CEO Conscientiousness and Reserve Management: Evidence from U.S. Property-Liability Insurers

Gene Lai
University of North Carolina at Charlotte
Belk College of Business
Charlotte, NC 28223
glai@uncc.edu

Gunratan Lonare
Illinois State University
College of Business
Normal, IL 61790
glonar@ilstu.edu

Zifen Zeng
University of North Carolina at Charlotte
Belk College of Business
Charlotte, NC 28223
zzeng1@uncc.edu

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Abstract

This paper investigates the relation between CEO conscientiousness and reserve management in U.S. property-liability insurers. Psychology literature claims that conscientiousness is one of the strongest predictors of work-related behavior. We find that CEO conscientiousness is negatively associated with reserve errors in the upper tail of the conditional distribution (at 75 percentile and higher), indicating CEOs with a higher level of conscientiousness focus on the accuracy of reserve estimates rather than conservatism when reserve errors are extremely conservative. The evidence also shows that the negative relation is mitigated when insurers face high financial risk. In addition, conscientious CEOs in their first four years of tenure, relative to the five to eight years, are more conservative in reserve management when insurers have high financial risk. Furthermore, conscientious CEOs pursue accurate reserve estimates in the upper tail of reserve errors after SOX (compared with before SOX) even when insurers face high financial risk, possibly because they are required to be responsible for financial statements. The evidence is consistent with one feature of conscientiousness, following the rules and norms. Finally, more conscientious CEOs are better rewarded than less-conscientious CEOs through the compensation channel.

Keywords: Big Five traits, Conscientiousness, Reserve Error, Accuracy, Responsibility

1. Introduction

This paper examines the relation between CEO consciousness and reserve management for property-liability insurers. A growing literature suggests that managers' attitudes and beliefs, such as confidence, optimism, risk aversion, ability, and emotion, significantly impact corporate policies and performance (e.g., Abdel-Khalik, 2007; Peterson et al., 2009; Galasso and Simcoe, 2011). The literature also shows that managers' traits such as MBA degrees, birth cohort, and execution-related abilities (Fast, Aggressive, Persistence, Proactive, Work Ethic, High Standards), and Big Five traits (agreeableness, conscientiousness, extraversion, emotional stability, and openness to experience) have a significant impact on decision-making or job (firm) performance (Bertrand and Schoar, 2003; Almlund et al., 2011; Kaplan et al., 2012; Green et al., 2019).[1,2] For example, Gow et al. (2016) examine the association between Big Five traits and corporate policies (e.g., financing and investment decisions and book-to-market ratio). They find CEO conscientiousness is positively associated with book-to-market and somewhat associated with net leverage. Their evidence also shows that CEO openness influences R&D intensity, investment, book-to-market, and leverage.[3]

The literature, however, has not examined the association between the manager's personality traits and corporate policies of insurers, with one exception.[4] To fill this gap, we examine the relation between CEOs' conscientiousness, one of the Big Five traits, and loss reserve management. Unlike Gow et al. (2016), we mainly focus on conscientiousness (one of the Big Five traits) because we choose (a) specific trait(s) that is (are) associated with reserve estimates.[5]

[1] Big Five traits are the most widely used as personality proxies in the psychology literature.
[2] Green et al. (2019) find a positive relation between executive extraversion and firm outcomes, indicating that the more extraverted CEOs have better career development and firm outcomes.
[3] Their other results (Table X in their paper) show that agreeableness and extraversion are not associated with firm policies and book-to-market ratio in the models with all control variables and fixed effects.
[4] Berry-Stölzle et al. (2018) find that CEO overconfidence is negatively associated with loss reserves.
[5] Recall that Gow et al. (2016) investigate the relation between all Big Five traits and various corporate policies.

Among the Big Five traits, we choose conscientiousness because its characteristics, such as being precise, painstaking, cautious, and responsible, play an essential role in work-related behaviors (Specht et al., 2011). In addition, Roberts et al. (2009) define conscientiousness as "individual differences in the propensity to follow socially prescribed norms for impulse control, to be goal-directed, planful, able to delay gratification, and to follow norms and rules." This characteristic is important when we examine the impact of the Sarbanes-Oxley Act. Roberts et al. (2009) also indicate that conscientiousness is associated with better economic and workplace outcomes which are related to firm performance. Finally, unlike managers' attitudes and beliefs, conscientiousness is stable in a person's life span (Specht et al., 2011).[6]

Among corporate policies for insurers, we examine the loss reserve estimates for the following reasons. The loss reserve is the largest liability on the balance sheet for property-liability insurers. Therefore, the reserve estimate is an important corporate policy. Insurance company actuaries recommend an acceptable range for loss reserves, and managers make the final decision on the loss-reserve estimate (e.g., Hsu et al., 2019). This discretion is work-related behavior that requires accuracy and responsibility. We argue that the loss reserve estimate is likely influenced by personality traits such as managerial conscientiousness. We also suggest that a conscientious CEO not only has discretion about the reserve estimate, but her conscientious management style also influences the actuaries that estimate the reserve estimates. As a result, the original estimate suggested by actuaries is likely to be precise and responsible. The reserve estimate of an insurer with a conscientious CEO is expected to be precise and responsible.

Additonally, the loss reserve estimation is disclosed and revised every year for the ten years after the initial report. We can examine ex-post whether the original reserve estimate is

[6] Conscientiousness is also associated with great career success (Judge et al., 1999; Kern and Friedman, 2008).

overstated or understated. Specifically, the difference between the original report and the revised estimation is called reserve error which reflects the manager's discretion during the initial report period.

High financial risk is a major concern for all types of firms, especially for firms in the financial industry, such as the insurance industry. Since the conscientiousness trait also exhibits characteristics of being more responsible and cautious when needed, it is interesting to explore how conscientious CEOs choose their reserve management policy when an insurer faces high financial risk. We suggest that when an insurer faces higher financial risk, the insurer with a more conscientious CEO is likely to reserve more.

Finally, following the literature (e.g., Ho et al., 2013; Dah et al., 2014; Banerjee et al., 2015), we use the Sarbanes-Oxley Act (SOX) of 2002, an exogenous shock, as an identification strategy for our study. Specifically, we investigate the impact of the passage of SOX on the relation between CEO conscientiousness and reserve management when insurers have high financial risk. SOX requires the CEO to issue a statement certifying that her/his company's financial statements and disclosures are fairly present in all material respects. Since the psychology literature suggests that conscientiousness indicates a propensity to follow social rules and norms (Roberts et al., 2009), we argue that financial statements certified by more conscientious CEOs are likely to be more precise after SOX.

We use publicly traded insurers as our sample because the conscientiousness measure can be calculated only for publicly-traded insurers. The final sample size is 244 insurer-years (29 insurers) from 2002 to 2015. We employ the quantile regression method for our analysis due to the positively skewed distribution of reserve errors (Grace and Leverty, 2010). Our results show that the negative relation between CEO conscientiousness and reserve error is significant in the

upper tail of the conditional distribution (75^{th}, 80^{th}, 85^{th}, 90^{th}, and 95^{th}) of reserve errors implying conscientious CEOs tend to reserve less at the upper tail of reserve errors. A possible reason is that insurers with conscientious CEOs tend to reserve less at the upper tail because reserving too much is costly.[7] To mitigate the endogeneity issue due to the possibility of non-random hiring of conscientious CEOs in firms, we use the propensity score matching (PSM) method to match low conscientious CEOs with high conscientious CEOs and ensure that firms in the treatment (with high conscientious CEOs) and matched (with low conscientious CEOs) groups are similar in observable insurers characteristics. Our baseline results remain robust using PSM approach. In our additional analysis, we also find that CEOs' conscientiousness prevails over CFOs' conscientiousness in reducing reserve error.

We also find that the negative relation between conscientiousness and reserve errors in the upper tail is mitigated when insurers face high financial risk, measured by Expected shortfall (ES) and value at risk (VaR). This evidence shows that conscientious CEOs reserve more when insurers face higher financial risk, which is consistent with consciousness's characteristics, i.e., being responsible and cautious. Furthermore, the evidence suggests the conscientious CEO lowers the reserve error in the upper tail to pursue accuracy after SOX when the financial risk is high. The overall results are consistent with the conscientiousness trait features such as being precise, diligent, responsible, and rules abiding. Finally, we find that insurers pay higher compensation to more conscientious CEO.

Our study contributes to the growing literature that explores the relation between CEOs' traits and corporate policies. Specifically, our study is the first to use multivariate analysis to examine the relation between CEO Big five traits (specifically, conscientiousness) and corporate

[7] Our summary statistics show that higher positive reserve errors at the upper tail.

policy (reserve management). In addition, we use machine learning algorithms to calculate the conscientiousness score based on CEOs' spoken language instead of questionnaires. More importantly, the algorithms that we use do not solely rely on keyword counts to determine whether a CEO is conscientious. Rather, we compute a conscientious score based on the linguistic spoken style rooted in personality (e.g., using filler words, such as like and well) and not related to conversation content. Thus, the CEO cannot use specific keywords related to conscientiousness to fake that s/he is conscientious. We also provide evidence on the interaction effect between conscientiousness and our variables of interest, including financial risk, and SOX. Finally, our evidence has an implication for choosing future CEOs. If the board of directors cares about the CEO over reserve too much, then the board should choose a conscientious CEO.

This paper is organized as follows. Section 2 reviews the related literature linking managerial personality to reserve management and then discuss the conscientiousness and reserve error measures. Section 3 describes the empirical methodology framework and data sources. Section 4 presents the summary statistics of the sample and empirical results. Section 5 concludes.

2. Conscientiousness and Reserve Errors

2.1 Big Five Traits and Conscientiousness

The Big Five traits (agreeableness, conscientiousness, extraversion, emotional stability, and openness to experience) framework represents a system description of personalities, which are continuously stable across the life span and can predict the significance of behavioral differences (Barrick and Mount, 1991; Roberts et al. 2009; Specht et al., 2011).

We focus on conscientiousness (one of the Big Five traits), which is considered as the most relevant predictor of job performance in the psychology literature (Barrick and Mount, 1991; Mount et al., 1998; Furnham et al., 1999; Barrick et al. 2001; Specht et al., 2011; Bleidorn et al.,

2018). Conscientious people tend to have an orientation to detail and are responsible, and are good at analysis, carefulness, and precision (e.g., Costa and McCrae, 1992; John and Srivastava, 1999). We suggest conscientiousness is related to reserve estimations because CEOs are required to be responsible and accurate in finalizing the reserve estimation.

2.2 Big Five Traits and Conscientiousness Measure

The Big Five traits (e.g., conscientiousness) can be measured by the language used because people differ in their talking styles (Allport and Odbert, 1936; Pennebaker and King, 1999; Mehl et al., 2006; Mairesse et al., 2007; Gow et al., 2016). Pennebaker and King (1999) also find that the Big Five traits are highly correlated with linguistic features. Specifically, linguistic features such as using sentimental words, verb tense, causal words, words per sentence, and speech rate reflect personality traits (Pennebaker and King, 1999; Pennebaker et al., 2001; Mehl et al., 2001; Mehl et al., 2006; Mairesse et al., 2007; Gow et al., 2016).

Mairesse et al. (2007) develop four well-performed algorithms for scoring Big Five traits using continuous scales. In each algorithm, they use 88 Linguistic Inquiry and Word Count (LIWC) features (Pennebaker et al., 2001) and 14 Machine Readable Cataloguing (MRC) features (Coltheart, 1981) to train the model to get the traits scores.[8] Furthermore, they confirm that conscientiousness can be well modeled from spoken language.[9] Specifically, conscientiousness is negatively related to discrepancies words (e.g., should, would, and could), exclusive words (e.g.,

[8] The list of features can be found in Table 6 of Mairesse et al. (2007). Features mean independent variables used in the training algorithm and the dependent variable is individual personality trait score.

[9] They claim that the main feature of conscientiousness is avoidance of using negative emotion words (e.g., fear, anger, depression, sadness). The other features of conscientiousness are described below. Conscientious people talk more about job and occupation, which are defined as content related to personal concerns in LIWC. They prefer to use longer words (e.g., words longer than six letters, number of syllables in the word), words related to communication (e.g., talk, listen, share), insight words capturing the sense of understanding or learning (e.g., think, know, consider), words acquired late by children, prompts (e.g., yeah, OK, huh), positive emotion words (e.g., happy, love, nice). They use fewer swear words and fewer pronouns (e.g., I, them, itself).

exclusive, but, and without), negations (e.g., no, not, and can't), causation words (e.g., because, reason, and why), and positively related to positive emotion words (e.g., happy and nice) (Pennebaker and King, 1999).[10]

In linguistics, different word categories (e.g., filler words, longer words, insight words, discrepancies words, exclusive words, and causation words) are used in verbal communication. For example, spoken language uses some common filler words (e.g., er, ah, you know, like, and well). It should be noted that these word categories are not related to the content of conversations, rather, word categories are associated with personality traits.[11] Importantly, the language style is hard to conceal because it is naturally revealed in the conversation, and it is difficult to change the deeply rooted language style.

We download quarterly earnings call transcripts for our sample insurers from Nexis Lexis from 2001–2018. We then automate an algorithm in R language to identify the CEO's spoken responses in the conference calls. We only keep CEOs' responses to the question and answer (Q&A) section of the calls because managerial responses during Q&A are likely to be less scripted (Hollander et al., 2010). To measure CEOs' conscientiousness level, we feed the CEOs' responses from the Q&A section to the well-trained linguistic algorithms developed by Mairesse et al. (2007).[12] For each CEO and a conference call, the conscientiousness trait scores are generated using the four linguistic algorithms provided by *Personality Recognizer* application, and then these scores are winsorized at 1st and 99th percentiles.[13] We average the scores from the four algorithms

[10] Conscientiousness is also negatively related to using swear words, negative emotion words and positively related to using longer words, insight words (e.g., realize, understand), and filler words (e.g., like, well) (Mehl et al., 2006).
[11] For example, filler words are used to calculate personality traits scores but not related to conversation content such as bright and wonderful.
[12] We use a Java command-line application *Personality Recognizer* that reads text information and estimates Big Five personality scores which are based on models analyzed in Mairesse et al. (2007). Appendix A describes the method of Mairesse et al. (2007) in detail.
[13] *Personality Recognizer* application estimates Big Five personality scores based on four different models: Linear Regression, M5' Model Tree, M5' Regression Tree, and Support Vector Machine with Linear Kernel.

to get the call-level score. At this point, we have call-level CEO conscientiousness scores; for example, if a CEO is in the firm for the past 20 quarters in our sample period attending conference calls, then we have 20 conscientiousness scores for this CEO. Some fundamental characteristics of firms around the call date and the seasonality may impact CEOs' responses during a conference call; therefore, we follow Green et al. (2019) to develop our CEO conscientiousness score.[14] We estimate the following OLS regression to extract out the variation in CEO conscientiousness affected by firm fundamentals and obtain the residual call-level conscientiousness score.

$$Call\ Conscientiousness = \beta_1 Ret_{t-63,t-2} + \beta_2 Ret_{t-1,t+1} + \beta_3 Ret_{t+2,t+63} + \beta_4 Earnings\ Call$$
$$+\beta_5 Loss + Qtr\ fixed\ effect + \varepsilon.$$

In this specification, $Ret_{t-63,t-2}$ is the stock returns in the previous quarter, $Ret_{t-1,t+1}$ is the 2-day returns around the call date, $Ret_{t+2,t+63}$ is the returns over the following quarter, *Earnings Call* is an indicator variable which is set equal to one if the conference call date occurred around the four-day window [–1,2] of the earnings announcement date (day 0), and *Loss* is an indicator variable which is set equal to one if the latest quarter before the conference call reports negative earnings. To generate a time-invariant conscientiousness measure for the CEO, we take a weighted average of all the residual call-level scores by the number of words spoken by the CEO in the Q&A section of each call. Finally, we assign this weighted average CEO-level conscientiousness measure to all the data points related to the CEO (and for the firm) to treat it as a time-invariant CEO fixed effect.

The followings are sentence examples of unconscientious and conscientious people from our conference calls data sample.

[14] Green et al. (2019) estimate executive extraversion score. We do not include Meet-or-Beat and Surprise variables from IBES in our regression due to data limitations for our insurance firms.

Unconscientious	Conscientious
- The first were underwriting margins were unacceptable in commercial. - We don't see a solution for that right now. - I'm not going to say what we are going to do. - That does not say, though, when I look at my core businesses, we can't get another point out of our core businesses. We obviously can't.	- I think that as we've indicated, the $25 billion goal is achievable with all of the actions that we've laid out. - We are watching very carefully the appeal process. - We are taking specific steps to improve that. - Additionally, as you'd expect, we conducted a variety of detailed analyses to see if there were any other unique causes to the pattern, we saw spike and we found none.

2.3 Reserve Estimates and Errors

Insurers underwrite the risk in return for the premiums received at the beginning of the policy period, but they do not pay out the losses at the beginning of the policy period. In other words, insurers do not earn the whole premiums when received. Instead, insurers, on average, pay out losses throughout the policy period. There are time gaps between the premiums received and the claims arising, between the claims arising and the loss's payments, and between the loss's payments and the balance sheet date. Insurers set up a reserve to pay for future losses.

Under statutory accounting principles (SAP), insurers estimate the liabilities for the unpaid claim occurring before the balance sheet date. This estimated liability is called loss reserve, which represents the largest liability on a property-liability insurer's balance sheet. Estimating the reserve is challenging because predicting future losses and claims is difficult. While past claims' information can be helpful, past claims cannot precisely predict future claims because the estimate is fraught with uncertainty. After actuaries provide a range of loss reserve estimates, managers make final decisions about the reserve estimates. In other words, the loss reserve is subject to the manager's discretion.

One unique feature of loss reserve is that after the initial estimation, insurers need to revise their loss reserve estimations when new information about the claim arrives. The difference

between the original loss reserve and the revised loss reserve is called reserve error which provides an ideal measure of whether the original loss reserve is over-stated or under-stated and reflects the information of the manager's discretion.

2.4 Reserve Error Measure

Property-liability insurers are required to disclose the initial reserve estimates and revised reserve estimates every year for ten years after the initial disclosure in Schedule P of the National Association of Insurance Commissions' (NAIC) annual statutory filing.This regulation allows us to compare the revised reserve estimate and the original reserve estimate to determine whether the original loss reserve is overstated or understated. The difference between the original estimated reserve and the revised reserve estimation is reserve error.

We follow the measure of Anderson (1971), which is widely cited by the research regarding reserve error (e.g., Petroni, 1992; Petroni and Beasley, 1996; Gaver and Paterson, 2004; Hsu et al., 2019) to calculate reserve errors. Barth and Eckles (2018) point out that the calendar year development approach is more appropriate to measure reserve error in terms of solvency problems. The calendar year development measure is an aggregate concept that measures the difference between the aggregate loss reserve at time t and the reestimated aggregate loss reserve at time $t + n$. The sign of the difference represents whether the aggregate loss reserve is overstated or understated at time t. According to the literature, a five-year window ($n = 5$) is appropriate to calculate reserve errors. Following the literature, the reserve error is scaled by total admitted assets (*TAssets*). The reserve error is defined as follows:

$$RESERROR_{i,t} = \left(Cumulative\ inccured\ loss_{i,t} - Cumulative\ inccured\ loss_{i,t+5}\right)/TAssets_{i,t}$$

A positive sign of reserve error, *RESERROR*, means that the initial estimation of loss reserve at time t is greater than the reestimated loss reserve at time $t+5$, indicating the insurer overstated the loss reserve at time t.

3. Data and Methodology

Our initial sample consists of all publicly traded property-liability insurers of which the CEOs' spoken language is available from the question and answer (Q&A) portion of conference call transcripts from 2001 to 2018. We obtain conference call transcripts from LexisNexis. The reserve error and other financial data are from the National Association of Insurance Commissioners (NAIC). CEO characteristics are from Execucomp. Firm risk variables such as Value at risk, Expected shortfall, and Distance to default are calculated from CRSP. Based on the data availability, our final sample contains 244 insurer-year observations (29 unique insurers) from 2002 to 2015.[15]

We find that the distribution of reserve errors is non-normal and positively skewed (Panels B–D of Table 1), indicating that the OLS approach, which assumes the distribution is normal and estimates the mean effect, is inappropriate. Instead, we use the quantile regression approach to address the non-normal and skewed distribution concerns. Please note that the incentive of estimating loss reserve may differ across different levels of reserve errors. At the median or lower quintile of reserve errors, managers have the incentive to be more conservative and reserve more, but at a very high quintile of positive reserve errors, managers may want to focus on the precision of reserve errors because reserving too much is costly. The quantile regression approach can

[15] We ended our sample period in 2015 because we need to have 5-year window to calculate reserve errors. For the initial sample, there are 42 unique insurers with conscientiousness and reserve errors data. After combining a set of control variables, there are 33 unique insurers. Less firms are missing control variables; there are 29 unique insurers in the final sample to run the regression.

measure the change in incentives across different quantile levels of reserve errors. In addition, the quantile regression is less sensitive to the distribution of the dependent variable and outliers, thus, can help us better understand conscientiousness's impact across different quantile levels of reserve errors.

The quantiles of the conditional distribution of the dependent variable are expressed as functions of independent variables (Koenker and Hallock, 2001). The quantile regression is based on minimizing the sum of asymmetric weighted absolute residuals to estimate the conditional quantile functions, providing a much more complete picture of the heterogeneity response of independent variables than would be offered by conditional mean models such as OLS (Koenker, 2005).

Our baseline quantile regression specification for the effect of CEO conscientiousness on reserve errors is as follows[16]:

$$Q_t\left(RESERROR_{i,t} | CONSC_i, Controls_{i,t}\right) \quad (1)$$
$$= \alpha_\tau + \beta_\tau CONSC_i + \lambda_\tau CEO\ Controls_{i,t-1} + \gamma_\tau Firm\ Controls_{i,t} + Year\ FE + e_{i,t},$$

where $RESERROR$ represents the reserve error, $CONSC$ represents CEO conscientiousness, β_τ represents the coefficient of conscientiousness, and λ_τ represents coefficients of control variables, all at τ^{th} percentile.

We include two types of control variables: CEO characteristics variables and firm characteristics variables, and year fixed effects.[17] For CEO characteristics control variables, we include CEO vega and CEO delta to control for managers' risk-taking incentives (Coles et al., 2006). We also include CEO age and CEO tenure. Coles et al. (2006) suggest that CEO tenure is

[16] The objective function of quantile regression is expressed as follows:

$$Q_N(\beta_\tau) = \min_{\beta_\tau} \sum_{i:y_i \geq x_i\beta_\tau}^{N} \tau|y_i - x_i\beta_\tau| + \sum_{i:y_i < x_i\beta_\tau}^{N} (1-\tau)|y_i - x_i\beta_\tau|.$$

[17] We do not include firm fixed effects as they would subsume variation in time-invariant conscientiousness measure.

negatively related to firm risk and is used as a proxy for the level of risk aversion. Serfling (2014) argues that older CEOs adopt a less risky firm policy. Therefore, older CEOs are likely to estimate the reserve more cautiously.

We control for various firm characteristics that are likely to affect the reserve error. We use the natural log of net premium written (*LNNPW*), which can control the effect of risk pooling, as a proxy for firm size. A higher net premium growth rate (*NPWGROWTH*) may lead to higher income fluctuation, so insurers will reserve more to prepare for future loss claim uncertainties. Grace and Leverty (2012) point out that insurers manage reserve estimation for tax purposes because increasing the reserve estimation will reduce the current liability. Increasing the reserve estimation can postpone the tax payment until claims are ultimately resolved. Overestimating the loss reserve reduces the taxable income. Grace (1990) uses the tax shield to measure the incentive to overestimate loss reserve. The tax shield (*TAXSHIELD*) is calculated as net income plus estimated reserve divided by total assets. We use the natural logarithm of Tobin's Q (*LNQ*) to control for insurers' growth opportunities. Insurers with higher Tobin's Q, representing higher growth opportunities, would be more conservative in estimating reserves because they need to keep business operations steady and be prudent in supporting business expansion (Cummins et al., 2006).

According to Grace (1990), insurers are incentivized to smooth income for regulation concerns. Regulators are concerned about the high fluctuation of surplus from one year to the next. In addition, income stability is an indicator of firm risk. Thus, insurers may smooth income by estimating reserves. We use the previous 3 years' average ROA (*SMOOTH*) to measure income smoothing (Grace 1990).

Harrington and Danzon (1994) find that weak insurers mask the financial situation by underserving through reinsurance. Therefore, we control for reinsurance ceded to affiliated reinsurers (*REAFFILIATE*) and reinsurance ceded to nonaffiliated reinsurers (*RENONAFFILIATE*). We also control the loss ratio growth (*LRGROWTH*). A high loss ratio growth implies underwriting uncertainty, which impacts the reserve estimation.

The literature demonstrates that there is more uncertainty for long-tailed lines of business, which need more reserve discretion, resulting in overestimating loss reserves (Petroni and Beasley, 1996; Phillips et al., 1998; Beaver et al., 2003). Therefore, we control the percentage of the net loss incurred in long-tailed lines of business over the net loss incurred in whole business lines (*LONGTAIL*). [18] We also control product diversification (*PRODHHI*) and geographical diversification (*GEOHHI*), which are calculated using Herfindahl Index.

Petroni (1992) and Gaver and Paterson (2004) suggest that weak insurers tend to under reserve to mask financial conditions to appear more solvent. We use an indicator variable, *WEAK*, to represent insurers' financial condition. Insurance regulators use IRIS ratios to analyze insurers' financial conditions and target those needing regulation attention. *WEAK* takes a value of 1 if the insurer has more than 3 out of the range IRIS ratios and 0 otherwise. In addition, we use the natural log of naive distance-to-default (*LNDD*), which is calculated following Bharath and Shumway (2008), to measure the default risk of the insurer. The default risk decreases as the distance-to-default increases. Appendix B provides the definitions of all the variables used in this study.

[18] Long-tailed lines of business are defined by Phillips et al. (1998).

4. Summary Statistics and Empirical Results

4.1 Summary Statistics

Table 1 presents the summary statistics of the variables for the entire sample. The loss reserve error is scaled by the total admitted assets (*RESERROR*). The mean (median) reserve error is 0.009 (0.020), indicating that, on average, property-liability insurers overstate their loss reserves, which is consistent with the finding of the literature. The mean (median) of CEO conscientiousness score (*CONSC*) is -0.052 (-0.060). The average insurer has a 7.2% net premium growth rate (*NPWGROWTH*), a 4.2% three-year average ROA (*SMOOTH*), 0.8% loss ratio growth rate (*LRGROWTH*), and 71.3% loss incurred from the long-tail business lines (*LONGTAIL*). The minimum of reinsurance ceded to nonaffiliated reinsurers (*RENONAFFILIATE*) is greater than zero, indicating that all insurers in this sample transfer a portion of the insurance business to nonaffiliated reinsurers to diversify underwriting risk. The median of reinsurance ceded to affiliate reinsurers (*REAFFILIATE*) is zero, indicating that at least half of the insurers do not transfer underwriting risk to affiliated reinsurers. The average insurer has a product line Herfindahl Index (*PRODHHI*) of 0.361 and a geographical Herfindahl Index (*GEOHHI*) of 0.128, indicating that the insurer, on average, has approximately 3 business lines and operates in 8 states. The 75^{th} quantile of *WEAK* is 0, representing that very few insurers have more than 3 unusual IRIS ratios.

4.2 CEO Conscientiousness and Reserve Error Baseline Result

As mentioned above, the loss reserve estimates are finalized at the CEO's discretion. We argue that among the Big Five personality traits, the conscientiousness trait of a CEO likely offers features that can influence reserve estimates. By definition, conscientious CEOs are likely more responsible, cautious, painstaking, and precise than non-conscientious CEOs. We examine the relationship between CEO conscientiousness and reserve estimates.

The literature suggests that the average of reserve errors is positive, implying conservatism in the property liability insurance industry. On the one hand, because of the responsible and cautious characteristics of a conscientious trait, an insurer with a conscientious CEO is likely to have more conservative estimates. Conservative estimates can lower insolvency risk because reserving more provides a buffer to pay future claims, thereby stabilizing underwriting. A low insolvency risk can help the CEO maximize and protect stakeholders' wealth. In other words, insurers with more conscientious CEOs are likely to report more conservative estimates to become less insolvent, which results in more positive reserve error. We refer to this type of reserving behavior as the conservatism hypothesis.

On the other hand, because of the painstaking and precise characteristics of a conscientious trait, an insurer with a conscientious CEO is more likely to have accurate estimates, which results in less reserve error. We refer to this kind of reserve behavior as the accuracy hypothesis.

Overall, our conservatism hypothesis predicts that insurers with conscientious CEOs have higher (more conservative) reserve estimates, while the accuracy hypothesis predicts that insurers with conscientious CEOs have more accurate reserve estimates. Since higher reserve estimates are different from accurate reserve estimates, theoretical arguments alone cannot unambiguously predict the average relationship between CEO conscientiousness and reserve estimates.

While we are not able to unambiguously predict the average relationship, we can try to predict the relationship at high levels of reserve errors. We suggest that at higher levels of reserve estimates, the accuracy hypothesis would dominate the conservative hypothesis because high-level conservative reserves are costly. More importantly, at a high level of reserve level, conscientious CEOs do not have to worry about the insolvency risk associated with underwriting. Based on the above argument, we have the following prediction.

Prediction: CEO conscientiousness is negatively associated with a high level of reserve errors.

Table 2 presents the results of the relation between CEO conscientiousness and reserve errors. In column (1), the coefficient on *CONSC* is insignificant. The OLS result shows no significant relation between CEO conscientiousness and reserve errors. One possible reason is that the OLS method focuses on the condition mean effect, which cannot capture the heterogeneous relation at different levels of reserve errors. A positive coefficient of conscientiousness indicates insurers reserve more, and a negative coefficient means reserve less.

Table 2 shows the coefficient of conscientiousness (*CONSC*) is significantly negative for the 75th quantiles and higher (80th, 85th, 90th, and 95th), indicating that insurers with more conscientious CEOs reserve less than those with less-conscientious CEOs.[19] One possible reason is that conscientious CEOs lower reserve errors to pursue precise estimations of loss reserve instead of conserveness at higher levels of reserve errors so that insurers do not overreserve too much.[20] In other words, more conscientious CEOs decrease reserve errors because they pursue accuracy estimation to lower the cost of excess reserve. While overreserve can lower the probability of financial distress, there are disadvantages of overreserving. Holding excess reserves has opportunity costs. Specifically, with excess loss reserve, insurers have less free cash flows to invest in positive NPV projects (financial or real assets). In other words, while conservatism in reserve estimates is important, reserving too much is not optimal.

We next discuss the results of control variables. The natural log of net premium written (*LNNPW*) is negatively and significantly related to reserve errors at all quantile levels, implying larger insurers are less conservative in terms of reserve estimates. The coefficients of the natural log of Tobin's Q (*LNQ*) are positive and significant for most of the quantiles, indicating that CEOs

[19] Panel A of Figure 1 demonstrates point estimates of the coefficients on *CONSC* from Table 2.
[20] Panel D of Table 1 shows that the median of reserve errors is positive.

of insurers with relatively stronger growth opportunities are more cautious and adopt a more conservative reserve policy to ensure solvency during business expansion. The reinsurance ceded to nonaffiliated reinsurers (*RENONAFFILIATE*) is negatively related to reserve errors, and the effect is significant in the upper tail of the conditional distribution (75^{th}, 80^{th}, 85^{th}, 90^{th}, and 95^{th}), implying that higher overreserved insurers transfer less underwritten risk to nonaffiliated reinsurers to save reinsurance costs. The percentage of the net loss incurred in long-tailed lines of business (*LONGTAIL*) are positively related to reserve error and significant at higher quantile level (75^{th}, 80^{th}, 85^{th}, 90^{th}, and 95^{th}), suggesting that insurers with high losses incurred from long-tail business lines have more conservative reserve estimations. One potential explanation for this result is that insurers with high losses incurred from long-tail business lines reserve more since the insurer needs to be able to pay future losses to hedge high uncertain losses. The estimated coefficients of the geographical Herfindahl Index (*GEOHHI*) are negatively related to reserve errors and significant at all quantile levels, suggesting that insurers operating in more states reserve more.[21]

The literature examines the relation between extraversion (one of the Big Five personality traits) and various corporate policies (e.g., Green et al., 2019; Lartey et al., 2020; Adebambo et al., 2022). The characteristics of extraversion include being talkative, energetic, and outgoing. Extraverts like to be a leader and often are the first to offer their opinion and suggestions. It is reasonable to suggest that the characteristics of extroverts are not relevant to reserve estimates. We thus use extraversion to perform a placebo test, replacing the CEO conscientiousness measure with CEO extraversion measure and rerunning our baseline specification. The results are in Table C.1

[21] The negative sign of geographical Herfindahl Index is not consistent with the literature. We find that geographical Herfindahl Index is highly correlated with *LNQ*. We run the same regression dropping *LNQ* and find geographical Herfindahl is positively associated with reserve errors. This evidence is consistent with the literature.

in Appendix C. The procedure we follow to generate CEOs' extraversion score (*EXTRA*) is similar to the procedure to form our conscientiousness score in Section 2.2. The mean (median) of *EXTRA* is -0.036 (0.120). The results show that the coefficients on CEO extraversion are generally insignificant, indicating extraversion personality traits are not associated with reserve errors. The evidence is consistent with our expectation.

4.2.1 Propensity Score Matching

We cannot completely rule out the possibility that our results in the previous section suffer from endogeneity issues. Roberts and Whited (2013) pointed out that the matching technique can alleviate asymptotic biases ascending from endogeneity or self-selection. Therefore, to mitigate self-selection-based endogeneity in our data, we use the widely known propensity score matching (PSM) technique (Rosenbaum and Rubin, 1983; Dehejia and Wahba, 2002; Shipman et al., 2017).

To implement PSM, we form tercile groups of CEO conscientiousness score (*CONSC*) each year and define high conscientiousness, *HIGHCONSC*, as a dummy variable equal to one if a CEO's conscientiousness score falls under the top tercile group, otherwise set to zero. We report the results related to our PSM procedure in Table 3. In Panel A, we run logistic regression using *HIGHCONSC* as a dependent variable and on all the control variables from equation (1). We then estimate propensity scores as the predicted probabilities using the coefficients from this regression. CEOs in the high conscientiousness group (i.e., *HIGHCONSC* = 1) represent our treatment group. For each observation in our treatment group, we matched a sample from the low conscientiousness group (i.e., *HIGHCONSC* = 0) using the estimated propensity scores based on the nearest-neighbor matching approach with replacement and a caliper of 5%. Panel B reports the covariate balancing after the matching procedure. In addition, Panel B reports means and medians of all the covariates for the treated group (i.e., high conscientious CEOs) and the matched group (i.e., PSM matched

group from low conscientious CEOs). We also report mean and median differences between these two groups for each covariate. As seen in the table 3, none of the means are different between these two groups, and the medians are also almost similar. This analysis ensures that the treated and the matched groups are statistically similar across all covariates except the dependent variable of interest, reserve error.

Using this PSM sample, we re-run our baseline specification in equation (1) and report the results in Panel C. In column (1), the OLS result shows the coefficient on *HIGHCONSC* is negative and statistically significant at 1% level. Additionally, using quantile regressions, this coefficient is significantly negative for the 90th (at 10% level) and for the 95th quantiles (at 1% level). These results confirm our baseline results using PSM method and suggest that conscientious CEOs reserve less.

4.2.2 CEO versus CFO Conscientiousness and Reserve Error

The recent literature documents that the incentives of CFOs could be more dominant than those of CEOs for setting a firm's financial reporting and investment policies (Chava and Purnanandam, 2010; Jiang et al., 2010; Kim et al., 2011). This section assesses the differential impact of CFOs' versus CEOs' conscientiousness on the reserve error in insurance firms.

We report the results of CFO conscientiousness on the reserve error analysis in Table C.2 in Appendix C. Panel A shows the summary statistics of CFOs' conscientiousness measure, *CFOCONSC*, and the other CFO variables. The mean (median) of the conscientiousness measure for CFOs is higher than those of CEOs. In Panel B, we regress reserve error on CFO conscientiousness, controlling for CFO characteristic variables and firm controls. Examining CFOs conscientiousness solely, the coefficients on *CFOCONSC* are negative and statistically significant in the upper tail of the conditional distribution (75th and onwards). The evidence

suggests that more conscientious CFOs reserve less, similar to the evidence for conscientious CEOs. However, when we include the CEO conscientiousness measure along with the CFO conscientiousness in Panel C, we find that the coefficients on CFOs conscientiousness (*CFOCONSC*) become insignificant with one exception, but the coefficients on CEOs conscientiousness (*CONSC*) remain significant.[22] The overall evidence implies that CEOs' conscientiousness prevails over CFOs' conscientiousness in deciding on the reserve estimate.

4.3 Channel of Conscientiousness and Reserve Errors

This section identifies the channel through which CEO conscientiousness affects reserve error. Specifically, we argue that insurers with more conscientious CEOs are likely to reserve more than insurers with less-conscientious CEOs when insurers have higher insolvency risk. The reason is that conscientious CEOs are more responsible for the insurers' financial health than less-conscientious CEOs because being responsible and cautious are also the major characteristics of conscientiousness. Following the literature (e.g., Milidonis et al., 2019), we use Expected shortfall (ES) and Value at risk (VaR) at various confidence intervals to proxy the financial risk. Expected shortfall (ES) is defined as the conditional expected loss using 1 year of daily stock returns. Value at risk (VaR) is defined as the maximum expected loss that could occur using 1 year of daily stock returns at a specified confidence level (Milidonis et al., 2019).[23] It should be noted that ES contains

[22] The coefficient of *CFOCONSC* is negative and statistically significant at the 95^{th} percentile of reserve errors, implying CFOs have influence on the reserve error at the very high level of reserve errors.

[23] Both ES and VaR are based on stock price which reflects the value of the firm. The total value of a firm can be calculated by summing its equity value and debt value. The market value of a firm's debt is not directly observable; however, it can be estimated by equity value under the Merton DD model. Furthermore, what happens in the income statement is reflected in the stock price

The equation of VaR is $VAR = \overline{R} + \sqrt{\sigma} z_c$. The equation of ES is. $ES = \overline{R} - \sqrt{\sigma}.\frac{1}{c}.\emptyset(z_c)$. $\overline{R}$ is the mean of 1 year of daily firm stock returns. σ is the variance of 1 year of daily firm stock returns. z_c is the c-quantile of the standard normal distribution. $\emptyset$ is the density function.

more information than VaR, and the value of ES is beyond VaR. In addition, the 99.5 percent confidence level is consistent with the solvency capital requirement (Milidonis et al., 2019).

Table 4 shows the results of the impact of financial risks. In Panel A, coefficients of the interaction term between CEO conscientiousness and Expected shortfall with confidence levels of 99.5 (*CONSC×ES99.5*) are positive and significant in the upper tail of the conditional distribution (75^{th}, 80^{th}, 85^{th}, 90^{th}, and 95^{th}), implying that the negative relation between CEO conscientiousness and reserve errors is inverted to a positive relation when insurers face higher financial risk. For the upper tail of overreserved insurers, when the financial risk is high, the conscientious CEOs pursue financial stability to avoid insolvency by reserving more. One possible explanation is that conscientiousness's responsibility feature makes the CEO take a more conservative reserve policy when the financial risk is high. Panel B, Table 4 shows that the interaction term between CEO conscientiousness and VaR with a confidence level of 99.5 (*CONSC×VAR99.5*) is significantly positive in the upper tail of the conditional distribution (75^{th}, 80^{th}, 85^{th}, 90^{th}, and 95^{th}).[24] The results of the interaction term between CEO conscientiousness and Expected shortfall (or Value at risk) with different confidence levels are qualitatively similar and presented in Appendix C (Table C.3).

4.4 Identification Strategy

We use the Sarbanes-Oxley Act (SOX) of 2002, an exogenous shock, as an identification strategy for our study. SOX requires CEOs to be responsible for the financial statements of their firms. For example, CEOs are required to certify the financial statement information according to Section 302 in SOX. Additionally, SOX increases penalties for violations of security acts in Sections 304, 807, 902, and 903. The passage of SOX may lead to some changes in CEOs' behaviors because it increases the liabilities of CEOs. For example, CEOs bear a higher risk of

[24] Panel B of Figure 1 shows point estimates of the coefficients on *CONSC×ES99.5* and *CONSC×VAR99.5*.

misreporting financial statement information and broader financial reporting responsibilities after SOX. It is well documented in the psychology literature that conscientiousness is indicative of a propensity to follow social rules and norms (e.g., John et al., 2008; Roberts et al., 2009). We suggest that the increased legal exposure has a pronounced impact on conscientious CEOs, and they are more likely to follow the requirement of SOX because they tend to follow the rules. In other words, conscientious CEOs would make more accurate reserve estimations to be responsible for the financial statement after SOX.

To examine the impact of SOX, we use *POSTSOX* as a dummy variable equals 0 if observations are during the implementation period of SOX (2002–2004) and 1 for 2005–2015. We follow Ho et al. (2013) to use a two-year lag because it takes time to revise the reserve policy. Table 5 presents the results of the impact of SOX on the relation between CEO conscientiousness and reserve error conditioning on financial risk. In Panel A (Panel B), we use Expected shortfall (Value at risk) with confidence levels of 99.5, *ES99.5* (*VAR99.5*), as a measure of financial risk. In Panel A, the coefficients of the interaction term between CEO conscientiousness, post-SOX, and expected shortfall with confidence levels of 99.5 (*CONSC*×*POSTSOX*×*ES99.5*) are significantly negative in the upper tail (75^{th}, 80^{th}, 85^{th}, and 95^{th}) of reserve errors, implying that the negative relation is accentuated. In other words, conscientious CEOs pursue more accurate reserve estimations in the upper tail of reserve errors after SOX (compared with before SOX) when their insurers face high financial risk, possibly because they are required to be responsible for the accuracy of their financial statements. The results of using VaR as a proxy for financial risk are

similar in Panel B.[25] Overall, this evidence is consistent with one feature of conscientiousness, i.e., following the rules and norms.

4.5 Conscientiousness and Compensation Channel

In this section, we investigate whether the value of conscientiousness of CEOs is rewarded through the compensation channel in the property-liability industry. Jung and Subramanian (2017) argue that CEOs get compensation for their talent and effort. In addition, higher pay is a reward for a CEO's unobservable talent, successful management, and firm performance (Barrick and Mount, 1991; Mount et al., 1998; Furnham et al., 1999; Barrick et al., 2001; Specht et al., 2011; Albuquerque et al., 2013; Bleidorn et al., 2018). The literature also shows that compensation and managerial style are influenced by the managers' latent traits, such as personality (Graham et al., 2012; Graham et al., 2013). The more narcissistic CEOs get higher compensation than the rest of the top management team (O'Reilly et al., 2014). Since pursuing accuracy and being responsible for reserve estimations are crucial for insurers' financial health, we suggest that conscientious CEOs are positively associated with compensation.

We use an OLS regression specification to examine the relationship between CEO conscientiousness and her compensation. We use CEO total compensation, *TDC1* variable in Execucomp, as the dependent variable in our model. The distribution of the natural log of total compensation is normal and not skewed, indicating that the OLS approach is appropriate for depicting the relation between CEO conscientiousness and compensation. Due to data availability, the sample with CEO compensation reduces to 224 insurer-year observations.

[25] Additionally, the results using Expected shortfall and Value at risk with different confidence levels are qualitatively similar and presented in Appendix C (Table C.5).

We include CEO and firm controls in our model specification. For CEO characteristics-related variables, we include CEO vega and CEO delta. Guo et al. (2021) argue that "similar compensation levels do not mean equal compensation if compensation risk differs." Following the literature (e.g., Bebchuk and Fried, 2005; Yim, 2013), we also include CEO age, CEO tenure, and a dummy variable *CHAIRMAN* to control whether the CEO is also the board chairman. The firm controls are defined as follows. The natural log of net premium written (*LNNPW*) is a proxy for firm size. The business of larger insurers tends to be more complicated, and larger insurers tend to pay more. Profitability (*ROA*) is used to control firm performance. CEOs get higher compensation for better firm performance. Insurers can diversify underwriting risk through reinsurance to lower uncertainty. Thus, we control for reinsurance ratios (*RERATIO*). Shareholders encourage CEOs to bear risk. If CEO invests a greater portion in low-risk projects, the CEO gets a lower reward. We use the tax-exempt ratio (*TAXEXEMPT*), which is measured by tax-exempt income divided by total investment income, to capture low-risk investment (D'Arcy and Garven, 1990). Firm risk affects CEO compensation (Core et al., 1999; Chang et al., 2016). We use five-year rolling data to calculate the standard deviation of ROA (*STDROA*), the standard deviation of ROI (*STDROI*), and the standard deviation of loss ratio (*STDLOSSRATIO*) to represent total risk, investment risk, and underwriting risk, respectively (Ho et al., 2013).

Table 6 presents the result of the relation between CEO conscientiousness and her compensation. The coefficient of CEO conscientiousness (*CONSC*) is positive and significant at the 5% level, implying that the conscientiousness trait is compensated by insurers. Pursuing accuracy and being responsible are rewarded by property-liability insurers.

Furthermore, we use the 2008 financial crisis as an external shock to examine how a financial crisis impacts the relation between CEO conscientiousness and compensation. *CRISIS* is

a dummy variable that equals 1 if fiscal year observations are in 2007–2009 and 0 otherwise. Table 8 shows the coefficient of the interaction term between CEO conscientiousness and financial crisis (*CONSC*×*CRISIS*) is positive and significant at the 10% level, implying that more conscientious CEOs received higher compensation during the financial crisis. This result somewhat supports that insurers reward more managerial conscientiousness trait during the financial crisis.

5. Conclusion

This paper investigates the relation between CEO conscientiousness and reserve management in U.S. property-liability insurers. Our baseline results show that CEO conscientiousness is negatively associated with reserve error in the upper tail of the conditional distribution (i.e., at 75^{th} percentile and higher), indicating CEOs with a higher level of conscientiousness focus on the accuracy of reserve rather than conservatism.

We also explore whether the other characteristics of consciousness, such as being responsible and cautious, play any role when insurers face high financial risk. The evidence suggests that CEOs become more conservative when their insurers have higher financial risk. Furthermore, conscientious CEOs pursue accurate reserves in the upper tail of distribution after SOX (compared with before SOX) even when their insurers face high financial risk, possibly because they are required to be responsible for the accuracy of financial statements. This evidence is consistent with one feature of conscientiousness, i.e., following the rules and norms. Finally, conscientious CEOs get higher compensation, suggesting that the conscientiousness trait is rewarded in the property-liability industry.

The overall results of this paper are consistent with the features of conscientiousness: pursuing accuracy, being responsible, and following the rule. When conscientious CEO faces high

financial risk, the responsibility feature dominates the pursuit of accuracy feature. In addition, conscientious CEOs do not pursue accuracy at the cost of financial stability when there is a conflict between accuracy and being responsible for financial health. That is, conscientious CEOs reserve more to ensure insurers' ability to pay future losses when the probability of insolvency is high.

Appendix A: The Method of Mairesse et al. (2007)

Mairesse et al. (2007) develop four well-performed algorithms for scoring Big Five traits using continuous scales. The dependent variable of the algorithm is the individual trait score, and the independent variables are linguistic features. They train the model using two data samples. The first data sample is from Pennebaker and King (1999), containing 2,479 essays written by psychology students. Each essay is associated with a self-reported personality traits score.[26] The second data sample consists of conversations of 96 participants during a 2-day monitoring period and is recorded by the Electronically Activated Recorder (EAR) (Mehl et al., 2001 and 2006). Then conversations are transcribed to text by well-trained research assistants. The participants also self-report their personality traits score. In addition, 18 independent observers also rated the participants' traits scores using a 7-point scale based on the description of Big Five traits from John and Srivastava (1999).

John and Srivastava (1999) describe conscientiousness as follows.

Conscientiousness	
Low	High
Careless Disorderly Frivolous Irresponsible Slipshod Undependable Forgetful	Organized Thorough Planful Efficient Responsible Reliable Dependable Conscientious Precise Practical Deliberate Painstaking Cautious

[26] The score reported is based on 5-point scale questionnaires from John et al. (1999).

These two data samples are trained by 4 algorithms: linear regression model, support vector regression, M5' model tree, and M5' regression tree. The features[27] used in each algorithm are: 88 Linguistic Inquiry and Word Count (LIWC) features (Pennebaker et al. 2001), 14 Machine Readable Cataloguing (MRC) features (Coltheart, 1981).[28] These features are related to the content and syntax. After the training of each algorithm, the personality scores are obtained. The final scores are the average scores from the 4 algorithms which apply 10-fold cross-validation to maximize out-of-sample prediction ability.[29] Mairesse et al. (2007) employ these algorithms to find out which LIWC and MRC features are significantly related to conscientiousness. They claim that the main feature of conscientiousness is the avoidance of using negative emotion words (e.g., fear, anger, depression, sadness). The other features of conscientiousness are described below. Conscientious people talk more about job and occupation, which are defined as content related to personal concerns in LIWC. They prefer to use longer words (e.g., words longer than six letters, number of syllables in the word), words related to communication (e.g., talk, listen, share), insight words capturing the sense of understanding or learning (e.g., think, know, consider), words acquired late by children, prompts (e.g., yeah, OK, huh), positive emotion words (e.g., happy, love, nice). They use fewer swear words and fewer pronouns (e.g., I, them, itself).

[27] Features mean independent variables used in the training algorithm.
[28] The list of features can be found in Table 6 of Mairesse et al. (2007)
[29] The 10-fold cross-validation means that the sample is randomly divided into 10 subsamples, using 9 subsamples as training dataset and the rest 1 subsample as test dataset.

Appendix B: Variable definitions

Variable	Definition
Reserve management	
RESERROR	The difference between the cumulative incurred loss at time *t* and the cumulative incurred loss at time *t* + 5 and scaled by total admitted assets. (NAIC)
CEO variables	
CONSC	For each CEO and for a conference call, conscientiousness trait scores are generated using the four linguistic algorithms provided by *Personality Recognizer* application. These four scores are winsorized at 1st and 99th percentiles and averaged to get a call-level score. Then, a CEO-level conscientiousness trait score is estimated by taking a weighted average of all the call-level scores by the number of words spoken by the CEO in the Q&A section of each call. This CEO-level conscientiousness trait score is assigned to all the data points related to the CEO. Detailed discussion is in Section 2.2. (LexisNexis)
HIGHCONSC	The HIGHCONSC takes a value of 1 if a CEO's conscientiousness score falls under the top tercile group and 0 otherwise
VEGA	The natural log of dollar changes in CEO wealth associated with a 0.01 change in the standard deviation of the firm's returns. (Execucomp)
DELTA	The natural log of dollar changes in CEO wealth associated with a 1% change in the firm's stock price. (Execucomp)
AGE	The natural log of CEO age. (Execucomp)
TENURE	The natural log of CEO tenure. (Execucomp)
COMPENSATION	The natural log of CEO total compensation. (Excucomp)
CHAIRMAN	The Chairman takes the value of 1 if CEO is also the board chairman, 0 otherwise. (Execucomp)
Firm variables	
LNNPW	The natural log of net premium written. (NAIC)
NPWGROWTH	1-year increase of net premium written. (NAIC)
TAXSHIELD	The sum of net income and estimated loss reserve divided by total assets. (NAIC)
LNQ	The natural log of Tobin's Q. (Compustat)
SMOOTH	The previous 3 years' average ROA. (NAIC)
REAFFILIATE	The ratio of reinsurance ceded to affiliated reinsurers to total direct premium plus reinsurance assumed. (NAIC)
RENONAFFILIATE	The ratio of reinsurance ceded to nonaffiliated reinsurers to total direct premium plus reinsurance assumed. (NAIC)
RERATIO	The ratio of reinsurance ceded to reinsurers to total direct premium plus reinsurance assumed. (NAIC)
LRGROWTH	1-year increase in loss ratio. (NAIC)
LONGTAIL	The net loss incurred in long-tailed lines of business over the net loss incurred in whole business lines (Phillips et al., 1998). (NAIC)

PRODHHI	The line of business Herfindahl Index. (NAIC)
GEOHHI	The geographical Herfindahl Index. (NAIC)
WEAK	The WEAK takes a value of 1 if the insurer has more than 3 out of the range IRIS ratios and 0 otherwise. (NAIC)
LNDD	The natural log of naive distance-to-default (Bharath and Shumway 2008). (CRSP)
ROA	The Operating income before depreciation divided by the book value of assets. (Compustat)
TAXEXEMPT	The tax-exempt income divided by total investment income, to capture low-risk investment (D'Arcy and Garven, 1990). (NAIC)
Firm risk variables	
ES	Expected shortfall (ES) is defined as the conditional expected loss using 1 year of daily firm stock returns, which is beyond the VaR. (CRSP)
VAR	Value at risk (VaR) is the maximum expected loss that could occur using 1 year of daily firm stock returns at a specified confidence level. (CRSP)
STDROA	The five-year standard deviation of returns on assets (ROA). (NAIC)
STDROI	The five-year standard deviation of returns on investment (ROI). (NAIC)
STDLOSSRATIO	The five-year standard deviation of loss ratio. (NAIC)
External shock	
POSTSOX	Equals 1 from 2005 to 2015 and equals 0 from 2002 to 2004.
CRISIS	Equals 1 if observations are during 2007-2009 and 0 otherwise.

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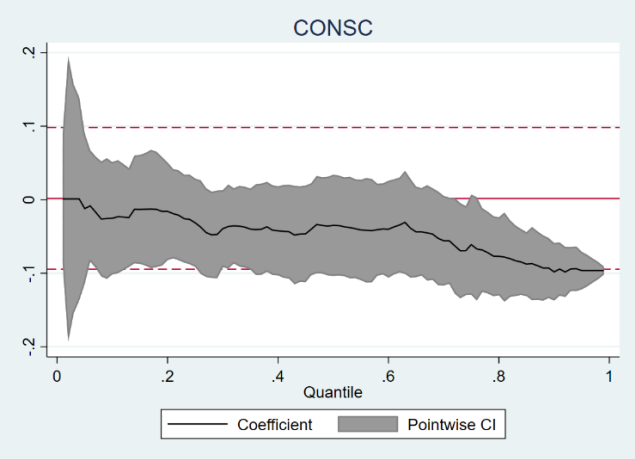
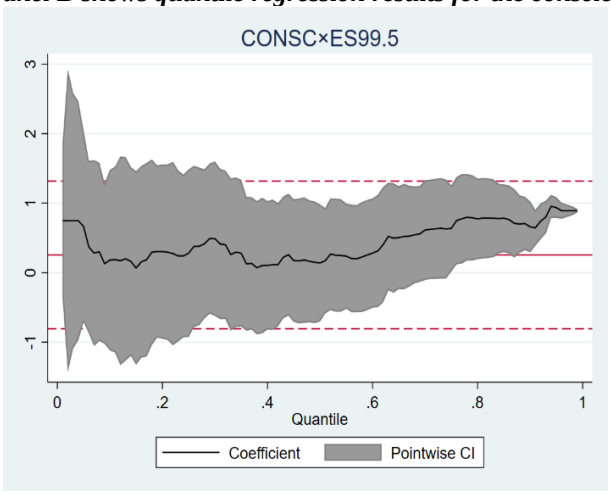
Figure 1: Point estimates for the effect of CEO conscientiousness on reserve error

Panel A demonstrates point estimates of the coefficients on *CONSC* from Table 2 for the effect of CEO conscientiousness on reserve errors. Panel B shows point estimates of the coefficients on *CONSC×ES99.5* and *CONSC×VAR99.5* from Table 3 for the effect of CEO conscientiousness on reserve error with financial risk mechanism. The solid dark curve represents point estimates of the coefficient for quantile regressions from the 1th percentile to the 95th percentile. The shaded area represents 95% pointwise confidence interval of quantile coefficients. The solid red straight line represents the OLS estimation, with two dashed lines depicting the 95% confidence level.

Panel A: Point estimate for the baseline regression specification



Panel B shows quantile regression results for the conscientiousness interaction with financial risk



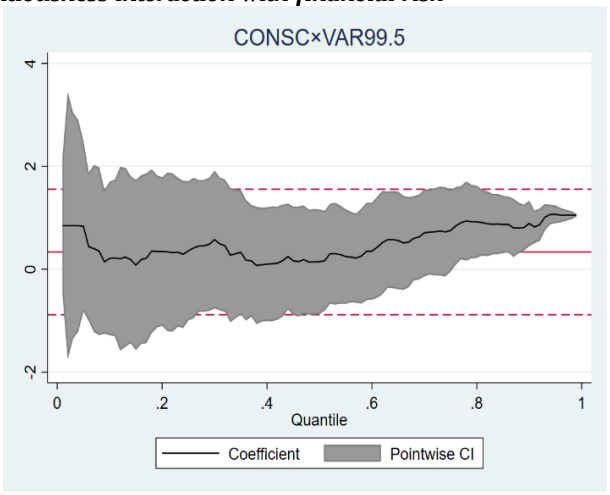


Table 1: Summary Statistics

This table presents summary statistics of variables used in the regression model. The sample period is from 2002 to 2015. Expected shortfall (ES) and Value at risk (VAR) are computed at 99.5, 99, and 95 percent confidence levels. All the variables are defined in Appendix B.

Panel A: Summary Statistics

Variable	N	MEAN	SD	MIN	P25	P50	P75	MAX
RESERROR	244	0.009	0.109	-1.388	-0.013	0.020	0.048	0.180
CONSC	244	-0.052	0.216	-0.607	-0.214	-0.060	0.108	0.361
VEGA	244	3.455	1.939	0	2.096	3.901	4.934	6.831
DELTA	244	5.345	1.546	0	4.310	5.318	6.364	9.330
AGE	244	4.028	0.124	3.738	3.951	4.025	4.094	4.443
TENURE	244	1.682	0.833	-0.876	1.225	1.792	2.286	3.807
COMPENSATION	224	8.178	0.897	6.016	7.471	8.167	8.921	10.73
CHAIRMAN	224	0.442	0.498	0	0	0	1	1
FIRST4	155	0.516	0.501	0	0	1	1	1
LNNPW	244	14.400	1.428	10.500	13.310	14.240	15.260	17.380
NPWGROWTH	244	0.072	0.192	-0.517	-0.012	0.033	0.105	1.691
TAXSHIELD	244	0.280	0.143	-0.068	0.179	0.243	0.395	0.631
LNQ	244	0.069	0.132	-0.147	-0.015	0.036	0.112	0.640
SMOOTH	244	0.042	0.038	-0.104	0.024	0.041	0.066	0.144
REAFFILIATE	244	0.061	0.157	-0.061	0	0	0.006	0.698
RENONAFFILIATE	244	0.135	0.116	0.001	0.038	0.096	0.234	0.506
RERATIO	224	0.173	0.206	0.00100	0.0390	0.089	0.256	0.915
LRGROWTH	244	0.008	0.277	-2.233	-0.066	-0.002	0.070	2.691
LONGTAIL	244	0.713	0.212	0	0.666	0.742	0.828	1
PRODHHI	244	0.361	0.255	0.123	0.170	0.296	0.449	1
GEOHHI	244	0.128	0.162	0.036	0.049	0.070	0.099	0.889
WEAK	244	0.033	0.178	0	0	0	0	1
LNDD	244	2.629	0.758	-0.554	2.324	2.778	3.139	4.163
ROA	224	0.034	0.047	-0.303	0.016	0.033	0.055	0.179
TAXEXEMPT	224	0.462	0.300	-0.596	0.271	0.455	0.686	1.372
ES99.5	244	0.057	0.040	0.021	0.034	0.043	0.065	0.304
ES99	244	0.053	0.037	0.019	0.031	0.040	0.060	0.281
ES95	244	0.041	0.028	0.015	0.024	0.031	0.046	0.219
VAR99.5	244	0.051	0.034	0.019	0.031	0.040	0.057	0.258
VAR99	244	0.046	0.030	0.018	0.028	0.036	0.052	0.233
VAR95	244	0.033	0.021	0.012	0.020	0.025	0.036	0.163
STDROA	224	0.022	0.017	0.001	0.010	0.019	0.028	0.094
STDROI	224	0.008	0.008	0.001	0.003	0.005	0.010	0.043
STDLOSSRATIO	224	0.084	0.127	0.010	0.030	0.048	0.080	0.858

Panel B: Shapiro-Wilk W Test for Normal Data

Variable	N	W	V	z	Prob>z
RESERROR	244	0.453	97.101	10.633	0.000

Panel C: Skewness/Kurtosis Tests for Normality

Variable	N	Pr (Skewness)	Pr (Kurtosis)	Joint Prob>chi2
RESERROR	244	0.000	0.000	0.000

Panel D: The Distribution of Reserve Error

Quantile	Value
100% Max	0.180
95%	0.098
90%	0.077
85%	0.062
80%	0.055
75% Q3	0.048
Mean	0.009
50% Median	0.020
25% Q1	-0.013
10%	-0.052
0% Min	-1.388

Table 2: CEO conscientiousness and reserve error

This table presents the main results of the baseline model, testing the relation between CEO conscientiousness and reserve error using the OLS and quantile regression methods. The dependent variable is reserve error (*RESERROR)*. All the variables are defined in Appendix B. The *t*-statistics are reported in parentheses. The standard deviations are clustered at firm level. Significant levels at the 1%, 5%, and 10% are indicated by ***, **, and *, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Variable	OLS	q0.10	q0.25	q0.50	q0.75	q0.80	q0.85	q0.90	q0.95
CONSC	**0.002**	**-0.025**	**-0.031**	**-0.035**	**-0.061***	**-0.077*****	**-0.088*****	**-0.098*****	**-0.096*****
	(0.039)	(-0.678)	(-1.068)	(-1.043)	(-1.776)	(-2.977)	(-4.130)	(-5.135)	(-7.727)
VEGA	-0.004	0.002	0.004	-0.000	-0.003	-0.003	-0.004	-0.004	-0.004**
	(-0.648)	(0.429)	(0.948)	(-0.070)	(-0.865)	(-0.862)	(-1.220)	(-1.339)	(-2.431)
DELTA	0.001	-0.008	-0.008	0.001	0.005	0.004	0.005	0.003	0.001
	(0.108)	(-1.692)	(-1.241)	(0.161)	(1.181)	(1.314)	(1.207)	(1.313)	(0.679)
AGE	-0.032	0.100	0.088	-0.010	-0.038	-0.012	-0.043	-0.029	-0.044*
	(-0.402)	(1.327)	(1.134)	(-0.109)	(-0.723)	(-0.250)	(-0.930)	(-0.886)	(-1.786)
TENURE	-0.003	0.002	0.002	0.001	0.003	0.003	0.007	0.007	0.012***
	(-0.380)	(0.228)	(0.198)	(0.063)	(0.417)	(0.538)	(1.293)	(1.475)	(3.866)
LNNPW	-0.005	-0.008	-0.010**	-0.013**	-0.023***	-0.024***	-0.026***	-0.026***	-0.025***
	(-0.478)	(-1.619)	(-2.140)	(-2.677)	(-5.083)	(-4.556)	(-5.337)	(-6.914)	(-9.903)
NPWGROWTH	0.031	0.057	0.029	0.018	-0.009	-0.011	-0.020	-0.022	-0.030**
	(1.147)	(1.346)	(0.852)	(0.670)	(-0.319)	(-0.414)	(-1.184)	(-1.501)	(-2.201)
TAXSHIELD	-0.180*	-0.154**	-0.053	-0.035	-0.069*	-0.080*	-0.096**	-0.090**	-0.095***
	(-1.727)	(-2.521)	(-1.207)	(-0.860)	(-1.796)	(-1.888)	(-2.222)	(-2.498)	(-4.342)
LNQ	0.174**	0.176*	0.181**	0.094	0.115	0.136**	0.149**	0.173***	0.165***
	(2.496)	(1.911)	(2.641)	(1.177)	(1.655)	(2.151)	(2.301)	(3.360)	(6.626)
SMOOTH	0.199	0.225	-0.099	-0.075	-0.002	0.090	0.125	0.104	0.106**
	(0.880)	(0.804)	(-0.426)	(-0.473)	(-0.010)	(0.638)	(0.981)	(1.215)	(2.403)
REAFFILIATE	-0.016	-0.073	-0.033	-0.040	0.015	0.049	0.060	0.081*	0.178***
	(-0.281)	(-1.361)	(-0.713)	(-0.730)	(0.228)	(0.801)	(0.906)	(1.715)	(6.407)
RENONAFFILIATE	-0.059	-0.157**	-0.121	-0.083	-0.131*	-0.158**	-0.197**	-0.203***	-0.244***
	(-0.675)	(-2.092)	(-1.411)	(-0.946)	(-1.757)	(-2.141)	(-2.644)	(-3.861)	(-8.495)
LRGROWTH	-0.005	-0.022	0.013	-0.012	-0.004	-0.009	-0.002	-0.003	-0.003
	(-0.253)	(-0.697)	(0.879)	(-0.736)	(-0.164)	(-0.753)	(-0.154)	(-0.294)	(-0.777)

Table 2 continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Variable	OLS	q0.10	q0.25	q0.50	q0.75	q0.80	q0.85	q0.90	q0.95
LONGTAIL	0.053***	0.080***	0.048	0.017	0.061**	0.066***	0.073***	0.077***	0.066***
	(3.004)	(3.152)	(1.590)	(0.627)	(2.227)	(3.817)	(3.923)	(6.259)	(6.624)
PRODHHI	0.008	-0.005	0.007	0.012	0.009	0.009	-0.003	-0.002	-0.013
	(0.299)	(-0.168)	(0.272)	(0.406)	(0.295)	(0.357)	(-0.100)	(-0.083)	(-0.887)
GEOHHI	-0.079*	-0.086*	-0.094**	-0.122***	-0.152***	-0.154***	-0.169***	-0.167***	-0.131***
	(-1.887)	(-1.942)	(-2.695)	(-3.748)	(-5.422)	(-6.005)	(-6.793)	(-8.045)	(-6.471)
WEAK	-0.039	-0.043	-0.104**	-0.091**	-0.052	-0.010	-0.008	-0.021	-0.009
	(-1.301)	(-1.413)	(-2.373)	(-2.063)	(-0.387)	(-0.158)	(-0.277)	(-0.854)	(-0.540)
LNDD	0.013*	0.017**	0.014**	0.005	0.003	0.002	0.000	-0.003	0.006**
	(1.834)	(2.079)	(2.079)	(0.879)	(0.429)	(0.247)	(0.065)	(-0.616)	(2.724)
Intercept	0.195	-0.447	-0.296	0.214	0.466**	0.405**	0.565***	0.515***	0.566***
	(0.735)	(-1.515)	(-0.925)	(0.607)	(2.438)	(2.249)	(3.337)	(4.473)	(5.424)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	244	244	244	244	244	244	244	244	244

Table 3: CEO conscientiousness and reserve error using Propensity Score Matching

This table presents the results using Propensity Score Matching (PSM) method. Panel A reports the first-stage logit regression results for estimating propensity scores. Panel B reports the mean (median) difference between the treatment and matched sample using PSM method, and signs ***, **, * indicate the significance of these differences based on *t*-tests (Wilcoxon rank-sum test) for means (medians) at the 1%, 5%, and 10% levels, respectively. Panel C reports the results for the relation between high conscientiousness CEOs and reserve error using the OLS and quantile regression methods with the model specification in equation (1). The sample used in these regressions is the treatment and matched insurers using PSM procedure. All the variables are defined in Appendix B. The z(*t*)-statistics are reported in parentheses. The standard deviations are clustered at firm level. Significant levels at the 1%, 5%, and 10% are indicated by ***, **, and *, respectively.

Panel A: First-stage logistic regression of PSM

	Dep var = ***HIGHCONSC***
VEGA	-0.382**
	(-2.465)
DELTA	0.006
	(0.026)
AGE	-3.321
	(-1.316)
TENURE	1.152***
	(2.745)
LNNPW	0.432**
	(2.082)
NPWGROWTH	1.552
	(0.876)
TAXSHIELD	-0.081
	(-0.032)
LNQ	-0.387
	(-0.141)
SMOOTH	5.431
	(0.504)
REAFFILIATE	1.089
	(0.408)
RENONAFFILIATE	-5.955*
	(-1.647)
LRGROWTH	-0.047
	(-0.030)
LONGTAIL	-0.510
	(-0.257)
PRODHHI	7.581***
	(5.020)
GEOHHI	-10.443***
	(-3.394)
WEAK	-3.254
	(-0.776)
LNDD	-1.263***
	(-2.828)
Intercept	8.462
	(0.821)
Year FE	Yes
Observations	244
Pseudo R-sq.	0.464

Panel B: Results of covariate balance checks after PSM procedure

	High conscientious CEOs		PSM matched group from low conscientious CEOs		Differences in	
	Mean	Median	Mean	Median	Mean	Median
VEGA	3.304	3.931	3.831	4.106	-0.527	-0.175
DELTA	5.321	5.323	5.629	5.876	-0.308	-0.553
AGE	4.033	4.025	4.074	4.043	-0.041	-0.018
TENURE	1.772	1.952	1.762	1.642	0.010	0.310
LNNPW	14.778	14.820	15.069	14.598	-0.291	0.222
NPWGROWTH	0.059	0.029	0.051	0.041	0.008	-0.012
TAXSHIELD	0.329	0.225	0.317	0.379	0.012	-0.154
LNQ	0.107	0.033	0.056	0.036	0.051	-0.003
SMOOTH	0.055	0.049	0.049	0.045	0.006	0.004
REAFFILIATE	0.023	0.000	0.020	0.000	0.003	0.000
RENONAFFILIATE	0.098	0.078	0.111	0.042	-0.013	0.036
LRGROWTH	0.014	0.010	0.012	0.048	0.002	-0.038
LONGTAIL	0.741	0.756	0.745	0.727	-0.004	0.029
PRODHHI	0.424	0.325	0.352	0.316	0.072	0.009
GEOHHI	0.088	0.052	0.122	0.059	-0.034	-0.007**
WEAK	0.020	0.000	0.000	0.000	0.020	0.000
LNDD	2.524	2.739	2.452	2.522	0.072	0.217

Panel C: Regression results using PSM procedure

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Variable	OLS	q0.10	q0.25	q0.50	q0.75	q0.80	q0.85	q0.90	q0.95
HIGHCONSC	**-0.024*** **	**-0.022**	**-0.016**	**-0.018**	**-0.018**	**-0.020**	**-0.020**	**-0.022*** **	**-0.022*** **
	(-3.244)	(-1.216)	(-0.793)	(-1.339)	(-1.229)	(-1.391)	(-1.495)	(-1.809)	(-2.825)
VEGA	0.006**	-0.002	0.001	0.005	0.007**	0.010**	0.010***	0.010***	0.010***
	(2.007)	(-0.330)	(0.124)	(1.359)	(2.366)	(2.543)	(2.726)	(3.032)	(3.704)
DELTA	-0.010*	-0.003	0.002	-0.013*	-0.016**	-0.021**	-0.019**	-0.017*	-0.017***
	(-1.894)	(-0.214)	(0.150)	(-1.799)	(-2.195)	(-2.371)	(-2.043)	(-1.846)	(-2.786)
AGE	0.058	0.084	-0.011	-0.027	-0.077	-0.040	-0.027	-0.009	-0.009
	(1.164)	(0.633)	(-0.127)	(-0.345)	(-1.111)	(-0.438)	(-0.317)	(-0.117)	(-0.160)
TENURE	-0.008	-0.008	-0.004	0.008	0.014	0.013	0.007	-0.002	-0.002
	(-0.778)	(-0.417)	(-0.300)	(0.478)	(0.887)	(0.761)	(0.343)	(-0.098)	(-0.122)
LNNPW	-0.016***	-0.017	-0.019**	-0.008	-0.008	-0.013	-0.015	-0.018	-0.018*
	(-3.466)	(-1.574)	(-2.264)	(-1.319)	(-0.735)	(-1.150)	(-1.314)	(-1.648)	(-1.822)
NPWGROWTH	-0.066*	0.015	-0.078	-0.063	-0.070	-0.098	-0.097	-0.101*	-0.101**
	(-1.803)	(0.128)	(-1.333)	(-1.633)	(-1.110)	(-1.522)	(-1.600)	(-1.718)	(-2.644)
TAXSHIELD	-0.013	-0.100	-0.062	0.008	0.015	0.042	0.040	0.021	0.021
	(-0.334)	(-1.235)	(-0.877)	(0.069)	(0.236)	(0.661)	(0.604)	(0.345)	(0.598)
LNQ	0.132***	0.167**	0.123**	0.067	0.137	0.196	0.195	0.211*	0.211**
	(3.066)	(2.258)	(2.323)	(0.528)	(1.036)	(1.316)	(1.489)	(1.831)	(2.621)
SMOOTH	-0.006	-0.048	-0.102	-0.082	-0.168	-0.034	0.080	0.242	0.242
	(-0.035)	(-0.180)	(-0.509)	(-0.362)	(-0.437)	(-0.084)	(0.197)	(0.632)	(0.747)
REAFFILIATE	0.115*	-0.033	0.087	0.077	0.240**	0.235*	0.222*	0.203	0.203**
	(1.698)	(-0.135)	(0.514)	(1.000)	(2.043)	(1.957)	(1.771)	(1.638)	(2.671)
RENONAFFILIATE	-0.108	-0.214	-0.269*	-0.143	-0.072	-0.037	-0.049	-0.070	-0.070
	(-1.634)	(-1.515)	(-1.981)	(-1.128)	(-0.893)	(-0.395)	(-0.520)	(-0.801)	(-1.439)
LRGROWTH	-0.016	-0.018	-0.024	-0.004	-0.026	-0.006	-0.013	-0.020	-0.020
	(-0.461)	(-0.381)	(-0.750)	(-0.087)	(-0.610)	(-0.174)	(-0.347)	(-0.512)	(-0.858)
LONGTAIL	0.016	0.020	0.006	0.025	0.046*	0.045	0.047	0.052	0.052***
	(0.581)	(0.454)	(0.182)	(1.131)	(1.756)	(1.440)	(1.415)	(1.637)	(3.129)
PRODHHI	0.006	-0.011	-0.032	0.026	0.012	-0.022	-0.033	-0.059	-0.059
	(0.183)	(-0.189)	(-0.749)	(0.456)	(0.151)	(-0.279)	(-0.433)	(-0.839)	(-1.053)

Table 3 Panel C continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Variable	OLS	q0.10	q0.25	q0.50	q0.75	q0.80	q0.85	q0.90	q0.95
GEOHHI	-0.033	-0.112	-0.058	0.018	0.022	0.008	0.008	0.008	0.008
	(-0.768)	(-0.992)	(-0.639)	(0.206)	(0.440)	(0.149)	(0.144)	(0.131)	(0.210)
WEAK	0.092**	0.066	0.113**	0.047	0.034	0.075	0.060	0.076	0.076*
	(2.055)	(0.927)	(2.131)	(0.792)	(0.519)	(1.150)	(0.947)	(1.251)	(1.859)
LNDD	0.019**	0.014	0.008	0.011	0.012	0.022**	0.022**	0.022**	0.022***
	(2.580)	(1.208)	(0.945)	(0.796)	(1.531)	(2.089)	(2.279)	(2.675)	(4.082)
Intercept	0.009	-0.156	0.322	0.215	0.389	0.314	0.287	0.269	0.269
	(0.042)	(-0.241)	(0.728)	(0.762)	(1.418)	(0.949)	(0.901)	(0.868)	(1.316)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	100	100	100	100	100	100	100	100	100

Table 4: CEO conscientiousness and reserve error with financial risk mechanism

This table presents the results of the interaction term model, testing the relation between CEO conscientiousness and reserve error with financial risk mechanism using the OLS and quantile regression methods. The dependent variable is reserve error (*RESERROR)*. All the variables are defined in Appendix B. The *t*-statistics are shown in parentheses. The standard deviations are clustered at firm level. Significant levels at the 1%, 5%, and 10% are indicated by ***, **, and *, respectively.

Panel A: Financial risk measured by Expected shortfall with confidence levels of 99.5 (ES99.5)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Variable	OLS	q0.10	q0.25	q0.50	q0.75	q0.80	q0.85	q0.90	q0.95
CONSC	-0.008	-0.035	-0.037	-0.039	-0.100**	-0.112***	-0.118***	-0.112***	-0.134***
	(-0.118)	(-0.847)	(-0.748)	(-0.905)	(-2.713)	(-3.890)	(-4.394)	(-5.715)	(-10.977)
CONSC×ES99.5	**0.254**	**0.180**	**0.280**	**0.139**	**0.636***	**0.773****	**0.784*****	**0.659*****	**0.935*****
	(0.490)	(0.285)	(0.475)	(0.356)	(1.936)	(2.732)	(3.296)	(3.690)	(12.999)
ES99.5	-0.225*	-0.061	-0.146	-0.152	-0.301**	-0.341***	-0.315***	-0.246***	-0.342***
	(-1.911)	(-0.365)	(-1.047)	(-1.247)	(-2.551)	(-3.738)	(-3.984)	(-3.283)	(-14.891)
VEGA	-0.004	0.001	0.005	0.000	-0.004	-0.003	-0.002	-0.002	-0.002
	(-0.590)	(0.305)	(1.236)	(0.073)	(-1.127)	(-1.014)	(-0.879)	(-0.826)	(-1.211)
DELTA	0.001	-0.008	-0.007	0.001	0.004	0.003	0.003	0.003	0.002
	(0.123)	(-1.486)	(-1.175)	(0.100)	(1.099)	(0.799)	(1.024)	(1.217)	(1.401)
AGE	-0.026	0.096	0.102	-0.000	-0.020	-0.023	-0.026	-0.020	-0.000
	(-0.325)	(1.331)	(1.288)	(-0.000)	(-0.359)	(-0.499)	(-0.703)	(-0.601)	(-0.000)
TENURE	-0.004	0.002	-0.005	0.001	0.005	0.004	0.005	0.005	0.004
	(-0.503)	(0.240)	(-0.466)	(0.116)	(0.699)	(0.747)	(1.113)	(1.208)	(1.589)
LNNPW	-0.005	-0.008	-0.009*	-0.013***	-0.022***	-0.023***	-0.025***	-0.027***	-0.028***
	(-0.479)	(-1.462)	(-1.977)	(-2.932)	(-4.842)	(-4.699)	(-6.304)	(-7.248)	(-11.242)
NPWGROWTH	0.038	0.058*	0.057**	0.039	0.010	-0.006	-0.014	-0.027	-0.031***
	(1.547)	(1.821)	(2.072)	(1.215)	(0.579)	(-0.361)	(-0.878)	(-1.677)	(-2.954)
TAXSHIELD	-0.178*	-0.150**	-0.052	-0.037	-0.056	-0.062	-0.080**	-0.058	-0.039*
	(-1.711)	(-2.226)	(-1.186)	(-0.914)	(-1.323)	(-1.405)	(-2.278)	(-1.638)	(-1.837)
LNQ	0.184**	0.169*	0.168**	0.089	0.104	0.156**	0.170***	0.159***	0.167***
	(2.678)	(1.821)	(2.632)	(1.318)	(1.639)	(2.487)	(3.063)	(3.133)	(6.588)
SMOOTH	0.169	0.274	-0.021	-0.075	-0.015	-0.098	0.010	0.023	0.015
	(0.730)	(0.855)	(-0.107)	(-0.495)	(-0.086)	(-0.784)	(0.102)	(0.267)	(0.309)
REAFFILIATE	-0.026	-0.038	-0.044	-0.036	0.007	0.053	0.056	0.069	0.146***
	(-0.440)	(-0.949)	(-0.951)	(-0.548)	(0.112)	(0.947)	(1.226)	(1.456)	(5.418)

Table 4 Panel A continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Variable	OLS	q0.10	q0.25	q0.50	q0.75	q0.80	q0.85	q0.90	q0.95
RENONAFFILIATE	-0.052	-0.162**	-0.076	-0.084	-0.139	-0.143*	-0.161***	-0.174***	-0.185***
	(-0.587)	(-2.320)	(-0.915)	(-0.982)	(-1.694)	(-1.903)	(-2.941)	(-3.722)	(-7.149)
LRGROWTH	-0.001	-0.024	0.011	-0.009	-0.001	0.001	-0.003	-0.004	-0.003
	(-0.064)	(-0.734)	(0.674)	(-0.630)	(-0.057)	(0.087)	(-0.292)	(-0.463)	(-0.952)
LONGTAIL	0.049***	0.074**	0.047	0.018	0.066***	0.062***	0.069***	0.072***	0.075***
	(3.055)	(2.322)	(1.479)	(0.699)	(3.120)	(3.651)	(4.072)	(5.316)	(8.827)
PRODHHI	0.008	-0.005	0.012	0.011	0.016	0.004	0.010	0.009	0.013
	(0.287)	(-0.148)	(0.465)	(0.388)	(0.536)	(0.148)	(0.393)	(0.374)	(1.001)
GEOHHI	-0.077*	-0.090	-0.075*	-0.116***	-0.151***	-0.166***	-0.168***	-0.162***	-0.161***
	(-2.017)	(-1.693)	(-1.780)	(-4.387)	(-4.494)	(-6.333)	(-7.417)	(-8.211)	(-12.102)
WEAK	-0.035	-0.067	-0.082**	-0.098**	-0.070	-0.014	-0.015	-0.020	-0.034***
	(-1.179)	(-1.584)	(-2.521)	(-2.240)	(-1.081)	(-0.314)	(-0.501)	(-0.936)	(-3.340)
LNDD	0.011	0.015*	0.010	0.003	0.001	0.001	0.000	-0.002	-0.004*
	(1.521)	(1.981)	(1.598)	(0.655)	(0.082)	(0.193)	(0.045)	(-0.407)	(-1.814)
Intercept	0.191	-0.426	-0.362	0.181	0.407**	0.474***	0.493***	0.497***	0.446***
	(0.700)	(-1.505)	(-1.109)	(0.536)	(2.055)	(2.839)	(3.529)	(4.536)	(4.918)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	244	244	244	244	244	244	244	244	244

Table 4: CEO conscientiousness and reserve error with financial risk mechanism

This table presents the results of the interaction term model, testing the relation between CEO conscientiousness and reserve error with financial risk mechanism using the OLS and quantile regression methods. The dependent variable is reserve error (*RESERROR*). All the variables are defined in Appendix B. The *t*-statistics are shown in parentheses. The standard deviations are clustered at firm level. Significant levels at the 1%, 5%, and 10% are indicated by ***, **, and *, respectively.

Panel B: Financial risk measured by Value at risk with confidence levels of 99.5 (VAR99.5)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Variable	OLS	q0.10	q0.25	q0.50	q0.75	q0.80	q0.85	q0.90	q0.95
CONSC	-0.011	-0.035	-0.038	-0.038	-0.102**	-0.117***	-0.119***	-0.119***	-0.138***
	(-0.161)	(-0.756)	(-0.745)	(-0.839)	(-2.702)	(-3.912)	(-4.396)	(-5.982)	(-11.328)
CONSC×VAR99.5	**0.335**	**0.211**	**0.357**	**0.145**	**0.751***	**0.922****	**0.869*****	**0.890*****	**1.067*****
	(0.561)	(0.290)	(0.545)	(0.293)	(1.883)	(2.691)	(3.213)	(4.139)	(12.758)
VAR99.5	-0.262*	-0.071	-0.175	-0.173	-0.351**	-0.403***	-0.359***	-0.301***	-0.413***
	(-1.879)	(-0.346)	(-1.049)	(-1.127)	(-2.460)	(-3.473)	(-3.910)	(-3.281)	(-15.418)
VEGA	-0.004	0.001	0.005	0.000	-0.003	-0.003	-0.002	-0.002	-0.002
	(-0.589)	(0.297)	(1.197)	(0.092)	(-1.021)	(-1.048)	(-0.922)	(-0.850)	(-1.191)
DELTA	0.001	-0.008	-0.007	0.001	0.004	0.003	0.003	0.003	0.001
	(0.118)	(-1.534)	(-1.173)	(0.098)	(1.108)	(0.845)	(0.993)	(1.108)	(0.984)
AGE	-0.026	0.096	0.101	0.002	-0.016	-0.023	-0.023	-0.022	0.003
	(-0.321)	(1.331)	(1.277)	(0.023)	(-0.296)	(-0.493)	(-0.618)	(-0.661)	(0.121)
TENURE	-0.004	0.002	-0.005	0.001	0.003	0.004	0.005	0.006	0.006**
	(-0.503)	(0.227)	(-0.448)	(0.078)	(0.506)	(0.717)	(1.034)	(1.425)	(2.068)
LNNPW	-0.005	-0.008	-0.009*	-0.013***	-0.023***	-0.024***	-0.025***	-0.026***	-0.027***
	(-0.481)	(-1.495)	(-2.037)	(-2.977)	(-4.879)	(-4.949)	(-6.109)	(-7.435)	(-11.222)
NPWGROWTH	0.038	0.058*	0.059**	0.039	0.008	-0.005	-0.016	-0.025	-0.029***
	(1.546)	(1.962)	(2.085)	(1.154)	(0.490)	(-0.341)	(-0.964)	(-1.397)	(-2.846)
TAXSHIELD	-0.179*	-0.151**	-0.055	-0.038	-0.056	-0.065	-0.080**	-0.065*	-0.049**
	(-1.712)	(-2.425)	(-1.293)	(-0.904)	(-1.318)	(-1.504)	(-2.257)	(-1.883)	(-2.351)
LNQ	0.185**	0.169*	0.170**	0.091	0.111*	0.160**	0.171***	0.154***	0.184***
	(2.692)	(1.781)	(2.668)	(1.327)	(1.727)	(2.520)	(3.017)	(3.018)	(7.161)
SMOOTH	0.167	0.274	-0.019	-0.078	-0.018	-0.090	0.020	0.012	-0.009
	(0.722)	(0.876)	(-0.093)	(-0.527)	(-0.105)	(-0.734)	(0.197)	(0.140)	(-0.190)
REAFFILIATE	-0.026	-0.038	-0.045	-0.036	0.004	0.052	0.058	0.069	0.142***
	(-0.439)	(-0.800)	(-0.886)	(-0.578)	(0.063)	(0.936)	(1.239)	(1.453)	(5.568)

Table 4 Panel B continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Variable	OLS	q0.10	q0.25	q0.50	q0.75	q0.80	q0.85	q0.90	q0.95
RENONAFFILIATE	-0.051	-0.163**	-0.077	-0.085	-0.135	-0.143*	-0.161***	-0.179***	-0.197***
	(-0.584)	(-2.191)	(-0.932)	(-1.006)	(-1.652)	(-1.887)	(-2.935)	(-3.780)	(-7.722)
LRGROWTH	-0.001	-0.024	0.011	-0.009	-0.001	0.002	-0.003	-0.005	-0.001
	(-0.073)	(-0.756)	(0.649)	(-0.587)	(-0.057)	(0.118)	(-0.357)	(-0.554)	(-0.370)
LONGTAIL	0.050***	0.074**	0.046	0.019	0.064***	0.063***	0.071***	0.066***	0.074***
	(3.082)	(2.395)	(1.426)	(0.718)	(2.988)	(3.796)	(5.292)	(5.205)	(8.744)
PRODHHI	0.008	-0.005	0.011	0.010	0.014	0.005	0.013	0.003	0.008
	(0.295)	(-0.155)	(0.411)	(0.335)	(0.453)	(0.157)	(0.499)	(0.147)	(0.638)
GEOHHI	-0.076*	-0.090*	-0.075*	-0.116***	-0.152***	-0.165***	-0.170***	-0.144***	-0.154***
	(-2.010)	(-1.776)	(-1.759)	(-4.173)	(-4.642)	(-6.340)	(-7.559)	(-5.815)	(-10.785)
WEAK	-0.035	-0.066	-0.068**	-0.098**	-0.067	-0.018	-0.018	-0.015	-0.034***
	(-1.194)	(-1.442)	(-2.325)	(-2.394)	(-1.011)	(-0.423)	(-0.475)	(-0.677)	(-3.426)
LNDD	0.011	0.015**	0.010	0.003	0.001	0.000	-0.000	0.000	-0.004*
	(1.480)	(2.166)	(1.599)	(0.503)	(0.127)	(0.014)	(-0.016)	(0.124)	(-1.992)
Intercept	0.191	-0.425	-0.354	0.177	0.397**	0.480***	0.483***	0.503***	0.439***
	(0.700)	(-1.505)	(-1.090)	(0.532)	(2.075)	(2.895)	(3.417)	(4.417)	(4.829)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	244	244	244	244	244	244	244	244	244

Table 5: CEO conscientiousness and reserve error using SOX as an exogenous shock with financial risk mechanism

This table presents the relation between CEO conscientiousness and reserve error with financial risk mechanism of the SOX period using the OLS and quantile regression methods. A dummy variable *POSTSOX* equals 1 from 2005 to 2015 and equals 0 from 2002 to 2004. The dependent variable is reserve error (*RESERROR*). All the variables are defined in Appendix B. The *t*-statistics are shown in parentheses. The standard deviations are clustered at firm level. Significant levels at the 1%, 5%, and 10% are indicated by ***, **, and *, respectively.

Panel A: Financial risk measured by Expected shortfall with confidence levels of 99.5 (ES99.5)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Variable	OLS	q0.10	q0.25	q0.50	q0.75	q0.80	q0.85	q0.90	q0.95
CONSC	-0.258**	-0.611**	-0.333*	-0.125	-0.243**	-0.272**	-0.271***	-0.262***	-0.261***
	(-2.406)	(-2.397)	(-1.830)	(-1.150)	(-2.239)	(-2.732)	(-2.974)	(-3.609)	(-10.129)
CONSC×POSTSOX×ES99.5	**-3.947****	**-10.644****	**-7.759****	**-2.086***	**-2.508*****	**-2.346*****	**-1.834****	**-1.403***	**-1.829*****
	(-2.353)	(-2.707)	(-2.450)	(-1.769)	(-3.033)	(-3.394)	(-2.070)	(-2.020)	(-6.981)
CONSC×POSTSOX	0.340**	0.640**	0.347*	0.110	0.209*	0.211**	0.203**	0.176**	0.178***
	(2.429)	(2.518)	(1.871)	(0.986)	(2.036)	(2.385)	(2.362)	(2.557)	(8.635)
CONSC×ES99.5	3.277**	10.114**	7.246**	1.950	2.492***	2.372***	1.886*	1.613**	2.282***
	(2.739)	(2.755)	(2.369)	(1.661)	(2.876)	(3.124)	(2.034)	(2.445)	(8.520)
POSTSOX×ES99.5	1.010**	2.369**	1.956**	0.630**	0.634**	0.603***	0.472**	0.350**	0.506***
	(2.279)	(2.325)	(2.423)	(2.148)	(2.698)	(3.480)	(2.118)	(2.066)	(5.212)
POSTSOX	-0.024	-0.105**	-0.069	-0.002	-0.005	-0.006	-0.004	0.002	-0.002
	(-0.860)	(-2.144)	(-1.697)	(-0.122)	(-0.246)	(-0.408)	(-0.364)	(0.203)	(-0.504)
ES99.5	-0.898**	-2.291**	-1.952**	-0.539*	-0.642***	-0.627***	-0.494**	-0.421**	-0.622***
	(-2.567)	(-2.397)	(-2.550)	(-1.899)	(-2.895)	(-3.713)	(-2.083)	(-2.622)	(-6.371)
VEGA	-0.001	0.001	0.001	0.000	0.001	0.001	0.001	-0.001	0.001
	(-0.091)	(0.353)	(0.359)	(0.040)	(0.223)	(0.556)	(0.339)	(-0.433)	(0.416)
DELTA	0.002	-0.006	-0.002	0.004	0.005	0.003	0.002	0.005*	0.004**
	(0.545)	(-1.160)	(-0.449)	(0.772)	(1.274)	(0.737)	(0.898)	(1.753)	(2.565)
AGE	-0.088	0.027	0.005	-0.044	-0.047	-0.055	-0.065	-0.085**	-0.034
	(-0.933)	(0.494)	(0.058)	(-0.583)	(-0.877)	(-1.257)	(-1.546)	(-2.338)	(-1.228)
TENURE	-0.005	0.004	0.004	-0.001	-0.002	0.002	0.003	0.003	-0.001
	(-0.459)	(0.330)	(0.302)	(-0.059)	(-0.248)	(0.235)	(0.451)	(0.465)	(-0.231)
LNNPW	-0.008	-0.004	-0.014***	-0.018***	-0.027***	-0.027***	-0.027***	-0.028***	-0.028***
	(-0.878)	(-0.495)	(-3.234)	(-4.141)	(-6.235)	(-7.887)	(-7.587)	(-10.075)	(-14.325)

Table 5 Panel A continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Variable	OLS	q0.10	q0.25	q0.50	q0.75	q0.80	q0.85	q0.90	q0.95
NPWGROWTH	0.020	0.011	0.003	-0.019	-0.018	-0.015	-0.012	-0.008	-0.061***
	(0.729)	(0.345)	(0.098)	(-0.838)	(-0.796)	(-0.832)	(-0.692)	(-0.435)	(-5.053)
TAXSHIELD	-0.151	-0.112*	-0.020	-0.021	-0.063	-0.088**	-0.083**	-0.082**	-0.029
	(-1.523)	(-1.960)	(-0.413)	(-0.509)	(-1.390)	(-2.459)	(-2.112)	(-2.496)	(-1.025)
LNQ	0.089	0.059	0.081	0.089	0.123*	0.165**	0.166**	0.145**	0.165***
	(1.257)	(0.822)	(1.058)	(1.124)	(1.705)	(2.689)	(2.755)	(2.396)	(3.763)
SMOOTH	0.562	0.715**	0.223	-0.014	0.201	0.249	0.301**	0.323***	0.091
	(1.620)	(2.624)	(0.960)	(-0.082)	(1.088)	(1.651)	(2.453)	(3.242)	(1.387)
REAFFILIATE	0.014	0.083*	0.019	-0.029	0.006	0.038	0.042	0.017	0.123***
	(0.227)	(1.747)	(0.403)	(-0.461)	(0.084)	(0.613)	(0.894)	(0.337)	(3.594)
RENONAFFILIATE	-0.011	-0.125	-0.144	-0.048	-0.096	-0.151**	-0.134**	-0.135**	-0.064
	(-0.113)	(-1.414)	(-1.447)	(-0.576)	(-1.325)	(-2.382)	(-2.292)	(-2.619)	(-1.628)
LRGROWTH	-0.008	-0.015	0.009	-0.010	-0.011	-0.005	-0.007	-0.008	-0.008
	(-0.404)	(-0.296)	(0.482)	(-0.536)	(-0.453)	(-0.426)	(-0.548)	(-0.780)	(-1.155)
LONGTAIL	0.044*	0.073***	0.050**	0.018	0.043	0.045*	0.045**	0.046***	0.032**
	(1.964)	(3.016)	(2.293)	(0.602)	(1.266)	(2.010)	(2.682)	(3.261)	(2.284)
PRODHHI	0.004	0.027	-0.002	0.001	0.004	-0.008	-0.005	-0.006	-0.009
	(0.157)	(0.993)	(-0.106)	(0.060)	(0.148)	(-0.352)	(-0.224)	(-0.292)	(-0.665)
GEOHHI	-0.070	-0.048	-0.111***	-0.121***	-0.146***	-0.151***	-0.161***	-0.173***	-0.043
	(-1.392)	(-1.307)	(-3.637)	(-4.978)	(-5.916)	(-4.990)	(-6.799)	(-10.140)	(-0.577)
WEAK	-0.050**	-0.059*	-0.108**	-0.102**	-0.052	-0.015	-0.013	0.000	0.030
	(-2.157)	(-1.984)	(-2.505)	(-2.421)	(-0.398)	(-0.295)	(-0.276)	(0.001)	(1.256)
LNDD	0.001	0.006	0.003	0.004	-0.002	-0.002	-0.001	-0.002	-0.001
	(0.125)	(1.039)	(0.484)	(0.759)	(-0.336)	(-0.371)	(-0.177)	(-0.486)	(-0.509)
Intercept	0.485	-0.027	0.228	0.444	0.613***	0.665***	0.699***	0.789***	0.593***
	(1.520)	(-0.109)	(0.709)	(1.602)	(3.213)	(3.721)	(4.083)	(4.988)	(4.940)
Year FE	NO	NO	NO	NO	NO	NO	NO	NO	NO
Observations	244	244	244	244	244	244	244	244	244

Table 5: CEO conscientiousness and reserve error using SOX as an exogenous shock with financial risk mechanism

This table presents the relation between CEO conscientiousness and reserve error with financial risk mechanism of the SOX period using the OLS and quantile regression methods. A dummy variable *POSTSOX* equals 1 from 2005 to 2015 and equals 0 from 2002 to 2004. The dependent variable is reserve error (*RESERROR*). All the variables are defined in Appendix B. The *t*-statistics are shown in parentheses. The standard deviations are clustered at firm level. Significant levels at the 1%, 5%, and 10% are indicated by ***, **, and *, respectively.

Panel B: Financial risk measured by Value at risk with confidence levels of 99.5 (VAR99.5)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Variable	OLS	q0.10	q0.25	q0.50	q0.75	q0.80	q0.85	q0.90	q0.95
CONSC	-0.275**	-0.628**	-0.359*	-0.119	-0.251**	-0.279**	-0.267***	-0.265***	-0.263***
	(-2.457)	(-2.318)	(-1.819)	(-1.037)	(-2.260)	(-2.732)	(-3.182)	(-3.566)	(-10.200)
CONSC×POSTSOX×VAR99.5	**-4.665****	**-12.478****	**-8.997****	**-2.157***	**-2.966*****	**-2.761*****	**-1.890****	**-1.627***	**-1.977*****
	(-2.373)	(-2.657)	(-2.378)	(-1.773)	(-2.980)	(-3.290)	(-2.142)	(-1.932)	(-6.283)
CONSC×POSTSOX	0.355**	0.662**	0.378*	0.105	0.216**	0.218**	0.197**	0.178**	0.176***
	(2.456)	(2.477)	(1.882)	(0.896)	(2.062)	(2.403)	(2.500)	(2.514)	(8.504)
CONSC×VAR99.5	3.959**	11.790**	8.343**	2.013	2.946***	2.790***	1.972**	1.872**	2.504***
	(2.763)	(2.563)	(2.266)	(1.637)	(2.836)	(3.054)	(2.071)	(2.319)	(7.781)
POSTSOX×VAR99.5	1.193**	2.768**	2.222**	0.661**	0.747**	0.709***	0.489**	0.407*	0.541***
	(2.297)	(2.249)	(2.303)	(2.296)	(2.708)	(3.448)	(2.196)	(2.028)	(4.605)
POSTSOX	-0.027	-0.112**	-0.070	-0.001	-0.007	-0.008	-0.003	0.001	-0.001
	(-0.949)	(-2.147)	(-1.663)	(-0.068)	(-0.332)	(-0.509)	(-0.237)	(0.072)	(-0.354)
VAR99.5	-1.069**	-2.666**	-2.212**	-0.558*	-0.757***	-0.738***	-0.518**	-0.490**	-0.678***
	(-2.582)	(-2.230)	(-2.389)	(-1.965)	(-2.903)	(-3.709)	(-2.226)	(-2.540)	(-5.760)
VEGA	-0.001	0.000	0.002	0.000	0.001	0.002	0.001	-0.001	0.000
	(-0.094)	(0.004)	(0.475)	(0.025)	(0.220)	(0.608)	(0.298)	(-0.463)	(0.284)
DELTA	0.002	-0.005	-0.002	0.004	0.005	0.003	0.003	0.005*	0.004**
	(0.546)	(-1.127)	(-0.464)	(0.814)	(1.279)	(0.699)	(0.817)	(1.751)	(2.672)
AGE	-0.089	0.007	0.007	-0.045	-0.047	-0.054	-0.065	-0.085**	-0.034
	(-0.939)	(0.106)	(0.085)	(-0.556)	(-0.883)	(-1.215)	(-1.505)	(-2.687)	(-1.215)
TENURE	-0.005	0.006	0.004	-0.001	-0.002	0.002	0.003	0.003	-0.000
	(-0.454)	(0.533)	(0.249)	(-0.065)	(-0.245)	(0.258)	(0.407)	(0.545)	(-0.159)
LNNPW	-0.008	-0.003	-0.013***	-0.018***	-0.027***	-0.027***	-0.027***	-0.028***	-0.027***
	(-0.878)	(-0.566)	(-3.117)	(-4.217)	(-6.233)	(-7.932)	(-8.361)	(-10.295)	(-13.819)

Table 5 Panel B continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Variable	OLS	q0.10	q0.25	q0.50	q0.75	q0.80	q0.85	q0.90	q0.95
NPWGROWTH	0.020	0.008	0.002	-0.018	-0.018	-0.015	-0.012	-0.009	-0.059***
	(0.739)	(0.235)	(0.061)	(-0.822)	(-0.783)	(-0.824)	(-0.689)	(-0.492)	(-4.982)
TAXSHIELD	-0.151	-0.127**	-0.016	-0.020	-0.063	-0.087**	-0.082**	-0.083**	-0.037
	(-1.529)	(-2.401)	(-0.322)	(-0.439)	(-1.384)	(-2.446)	(-2.079)	(-2.577)	(-1.312)
LNQ	0.088	0.063	0.072	0.089	0.122	0.167**	0.167***	0.147**	0.170***
	(1.242)	(0.863)	(1.010)	(1.033)	(1.694)	(2.676)	(2.770)	(2.437)	(3.906)
SMOOTH	0.565	0.714***	0.224	-0.018	0.201	0.247	0.301**	0.318***	0.098
	(1.623)	(2.835)	(0.946)	(-0.108)	(1.088)	(1.641)	(2.488)	(3.228)	(1.510)
REAFFILIATE	0.014	0.089*	0.020	-0.030	0.006	0.041	0.042	0.020	0.123***
	(0.229)	(1.865)	(0.434)	(-0.466)	(0.084)	(0.661)	(0.892)	(0.397)	(3.604)
RENONAFFILIATE	-0.011	-0.145	-0.136	-0.045	-0.095	-0.151**	-0.134**	-0.139***	-0.067*
	(-0.110)	(-1.626)	(-1.370)	(-0.475)	(-1.315)	(-2.377)	(-2.296)	(-2.796)	(-1.712)
LRGROWTH	-0.008	-0.021	0.006	-0.010	-0.011	-0.005	-0.007	-0.008	-0.006
	(-0.400)	(-0.417)	(0.295)	(-0.548)	(-0.456)	(-0.402)	(-0.545)	(-0.750)	(-1.018)
LONGTAIL	0.044*	0.070***	0.042	0.018	0.043	0.045**	0.046**	0.046***	0.034**
	(1.958)	(2.902)	(1.465)	(0.635)	(1.259)	(2.055)	(2.742)	(3.390)	(2.467)
PRODHHI	0.004	0.023	0.002	0.001	0.004	-0.008	-0.005	-0.007	-0.007
	(0.157)	(0.841)	(0.104)	(0.034)	(0.159)	(-0.360)	(-0.222)	(-0.354)	(-0.550)
GEOHHI	-0.069	-0.050	-0.109***	-0.121***	-0.146***	-0.151***	-0.162***	-0.173***	-0.036
	(-1.389)	(-1.361)	(-3.585)	(-4.984)	(-5.914)	(-6.797)	(-6.827)	(-10.434)	(-0.453)
WEAK	-0.050**	-0.062**	-0.116**	-0.103**	-0.053	-0.015	-0.013	0.001	0.026
	(-2.179)	(-2.192)	(-2.557)	(-2.441)	(-0.395)	(-0.290)	(-0.272)	(0.048)	(1.192)
LNDD	0.001	0.006	0.003	0.004	-0.002	-0.002	-0.001	-0.001	-0.002
	(0.115)	(1.167)	(0.583)	(0.722)	(-0.330)	(-0.366)	(-0.171)	(-0.417)	(-0.718)
Intercept	0.491	0.059	0.214	0.451	0.615***	0.662***	0.699***	0.791***	0.580***
	(1.530)	(0.192)	(0.643)	(1.511)	(3.222)	(3.662)	(3.978)	(5.938)	(4.727)
Year FE	NO	NO	NO	NO	NO	NO	NO	NO	NO
Observations	244	244	244	244	244	244	244	244	244

Table 6: CEO conscientiousness and compensation

This table presents the results of CEO conscientiousness and compensation. The dependent variable is the natural log of CEO's total compensation (*COMPENSATION*). All the variables are defined in Appendix B. The *t*-statistics are shown in parentheses. The standard deviations are clustered at firm level. Significant levels at the 1%, 5%, and 10% are indicated by ***, **, and *, respectively.

Variable	OLS
CONSC	**0.711****
	(2.304)
VEGA	0.030
	(0.760)
DELTA	0.170**
	(2.258)
AGE	-1.293
	(-1.315)
TENURE	-0.332**
	(-2.689)
CHAIRMAN	0.261*
	(1.936)
LNNPW	0.353***
	(4.940)
ROA	0.872
	(0.882)
RERATIO	1.273***
	(3.132)
TAXEXEMPT	-0.613***
	(-3.154)
STDROA	14.197***
	(4.113)
STDROI	4.303
	(0.941)
STDLOSSRATIO	0.592
	(1.466)
Intercept	7.465*
	(1.885)
Year FE	Yes
Observations	224
Adjusted R-squared	0.641

Table 7: CEO conscientiousness and compensation using the financial crisis as an exogenous shock

This table presents the results of the interaction term between conscientiousness and the financial crisis of 2008. *CRISIS* equals 1 if observations are during 2007-2009 and 0 otherwise. The dependent variable is the natural log of CEO compensation (*COMPENSATION*). All the variables are defined in Appendix B. The *t*-statistics are shown in parentheses. The standard deviations are clustered at firm level. Significant levels at the 1%, 5%, and 10% are indicated by ***, **, and *, respectively.

Variable	OLS
CONSC	0.033
	(0.090)
CONSC×CRISIS	**1.033***
	(1.882)
CRISIS	-0.167
	(-1.522)
VEGA	-0.011
	(-0.249)
DELTA	0.139*
	(1.901)
AGE	-1.295
	(-1.327)
TENURE	-0.208*
	(-1.749)
CHAIRMAN	0.223
	(1.584)
LNNPW	0.365***
	(4.807)
ROA	0.859
	(0.744)
RERATIO	1.385***
	(3.026)
TAXEXEMPT	-0.595***
	(-3.041)
STDROA	13.494***
	(3.637)
STDROI	2.360
	(0.467)
STDLOSSRATIO	0.418
	(1.162)
Intercept	7.436*
	(1.915)
Year FE	NO
Observations	224
Adjusted R-squared	0.582

Appendix C Additional results

Table C.1: ***CEO extraversion trait and reserve error***

This table presents the results of the baseline model, testing the relation between other CEO extraversion trait and reserve error using the OLS and quantile regression methods. The dependent variable is reserve error (*RESERROR)*, and the main independent variable is CEO extraversion (*EXTRA*). The regressions include all the controls from Table 2. All the variables are defined in Appendix B. The *t*-statistics are shown in parentheses. Significant levels at the 1%, 5%, and 10% are indicated by ***, **, and *, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	OLS	q0.10	q0.25	q0.50	q0.75	q0.80	q0.85	q0.90	q0.95
EXTRA	**0.052**	**0.031**	**0.009**	**0.007**	**0.017**	**0.026**	**0.020**	**0.012**	**0.007**
	(1.622)	(1.196)	(0.511)	(0.278)	(0.904)	(1.659)	(1.284)	(0.818)	(0.721)
Other variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	0.153	-0.409	-0.333	0.234	0.547***	0.740***	0.593***	0.498***	0.567***
	(0.614)	(-1.438)	(-1.015)	(0.630)	(3.094)	(3.841)	(3.666)	(3.122)	(4.733)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	244	244	244	244	244	244	244	244	244

Table C.2: CEO versus CFO conscientiousness and reserve error

Panel A of this table presents summary statistics of CFO variables. Panel B reports results of the relation between CFO conscientiousness and reserve error using the OLS and quantile regression methods. Panel C reports results of the relation between CFO versus CEO conscientiousness and reserve error using the OLS and quantile regression methods. CFO variables are computed same as CEO variables. All the other variables are defined in Appendix B. The *t*-statistics are reported in parentheses. Significant levels at the 1%, 5%, and 10% are indicated by ***, **, and *, respectively.

Panel A: Summary Statistics* of *CFO variables

Variable	N	MEAN	SD	MIN	P25	P50	P75	MAX
CFOCONSC	113	0.041	0.182	-0.443	-0.091	0.045	0.224	0.399
CFOVEGA	113	2.216	2.232	-15.455	1.593	2.488	3.367	4.640
CFODELTA	113	3.185	1.536	-1.026	2.326	3.222	4.361	6.071
CFOAGE	113	3.933	0.119	3.611	3.850	3.932	4.025	4.190
CFOTENURE	113	1.475	0.714	0.000	1.099	1.609	2.079	2.833

Table C.2 Panel B: CFO conscientiousness and reserve error

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Variable	OLS	q0.10	q0.25	q0.50	q0.75	q0.80	q0.85	q0.90	q0.95
CFOCONSC	**-0.008**	**-0.031**	**-0.007**	**-0.023**	**-0.033***	**-0.037***	**-0.039****	**-0.035****	**-0.028*****
	(-0.331)	(-0.897)	(-0.178)	(-0.947)	(-2.051)	(-1.913)	(-2.279)	(-2.772)	(-3.045)
CFOVEGA	0.000	0.004	0.004	-0.001	-0.002	-0.002	-0.001	-0.002	-0.001
	(0.060)	(0.538)	(0.718)	(-0.552)	(-1.094)	(-0.665)	(-0.821)	(-1.279)	(-1.684)
CFODELTA	0.006	-0.003	-0.000	0.002	0.004	0.006	0.005	0.007***	0.009***
	(1.449)	(-0.388)	(-0.030)	(0.544)	(1.312)	(1.626)	(1.636)	(3.650)	(6.353)
CFOAGE	-0.063	0.014	-0.041	-0.004	0.007	-0.007	0.027	-0.006	-0.006
	(-0.871)	(0.175)	(-0.480)	(-0.070)	(0.127)	(-0.095)	(0.521)	(-0.148)	(-0.243)
CFOTENURE	0.004	0.002	0.006	0.010	0.009	0.009	0.010*	0.008	0.008***
	(0.465)	(0.176)	(0.452)	(0.942)	(1.194)	(1.543)	(2.068)	(1.677)	(3.430)
Firm controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	0.567**	0.264	0.501*	0.394**	0.444**	0.560**	0.473***	0.579***	0.570***
	(2.466)	(0.942)	(1.900)	(2.372)	(2.434)	(2.543)	(3.166)	(4.113)	(7.109)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	113	113	113	113	113	113	113	113	113

Table C.2 Panel C: CEO versus CFO conscientiousness and reserve error

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	OLS	q0.10	q0.25	q0.50	q0.75	q0.80	q0.85	q0.90	q0.95
CONSC	**-0.073***	**-0.083***	**-0.087***	**-0.072***	**-0.101*****	**-0.094****	**-0.117*****	**-0.120*****	**-0.120*****
	(-1.992)	(-1.811)	(-2.027)	(-1.954)	(-3.512)	(-2.503)	(-3.184)	(-5.325)	(-10.866)
VEGA	0.006**	0.004	0.007**	0.001	0.001	-0.002	-0.004	-0.004	-0.004**
	(2.361)	(1.097)	(2.193)	(0.716)	(0.176)	(-0.481)	(-1.094)	(-1.268)	(-2.334)
DELTA	0.001	-0.004	-0.004	-0.004	-0.008**	-0.004	-0.005*	-0.005**	-0.005***
	(0.297)	(-0.580)	(-0.488)	(-1.250)	(-2.616)	(-1.204)	(-1.782)	(-2.493)	(-4.489)
AGE	0.043	0.058	0.078	0.039	0.047*	0.012	-0.001	-0.000	-0.000
	(0.873)	(0.943)	(1.283)	(1.670)	(1.737)	(0.352)	(-0.034)	(-0.009)	(-0.018)
TENURE	0.006	0.008	0.002	0.005	0.008*	0.005	0.013*	0.013***	0.013***
	(0.860)	(0.702)	(0.243)	(1.254)	(1.971)	(0.501)	(2.019)	(3.074)	(5.900)
CFOCONSC	**-0.032**	**-0.007**	**-0.007**	**-0.013**	**-0.021**	**-0.030**	**-0.024**	**-0.022**	**-0.022****
	(-1.621)	(-0.236)	(-0.284)	(-1.092)	(-1.237)	(-1.203)	(-0.888)	(-1.112)	(-2.370)
CFOVEGA	-0.003	-0.002	-0.002	-0.001	0.001	-0.001	0.003	0.003	0.003***
	(-1.421)	(-0.697)	(-0.881)	(-0.578)	(0.395)	(-0.513)	(1.013)	(1.544)	(3.391)
CFODELTA	0.009*	0.008	0.010*	0.009**	0.011***	0.013**	0.013***	0.013***	0.013***
	(1.736)	(1.350)	(1.861)	(2.342)	(2.952)	(2.398)	(3.229)	(4.467)	(8.220)
CFOAGE	-0.120*	-0.080	-0.122*	-0.036	-0.038	-0.024	-0.012	-0.014	-0.014
	(-1.862)	(-0.978)	(-1.886)	(-0.673)	(-0.761)	(-0.355)	(-0.166)	(-0.256)	(-0.468)
CFOTENURE	0.007	0.010	0.014	0.008*	0.010*	0.001	-0.005	-0.006	-0.006**
	(0.996)	(0.901)	(1.476)	(1.801)	(2.084)	(0.249)	(-0.712)	(-1.120)	(-2.143)
Firm controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	0.542*	0.215	0.341	0.246	0.249	0.502*	0.491**	0.496**	0.496***
	(2.036)	(0.694)	(0.956)	(1.261)	(1.440)	(1.962)	(2.654)	(2.559)	(4.759)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	110	110	110	110	110	110	110	110	110

Table C.3: CEO conscientiousness and reserve error with financial risk mechanism

This table presents the results of the interaction term model, testing the relation between CEO conscientiousness and reserve error with financial risk mechanism using the OLS and quantile regression methods. The dependent variable is reserve error (*RESERROR)*. In Panels A and B, financial risk is measured by Expected shortfall with confidence levels of 99 and 95, respectively. In Panels C and D, financial risk is measured by Value at risk with confidence levels of 99 and 95, respectively. All the panels include respective all the other independent variables from Table 3. All the variables are defined in Appendix B. The *t*-statistics are shown in parentheses. Significant levels at the 1%, 5%, and 10% are indicated by ***, **, and *, respectively.

Panel A: Financial risk measured by Expected shortfall with confidence levels of 99 (ES99)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	OLS	q0.10	q0.25	q0.50	q0.75	q0.80	q0.85	q0.90	q0.95
CONSC* × *ES99	**0.274**	**0.195**	**0.302**	**0.151**	**0.690***	**0.839****	**0.852*****	**0.713*****	**1.016*****
	(0.488)	(0.285)	(0.473)	(0.340)	(1.939)	(2.733)	(3.304)	(3.684)	(13.038)
Other variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	0.191	-0.426	-0.362	0.181	0.407**	0.474***	0.494***	0.497***	0.447***
	(0.700)	(-1.505)	(-1.110)	(0.521)	(2.055)	(2.838)	(3.534)	(4.539)	(4.929)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	244	244	244	244	244	244	244	244	244

Panel B: Financial risk measured by Expected shortfall with confidence levels of 95 (ES95)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	OLS	q0.10	q0.25	q0.50	q0.75	q0.80	q0.85	q0.90	q0.95
CONSC* × *ES95	**0.345**	**0.251**	**0.382**	**0.196**	**0.893***	**1.074****	**1.105*****	**0.910*****	**1.318*****
	(0.477)	(0.286)	(0.466)	(0.357)	(1.949)	(2.712)	(3.316)	(3.660)	(13.163)
Other variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	0.191	-0.426	-0.363	0.181	0.406**	0.472**	0.497***	0.498***	0.450***
	(0.700)	(-1.506)	(-1.112)	(0.539)	(2.052)	(2.758)	(3.544)	(4.551)	(4.965)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	244	244	244	244	244	244	244	244	244

Table C.3 continued

Panel C: Financial risk measured by Value at risk with confidence levels of 99 (VAR99)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	OLS	q0.10	q0.25	q0.50	q0.75	q0.80	q0.85	q0.90	q0.95
CONSC* × *VAR99	**0.374**	**0.234**	**0.399**	**0.159**	**0.830***	**1.022****	**0.963*****	**0.992*****	**1.184*****
	(0.566)	(0.290)	(0.550)	(0.293)	(1.876)	(2.690)	(3.217)	(4.144)	(12.754)
Other variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	0.191	-0.425	-0.353	0.176	0.399**	0.480***	0.483***	0.501***	0.439***
	(0.700)	(-1.505)	(-1.086)	(0.511)	(2.093)	(2.895)	(3.419)	(4.370)	(4.834)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	244	244	244	244	244	244	244	244	244

Panel D: Financial risk measured by Value at risk with confidence levels of 95 (VAR95)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	OLS	q0.10	q0.25	q0.50	q0.75	q0.80	q0.85	q0.90	q0.95
CONSC* × *VAR95	**0.548**	**0.335**	**0.541**	**0.214**	**1.169***	**1.424****	**1.376*****	**1.422*****	**1.690*****
	(0.584)	(0.285)	(0.522)	(0.276)	(1.844)	(2.749)	(3.219)	(4.116)	(12.749)
Other variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	0.191	-0.425	-0.346	0.176	0.406**	0.475***	0.484***	0.487***	0.442***
	(0.700)	(-1.500)	(-1.073)	(0.549)	(2.227)	(2.868)	(3.236)	(4.195)	(4.858)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	244	244	244	244	244	244	244	244	244

Table C.4: CEO conscientiousness and reserve error using SOX as an exogenous shock with financial risk mechanism

This table presents the relation between CEO conscientiousness and reserve error with financial risk mechanism of the SOX period using the OLS and quantile regression methods. A dummy variable *POSTSOX* equals 1 from 2005 to 2015 and equals 0 from 2002 to 2004. The dependent variable is reserve error (*RESERROR*). In Panels A and B, financial risk is measured by Expected shortfall with confidence levels of 99 and 95, respectively. In Panels C and D, financial risk is measured by Value at risk with confidence levels of 99 and 95, respectively. All the panels include respective all the other independent variables from Table 5. All the variables are defined in Appendix B. The *t*-statistics are shown in parentheses. Significant levels at the 1%, 5%, and 10% are indicated by ***, **, and *, respectively.

Panel A: Financial risk measured by Expected shortfall with confidence levels of 99 (ES99)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	OLS	q0.10	q0.25	q0.50	q0.75	q0.80	q0.85	q0.90	q0.95
CONSC* × *POSTSOX* × *ES99	**-4.273****	**-11.521****	**-8.398****	**-2.275***	**-2.715*****	**-2.541*****	**-2.006****	**-1.520***	**-1.987*****
	(-2.353)	(-2.704)	(-2.452)	(-1.744)	(-3.035)	(-3.397)	(-2.129)	(-2.023)	(-7.006)
Other variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	0.485	-0.030	0.229	0.444	0.613***	0.665***	0.699***	0.789***	0.593***
	(1.520)	(-0.122)	(0.715)	(1.601)	(3.212)	(3.722)	(4.079)	(4.984)	(4.946)
Year FE	NO	NO	NO	NO	NO	NO	NO	NO	NO
Observations	244	244	244	244	244	244	244	244	244

Panel B: Financial risk measured by Expected shortfall with confidence levels of 95 (ES95)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	OLS	q0.10	q0.25	q0.50	q0.75	q0.80	q0.85	q0.90	q0.95
CONSC* × *POSTSOX* × *ES95	**-5.479****	**-14.748****	**-10.753****	**-3.002**	**-3.482*****	**-3.262*****	**-2.317****	**-1.951***	**-2.580*****
	(-2.350)	(-2.691)	(-2.453)	(-1.632)	(-3.042)	(-3.404)	(-2.209)	(-2.032)	(-7.103)
Other variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	0.484	-0.042	0.232	0.442	0.612***	0.665***	0.698***	0.789***	0.594***
	(1.518)	(-0.171)	(0.735)	(1.600)	(3.211)	(3.721)	(3.920)	(4.972)	(4.963)
Year FE	NO	NO	NO	NO	NO	NO	NO	NO	NO
Observations	244	244	244	244	244	244	244	244	244

Table C.4 continued

Panel C: Financial risk measured by Value at risk with confidence levels of 99 (VAR99)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	OLS	q0.10	q0.25	q0.50	q0.75	q0.80	q0.85	q0.90	q0.95
CONSC* × *POSTSOX* × *VAR99	**-5.181****	**-13.853****	**-9.972****	**-2.375***	**-3.294*****	**-3.066*****	**-2.089****	**-1.802***	**-2.183*****
	(-2.374)	(-2.656)	(-2.376)	(-1.767)	(-2.977)	(-3.286)	(-2.117)	(-1.922)	(-6.240)
Other variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	0.491	0.058	0.213	0.451	0.616***	0.661***	0.700***	0.791***	0.580***
	(1.531)	(0.188)	(0.640)	(1.511)	(3.223)	(3.661)	(3.980)	(5.938)	(4.712)
Year FE	NO	NO	NO	NO	NO	NO	NO	NO	NO
Observations	244	244	244	244	244	244	244	244	244

Panel D: Financial risk measured by Value at risk with confidence levels of 95 (VAR95)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	OLS	q0.10	q0.25	q0.50	q0.75	q0.80	q0.85	q0.90	q0.95
CONSC* × *POSTSOX* × *VAR95	**-7.418****	**-19.822****	**-14.169****	**-3.288***	**-4.719*****	**-4.395*****	**-2.935***	**-2.557***	**-3.053*****
	(-2.381)	(-2.653)	(-2.510)	(-1.746)	(-2.961)	(-3.391)	(-2.005)	(-1.876)	(-6.053)
Other variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	0.493	0.053	0.211	0.460	0.616***	0.661***	0.701***	0.789***	0.576***
	(1.533)	(0.172)	(0.636)	(1.524)	(3.226)	(3.369)	(3.994)	(5.938)	(4.646)
Year FE	NO	NO	NO	NO	NO	NO	NO	NO	NO
Observations	244	244	244	244	244	244	244	244	244