

# CEO Financial Background and Audit Pricing

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**SYNOPSIS:** Accounting scholars theorize that audit price is a function of a client's audit and business risk. Existing research finds that the functional expertise of Chief Executive Officers (CEOs) in finance improves financial reporting quality (Matsunaga, Wang, and Yeung 2013), increases profitability, and reduces the likelihood of firm failure (Custodio and Metzger 2014). These factors suggest that auditors' engagement risk decreases when incumbent CEOs possess financial expertise, raising the likelihood that auditors will charge these firms lower fees. In this study, we examine whether CEOs' work experience in accounting- and finance-related jobs affects audit fees. Using a panel of U.S. firms between 2004 and 2013, we find that firms that have a financial expert CEO pay lower audit fees. Our results are robust to various specifications, including firm-fixed effect model and specifications that control for other CEO- and Chief Financial Officer (CFO)-specific and audit committee characteristics. Our findings thus add to the literature on the advantages and disadvantages of a functional background of top managers and how this background can create value for a firm through savings in audit fees.

**Keywords:** CEO financial expertise; audit fees.

## INTRODUCTION

Accounting scholars theorize that audit price is a function of a client's audit and business risk (e.g., Hay, Knechel, and Wong 2006; Simon and Francis 1988; Simunic 1980). Empirically, there is evidence that auditors consider the CEO's characteristics when determining the client's business and audit risk. For instance, Johnson, Kuhn, Apostolou, and Hassell (2012) show that auditors charge higher fees when a client's CEO exhibits narcissistic behavior, and Kim, H. Li, and S. Li (2015) and Wysocki (2010) find CEOs' incentive-based compensation to be positively related to audit fees. We extend the literature in this area by studying a relatively neglected aspect of CEO characteristics—the work experience of CEOs in accounting and finance-related jobs—and its impact on auditors' engagement risk and, therefore, audit pricing.

The upper echelons theory suggests that executives' background and experiences shape the choices they make (Hambrick and Mason 1984; Hitt and Ireland 1985). Prior research shows that CEOs' functional backgrounds make them more effective at addressing problems in related functional areas. For example, Koyuncu, Firfray, Claes, and Hamori (2010) document that CEOs with a background in operations are better able to handle problems related to the supply chain, while CEOs with marketing backgrounds are better able than their counterparts to manage marketing policies (Boyd, Chandy, and Cunha 2010).

A recent article in the *Wall Street Journal* highlights an upward trend in the appointment of CEOs with a functional background in finance (henceforth referred to as "financial expert") (Johnson 2015).<sup>1</sup> The rise in the number of CEOs with a financial background prompts the question of why an increasing number of firms hire CEOs with such a background. One possible explanation is the increased focus on financial reporting and disclosure policies and potentially increased liabilities due to accounting failure in the post-Sarbanes-Oxley of 2002 (SOX) period (Cao and Narayanamoorthy 2014). Another possible

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<sup>1</sup> In a similar study, Custodio and Metzger (2014) analyze S&P 1500 firms from 1993 to 2007 and find that 41 percent of their sample firms had CEOs with a functional background in finance.

explanation is the increased financial constraint inflicted by the recession of 2008–2009, which makes CEOs with financial acumen more desirable candidates as they are likely to possess a better ability to manage the limited financial resources and use them more productively (Custodio and Metzger 2014).

The existing literature documents that firms managed by financial expert CEOs benefit in terms of improved financial policies (Custodio and Metzger 2014) and better disclosure practices (Matsunaga, Wang, and Yeung 2013). We investigate another potential channel (i.e., audit fees) through which a financial expert CEO can create value to the firm.<sup>2</sup> We hypothesize that firms with financial expert CEOs pay lower audit fees, because the financial expertise of CEOs (1) improves the quality of earnings (Matsunaga et al. 2013), thus reducing the risk of material misstatement, and (2) increases profitability and reduces firm failure (Custodio and Metzger 2014), reducing a client's business risk. In other words, auditors' engagement risk appears to decline with the financial expertise of the CEO, raising the prospect that audit fees will be relatively lower for firms where CEOs are financial experts.

We use a sample of data consisting of 77 firms and 81 changes in financial expertise for the period ranging from 2004 to 2013. We hand-collect relevant CEO background information and examine the link between CEOs' financial expertise and audit fees. Following Custodio and Metzger (2014), we define CEO as a financial expert if he or she worked in banking or investment firms, was an employee of an auditing firm, or worked as a CFO, treasurer, or vice president (VP) of finance. One of the concerns with research related to executive characteristics is the endogenous nature of CEO-firm matching (or the prospect that CEO expertise and firms' financial and disclosure practices are jointly determined). To the extent that some unobserved quality simultaneously affects both firms' accounting outcome and financial expert CEOs' selections, our observed results may be biased. To address such a concern, we follow an approach similar to the managerial-fixed effect model used in Bertrand and Schoar (2003). Specifically, we restrict our analysis only to those firms that either changed CEOs from a nonfinancial expert to financial expert or otherwise. Furthermore, we require firms to have at least a three-year range of data before and after the change within a panel to be included in the sample. We also consider a firm-fixed effect model to control for unobservable persistent firm effects.

Our results show that firms with a financial expert CEO pay lower audit fees. In terms of economic magnitude, we find that annual audit fees are lower by approximately 8.5 percent, or approximately \$310,000 for firms that have a financial expert CEO. We also use an instrumental variables approach to further validate our results. Using local density of financial firms as an instrument, we continue to find that firms with financial expert CEOs pay lower audit fees. Additionally, in unreported regressions, we control for managerial ability and audit committee diligence; the results based on these specifications (not tabulated) remain similar.

This study makes an important contribution to the literature that focuses on CEOs' personal traits and firm performance. Our study adds to the literature on the role of CEOs' financial expertise in corporate governance. In particular, we argue that, given the fact that CEOs are the ultimate authority over policy decisions, they play a more influential role in the reporting process when they are financial experts. Our findings increase our understanding that auditors find CEOs' functional background in finance to be a relevant factor in audit pricing decisions. Our results, however, should be interpreted with caution. In particular, the sample used in the study is relatively small and comprises relatively large firms. The possible implication is that the findings and inferences are limited to such firms, and may not be generalizable to a broader population. Despite such a limitation, our analysis and the robustness of the results suggest that CEOs' financial expertise has a statistically and economically significant effect on audit pricing.

The remainder of the paper proceeds as follows. The following section provides a literature review and develops the hypothesis. The third section illustrates our sample selection process, and the fourth describes the research design. The fifth section then reports the results. The sixth section reports the additional tests, and the seventh concludes the paper.

## THEORY AND HYPOTHESIS DEVELOPMENT

The role of managers in firm performance is subject to debate among scholars. On the one hand, organizational ecologists question the value of the manager to the firm. Their argument is that the success of an organization is determined largely by its quality of products, core competency, life cycle, and to some extent even luck, and not by CEO ability (e.g., Cohen, March, and Olsen 1972; Hannan and Freeman 1977). On the contrary, the upper echelon theory proposes that top managers make a significant contribution to firm performance (e.g., Hambrick and Mason 1984; Harris and Helfat 1997; Hayes and Schaefer 2000). The key proposition of the theory is that organizational outcomes reflect the values and abilities of top managers. Furthermore, the human capital theory suggests that knowledge and abilities possessed by managers can be an important determinant of organizational performance (e.g., Amit and Shoemaker 1993; Becker 1962; Coff 2002).

<sup>2</sup> The financial expertise of CEOs can create value through various sources, such as more efficient use of cash, better investment decisions, etc. (see Custodio and Metzger 2014 for more details). In this paper, we focus only on value created through savings in audit fees.

Drawing from alternative views about the role of executives in organizations, a substantial body of literature examines the role of CEOs in accounting outcomes. These studies have variously explored the link between financial reporting outcomes and CEOs' personal attributes, such as gender (Betz, O'Connell, and Shepard 1989; Butz and Lewis 1996; Mason and Mudrack 1996), age (Peterson, Rhoads, and Vaught 2001; Sundaram and Yermack 2007), and education (e.g., Bhagat, Bolton, and Subramanian 2010; Kimberly and Evansiko 1981). Other studies focus on the effect of the CEO's motives on the accounting outcomes. For instance, Burns and Kedia (2006) focus on the implications of CEOs' equity incentive on financial misreporting (see also Baik, Brockman, Farber, and Lee 2011; Bergstresser and Philippon 2006; Cheng and Warfield 2005).

Turning to auditing, a growing body of knowledge finds that CEO characteristics affect audit risk. To illustrate, Kim et al. (2015) and Wysocki (2010) find that auditors perceive CEO equity incentive to increase their audit risk and, thus, incorporate such risk in their pricing decisions. Hribar, Kim, Wilson, and Yang (2012) find that overconfident CEOs report more aggressively and that auditors increase audit fees to compensate for aggressive reporting. Other factors shown to be related to audit fees include CEO narcissism (Johnson et al. 2012; Judd, Olsen, and Stekelberg 2015) and CEO gender (T. Huang, H. Huang, and Lee 2014). Overall, this stream of literature suggests that auditors consider CEO attributes that influence reporting quality in their pricing decisions.

One CEO feature that is still unexplored in the context of auditing is how CEO's functional experience in finance affects audit pricing. Few studies have examined the effect of CEO's work experience in finance on firm performance and financial reporting. Custodio and Metzger (2014) find that firms that appoint financial expert CEOs hold less cash, have better access to capital markets, and are less sensitive to cash-flow shocks. Matsunaga et al. (2013) suggest that firms run by former CFOs report conservatively. In particular, Matsunaga et al. (2013) emphasize that the exposure of CEOs to financial policies over their careers make them better monitors of financial reporting quality. The increase in the appointment of CEOs with functional backgrounds in finance in recent years and the findings of these two above studies raise the question of whether and the extent to which the CEO's financial expertise is reflected in audit pricing.

The existing literature shows that auditors charge higher fees when they perceive an increase in audit and business risk of an audit engagement (e.g., see Hay et al. 2006 for a review). Abbott, Parker, and Peters (2006) find the audit fee to be positively associated with discretionary accruals (see also Gul, Chen, and Tsui 2003), and Feldmann, Read, and Abdolmohammadi (2009) find that audit fees are higher for firms that restate their earnings. These authors attribute their results to increased perceived audit risk and a loss of organizational legitimacy. Other studies show that higher audit fees are associated with firms that disclose a material weakness in their internal controls (see Bedard, Ettredge, and Johnstone 2007; Hogan and Wilkins 2008; Raghunandan and Rama 2006). Additionally, DeFond, Lim, and Zang (2016) find the audit fee to be negatively related to conservatism, while Bell, Landsman, and Shackelford (2002) and Bedard and Johnstone (2004) find that a client's business risk increases the fees auditors charge.

As it pertains to engagement risk, the CEO's financial expertise is likely to be an important mitigating factor for two reasons. First, the financial background of CEOs mitigates the risk of poor performance and risk of firm failure (Custodio and Metzger 2014), reducing a client's business risk. Second, the financial background of CEOs improves the quality of financial reporting (Matsunaga et al. 2013), which reduces the probability of material misstatements, thus reducing the risk related to the audit engagement. The reductions of business and audit risks will translate into lower audit fees. We state our hypothesis as follows:

**H1:** After controlling for firm-level characteristics, the financial expertise of a CEO is negatively associated with audit fees.

Although we predict a negative relationship between CEOs' financial expertise and audit fees, an alternative perspective is that a greater understanding of generally accepted accounting principles (GAAP) provides these CEOs with more avenues to misuse flexibility allowed by GAAP (Demerjian, Lev, Lewis, and McVay 2013). If the use of discretion in financial reporting increases engagement risk, then auditors will adjust audit fees to compensate for the increased risk, resulting in higher fees.

## SAMPLE SELECTION

We start the analysis of the effect of CEOs' financial expertise on audit fees with a sample of nonfinancial and non-utility firms between 2004 and 2013. We use three different sources to obtain the data for the analysis: Compustat, Audit Analytics, and Execucomp. We use Compustat to calculate firm-specific variables, Audit Analytics for auditor-specific variables, and Execucomp for CEO-specific variables. We then hand-collect information about CEO background from *Businessweek* and *Forbes*. We are able to hand-collect CEO background information for 6,811 observations.

To examine the effect of the appointment of financial expert CEOs on audit fees, we use methodology similar to the managerial-effect model used in Bertrand and Schoar (2003). Specifically, we focus on firms that change their CEOs from

**TABLE 1**  
**Sample Selection**

**Panel A: Sample Selection**

	<b>Firm Observations 2004–2013</b>
Firm observations with valid CEO background information	6811
Less: firms with all years of nonfinancial expert CEO during the sample period	(4664)
Less: firms with all years of financial expert CEO during the sample period	(1213)
Less: firms with fewer than three-year observations in pre- and post-post change	(357)
Final Sample	577

**Panel B Frequency Distribution of Firms**

No. of Years	No. of Firms	Frequency
6	25	32.47%
7	19	24.68%
8	7	9.09%
9	22	28.57%
10	4	5.19%
	77	100.00%

nonfinancial experts to financial experts or from financial experts to nonfinancial experts. For this purpose, we delete firms from our sample that do not use both financial expert and nonfinancial expert CEOs during our sample period, resulting in a loss of 5,877 observations. This restriction leaves us with 934 firm observations.

Furthermore, we require firms to have three-year observations before and after a CEO change. This restriction results in the deletion of 357 observations. We follow accounting literature for our choice of a three-year window (see [Bamber, Jiang, and Wang 2010](#); [McInnis and Collins 2011](#)). This window is long enough to allow firms' audit fees to adjust to the implications of financial expert CEOs yet short enough to avoid picking up other economic factors that could affect firms' audit fees ([McInnis and Collins 2011](#)). Another potential advantage of such analysis is that the events of financial expert CEO appointments are scattered over time, thus allowing us to differentiate the impact of financial expert CEOs from other economic events. Overall, our design tracks a firm over time and requires a firm to have both nonfinancial expert and financial expert CEOs with at least three years of pre- and post-change data. With all of the restrictions, our sample consists of 577 observations from 77 firms. Out of these 77 firms, we find that there are 69 firms that changed from nonfinancial expert CEOs to financial expert CEOs and 12 firms that changed their CEOs with financial expertise to nonfinancial expertise.<sup>3</sup> Table 1, Panel A provides more information on the sample selection.<sup>4</sup>

In Panel B we present the frequency distribution of firms in our sample. Our analysis shows an average of 7.5 year-observations per firm. The observations per firm range from six to ten years. The results show that almost 32 percent of the total firms have six years of observations while only 5 percent of firms have ten years of observations.

<sup>3</sup> In order to be included in our sample, a firm must have changed its CFO from a non-financial expert to financial expert at least once during the sample period. There are four firms in our sample that appoint their CEOs more than once during the sample period and, therefore, the total number of changes are 81 (69 + 12).

<sup>4</sup> Since our sample is small, which may result in the lack of generalizability of our result, we compare our firms to a broader sample. The broader dataset consists of firms after combining all the databases used in our study and after excluding our sample firms. This results in a broader sample of 13,687 firm-year observations. We compare the average firm size and the average audit fees of our sample with this broader dataset. We find that the average total assets (proxy for firm size) of our sample firms are \$7,435.57 million and for the broader sample is \$7,061.89 million. The test of difference in means reveals that this difference is not significantly different from zero (p-value = 0.66). We also compare the average audit fees (in thousands of dollars) of our sample (\$3,673.02) with the broader sample (\$3,312.09). We find that audit fees in our sample are significantly higher than in the broader sample (p-value = 0.06). In another test, we compare the firm size and audit fees of our sample firms with the industry average over the same period of time. We first calculate industry average over the sample period time for the broader sample and then subtract the industry averages from our observations and test (t-test) whether the resulting value is different than zero. Again, we find no difference in total assets (p = 0.26), but we find statistically a significant difference in audit fee; the difference is \$717.26 and is significant at less than 0.05.

## RESEARCH DESIGN

### Audit Fee Model

To test the hypothesis, we develop our model using the specification from [Munsif, Raghunandan, Rama, and Singhvi \(2011\)](#). For brevity, we suppress firm and time subscripts. The model used is as follows:

$$AFee = \beta_0 + \beta_1*FinExp + \beta_2*Size + \beta_3*InvRec + \beta_4*Segments + \beta_5*Foreign + \beta_6*CurrRatio + \beta_7*GC + \beta_8*Distress + \beta_9*Big4 + \beta_{10}*ICweak + \beta_{11}*Exord + \beta_{12}*AudChg + \varepsilon. \quad (1)$$

In the above model, we measure audit fees, *AFee*, as the natural logarithm of audit fees. Our variable of interest in the above specification is *FinExp*, which takes a value of 1 for the firm-year observations when the CEO is a financial expert and 0 otherwise. Following [Custodio and Metzger \(2014\)](#), we define CEO as a financial expert if he or she worked in banking or investment firms, was an employee of an auditing firm, or worked as a CFO, treasurer, or vice president (VP) of finance. If auditors perceive a lower audit risk or expend less effort when the CEO of a firm is a financial expert, then we expect a negative coefficient on *FinExp*. Additionally, we include industry and year effect in the model. We calculate standard errors robust to heteroscedasticity and clustered by firm. We also consider a firm-fixed effect model with standard errors clustered by firm. In this specification, the coefficient on *FinExp* is driven by changes in CEOs' financial background over time.

The other variables included in the model control for audit risk, audit complexity, and auditor characteristics ([Ashton, Willingham, and Elliott 1987](#); [Ashton, Graul, and Newton 1989](#); [Cushing 1989](#); [Ng and Tai 1994](#); [Simunic 1980](#)). Prior studies document that audit risk increases with firm operations, internal control weakness, and poor firm performance ([Higgs and Skantz 2006](#)). Following these studies, we include firm size (*Size*), measured as a logarithm of total assets, and current ratio (*CurrRatio*), measured as a ratio of current assets to total assets to measure firm operations. To measure internal control weakness, we use *ICweak* measured as 1 if a firm has a material weakness in its internal control, else 0. For firm performance, we use two proxies: bankruptcy risk (*Distress*) and receipt of going concern opinion (*GC*). We measure *Distress* as [Zmijewski's \(1984\)](#) probability of bankruptcy, and *GC* is 1 if the audit opinion is modified for going concern, else 0.

Audit complexity increases audit fees ([Ashton et al. 1987](#); [Ashton et al. 1989](#); [Cushing 1989](#); [Ng and Tai 1994](#); [Simunic 1980](#)). To control for audit complexity, we include the ratio of accounts receivable and inventories to total assets (*InvRec*), the number of business segments (*Segments*), measured as the square root of the number of business segments, and an indicator variable for the client's foreign operations (*Foreign*), measured as 1 if the firm has foreign operations and 0 otherwise. Following [Munsif et al. \(2011\)](#), we control for special events (*Exord*), a dummy variable that equals 1 if the firm reports extraordinary items or discontinued operations, else 0. Last, we include auditor size and auditor change to control for auditor characteristics. We measure auditor size (*Big4*), as an indicator variable that equals 1 if the auditor represents one of the Big 4 auditing firms and auditor change, *AudChg*, as an indicator variable equal to 1 if there was a change in auditor in the model.

## RESULTS

### Univariate Results

#### Descriptive Statistics

In Table 2, Panel A we present the descriptive statistics of the variables used in the audit fee analysis. Our univariate results for the sample in Column 1 show that mean and median audit fees are \$3,673,022 and \$1,983,560, respectively. On average, 7 percent and 2 percent of the firms report internal control weakness and extraordinary items, respectively. The statistics on other variables used in the model reveal that the average size of the firms, measured in terms of total assets, is \$7,435,570, 40 percent of the firms are engage in foreign activities, and 1 percent of the firms receive going concern opinions. The analysis on auditor characteristics shows that 90 percent of firms use Big 4 auditors and 3 percent of firms change their auditor.

We divide the sample into firm-observations with financial expert CEO and nonfinancial expert CEO and present the mean and median statistics in Columns 2 and 3, respectively. The results show that mean (median) audit fees (in thousands of dollars) for the financial expert CEO sample is 3,392.34 (1,754.34) and 3,706.46 (2,004.69) for nonfinancial expert CEOs. This suggests that the audit fees are lower when financial expert CEOs manage firms. Additionally, the results show that firm-observations with financial expert CEOs have lower internal control weakness, and the difference is significant at less than a 5 percent significance level. The summary statistics further reveal that observations with financial expert CEOs are larger firms and have better firm performance than observations with nonfinancial expert CEOs. Last, firm-years with financial expert CEOs are less likely to appoint Big 4 auditors and are less likely to change auditors.

**TABLE 2**  
**Summary Statistics**

**Panel A: Descriptive Analysis**

Variable	(1) All Observations		(2) Financial Expert		(3) Nonfinancial Expert		Difference
	Mean	Median	Mean	Median	Mean	Median	
<i>AFee</i>	3,673.02	1,983.56	3,392.34	1,754.34	3,706.46	2,004.69	-314.12
<i>Size</i>	7,435.57	1,916.82	7,719.20	1,963.90	7,184.30	1,845.27	534.90
<i>InvRec</i>	0.22	0.22	0.23	0.23	0.21	0.21	0.02
<i>Segments</i>	2.15	1.00	2.08	1.00	2.20	1.00	-0.12
<i>Foreign</i>	0.40	0.00	0.43	0.00	0.37	0.00	0.06
<i>CurrRatio</i>	2.42	1.69	2.33	1.72	2.50	1.63	-0.17
<i>GC</i>	0.01	0.00	0.00	0.00	0.02	0.00	-0.02
<i>Distress</i>	2.29	1.24	1.95	1.04	2.59	1.41	-0.64**
<i>Big4</i>	0.90	1.00	0.88	1.00	0.93	1.00	-0.05**
<i>ICweak</i>	0.07	0.00	0.02	0.00	0.12	0.00	-0.1**
<i>Exord</i>	0.02	0.00	0.00	0.00	0.04	0.00	-0.04***
<i>AudChg</i>	0.03	0.00	0.02	0.00	0.05	0.00	-0.03*

**Panel B: Classifications of Financial Experts**

	Banking	Financial Industry	Former CFO	Treasurer	VP of Finance
<i>FinExp</i>	0.34	0.12	0.67	0.25	0.19

**Panel C: Time-Series of Audit Fees and Financial Expertise**

Year	Size-Adjusted Audit Fees			Log of Audit Fees		
	Mean	Std. Dev.	Median	Mean	Std. Dev.	Median
<i>t-3</i>	1,502.84	1,191.11	1,094.45	14.69	1.02	14.7
<i>t-2</i>	1,531.46	1,651.40	1,002.26	14.54	1.19	14.55
<i>t-1</i>	1,769.30	2,067.22	972.52	14.58	1.04	14.5
<i>t</i>	1,617.81	1,746.90	966.04	14.55	1.06	14.42
<i>t+1</i>	1,565.41	2,000.36	850.33	14.51	1.07	14.56
<i>t+2</i>	1,397.90	1,553.56	769.53	14.59	1.06	14.51

**Panel D: Test of Equality between Pre- and Post-CEO Appointment Audit Fee**

Pre-turnover year (-1) versus Post-turnover year (+1)	Difference p-value	t-test	
		Size-Adjusted AF	Log AF
		203.89	0.07
		0.402	0.912

\*\*\*, \*\*, \* Denotes significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

This table provides summary statistics for all, financial expert, and nonfinancial expert firm-observations in Panel A. The Difference column represents differences between variables in financial expert and nonfinancial expert groups. Panel B provides different classifications of financial expert CEO. Panel C presents time-series analyses of audit fees in the pre- and post-financial expert CEO's appointment period, and Panel D presents p-values from parametric t-tests of change in audit fees from nonfinancial expert CEO period (year *t-1*) to financial expert CEO period (year *t+1*). Audit fees reported in the table are in thousands of dollars. Difference reflects the reduction in fee from year -1 to year +1.

In Panel B of Table 2 we present a distribution of different classifications of financial expert CEO. Our results indicate that 12 percent of the CEOs have worked as CPAs, 34 percent have worked in a financial industry, 67 percent have worked as CFOs, 25 percent have worked as treasurers, and 19 percent have worked as vice presidents of finance. The total of the distribution is greater than 100 percent as some of the CEOs have multiple classifications.

**TABLE 3**  
**Correlations**

	<i>AFee</i>	<i>FinExp</i>	<i>Size</i>	<i>InvRec</i>	<i>Segments</i>	<i>Foreign</i>	<i>CurrRatio</i>	<i>GC</i>	<i>Distress</i>	<i>Big4</i>	<i>ICweak</i>	<i>Exord</i>	<i>AudChg</i>
<i>AFee</i>	1												
<i>FinExp</i>	-0.04	1											
<i>Size</i>	0.81*	0.05	1										
<i>InvRec</i>	0.04	0.06	-0.05	1									
<i>Segments</i>	0.10*	-0.02	0.01	0.12*	1								
<i>Foreign</i>	0.47*	0.08	0.25*	0.06	0.02	1							
<i>CurrRatio</i>	-0.34*	-0.04	-0.33*	-0.11*	-0.01	-0.02	1						
<i>GC</i>	0.02	-0.06	0.00	-0.09*	-0.05	0.02	-0.07	1					
<i>Distress</i>	-0.35*	-0.10*	-0.36*	-0.08	-0.06	-0.04	0.62*	-0.07	1				
<i>Big4</i>	0.23*	-0.08*	0.26*	-0.20*	0.00	-0.15*	-0.05	0.03	-0.06	1			
<i>ICweak</i>	-0.02	-0.17*	-0.11*	-0.06	0.04	-0.12*	-0.05	0.04	-0.04	0.04	1		
<i>Exord</i>	0.07	-0.11*	0.03	0.00	0.01	0.03	-0.06	0.10*	-0.06	0.00	0.01	1	
<i>AudChg</i>	-0.09*	-0.09*	-0.10*	-0.07	0.03	-0.05	-0.01	-0.02	0.05	-0.05	0.10*	0.04	1

\* Variable is statistically significant at 5 percent.

This table provides pairwise correlations between variables used in the base model.  
See Appendix A for variable definitions.

Panel C of Table 2 shows a trend in audit fees where  $t$  is the first year of a financial expert CEO being in charge. Since firm size influences audit fees, we adjust the audit fee for firm size by scaling the audit fees by total assets or by taking the logarithm of audit fees. We restrict our analysis only to those firms that change their CEO from a nonfinancial expert to a financial expert. For the size-adjusted audit fees, we find that audit fees generally increase leading up to the appointment of financial expert CEOs but decline subsequently. However, we fail to find a similar trend for the log of audit fees.

Panel D of Table 2 provides the p-value from t-tests of change in audit fees from nonfinancial expert CEO period (year  $t-1$ ) to financial expert CEO period (year  $t+1$ ). Although, the change in scaled audit fees from year  $t-1$  to year  $t+1$  is about 11.5 percent  $([1,769.30 - 1,565.41]/1,769.30)$ , this change is not statistically significant (two-tailed  $p > 0.05$ ). A similar result persists when the log of audit fees is used.<sup>5</sup> However, the univariate t-tests of change do not account for other confounding variables, and thus may be biased to the extent other confounding variables affect audit fee. To overcome these shortcomings, we use multivariate regression analyses.

### Correlation Analysis

In Table 3, we present the correlation among the variables used in our analysis. The results show that the correlation between the audit fee and a financial expert CEO is negative (coefficient =  $-0.04$ ). This indicates that auditors charge lower fees when firms are managed by financial expert CEOs. Consistent with prior studies, we find *AFee* to be positively associated with *Size* (coefficient =  $0.81$ ), *InvRec* (coefficient =  $0.04$ ), *Segments* (coefficient =  $0.10$ ), *Foreign* (coefficient =  $0.47$ ), and *Big4* (coefficient =  $0.23$ ) and negatively associated with *CurrRatio* (coefficient =  $-0.34$ ), *Distress* (coefficient =  $-0.35$ ), and *AudChg* (coefficient =  $-0.09$ ). We also find *FinExp* to be negatively and significantly associated with *Distress* (coefficient =  $-0.10$ ), *Big4* (coefficient =  $-0.08$ ), *ICweak* (coefficient =  $-0.17$ ), *Exord* (coefficient =  $-0.11$ ), and *AudChg* (coefficient =  $-0.09$ ), thus indicating that firms with financial expert CEOs have lower audit risk and are less likely to switch their auditors and appoint Big 4 auditors.

### Regression Results

#### Audit Fees and Financial Expert CEOs

Table 4 provides the results from the regressions with the log of audit fees as the dependent variable. Column 1 (base model) includes our CEOs' financial expertise variable (*FinExp*) and standard firm-level controls. Our main variable of interest,

<sup>5</sup> We also compare audit fees for the three years before and three years after the financial expert CEO appointment. We find that the average change in the size-adjusted audit fees from year  $t-3$  to year  $t+3$  is statistically significant ( $p$ -value =  $0.06$ ). We do not find any difference between pre- and post-appointment period when we use the log of audit fee ( $p$ -value =  $0.87$ ).

**TABLE 4**  
**Financial Expert and Audit Fees**

	Log of Audit Fees							
	(1)		(2)		(3)		(4)	
	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
Intercept	10.550***	(28.57)	9.930***	(28.16)	9.869***	(26.48)	11.276***	(25.87)
<i>FinExp</i>	-0.176***	(-4.99)	-0.165***	(-3.64)	-0.221***	(-3.48)	-0.083**	(-2.61)
<i>Size</i>	0.449***	(12.07)	0.453***	(11.88)	0.447***	(11.85)	0.392***	(8.90)
<i>InvRec</i>	0.594	(1.27)	0.629	(1.26)	0.640	(1.30)	0.869	(1.54)
<i>Segments</i>	0.208**	(2.24)	0.213**	(2.32)	0.213**	(2.28)	0.080	(1.24)
<i>Foreign</i>	0.497***	(5.25)	0.492***	(4.92)	0.485***	(5.08)	0.070	(1.09)
<i>CurrRatio</i>	-0.051***	(-3.04)	-0.051***	(-3.03)	-0.053***	(-3.17)	-0.023***	(-3.22)
<i>GC</i>	-0.232	(-1.17)	-0.235	(-1.20)	-0.232	(-1.12)	0.018	(0.15)
<i>Distress</i>	-0.005	(-0.55)	-0.006	(-0.56)	-0.004	(-0.41)	-0.006	(-1.10)
<i>Big4</i>	0.093	(1.01)	0.092	(1.02)	0.115	(1.08)	0.053	(0.27)
<i>ICweak</i>	0.233**	(2.56)	0.238**	(2.55)	0.178**	(2.04)	0.126	(1.63)
<i>Exord</i>	0.064	(0.64)	0.064	(0.66)	0.070	(0.68)	0.013	(0.16)
<i>AudChg</i>	0.036	(0.28)	0.040	(0.31)	0.045	(0.34)	0.033	(0.28)
<i>Departure</i>			-0.015	(-0.13)				
<i>FinExp * Departure</i>			-0.032	(-0.47)				
<i>CFO Change</i>					0.082	(0.76)		
<i>FinExp * CFO Change</i>					0.048	(0.60)		
Fixed Effects	Industry and Year		Industry and Year		Industry and Year		Firm	
No of Obs.	577		577		577		577	
Adj. R <sup>2</sup>	85.50%		85.40%		85.40%		74.19%	

\*\*\*, \*\*, \* Denotes significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

This table provides results from regressing log of audit fees on financial expert CEO, a dummy variable that equals 1 if the firm is headed by a financial expert CEO, and various control variables. The data cover the period from 2004–2013. All models include industry and year dummies. Standard errors are robust to heteroscedasticity and clustering by firm. All tests are two-sided and t-statistics are provided in parentheses. Column 1 presents the result of the base model. Column 2 and Column 3 additionally control for CEO turnover type and a simultaneous CFO change, respectively. Column 4 presents a regression with firm-fixed effect model.

See Appendix A for variable definitions.

*FinExp*, is significant and in the predicted direction ( $\beta = -0.176$ ;  $p < 0.01$ ). This result suggests that, on average, firms with financial expert CEOs pay approximately 17 percent lower audit fees. The sign on the coefficients of other control variables are consistent with existing literature. Specifically, we find that audit fees increase with client size and other audit risk factors. We also find coefficients on *Segments* and *Foreign* to be positive, suggesting that complexity of business is positively associated with audit fees. Additionally, we find that audit fees are significantly and negatively associated with *CurrRatio* and positively associated with *Size* and *ICweak*, thus indicating that audit fees increase with audit risk. The coefficients on auditor-specific variables—such as auditor size and auditor change—are insignificant however. Overall, the results from Column 1 indicate that firms whose CEOs' background is in finance pay significantly lower audit fees.

In Column 2, we add a dummy for a potential exogenous turnover (*Departure*) and an interaction term (*FinExp \* Departure*) to our base model. We identify possible exogenous turnovers if a CEO turnover is caused by death or health issues (Fee, Hadlock, and Pierce 2013), move elsewhere in a same position (Brochet, Faurel, and McVay 2011), or retirement (Custodio and Metzger 2014).<sup>6</sup> Thus, we create a dummy variable that equals 1 if CEO turnover is caused by any of the above reasons and 0 otherwise. This variable, to some degree, helps us separate two groups of turnovers: situations in which nonfinancial (financial) expert CEOs are replaced by the board of directors specifically to appoint financial (nonfinancial) expert CEOs and situations where a CEO either voluntarily retires or takes a position at another firm and the appointment of a CEO is potentially unrelated to a firm's internal demand. We assume the latter situation to be exogenous for the purpose of our analyses; however, we acknowledge the imperfectness of our measures as, in many cases, these turnovers may not necessarily be strictly exogenous.

<sup>6</sup> None of the turnovers in our sample occurs due to the death of a CEO.



We repeat our analysis and find that *FinExp* continues to remain negatively significant ( $\beta = -0.165$ ;  $p < 0.01$ ). Additionally, we do not find any significant association between audit fees and the interaction of *FinExp \* Departure*. This result suggests that the effect of financial expert CEOs on audit fees are not conditional on the type of CEO turnovers. That is, the change in audit fees due to the presence of a financial expert CEO does not depend on whether an outgoing CEO voluntarily leaves his position or is replaced by a financial (nonfinancial) expert CEO due to some unobserved demand for such an individual within the firm. Thus, our result of a negative association between audit fees and financial expert CEOs is less likely to be driven by the different types of CEO departure.

In Column 3, we control for CFO turnover. Some studies in the recent past have argued that CEOs are responsible for reporting quality while other studies have documented that CFOs have greater influence over financial reporting. [Kannan, Skantz, and Higgs \(2014\)](#) find that auditors charge higher fees following an increase in CFO equity incentives, suggesting that auditors perceive higher audit risk associated with CFO equity incentives, while [Geiger and North \(2006\)](#) find that a negative association between discretionary accruals and the appointment of a new CFO. Additionally, financial expert CEOs are more likely to replace the current CFO in order to gain more control with respect to implementing financial policies ([Custodio and Metzger 2014](#)). Thus, a possibility exists that a reduction in audit fees following the appointment of a financial expert CEO is driven by the appointment of a new CFO.

If CEO and CFO changes are simultaneous, then it is important to separate the effect of these two changes on audit fees to provide a cleaner inference related to our main variable (*FinExp*). Although we do not intend to examine who is more responsible for reporting quality, we do ensure that simultaneous CFO changes do not determine our reported association between CEOs' financial expertise and audit fees. To separate the effect of new CFOs on financial reporting quality, we rerun our base model after including a dummy for firms that changed CFOs during the sample period (*CFO Change*). Specifically, the dummy takes a value of 1 for the periods  $t$ ,  $t+1$ , and  $t+2$  if a firm changes its CFO. Additionally, we also include an interaction between CEO financial expertise and the CFO change variable (*FinExp \* CFO Change*). Our result in Column 3 shows that *FinExp* is still negatively and significantly associated with audit fees. Additionally, we find the coefficient on the interaction term to be positive but insignificant.

In Column 4, we present results using a firm-fixed effect model to control for unobserved firm effects. We use this specification because it is possible that some unobserved firm-specific quality is correlated with our explanatory variable (i.e., audit fee), which may bias our inferences. Our results using the fixed-effect model continues to remain same ( $\beta = -0.083$ ,  $p < 0.05$ ); however, the magnitude of the coefficient on *FinExp* reduces from the first three columns. This highlights that some of the variation in audit fees reported in the first three columns is due to unobserved firm characteristics. In terms of economic significance, we observe a reduction of about 8.3 percent or about \$310,000 in audit fees for firms with financial expert CEOs. Overall, the results are consistent across all four models, suggesting that work experience makes managers more effective in handling challenges in related areas. In particular, financial background of CEOs affects auditors' pricing decision.<sup>7</sup>

### ***Instrumental Variable Regression***

In Table 5, we report results from an instrumental variable (IV) approach. We use endogenous treatment effect specification to implement instrumental variable regressions (see [Maddala 1983](#)).<sup>8</sup> We use the local density of financial firms (*Density*) as our instrument in the first stage. We define *Density* as the log of the number of financial firms available within a 100-mile radius from the focal firm. [Alam, Chen, Ciccotello, and Ryan \(2014\)](#) and [A. Knyazeva, D. Knyazeva, and Masulis \(2013\)](#) show that the geographical location of firms influences board composition. [Mobbs \(2014\)](#) suggests that firms located near the larger pool of financial firms have access to more financial experts and are thus more likely to have outside expert

<sup>7</sup> Since our tests use CEO turnover with the change in their financial expertise, there is a possibility that our results are driven by CEO turnover and not by change in CEO financial expertise. To rule out this possibility, in an unreported regression, we conduct a falsification test around a CEO turnover that does not involve a change in the financial expertise of a CEO. We rerun Model (1) with one difference. Model 1 includes CEO turnover with change in financial expertise (*FinExp*), while our falsification test includes a CEO turnover variable with no changes in expertise. Our analysis, that includes 73 firms with 577 firm-year observations and 73 CEO turnovers, reveals that no difference exists in audit fee between pre- and post-CEO turnover. Specifically, we find that although the coefficient on CEO turnover is negative, it is statistically insignificant ( $\beta = -0.01$ ,  $p = 0.92$ ). This suggests that our results are not driven by CEO turnovers.

<sup>8</sup> We use a full sample for which we hand-collected financial expert data and for which all relevant variables are available to conduct instrumental variable regression, resulting in 6,600 observations. We do this (as opposed to restricting our analyses to managerial fixed-effect [or change] sample), because we need enough variations both in our dependent variable (dummy for financial expert) and our instrument (the density of financial firm). Since our instrument is sticky, as firms do not change their headquarters frequently, using the restricted sample does not allow us to properly estimate the first stage model, because all firms in the restricted sample have both a financial expert and a nonfinancial expert within a panel. Thus, our ability to separate the likelihood of a firm, given its location, appointing a financial expert CEO is severely curtailed in the restricted sample. Therefore, to properly estimate the likelihood of a firm appointing a financial expert CEO, we require a full sample that includes both firms that never appointed a financial expert CEO during our sample period and firms that have.

**TABLE 5**  
**Instrumental Variable Regression**

	<i>FinExp</i>		Log of Audit Fees	
	(1) Coefficient	Z-stat	(2) Coefficient	Z-stat
Intercept	1.714*	(1.77)	9.795***	(30.66)
<i>Density</i>	-0.269**	(-2.29)		
<i>FinExp</i>			-0.587***	(-5.92)
<i>Size</i>	0.0275	(0.96)	0.522***	(38.04)
<i>InvRec</i>	-0.477	(-1.61)	0.571***	(3.93)
<i>Segments</i>	-0.043	(-0.62)	0.108***	(3.97)
<i>Foreign</i>	0.129*	(1.66)	0.222***	(7.02)
<i>CurrRatio</i>	-0.049**	(-2.07)	-0.031***	(-3.50)
<i>GC</i>	-0.343	(-1.19)	-0.050	(-0.47)
<i>Distress</i>	-0.002	(-0.20)	-0.007*	(-1.65)
<i>Big4</i>	-0.127	(-0.92)	0.122**	(2.29)
<i>ICweak</i>	-0.148	(-1.29)	0.371***	(6.35)
<i>Exord</i>	0.055	(0.41)	0.136**	(2.52)
<i>AudChg</i>	-0.173	(-1.56)	-0.267***	(-4.59)
Fixed Effects	Industry and Year		Industry and Year	
No of Obs.	6,660		6,660	
Log likelihood	-3,633.33		-8,209.96	

\*\*\*, \*\*, \* Denotes significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

This table presents results from instrumental variable approach. Column 1 presents the results from the selection model and Column 2 reports results of the outcome model. The data cover the period from 2004–2013. All models include industry and year dummy. Standard errors are robust to heteroscedasticity and clustering by firm. All tests are two-sided and z-statistics are provided in parentheses. See Appendix A for variable definitions.

directors on board, thereby reducing the demand for a financial expert from inside of the firm to serve on the board. Adapting Mobbs's argument, we suggest that if a firm is located near a large pool of financial firms, then it can fulfill its financial expert needs by appointing these experts as directors to its board. Thus, the likelihood of a financial expert CEO should be negatively associated with the local density of financial firms. The density of financial firms is a valid instrument, because it is negatively related to the selection of a financial expert CEO but not systematically associated with firm-specific policies such as accruals and audit fees.

In Table 5, Column 1 we present results from the first stage regression. The results show that after netting out other control variables, the local density of financial firms is negatively associated with the selection of financial expert CEOs ( $p < 0.05$ ). The results further reveal an F-statistic of 1,716.05 ( $p < 0.01$ ), which is significantly greater than the critical value of 10. In Column 2, we present results from the second stage, which show that, after controlling for all other factors, the financial expertise is negatively associated with audit fees ( $p < 0.01$ ), although the magnitude is larger than expected.<sup>9</sup> The signs on the coefficients of other control variables are consistent with existing literature.

## ADDITIONAL TESTS

### Improvement in Reporting Information

The results from Tables 4 and 5 indicate that firms with financial expert CEOs pay lower audit fees. To shed more light on a possible cause, we examine, in an unreported regression, whether firms with financial expert CEOs report better quality of earnings. Caramanis and Lennox (2008) find an inverse relationship between audit effort and earnings quality (see also Kinney and McDaniel 1993; Mitra, Deis, and Hossain 2009; Shibano 1990). It follows that improvement in the perceived earnings quality is likely to reduce audit effort. We use absolute value of discretionary accruals, calculated using Kothari, Leone, and

<sup>9</sup> This larger than expected coefficient on *FinExp* in the second stage is probably due to problems with a weak instrument in a finite sample (see Hahn and Hausman 2003).

Wasley's (2005) performance-matched modified Jones model (*Dac*), to proxy for reporting quality.<sup>10</sup> Our unreported result confirms the findings of Matsunaga et al. (2013) and indicates that firms with financial expert CEOs report better quality of earnings ( $\beta = -0.011$ ;  $p < 0.05$ ). This result provides some explanation that auditors perceive earnings quality to be better when firms are headed by financial expert CEOs and possibly reduce audit effort as reflected in lower audit fees.

### Inside versus Outside Appointment

We also consider whether the effect of financial expertise of CEOs on audit fees differs between internal and external appointments of financial expert CEOs. We include an interaction variable between financial expert CEOs (*FinExp*) and a dummy variable that equals 1 if the financial expert CEO is recruited from outside (*Outsider*) the firm in our primary audit fee specification (Model 1). The coefficient on the interaction term is the incremental effect of a financial expert CEO if he or she is recruited from outside the firm. In unreported results, we find a positive but insignificant coefficient on the interaction term (*FinExp \* Outsider*). The result suggests that no significant difference exists in audit fee reduction between internally promoted and externally recruited financial expert CEOs.

### Other Tests

We consider a couple of additional analyses to confirm the robustness of our reported results. In the first test we control for managerial ability. Demerjian, Lev, and McVay (2012) show that firms with better managers provide higher quality of earnings. If CEOs' financial background is correlated with firm-specific managerial ability, then our results may be biased due to an omitted-variable problem. To address this concern, we include an industry-year decile rank of managerial ability as calculated by Demerjian et al. (2012).<sup>11</sup> Inclusion of this managerial ability variable results in the loss of 90 observations, resulting in 487 observations. The inclusion of managerial ability does not change our results related to financial expert CEOs. For example, the coefficient on *FinExp* in our primary audit fees model remains negative and significant ( $\beta = -0.177$ ,  $p < 0.01$ ). Additionally, we find that managerial ability is significantly and negatively associated with audit fees, results that are consistent with the findings of Krishnan and Wang (2015). Therefore, our results of financial expert CEOs are in addition to the firm-specific managerial ability.

In our last test, we control for audit committee characteristics. The role of audit committees in monitoring reporting quality is well documented. Existing literature shows that auditors charge lower fees when the audit committee monitoring is diligent (Abbott et al. 2003; Chang, Chen, and Zhou 2013; Goodwin-Stewart and Kent 2006; Lee and Mande 2005; Vafeas and Waagelein 2007), when the audit committee is more financially literate (e.g., Krishnan and Visvanathan 2008), and when it is chaired by a female (Ittonen, Miettinen, and Vähämaa 2010).

Following these studies, we control for audit committee characteristics in our model. We include the percentage of female members, average director tenure, size of the audit committee (number of audit committee members), and average age of the audit committee members. Risk Metrics database provides these variables. Inclusion of these audit committee variables in the model results in the loss of 386 firm-year observations. However, our results remain consistent even for the smaller sample. In particular, the coefficient on *FinExp* remains negative and significant ( $\beta = -0.165$ ,  $p < 0.01$ ). Additionally, we find that director tenure is negative and significantly associated with audit fees, and average female board membership is positively and significantly associated with audit fees. Our results are consistent with Gul, Srinidhi, and Tsui (2008), suggesting that female directors require higher audit effort and therefore result in higher audit fees.

## CONCLUSION

We consider the importance of financial expert CEOs on audit fees. We examine whether the financial background of CEOs results in an improved trustworthiness of the financial reporting process, which can potentially reduce audit effort and audit risk as perceived by auditors. Our expectations are based on the upper echelon theory, which predicts that training and experience in a particular domain improves a manager's performance in related areas (Hambrick and Mason 1984). Consistent with this upper echelon theory, Matsunaga et al. (2013) document an improvement in the quality of earnings and Custodio and Metzger (2014) document an increase in firm profitability and a reduction in firm failure, following the appointment of a financial expert CEO. The findings of these studies thus suggest that auditors' engagement risk decreases with the appointment of financial expert CEOs, raising a prospect that audit fees would be lower for these firms.

<sup>10</sup> We follow a specification similar to the one used in Jiang, Petroni, and Wang (2010) for the choice of our control variables to be included in the regression model. Specifically, we include firm size, leverage, cash-flow volatility, sales volatility, sales growth volatility, a dummy that equals 1 if the firm is 20 years old, the log of the number of analysts following, and an entrenchment index developed by Bebchuk, Cohen, and Ferrell (2008).

<sup>11</sup> Please see Demerjian et al. (2012) for the calculation of this variable.

Our analyses indicate that firms where CEOs possess a background in finance pay lower audit fees, suggesting that auditors consider such firms to have a lower engagement risk. The results highlight that auditors consider financial background of CEOs to be an important determinant of audit fees. Our results are robust to a number of alternative specifications. The results also hold after controlling for managerial ability, CFO changes, and audit committee characteristics. The instrumental variable and firm-fixed effect regressions further confirm that firms with financial expert CEOs pay lower audit fees. Overall, our result adds to the literature on the advantages and disadvantages of a functional background of top managers and how this background can create value for a firm through savings in audit fees.

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## APPENDIX A

### Variable Descriptions

#### Main Variables

*AFee* = the natural logarithm of audit fees; and

*FinExp* = 1 for the firm-year observations when the CEO is a financial expert, else 0.

#### Control Variables

*Size* = logarithm of total assets;

*CurrRatio* = ratio of current assets to total assets;

*ICweak* = 1 if there is a material weakness in internal control, else 0;

*Distress* = Zmijewski's (1984) probability of bankruptcy;

*GC* = 1 if the audit opinion is modified for going concern, else 0;

*InvRec* = ratio of accounts receivables and inventories to total assets;

*Segments* = square root of the number of business segments;  
*Foreign* = 1 if the firm has foreign operations, else 0;  
*Exord* = 1 if the firm reports extraordinary items or discontinued operations, else 0;  
*Big4* = 1 if the auditor represents one of the Big 4 auditing firms, else 0; and  
*AudChg* = 1 if there was a change in auditor, else 0.

**Other Variables**

*Departure* = 1 if CEO turnover is caused by death, retirement, or move elsewhere in a same position, else 0;  
*CFO Change* = 1 if there is a CFO change, else 0;  
*Dac* = absolute value of residuals from [Kothari et al. \(2005\)](#) performance matched modified Jones model;  
*Outsider* = 1 if the financial expert CEO is recruited from outside the firm, else 0; and  
*Density* = log of number of financial firms within 100 miles of the focal firm.

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