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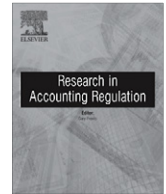

Research Report

Has the likelihood of appointing a CEO with an accounting/finance background changed in the post-Sarbanes Oxley era?

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ABSTRACT

Congress passed the Sarbanes–Oxley Act (SOX) in July 2002 to improve the accuracy and reliability of financial reporting. The Act increased boards of directors' responsibilities for financial reporting and control. Did it consequently increase boards' preferences for a CEO with financial experience to protect against the potential reputational and/or legal losses that directors incur when financial scandals happen? We investigated whether newly appointed CEOs in the post-SOX period were more likely to have accounting or finance experience than in the pre-SOX period. Using a sample of 264 CEO changes from 2001 to 2004, we found that the percentage of newly-appointed CEOs with accounting/finance backgrounds significantly increased in the post-SOX period compared to the pre-SOX period. Our results suggest that the events surrounding the passage of the Sarbanes–Oxley Act may have affected the CEO background experience preferred by boards of directors.

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Introduction

The Sarbanes–Oxley Act (SOX) 2002 was passed in the wake of a number of high profile corporate accounting scandals to "improv[e] the accuracy and reliability of corporate disclosures ..." SOX includes several provisions clarifying and extending the board's responsibilities for financial reporting and control issues. Boards of directors are required to establish audit committees, and the act creates a presumption that there will be a financial expert on the audit committee. The act also makes SEC sanctions against directors and management more likely by lowering the bar for actionable director misconduct. As a result of the financial scandals precipitating the passage of SOX, the financial press questioned the adequacy of board oversight of executive's financial reporting. For example, Hu (2006) indicates that if directors had hired executives with more accounting/finance knowledge, some of the high profile frauds occurring during the pre-SOX period may have been avoided.

This paper adds to the literature on the changes that may have been effected by the Sarbanes–Oxley Act[2] by assessing whether the provisions of SOX (and the financial misstatements occurring at the same time) may have affected CEO appointments.[3] Specifically, we investigate whether newly-appointed CEOs were more likely to have accounting/financial experience in the post-SOX era relative

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[2] For example, Gordon, Loeb, Lucyshyn, and Sohail (2006) found that information security disclosures were significantly different in the post-SOX period compared to the pre-Sox period. Similarly, McEnroe (2007) found that SOX has a small perceived effect on the likelihood of earnings management.

[3] Because the passage of SOX and financial misstatement disclosure occurred at about the same time, we cannot determine whether it was the passage of the SOX or the financial scandals that may have changed executive hiring decisions, or some combination of the two issues. As such, when we refer to the post-SOX era, we do not imply that the passage of the SOX was the only issue that may have changed behavior.

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to the pre-SOX era. The negative perceptions of the board's monitoring responsibility for executive qualifications in highly publicized frauds may have influenced directors to place more emphasis on the accounting/financial background of CEO candidates in the post-SOX corporate environment.[4]

We examined 264 CEO appointments in publicly-traded firms occurring from 2001 to 2004. We found that 15.48% of the CEOs appointed in the pre-SOX period had accounting and/or finance experience, while 33.33% of CEOs appointed post-SOX had this experience. To test the persistence of these results, we compared six-month time periods before and after the act. Results show a spike in CEO appointments with an accounting/finance background in the six month period immediately following the passage of the SOX, and that the percentage of newly-appointed CEOs with accounting/finance experience was higher in each of the six-month periods post-SOX than they were in any of the pre-SOX periods. We also tested a multivariate model to assess the SOX main effect on CEO accounting/financial experience by including control variables that may explain firm preference for a CEO with an accounting/finance background. The multivariate model supports the idea that firms were significantly more likely to appoint a CEO with an accounting/finance background in the post-SOX period than in the pre-SOX period.

The remainder of this paper is organized as follows. In the next section, we review the board and executive responsibility provisions of SOX and the "lack of knowledge of accounting" defense used by executives accused of financial manipulation. We also discuss the limited research on the effects of CEO background, followed by development of the research question examined in the study. We then discuss the research methods used and the results, followed by a presentation of the limitations of our research. We conclude with a summary and implications of our findings.

Literature review

Board and CEO responsibilities for financial reporting and control

The Sarbanes–Oxley Act, passed by the US Congress and signed by the President on July 30, 2002, increased director's responsibility for financial reports. For example, SOX requires boards to establish audit committees, which have the responsibility to provide oversight of the financial reporting process (§ 301). The Act also imposes a higher standard of care on directors and lowers the bar for the SEC to pursue directors for unfitness (§ 305).[5] SOX also creates a presumption that boards will have a financial expert on their audit committee by requiring the disclosure of a financial expert, or the reasons why the audit committee does not have a financial expert (§ 407). These director provisions of SOX could lead to further reputational and/or legal consequences for directors in firms that experience financial scandals. Directors could be expected to place greater reliance on managers' accounting and financial experience to avoid these financial scandals, and the resulting director reputational and/or legal complications.

Upper management's responsibilities for financial reporting and control issues were also increased by SOX. The Act requires CEOs to certify that the financial statements fairly present financial results (§ 302), and imposes fines of up to $5,000,000 and prison terms of up to 20 years for corporate officers who falsely certify financial results (§ 906). In addition, executives of publicly-traded firms are required to acknowledge their responsibility for, and report on the effectiveness of, their internal control system (§ 404). Senior management must also disclose to the auditor and audit committee any fraud (even if immaterial) involving management or others involved in control functions.

The "lack of accounting knowledge" defense

In the 2006 trial in which he was accused of involvement in a material misstatement of Cendant's financial statements, Walter Forbes, former CEO of Cendant, claimed that he was not responsible for the financial manipulation because he knew "little of accounting and never paid any attention to how the profit figures were compiled" (Norris, 2006, p. C6). Due to a mistrial, Mr. Forbes avoided conviction.[6] In 2001, Enron management was accused of financial statement manipulation. Subsequently, Jeffrey Skilling, former CEO of Enron, testified before the US Senate that he "was not an accountant" (Norris, 2005) and could therefore not be expected to understand or be responsible for any financial statement problems at Enron. In both of these cases, the executives asserted their innocence due to their "lack of accounting knowledge."[7]

Although management has always been responsible for financial reporting and internal controls, these responsibilities were clarified in SOX, and more severe sanctions were implemented. Norris (2005) asserts that the US Congress included the CEO provisions in SOX because of Jeffrey Skilling's (the former Enron CEO) use of the "lack of accounting knowledge" defense in his congressional testimony. Asare, Cunningham, and Wright (2007) discuss the SOX provisions regarding executive responsibility for financial reporting. With regard to the lack of knowledge defense, they indicate that: "[t]he chief practical goals and effect of [SOX] Section 906 is to diminish the ignorance defense ... Similarly, [SOX] Section 302 affirmations limit

[4] For example, Chandar, Klein, and Zheng (2010) examined the effects of the Enron financial scandal on the directors of Enron. They found that in 2000, before the financial scandal, the 16 directors of Enron had an average of 2.7 total directorships each. In 2003, after the Enron financial scandal, 15 of the 16 directors had no directorships at all. The 1 remaining director went from having 5 directorships to only 2.

[5] Specifically, the act lowers the standard for SEC action against directors and management from "substantial unfitness" to simply "unfitness" (SOX § 305).

[6] The jury could not reach consensus on Mr. Forbes' guilt, so a mistrial was declared.

[7] In the subsequent trial of former Enron CEOs Jeffrey Skilling and Kenneth Lay, the jury convicted both men on numerous federal fraud and conspiracy charges. A juror stated that she "hoped executives at other companies would realize that those in charge have responsibility" (Emshwiller, McWilliams, & Davis, 2006).

officer's ability to hide behind the defense of ignorance." (Asare et al., 2007, p. 93). Did the CEOs' explicit statutory responsibilities encourage corporate boards to seek out CEOs with financial experience?[8]

Effects of CEO accounting/financial experience

There is some research that examines the effects on firms of CEOs with an accounting/finance background. Barker and Mueller (2002) examined research and development (R&D) spending and found that firms whose CEOs have an accounting/finance background did not spend significantly different amounts on R&D than other firms. Mizruchi and Stearns (2002) found that in the 1970 and early 1980s, firms' debt levels were more influenced by whether the firm's CEO had an accounting/finance background, and less influenced by the firms' industry characteristics. For more recent time periods, they found that industry characteristics, rather than the CEO's background, had greater explanatory power in their model of debt levels.

Matsunaga and Yeung (2008) examined the outcomes of appointing a CEO with financial/accounting experience (as measured by whether the CEO has previously served as a CFO). They found that firms managed by CEOs who had formerly been CFOs exhibited more conservative accruals than other firms. They also found that firms managed by CEOs with CFO experience had more accurate and less volatile analyst's earnings expectations. They conclude that "the quality of a firm's financial disclosures is a function of the CEO's financial experience" (p. 1).

Research question

Directors, whose reputations and/or legal liability could be adversely affected by a financial scandal (e.g., SOX § 301, 305 and 407) wish to avoid situations in which the CEOs of companies that they oversee are not able to effectively carry out their financial reporting responsibility, and also probably wish to avoid CEOs who could claim ignorance of financial rules. These directors may also prefer the higher quality financial disclosures which Matsunaga and Yeung (2008) found to be associated with CEOs having accounting/financial experience. Directors could reduce the probability of reputational and/or legal losses associated with financial reporting problems by selecting CEOs with accounting/financial experience.

Hu (2006) directly discusses the relationship between accounting knowledge and the importance of director oversight of executives at Enron, and asserts that:

"A board vigorously monitoring Mr. Lay's performance would surely have concluded that anyone who didn't understand these [suspect financial arrangements] wasn't qualified for the job (much less worth millions of dollars in compensation)."

"Just think how much fraud might have been deterred if a board had replaced Mr. Lay with someone more qualified" (Hu, 2006, p. A27).

[8] Alternatively, the legal liability provisions of the SOX may have restricted the applicant pool of people who are willing to assume the responsibilities of CEO.

SOX makes a number of explicit statements about boards of directors' responsibilities for financial reporting and control, and was enacted when some large financial misstatements were being disclosed. Given the accounting frauds which brought about the act, and Matsunaga and Yeung's (2008) finding that accounting/finance-experienced CEOs use more conservative accounting, boards may perceive greater benefits to hiring a CEO with accounting/finance knowledge in the post-SOX period (Hu, 2006).[9] In this study, we seek to determine whether boards of directors place greater emphasis on accounting/finance knowledge when choosing CEOs in the post-SOX era than they did in the pre-SOX era. Specifically, we examine the following research question:

> **RQ:** Are CEOs appointed after enactment of Sarbanes–Oxley more likely to have accounting/finance experience than those appointed before SOX?

Research method

Identification of CEO changes and the main variable of interest

We used the website "ceogo.com" to identify Fortune 500 CEO replacements made from 2001 to 2004. Biographical information on the new CEOs was obtained from "ceogo.com" and *Who's Who in Finance and Industry*. We obtained adequate information to examine CEO changes for an 18 month period prior to the adoption of the Sarbanes–Oxley Act and for a 30 month post-Sarbanes–Oxley period.[10] The main variable of interest is whether the change occurred in the pre- or post-Sarbanes–Oxley period.

Measuring accounting/finance experience

Gore, Matsunaga, and Yeung (2004) deemed "financial experience" of CEOs to exist if the executive had a CPA designation; had worked as a CFO, controller, treasurer, etc.; had a degree in accounting or finance; or had worked for a financial services firm (e.g., banking, insurance).[11] For our study, we largely follow the Gore definition with one exception. Because we are interested in whether CEOs had the requisite background to assess fair presentation and internal control adequacy, we did not feel that experience

[9] Complementarily, potential candidates for CEO positions without an accounting/finance background may be less willing to assume the incremental legal liability exposure created by SOX's certification provisions.

[10] The site began providing CEO biographies in 2001. As such, we were unable to extend our sample period to more than 18 months prior to the passage of Sarbanes–Oxley.

[11] There is a difference between financial "*experience*" as used in the current study (which is also used by Gore et al. (2004) and DeFond, Hann, and Hu (2005)) and financial "*expertise*" as used by SOX § 407 regarding audit committees. In particular, the Securities Exchange Commission (2003) broadly defines financial expertise (of audit committee members) to include anyone (including a CEO) who has overseen top financial executives. Such a definition would be too broad to assess the importance of financial ***experience*** of potential CEOs. In addition, if we were to use the SEC's definition, every one of the CEOs in our sample could be said to have financial expertise because they are CEOs. DeFond et al. (2005), in their study of audit committee members also emphasize the distinction between financial "experience" and financial "expertise."

working in a financial services firm in a non-financial position (e.g., in a marketing capacity) would qualify as accounting/finance experience.[12] Thus, in our study, the CEO is considered to have financial expertise if he/she had one or more of the following background characteristics[13]:

a. Experience in an accounting or auditing position.
b. Experience in a financial management position, such as CFO or treasurer.
c. A degree (either undergraduate or graduate) in accounting or finance.
d. CPA certification.

Control variables

We control for firm characteristics that may explain why firms would select CEOs with accounting/financial experience. The only study we identified that developed a model of characteristics associated with financial experienced CEOs was Guthrie and Datta (1997), who examined the differing characteristics of firms hiring CEOs with "output" vs. "throughput" functional experience. "Output" experience was defined to include "marketing, sales, merchandising, [and] product R & D"[14] (p. 548), while "throughput" experience included "production, process R & D, and finance/accounting" (p. 548). Notice that our measure of accounting/finance experience is narrower than Guthrie and Datta's (1997) definition of "throughput" experience.

Consistent with Guthrie and Datta (1997), we included firm size as a control variable measured as total assets. Previous literature provides no clear guidance as to whether larger or smaller firms may prefer certain types of executives. Retail firms are more likely to seek a CEO with a marketing/sales background (Cullinan, 2008) and therefore may be less likely to choose a CEO with accounting/finance experience; we included a variable measuring whether the firm was in a retail business. We included the firm's gross profit margin to measure whether the firm follows a differentiation strategy (suggested by a higher profit margin) or a cost-leadership strategy (evidenced by a lower profit margin). Firms following a cost leadership strategy may have a greater emphasis on cost control, and therefore might favor CEOs with accounting/financial experience.

The percentage of a firm's assets in property, plant and equipment (PPE) was included to control for the relative asset intensity of the firm. Firms with greater asset intensity may be more likely to choose a CEO with accounting/finance experience because these companies require an executive more experienced in managing resources, rather than managing people. We also included measures of financial stress the firm may be experiencing at the time of the CEO change, with the expectation that higher level of financial stress may lead boards to prefer CEOs with accounting/financial experience. Our measures of financial stress are financial leverage (debt to invested capital) to measure whether the firm relies more heavily on debt than equity, and cash balances and cash flows (both scaled by firm size).

We included a variable measuring whether the firms pays a dividend. These firms may prefer CEOs with more accounting/finance experience to manage the financial resources necessary to ensure a continuing dividend stream. We also measure whether the firm has foreign operations, as these firms may emphasize international experience, rather than accounting experience in choosing CEOs. We also included industry dummy variables in our model.[15]

In a second model, we also included a variable measuring whether the *former* CEO had an accounting/finance background to reflect the longer-term characteristics of firms that may cause the firm to favor a CEO with an accounting/finance background. This variable controls for the possibility that these firms may simply have replaced former CEOs with accounting/finance experience with a new CEO that also has accounting/finance experience. While such changes may have occurred around the SOX adoption, we felt they would not likely be related to events occurring at the time of the passage of SOX.

Data collection and analysis

Data collection

The final sample of CEO changes drawn from the "ceo-go.com" website consisted of 244 changes from 2001 to 2004. To analyze whether the accounting/financial experience of individuals chosen to be CEOs changed in the post-Sarbanes–Oxley period, we computed the percentage of newly-appointed CEOs with accounting/financial experience in the pre- and post-Sarbanes–Oxley periods. We next present a logistic regression model (Model 1) including the post-SOX variable and the control variables to examine the effect of SOX on the likelihood of appointing a CEO with an accounting/financial background. We also present another logistic regression model (Model 2), which incorporate all of the control variables, plus whether the former CEO had accounting/financial experience.

Results and limitations

Results

The percentage of firms hiring CEOs with accounting/financial experience in the pre- and post-SOX periods is presented in Panel A of Table 1. In the pre-SOX period 15.48% of newly-appointed CEOs had accounting/financial experience. In the post-SOX period this percentage increased to 33.33%. This difference is statistically significant. These results suggest that events associated with

[12] Inclusion of CEOs with a non-accounting/finance background who worked in financial service firms did not materially alter the results.

[13] This coding scheme is also materially consistent with DeFond et al. (2005).

[14] Cullinan (2008) provided a more specific model of the types of firms that are likely to select a CEO with marketing experience.

[15] In unreported analyses, we also included as control variables the firm's age at the time of CEO change, the firm's stock's beta, and the firm's 3 year sales growth. None of these variables were significant, and none of these variables had a material effect on the other control variables or on the pre-post Sarbanes variable of interest. Because of missing data for some of these additional control variables, which would have resulted in a material decrease in sample size, we chose to present a more parsimonious model.

Table 1
Descriptive statistics and bivariate results.

Panel A: Sarbanes–Oxley Act variable

	% of CEO appointments where CEO has an accounting or finance background	Sample size
Pre-Sarbanes–Oxley Act	15.48%	84
Post Sarbanes–Oxley Act	33.33%	180
t Value	−3.36	
$p > t$	0.0009	

Panel B: Breakdown of CEO changes by six month periods

Period	% of newly appointed CEO with accounting background	% of CEO appointments changing from non-accounting to accounting background	% of CEO appointments changing from accounting to non-accounting background	% net changes to accounting background CEO
2001: first half	11.4%	8.6%	8.6%	0.0%
2001: second half	19.0%	19.0%	9.5%	9.5%
2002: first half	10.0%	5.0%	0.0%	5.0%
2002: second half	*59.1%*	*40.9%*	*9.1%*	*31.8%*
2003: first half	24.4%	14.6%	14.6%	0.0%
2003: second half	37.1%	28.6%	11.4%	17.1%
2004: first half	35.7%	26.2%	7.1%	19.0%
2004: second half	25.0%	22.9%	8.3%	14.6%

Period in *italics* (2002: second half) represents immediate post-SOX period.

the passage of the SOX changed board's preferences for hiring CEOs with accounting/financial backgrounds.

To further examine the pattern of CEO changes surrounding the passage of SOX, and to provide some sensitivity analysis, we broke our sample into eight six month periods, 3 before SOX and 5 after. These results are presented in Table 1, Panel B. The second column displays the percentage of CEO changes where the new CEO had accounting/finance experience. This information is also presented in graphical form in Fig. 1. As can be seen, this percentage increases materially in the immediate post-SOX period.

The final column of Table 1, Panel B incorporates the functional experience of the previous CEO. This column represents the net percentage of CEO changes that moved from a non-accounting CEO to a CEO with accounting experience. These results suggest that there was a significant spike in appointing CEOs with accounting/finance experience, and the likelihood of choosing a CEO with an accounting/finance background settled down after 2002, but at a level higher than in the pre-SOX period.

Our logistic regression models are presented in Table 2. Overall, both models are significant at conventional levels ($p \leqslant 0.004$). Consistent with the results shown in Table 1, the "Post-SOX" variable is significant and in the expected direction. The positive sign and significance of the "Post-SOX" variable indicates that firms were more likely to select a CEO with accounting/finance experience in the post-Sarbanes period than they were in the pre-Sarbanes period. This further supports the idea that the results seen in the post-SOX period are not related to the nature of the companies making the change, but are more likely to be related to changing CEO experience preferences in the post-SOX period.

With regard to control variables, gross profit margin was significant at 0.001, indicating that firms with lower gross margins were more likely to choose a CEO with an accounting/finance background. Long term debt to capital

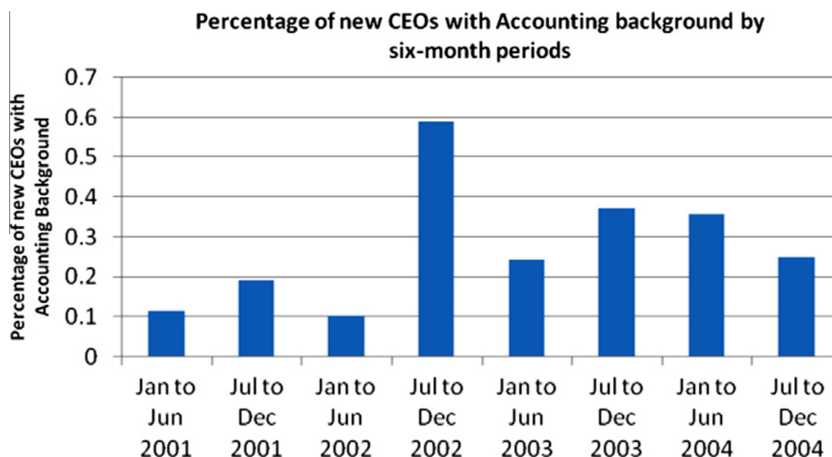

Fig. 1. Percentage of newly-appointed CEO with accounting/finance background by six-month periods surrounding passage of Sarbanes–Oxley Act. *Note*: Sarbanes–Oxley Act passed in July, 2002.

Table 2
Logistic regression results. Dependent variable: likelihood of hiring a CEO with an accounting/finance background (CEO financial experience).

	Model 1		Model 2	
	Estimate	$p > \chi^2$	Estimate	$p > \chi^2$
Intercept	−2.799	0.0451	−2.727	0.0607
Main variable				
CEO appointed after Sarbanes–Oxley Act	1.173	0.0024	1.064	0.0071
Control variables				
Log of total assets	0.129	0.3153	0.130	0.3355
Retail store	−0.058	0.9520	−0.106	0.9145
Gross profit margin	−0.044	0.0001	−0.053	0.0001
Property, plant and equipment/total assets	1.018	0.0722	1.203	0.0545
Long term debt to capital	0.008	0.0392	0.009	0.0331
Cash/total assets	0.444	0.7482	1.055	0.5041
Cash flow/total assets	−4.409	0.0123	−5.792	0.0062
Foreign operations?	−0.687	0.0572	−0.805	0.0422
Dividend payments?	0.342	0.3498	0.557	0.1601
Former CEO accounting background?			0.355	0.4181
Wald χ^2	37.94		37.28	
$P > \chi^2$	0.003		0.004	
Sample size	261		244	

Note: Industry dummy variables included in all models.

and cash flow (as a percentage of total assets) were also both significant. These results together suggest that firms facing greater financial stress are more likely to prefer CEOs with accounting/financial experience. Finally, it appears that firms with foreign operation are less likely to choose CEOs with accounting/financial experiences.[16,17]

Limitations

This study is subject to a number of limitations. Among these is our use of CEO changes among large publicly traded firms. The results presented in this paper may not be generalizable to smaller firms. Also, our results suggesting that firms are more likely to hire a CEO with an accounting/finance background may have resulted from differential disclosure of CEO background in the pre- and post-SOX periods. The biographical information provided on the chief executives is not necessarily a comprehensive list of the CEO's previous experiences. In the post-Sarbanes–Oxley period, firms may have been more likely to include in a CEO's biography information about a newly-appointed CEO's accounting/finance background. Our results thus could also be explained by a change in what companies choose to *disclose* about their CEO's background, rather than a change in the CEO's background itself. Finally, while our results are consistent with the idea of boards preferring CEOs with accounting/financial experience more in the post-SOX period, our results could also reflect a smaller applicant pool for CEO positions, as potential CEO candidates without accounting/financial experience may be less willing to assume a CEO's financial reporting responsibilities in the post-SOX period.

Summary and conclusions

We examined whether CEOs appointed in the post-Sarbanes–Oxley period were more likely to have experience in accounting and/or finance than before the Sarbanes–Oxley Act was enacted. We find that firms were significantly more likely to choose a CEO with accounting/finance experience in the post-SOX era. Our results suggest that the events of mid 2002, including the enactment of the Sarbanes–Oxley Act and the financial misstatements occurring during this time, may have changed corporate boards' decision making in their hiring of top executives. Whether such a behavioral change will prove cost beneficial to organizations and/or their shareholders has not yet been established. Such a determination would depend on whether the benefits of the CEO's accounting/finance knowledge, such as more conservative financial reporting (Matsunaga & Yeung, 2008), would exceed the potential cost associated with CEO's more limited knowledge in other areas.

Our findings are also consistent with by Hu's (2006) idea that "A board vigorously monitoring . . . performance" might conclude that an executive without adequate accounting/financial knowledge "wasn't qualified for the job" of CEO. To avoid the adverse effects of future CEOs potentially claiming ignorance of basic accounting or finance matters, boards of directors appeared to place greater value on in-depth financial knowledge of top executives in the post-SOX period.

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[16] In unreported analyses, we also assessed whether the relationships between any of the control variables and the likelihood of appointing a CEO with an accounting/finance background changed from the pre to the post Sarbanes eras. Using both separate regression analyses for the two periods, and interaction terms in a single analyses, our results revealed no significant difference between the control variables pre and post Sarbanes, with the exception of long term debt to assets, which appear to be slightly more important post SOX than pre-Sox.

[17] None of the industry dummy variables were significant at the 0.05 level.

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