fombrun (2006) incorporates shareholder primacy in defining corporate governance as “the system of structural, procedural and cultural safeguards designed to ensure that a company is run in the best long-term interests of its shareholders” (2006, p. 267). And as such, Sarbanes-Oxley ultimately seeks to protect investors.

Agency theory--the separation of the ownership and control--invariably leads to the theory commonly referred to as *agency problem*, that being management’s propensity to subordinate the needs of shareholders in favor of their own self-interests. Clearly the authors of SOX recognized the agency problem extended to the board of directors as well by requiring director independence on a key committee.

In agency theory, the board of directors represents the owner-shareholders in overseeing company management. du Plessis et al. (2005) seem to agree, and after reviewing definitions from organizations around the world, part of their own definition of

corporate governance includes “the process of controlling management...” (2005, p. 6). Carter et al. (2003) assert the board of directors act to “resolve agency problems between managers and shareholders by setting compensation and replacing managers that do not create value for the shareholders” (2003, p. 37). Blair (1994) sees the board as the “first and most important line of defense against abuses” (p. 325).

Agency theorists reject CEO duality because of the inherent conflict of interest--the board represents the owner-shareholders of the company and are meant to monitor management (Daily, 1993). As chairman of the board, the CEO would not have sufficient objectivity to effectively self-evaluate. For these reasons, an argument can be made to separate the roles of CEO and chairperson of the board of directors. There is evidence dual roles may lead to management entrenchment and a greater likelihood of earnings manipulation (Chhaochharia & Grinstein, 2007; Finkelstein & D’Aveni, 1994)--a main focus of SOX legislation.

Although, separating the roles does not provide the ultimate guarantee. Davis and Useem (2001) discuss General Motors separating the roles after a loss in 1992. Over a decade and a half later, the company continues to struggle and lose ground. Also, Nortel had a separate, non-executive chairperson when an accounting crisis plagued the company and severely hampered its growth. Hewlett-Packard’s non-executive chairwoman became the focus of a criminal investigation (Jennings, 2006). Further evidence is provided by Nadler et al. (2006), who point out Enron had a separate CEO and chairperson up until almost the end. Of course, Enron had many other issues contributing to its demise.

There are other variations to CEO duality and the non-executive chairperson arrangement. One such alternative is to have a lead or presiding director provide leadership for the independent directors. Nadler et al. (2006) cites one commissioner on the National Association of Corporate Directors (NACD) Blue Ribbon Commission as warning against holding any one particular structure out as a model of corporate governance because each has its detractors and companies are very different. Others agree, noting size, complexity, needs, ability to comply with applicable regulations, and corporate culture should be considered (Australian Securities Exchange, 2003; Broutas, 2004; du Plessis et al., 2005; Patterson, 1998). This position is not new as Vance (1978) observed decades prior that "...neither is there an optimal formula" (p. 203).

#### *Organizational Theory*

Organization theories focus on "structure, leadership, and legitimacy" (Finkelstein & D'Aveni, 1994, p. 1080). Falling under organization theory could be the stakeholder theory--that organizations must balance the interests of shareholders with other stakeholders, such as employees, customers, and the communities in which they operate (Freeman, 1994). With that in mind, Blair (1994) favors corporations maximizing "the wealth creating potential of the corporation as a whole" (p. 275).

Another organizational theory is the resource dependence theory. For those subscribing to the resource perspective, individual board members are viewed as conduits with the environment to attract and extract resources for the company (Hillman & Dalziel, 2003; Westphal & Stern, 2007). This perspective largely originates from sociology and organizational theory and is echoed by Nadler et al. (2006). In fact, Westphal and Stern (2007) provide evidence that directors are rewarded with additional



directorships by exhibiting more resource providing behaviors and less monitoring behaviors. Finkelstein and D'Aveni (1994) argue in favor of CEO duality from the perspective of organization theories because such duality improves the command role and there is no confusion regarding final authority. Daily and Dalton (1994) cite Anderson and Anthony's 1986 work contending such a structure offers a "focal point for leadership" (p. 1604). According to Nadler et al. (2006), this argument was largely dismissed by the commissioners on the NACD Blue Ribbon commission.

### *Integrating the Perspectives for Corporate Governance*

Zahra and Pearce (1989) describe the boards in terms of various perspectives: legalistic, agency theory, resource dependence, and class hegemony. The legalistic perspective and agency theory are quite similar in that both assert the primary role of boards of directors is to protect the interests of the owner-shareholders. However, the legalistic perspective is rooted in corporate law, while agency theory has its basis in economics and finance theory.

The theoretical underpinnings of class hegemony begin with Marxist sociology and can be observed in the composition of the board. The role of the board, from such a perspective, is to exert the power and control over the institution. Zahra and Pearce (1989) do note empirical support for class hegemony is limited.

Vance's (1978) early work summarizes four categories of boards: constitutional, consultative, collegial, and communal. The constitutional board mainly fulfills the legal obligation of incorporations. The consultative board serves as advisors to the chief executive. The collegial board acts much in the same way as the consultative board, but each member has an equal vote in policy setting. Finally, Vance foresaw the communal

board as yet to come and describes it “as participatory, representative, public-member boards” (p. 207). He cites several European countries as examples and goes on to say central governments will take a more prominent role in defining public membership. SOX requirements for committee membership seems to fulfill that prophesy.

While Westphal and Stern (2007) acknowledge monitoring and control as a board function, they show evidence that such behaviors are less valued and result in fewer recommendations to join other boards. The scholars indicate the functions of providing information and advice to management are more preferred of board members.

In their influential book, Lorsch and MacIver (1989) detail how directors themselves are not certain about their goals and whose interests should be served. Of the directors interviewed, the authors identified three different philosophical viewpoints: the traditionalist, the rationalists, and the broad constructionists. The traditionalists firmly believe in shareholder primacy; at the other end of the spectrum are the broad constructionists, who subscribe to the stakeholder theory and believe in balancing the needs of a broad range of constituencies, including employees, customers, and the general community. Finally, the rationalists recognize the environmental complexities of contemporary businesses but rationalize that what is beneficial for shareholders will ultimately benefit other stakeholders as well. Regardless of the point of view, each recognized the legal responsibility to the shareholder. However, such uncertainties and ideological differences could impair the functioning of the board.

From a more utilitarian perspective, du Plessis et al. (2005) summarize the function of the board as being to “direct, govern, guide, monitor, oversee, supervise and comply” (2005, p. 60). Similarly, Lorsch and MacIver (1989) identify three major duties:

“selecting, assessing, rewarding, and, if necessary, replacing the CEO; determining strategic direction; and assuring ethical and legal conduct” (p. 63). Of increasing importance is strategic and succession planning and dealing with corporate crises (Lorsch & MacIver, 1989; Nadler et al., 2006).

Those in favor of splitting the roles discuss managerial hegemony (Dent, 2005; Westphal, 1995) that may inhibit board independence while increasing CEO power. A similar argument is raised in the Finkelstein and D'Aveni (1994) discussion of “management entrenchment” (p. 66). Agency theory, however, focuses on the monitoring function because the main goal of boards is to represent the interests of owners.

#### *Contributors to Corporate Governance Theory and Practice*

Corporate governance is informed through scholars, consultants who act as practitioners, and professional organizations or special interest groups from the legal, sociological, and business fields. Just a few of the organizations are the National Association of Corporate Directors, The Conference Board, Catalyst, The American Law Institute, and The Business Roundtable. Much of the statistics are accumulated by consultants and utilized by scholars to inform their work. Academicians often cite statistics from top tier consulting firms, such as Korn/Ferry, Heidrick and Struggles, McKinsey and Company, and Spencer Stuart in their own work.

Organizations such as the National Association of Corporate Directors have impacted general practice through well-studied recommendations such as directors being remunerated mostly in stock rather than cash (Hamilton, 2000). One such recommendation is based on research supporting boards being owners of the enterprise

(Hambrick, 2000), to better align director and shareholder interests (Westphal, 1995). This demonstrates the inter-play of knowledge within these circles.

Ratings systems have become more prevalent since SOX. These include the pension fund CalPERS report card (Patterson, 1998), TIAA/CREF, and the New York State Retirement Fund (Hamilton, 2000). These retirement investment vehicles are too heavily vested in companies to exercise the Berle and Means *Wall Street Rule* by simply selling their holdings (Hamilton, 2000). Fombrun (2006) notes the organizations that provide the most respected ratings are Governance Metrics International (GMI), the Institutional Shareholder Services' (ISS) Corporate Governance Quotient (CGQ), and The Corporate Library. Gompers, Ishii, and Metrick (2003) construct a governance index to rate shareholder versus management power in large companies and find corporations with stronger shareholder rights outperform in various monetary metrics. Even the popular business magazine *BusinessWeek* started evaluating companies with good and bad governance (Byrne, 1997). In discussing those ratings, Hamilton (2000) evaluates the list as a "list of fairly mechanical tests based on generally accepted 'good governance' standards" (pp. 370-371). He continues by noting that some companies listed as having the worst governance outperformed in the econometric sense. Clarke (1998) acknowledged the increase in attention to corporate governance and noted that the theory in the field was not integrated. Branson (2007) agrees by discussing that corporate governance, and particularly the subject of diversity on boards, comes from the field of law, management science, and behavioral psychology.

## Board Characteristics

The attributes that have come to define boards have mainly been its structure and composition. A detailed discussion of each follows.

### *Board Structure*

The question of board structure, in this study, encompasses three important areas, that of CEO duality, the size of the total board of directors, and the number and type of committees.

#### *CEO Duality (Board Leadership Structure)*

Most large corporations around the globe have roles for both a chief executive officer (CEO) and a chairperson of the board of directors. Separating the roles has been the tradition in Europe, Canada, and Japan (Cadbury, 2002; Kang & Zardkoohi, 2005; Nadler et al., 2006). However, the U.S. has a longstanding tradition of the CEO also being the chairperson of the board of directors. This is often referred to in the scholarly literature as *CEO duality* (Abdullah, 2006; Blair, 1995; Finkelstein & D'Aveni, 1994; Kang & Zardkoohi, 2005; Rechner & Dalton, 1989). This same phenomenon is also referred to as *board leadership structure* (Daily and Dalton, 1997a; 1997b; Dalton, Daily, Ellstrand, & Johnson, 1998; Kang & Zardkoohi, 2005). Regardless of the sample population, the governance community agrees about 80% of large U.S. firms utilize conjoined roles (Abdullah, 2006; Blair, 1995; Kang & Zardkoohi, 2005; Lorsch & MacIver, 1989).

Arguments have been made both in favor of (Cadbury, 2002; Lorsch & MacIver, 1989) and against (Daily & Dalton, 1997a; Nuzzo, 1995) separating the roles. Of the scholars advocating split roles, Finkelstein & D'Aveni (1994) and Lorsch and MacIver (1989) recognize the key role of the board is to monitor and duality can hamper such efforts. Cadbury (2002), the former chairman of Cadbury Schweppes, discusses how the roles of chairperson and CEO are distinctly different and require different skills. About one-third of the executives who were commissioners on the NACD Blue Ribbon Commission concur (Nadler et al., 2006). The CEO is concerned with corporate affairs while the chairperson of the board has a critical purpose of monitoring company management (Daily & Dalton, 1997a). Studies have shown that companies whose CEO and chairperson are separate are less likely to adopt poison pill strategies as an anti-takeover defense (Daily & Dalton, 1994). Daily and Dalton (1994) also found bankrupt firms were more likely to have a leader serving in both roles.

Scholarly literature provides little empirical evidence of improved financial performance of either structure (Abdullah, 2006; Dalton et al., 1998; Kang & Zardkoohi, 2005). Daily and Dalton (1997a) contend role separation should be done as a matter of circumstance, not of policy. However, boards have been reluctant to remove the chairmanship of a current CEO who holds both, but are open to changing the role during a transitional phase (Nadler et al., 2006). Furthermore, Nadler et al. (2006) state boards are more likely to add a lead director rather than separate the roles. Nuzzo (1995) presents three options for separating the roles, where the chairperson could act as the manager of the board, an internal consultant, or an alternative power. While Nuzzo (1995) recognizes separating the roles increases monitoring, he claims the costs--

economic and otherwise--do not outweigh the benefits. Sarbanes-Oxley, however, is meant to facilitate the board's increased monitoring of management.

The scholarly literature sets forth a differing protocol for coding CEO duality or board leadership. Truong (2006) used the explanatory variable BLEADER to code CEO duality: 0 for CEOs holding multiple titles and 1 otherwise. Westphal and Zajac (1995), however, code this same characteristic the exact opposite.

### *Board Size*

Another aspect of board structure involves the number of directors serving on the board – or its size. Reviewing governance trends in the later half of the twentieth century, Hamilton (2000) notes boards of directors were often composed of 10 to 20 members. For decades, boards of for-profit corporations were large and consisted of as many as 20 or more directors (Branson, 2007). According to a Heidrick & Struggles' report *The Changing Board*, cited by Pearce and Zahra (1992), boards ranged in size from 6.2 to 14.62 members from the years 1979 through 1986. Using 1983 data, Kesner (1988) found boards at Fortune 500 companies to average about 13 members. Based on 1999 data, Carter et al. (2003) state the average board is comprised of 11 members. Among Fortune 1000 boards, Davis & Useem (2001) cite the size as ranging from 4 to 35 directors, with an average of 11 members. Rose (2006) cites Monks and Minow's 2003 work with an average size of 12. More recently, the average size of boards in the 2006 - 2007 report was 10.4 members (Heidrick & Struggles, 2006 – 2007).

Branson (2007) cited a similar trend by looking at boards in aggregate; in 2001, there were a total of 5,821 total directors at *Fortune* 500 boards. However, by 2005, total directors had declined to 5,161 (Branson). No matter how the data is viewed, it appears

the trend is toward smaller boards (Davis & Useem, 2001; *Spencer Stuart Board Index*, 2002). While Branson studied boards in aggregate, Jones (1986) categorized boards as small: 12 or less directors, medium: between 12 and 17, and large: 17 or more. Truong (2006) researched board size (BSIZE) as a natural log of the total number of directors.

### *Board Committees*

Committees provide the critical infrastructure boards of directors need to satisfy their purpose. The use of committees has increased over the years. In the early 1970s, one or two standing committees was standard; but a decade later, boards at Fortune 1,000 company had an average of 4.3 committees (Kesner, 1986). According to Lorsch and MacIver (1989), 75% of industrial company boards had 3 to 5 committees by 1989. Some of the various committees existing on boards include executive, compensation, audit, nominating, public affairs, strategic planning, finance, social responsibility, investment, corporate ethics, environmental, technology, and corporate governance committees (Bilimoria & Piderit, 1994; Blair, 1995; Bostrom, 2003; Davidson, Pilger, Szakmary, 2004; Hamilton, 2000). Melendy (2005) discussed the increased use of compliance committees after SOX enactment. For more than a decade, the SEC has required the disclosure of the existence of compensation, audit, and nominating committees.

It is generally understood that the work of the board gets done in the committees (Brountas, 2004; Kesner et al., 1986; Lorsch & MacIver, 1989). While companies are free to have as many committees as they deem necessary, the three main committees are the audit, nominating, and compensation committees (Branson, 2007, Kesner et al., 1986; Lorsch & MacIver, 1989). In fact, Bhagat and Black (1999) refer to these three committees as the “monitoring committees” (p. 237), the main goal being to monitor



management and protect shareholder investment (Harrison, 1987). For this reason, the executive and nominating committees are considered the most influential and powerful.

Peterson and Philpot (2007) cite scholars such as Braiotta and Sommer (1987) and Bilimoria and Piderit (1994) in investigating six categories of committees: executive, audit, compensation, nominating, finance, and public affairs. Peterson and Philpot and Branson (2007) include governance in the nominating category and it will be the same in this research, unless a company has both noted as separate committees. A discussion of the various committees follows.

*Executive committee.* Most states authorize executive committees in the corporate law. This committee is powerful because it can exercise the power of the full board between meetings on many issues (Branson, 2007). Bilimoria & Piderit (1994) blend the topics of gender composition and committee membership by observing that females are relegated to certain types of committees while males more often serve on the more strategic and powerful committees.

*Audit committee.* The use of audit committees has been widespread since the mid-1980s (Branson, 2007). Audit committees have been required by the NYSE since 1978 (Blair, 1995; Davidson et al., 2004), but now SOX requires regulated companies to have an audit committee. Having an audit committee comprised 100% of independent directors was once recommended as a best practice, but is now an integral part of the SOX mandates. Independence, as defined by the Law, is an individual who is not an employee of the company and does not receive any remuneration from the company other than director compensation.

The purpose of the audit committee is to ensure the independence and performance of the external auditors, oversee the work of the internal auditors, and review the financial statements. Audit committees are considered to have important, positive benefits for companies. Results from the Jones (1986) study point to fewer incidences of litigation for companies that have audit committees. And Beasley, Carcello, Hermanson, & Lapides (2000) found that companies in three volatile industries experiencing instances of financial statement fraud had fewer audit committees, less independent audit committees, or fewer audit committee meetings.

As one of the monitoring committees, perhaps this is why Sarbanes-Oxley focuses on the committee level, particularly the audit committee, in deterring financial statement fraud. SOX requires at least one audit committee member be a “financial expert”, while the remaining committee members must have an understanding of financial statements. It is clear, in SOX section 301, the audit committee is meant to be the last line of defense in preventing financial statement fraud. A 2004 KPMG survey of audit committee members indicates they believe audit committees can, indeed, impact the quality of financial statements (Harrast & Mason-Olsen, 2007).

*Nominating committee.* Sometimes referred to as the *governance committee*, the nominating committee deals with ensuring boards were independent by managing the recruitment process (Branson, 2007). This means the committee is involved with identifying qualified candidates to nominate to the board. In 2003, the NYSE proposed and ultimately implemented policies for governance committees (Bostrom, 2003). The NYSE and NASDAQ both have rules on the independence level of members who can

vote on such provisions (Brountas, 2004). According to Nadler et al. (2006), now independent directors control a more disciplined approach to the nominating process.

*Compensation committee.* The SEC has required compensation committees since 1992. The compensation committee primarily concerns itself with the compensation package of the executive officers (Branson, 2007), directors, and employees. This committee is required by the SEC and NYSE and must be independent.

*Finance committee.* The corporation's financial performance is guided and monitored by the finance committee (Bilimoria, 1994). Harrison (1987) refers to the finance committee as a "management support" (p. 109) committee, as opposed to a monitoring committee.

*Public affairs committee.* Sometimes called Public Policy or Corporate Responsibility committees, the committee has purview over the company's programs involving community involvement, social and ethical concerns, and regulations relating to environment, product safety, and equal opportunity (Luoma & Goodstein, 1999; Peterson & Philpot, 2006).

### *Board Composition*

Before SOX, the nominating process was "informal" (Nadler et al., 2006, p. 27), with the CEO having considerable influence in stocking the board with personal and professional friends (Lorsch & MacIver, 1989; Monks & Minow, 1991; Nadler et al., 2006; Pfeffer, 1972). Having a well rounded board meant including "a sprinkling of bankers, lawyers, academics, community leaders, and retired politicians" (Nadler et al., 2006). Nominating committees have made the process more formal and deliberate. This

could be an indicator that the makeup of the board is changing. But many directors serve on more than one board and often serve with other directors on multiple boards. This is often referred to in the scholarly literature as *board interlocks* (Bhagat & Black, 1999; Pfeffer, 1972). Westphal and Stern (2007) investigate how directors use ingratiation tactics to acquire additional board appointments, thus broadening their influence and validating their position among the corporate elite. In this research, board composition includes tests of inside and outside directors as well as the many facets of board demographics, to include gender, age, race, and functional experience.

#### *Inside and Outside Directors*

The composition of boards involves board independence, often expressed in terms of the ratio of inside and outside directors. In fact, this aspect of composition is most commonly studied (Carter, 2003). Scholars often theorize that greater outside representation on boards of directors provides greater benefits to shareholders (Carter et al., 2003; Daily & Dalton, 1993). Yet du Plessis, McConvill, & Bagaric (2005) offer a multitude of studies that empirically do not support this position, many based on studies by Bhagat and Black (1999, 2002). In fact, Bhagat and Black (1999) cite companies such as American Express, Chrysler, General Motors, IBM, Kodak, Sears, and Westinghouse as dismal performers with outsider dominated boards. Despite the contradictory empirical evidence, Blair (1995) notes adding more outside directors to the board has been a prominent goal since the 1970s in response to scandal and litigation.

In the 1950s and 1960s, boards of directors in the U.S. were mostly comprised of inside directors (Bhagat & Black, 2002; Branson, 2007; Hamilton, 2000). External forces started to cite outsider dominated boards as being best practice. The American Law

Institute's recommendation that boards be outsider-dominated, initially proposed in the early 1980s, was very controversial at the time (Branson, 2007). And, in the late 1980s, the NYSE and the American Stock Exchange implemented policies requiring listed companies to have a minimum of two outside board members (Kesner et al., 1986). Citing Murray L. Weidenbaum's 1985 report, Lorsch & MacIver (1989) state 50% of U.S. companies in 1938 had outsider dominated boards and that rate increased to 83% by 1979. Using a sample of Fortune 500 companies, Kesner et al. (1988) notes 63% of directorships were held by outsiders in 1983. And Pearce & Zahra (1992) cite a Heidrick & Struggles' report *The Changing Board* in noting that outside membership ranged from 0.4 to 0.67 from the years 1979 through 1986. While the ratios from both the Weidenbaum and the Heidrick and Struggles sources do not coincide for the year 1979, likely due to different samples, the trend suggests boards are composed more of outside directors. Based on 1999 data, Carter et al. (2003) report outsiders were 0.75. More recently, the same 0.75 held true in a 2006 - 2007 report (Heidrick & Struggles, 2006 – 2007). The foregoing all demonstrates the trend toward more outsiders on boards of directors.

Scholarly discourse exists both in favor (Beasley et al., 2000; Davidson et al., 2004; Jones, 1986) and against boards with a high representation of outside board members (Daily & Dalton, 1993 cited Kesner, 1986; Pfeffer, 1972; Schellendger, Wood, and Tashakori, 1989; Vance, 1964). Numerous empirical investigations document situations where outsiders offer better protections for shareholder interests. Such conditions are during transitional phases, such as CEO turnover due to result of poor performance and mergers and acquisitions (Davidson et al., 2004; Hamilton, 2000).

Conversely, Hermalin and Weisbach (1988) discuss the proportion of inside directors may be higher during other types of CEO turnover for the sake of consistency.

Having a majority of outside directors is thought to combat management entrenchment (Finkelstein & D'Aveni, 1994; Westphal & Zajac, 1995). Jones (1986) found outside dominated boards had lower incidences of shareholder lawsuits, while the Daily and Dalton (1994) research indicates bankrupt firms have more affiliated directors. And there is evidence that boards dominated by outside directors have a much lower incidence of fraud (Beasley et al., 2000; Hamilton, 2000)--a main goal of Sarbanes-Oxley.

The caveat, according to Hamilton (2000) citing Bhagat and Black, is outsider dominated boards do not necessarily lead to superior financial reporting. The scholars who see no evidence of the benefit of independent boards base such positions on performance evaluations (Daily & Dalton, 1993; Pfeffer, 1972; Schellenger, Wood, & Tashakori, 1989; Vance, 1955; 1964). Vance's (1978) seminal studies in 1955 and 1964 both provided evidence that insider controlled boards were superior in simplistic growth and productivity norms. However, in his 1978 study, Vance makes the point that the nature of business was changing. He discussed that companies in the earlier studies had owners still involved in the business. But as boards became less proprietor-driven and more complex, the model for governance changed as well. Decades later, in their renowned study, Bhagat and Black (1999) conclude increasing outsiders on the board does not improve financial or stock performance. The Law, however, is not concerned with company performance, but with preventing future massive business failures,

particularly those resulting from fraud. And the lawmakers drafting SOX were very specific in defining an independent director, to the exclusion of affiliated persons.

A main goal of the Act is to prevent future business failures, such as the bankruptcies of Enron and WorldCom, that result in liquidation or severe investor losses. Daily and Dalton's (1994) research matching bankrupt and surviving firms showed evidence that boards with many affiliated directors often had the same person serving as the chairperson and CEO. However, researchers have not found a significant difference in board composition between firms that failed and those that did not (Bhagat & Black, 1999; Hamilton, 2000). The Law mandates audit committees must be fully composed of outside directors. To comply with SOX, companies may have increased total outside representation on its boards as a result.

As a practical matter for research, often variables are coded dichotomously for inside and outside directors. However, Hermalin & Weisbach (1988), Bhagat & Black (2002), and Davidson et al. (2004) use trichotomous variables by recognizing some board members are "affiliated" (Hermalin & Weisbach, 1988, p. 239).

### *Board Demography*

Another aspect of board composition involves its demography. Khurana (2002) recognizes the homogeneity that has become a hallmark of corporate boards in general. Boards have largely been viewed as bastions for the elite, Caucasian male. Westphal and Zajac (1995) study how powerful CEOs influence boards to be demographically similar. This homogeneity of board members may lead to *groupthink*: a phenomenon that similar people together will cede to the consensus in order to be a part of the group (Branson, 2007; Khurana, 2002; Ramirez, 2003). Such a phenomenon can be dangerous and has

been attributed to political and business failures (Branson, 2007). While expanding diversity on a board is thought to reduce the likelihood of groupthink, it provides no guarantee, as Enron's board of directors was racially diverse (Branson, 2007). The composition of the board of directors can be expressed in a number of demographic dimensions, including gender, race, age, and functional experience.

*Gender.* Boards of directors have historically been populated by males and have been referred to as “gentlemen’s clubs” (Khurana, 2002, p. 85) and “old boys’ clubs” (Bilimoria, 1994, p. 1457). Using 1983 data, Kesner (1988) calculated female directorship at 3.6%. Some predicted a byproduct of making boards more independent would be an increase in female directors. Yet recent data acknowledge boards are still overwhelmingly dominated by males (Branson, 2007; Broome, 2008). Strauss (2002) cites the most optimistic statistic of women holding 1,584 of 11,500 Fortune 1,000 board seats at roughly 14%. Yet, neither the year nor the methodology is noted for this data. More specifically, Branson (2007) discusses that 480 women held 678 of the total 5,821 seats on the boards of *Fortune* 500 companies in 2001. By 2005, the number of women directors had increased to 568 of the total 5,161 Fortune 500 board seats (Branson, 2007). With this data, females represented 8.3% and 11% of total directorships in 2001 and 2005 respectively. Branson (2007) asserts these are particularly dismal statistics, considering many of these companies deal with consumer goods, of which women are significant patrons. Yet the *SpencerStuart Board Index* (2002) indicate women board members may actually be on the decline. Branson (2007) cites 14.4% and 12.3% of *Fortune* 500 boards have no female representation in 2001 and 2005 respectively.



Harrigan (1981) found more women served on boards of smaller firms. However, using 1999 data, Carter et al. (2003) found boards with more than two female directors were larger in terms of total assets. Branson (2007) accuses boards with only one or two females of tokenism. Of the women that serve as directors, Kesner (1988) notes their experience is more likely to be in academe, law, or the not-for-profit sector as opposed to business. Peterson and Philpot (2007) delve into the roles females take in serving on boards of directors at *Fortune* 500 companies.

Bilimoria and Piderit (1994) coded the gender of the director as 0, representing females, and 1, representing males. The Peterson and Philpot (2007) research updated that of Bilimoria and Piderit (1994), yet used the exact opposite coding. Kesner (1988) also used a binary coding scheme but did not disclose which.

*Age.* Lorsch and MacIver (1989) cite Heidrick and Struggles data in stating two-thirds of directors are older than 55 years. Both Kesner (1988), using 1983 data, and Carter et al. (2003), using 1999 data, calculate the mean age of boards at 59 years. Khurana (2002) notes board members are generally in their 50s and 60s. This indicates the age ranges are relatively tight and had not changed significantly in recent years. According to the 2002 SpencerStuart Board Index, the average age of S&P 500 directors boards is declining (2002). Rose (2006) and Truong (2006) also analyze age in terms of board averages.

*Race.* Boards of directors have historically been Caucasian (Lorsch, 1989; Khurana, 2002). Carter et al. (2003) define diversity in terms of percentage of African Americans, Asians, and Hispanics on the board. According to these scholars, an average of 0.7 directors belonged to a racial minority in 1999. Not noting the date, Strauss (2002)

cites African-Americans held 388 and Hispanics held 86 of the approximate 11,500 directorships in *Fortune* 1000 companies. Deducting out the collective 76 directorships held by nine prominent African-Americans and Hispanics, racial diversity in boardrooms was 3.4%. As with women, companies with two or more minority directors tend to be larger.

Brammer et al. (2007) note that race identification in the scholarly literature has mostly been done by survey self-identification that has led to non-response bias. To reduce this bias, the authors chose to use a visual photographic review of either proxy information or internet search to determine race. Because of the dominance of Caucasians on boards of directors (Branson, 2007; Ramirez, 2003; Westphal & Stern, 2007; Westphal & Zajac, 1995), Brammer et al. (2007) coded race as a binary variable - Caucasian or non-Caucasian.

*Functional experience.* There are two components of functional experience considered in this research: the level of experience and the type of organization. Most board members are, or have been, executives in organizations (Khurana, 2002). Kesner (1988) finds business executives held 65% of board positions in her study of 1983 proxy data. Fellow CEOs have “always been the single largest source of corporate directors” (Branson, 2007, p. 134). But based on their study of S&P 500 companies, Neff and Heidrick (2006) note CEOs are serving on fewer outside boards since 1998. Using *Fortune* 1,000 and *Fortune* 500 companies respectively, Lorsch and MacIver (1989) and Branson (2007) observe the same phenomenon. If fewer CEOs and lawyers are serving on boards, the percentage of directors with executive experience may change.

Kesner (1988) also finds mostly attorneys, consultants and educators fill the other 35% of board positions. In her research, Kesner classified board members into two broad categories: either business or non-business professionals. Westphal and Zajac (1995) were more specific by dividing functional backgrounds into three core areas: “output functions, which include marketing and sales; throughput functions, which include operations, R&D, and engineering; and peripheral functions, primarily law, finance, and accounting” (p. 69). Rose (2006) separates lawyers into a single category, while Bilimoria and Piderit (1994) include lawyers with the business function area. These differences in approach are clarified in this research and will bring greater clarity to what functions are being recruited to boards since SOX.

The scholarly literature suggests options for coding functional experience. Bilimoria and Piderit (1994) used dichotomous coding, with 1 representing business occupations having a corporation, financial institution, or law firm as the employer. Zero, in the Bilimoria and Piderit (1994) study, represented all others non business occupations. Westphal and Zajac (1995) used trichotomous coding of functional experiences as: 1 for directors with primary experience in operations, engineering, or research and development, 2 for directors with experience in marketing or sales, and 0 for directors with chief experience in support functions.

#### *Boards and Performance*

Branson (2007) cites that management science has previously investigated the subject of boards of directors from the perspective of the “bottom line” (p. 132). This study decidedly does not use such a lens. The study is unique in that it studies differences in board structure and composition of the very large companies included in the Dow

Jones Industrial Index since SOX enactment. Much of the existing literature involves only one characteristic or attribute of boards of directors in an effort to evaluate either board or company performance (Carter, Simkins, & Simpson, 2003; Daily & Dalton, 1992, 1993, 1994, 1998; Dalton, Daily, Ellstrand, & Johnson, 1998; Hambrick & Jackson, 2000; Jones, 1986; Kang & Zardkoohi, 2005; Rhoades, Rechner, & Sundaramurthy, 2000; Vance, 1978; Zahra & Pearce, 1989). Examples include Kang and Zardkoohi's (2005) investigation of CEO duality and Carter et al.'s (2003) examination of board diversity. In the year 2000, two sets of scholars - Hambrick and Jackson as well as Rhoades, Rechner, and Sundaramurthy - studied the impact of outside directors on shareholder returns and organizational performance respectively.

Relating board characteristics to performance is common. Zahra and Pearce (1989) note three typologies for evaluating performance: financial, systemic, and social. Financial performance metrics have included return on assets, return on equity, dividend per share, Tobin's Q, price-to-earnings ratio, and total return to investors (Bhagat & Black, 1999, 2002; Carter et al., 2003; Daily & Dalton, 1993; Hermalin & Weisbach, 2000; Vance, 1978). Assessing performance based on systemic performance generally considers the firm's survival, particularly bankruptcy (Daily & Dalton, 1994). Finally, social evaluations are tied to society's expectations for the corporation (Zahra & Pearce, 1989).

In discussing performance, Hambrick and Jackson (2000) found no significant differences in board characteristics, such as age, size, CEO duality, or outsider ratio between companies that outperformed or underperformed their peers. This, they assert, suggests such characteristics are not "central determinants of performance" (p. 114). A

common method of evaluating performance is profitability. Hamilton (2000) notes corporate governance characteristics are weak variables because profitability is impacted by broader issues, such as the company's economic conditions, its standing in the industry, the industry itself, and the company's competitive position. He goes further to state it is often difficult to determine if the governance measure is an independent or dependent variable. Hermalin and Weisbach (2000) concur that board composition is not a cross-section of performance. Therefore, these scholars would likely consider attempting to assess performance attributable to basic characteristics as futile. Although utilizing board attributes as a function of company performance persists, Hamilton's point may explain why the literature is so inconclusive. For this reason, relating board characteristics to company performance is not part of this investigation.

### Index of Large Corporations

In their study of structure and performance in small firms, Daily and Dalton (1993) cite a common criticism of corporate governance research, as of that time, as being exclusive to large enterprises. So why study them further? The historic failures of both Enron and WorldCom were the motivation for the Sarbanes-Oxley legislation. Both failures were historic because of the size of the companies. Enron was listed as the seventh largest on the 2001 *Fortune* 500 (2001) and WorldCom ranked fourth on the *Fortune* 500 Telecom Index (Pandey & Verma, 2005). Because companies of this size have the ability to influence the economy, stock market confidence, and legislation, large companies are exclusively the focus of this research. But what exactly is a large corporation? Berle & Means (1933) based their assessment on total assets. And Pfeffer

(1972) noted the average size of large companies in terms of total sales. *Fortune* magazine issues its well-renowned annual list of the 500 largest companies, also based on reported sales.

More recently in the scholarly literature, large corporations are based on their stock market capitalization. Because this research focuses on very large companies, large capitalization (large cap) stocks are investigated. Scholarly literature speaks to large cap, but definitions are absent. And there are discrepancies in the definition of large cap among practitioners; Investopedia (2008) and Investor's Business Daily (2008) note at least \$10 billion in market capitalization as the large cap threshold, while Dow Jones and Yahoo!Finance (2008) declare a minimum of \$5 billion in market capitalization. Standard and Poor's considers companies with a market capitalization of \$4 billion or more as large capitalization.

Two indexes are commonly used as measures of large companies: the S&P 500 and the Dow Jones Industrial Average (DJIA). Much of existing corporate governance literature uses the Standard and Poor 500 (S&P 500) or the *Fortune* 500 or 1000 indexes as the population from which a sample of large companies is drawn. Using such a large sample theoretically makes the findings generalizable to large companies. Yet there are inconsistencies in what the index considers to be a large capitalization (large cap) stock and the companies actually listed on the index. For example, the large cap S&P 500 index should include companies with \$4 million or more in market capitalization (Poor's, 2006). Yet, as of market close on May 16, 2008, twelve stocks--or 9.0%--out of the 133 added to the index since SOX was enacted were below the \$4 billion threshold. This

inconsistency in market capitalization indicates the S&P 500 may not be a true measure of very large, well-established firms.

Using the S&P 500 for research purposes is logical because the companies represent 75% of the U.S. stock market (2006). However, the frequent index changes may increase the potential for “entry into and exit from” (Bhagat & Black, 2002, p. 241) bias over the sampling period. The S&P 500 replaced 133 companies since SOX was enacted, for a net change of 26.6%. Of the 133 companies that were added to the S&P 500 index post-SOX, ten (or 7.5%) appear to have been initial public offerings since 2002 and, therefore, would need to be excluded from the population in a relational study such as this. During the same time period, the DJIA had only had 5 company replacements, amounting to a net change in index components of 16.7%. None of the replacements were initial public offerings and, therefore, no company would need to be excluded from the investigation. Because of the inconsistencies in the companies listed on the S&P 500, using a more stable index, such as the DJIA, lessens the risk discussed by Bhagat and Black. Dow Jones notes a goal in company selection in the index is “continuity” (2008, para. 2), which accounts for the rare changes in index components.

#### Sarbanes-Oxley: About the Law

Over the years, the way in which companies rule themselves has been impacted by various events and constituencies. Until legislation created the Securities and Exchange Commission in 1934, corporations largely did as they pleased. Blair (1995) provides history by summarizing how companies are governed by a conglomeration of

state laws and legal documents--such as charters and bylaws, regulatory agencies, and SROs. For instance, the NYSE has taken steps that have affected boards; in 1978, it required audit committees have a majority of outside directors (Blair, 1995). Also, in the 1970s, the makeup of two boards changed as the result of settlements in shareholder litigation. And in 1992, the SEC required compensation committees. The following year, Congress required compensation committees be composed exclusively of outside directors. During this time, corporate governance practices have been impacted by professional organizations, institutional investors and other shareholders have taken on activist roles as well as management defenses to discourage takeovers (Barnard, 1991; Branson, 2007; Fombrun, 2006; Hamilton, 2000; Monks, 1991). Catalyst, a women's advocacy group, also has contributed.

The idea of reforming corporate governance is certainly not new (Hambrick & Jackson, 2000; Hamilton, 2000; Jemison & Oakley, 1981; Lipton & Lorsch, 1992; Minow & Bingham, 1993). Hamilton (2000) notes the changes in corporate governance since the 1950s have generally been positive, to which its most significant benefit is greater market confidence. But with the overall market skepticism in the midst of large corporate failures in the late 1990s and early 2000s, drastic measures were necessary. The Sarbanes-Oxley Act of 2002 mandates reforms in the way publicly traded companies in the U.S. are governed at the highest levels. Branson (2007) acknowledges the Law as the first venture into corporate governance. The Australian Securities Exchange is careful in noting its principles and best practices are descriptive, rather than prescriptive. It is clear with this legislation, however, the U.S. took a more prescriptive approach.



The Law is sixty-six pages and includes eleven broad titles, each with more specific sections. The Act created a new quasi-government entity--the Public Company Accounting Oversight Board (PCAOB), spells out corporate responsibility, increases financial disclosures, restructures public companies' relationships with their auditors, and imposes greater penalties for companies and perpetrators engaged in corporate misdeeds. The Law seems to specifically address the collective sins perpetrated in this latest round of scandals. Some of the most important provisions of SOX relate to its impact on corporate governance.

#### *Independence and Conflicts of Interest*

Section 301 of SOX states every member of the audit committee on the board of directors must be independent of the company. In other words, board members on the audit committee cannot be employees, consultants, or otherwise affiliated with the enterprise. The law incorporates a broader definition of insiders as observed by Rhoades (2000) that includes not only current employees, but former employees and consultants, attorneys, and relatives. The audit committee is intended to be the watchdog of the organization now and independence is critical for that goal to be realized (Harrast & Mason-Olsen, 2007). Directors at Enron were so entrenched with the company that they did not heed early warnings of trouble.

Section 306 involves high level company insiders selling their stock during blackout periods. This will prevent officers from protecting the stock price by locking in employee retirement savings, while company officers sell their own stock. Many employees of Enron lost their retirement savings during such a lockout (Reish & Faucher, 2002).

Companies and related entities are now forbidden, by section 402, from extending loans or credit of any kind to executives. Companies that have leaders with a concentration of power generally do not have the checks and balances in place for loan approval; therefore, the executive is approving their own loan. More than \$40 million of loans remain unpaid by WorldCom CEO Bernie Ebbers (Brown, 2006). This section, however, is widely considered one of the easiest to circumvent through the use of sign-on and renewal bonuses (Brown, 2006).

### *Responsibility*

Section 302 explicitly establishes ultimate responsibility for the content of financial statements with company management. It requires that the principal executive and financial officers certify they have read, understand, and confirm the content of the financial statements. This section also requires company executives to “establish and maintain internal controls” (p. 777) so that significant financial information gets properly recorded. Along with section 404, both company management and auditors must regularly evaluate and report on the effectiveness of internal controls. These sections were in direct response to chief executives feigning ignorance of fictitious financial statements. Ken Lay of Enron, Andrew Scorsi of HealthSouth, and Bernie Ebbers of WorldCom all claimed to be unaware that the financial statements of the companies they led were false (Brown, 2006; Frieswick, 2005).

### *Enforcement*

This Law is taken more seriously than all others before because of Titles VIII, IX, and XI, entitled ‘Corporate and Criminal Fraud Accountability’, ‘White-Collar Crime and Penalty Enhancement’, and ‘Corporate Fraud and Accountability’ respectively. These

sections raise the bar on civil and criminal liability and enforcement by increasing penalties.

Failure to follow any one of the mandates in this Law could result in significantly higher fines, prison sentences, restitution, repayment of compensation, and either temporary or permanent prohibition from serving as an officer or director in a public company. Martha Stewart can no longer serve as either in her namesake company ("Unfit To Serve: Permanently Barring People from Serving as Officers and Directors of Publicly Traded Companies After the Sarbanes-Oxley Act," 2003). Also, this Law can effectively shut a company down by freezing its assets or by sanctioning or censuring an accounting firm.

The goal in this Act is to increase the risk to a point "sufficient to deter and punish such offenses" ("Sarbanes-Oxley Act of 2002," 2002, p. 805). Some fines increased by ten times for securities fraud; jail time for crimes involving retirement funds increased ten times as well. This one law increased penalties either directly or by amending the U.S. Code, the Securities Acts of 1933 and 1934, or through the U.S. Sentencing Guidelines. The Law specifically required the latter to include increased penalties for "a fraud offense that endangers the solvency or financial security of a substantial number of victims" ("Sarbanes-Oxley Act of 2002," 2002, p. 802). The fraud was so pervasive at Adelphia, Enron, and WorldCom, each ultimately failed (Harrast & Mason-Olsen, 2007).

The penalties are not just to be applied to publicly traded companies and their officers, directors, or employees; this Law extends to accounting firms, attorneys, securities companies, and hired administrators of retirement plans. The latter can be fined

as much as \$100 per day, per participant for locking employees out of retirement programs without sufficient, prior notice.

### Scholarly Discourse on the Sarbanes-Oxley Act of 2002

In response to investor outrage and lost confidence in the United States financial market, the government hastily drafted and enacted a law to seemingly address every offense that had been witnessed up until that date. Because of the comprehensive nature of this legislation, there is broad discourse on its practical implications. This is particularly so because SOX does not specifically address how its many directives are to be carried out. Thus, there is no shortage of literature on SOX in the years since it was enacted. Some scholars conclude the Law was positive (Wagner, 2006), others argue it diminished the competitiveness of the U.S. markets (Romano, 2005; Stephens, 2006), while a few acknowledge discussion of its complete repeal or overhaul (Koehn & DelVecchio, 2006; Shine, 2007; Swartz, 2006).

Perspectives range from the obvious legal and accounting viewpoints to topics that, on the surface, seem to have no direct connection to the Law. Some legal observations have been that SOX “federalized” corporate law by usurping power that formerly belonged to states (Brountas, 2004; Romano, 2005) and that lawyers are serving on fewer boards (Kostal, 2006).

Discussions surrounding accounting include enhanced financial disclosure, fully documented internal controls (O'Connor, 2005) and the cost of compliance (Calegari & Turetsky, 2006). The Law requires lead auditors be rotated periodically; Orin (2008) points out the entire audit firm should be rotated.

But there is also dialogue on such seemingly far-reaching discussions as how SOX has impacted formal quality programs (Stimson, 2005), document retention (Freeman, 2005; Raiborn & Schorg, 2004), and its impact on employer benefit plans (Muir & Schipani, 2007). Ramirez (2003) argues the law missed the opportunity to explicitly interject racial diversity as a requirement.

Lamentations of SOX abound. The Law has been blamed for increased audit fees, high compliance costs, foreign companies listing on non-U.S. exchanges, director and officer insurance policies being less available and with less favorable terms, more mergers and acquisitions that reduced competition in the market, fewer initial public offerings, and disproportionately higher costs for smaller companies leading many to go private (Bessette, Biles, Ahart, & Heard, 2006; Branson, 2007; Brountas, 2004; Brown, 2006; Calegari & Turetsky, 2006; Koehn & DelVecchio, 2006; Stephens & Schwartz, 2006). And the discourse on the perceived flaws in the law continues to grow.

Despite that, others can demonstrate how the Law has improved ethics in business. Studies indicate audit committees are taking their roles seriously and are meeting more than recommended (Koehn & DelVecchio, 2006). In improving internal controls, redundancies have dropped while operational effectiveness has risen (Wagner & Dittmar, 2006). Because of increased time commitment and personal liability for outside directors, many are serving on fewer boards (Kostal, 2006). In the absence of the Act, this may demonstrate progress that may have not occurred or could have taken a long time to occur. Or does it? Written over a decade prior to SOX, Lorsch and MacIver (1989) remark “A majority of directors now come from outside the corporation, the number of board committees to facilitate the directors’ work has risen, and directors

today view their role and their responsibilities with a seriousness and an involvement that were often lacking fifteen or more years ago” (p. 5). Considering this round of reforms with the last round, one could conclude such reactions to reform have occurred before. What is yet to be determined is if these attitudes will endure.

### Overview of Prior Research Methodology

The quantitative--or analytical--methodological approach (Arbnor & Bjerke, 1997; Karami, Rowley, & Analoui, 2006; Remenyi, 1996) is most commonly used in the field of general business research. Such research relies on empirical data--in the positivist tradition--to generate new knowledge. Studies in the field of corporate governance, in particular, are generally quantitative--as opposed to qualitative. The issue of access tends to be the predominant reason to use the quantitative method. Due to their inherent exclusivity, getting physical access to the inner workings of boards of directors is a well-known impediment (Khurana, 2002; Pettigrew, 1992). Direct observation of boards of directors is often difficult to attain (Vance, 1978). Brontas (2004) notes that observation may not be the superior research option as he quotes corporate governance reform advocate Nell Minow: “Boards of directors are like subatomic particles (because) they behave differently when being observed” (2004, p. 20).

Quantitative researchers have the choice of either experimental or non-experimental designs. The difference between the two is the experimental models involve “introduction of planned change on one or more variables” (Robson, 2002, p. 88). Surveys or questionnaires are often used in the non-experimental, quantitative approach.

Researchers can view data at a cross-section or longitudinally. A cross-sectional view of data is at a point in time. A longitudinal study views data over time (Cooper & Schindler, 2006; Ruspini, 2000). Cross-sectional studies dominate general business research. Yet, longitudinal studies are more common in the specific business field of organizational change (Armenakis & Bedeian, 1999). While longitudinal studies are not new, Ancona, Goodman, Lawrence, and Tushman (2001) and Mitchell and James (2001) discuss consciously researching organizational phenomena through a temporal lense. In their study of outside director equity stakes, Hambrick and Jackson (2000) use three data points of 1987, 1992, and 1996. Lawler and Finegold (2005), Wolf (2007), and Branson (2007) use two data points to collect data before and after SOX.

### *Sample*

Because of the sheer size of the population of publicly traded companies, the literature offers a broad range of possibilities for drawing a sample. For the most part, contemporary scholarly and practitioner research in the various aspects of the corporate governance field draw samples from some version of Standard and Poor (Lee & Carlson, 2007; Neff & Heidrick, 2006; Peterson & Philpot, 2007; Wolf, 2007) or Fortune (Bilimoria & Piderit, 1994; Branson, 2007; Carter et al., 2003; Davis & Useem, 2001; Kesner, 1988; Lawler & Finegold, 2005; Pearce & Zahra, 1992) indices. Older studies tend to use Dun and Bradstreet Reference Book of Corporate Management, Standard and Poor's Register of Corporations, Directors, and Executives, and Microquest.

Other possibilities are available, such as Hermalin & Weisbach's (1988) use of a sample from companies trading on the New York Stock Exchange. In specifically studying large companies, Westphal and Zajac (1995) used a combination of Forbes and

Fortune 500 indexes. Also looking to isolate very large companies, Jones (1986) uses the top tier of several Fortune indexes.

In one of his many seminal studies, Vance (1978) uses only forty large corporations in what appears to be a convenience sample. In doing so, he states “The sample size was limited by data availability and computational complexity” (1978, p. 210). The companies were not noted as being taken from any particular index and large companies were eliminated from the sample if data on two or more directors was missing. Presumably, this led to General Motors’--a dominating company at the time--exclusion in the study.

#### *Data Collection*

In terms of collecting research data, there are two possible sources: primary and secondary (Arbnor & Bjerke, 1997; Cooper & Schindler, 2006). Primary data is created by the researcher for the sole purpose of the study; examples of primary data include interviews and surveys or questionnaires. Vance’s 1964 study used primary data collected from interviews (Vance, 1978). Secondary data has been developed for purposes other than the research for which it is being used (Scandura & Williams, 2000). Examples of secondary data include reports issued by the government or by companies as a reporting mechanism to the government. There is the potential to pursue either type of data source, or a combination, in this study. A combination of survey and interviews was used by Lorsch and MacIver (1989) in their influential investigation of board goals and function. Harrigan (1981) used questionnaires from 112 respondents, followed by 9 field interviews. The Pearce and Zahra (1992) study used a combination of mailed surveys and



secondary data, such as annual reports, 10-K reports, Value Line, and Moody's Industrial Manuals.

In specifically considering the study of corporate governance, the use of secondary data is common. Because much of the data is required to be regularly reported to The Securities and Exchange Commission, its legitimacy is considered to be very high. In a longitudinal content analysis of research methodologies utilized in articles published in three scholarly journals, Scandura and Williams (2000) note the use of secondary data increased by over 10% from the 1980s to the 1990s. A host of researchers in the field of corporate governance have exclusively used secondary data (Bilimoria & Piderit, 1994; Branson, 2007; Carter et al., 2003; Davis & Useem, 2001; Kesner, 1988; Lawler & Finegold, 2005; Pearce & Zahra, 1992). Data for the Westphal & Zajac (1995) and Melendy (2005) studies was extracted from proxy statements and Compustat. Truong's data is derived from Australian proxy statements. In addition to other sources such as the Dun and Bradstreet Reference Book of Corporate Management, Standard and Poor's Register of Corporations, Directors, and Executives, and Microquest, the use of proxy statements is rather common (Bilimoria & Piderit, 1994; Davidson et al., 2004; Pfeffer, 1972; Vance, 1978).

### CHAPTER 3. METHODOLOGY

The purpose of this research is to examine the ways boards of directors at companies included in the Dow Jones Industrial Average have been impacted by the Sarbanes-Oxley legislation in two specific areas: board structure and composition. This chapter describes exactly what methodologies the researcher will employ in conducting individual tests of the hypotheses. A recapitulation of the research questions follow:

1. Has the structure of boards at companies included in the DJIA changed in terms of CEO duality since the SOX legislation?
2. Has the structure of boards at DJIA companies changed in terms of size since SOX?
3. In terms of structure, do boards of directors at DJIA companies have the same number and type of committees as before SOX?
4. From the perspective of composition, has the ratio of inside and outside directors changed on boards of directors at companies included in the DJIA since the Sarbanes-Oxley Act?
5. Has the composition of boards of directors at DJIA companies changed in terms of demographics such as gender, age, race, and functional experience since SOX enactment?

Based on the research questions, the following sections detail the research specifics. The population and sampling techniques will be outlined, as well as the data collection instrument and procedures. The coding protocol will be specified according to the appropriate hypothesis. The discussion will conclude with an overview of the statistical tests likely to be utilized on the data collected.

## Research Design

Considering the research questions, the most practical approach is to employ a quantitative, non-experimental, longitudinal methodology. The quantitative approach is predominant in the general field of business and addresses the specific research questions ideally. This study will incorporate a non-experimental strategy because the researcher did not initiate the change, yet is an observer of the change. This examination is also longitudinal because the same companies are being studied at two different points in time--both before and after SOX enactment. The pre-SOX data is collected from the annual 2001 SEC proxy filing and the annual filing in 2007. This study considers time as a factor since a comparison of specific board of director characteristics will be gathered at two data points between a span of approximately six years.

## Sample

The target population along with sampling frame and sampling methods are discussed. Also included is a description of how the data will be accessed.

### *Population*

Compliance with SOX is required of virtually all companies whose stock trades publicly; therefore, the population to be studied includes all such companies and has the potential to be enormous. With over 5,000 companies registered just between the two largest U.S. stock exchanges--the NYSE and the NASDAQ--the population of impacted companies is of sufficient size and scale for study. Because of the large size of the population, a census is neither practical nor statistically desirable. Cooper and Schindler (2002) discuss that fixed designs, such as this study, will have a large sample size. Yet,

for purposes previously justified, the very large companies included in the Dow Jones Industrial Average will represent the population in this investigation.

### *Sample*

This research will utilize a census of the 30 companies that make up the Dow Jones Industrial Average on of May 16, 2008. As of this date, 28 of the companies were listed on the New York Stock Exchange and 2 were listed on the NASDAQ. A census is appropriate in this regard because of the small number of companies--30--included in the index. The index itself is a sample of the largest companies that trade stock in the U.S. To take a sample of the index would not be appropriate; therefore, a census of the DJIA will be used. Table 1 lists the 30 companies, the stock exchanges, and its market capitalization as of May 16, 2008. These are the companies examined in this investigation.

### Instrumentation / Measures

The instrument used to collect data for this investigation will be a coding sheet. The coding sheet was developed in Microsoft Excel. The measures to be recorded on the coding sheet relate directly to the board characteristics discussed in each hypothesis. For each variable noted in the hypotheses, pre- and post- SOX measures will be collected for each of the 30 sample companies. The summary data collection and coding sheet used for this research is noted in Appendix A and indicates the variables and the hypotheses measured.

Table 1. Component Companies of the DJIA as of May 16, 2008

Company Name	Exchange	Market Capitalization (in billions)
3M Co.	NYSE	55.40
Alcoa Inc.	NYSE	35.17
American Express Co.	NYSE	56.39
American International Group	NYSE	99.23
AT&T Inc.	NYSE	237.98
Bank of America Corp.	NYSE	161.06
Boeing Co.	NYSE	64.00
Caterpillar Inc.	NYSE	51.46
Chevron Corp.	NYSE	207.43
Citigroup Inc.	NYSE	121.38
Coca-Cola Co.	NYSE	132.56
DuPont de Nemours & Co.	NYSE	44.70
Exxon Mobil Corp.	NYSE	489.64
General Electric Co.	NYSE	320.25
General Motors Corp.	NYSE	11.71
Hewlett-Packard Co.	NYSE	116.58
Home Depot Inc.	NYSE	49.18
Intel Corp.	NASDAQ	131.95
International Business Machines	NYSE	175.56
Johnson & Johnson	NYSE	191.12
JPMorgan Chase & Co.	NYSE	158.24

Table 1. Component Companies of the Dow Jones Industrial Average as of May 16, 2008  
(continued)

Company Name	Exchange	Market Capitalization (in billions)
McDonald's Corp.	NYSE	68.61
Merck & Co. Inc.	NYSE	85.86
Microsoft Corp.	NASDAQ	279.31
Pfizer Inc.	NYSE	135.51
Procter & Gamble Co.	NYSE	203.79
United Technologies Corp	NYSE	71.98
Verizon Communications Inc.	NYSE	110.52
Wal-Mart Stores Inc.	NYSE	225.56
Walt Disney Co.	NYSE	66.51

*Note.* Data compiled from the websites of Dow Jones Company (2008) and Yahoo!Finance (2008).

### Data Collection

Following both scholars and practitioners, data collected for this study was exclusively from secondary sources. For each company included in this investigation, the SEC's Electronic Data Gathering, Analysis, and Retrieval (EDGAR) system was used to extract the required annual filing of Schedule 14-A (proxy statement). The information obtained from the proxy statement was total number of directors, number and type of committees and directors' age, gender, and primary occupation. Race may be discernable if photographs of directors are included in the proxy statement. If photographic evidence

is not included, other methods, such as internet search under the primary occupation website, may be necessary. The methodology for race identification follows that of the Brammer et al. (2007) study, discussed in the literature review.

For each sample company, the same data was collected twice--first from the 2001 proxy statement and again from the 2007 proxy statement. Data retrieved from methods other than the proxy statement will be disclosed on the data collection sheet. As recommended by Robson (2002), a signal code for missing data will uniformly be used in this research. The code for missing data will be the number 99.

Arbnor and Bjerke (1997) discuss that data collection--“a constant goal of the analytical approach” (p. 64)--is controlled by the hypotheses. Therefore, data collected strictly related to testing a hypothesis or responding to a research question. During the data collection process, data was coded into the Microsoft Excel coding sheet. In doing so, the first steps of analysis occurred (Cooper & Schindler, 2006; White, 2006). The hypotheses and corresponding data collection and coding method follow.

Hypothesis<sub>1</sub> is: The structure of boards of directors in DJIA component companies have not changed, in terms of CEO duality, since enactment of SOX. The proxy statement explicitly states if the CEO also serves as the chairperson of the board of directors. This research followed Truong (2006) by using the explanatory variable BLEADER and coding 0 for CEOs holding multiple titles and 1 for separate roles. There was only one occurrence where two persons jointly chaired the board of directors and it was coded as a 1 for separate roles.

The next hypothesis, H<sub>2</sub>, is: The structure of boards of directors at corporations included in the DJIA is the same, in terms of size, as before the SOX legislation.

Following Truong (2006), this research recorded board size (BSIZE) as the natural log of the total number of directors.

The third hypothesis, H<sub>3</sub>, is: The structure of boards of directors at DJIA component companies has remained the same in terms of the number and type of committees since SOX. The coding of committees was Other - 0, Executive - 1, Audit - 2, Nominating - 3, Compensation - 4, Finance - 5, Public Affairs - 6, and Governance - 7. The *Other* designation was used if a different committee was named in the proxy but was not used with substantial frequency.

From the review of the proxy statements, 19 different committees not fitting the coding scheme were observed and were coded as Other. These committees--often reflecting the unique industry of the company--were Pension and Savings Plan Investment, Regulatory, Compliance & Legal Committee, Asset Quality Review, Contributions, Diversity, Environmental Policy, Strategic Direction, Board Advisory, Management/Leadership Development, Capital Stock Committee, Investment Fund Committee, Human Resource, Stock Option, Executive Performance, Science and Technology, Infrastructure, Research, and Innovation and Technology.

Hypothesis<sub>4</sub> is: The composition of boards at companies listed in the DJIA is the same in terms of the ratio of inside and outside directors since SOX enactment. Since SOX only discusses independence, which relates strictly to outside directors, this study will only distinguish between independent, outside directors and all others are coded as insiders. Inside directors (INDIR), usually defined as all current or former employees of a company or its subsidiaries and all relatives of such persons, are defined as not being an independent, outside director. Outsider Directors (OUTDIR) will meet the strict



definition of independent directors set forth in SOX. The numbers of each category of director were recorded as an interval. To increase validity, the sum of INDIR and OUTDIR must equal BSIZE. Then the proportion of inside and outside directors were computed as a ratio to the total number of directors--or board size (BSIZE).

The last hypothesis, H<sub>5</sub>, is: The composition of boards of directors at DJIA firms is no more diverse in terms of gender, age, race, and functional experience than before SOX enactment. The gender (GENDER) coding in this study strictly followed Bilimoria and Piderit (1994) in that 0 will represent females and 1 will represent males. Consistent with Truong (2006), the average age of board members was represented by BAGE. Each board member's age was recorded as an interval and an average for the overall board will be calculated. Coding race (BRACE) dichotomously--Caucasian as 0 and non-Caucasian as 1--is sufficient to test if the percentage of minorities has increased since SOX.

The coding schemata for functional experience (FUNC) used in the Bilimoria and Piderit (1994) and Westphal and Zajac (1995) studies were not specific enough in demonstrating if boards have had to recruit lower in the corporate organizational hierarchy or in nontraditional areas. To appropriately address the research question, the following coding scheme was used: Corporate - 0, Not-for-profit - 1, Government/Military - 2, Entrepreneur/Entertainment - 3, Academic - 4, and Law - 5. Codes will be applied according to the director's primary industry. Additionally, the director's level within their organization was coded as Lead Executive - a, Executive Team - b, and Management - c. Some directors were accomplished in multiple settings and were coded two times; only a few were so accomplished as to be coded three times. Some directors served on multiple boards and were coded accordingly. There were no

board members from the management ranks from the Corporate, Not-for-profit, and Government/Military sectors and these combined categories will be excluded from the statistical analysis. Considered independently, this observation in data collection was important.

### Data Analysis

Arbnor and Bjerke (1997) assert analysis is “*a thorough investigation of an existing situation*” (p. 94, emphasis in original). Initial data entry, entry, coding, and cleaning was done in Microsoft Office Excel 2003. The primary statistical analysis was conducted using analytical software Statistical Package for the Social Sciences (SPSS) Student version 14.0. Secondary data analysis utilized R version 2.8.1 and Statistical Analysis Software (SAS) version 9.1 for testing the committee type characteristic of H<sub>3</sub> and the functional experience aspect of H<sub>5</sub> respectively.

The strategy used for dealing with missing data is “listwise deletion” (Cooper & Schindler, 2006, p. 455; Norusis, 2006, p. 526), whereby the missing data is coded as such and variables with one or more missing codes are analyzed without the data. Robson’s (2002) and Trochim’s (2006) suggestion to use the number “99” to indicate missing data will be heeded.

Robson (2002) and Cooper and Schindler (2006) advocate conducting both exploratory data analysis (EDA) and confirmatory data analysis (CDA) in quantitative research. For both EDA and CDA, pre-SOX data was paired with post-SOX data for each of the 30 sample companies and compared. The premise is that exploring the data is desirable to get a feeling for the data and to ensure errors are minimized. Visualization of

the data is central to EDA and will be incorporated in this research. Exploratory data displays used include histograms for interval data such as board size, age, and number of committees for hypotheses 2, 5, and 3. Descriptive--or summary--statistics, the product of EDA, was used to demonstrate the measures of central tendency and variability of the data. Categorical data--such as CEO duality, gender, independence, race, and functional experience--was explored using either frequency tables or cross-tabulation techniques for hypotheses 1, 4, and 5.

Once EDA was completed, CDA was conducted to test the hypotheses and generate inferential statistics. Confirmatory data analysis is divided into parametric and nonparametric testing. Certain assumptions must be met to conduct parametric testing: variables can be measured as an interval or ratio and must be drawn from independent, normally distributed populations (Cooper & Schindler, 2006). While some data--such as board size and age--was interval and meet the first assumption for parametric testing, the observations are neither independent since there are multiple observations of the sample companies nor is the data normally distributed. Because much of the data is nominal and some of the interval data could be ordinal, nonparametric tests were performed on most of the data. Specifically, three nonparametric tests were used: Wilcoxon, the sign, and McNemar. The Wilcoxon matched-pairs test was used to test hypotheses with the ordinal data while McNemar testing was used with either ordinal or nominal data with dichotomous values. McNemar's test of symmetry was also used for nominal variables with multiple values (Andrews, Klem, Davidson, O'Malley, & Rodgers, 1981).

Nonparametric procedures are well suited for pairing data (pre- and post-SOX), as has been done in this examination. Nonparametric procedures can also handle

multivariate data, specifically incorporated in this one aspect of hypothesis<sub>5</sub>. But the combination of multivariate data (industry and experience level) and pairing is problematic for nonparametric procedures. Therefore, because of the complexity of the variables collected for the functional experience portion of hypothesis<sub>5</sub> and the pairing necessary, the parametric “repeated measures analysis of variance (ANOVA) assuming an unstructured correlation matrix” (T. L. Morris, personal communication, May 16, 2009) was utilized. The data was transformed to percentages; by using the arcsine of the square root, the data had a more continuous distribution. The adjusted ANOVA is robust enough to perform well under this condition.

In evaluating statistical significance, a significance level of 5% or more will be used to either fail to reject or to reject the null hypothesis.

### Validity and Reliability

The goal of any researcher is to conduct an investigation with high levels of validity and reliability. Both are imperative to high quality research and, although distinct, they are related. Reliability is a necessary condition for validity; however, validity is not a precondition for reliability (Cooper & Schindler, 2006; Robson, 2002). Most of the data collection, coding, and analysis in this investigation will mimic that of preceding scholars. This will increase reliability and validity of the data and reduce a host of biases inherent in creating primary data. Furthermore, the secondary data utilized is required by regulatory agencies. Therefore, the validity of the data used should be high. However, statistical tests will still be conducted to ensure a high rate of validity and reliability.

In the field of research, validity means the extent to which a “test measures what the researcher actually wishes to measure” (Cooper & Schindler, 2006, p. 720). The research questions dictated the hypotheses and the coding sheet was developed based on the hypotheses. By linking these three, the research should have a high level of validity. Three types of validity are well-recognized in research literature: internal, external, and construct validity (Cooper & Schindler, 2006; Robson, 2002).

Internal validity concerns whether the instrument, such as a coding sheet or survey, measures what it purports to measure. And construct validity entails how well the measuring instrument operationalizes the theories being tested. By allowing the research question to guide the hypotheses and the hypotheses to dictate the coding, the instrument should have a high level of internal validity. Scandura and Williams (2000) assert longitudinal studies, such as this, have the potential for high internal validity. Cooper and Schindler (2006) and Robson (2002) cite Cook and Campbell’s (1979) threats to internal validity, many of which do not apply due to design of this investigation.

External validity involves the generalizability of the results onto other populations. The nature of dissertations is to specify a topic narrow enough for a novice researcher to manage, yet broad enough to demonstrate mastery of the topic, research methodologies, and contribute to the body of knowledge. This research focuses on the 30 very large companies included in the DJIA. However, the results of this research could be generalized to other large scale corporations not included in the index. Cooper and Schindler (2006) indicate internal and external validity often have an inverse relationship. In other words, research designs with high levels of internal validity often compromise external validity. Scandura and Williams (2000) seem to concur, noting no one design is

ideal for both. Trochim (2006) asserts the different types of validity are relevant only in causal studies, such as this one.

In research, reliability is a “characteristic of measurement concerned with accuracy, precision, and consistency” (Cooper & Schindler, 2006, p. 716). The Web Center for Social Research Methods (Trochim, 2006) puts it more plainly by stating its “repeatability” (para. 2). This research is designed to be highly reliable because the instrument to be used for the pre- and post-SOX data collection was developed at the same time and, therefore, there will be no variances in the type or nature of information recorded between the two time periods. Additionally, potential errors were reduced in data collection by using the same coding for directors who served on more than one board. Also, the totals for the different hypotheses were cross-checked to ensure consistency with the BSIZE variable. Furthermore, the secondary data to be recorded is archived in the SEC’s EDGAR database, which does not allow changes to a prospectus once submitted.

Subjectivity could become a factor in the visual photographic inspection of directors used in testing the for the composition characteristic of race. Brammer et al. (2007) were able to validate, and therefore minimize, inter-rater bias by having colleagues independently review director pictures. Differences of opinion were rated according to the independent colleague’s opinion. Since this work is an individual thesis, such collaboration will not be used. Due care has been taken to code race dichotomously in an effort to reduce errors or bias.

## Ethical Considerations

Because this study exclusively utilizes secondary data, the myriad of ethical considerations in involving human participants is abated. However, appropriate research standards that adhere to Capella University and Institutional Review Board policies will be utilized in collecting, reporting, and securing research data.

## CHAPTER 4. RESULTS

Both exploratory and confirmatory analyses are incorporated in this examination. The data is explored using descriptive statistics while the hypotheses are tested using confirmatory data analysis. The results of the analyses follow.

### Descriptive Statistics

Summary – or descriptive – statistics are the product of exploratory data analysis and is done to insure the data collected is correct and complete. It also provides the researcher with an initial idea of the data collected. The following discussion summarizes the data as it relates to each hypothesis.

#### *Hypothesis<sub>1</sub>*

*The structure of boards of directors in DJIA component companies have not changed, in terms of CEO duality, since the enactment of SOX.*

From the frequency table below (Table 2), CEO duality appears to have increased from 76.7% to 80% since SOX enactment. In actuality, one sample company had an unusual situation in 2001, where two individuals held the board chairmanship. By 2007, only one of those two individuals was the chairperson.



Table 2. Pre- and Post- CEO Duality at DJIA Companies ( $N = 30$ )

	Status	Pre-SOX Frequency	Pre-SOX Percent	Post-SOX Frequency	Post-SOX Percent
Valid	Duality	23	76.7	24	80.0
	No Duality	7	23.3	6	20.0
	Total	30	100.0	30	100.0

Prior to SOX, the board leadership was autonomous in that the chairperson was the sole leader. Only 1 company, or 3.3%, had a leadership structure that included a lead director. After SOX, 66.7% utilized lead or presiding directors (Table 3).

Table 3. Pre- and Post-SOX Lead Directors at DJIA Companies ( $N = 30$ )

		Pre-SOX Frequency	Pre-SOX Percent	Post-SOX Frequency	Post-SOX Percent
Valid	No Lead Director	29	33.3	10	96.7
	Lead Director	1	66.7	20	3.3
	Total	30	100.0	30	100.0

### *Hypothesis<sub>2</sub>*

*The structure of boards of directors at corporations included in the DJIA is the same, in terms of size, as before the SOX legislation.*

There were a total of 422 director positions on the boards of Dow Jones companies pre-SOX, occupied by 381 people. Thirty-seven directors held board seats on

two boards and two people held seats on three boards. Pre-SOX board sizes of Dow Jones companies appear to have a range of 13, with a minimum of 8 and a maximum of 21 directors. The average seems to be 14.07 members. The mode is 12 members, with an occurrence of 6 companies; that is, 20% of companies appear to have 12 directors. Figure 1 (below) displays a histogram of board size frequencies. It seems over half--53.3%--of companies have between 12 and 15 directors.

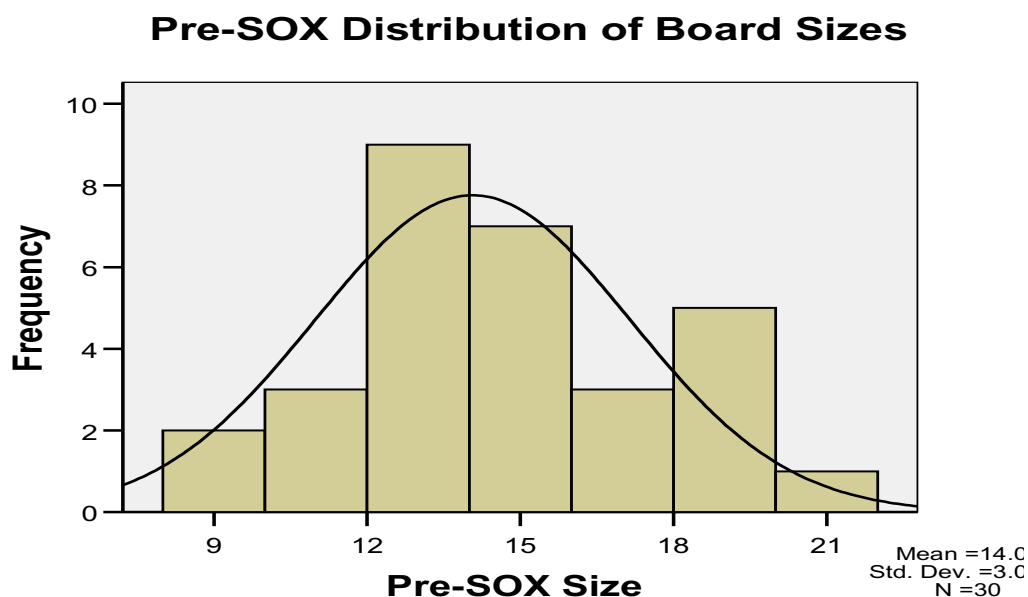


Figure 1. Pre-SOX distribution of board sizes.

Post-SOX, there were a total of 391 director positions on the boards of Dow Jones companies. These positions were held by 350 people. The average board size of Dow Jones companies after SOX in 2007 appears to be 13.03; the range seems to be 7, with a minimum of 10 and a maximum of 17. Shown on Figure 2, board size frequencies of Post-SOX Dow Jones companies are bimodal at the peak. Seven companies each, or 23.3% each, had 13 and 14 members.

Dow Jones companies represented a total of 422 board positions pre-SOX; this number decreased to 391 positions post-SOX--a decline of 7.58%. Likewise, average board sizes declined from 14.1 to 13 members. The ranges of board membership seems to have tightened from 2001 and 2007, as the standard deviation of 3.08 in 2001 reduced to 1.74 in 2007.

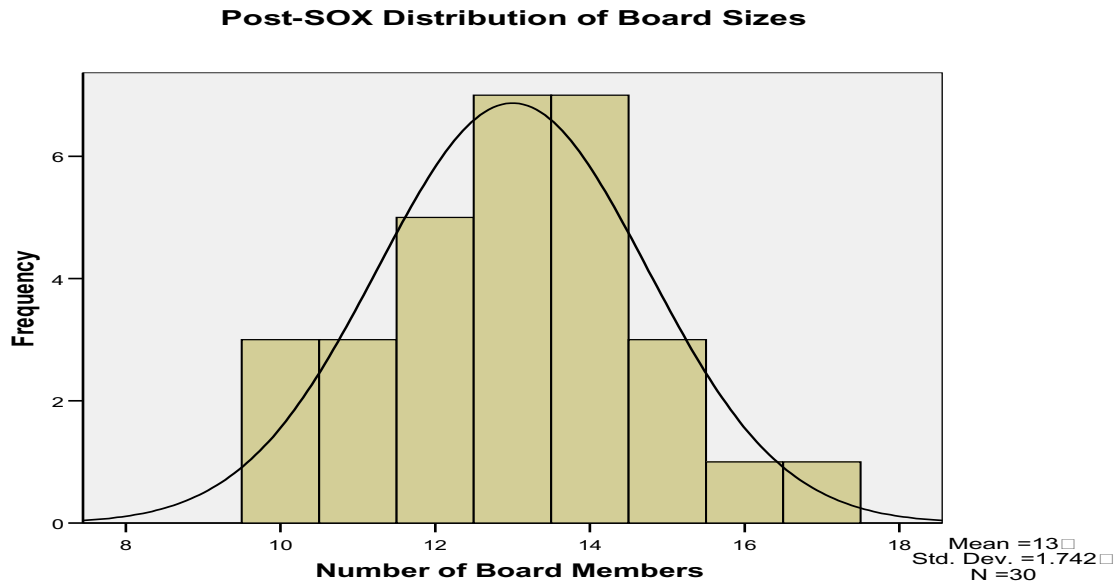


Figure 2. Post-SOX distribution of board sizes.

*Hypothesis<sub>3</sub>*

*The structure of boards of directors at DJIA component companies has remained the same in terms of the number and type of committees since SOX.*

Dow Jones companies averaged 4.77 committees pre-SOX and had a mode of 5 (Figure 3). The distribution is more heavily skewed towards fewer committees with 76.7% of companies having 3 to 5 committees.

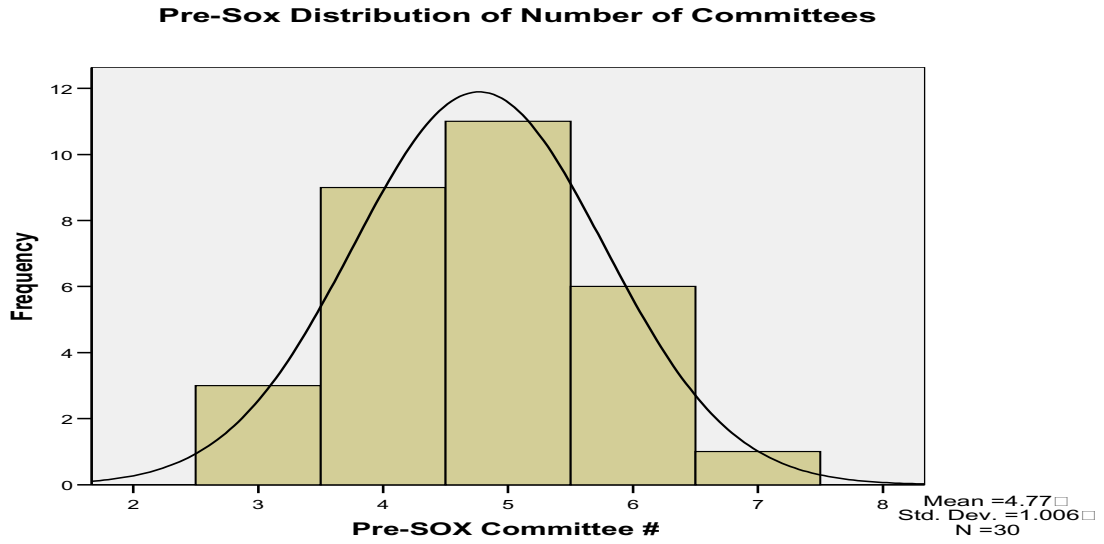


Figure 3. Pre-SOX distribution of number of committees.

Post-SOX, the average number of committees on the boards of Dow Jones companies is 5.03. Thirteen companies, or 43.3%, of DJIA companies had the mode of 5 committees (Figure 4).

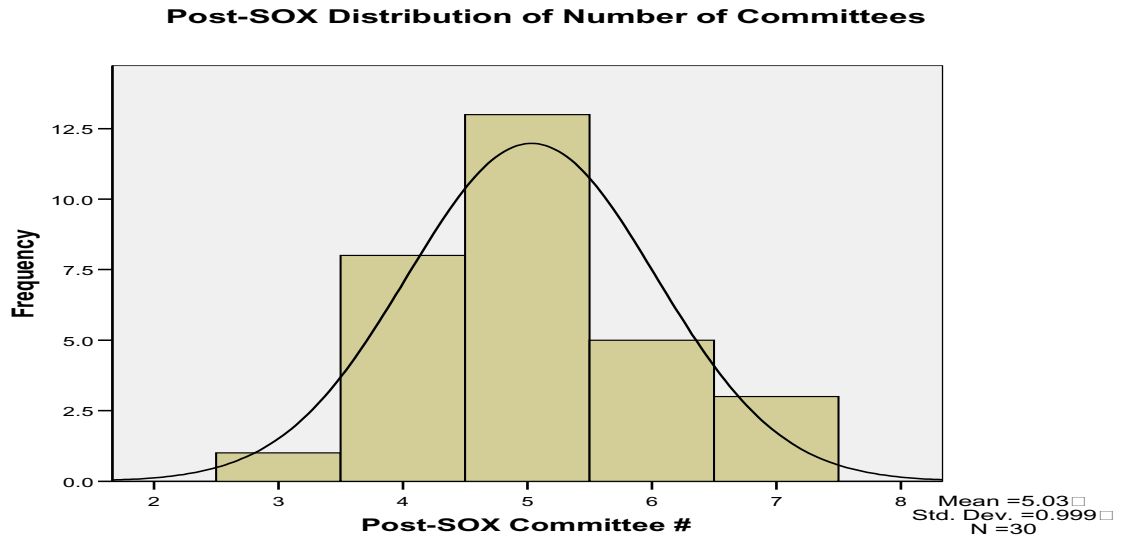


Figure 4. Post-SOX distribution of number of committees.

The range of committees was identical both pre- and post-SOX at a minimum of 3 and a maximum of seven. The only difference during that time is the distribution of the frequencies. In general, companies on the Dow Jones have an average of 5 committees.

Prior to Sarbanes-Oxley, over half of Dow Jones companies utilized five main types of committees: Executive, Audit, Nominating, Compensation, and Governance. Every board had an Audit committee, indicating the SRO rules on Audit committees were more dominant than SOX in this regard. Nearly every company's board, or 97%, had a Compensation committee. Lesser used board committees were Finance and Public Affairs at 13 and 14% respectively. The Governance committee was often commingled with the Nominating Committee. Table 4 displays the frequencies of pre- and post-SOX committee types.

Table 4. Committee Types on DJIA Boards ( $N = 30$ )

Committee	Pre-SOX		Post-SOX	
	Total Companies	Percent	Total Companies	Percent
Executive	17	57%	12	40%
Audit	30	100%	30	100%
Nominating	25	83%	24	80%
Compensation	29	97%	29	97%
Finance	13	43%	15	50%
Public Affairs	14	47%	14	47%
Governance	20	67%	30	100%
Other *	15	50%	20	67%

\* The pre-SOX boards of 15 companies comprised a committee labeled "Other". Data on 18 "Other" pre-SOX committees was collected, indicating 3 companies had 2 "Other" committees.

Exactly half of Dow Jones boards used a committee labeled as Other. These committees often reflected the unique industry of the company. Such committees were fully disclosed in the discussion in Chapter 3.

Post-SOX, 100% of the 30 Dow Jones companies had both Audit and Governance committees. The use of Executive committees appeared to decrease to 40%, while Finance committees appeared to increase to 50%.

*Hypothesis 4*

*The composition of boards at companies listed in the DJIA is the same in terms of the ratio of inside and outside directors since SOX enactment.*

In 2001, the pre-SOX average ratio of board insiders in Dow Jones companies was 20.84%. Insider ratios ranged from 7.14% to 44.44%, having a standard deviation of 0.0969. The histogram below (Figure 5) peaks at 6 companies having insider ratios between 25 and 30%.

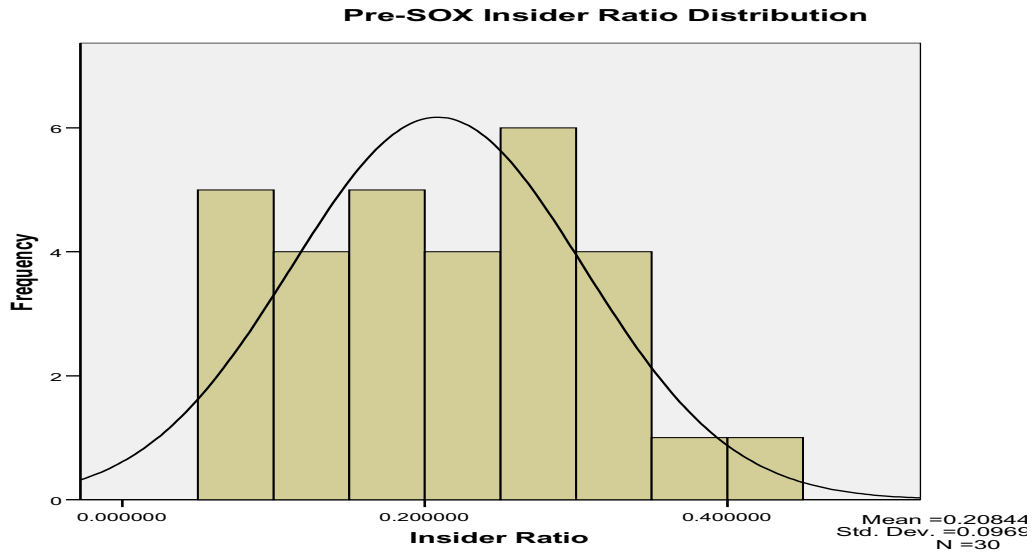


Figure 5. Pre-SOX insider ratio distribution.

Post-SOX, there appears to be a large decrease in insider membership on the boards of Dow Jones component companies. The range of insider ratios in 2007 is comparable to pre-SOX with a minimum of 6.67% and a maximum of 41.67%, with a standard deviation of 0.0904. However, the mean ratio of insiders post-SOX is 15.48%. The peak of 12 companies is at the low end of the range in 2007. More than half the Dow Jones companies, specifically 53.33%, have less than 15% insiders.

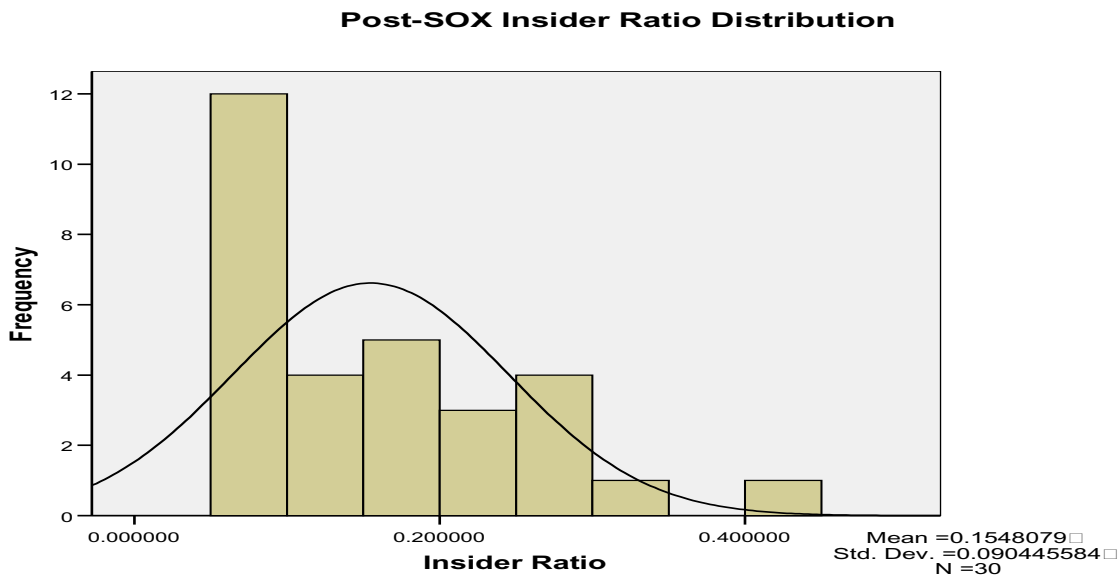


Figure 6. Post-SOX insider ratio distribution.

*Hypothesis<sub>5</sub>*

*The composition of boards of directors at DJIA firms is no more diverse in terms of gender, age, race, and functional experience than before SOX enactment.*

As shown in Table 5 (below), there appear to be 68 board seats occupied by females pre-SOX and 71 seats post-SOX. The board seats occupied by women seem to have increased from 16.1% pre-SOX to 18.2% post-SOX. However, the percent increase

is more a function of the decrease in total director positions on DJIA boards than an increase female participation.

Table 5. Pre- and Post-SOX Gender Representation on DJIA Boards

		Pre-SOX Frequency	Pre-SOX Percent	Post-SOX Frequency	Post-SOX Percent
Valid	Female	68	16.1	71	18.2
	Male	354	83.9	320	81.8
Total		422	100.0	391	100.0

The actual number of females serving on boards seems to be 65 pre-SOX and 61 post-SOX because some females served on multiple DJIA boards. Pre-SOX, 1 female served as a director on three Dow Jones boards while the others served on a maximum of two boards. One board--or 3.3% of DJIA companies--had no female director pre-SOX.

The average age of board members pre-SOX is 61.05 years, with the minimum average age being 54.88 years and the maximum average age being 65.56 years (Figure 7). The standard deviation was 2.61. There were two board members who were the actual youngest board members at age 40. The actual oldest board member was 82 years old.



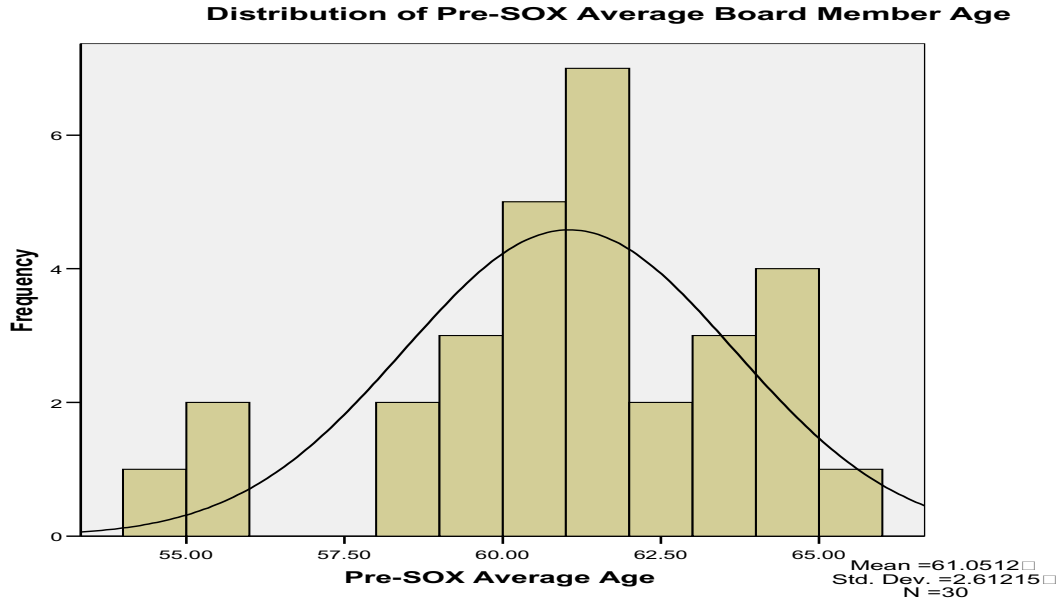


Figure 7. Distribution of pre-SOX average board member age.

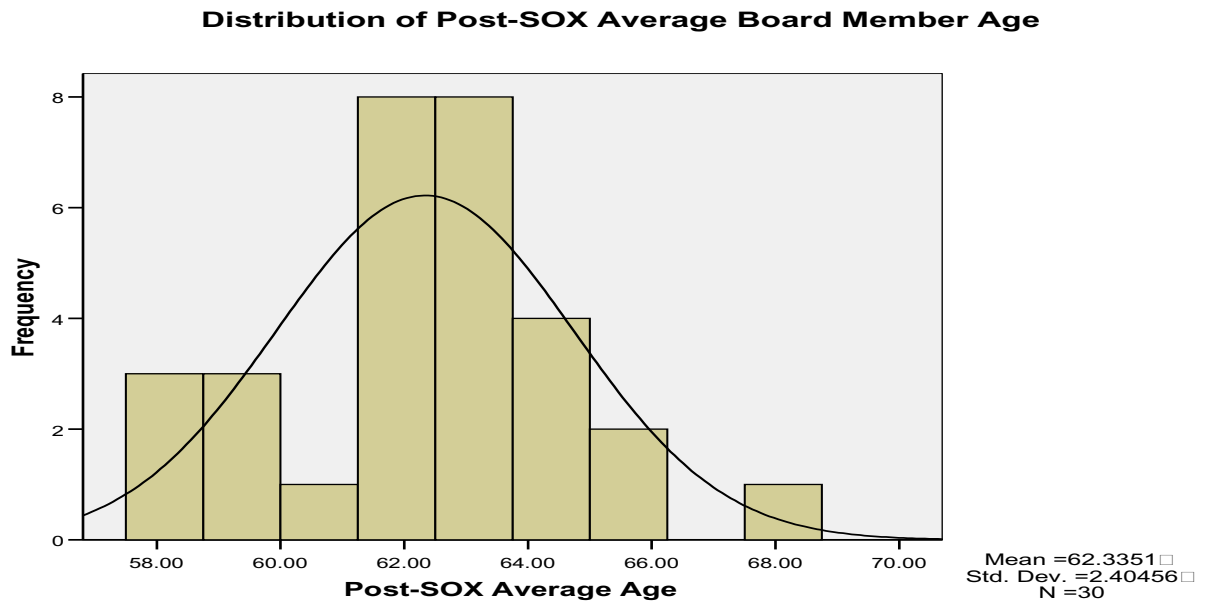


Figure 8. Distribution of post-SOX average board member age.

Post-SOX average board member age is 62.34 years. The average board ages ranged from 57.70 to 68.58 years, with a standard deviation of 2.40 (Figure 8). The actual youngest board member is 41 and the actual oldest is 81 years old.

The average non-Caucasian membership on boards of directors of Dow Jones companies pre-SOX was 15.27%. Among the 30 companies, pre-SOX non-Caucasian board membership ranged from 0% to 27.78%, with a standard deviation of 0.067 (Figure 9). One company--or 3.33%--had no non-Caucasian board member. The frequency peaks at 8 companies having between 10 and 15% non-Caucasians. Half of the companies have over 15% non-Caucasians.

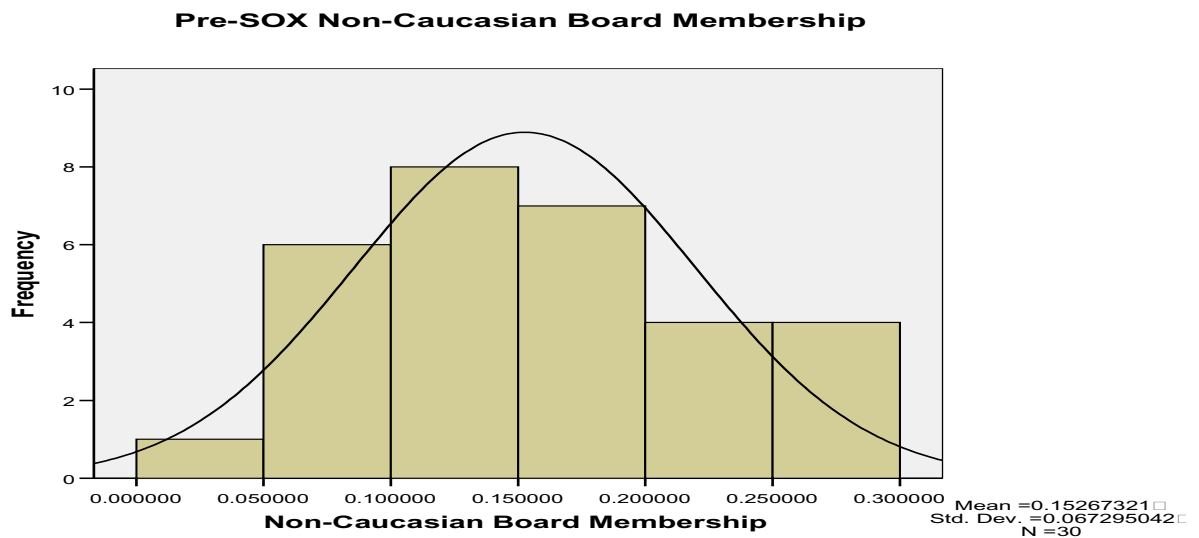


Figure 9. Pre-SOX non-Caucasian board membership.

Post-SOX, Dow Jones companies averaged 17.32% non-Caucasian board members. The range was from 0% at the minimum to a 40% maximum; the standard deviation was 0.101 (Figure 10). There are two companies--or 6.67%--with zero non-Caucasians represented on the board; this statistic doubled from pre-SOX. The histogram

peaks at seven companies between 5 and 10% non-Caucasians. Half the companies, post-SOX, have over 15% non-Caucasian board members. The same can be said about pre-SOX except the distribution goes to 40% post-SOX as opposed to 27.78% pre-SOX.

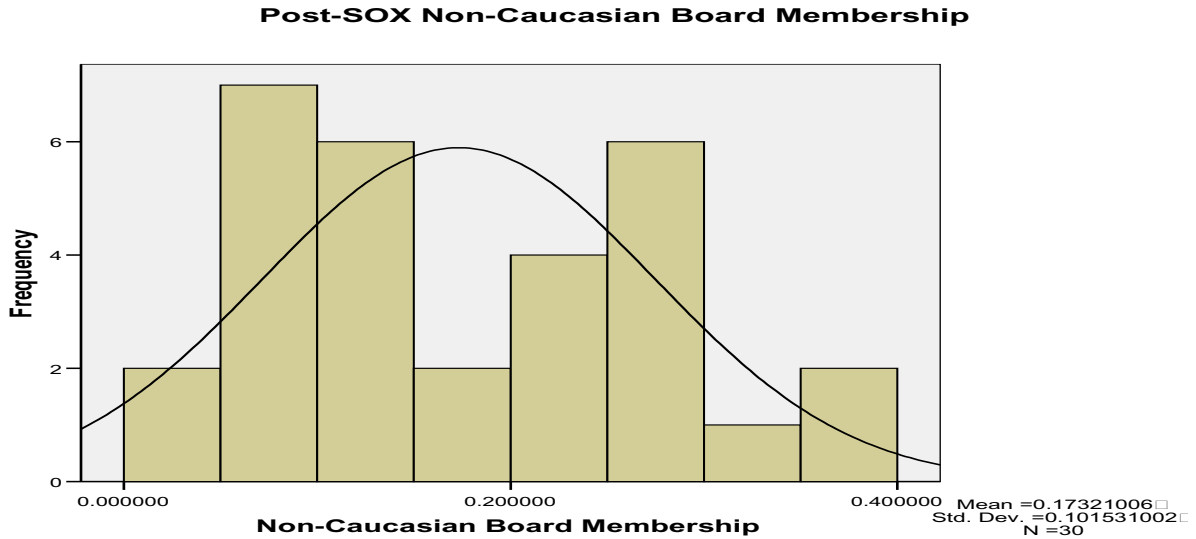


Figure 10. Post-SOX non-Caucasian board membership.

Both before and after the enactment of SOX, boards appear to have a majority of directors with a corporate background. Pre-SOX corporate experience was at 62.2% and post-SOX corporate experience increased by 2.5% to 64.6% (Table 5). Directors with Government/Military experience appear to be the only other experience type to increase slightly from 8.1% pre-SOX to 9.0% post-SOX. Representation of all other experience types appears to either remain the same or decrease.

Table 6. Functional Experience of Board Directors of DJIA Companies

Experience Type	Pre-SOX Frequency	Pre-SOX Percent	Post-SOX Frequency	Post-SOX Percent
Corporate	285	62.2	274	64.6
Not-for-Profit	25	5.5	22	5.2
Government/Military	37	8.1	38	9
Entrepreneur	38	8.3	30	7.1
Academic	53	11.6	49	11.6
Law	18	3.9	11	2.6
Entertainment	2	0.4	0	0
Total	458	100	424	100

The experience level of pre-SOX boards appears to be overwhelmingly at the lead executive level at 69% (Table 6). Less than one-third of directors appear to be at the executive level at 28.2%. Very few managers--2.8%--enjoyed directorships at Dow Jones companies. Post-SOX, boards seem to be even more so composed of directors who were either active or retired chief executives at 73.8%. Fewer executive level professionals, or 22.4%, appear to serve on the boards of Dow Jones companies after the enactment of SOX. Slightly more directors--at 3.8%--seem to come from the management, or non-executive, ranks.

Table 7. Experience Level of Board Directors of DJIA Companies

Experience Level	Pre- SOX Frequency	Pre- SOX Percent	Post- SOX Frequency	Post- SOX Percent
Lead Executive	316	69.0	313	73.8
Executive Team	129	28.2	95	22.4
Management	13	2.8	16	3.8
Total	458	100.0	424	100.0

### Hypothesis Testing

The next phase of analysis is the confirmatory data analysis that tests the five hypotheses by comparing the pre-SOX and post-SOX data for each DJIA composite company. Three non-parametric tests were used: McNemar, the sign test, and Wilcoxon. An adjusted parametric test--repeated measures ANOVA--was utilized to test the functional experience aspect of hypothesis 5. The results of each test follows.

#### *Hypothesis<sub>1</sub>*

*The structure of boards of directors in DJIA component companies have not changed, in terms of CEO duality, since the enactment of SOX.*

A two-by-two contingency table of the McNemar test reveals twenty companies that had CEO duality before SOX continued to have CEO duality after SOX and three companies that had separated roles pre-SOX continued to have separated roles. Only 7 of the 30 companies experienced a change in the leadership structure of the board, many of which also experienced corporate leadership transitions during the same period. Four

companies that had separate roles pre-SOX, had combined roles by 2007 and 3 companies that had combined roles in 2001 had separate roles post-SOX. However, the results of the McNemar test indicate the comparison was not significant because the two-tailed significance was 1.0. Therefore, hypothesis<sub>1</sub> fails to be rejected.

#### *Hypothesis<sub>2</sub>*

*The structure of boards of directors at corporations included in the DJIA is the same, in terms of size, as before the SOX legislation.*

Sixteen of 30 boards reduced in size, 8 boards remained the same size, and 6 boards increased in size. The Wilcoxon Signed Rank test computes  $p = 0.013$ , which is significant. The z-score is -2.482, indicating board size decreased dramatically. The null hypothesis is rejected.

#### *Hypothesis<sub>3</sub>*

*The structure of boards of directors at DJIA component companies has remained the same in terms of the number and type of committees since SOX.*

This hypothesis is divided into two separate tests--the Wilcoxon Signed Rank test was used to test the number of committees pre- and post-SOX and McNemar was used to test the types of committees being used pre- and post-SOX.

The Wilcoxon Signed Rank test calculated 12 of the thirty companies had no change in the number of committees, 11 companies increased in the number of committees, and 7 decreased in the number of committees. The two-tailed significance of this test indicates the results are not significant ( $p = 0.168$ ). Therefore, hypothesis<sub>3</sub> fails to be rejected.

To test the second part of hypothesis<sub>3</sub>, individual McNemar tests with continuity correction were conducted for each type of committee: Executive, Audit, Nominating,

Compensation, Finance, Public Affairs, and Governance. Table 7--below--displays the chi-squared and approximate p-values for each committee.

Table 8. McNemar Test Statistics and p-values by Committee

Committee	$\chi^2$	p-value
Executive	2.2857	0.1306
Audit	NA	NA
Nominating	0	1
Compensation	NA	NA
Finance	0.25	0.6171
Public Affairs	0	1
Governance	8.1	0.0044

*Note.* Adapted with permission from T. L. Morris, personal communication (2009).

Four committees--Executive, Nominating, Finance, and Public Affairs--calculate insignificant approximate p-values. Thus, the null hypothesis fails to be rejected. The same result holds true for the numerous committees aggregated into the "Other" category. The null hypothesis will fail to be rejected for the other committees as well.

For two committees--Audit and Compensation--the McNemar results do not apply because there must be change between the two test dates. All companies had audit committees pre- and post-SOX. Compensation committees were utilized by 29 of the 30

DJIA companies pre-SOX and only those same companies used the compensation committee post-SOX. Thus, there were no changes in the occurrence of audit and compensation committees. Therefore, the hypotheses will fail to be rejected for the audit and compensation committees even though an exact or approximate p-value cannot be calculated.

For the Governance committee, McNemar could not create a two-by-two contingency table because twenty companies had Governance committees pre-SOX but all 30 companies had Governance committees post-SOX. An exact p-value could not be computed using a discrete distribution. An approximate p-value was calculated using a continuous distribution. This approximate p-value is significant (0.0044); therefore, the hypothesis will be rejected pertaining only to the Governance committee.

#### *Hypothesis 4*

*The composition of boards at companies listed in the DJIA is the same in terms of the ratio of inside and outside directors since SOX enactment.*

The Wilcoxon Signed Rank test revealed 21 of the 30 boards experienced a decrease in insider participation, 7 increased insider participation on the boards, and 2 had no change in insider participation. The two-tailed significance of this test indicates the results are significant ( $p = .006$ ); therefore, hypothesis<sub>4</sub> will be rejected. Further, the z-score of -2.733 means the ratio of insiders serving on the boards of directors of DJIA companies has decreased considerably.



### *Hypothesis 5*

*The composition of boards of directors at DJIA firms is no more diverse in terms of gender, race, age, and functional experience than before SOX enactment.*

Board composition in hypothesis<sub>5</sub> incorporates four separate attributes: gender, age, race, and functional experience. The sign test was used to test gender. Eighteen of the 30 boards increased the ratio of female directors, 8 boards decreased the ratio of female directors, and 4 boards had no change in the representation of female directors. As a secondary means of validation, the parametric t-test shows the means are increasing from 0.159 pre-SOX to 0.183 post-SOX, thus supporting the sign test results that more females are serving on DJIA boards of directors. The sign test  $p = 0.078$  indicates the findings are not statistically significant and, therefore, the hypothesis will fail to be rejected.

The Wilcoxon Signed Ranks test was used to test the age aspect of hypothesis<sub>5</sub>. The average age of board members at 20 of the 30 DJIA companies increased and the average age decreased at the remaining ten companies. With  $p = .004$ , the test demonstrates a high level of significance. Therefore, the age aspect of hypothesis<sub>5</sub> will be rejected. The z-score of -2.869 suggests ages increased greatly.

Results of the sign test on the race aspect of hypothesis<sub>5</sub> indicate 15 companies-- or half--of the 30 DJIA components had a higher ratio of non-Caucasians serving on the board of directors. Nine companies had a lower ratio and 6 companies had no change in the ratio of non-Caucasians serving as board members. As a secondary means of validation, the parametric t-test shows the means are increasing from 0.153 pre-SOX to

0.173 post-SOX. The sign test  $p = 0.307$  indicates the findings are not statistically significant and the hypothesis will fail to be rejected.

The functional experience aspect of composition was tested using the parametric test repeated measures ANOVA. The explanatory variables are year, sector, and level with the response variable being the percentage of board members for each combination. Data transformation, specifically the arcsine of the square root of the percentages, was necessary to make the distribution of percentages more normal. The three-way interaction between the explanatory variables is significant ( $p = 0.0051$ ). Appendix B displays the mean percentages--computed from the raw percentages--and the p-values resulting from this analysis by level. The only p-values that were significant were lead executives from Corporate, executive team from Academia, and management from the Entrepreneurial/Entertainment, Academic, and Law. For these combinations, the hypothesis will be rejected. There was a significant increase in DJIA board members who were Corporate lead executives and Academic management, while there was a significant decrease in DJIA directors who were Law managers, Academic executive team, and Entrepreneurial/Entertainment management. For all other combinations, the hypothesis will fail to be rejected.

### Conclusion

The foregoing discussion in this chapter reviewed both the exploratory and confirmatory data analysis for the research questions discussed in Chapter 1. Of the original 5 hypotheses, 29 independent tests were conducted. One hypothesis regarding CEO duality-- $H_1$ --was not rejected. Two hypotheses were outright rejected-- $H_2$  and  $H_4$ --

regarding size and insider participation respectively. Results from tests on another two hypotheses led to mixed results--H<sub>3</sub> and H<sub>5</sub>. The committee number aspect of H<sub>3</sub> was not rejected, while only the Governance committee of the committee type of H<sub>3</sub> was rejected. The age aspect of H<sub>5</sub> was rejected. Only 5 of the possible 18 functional experience combinations were rejected.

Considering the combined results of the exploratory and confirmatory data analysis, the next chapter provides greater discussion of the conclusions from the results. Additionally, a discussion will ensue regarding the possible impact of the results on the existing knowledge base. Finally, recommendations will be made for further study in the area of corporate governance.

## CHAPTER 5. DISCUSSION, IMPLICATIONS, RECOMMENDATIONS

The purpose of this research was to determine the impact of the Sarbanes-Oxley Act of 2002 on corporate governance in companies that were components of the Dow Jones Industrial Average as of May 16, 2008. Specifically, the structure and composition of the board of directors was examined from a pre-SOX and post-SOX perspective. In testing the hypotheses, analysis of some data provided evidence to support the extant knowledge while others should lay the groundwork for further investigation. The first 3--of 5--hypotheses involved the structure of the board of directors. In this research, board structure entailed CEO duality, board size, and the number and types of committees.

The data provide no evidence that board leadership--or CEO duality--changed as a result of SOX. This is somewhat surprising because popular sentiment immediately following the scandals that led to SOX legislation was that greater independence could primarily be had through divided CEO and chairman of the board roles. This finding is not consistent with, but does support results from Chhaochharia & Grinstein (2007) that there is a slight decrease in CEO-chairman positions in large companies--the focus of this research. However, their finding is not statistically significant. The result in this research is not compatible with Valenti's (2008) statistically significant finding that CEO's were increasingly not chairing the board. This research does support Chhaochharia & Grinstein (2007), but is not statistically significant. The incongruence in each study indicates further research is needed in this area. Although not included in the hypothesis, a secondary observation is worth mentioning. Data collected in this research indicates an

increase in the use of a lead director on corporate boards. This was noted by Valenti (2008) as well. Further research is necessary to determine if the lead director role actually provides the independence sought.

This investigation provides evidence that boards reduced in size because of SOX. This result is consistent with the findings by Lee & Carlson (2007) and Chhaochharia & Grinstein (2007) that boards, in general, have become smaller since the Act. Chhaochharia & Grinstein (2007) specifically site a statistically significant decrease in large firms. However, this finding is contrary to Pearce & Zahra's (1992) discussion that boards tend to increase in size after board reform. The contradictory result could be a product of the specific clause in SOX that mandates independence on audit committees, where it had previously only been a best practice and a requirement of the listing exchanges. Smaller boards could also be a result of the mandatory penalties SOX initiates that could have driven potential board members away from service.

Committees were viewed from two different perspectives in this research: the number and type of committees. There was no justification SOX impacted the number of committees boards used to carry out their work since the number of committees remained about the same. However, there was a significant increase in the number of boards that use a Governance committee. Throughout SOX, there are several clauses that mandate the business or activities of board members and a greater emphasis is now made on the board itself. This is likely the cause for 100% use of the Governance committee post-SOX. There was no such change in the use of 5 commonly used committees or committees noted as Other.

The final two hypotheses involved the composition of the board of directors at DJIA companies. In this research, composition involves the ratio of independent directors and the gender, age, race, and functional experience of board members. As expected, DJIA companies have more independent board members than before SOX. This supports research by Lee & Carlson (2007), Chhaochharia & Grinstein (2007), and Valenti (2008) asserting that boards, in general, are more independent after SOX. However, more research is needed in this area because independence is not uniformly defined by companies subject to SOX. As a law, SOX does not provide specific guidelines to assist companies in determining independence. Therefore, companies have adopted definitions of independence from SROs or set the standard itself. The result is inconsistency in the determination of independence. An enhancement of this research would be to develop a single definition for an independent director and apply that definition to all directors of the companies. The result could be the classification of some directors coded as outsider would likely change and, perhaps, the result of the test would be different.

In terms of the average age of boards of directors, there was a counterintuitive finding. The researcher expected a decrease in age on boards; yet, the average age of board members increased significantly as boards summoned more retired CEOs and some boards increased the mandatory retirement age. While a specific purpose of this investigation was not to examine the retirement status of board members, it was observed that more retirees participated on boards after SOX. This is consistent with Chhaochharia & Grinstein's (2007) findings of a significant increase in retired directors.

The researcher had anticipated evidence indicating boards had become more diverse in terms of gender and race. Analysis of the data collected does not provide

support in either regard. There was not sufficient confirmation that boards have substantially changed in the number of females serving as directors. This research is consistent with Branson's (2007) findings. It is somewhat consistent with the assertion by Arfken, Bellar & Helms (2004) that females have made only modest gains in board representation. If one views female participation from the perspective of increasing the absolute number of women of boards, the argument could be made that perhaps fewer women are serving on DJIA boards. Considered collectively, the evidence indicates boards of directors at DJIA companies continue to be a "male club" (Broome, 2008, title). An observation worth noting, that likely indicates an opportunity for further research, is that females appear to experience less turnover than their male counterparts. In other words, if a female was on the board pre-SOX, it seems she was more likely to still be on the board post-SOX.

Furthermore, no statistically significant change has occurred in the racial composition of directors. This finding supports a host of other research indicating minority groups are underrepresented on boards of directors (Brammer et al., 2007, Branson, 2007; Ramirez, 2003; Strauss, 2002; Westphal & Stern, 2007; Westphal & Zajac, 1995). It also supports Heffes' (2009) summary of the Heidrick and Struggles survey conducted in the fall of 2008 that indicates boards recognize the business case for increasing minority representation but there is "little commitment" (Heffes, 2009, p. 11) to do so.

Functional expertise in this research consisted of sector and level. It was found that more directors were corporate CEOs and, to a lesser extent, academicians. This result is consistent with, yet more specific than, Chhaochharia & Grinstein's (2007) finding that

directors are executives of other companies. Chhaochharia & Grinstein (2007) observe the second most frequent occupation is retiree. This research did not distinguish between active and retired lead executives, but provides consistent results. The finding in this study contradicts both traditional and recent assertions indicating fewer executives are serving on boards in an effort to mitigate the inherent risks (Arfken, Bellar & Helms, 2004; Branson, 2007; Lorsh & MacIver, 1989; Nadler, 2006; Neff & Heidrick, 2006). The difference in these results could be that retired and active CEOs are commingled. Indeed, future studies should specifically examine this status separately.

An observation of this study not connected with the hypotheses is the sample. Although the DJIA was specifically selected for this study because it had a history of rarely changing component companies, the DJIA has experienced unprecedented change since the inception of this study due to meltdown in the financial markets beginning in 2008. Three component companies have been replaced since data collection began--AIG because it was assumed by the United States government, Citigroup because it needed significant assistance from the government, and General Motors because it filed for bankruptcy (Dow Jones, 2008, 2009). Updating the study to include the current DJIA would provide better insight into the current state of these large companies.

### Conclusion

Indisputably, the Sarbanes-Oxley Act of 2002 had a broad impact on businesses--both intentional and unintentional. This study specifically focused on the impact the Law had on several aspects of corporate governance. SOX has also caused many other organizations and regulating entities to focus on governance issues. This research



contributes to the body of knowledge regarding the interaction of SOX and corporate governance. There is the possibility that, as time continues, the impact of SOX itself will diminish as the listing requirements at the SROs become more rigorous. In more general terms, this research will remain relevant as it provides evidence of the impact legislation can have on how boards operate.

## REFERENCES

- Abdullah, S. N. (2006). Board structure and ownership in Malaysia: The case of distressed listed companies. *Corporate Governance*, 6(5), 582.
- Ancona, D. G., Goodman, P. S., Lawrence, B. S., & Tushman, M. L. (2001). Time: A new research lens. *Academy of Management Review*, 26(4), 645-563.
- Andrews, F. M., Klem, L., Davidson, T. N., O'Malley, P. M., & Rodgers, W. L. (1981). *A guide for selecting statistical techniques for analyzing social science data* (2nd ed.). Ann Arbor: Institute for Social Research, The University of Michigan.
- Arbnor, I., & Bjerke, B. (1997). *Methodology for creating business knowledge*. Thousand Oaks: Sage Publications.
- Arfken, D. E., Bellar, S. L., & Helms, M. M. (2004). The ultimate glass ceiling revisited: The presence of women on corporate boards. *Journal of Business Ethics*, 50, 177 – 185.
- Armenakis, A. A., & Bedeian, A. G. (1999). Organizational change: A review of theory and research in the 1990s. *Journal of Management*, 25(3), 293-315.
- Australian Securities Exchange. (2003). *Principles of good corporate governance and best practice recommendations*. Sydney, Australia: Australian Securities Exchange.
- Barnard, J. W. (1991). *Institutional investors and the new corporate governance*. North Carolina Law Review, 69.
- Beasley, M. S., Carcello, J. V., Hermanson, D. R., & Lapides, P. D. (2000). Fraudulent financial reporting: Consideration of industry traits and corporate governance mechanisms. *Accounting Horizons*, 14(4), 441.
- Berle, A. A., & Means, G. C. (1932). *The modern corporation and private property*. New York: McMillan.
- Berle, A. A., & Means, G. C. (1933). *The modern corporation and private property*. New York: McMillan.
- Bessette, P. R., Biles, M. J., Ahart, C. W., & Heard, H. V. (2006). Considering going dark? *Financial Executive*, 22(9), 30-32.
- Bhagat, S., & Black, B. (1999). The uncertain relationship between board composition and firm performance. *Business Lawyer*, 54(3), 921.

- Bhagat, S., & Black, B. (2002). The non-correlation between board independence and long-term firm performance. *Journal of Corporation Law*, 27(2), 231.
- Bilimoria, D., & Piderit, S. K. (1994). Board committee membership: Effects of sex-based bias. *Academy of Management Journal*, 37(6), 1453.
- Blair, M. M. (1994). *Ownership and control: Who's at stake in the corporate governance debates*. Washington, D.C.: Brookings Institution.
- Blair, M. M. (1995). *Ownership and control: Rethinking corporate governance for the twenty-first century*. Washington, D.C.: The Brookings Institution.
- Bostrom, R. E. (2003). Corporate governance: developments and best practices one year after Sarbanes-Oxley. *International Financial Law Review*, 189-204.
- Brammer, S., Millington, A., & Pavelin, S. (2007). Gender and ethnic diversity among UK corporate boards. *Corporate Governance: An International Review*, 15(2), 393-403.
- Branson, D. M. (2007). *No seat at the table: How corporate governance and law keep women out of the boardroom*. New York: New York University Press.
- Broome, L. L. (2008). The corporate boardroom: Still a male club. *Journal of Corporation Law*, 33(3), 665.
- Brountas, P. P. (2004). *Boardroom excellence: A commonsense perspective on corporate governance* (1st ed.). San Francisco, CA: Jossey-Bass.
- Brown, J. R. (2006). Criticizing the critics: Sarbanes-Oxley and quack corporate governance. *Marquette Law Review*, 90(2), 309-335.
- Byrne, J. A., Grover, R., & Melcher, R. A. (1997). The best and worst boards. *Business Week*, 3556, 90-98.
- Cadbury, A. (2002). *Corporate governance and chairmanship: A personal view*. Oxford University Press.
- Calegari, M., & Turetsky, H. (2006). Selling to escape compliance costs. *Mergers & Acquisitions: The Dealermaker's Journal*, 41(9), 54-58.
- Carter, D. A., Simkins, B. J., & Simpson, W. G. (2003). Corporate governance, board diversity, and firm value. *Financial Review*, 38(1), 33-53.

- Chhaochharia, V., & Grinstein, Y. (2007, November). The changing structure of US corporate boards: 1997–2003. *Corporate Governance: An International Review*, 15(6), 1215-1223.
- Clarke, T. (1993). Corporate governance: The state of the art. *Managerial Auditing Journal*, 8(3), 3.
- Clarke, T. (1998). Research on corporate governance. *Corporate Governance: An International Review*, 6(1), 57.
- Cooper, D. R., & Schindler, P. S. (2006). *Business research methods*. New York: McGraw-Hill Irwin.
- Daily, C. M., & Dalton, D. R. (1993). Board of directors leadership and structure: Control and performance implications. *Entrepreneurship: Theory & Practice*, 17(3), 65-81.
- Daily, C. M., & Dalton, D. R. (1994). Bankruptcy and corporate governance: The impact of board composition and structure. *Academy of Management Journal*, 37(6), 1603-1617.
- Daily, C. M., & Dalton, D. R. (1997a). CEO and board chair roles held jointly or separately: Much ado about nothing? *Academy of Management Executive*, 11(3), 11-20.
- Daily, C. M., & Dalton, D. R. (1997b). Separate, but not independent: Board leadership structure in large corporations. *Corporate Governance: An International Review*, 5(3), 126.
- Dalton, D. R., Daily, C. M., Ellstrand, A. E., & Johnson, J. L. (1998). Meta-analytic reviews of board composition, leadership structure, and financial performance. *Strategic Management Journal*, 19(3), 269.
- Davidson, W. N., Pilger, T., & Szakmary, A. (2004). The importance of board composition and committee structure: The case of poison pills. *Corporate Ownership & Control*, 1(3), 81-95.
- Davis, G. F., & Useem, M. (2001). Governance leadership and convergence. *Corporate Board*, 22(127), 17.
- Dent, G. W. (2005). Corporate governance: Still broke, no fix in sight. *Journal of Corporation Law*, 31(1), 39-76.
- Dodwell, W. J. (2008). Six years of the Sarbanes-Oxley Act: Are we better off? *The CPA Journal*, 78(8), 38.

- Dow Jones Company. (2008). *Dow Jones Indexes: Averages: Methodology*. Retrieved 6/12/08 from <http://www.djindexes.com/mdsidx/index.cfm?event=showAvgMethod>.
- Dow Jones Company. (2009). *Dow Jones to change composition of the Dow Jones Industrial Average*. Retrieved 7/1/2009 from [http://www.dowjones.com/Pressroom/PressReleases/Other/US/2009/0601\\_US\\_DowJonesIndexes\\_9122.htm](http://www.dowjones.com/Pressroom/PressReleases/Other/US/2009/0601_US_DowJonesIndexes_9122.htm)
- Dow Jones Company. (2008). *Dow Jones to change composition of the Dow Jones Industrial Average*. Retrieved 9/18/2009 from [http://www.dowjones.com/Pressroom/PressReleases/Other/US/2008/0918\\_US\\_MarketWatch\\_2674.htm](http://www.dowjones.com/Pressroom/PressReleases/Other/US/2008/0918_US_MarketWatch_2674.htm)
- du Plessis, J. J., McConvill, J., & Bagaric, M. (2005). *Principles of contemporary corporate governance*. New York: Cambridge University Press.
- Eaton, T. V., & Akers, M. D. (2007). Whistleblowing and good governance. *CPA Journal*, 77(6), 66-71.
- Finkelstein, S., & D'Aveni, R. A. (1994). CEO duality as a double-edged sword: How boards of directors balance entrenchment avoidance and unity of command. *Academy of Management Journal*, 37(5), 1079-1108.
- Fombrun, C. J. (2006). Corporate governance. *Corporate Reputation Review*, 8(4), 267-271.
- Fortune. (2001). 2001 *Fortune 500*. Retrieved 8/25/08, 2008, from [http://money.cnn.com/magazines/fortune/fortune500\\_archive/full/2001/](http://money.cnn.com/magazines/fortune/fortune500_archive/full/2001/)
- Freeman, E. H. (2005). Retention of Corporate E-Documents under Sarbanes--Oxley. *Information Systems Security*, 14(4), 5-9.
- Freeman, R. E. (1994). The politics of stakeholder theory: Some future directions. *Business Ethics Quarterly*, 4(4), 409-421.
- Friedman, M. (September 13, 1970). The social responsibility of business is to increase its profits. *New York Times Magazine*.
- Gompers, P., Ishii, J., & Metrick, A. (2003). Corporate governance and equity prices. *Quarterly Journal of Economics*, 118(1), 107.
- Hambrick, D. C., & Jackson, E. M. (2000). Outside directors with a stake: The linchpin in improving governance. *California Management Review*, 42(4), 108-127.

- Hamilton, R. W. (2000). Corporate governance in America 1950-2000: Major changes but uncertain benefits. *Journal of Corporation Law*, 25(2), 349.
- Harrast, S. A., & Mason-Olsen, L. (2007). Can audit committees prevent management fraud? *CPA Journal*, 77(1), 24-27.
- Harrigan, K. R. (1981). Numbers and positions of women elected to corporate boards. *Academy of Management Journal*, 24(3), 619-625.
- Harrison, J. R. (1987). The strategic use of corporate board committees. *California Management Review*, 30(1), 109-125.
- Heffes, E. (2009). Minorities 'Not Wanted', Says Survey. *Financial Executive*, 25(2), 11-11.
- Heidrick & Struggles & University of Southern California. (2006 - 2007). *10th annual corporate board effectiveness survey*. Los Angeles: USC/Center for Effective Organizations.
- Hermalin, B. E., & Weisbach, M. S. (1988). The determinants of board composition. *RAND Journal of Economics*, 19(4), 589-606.
- Hermalin, B. E., & Weisbach, M. S. (2000). *Boards of directors as an endogenously determined institution: A survey of economic literature*. Unpublished manuscript.
- Hillman, A. J., & Dalziel, T. (2003). Boards of directors and firm performance: Integrating agency and resource dependence perspectives. *Academy of Management Review*, 28(3), 383-396.
- Investopedia. (2008). *Investopedia.com: Financial dictionary*. Retrieved 4/23/08 from <http://www.investopedia.com/dictionary/default.asp>
- Investor's Business Daily. (2008). *Investor's Business Daily: Financial dictionary*. Retrieved 4/23/08 from <http://www.investors.com/financialdictionary/>
- Jemison, D., & Oakley, R. (1981). The need to reform corporate governance in the mutual insurance industry. *Journal of Business Strategy*, 2(1), 52.
- Jennings, M. M. (2006). Why do smart businesspeople do ethically dumb things? *Corporate Finance Review*, 11(3), 38.
- Jones, T. M. (1986). Corporate board structure and performance: Variations in the incidence of shareholder suits. *Research in Corporate Social Performance and Policy*, 8, 345-359.

- Kaiser, G. S. (2005). Comment: Fiduciary responsibilities under the Sarbanes-Oxley design. *Case Western Reserve Law Review*, 55(3), 627-631.
- Kang, E., & Zardkoochi, A. (2005). Board leadership structure and firm performance. *Corporate Governance: An International Review*, 13(6), 785-799.
- Karami, A., Rowley, J., & Analoui, F. (2006). Research and knowledge building in management studies: An Analysis of Methodological Preferences. *International Journal of Management*, 23(1), 43-52.
- Kesner, I. F. (1988). Directors' characteristics and committee membership: An investigation of type, occupation, tenure, and gender. *Academy of Management Journal*, 31(1), 66-84.
- Kesner, I. F., Victor, B., & Lamont, B. T. (1986). Board composition and the commission of illegal acts: An investigation of Fortune 500 companies. *Academy of Management Journal*, 29(4), 789-799.
- Khurana, R. (2002). *Searching for the corporate savior: The irrational quest for charismatic CEOs*. Princeton, NJ: Princeton University Press.
- Klein, A. (2003). Likely effects of stock exchange governance proposals and Sarbanes-Oxley on corporate boards and financial reporting. *Accounting Horizons*, 17(4), 343-355.
- Koehn, J. L., & DelVecchio, S. C. (2006). Revisiting the Ripple Effects of the Sarbanes-Oxley Act. *CPA Journal*, 76(5), 32-39.
- Kostal, S. (2006). Board to pieces. *ABA Journal*, 92(6), 12-14.
- Lawler, E. E., & Finegold, D. L. (2005). The changing face of corporate boards. *MIT Sloan Management Review*, 46(2), 67-70.
- Lee, S. K., & Carlson, L. R. (2007). The changing board of directors: Board independence in S & P 500 firms. *Journal of Organizational Culture, Communication and Conflict*, 11(1), 31.
- Lipton, M., & Lorsch, J. W. (1992). A modest proposal for improved corporate governance. *Business Lawyer*, 48(1), 59.
- Lorsch, J. W., & MacIver, E. (1989). *Pawns or potentates: The reality of America's corporate boards*. Boston: Harvard Business School Press.

- Louis, B., Jr., & Jian, Z. (2006). An exploratory study of the effects of the Sarbanes-Oxley Act, the SEC and United States stock exchange(s) rules on audit committee alignment. *Managerial Auditing Journal*, 21(2), 166-190.
- Luoma, P., & Goodstein, J. (1999). Stakeholders and corporate boards: Institutional influences on board composition and structure. *Academy of Management Journal*, 42(5), 553-563.
- Melendy, S. (2005). *The role of compliance committees in corporate governance*. Unpublished doctoral dissertation., State University of New York at Buffalo, United States -- New York.
- Minow, N., & Bingham, K. (1993). The ideal board. *Corporate Board*, 14(81), 11.
- Mitchell, T. R., & James, L. R. (2001). Buiding better theory: Time and the specification of when things happen. *Academy of Management Review*, 26(4), 530-547.
- Monks, R. A. G., & Minow, N. (1991). *Power and accountability*. Cambridge, MA: Blackwell Publishers.
- Muir, D. M., & Schipani, C. A. (2007). The use of efficient market hypothesis: Beyond SOX. *Michigan Law Review*, 105(8), 1941.
- Nadler, D. A., Behan, B. A., & Nadler, M. B. (2006). *Building better boards: A blueprint for effective governance*. San Francisco: Jossey-Bass.
- Neff, T. J., & Heidrick, R. L. (2006). Why board service is still attractive. *Corporate Board*, 27(158), 1-5.
- Norusis, M. J. (2006). *SPSS 14.0 guide to data analysis*. Upper Saddle River, NJ: Prentice Hall.
- Nuzzo, J. L. J. (1995). Separation of the role of chairman and CEO: Will it really improve corporate governance? *Directorship*, 21(9), 6.
- O'Connor, R. (2005). The Sarbanes-Oxley 404 Checklist. *Business Credit*, 107(8), 32-34.
- Organisation for Economic Co-operation and Development. (2004). *OECD Principles for Corporate Governance*. Paris, France: OECD Publications Service.
- Orin, R. M. (2008). Ethical guidance and constraint under the Sarbanes-Oxley Act of 2002. *Journal of Accounting, Auditing & Finance*, 23(1), 141-171.
- Pandey, S. C., & Verma, P. (2005). Organizational decline and turnaround: insights from the Worldcom case. *Vision*, 9(2), 51-65.



- Patterson, D. J. (1998). *The link between corporate governance and performance*. New York: The Conference Board. (TCB No. R-1215-98-RR)
- Pearce, J. A., & Zahra, S. A. (1992). Board composition from a strategic contingency perspective. *Journal of Management Studies*, 29(4), 411-438.
- Peterson, C. A., & Philpot, J. (2007). Women's roles on U.S. Fortune 500 boards: Director expertise and committee memberships. *Journal of Business Ethics*, 72(2), 177.
- Pettigrew, A. M. (1992). On studying managerial elites. *Strategic Management Journal*, 13, 163-182.
- Pfeffer, J. (1972). Size and composition of corporate boards of directors: The organization and its environment. *Administrative Science Quarterly*, 17(2), 218-228.
- Public Company Accounting Reform and Investor Protection Act of 2002, Senate and House of Representatives, 107th Congress Session.(2002).
- Raiborn, C., & Schorg, C. (2004). The Sarbanes-Oxley Act of 2002: An analysis of and comments on the accounting-related provisions. *Journal of Business & Management*, 10(1), 1-13.
- Ramirez, S. A. (2003). A flaw in the Sarbanes-Oxley reform: Can diversity in the boardroom quell corporate corruption? *St. John's Law Review*, 77(4), 837-866.
- Rechner, P. L., & Dalton, D. R. (1989). The impact of CEO as board chairperson on corporate performance: Evidence vs. rhetoric. *Academy of Management Executive*, 3(2), 141-143.
- Reed, R. O., Sinnett, W. M., Buchman, T., & Wobbekind, R. (2005). Why should private companies implement Sarbanes-Oxley? *Financial Executive*, 21(3), 54-57.
- Remenyi, D. (1996). So you want to be an academic researcher in business and management studies! Where do you start. *South African Journal of Business Management*, 27(1/2), 22.
- Rhoades, D., L., Rechner, P., L., & Sundaramurthy, C. (2000). Board composition and financial performance: A meta-analysis of the influence of outside directors. *Journal of Managerial Issues*, 12(1), 76.
- Robson, C. (2002). *Real world research* (2nd ed.). Malden: Blackwell Publishing.

- Romano, R. (2005). The Sarbanes-Oxley Act and the making of quack corporate governance. *The Yale Law Journal*, 114(7), 1521.
- Rose, C. (2006). Board composition and corporate governance-A multivariate analysis of listed Danish firms. *European Journal of Law and Economics*, 21(2), 113.
- Ruspini, E. (2000). Longitudinal research in the social sciences. Department of Sociology, University of Surrey.
- Standard & Poor. (2006). *S&P U.S. indices: Fact Sheet*. Standard & Poor's. Retrieved 4/20/08 from [http://www2.standardandpoors.com/spf/pdf/index/SP\\_500\\_Factsheet.pdf](http://www2.standardandpoors.com/spf/pdf/index/SP_500_Factsheet.pdf)
- Scandura, T. A., & Williams, E. A. (2000). Research methodology in management: Current practices, trends, and implication for future research. *Academy of Management Journal*, 43(6), 1248-1264.
- Schein, E. H. (1983). The role of the founder in creating organizational culture. *Organizational Dynamics*, 13 - 28.
- Shine, D. B. (2007). Pity the SOX whistleblower: Pity the SOX lawyer whistleblower! *Labor Law Journal*, 58(4), 228-241.
- Sinnett, W. (2003). Even private company boards of directors are changing. *Financial Executive*, 19(7), 46-49.
- Spencer Stuart. (2002). Spencer Stuart US Board Index.
- Stephens, L., & Schwartz, R. G. (2006). The Chilling Effect of Sarbanes-Oxley: Myth or reality? *CPA Journal*, 76(6), 14-19.
- Stimson, W. A. (2005). Sarbanes-Oxley and ISO-9000. *Quality Progress*, 38(3), 24.
- Strauss, G. (11/1/02). Good old boys' network still rules corporate boards. *USA Today*.
- Swartz, N. (2006). Some executives want to repeal SOX. *Information Management Journal*, 40(3), 12.
- Trochim, W. M. K. (2006). *The research methods knowledge base*. Retrieved 9/28/07 from <http://www.socialresearchmethods.net/kb/index.php>
- Truong, T. (2006). Corporate boards, ownership and agency costs: Evidence from Australia. *The Business Review, Cambridge*, 5(2), 163.

- Valenti, A. (2008). The Sarbanes-Oxley Act of 2002: Has it brought about changes in the boards of large U.S. corporations? (No. 81): *Springer Science & Business Media*.
- Van der Walt, N., Ingley, C., Shergill, G. S., & Townsend, A. (2006). Board configuration: Are diverse boards better boards? *Corporate Governance*, 6(2), 129.
- Vance, S. C. (1978). Corporate governance: Assessing corporate performance by boardroom attributes. *Journal of Business Research*, 6(3), 203-220.
- Voordeckers, W., Van Gils, A., & Van den Heuvel, J. (2007). Board composition in small and medium-sized family firms. *Journal of Small Business Management*, 45(1), 137.
- Wagner, S., & Dittmar, L. (2006). The Unexpected Benefits of Sarbanes-Oxley. *Harvard Business Review*, 84(4), 133-140.
- Westphal, J. D., & Stern, I. (2007). Flattery will get you everywhere (especially if you are a male Caucasian): How ingratiation, boardroom behavior, and demographic minority status affect additional board appointments at U.S. companies. *Academy of Management Journal*, 50(2), 267-288.
- Westphal, J. D., & Zajac, E. J. (1995). Who shall govern? CEO/board power, demographic similarity, and new director selection. *Administrative Science Quarterly*, 40(1), 60.
- White, M. D., & Marsh, E. E. (2006). Content Analysis: A Flexible Methodology. *Library Trends*, 55(1), 22-45.
- Wolf, P. M. (2007). *Board performance in a post Sarbanes-Oxley environment: An examination of the relationships among board processes, board intellectual capital and board changes*. Unpublished doctoral dissertation, Capella University, United States -- Minnesota.
- Yahoo!Finance. (2008). *Education center - Yahoo!Finance*. Retrieved 4/20/08 from <http://finance.yahoo.com/education>
- Zahra, S. A., & Pearce, J. A. (1989). Boards of directors and corporate financial performance: A review and integrative model. *Journal of Management*, 15(2), 291.

## APPENDIX A. Summary Data Collection and Coding Sheet

Company Name	Board Structure										Board Composition									
	Hypothesis 1 CEO Duality BLEADER		Lead Director	Hypothesis 2 Board Size BSIZE		Hypothesis 3 # of Committees COMMNUM		Hypothesis 3 Committees COMMTYPE		Hypothesis 4 Insider/Outside Ratio		Hypothesis 5 Gender GENDER		Hypothesis 5 Race BRACE		Hypothesis 5 Age BAGE		Hypothesis 5 Functional Experience FUNC		
	Pre-SOX	Post-SOX		Pre-SOX	Post-SOX	Pre-SOX	Post-SOX	Pre-SOX	Post-SOX	Pre-SOX	Post-SOX	Pre-SOX	Post-SOX	Pre-SOX	Post-SOX	Pre-SOX	Post-SOX	Pre-SOX	Post-SOX	
3M Co.	0	0	yes-2007	11	10	4	4	2,4,3&7,6	2,4,3&7,5	0.181818	0.1	0.272727	0.3	0.272727	0.2	60.27273	63.1	0.5454545	0.6	
Alcoa Inc.	0	0	yes-2007	9	10	5	5	0,1,2,3,4	1,2,4,3&7	0.111111	0.2	0.222222	0.2	0.222222	0.4	64.11111	63.5	0.4444444	0.4	
Am. Express Co.	0	0		12	14	5	4	1,2,3,4,6	2,3,7,4,6	0.25	0.214286	0.166667	0.142857	0.166667	0.285714	61.08333	61	0.3333333	0.428571	
Am. Intl Group	0	1	yes-2007	18	14	4	6	1,2,4,5	0,2,3&7,4,5,6	0.444444	0.071429	0.111111	0.142857	0.111111	0.071429	65.55556	64.64286	0.0555556	0.285714	
AT&T Inc.	0	0	yes-2007	21	14	6	7	0,1,2,3&4,5,6,0,1,2,3&7,4,5,6	0,095238	0.071429	0.285714	0.357143	0.142857	0.142857	64.38095	63.71429	0.3809524	0.571429		
Bank of Am Corp.	0	0	yes-2007	18	17	5	5	0,0,1,2,4,7	0,1,2,4,7	0.222222	0.117647	0.222222	0.235294	0.111111	0.117647	59.88889	62.82353	0.2222222	0.235294	
Boeing Co.	0	0	yes-2007	12	12	4	5	2,3&7,4,5	0,2,3&7,4,5	0.166667	0.416667	0.083333	0.166667	0	0	62.91667	62.16667	0.5833333	0.5	
Caterpillar Inc.	0	0		14	14	4	4	2,4,3&7,6	2,4,7,6	0.071429	0.071429	0.071429	0.071429	0.142857	0.142857	61.38462	62.71429	0.7857143	0.785714	
Chevron Corp.	0	0	yes-2007	15	14	4	4	2,3&7,4,6	2,3&7,4,6	0.2	0.142857	0.066667	0.071429	0.133333	0.142857	63	65.07143	0.3333333	0.5	
Citigroup Inc.	0	0	yes-2007	18	15	4	5	0,2,3&4&7,6	1,2,3&7,4,6	0.277778	0.333333	0.055556	0.133333	0.333333	0.4	63	63.33333	0.3888889	0.6	
Coca-Cola Co.	0	0		12	12	6	7	1,2,3,4,5,6&8,0,1,2,3,7,4,5,6&8	0,083333	0.25	0.166667	0.166667	0.083333	0.166667	64.63636	68.58333	0.4166667	0.5		
DuPont de Nemours & Co.	0	0		13	12	5	6	2,4,7,0,0	2,4,7,0,0,0	0.076923	0.083333	0.230769	0.166667	0.153846	0.083333	58.61538	58.33333	0.3846154	0.416667	
Exxon Mobil Corp.	0	0		14	13	7	7	0,1,2,3,4,5,6,0,1,2,3,7,4,5,6	0,285714	0.153846	0.214286	0.153846	0.071429	0.076923	63	65.61538	0.5714286	0.692308		
General Electric Co.	0	0	yes-2007	19	16	3	4	2,3,4,0	2,3,7,4,0,6	0.263158	0.25	0.210526	0.25	0.25	58	61.4375	0.4736842	0.625		
General Motors Corp.	1	0	yes-2007	12	13	6	5	0,0,2,3,7,4,6	0,2,3,7,4,6	0.25	0.076923	0.083333	0.230769	0.25	0.153846	59.75	62.30769	0.8333333	0.769231	
Hewlett-Packard Co.	0	0	yes-2007	10	10	5	5	1,2,3,7,4,5	0,2,3,7,4,5	0.3	0.2	0.3	0.2	0.1	0.1	55.8	57.7	0.6	0.4	
Home Depot Inc.	0	0	yes '01/07	12	13	5	4	0,1,2,3,7,4	0,2,3,7,0,4	0.166667	0.076923	0.083333	0.153846	0.166667	0.230769	60.83333	62.69231	0.4166667	0.384615	
Intel Corp.	1	1		11	11	6	5	1,2,3,4,5,7	1,2,3,7,4,5	0.181818	0.181818	0.090909	0.272727	0.090909	0	59.90909	59.18182	0.5454545	0.454545	
Intl Business Machines	1	0		15	13	4	4	1,2,3,7,4	1,2,3,7,4	0.2	0.153846	0.133333	0.230769	0.2	0.307692	61.2	63.07692	0.6666667	0.615385	
Johnson & Johnson	0	0	yes 2007	15	12	3	6	2,4,3,7	0,2,4,3,7,5,6	0.266667	0.166667	0.2	0.25	0.066667	0.25	64.06667	62.08333	0.3333333	0.5	
JPMorgan Chase & Co.	0	0	yes 2007	14	12	5	5	0,2,3,7,4,6	0,2,3,7,4,6	0.071429	0.083333	0.214286	0.166667	0.142857	0.083333	61.35714	59.25	0.7142857	0.666667	
McDonald's Corp.	0	1		13	13	5	6	0,1,2,3,7,4	0,1,2,3,7,4,5	0.307692	0.076923	0.153846	0.153846	0.153846	0.230769	61.76923	62.30769	0.5384615	0.538462	
Merck & Co. Inc.	0	0	yes 2007	13	13	6	6	1,2,3,4,5,6	0,2,4,5,6,7	0.230769	0.153846	0.230769	0.230769	0.076923	0.076923	60.23077	61.30769	0.3846154	0.538462	
Microsoft Corp.	1	1	yes 2007	8	11	3	5	2,4,5	0,2,3,7,4,5	0.375	0.272727	0	0.090909	0.125	0.090909	54.875	61.30769	0.375	0.272727	
Pfizer Inc.	0	0	yes 2007	18	14	4	5	1,2,4,3,7	0,1,2,4,3,7	0.111111	0.142857	0.111111	0.142857	0.222222	0.142857	61.33333	64.21429	0.7222222	0.571429	
Procter & Gamble Co.	1	0	yes 2007	16	14	6	5	1,2,3,7,4,5,6	0,2,4,0,5,6,7	0.125	0.071429	0.125	0.142857	0.1875	0.214286	60	62.21429	0.5625	0.642857	
United Technologies Corp	0	0	yes 2007	12	14	5	5	2,3,7,4,5,6	2,3,7,4,5,6	0.166667	0.071429	0.166667	0.142857	0.083333	0.071429	60.58333	63	0.5	0.5	
Verizon Comm Inc.	1	0	yes 2007	16	15	4	3	0,2,5,6,7	0,2,7	0.125	0.066667	0.125	0.133333	0.1875	0.266667	62.8125	64.73333	0.6875	0.6	
Wal-Mart Stores Inc.	1	1	yes 2007	15	15	5	5	0,1,2,3,4,0,5	0,1,2,3,4,7,0,5	0.333333	0.266667	0.133333	0.2	0.2	0.266667	55.73333	59.66667	0.4	0.6	
Walt Disney Co.	0	1		16	11	5	4	0,1,2,4,3,7	1,2,3,7,4	0.3125	0.090909	0.25	0.181818	0.1875	0.272727	61.4375	58.09091	0.1875	0.545455	
				total	422	391														
0.7667	0.8			min	8	10	3	3		min	0.071429	0.066667	0	0.071429		min	54.875	57.7	0.0555556	0.235294
				max	21	17	7	7		max	0.444444	0.416667	0.3	0.357143		max	65.55556	68.58333	0.8333333	0.785714
				M	14.07	13.0333	4.7867	5.0333		M	0.20845	0.154307				M	61.05123	62.30669	0.4795722	0.524684
				SD	3.084	1.75152	1.0063	0.9994		SD	0.096915	0.089668				SD	2.612148	2.386124	0.1783201	0.133938

0 = Duality  
1 = No Duality

0 = Other  
1 = Executive  
2 = Audit  
3 = Nominating  
4 = Compensation  
5 = Finance  
6 = Public Affairs  
7 = Governance

0 = female  
1 = male  
1 = Non-Caucasian

0 = Corporate  
1 = Not-for-Profit  
2 = Government/Militan  
3 = Entrep/Entertain  
4 = Academic  
5 = Law

a = Lead Executive  
b = Executive Team  
c = Management

APPENDIX B. Pre-SOX and Post-SOX Mean Percentages and p-values for Functional Experience

Level	a	A	A	a	a	a
Industry	0	1	2	3	4	5
Pre-SOX	0.497	0.108	0.071	0.138	0.084	0.056
Post-SOX	0.566	0.094	0.086	0.124	0.071	0.079
p-value	0.0322*	0.7397	0.2034	0.9031	0.1719	0.3816

Level	b	B	B	b	b	b
Industry	0	1	2	3	4	5
Pre-SOX	0.185	0.028	0.063	0.064	0.079	0.078
Post-SOX	0.157	0.05	0.074	0.02	0.049	0.052
p-value	0.3974	0.7518	0.5525	0.111	0.0175*	0.2159

Level	c	C	C
Industry	3	4	5
Pre-SOX	0.073	0.045	0.069
Post-SOX	0	0.094	0
p-value	0.0406*	0.0086*	0.0152*

\* Significant at the 0.05 level.

*Note.* Adapted with permission from T. L. Morris, personal communication (2009).