

Internal governance and audit fees: evidence from CEO-CFO career heterogeneity

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ABSTRACT

CEO-CFO career heterogeneity refers to firms' internal governance in which younger CFOs may constrain older CEOs' earnings management activities since they have different career concerns and career goals. Prior literature finds that the external auditors assess client firms' earnings management risk, and charge correspondingly. Using the CEO-CFO age difference as the proxy of firms' internal governance, this paper investigates whether auditors' pricing decisions are associated with firms' internal governance and whether firms' financial performance and firms' external governance moderate this association. The authors find that CEO-CFO career heterogeneity is associated with lower audit fees in a large US public companies sample covering a ten-year period from 2007 to 2016. Further analysis shows that this relationship is attenuated by better accounting performance (less incentive to perform earnings management) and better corporate governance (block holding investors curb earnings management activities in a similar way with CEO-CFO career heterogeneity). Prior literature of internal governance focuses on the effects of internal governance on earnings management. This study adds to the strand of research by documenting the market impact of internal governance. Furthermore, this study also extends the audit fee literature by providing evidence on the impact of internal governance on audit fees.

Keywords: Audit Fees, CEO-CFO Career Heterogeneity, Internal Governance

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INTRODUCTION

This study examines whether internal governance influences decision making of outside stakeholders. Specifically, this study explores whether CEO-CFO career heterogeneity and its ensuing impact on financial reporting quality will influence auditors' pricing decision. Prior literature suggests that due to distinctive career horizon, preferences and interests, young subordinate managers play a monitoring role in the corporate governance system (Landier et al. 2013; Cheng et al. 2014). However, there is no empirical evidence of the economic consequence of the internal governance on market participants. This study attempts to fill this void in the literature.

A modern firm is traditionally characterized as an organization run by professional managers and monitored by representatives of shareholders. However, empirical research suggests that the interests of professional managers who are supposed to maximize shareholder wealth are misaligned with those of owners (shareholders), creating the notorious problem of separation of ownership from control (Jensen and Meckling 1976). A large body of archival accounting research focuses on mechanisms to monitor self-interested managers and incentivize them to act in the best interest of shareholders.¹

To date, the research of corporate governance has primarily focused on external monitoring mechanisms, such as institutional investors, auditors, and board of directors (Shleifer and Vishny, 1997; McCahery et al. 2016; Nowland 2016; Agrawal et al. 2017). While little attention has been paid to the monitoring role of subordinate senior managers. Recently, there is an emergent strand of research that examines the relation between the interaction of CEOs and other senior executives and the impact of the interaction on corporate governance.

Management teams consist of members with different career horizons, preferences and goals (Acharya et al. 2011). Cheng et al. (2016) argue that subordinates have strong incentives to monitor and deter self-interested CEOs from taking opportunistic actions at the expense of the interests of other stakeholders for the following reasons: first, subordinate managers are stakeholders who hold significant long-term interest in firm's future, unlike self-interested CEOs who have the shorter career tenure; second, subordinates financially suffer more than CEOs from subpar financial performance; third, there is an interdependence of outside opportunity wage among members in the management team. Consistent with the above argument, Cheng et al. 2016 find subordinates can successfully constrain CEO's opportunistic financial reporting behaviors, such as real earnings management activities and abnormal accruals. Zhang (2013) uses the setting of CEO-CFO career heterogeneity, in which the career horizon conflict between CEOs and other managers is the most intense, to examine how internal governance impacts a firm's financial reporting quality. He documents that pre-retirement CEOs have incentive to inflate short-term performance while young CFOs care more about the long-term performance. Thus, young CFOs are more likely to constrain earnings management activities of pre-retirement CEOs.

Motivated by the above emergent studies on internal governance, we examine how internal governance may impact other market participants. Specifically, we explore whether auditors are sensitive to this corporate governance mechanism and make pricing adjustments accordingly. Following Zhang (2013), we use the CEO-CFO career heterogeneity as a proxy of internal governance since the CFO is the top manager responsible for financial reporting (Jiang et al. 2010; Feng et al. 2011) with the ability to influence CEO's financial reporting decision.

¹ Please see Shleifer and Vishny (1997) for a review of empirical corporate governance research.

To the extent that the personal interests of CEOs and CFOs at different career stages may not align, CEOs and CFOs may constrain the other parties' self-interested activities. Therefore, auditors may perceive larger CEO-CFO career heterogeneity as an indicator of lower earnings management risk, which is a significant auditor pricing consideration (Abbott et al. 2006). Consistently, we expect a negative relationship between CEO-CFO career heterogeneity and audit fees.

Our sample consists of 9,098 firm-year observations for the year 2007-2016. Our findings can be summarized as follows: first, our results show a negative association between audit fees and CEO-CFO career heterogeneity, suggesting that auditors view the CEO-CFO career heterogeneity as a positive indicator on firms' internal governance that may reduce audit risks. Second, we find that firms' financial performance moderate the relationship between CEO-CFO career heterogeneity and audit fees. Specifically, the effects of CEO-CFO career heterogeneity on audit fees are weakened for firms with higher ROA. This is consistent with the notion that firms with healthier financial performance have less incentive to misreport their financial statements, and thus, auditors are less likely to consider CEO-CFO career heterogeneity in their pricing decisions. Third, good corporate governance attenuates relationships between CEO-CFO career heterogeneity and audit fees. Results suggest that auditors may perceive good corporate governance as a substitute of CEO-CFO career heterogeneity.

This study makes two contributions to the literature. First, our study complements the emergent research on internal governance. Prior studies of internal governance document evidence that internal governance can constrain managerial opportunism (Cheng et al. 2016; Zhang 2013). We add to this strand of research by documenting a significant market impact of internal governance. Our evidence suggests that auditors are sensitive to a firm's internal governance and its impact on earnings quality.

Our paper also contributes to the audit fee literature. Prior literature has identified a set of factors related to clients' business risk, audit scope and efforts, corporate governance and litigation risk which can significantly impact auditors' pricing decisions (Hay et al. 2006; Knechel et al. 2013). However, little is known about the impact of internal governance on audit fees. To our best knowledge, our study is the first to examine this empirical issue and adds a significant cross-sectional determinant to the audit fee model.

The rest of the paper is organized as follows. The next section reviews prior research and discusses our research question. The third section provides research design. The fourth section presents results and the final section concludes.

LITERATURE REVIEW AND RESEARCH QUESTION

CEO-CFO Career Heterogeneity

Agency theory suggests that the goals of managers (the agent) and shareholders (the principal) may conflict and managers may make decisions that best align with their own interest at the cost of shareholders' benefits (Jensen and Meckling 1976). Based on this theory, Fama (1980) argues that the managerial labor market efficiently assesses managers' talents by evaluating the past performance of the managers. According to Fama (1980), the performance of managers may not lead to immediate gain or loss of managers' current payment, but may affect their future wages decided by the labor market. In other words, managers with good performance are more demanded and rewarded by the managerial labor market. Therefore, managers should

be aware that their current management performance may have a big influence on their future job benefits, and thus, managers are disciplined to make decisions aligned with shareholders best interests. The career concerns created by the monitoring effects of the labor market lead to a lessening of agency cost.

Based on Fama (1980), the career concerns of younger executives are not the same as the ones of pre-retirement executives. Executives at early career stages are more concerned with future job opportunities and benefits since they will potentially stay in the labor market for many years. Therefore, younger executives are more likely to work for the benefits of the firm than of their own. Conversely, senior executives closer to retirement age have less career concerns since they will soon exit the labor market. As a result, the agency costs related to senior managers are more serious than younger managers, and thus, senior managers are more likely to engage in activities that increase their own benefits than the shareholders'.

Empirical research shows mixed evidence on the relationship between the CEO's career stage and earnings management. A series of prior literature find evidence that pre-retirement managers are related to both accrual-based and real earnings management. For example, Dechow and Sloan (1991) document evidence that CEOs in their final years are more likely to cut R&D expenditures. The authors argue that the purpose is to increase earnings performance and therefore CEOs' compensation at the cost of firms' long-term benefit. Barker and Mueller (2002) also show evidence that R&D expenditures are higher in firms with younger CEOs than firms with older CEOs. Moreover, Davidson et al. (2007) find results that firms with pre-retirement CEOs have larger discretionary accruals; in other words, are more likely to engage in earnings management. Kalyta (2009) provide further evidence that only pre-retirement executives with pension plans tied to firm performance are more likely to engage in accrual-based earnings management. Chen et al. (2017) also document evidence that CEOs become less conservative in the financial reporting decisions before their retirement. To sum up, these empirical evidences suggest that senior pre-retirement executives have less career concerns and therefore are more likely to engage in earnings management behaviors.

On the other hand, certain psychological research suggests that older individuals are more ethical and conservative than younger individuals (Mudrack 1989; Twenge and Campbell 2008). Another series of prior studies find evidence that older CEOs are less likely to engage in earnings management. For example, Cornett et al. (2008) report evidence that discretionary accruals are lower in firms with older CEOs. Demers and Wang (2010) find evidence that younger managers are more motivated to perform income-increasing earnings management than older managers. Huang et al. (2012) find a positive associate between CEO age and financial reporting quality, suggesting older CEOs are less likely to engage in earnings management. Kouaib and Jarboui (2016) report a negative relationship between CEO age and the proxy of cutting R&D expenditure, suggesting younger CEOs cut more R&D expenditure to increase net income.

While most of the prior studies focus on the effects of CEOs on earnings management, a recent stream of literature suggests that CFOs also play an important role in firms' earnings performance. Especially in the post SOX period, CFOs are expected to coordinate with CEOs on firms' financial reporting process because both the CEO and the CFO are required to personally certify the financial statement. Consistent with the expectation, Jiang et al. (2010) find evidence that CFO equity incentives play the major role in earnings management. Similarly, Feng et al. (2011) document evidence that CFOs participate in earnings manipulations, mainly due to pressure from the CEOs. To conclude, in addition to CEOs, CFOs also have significant effects on firms' earnings management activities.

Therefore, when examining management's effects on firm's performance, it is important to treat the CEO and the CFO as a team. Testing CEOs or CFOs individually may result in mixed results, such as the mixed evidences on the relationship between CEO age and financial reporting quality. Acharya et al. (2011) develop an analytical model of internal governance and state that the pre-retirement CEO and the younger non-CEO manager may have conflicts of interests. The two parties are able to watch each other and prevent the opposite party from performing self-interested actions. In this study, rather than studying the CEOs and the CFOs individually, we treat the CEOs and the CFOs as a team. We use a proxy for CEO-CFO career heterogeneity, meaning that the CEO and the CFO are at different career stages and therefore have different career concerns or career goals (Zhang 2013). Larger CEO-CFO career heterogeneity indicates better internal governance because CEOs and CFOs at different career stage may have conflicts of interests. Therefore, the two parties may monitor each other's behavior, resulting in better internal governance. Consistently, Zhang (2013) finds evidence that CEO-CFO career heterogeneity is negatively related to earnings management activities prior to CEO retirement.

Audit Pricing

Auditors assess clients' business risk to determine the audit fees. Higher business risk may result in a higher audit error (Simunic 1980; Stice 1991) or require more extensive audit tests (Donohoe and Knechel 2014). Consistently, several indicators of client risk are found to be associated with audit fees. For example, more complex clients require auditors to be more competent to discover the potential financial misstatement (Hackenbrack and Knechel 1997) and therefore increase the audit risk as well as the audit fee (Francis et al. 2005). Similarly, receivable and inventory intensity as well as level of long-term debt are positively related to audit fees (Ferguson et al. 2003; Abbott et al. 2003). Furthermore, Huang et al. (2014) find that audit fees are significantly higher for firms with forced CEO turnover, which indicates higher business risks and audit risks. Ettredge et al. (2014) also find that bank audit fees are positively related to the proportion of fair-valued assets. Client profitability is another indicator of the business risk as high profitability indicates better financial health and therefore less risk for earnings management. Consistently, Carcello et al. (2002) find that the existence of a net loss is positively related to audit fees. In addition, Ferguson et al. (2003) and Francis et al. (2005) find a negative association between return on asset and audit fees.

In addition, since higher-level earnings management may indicate higher-level audit risks, mechanisms that may control the earnings management behavior, and therefore decrease the audit risks, are found to be negatively associated with audit fees. Carcello et al. (2002) find that firms in the utility industry are associated with lower level audit fees because the utility industry is more regulated. Similarly, higher institutional ownership provides additional governance to the firms and decreases audit risk as well as audit fees (Mitra et al. 2007). Kalelkar and Khan (2016) find that firms pay lower audit fees when their CEOs have financial expertise.

According to Cheng et al. (2016), older CEOs and younger CFOs with different career horizons and goals are more likely to constrain the earnings management behavior of the other party (Cheng et al. 2016) and therefore increase the financial reporting quality (Zhang 2013). The large CEO-CFO career heterogeneity can indicate a high quality internal governance, which can lead to low business risk and low audit risk. Therefore, if auditors consider this indicator when assessing the business risk to determine the total audit fees, we may find a negative

relationship between the CEO-CFO career heterogeneity and audit fees. Diagram 1 summarizes the theoretical link CEO-CFO career heterogeneity (proxied by CEO-CFO age difference) and audit fees.

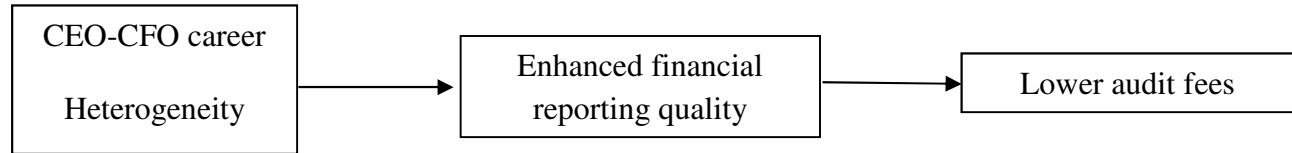


Diagram 1: Theoretical link

Thus, the hypothesis of our study is:

CEO-CFO career heterogeneity negatively impacts auditors' pricing decision.

RESEARCH METHOD

Sample

We begin with all U.S. companies in the Audit Analytics database and obtain the age information of CEOs and CFOs from Compustat Execucomp for the years 2007-2016. We start with the year 2007 because Execucomp reports CFOs' age since 2006, and we use a one-year lagged age difference in our model. Consistent with results in Zhang (2013) that younger non-CEO managers (i.e. CFOs) reduce earnings management behavior of older CEOs, we only include firms with a larger CEO age than the CFO age. Firms' financial information is obtained from Compustat. Institutional holding data is retrieved from Thomson Reuters. We exclude observations with missing required data for the calculation of the measures used in our model, as well as firms from regulated industries (SIC 4000-4999) or financial industries (SIC 6000-6999). To mitigate the effect of potential outliers, all continuous variables are winsorized at the 1 percent and 99 percent levels. The final sample includes 9,098 firm-year observations.

Research Model

We first study the relationship between the total audit fees (*LAUDIT*) on the CEO-CFO Career heterogeneity (*AGEDIFF*) by estimating the following equation:

$$\begin{aligned}
 LAUDIT_t = & \beta_0 + \beta_1 * AGEDIFF_{t-1} + \beta_2 * LOGAT_t + \beta_3 * NSEG_t + \beta_4 * FOPS_t \\
 & + \beta_5 * INVREC_t + \beta_6 * CRATIO_t + \beta_7 * LEVERAGE_t + \beta_8 * SPITEM_t \\
 & + \beta_9 * ROA_t + \beta_{10} * LOSS_t + \beta_{11} * BM_t + \beta_{12} * GCM_t + \beta_{13} * BUSY_t \\
 & + \beta_{14} * REPORT_LAG_t + \beta_{15} * TENURE_t + \varepsilon_t.
 \end{aligned}$$

The dependent variable (*LAUDIT*) is the natural logarithm of the total audit fees (in 000s). The variable of interest, CEO-CFO career heterogeneity (*AGEDIFF*), is measured by the difference between the age of the CEO and CFO in year $t-1$.² A larger age difference between the CEO and

² We use the lagged measure of CEO-CFO career heterogeneity because audit fees are normally determined in advance. We also performed all regressions using the contemporary measure, our results still hold.

the CFO indicates larger career heterogeneity between the two managers. Therefore, the interests of the CEO and the CFO may not align, and the two parties are able to monitor the self-interested activities of each other. If auditors view CEO-CFO career heterogeneity as a risk mitigation factor, we expect a negative and significant coefficient on *AGEDIFF*.

We also control the effects of client size, complexity, financial health, and auditor characteristics in our model. Client size is measured by the natural logarithm of the total assets (*LOGAT*). We control the client complexity by including the number of consolidated segments (*NSEG*) and the existence of foreign operations (*FOPS*). The proportion of total assets in inventory and accounts receivable (*INVREC*), current ratio (*CRATIO*), as well as the leverage (*LEVERAGE*), are used to measure the client's business risk related to their financial structure and the debt level. The existence of the special item (*SPITEM*) is also included to control the inherent risk of the firm. Client financial health is measured by the return on assets (*ROA*) and the net loss (*LOSS*). The book to market ratio (*BM*) is used to control the client growth opportunities. Qualified opinion (*GCM*), audit busy season (*BUSY*), and the reporting lag (*REPORT_LAG*) are included to measure the audit risk and audit workload. In addition, we also include the number of years that auditor serves the specific client (*TENURE*) to control the possible auditor characteristics in the regression.³ Year and industry dummy variables are also included. A detailed description of variable definitions is listed in Table 1.

[Insert Table 1]

Next, we study the moderating effects of firm performance on the relationship between audit fees and CEO-CFO career heterogeneity. Managers of high performance firms are less motivated to engage in earnings management behavior. Therefore, the effects of CEO-CFO career heterogeneity serving as a risk mitigation factor may be diminished by a good performance. To examine this prediction, we include an interaction term of the return on assets (*ROA*) and CEO-CFO career heterogeneity (*AGEDIFF*) in our main regression. A positive and significant coefficient on the interaction indicates that the effects of CEO-CFO Career heterogeneity on audit fees are diminished by firm performance.

In addition, good corporate governance may be a substitute of the CEO-CFO career heterogeneity in constraining CEOs' earnings management behavior. Therefore, we include the interaction between CEO-CFO career heterogeneity (*AGEDIFF*) and corporate governance, measured by the institutional holding (*IOR*). If good corporate governance moderates the relationship between CEO-CFO career heterogeneity and audit fees, we expect a positive and significant coefficient on the interaction term.

EMPIRICAL RESULTS

Univariate Results

Table 2 provides the sample distribution across year and industry. The business equipment industry (Column (5)) contains the highest amount of observations (2,286), followed by the wholesale, retail, laundries and repair shops and related industries (Column (6)) with 942 observations. Not surprising, there are fewer observations in the year 2007 than other sample

³Instead of using the continuous tenure measurements, when we use another dummy variable *TENURE2* (= 1 when *TENURE* is larger than or equal 3, = 0 otherwise) to replace the *TENURE* variable, our results hold. Industry audit expert or Industry specialist auditor is defined on city (or the metropolitan statistical areas) level following Reichelt and Wang (2010). Similar results are found if we use both national and city level audit expert as a control variable in our regression model.

years given that it is the first year that CFO ages are disclosed in Execucomp. Our sample is well distributed across 2007 to 2016.

[Insert Table 2]

Panel A of Table 3 provides the descriptive statistics for the variables used in our regression model. The mean of natural logarithm audit fees is 7.602, which is close to the median 7.523. The average age difference between the CEO and CFO is 8.665, which is quite close to the median of eight. The average segments reported by the firms are 2.835, and around 80 percent of firms have foreign operations. On average, the inventory and receivables represent 26 percent of the total assets. The average current ratio is 2.021, and the mean leverage is 0.521. Eighty three percent of the sample firms report a special item. The average ROA is 0.03, and near 20 percent of our sample firms has a net loss. The average book-to-market ratio is 0.53. Only one percent of the firms receive a going concern opinion in our sample. Around 78 percent of our sample firms have a December fiscal year-end. The average reporting lag and audit tenure is about 57 days and 14 years, respectively.

Panel B of Table 3 shows the Pearson correlation for the variables in the regression. In line with prior studies (Abbott et al. 2003; Carcello et al. 2002; Ferguson et al 2003; Francis et al 2005), the audit fees (*LAUDIT*) is positively correlated with the size of client firm (*SIZE*). The correlation between our variable of interest, *AGEDIFF*, and audit fees is not significant. However, given that the audit fees are determined by multiple factors, it is necessary for us to perform a multivariate regression including multiple control variables that are found to be significantly related to audit fees by prior literature. For the control variables, some correlations are significant at 10 percent level, but none is larger than 0.50 except the correlation between *ROA* and *LOSS*. In addition, all of the VIF scores for the multivariate regressions are below four. Therefore, multicollinearity does not seem to be an issue in our regression tests.

[Insert Table 3]

Multivariate Results

Table 4 reports the multivariate regression results of our audit fee model. We find that the coefficient on *AGEDIFF* is negative and significant (Coeff. = -0.002; P-value < 0.01). Auditors consider the internal governance factors and charge less fees when there is a large gap between the age of the CEO and the CFO. The results indicate that auditors view the CEO-CFO career heterogeneity as a potential factor that may decrease the earnings management behavior and therefore decrease the audit risk. The coefficients on the control variables are in the expected direction except for *BM* and *GCM*. Specifically, audit fees are positively associated between the size (*SIZE*) and client complexity (*NSEG* and *FOPS*). Firms are expected to pay higher audit fees when they have large size and complicated operations. Consistently, three indicators of business risks, *INVREC*, *LEVERAGE*, and *SPITEM*, are positively related to audit fees, suggesting auditors charge higher fees to compensate firms' high risk. The coefficient of current ratio (*CRATIO*) is negative and significant, suggesting firms with healthier financial conditions are charged less audit fees. Firms reporting a special item (*SPITEM*) are found to pay higher audit fees, suggesting auditors consider reporting a special item as an indicator of higher audit risks. We find a negative association between audit fees and *ROA* and a positive association between audit fees and *LOSS*, further indicating auditors consider clients financial health when making the audit pricing decisions. In addition, auditors charge higher fees when the clients have a fiscal

year-end in the busy season (*BUSY*) and when the reporting lag (*REPORT_LAG*) or the auditor tenure (*TENURE*) is high.

[Insert Table 4]

Table 5 presents the results on the moderating effects of firm's financial performance on the relationship between audit fees and CEO-CFO career heterogeneity. Higher levels of profitability indicate a healthier financial situation and therefore less incentive for managers to engage in earnings management behavior. Consequently, the effects of CEO-CFO career heterogeneity as a low risk indicator on audit fees may be attenuated by high profitability. The results are in line with our prediction. Specifically, we find a negative coefficient on *AGEDIFF* (Coeff. = -0.003; P-value < 0.01) and a positive coefficient on the interaction between *ROA* and *AGEDIFF* (Coeff. = 0.001; P-value < 0.01). In addition, the sign and significance of the coefficients on the control variables are similar to the main results in Table 4, except that the coefficient of *CRATIO* is no longer significant.

[Insert Table 5]

The results on the moderating effects of corporate governance are shown in Table 6. We use the percentage of institutional holding (*IOR*) as a proxy for corporate governance. Table 6 shows that the coefficient on *AGEDIFF* is negative and significant (Coeff. = -0.008; P-value < 0.01) while the coefficient on the interaction term of *IOR* and *AGEDIFF* is positive and significant (Coeff. = 0.006; P-value < 0.01). The results imply that auditors view good corporate governance as a substitute of the CEO-CFO career heterogeneity to constrain the earnings management behavior. Therefore, the association of CEO-CFO career heterogeneity and audit fees are attenuated with better external corporate governance. Consistent with prior literature (Chen et al. 2017; Liu and Ouyang 2014; Hua et al. 2016;), our regression models are highly significant ($p < 0.01$) and the adjusted R^2 are all larger than 80 percent.

[Insert Table 6]

Sensitivity Analysis

We first include the absolute value of discretionary accrual as an additional control variable. Cheng et al. (2016) find that CEO-CFO career heterogeneity is negatively related to the earnings management, specifically the discretionary accrual. Therefore, if the effects of CEO-CFO career heterogeneity on audit fees is only because of the lower level of accruals, the coefficient on CEO-CFO career heterogeneity may become insignificant. The untabulated results show that the sign and significance of the results are consistent with the main results after we include the discretionary accrual as an additional control variable. This indicates that auditors view CEO-CFO career heterogeneity as an additional risk mitigation factor compared to the discretionary accrual.

Next, for each firm, the CEO-CFO career heterogeneity as well as the audit fees are highly correlated with the last year's levels. Following Krishnan et al. (2013), we rerun the regressions with the standard errors clustered by the firms to control for the potential serial correlation problems in our sample period. The results for the variables of interest do not change in terms of the sign and the significance (untabulated). Our results are robust after controlling for the serial correlation problem.

Ferguson et al. (2003) document that industry audit experts charge a fee premium. To control for the effects of auditor industry expertise on audit pricing, we include the city level industry expert as an additional control variable. Following Reichelt and Wang (2010), auditors

are city level industry experts if their market share is greater than 50% in a two-digit SIC category and year. Untabulated results suggest that the sign and significance level of our variables of interest still hold.

CONCLUSION

This paper examines auditors' perception of firms' internal governance. Specifically, we investigate the effects of CEO-CFO career heterogeneity on audit fees. CEO-CFO career heterogeneity suggests that younger non-CEO executives have different career concerns and career goals with the pre-retirement CEOs. Therefore, younger non-CEO executives are less likely to cooperate with pre-retirement CEOs on earnings management behavior. We find a negative and significant association between audit fees and CEO-CFO career heterogeneity. The results suggest that auditors perceive CEO-CFO career heterogeneity as a favorable factor of firms' internal governance and therefore may decrease audit risks. Further, we find that firm's financial performance, as well as the corporate governance, moderates the relationship between audit fees and CEO-CFO career heterogeneity. Firms with higher ROA have less incentive to misreport their financial statement, and therefore, the effects of CEO-CFO career heterogeneity on audit fees are diminished. Similarly, we find that good external corporate governance also weakens the relationship between CEO-CFO career heterogeneity and audit fees suggesting that auditors view good corporate governance as a substitute of CEO-CFO career heterogeneity. Our results are robust when we control for discretionary accrual and city level industry expertise, as well as when we control for the serial correlation problems in the audit fee data. Future research should further investigate how other firm internal factors, such as internal auditor and company culture, associate with auditors' pricing decisions when such data are available. The findings of this paper should be informative to the stock market investors, the auditors and professionals, as well as the corporate governance and audit pricing researchers.

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Table 1
Variable Definitions

Dependent Variables

LAUDIT = natural log of the total audit fees in thousand dollars;

Experimental Variables

AGEDIFF = CEO age minus CFO age;

AGEDIFF_ROA = interaction of AGEDIFF and ROA;

AGEDIFF_IOR = interaction of AGEDIFF and IOR;

Control Variables

SIZE = natural log of total assets in millions of dollars;

NSEG = number of business segments reported by the client;

FOPS = 1 if firm has foreign operation, and 0 otherwise;

INVREC = sum of inventories and receivables, scaled by total assets;

CRATIO = ratio of the current assets to current liabilities;

LEVERAGE = total debts divided by total assets;

SPITEM = 1 if the firm reports a special item, and 0 otherwise;

ROA = income before extraordinary items divided by total assets;

LOSS = 1 if the firm reports a net loss for current year, and 0 otherwise;

BM = book-to-market ratio;

GCM = 1 if firm receives a going concern opinion, and 0 otherwise;

BUSY = 1 if firm's fiscal year-end is in December, and 0 otherwise;

REPORT_LAG = number of days between firm's year-end and audit opinion date;

TENURE = number of years the auditor serves a specific client;

IOR = the percentage of institutional holdings;

Table 2**Sample Year and Industry Distribution**

Year	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	Total
2007	19	22	14	9	71	23	27	26	211
2008	121	173	64	51	268	101	137	129	1,044
2009	122	175	65	52	269	100	137	126	1,046
2010	122	169	66	49	269	100	135	128	1,038
2011	118	170	60	45	248	104	126	125	996
2012	118	165	62	47	253	99	123	129	996
2013	115	161	61	47	250	102	119	127	982
2014	114	151	64	47	240	104	116	121	957
2015	106	144	64	47	218	106	116	121	922
2016	103	147	66	48	200	103	120	119	906
Total	1,058	1,477	586	442	2,286	942	1,156	1,151	9,098

Industries are classified following Fama-French 12 industry portfolios: (1) Durable and non-durable consumer goods industries; (2) Manufacturing, including machinery, trucks, planes, office furniture, paper production, and printing industries; (3) Energy, including oil, gas, and coal extraction and allied production industries (4) Chemical and allied product industries; (5) Business equipment, including computer, software and electronic industries; (6) Wholesale, retail, laundries and repair shops and related industries; (7) Health care, medical instrument and drugs; (8) Other industries, including mines, construction, building management, transportation, hotels, entertainment. Detailed portfolios definition are available from Kenneth French's websites⁴.

⁴ <http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/index.html>

Table 3
Panel A: Descriptive Statistics for Age Difference Sample (N = 9,098)

Variable Name	Mean	Median	Standard Deviation	25th percentile	75th percentile
<i>LAUDIT</i>	7.602	7.523	0.988	6.906	8.251
<i>AGEDIFF</i>	8.665	8.000	6.658	3.000	13.000
<i>SIZE</i>	7.451	7.372	1.612	6.329	8.485
<i>NSEG</i>	2.835	3.000	1.835	1.000	4.000
<i>FOPS</i>	0.799	1.000	0.401	1.000	1.000
<i>INVREC</i>	0.264	0.239	0.174	0.136	0.374
<i>CRATIO</i>	2.021	1.508	1.853	1.053	2.341
<i>LEVERAGE</i>	0.521	0.501	0.257	0.346	0.653
<i>SPITEM</i>	0.831	1.000	0.374	1.000	1.000
<i>ROA</i>	0.034	0.052	0.158	0.014	0.091
<i>LOSS</i>	0.198	0.000	0.398	0.000	0.000
<i>BM</i>	0.531	0.412	0.437	0.281	0.655
<i>GCM</i>	0.008	0.000	0.089	0.000	0.000
<i>BUSY</i>	0.781	1.000	0.412	0.000	1.000
<i>REPORT_LAG</i>	57.461	57.000	10.864	52.000	61.000
<i>TENURE</i>	14.346	12.000	10.121	7.000	19.000

Panel B: Pearson Correlation among Variables of Interest (N = 9,098)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) LAUDIT	1															
(2) AGEDIFF	-0.00	1														
(3) SIZE	0.85	0.02	1													
(4) BM	0.00	-0.02	0.01	1												
(5) BUSY	0.01	0.01	0.00	-0.03	1											
(6) ROA	0.08	-0.02	0.18	-0.31	0.00	1										
(7) CRATIO	-0.29	-0.07	-0.31	0.02	0.02	0.07	1									
(8) LEVERAGE	0.35	0.02	0.29	-0.23	0.06	-0.19	-0.57	1								
(9) LOSS	-0.10	0.01	-0.20	0.27	0.01	-0.70	-0.01	0.14	1							
(10) INV_REC	-0.02	0.04	-0.13	0.06	-0.08	0.11	-0.16	0.03	-0.12	1						
(11) SPITEM	0.21	0.01	0.18	0.10	0.05	-0.18	-0.07	0.17	0.13	-0.09	1					
(12) NSEG	0.46	0.02	0.39	-0.01	0.06	0.05	-0.21	0.19	-0.06	0.05	0.13	1				
(13) FOPS	0.39	-0.03	0.25	-0.03	0.02	0.01	0.07	-0.01	-0.01	0.01	0.21	0.23	1			
(14) GCM	-0.03	0.01	-0.05	-0.06	0.03	-0.17	-0.04	0.18	0.14	-0.01	0.02	-0.02	-0.04	1		
(15) REPORT_LAG	-0.35	0.02	-0.47	-0.00	0.08	-0.22	0.08	-0.07	0.23	-0.06	-0.02	-0.14	-0.15	0.18	1	
(16) TENURE	0.31	-0.01	0.31	-0.01	-0.02	0.07	-0.09	0.11	-0.08	0.01	0.21	0.15	0.09	0.00	-0.19	1

Note: Variables are defined in Table 1. Bold values indicate significant at 10percent level.

Table 4
Testing the Association between
CEO-CFO Age Difference and Audit Fees

Variables	Predicted Sign	Coefficient	t-Statistic
<i>INTERCEPT</i>	?	2.804	52.68***
<i>AGEDIFF</i>	-	-0.002	-3.67***
<i>ROA</i>	-	-0.185	-5.26***
<i>LOGAT</i>	+	0.495	121.76***
<i>NSEG</i>	+	0.048	16.58***
<i>FOPS</i>	+	0.305	23.17***
<i>INV_REC</i>	+	0.514	17.35***
<i>CRATIO</i>	-	-0.005	-1.73*
<i>LEVERAGE</i>	+	0.354	16.65***
<i>SPITEM</i>	+	0.123	9.83***
<i>LOSS</i>	+	0.085	5.94***
<i>BM</i>	-	-0.000	-0.71
<i>GCM</i>	+	-0.121	-1.02
<i>BUSY</i>	+	0.021	1.82*
<i>REPORT_LAG</i>	+	0.005	10.07***
<i>TENURE</i>	+	0.004	7.27***
<i>INDUSTRY</i>	?	Yes	
<i>YEAR</i>	?	Yes	
<i>N</i>		9,098	
<i>R-SQUARE</i>		0.81	

*Significance of t-statistics are two-tailed. Year and Industry dummies are included, but not reported. *, **, *** represent significance levels of 10 percent, 5 percent, and 1 percent, respectively. Variables are defined in Table 1.*

Table 5
Testing the Association between
CEO-CFO Age Difference and Audit Fees - ROA Moderating Effect

Variables	Predicted Sign	Coefficient	t-Statistic
<i>INTERCEPT</i>	?	2.816	51.95***
<i>AGEDIFF</i>	-	-0.003	-4.05***
<i>AGEDIFF_ROA</i>	+	0.001	2.69***
<i>ROA</i>	-	-0.257	-5.33***
<i>LOGAT</i>	+	0.498	121.78***
<i>NSEG</i>	+	0.048	18.61***
<i>FOPS</i>	+	0.293	21.74***
<i>INVREC</i>	+	0.511	15.45**
<i>CRATIO</i>	-	-0.005	-1.12
<i>LEVERAGE</i>	+	0.354	16.25***
<i>SPITEM</i>	+	0.125	9.48***
<i>LOSS</i>	+	0.078	5.36***
<i>BM</i>	-	-0.000	-0.62
<i>GCM</i>	+	-0.118	-0.73
<i>BUSY</i>	+	0.029	1.83*
<i>REPORT_LAG</i>	+	0.002	10.21***
<i>TENURE</i>	+	0.003	7.31***
<i>INDUSTRY</i>	?	Yes	
<i>YEAR</i>	?	Yes	
<i>N</i>		9,098	
<i>R-SQUARE</i>		0.81	

*Significance of t-statistics are two-tailed. Year and Industry dummies are included, but not reported. *, **, *** represent significance levels of 10 percent, 5 percent, and 1 percent, respectively. Variables are defined in Table 1.*

Table 6
Testing the Association between
CEO-CFO Age Difference and Audit Fees - IOR Moderating Effect

Variables	Predicted Sign	Coefficient	t-Statistic
<i>INTERCEPT</i>	?	2.739	53.17***
<i>AGEDIFF</i>	-	-0.008	-3.59***
<i>AGEDIFF_IOR</i>	+	0.006	3.61***
<i>IOR</i>	-	-0.161	-2.91***
<i>ROA</i>	-	-0.178	-5.24***
<i>LOGAT</i>	+	0.497	118.97***
<i>NSEG</i>	+	0.047	15.63***
<i>FOPS</i>	+	0.301	22.33***
<i>INVREC</i>	+	0.497	17.58**
<i>CRATIO</i>	-	-0.007	-1.75*
<i>LEVERAGE</i>	+	0.347	15.49***
<i>SPITEM</i>	+	0.116	9.46***
<i>LOSS</i>	+	0.095	4.78***
<i>BM</i>	-	-0.001	-0.66
<i>GCM</i>	+	-0.187	-1.05
<i>BUSY</i>	+	0.053	1.81*
<i>REPORT_LAG</i>	+	0.003	10.39***
<i>TENURE</i>	+	0.004	7.36***
<i>INDUSTRY</i>	?	Yes	
<i>YEAR</i>	?	Yes	
<i>N</i>		7,336	
<i>R-SQUARE</i>		0.82	

Significance of t-statistics are two-tailed. Year and Industry dummies are included, but not reported. *, **, *** represent significance levels of 10 percent, 5 percent, and 1 percent, respectively. Variables are defined in Table 1.