

The Short-Term and Long-Term Impacts of Sarbanes-Oxley Act on Composition and Characteristics of Corporate Board of Directors

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Abstract

The paper examines the Sarbanes-Oxley (2002) Act's immediate impact on board composition and characteristics as well as possible reversals in its impact over time. Effects on directors' age and tenure are analyzed over the 2001-06 sample period. Female participation in corporate boards is also studied in the pre-SOX and post-SOX periods. The dual roles of directors in being a member of the board as well as serving as either CEO, CFO, Chairman, Co-Chair, Founder, or Lead Director of their respective companies is also examined. We observe a short-term impact of SOX on board compositions due to changes seen in board characteristics between 2001 (pre-SOX), and 2003-05 short-term period (post-SOX). Also, we observe a reversal of board characteristics in 2006 to pre-SOX levels implying that the effects of SOX on board composition were short-lived, and needs to be monitored over time to ensure adherence to corporate accountability guidelines over the long-term.

Keywords: Board Composition and Characteristics, Sarbanes Oxley Act, Directors' Age, Tenure, Female Participation, Dual Roles

Introduction

The objective of the Sarbanes-Oxley Act of 2002 was to improve corporate governance and reduce conflicts of interest issues and agency problems within firms following the collapse of several large US firms. In this paper we look at possible effects of the Sarbanes-Oxley (i.e. SOX) Act (2002) on the composition and characteristics of the board of directors of US companies during the period 2001-2006. The motivation underlying the study is to examine whether the changes in board composition and characteristics prescribed by the SOX Act were put into

effect in the short-term and whether those changes were sustained over the long term following the passage of the Act.

We look at specific characteristics as well as composition of the board of directors. Effects on directors' age and tenure are analyzed over the sample period. Also, changes in board composition in terms of female participation following the passage of the SOX Act are tested. We attempt to track any changes in director characteristics such as age, tenure and gender over time. Specifically, we examine SOX's immediate impact (i.e. after 2002) on board compositions as well as possible reversals in its impact over time (i.e. after 2005) after the passage of the SOX. If the initial impacts were mostly positive, but over time some of the director characteristics got reversed, we could then conclude that, in some respects, the impact of passing such an Act was short-lived. Our paper also examines the director characteristics in the period immediately before the SOX Act (in 2001), and then compares them in the periods following the Act until 2006.

The board composition is also examined in terms of dual roles of directors in being a member of the board as well as serving as either CEO, CFO, Chairman, Co-Chair, Founder, or Lead Director of their respective companies is examined. The analysis could shed some light on the preference of companies for filling these positions using either company insiders or outsiders. In particular, we would like to study whether the Sarbanes-Oxley Act may have had an effect on board of directors' serving dual roles within the organization. The results could provide some insights into corporate governance and agency issues of US corporations in response to the corporate accountability guidelines and requirements of

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the Sarbanes-Oxley Act.

The paper is organized as follows. Literature Review is provided in section 2. Data and methodology are presented in section 3. Results are presented in section 4, and section 5 provides conclusions of our study.

Literature Review

Linck et al. (2009) find broad-based changes in terms of increase in outside directors for firms following the mandate of the SOX Act. They find that in the post-SOX period directors are more likely to be lawyers/consultants, financial experts, and retired executives, and less likely to be current executives. Uzun et al. (2004) found that incidence of corporate fraud decreased as firms hired more external directors.

We use the mean value of director tenure before and after the Act to see if firms employed more external directors that could be reflected in drop in tenure of existing directors in the companies (OMIT) Hillman and Dalziel (2003) emphasize the role of the board of directors in monitoring the behavior of managers on behalf of the stockholders. Following agency theory they propose that the inclusion of more internal directors in the board could hamper monitoring as they are more dependent on the CEO and the organization.

Raheja (2005) analyzes the pros and cons of having internal versus external candidates on a firm's corporate board of directors. In the model, the board is responsible for monitoring projects and making CEO succession decisions. Inside directors are assumed to have better information regarding the quality of firm investment projects, while outside directors can use CEO succession to motivate insiders to reveal their superior information and help the board implement higher value projects. Valenti (2008) examined corporate board structures following the enactment of Sarbanes-Oxley and obtained evidence that companies were implementing changes designed to improve the monitoring ability of their boards. In our paper, we try to check whether firms had a preference for insiders or outsiders to serve in the board following the passage of the SOX Act.

Petra (2005) examined five areas within corporate boards of directors, including board composition, CEO duality, audit committees, compensation committees and nominating committees. The paper discussed the effects

that outside independent directors have on increased firm performance and shareholder wealth through stronger corporate governance, and concluded that outside independent directors appeared to strengthen corporate boards. In our paper we focus on the board composition (in terms of age, tenure, and gender) and duality roles among board members in terms of their dual roles as CEO, CFO, Chairman, Founder, etc. of their companies.

Peterson and Philpot (2007) find that female directors are less likely than male directors to sit on executive committees and more likely than their male counterparts to sit on public affairs committees. Previous work concludes that there is a systematic bias against females in assignment to top board committees. Dalton and Dalton (2010), however note steady increases in the overall participation of women on corporate boards including roles as lead directors, as well as increases in their presence on key board committees. Bear, et al. (2010) found female directors on average possessed different educational and professional backgrounds vis-à-vis their male counterparts, and were seen to be more participative and democratic in their decision-making process.

Kesner (1988) examined the composition of corporate board committees. The characteristics of occupation, type, tenure, and gender were examined in relationship to directors' membership on the four most influential board committees, namely the audit, nominating, compensation, and executive committees. The results in the paper show strong evidence to suggest that the composition of these committees differs in rather significant way from that of corporate boards in general. According to McIntyre, et al. (2007) diversity in terms of age and tenure is beneficial for the board of directors. More specifically, younger and shorter-tenured directors are suggested on boards for diversity of outlook (Bere 1991, and Siciliano, 1996), while older and longer tenured directors are suggested for stability. According to Forbes and Milliken (1999) representation of outside board members adds to diversity and adds to cognitive conflicts on the company boards. John (1995) mentions diversity dimensions of differences in viewpoints, ideas and judgments arising between board members when external members are added to the board. In our paper, we analyze the change, if any, in the dual roles of company insiders in company boards, that could then indicate the prevalence of external candidates being added as board members.

Linck et al. (2008) find that board structure across firms

is consistent with the costs and benefits of the board’s monitoring and advising roles. According to their findings, board size fell in the 1990s for large firms, a trend that reversed at the time of mandated reforms following the SOX, while board size was relatively flat for small and medium-sized firms. We look at board structures in terms of the number of company insiders (such as CEOs, etc.) serving in the board before and after the SOX recommendations.

Data and Methodology

We use the Board Analyst database in our study. Board Analyst has U.S. corporate board data for the 2001-2006 period, therefore our sample period is the 2001-2006 period. We have considered board of directors data until 2006 to look at the impact of Sarbanes Oxley (SOX) Act on board composition and characteristics and compare them in the period before and after the passage of the SOX Act in 2002. Our focus in the paper is to observe the impact of the Sarbanes-Oxley Act (2002), and so it would be appropriate to use pre- and post- 2002 data. In total, we have 124,366 observations in our sample. 14,068 of them are in year 2001, 17,316 are in 2002, 20,920 are in 2003, 18,224 are in 2004, 18,909 are in 2005, and 34,929 are in 2006.

First, we look at director characteristics like director age, the percentage of female directors, and director tenure over our sample period. We call these variables “Director Age”, “Female Directors”, and “Director Tenure”. Then, we look at variables that measure the directors’ dual roles in their respective companies. These are “Is CEO (%)”, “Is CFO (%)”, “Is Chairman (%)”, “Is Co-Chair (%)”, “Is Founder (%)”, and “Is Lead Director (%)” (i.e. the percentage of directors also serving as the CEO, the CFO, the Chairman, the Co-Chair, the Founder, and the Lead Director).

First, we look at the trend in each of these variables over time. Our main question is this: “Did Sarbanes-Oxley Act have an impact on any of these variables?” After looking at the trend in each variable, we run statistical tests to compare year 2001 values (i.e. just before the Act) to the values during the 2003-2005 period (i.e. the period just after the Act). We will see in our graphs that there is a big reversal in some of these variables from 2005 to 2006; therefore we also run tests to compare year 2005 values to year 2006 values.

We use the Wilcoxon test for time varying continuous variables in our sample, namely, “Director Age” and “Director Tenure”. The Chi-squared test is used for comparisons of categorical variables in our study such as “Female Directors”, “Is CEO(%)”, and other variables that measure the directors’ dual roles in their respective companies.

Empirical Results

I. Age, Gender, and Tenure

Table 1 shows the mean and the median director age in U.S. corporate boards over the period 2001-2006. Figure 1 is a graphical presentation of the mean director age over the same period (2001-2006). As we can see, while the mean age slightly drops from 2001 to 2002 (from 59.12 years to 58.98 years), it starts to go up each year after 2002. The mean age in the following years (starting from 2003) is 59.29, 59.50, 59.63, and 60.22, respectively. We can say that, after the Sarbanes-Oxley Act was passed in 2002, U.S. corporations employed more and more experienced directors each year.

Table 1: Director Age Over Time

Director Age (years)			
Year	Mean	Median	St. Deviation
2001	59.12	59.00	8.81
2002	58.98	59.00	8.82
2003	59.29	60.00	9.02
2004	59.50	60.00	8.78
2005	59.63	60.00	8.69
2006	60.22	61.00	9.55

Fig 1. Mean Director Age Over Time

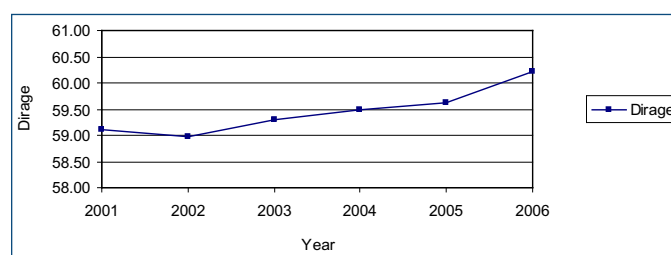


Table 2 and Figure 2 show the percentage of female directors over time. Here, we are seeing that U.S. corporations increased the percentage of female directors in their boards each year up until year 2005. In 2001,

9.25% of the directors were female while in 2002 this percentage jumped to 9.34%. In 2003 it jumped further to 9.68%. This percentage continued to increase in 2004 and 2005 (10.49% and 10.88%). Interestingly, there was a reversal in 2006. In 2006, the percentage of female directors dropped to 9.57%. In our opinion, these findings imply that the Sarbanes-Oxley Act had a positive impact on boards' gender diversity only temporarily (i.e. for 3-4 years). After this period, the companies somewhat reverted back to their original male/female composition.

Table 2: The Percentage of Female Directors

Year	Female Directors (%)
2001	9.25
2002	9.34
2003	9.68
2004	10.49
2005	10.88
2006	9.57

Fig 2. The Percentage of Female Directors Over Time

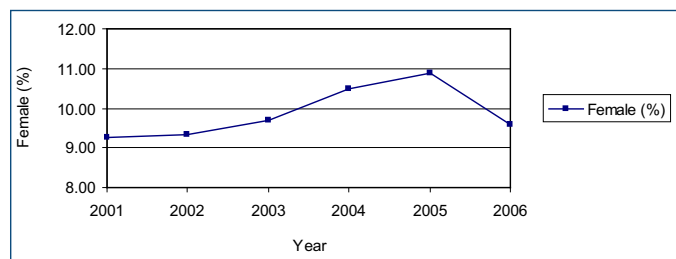
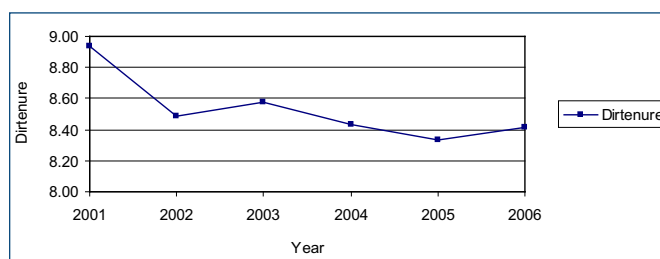


Table 3 and Figure 3 show the mean values of director tenure (in years) over time. Here, we are seeing a big drop from 2001 to 2002 (from 8.94 years to 8.49 years). After 2002, the mean value of director tenure is almost constant (just small ups and downs). By looking at these numbers, we can conclude that the Sarbanes-Oxley Act in 2002 had a big impact on companies' boards. In order to have such a big drop in director tenure, there should have been big changes in the composition of these boards. The directors who were associated with these companies for a long time should have been substituted by some newcomers in 2002.

Table 3: The Number of Years the Directorship Has Been Active

Year	Director Tenure (years)
2001	8.94
2002	8.49
2003	8.58
2004	8.43
2005	8.33
2006	8.41

Fig 3. Mean Director Tenure Over time



II. Directors Serving in Dual Roles

Table 4 and Figure 4 show the percentage of directors who also served as the CEO in the same company. Here, again we are seeing a big impact due to Sarbanes-Oxley Act. There is a big jump from 2001 to 2002 (from 4.53% to 9.79%). After 2002, the numbers are almost constant. These percentages indicate that more companies started to employ CEO-directors after Sarbanes-Oxley.

Table 4: The Percentage of Directors Also Serving as the CEO

Year	Is CEO (%)
2001	4.53
2002	9.79
2003	9.01
2004	10.76
2005	10.76
2006	8.44

Fig 4. The Percentage of Directors Also Serving as the CEO of the Firm

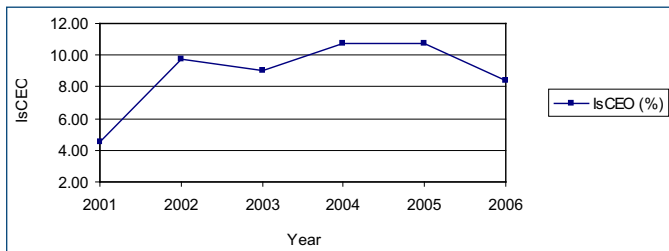


Table 5 and Figure 5 show the percentage of directors who also served as the CFO in the same company. In 2001-2003 period, no director was reported as the CFO. In 2004, there was a big jump: 1.02% of the directors were reported as the CFO. In 2005 and 2006, this percentage dropped to first 0.84% and then to 0.59. One can argue that Sarbanes-Oxley created some CFO-directors in a delayed way. Instead of a jump in 2002, we are seeing a jump in 2004.

Table 5: The Percentage of Directors Also Serving as the CFO

Year	Is CFO (%)
2001	0.00
2002	0.00
2003	0.00
2004	1.02
2005	0.84
2006	0.59

Fig 5. The Percentage of Directors Who were the CFO of the Firm



The next table and figure show the percentage of directors who were also the Chairman of the Board. Similar to Table 4 for CEO-directors, here we are seeing a big impact due

to Sarbanes-Oxley Act. There is a big jump from 2001 to 2002 (from 4.39% to 9.69%). Again, after 2002, the numbers are relatively unchanged.

Table 6: The Percentage of Directors Also Serving as the Chairman of the Board

Year	Is Chairman (%)
2001	4.39
2002	9.69
2003	9.06
2004	10.90
2005	10.93
2006	8.60

Fig 6. The Percentage of Directors Who Were a Chairman of the Firm

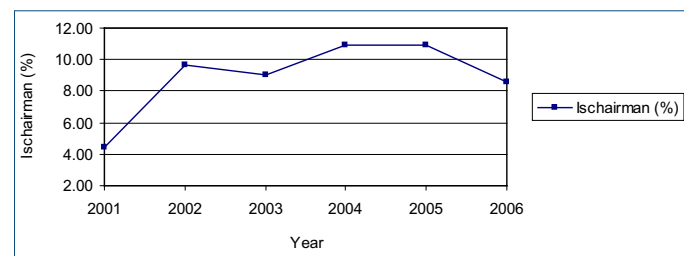
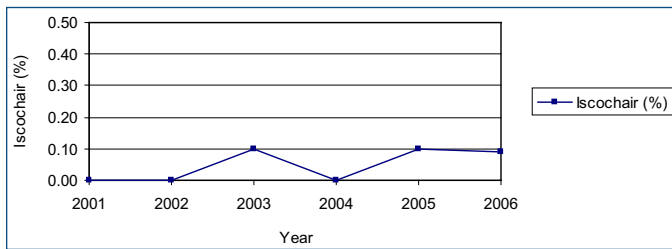


Table 7 and Figure 7 present the percentage of directors who were also the Co-Chair of the Board. In 2001 and 2002, none of the directors were reported as the Co-Chair. In 2001, 0.10% were reported as the Co-Chair. Again, in 2004, none of the directors was Co-Chair. In 2005 and 2006, 0.10% and 0.09% of the directors were reported as the Co-Chair. So, after Sarbanes-Oxley, we are seeing some of the directors serving as the Co-Chair of their respective firms.

Table 7: The Percentage of Directors Also Serving as the Co-Chairman of the Board

Year	Is Co-Chair (%)
2001	0.00
2002	0.00
2003	0.10
2004	0.00
2005	0.10
2006	0.09

Fig 7. The Percentage of Directors Who Were a Co-Chair of the Firm



The next table and figure show the percentage of directors who were also founder of the firm. Here, we are seeing a gradual increase throughout the whole period. In 2001, 0.83% of the directors were a founder, in 2002, 1.59% were a founder. This percentage gradually increased each year, and finally in 2006, it reached 2.27%. These numbers imply that, during this period, the founders of the firms returned back in a more active role as a director.

Table 8: The Percentage of Directors Who were Also a Founder of the Company

Year	Is Founder (%)
2001	0.83
2002	1.59
2003	1.76
2004	2.06
2005	2.28
2006	2.27

Fig 8. The Percentage of Directors Who were a Founder of the Firm

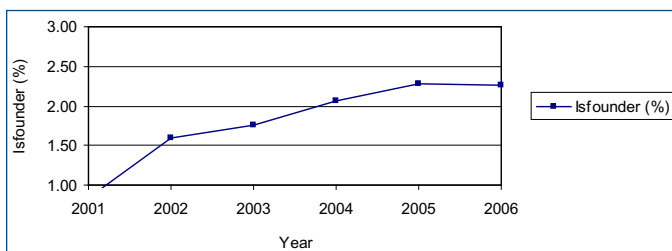


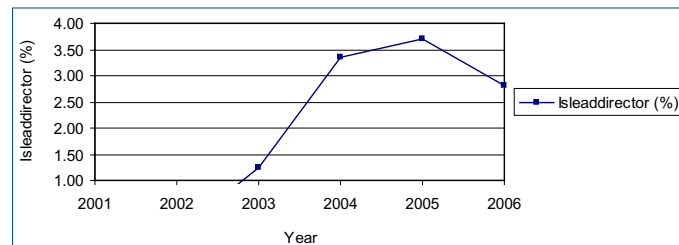
Table 9 and Figure 9 show the percentage of directors serving as the lead director. The “lead director” classification was not used in 2001 and 2002. It was first used in 2003. That year, 1.25% of the directors are classified as a lead director. In 2004 and 2005, this percentage went up to 3.35% and 3.71% before dropping back to 2.80% in 2006. These percentages indicate

that the boards became more proactive by creating this classification starting from 2003, but by 2006, some of them started eliminating this classification. Again, the affect of Sarbanes-Oxley seem to be temporary here.

Table 9: The Percentage of Directors Serving as the Lead Director

Year	Is Lead Director (%)
2001	0.00
2002	0.00
2003	1.25
2004	3.35
2005	3.71
2006	2.80

Fig 9. The Percentage of Directors Who were Classified as the Lead Director



III. Tests for Comparing the 2001 (pre-SOX) and 2003-2005 (post-SOX) periods:

The next two tables show the results of the empirical tests that compare the director characteristics in 2001 versus in 2003-2005 period. Table 10 compares director age as well as director tenure across the two periods. Since director age and tenure are continuous variables, we use the Wilcoxon test for these comparisons. Table 11 compares the other director characteristics like the % of female directors, is CEO %, etc. across the two periods. Since these variables are categorical, we use the Chi-Square test for these comparisons.

Table X shows that the director age was significantly (p-value<0.0001) higher in 2003-2005 compared to 2001. The mean director age was 59.47 in 2003-2005, while it was 59.12 in 2001. On the other hand, the director tenure was significantly (p-value<0.0001) lower in 2003-2005 compared to 2001. The mean director tenure was 8.45 years in 2003-2005, while it was 8.94 years in 2001.

Table 10: Director Age and Tenure in 2001 versus 2003-2005

<i>Wilcoxon Test</i>			
	2001	2003-2005	<i>p-value</i>
Director Age (years)	59.12	59.47	<0.0001
Director Tenure (years)	8.94	8.45	<0.0001

Table 11 shows that the % of female directors was significantly higher (p-value=0.0005) in 2003-2005 (i.e. 10.35%) compared to 2001 (9.25%). The percentage of

directors also serving as the CEO was also significantly higher (p-value<0.0001) in 2003-2005. We can say the same thing for the percentage of directors also serving as the CFO, the Chairman, the Co-Chair, the Founder, and the Lead Director. The differences between the two periods are all statistically significant (p-values range from <0.0001 to 0.0021). The results here imply that U.S. boards included more female directors. We can also conclude that more directors served in dual roles in their respective companies after Sarbanes-Oxley.

Table 11: Comparison of Other Characteristics Across the 2001 and 2003-2005 Periods

<i>Chi-Square Test</i>				
	2001	2003-2005	<i>Chi-Square Value</i>	<i>p-value</i>
The % of female directors	9.25	10.35	15.10	0.0005
Is CEO (%)	4.53	10.12	430.69	<0.0001
Is CFO (%)	0.00	0.59	84.01	<0.0001
Is Chairman (%)	4.39	10.23	468.48	<0.0001
Is Co-Chair (%)	0.00	0.07	9.46	0.0021
Is Founder (%)	0.83	2.01	90.34	<0.0001
Is Lead Director (%)	0.00	2.68	385.63	<0.0001

IV. Tests for the Possible Reversal in the Long-Run

The final two tables show the results of the empirical tests that compare the director characteristics in 2005 versus in 2006 to examine reversals, if any, in the characteristics. The tables indicate reversal in some of the director characteristics. This reversal may be due to the diminishing impact of SOX over time on U.S. companies. Table 12 compares director age as well as director tenure across the two periods. Table 13 compares the other director characteristics like the % of female directors, is CEO %, etc. across the two periods.

Table 12 shows that the director age was significantly (p-value<0.0001) higher in 2006 compared to 2005. The mean director age was 60.22 in 2006, while it was 59.63 in 2005. On the other hand, the director tenure was not significantly different across the two years. The mean tenure was 8.41 years in 2006 versus 8.33 years in 2005 (p-value=0.2754). We can conclude that the director age continued to rise after 2005. On the other hand, while

director tenure went down for a few years, (comparing 2001 versus 2003-05, in Table X), after 2005, it was flat.

Table 12: Director Age and Tenure in 2005 versus 2006

<i>Wilcoxon Test</i>			
	2005	2006	<i>p-value</i>
Director Age (years)	59.63	60.22	<0.0001
Director Tenure (years)	8.33	8.41	0.2754

Table 13 shows that after an increase in the earlier period (comparing 2001 versus 2003-05, in Table XI), the percentage of female directors as well as the percentage of directors also serving as the CEO, the CFO, the Chairman, or the Lead Director went down significantly in 2006. The p-values range from <0.0001 to 0.0008. In these variables, we are seeing a reversal in the trend, meaning that the impact of Sarbanes-Oxley disappeared after 3-4 years. After 2005, firms started to reduce the number of female directors and the number of directors serving in dual roles in their boards.

Table 13: Comparison of Other Characteristics in 2005 Versus in 2006

<i>Chi-Square Test</i>				
	2005	2006	<i>Chi-Square Value</i>	<i>p-value</i>
The % of female directors	10.88	9.57	25.29	<0.0001
Is CEO (%)	10.76	8.44	79.18	<0.0001
Is CFO (%)	0.84	0.59	11.20	0.0008
Is Chairman (%)	10.93	8.60	77.99	<0.0001
Is Co-Chair (%)	0.10	0.09	0.18	0.6697
Is Founder (%)	2.28	2.27	0.01	0.9270
Is Lead Director (%)	3.71	2.80	34.03	<0.0001

Conclusions

In this study, we attempt to examine the impact of the Sarbanes-Oxley Act of 2002 on U.S. firms' board characteristics. We compare the pre-SOX period (i.e. 2001) to the post-SOX period (2003-2006). Our findings indicate that while the SOX Act had some real impact on board's composition following the guidelines and requirements of the Act during the earlier period (i.e. the 2003-2005 period). However, this positive impact on board compositions had mostly reversed after 2005 to pre-SOX (2001) levels.

The mean age of the board of directors dropped slightly from 2001 to 2002 (from 59.12 years to 58.98 years), but it started to go up each year after 2002. We can say that, after the Sarbanes-Oxley Act was passed in 2002, U.S. corporations employed more and more experienced directors each year. Comparing the immediate pre- and post SOX periods, director age was significantly ($p\text{-value}<0.0001$) higher in 2003-2005 compared to 2001. U.S. corporations increased the percentage of female directors in their boards, after passage of the SOX in 2002, each year up until year 2005. The % of female directors was significantly higher ($p\text{-value}=0.0005$) in 2003-2005 (i.e. 10.35%) compared to 2001 (9.25%). Interestingly, there was a reversal in 2006. In 2006, the percentage of female directors dropped. These findings imply that the Sarbanes-Oxley Act had a positive impact on boards' gender diversity only temporarily (i.e. for 3-4 years). After this period, the companies somewhat reverted back to their original male/female composition. The percent of directors serving in dual roles (as CEO, CFO, Chairman, etc.) also increased significantly from 2001 (pre-SOX) to

2003-05 (post SOX periods). The percentage of directors also serving as the CEO, the CFO, the Chairman, or the Lead Director went down significantly in 2006 from 2005 levels, indicating a reversal of board compositions to pre-SOX levels such as those in 2001. This reversal was seen to occur following a short-term change in board compositions (2003-05) following the passage of the SOX in 2002.

Mean values of director tenure (in years) saw a big drop from 2001 to 2002. After 2002, the mean value of director tenure is almost flat. By looking at these numbers, we can conclude that the Sarbanes-Oxley Act in 2002 had a big impact on companies' boards. In order to have such a big drop in director tenure, there should have been big changes in the composition of these boards. The directors who were associated with these companies for a long time should have been substituted by some newcomers in 2002. Comparing the immediate pre- and post SOX periods, the director tenure was significantly ($p\text{-value}<0.0001$) lower in 2003-2005 compared to 2001.

Our study finds the percentage of directors who also served as the CEO in the same company jumped from 2001 to 2002 (from 4.53% to 9.79%). After 2002, the numbers are almost flat. These percentages indicate that more companies started to employ CEO-directors after Sarbanes-Oxley. This could have had beneficial effects of reducing agency separation issues between directors and CEOs in terms of resource allocation decisions, but could have also increased potential conflicts of interest in the monitoring role of the board in terms of CEO compensation plans, etc. Sarbanes-Oxley created some CFO-directors in a delayed way. Instead of a jump in 2002, we are seeing a jump in 2004.

The percentage of directors who were the Chairman of the Board experienced an immediate impact due to Sarbanes-Oxley Act. There was a big jump from 2001 to 2002 (from 4.39% to 9.69%). This shows an increase in internal candidates as Board Chairs and a decrease in hiring outsiders as chairmen of the board of directors. Again, after 2002, the numbers of Chairman-Directors are almost flat. In 2001 and 2002, none of the directors were reported as the Co-Chair of the boards. After Sarbanes-Oxley (2002) however, we are seeing some of the directors serving as the Co-Chair of their respective firms.

We find that the percentage of directors who were also a founder of the firm showed a gradual increase throughout

the period (2001-05). These numbers imply that, during this period, the founders of the firms returned back in a more active role as a director, thereby reducing agency issues. The “lead director” classification was not used in 2001 and 2002. The percentages indicate that the boards became more proactive by creating this classification starting from 2003, but by 2006, some of them started eliminating this classification. Again, the effects of Sarbanes-Oxley seem to be temporary in case of the increase in the numbers of founders acting as directors of their respective companies.

Overall, we observe a short-term impact of SOX on board compositions due to changes seen in board characteristics (average age, female participation rates, director tenure, and dual roles of board members) between 2001 (pre-SOX), and 2003-05 (post-SOX). Also, we observe a reversal of board characteristics in 2006 to pre-SOX levels implying that the effects of SOX on board compositions were temporary and short-lived. Therefore, from a policy implication point of view, our findings suggest that it may be worthwhile for policymakers to increase long-run monitoring of such Acts, to ensure adherence to the corporate accountability guidelines and recommendations of the Act over time. We can look at possible effects of the 2008 financial crisis on corporate governance issues relating to composition and characteristics of board of directors in the pre- and post- financial crisis (2008) period as an independent future study.

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