

# **Can Individual CPA Sanction Improve Audit Quality of the Firm?\***

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## **Can Individual CPA Sanction Improve Audit Quality of the Firm?**

**SUMMARY:** It is instrumental for regulators and policy makers to know the impact of individual sanctions on improving audit quality of the entire firm because many countries in the world enforce disciplinary actions against individual auditors. This paper examines the improvement on audit quality of the firm after an individual auditor's disciplinary action and infers that both reputation effect and deterrent effect should drive the non-sanctioned fellow auditors to improve their audit quality thereafter. Our empirical results show that sanction enforcements against individual auditors will improve the audit quality of the firm and most improvement on firm quality is attributed to the Big N firm group, probably due to the stronger reputation effect existent in Big N firms. However, further tests on separate firm data find that not every Big N firm shows significant improvement on its audit quality.

**Keywords:** CPA sanction; disciplinary actions; audit quality of the firm.

**Data Availability:** The data used in this study is either available from public sources or commercially obtainable.

# **Can Individual CPA Sanction Improve Audit Quality of the Firm?**

## **I. Introduction**

Many countries in the world enforce disciplinary actions against individual Certified Public Accountants<sup>1</sup> (CPAs) and believe that other auditors can learn from fellow practitioners' wrongdoing. As a matter of fact, administrative disciplinary actions released by SEC remain to be voluminous after SOX. More academic studies and government documents on regulation mechanism and enforcement actions are reported recently (DeFond et al. 2008; Abbott et al. 2008; U. S. Department of the Treasury 2008). It is instrumental for regulators and policy makers to know more about the causes of low quality accounting information reported and the effectiveness of auditor sanction system in practice. Therefore, understanding how sanction enforcements against individual auditors affect the audit quality of sanctioned accountants and their audit firms is a substantial and relevant question. Chang et al. (2007) examine the appropriateness and effectiveness of auditor sanction system in Taiwan and focus on audit quality of the sanctioned auditors, i.e., at the level of individual CPAs. In this study, we apply our tests to entire audit firms and discuss how a sanction action against one individual auditor affects other non-sanctioned auditors in the same audit firm. That is, this paper investigates the quality

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<sup>1</sup> For example, Singapore, United States, United Kingdom, Japan and Taiwan.

improvement of audit firms after a disciplinary action is issued against one partner of the firm.

The purpose of this paper is to investigate whether sanction enforcements against individual auditors can improve audit quality of the entire audit firm. We decompose the impact of auditor sanction enforcement into reputation effect and deterrent effect, and propose that after disciplinary actions against individual auditors are released, fellow auditors of respective firms improve their audit quality as a result. Since Becker et al. (1998) suggest that reputation effect is more important for Big N firms than non-Big N firms, we question if individual CPA sanctions might end up with different impacts across firms. To disentangle these effects, we examine the improvement of firm quality by separating the full sample into Big N and non-Big N firms. Previous studies have developed various measurements to proxy audit quality, e.g., ERC (Ghosh and Moon 2005) and industry expertise (Balson et al. 2003). Their results show that not all Big N firms are selected as high audit quality by these measurements, we further test if every Big N firm shows improvement on its audit quality after a sanction enforcement is released against one auditor of the said firm.

In Taiwan, auditors are required by statute to sign the audit report in their own names as well as in the name of their audit firm. Statutory enforcements, such as

warning, reprimand, suspension and disbarment<sup>2</sup>, are ruled against individual auditors only. The regulators through their administrative arms, the Financial Supervisory Commission (FSC) issue disciplinary actions to punish auditors who violate professional standards and guidelines. Accordingly, we take advantage of this unique setting to examine the deterrent and reputation effects of CPA sanctions by observing the variation of audit firm quality when a partner CPA is sanctioned.

In this study, four hypotheses are inferred and tested with evidence from a sample of 16,239 observations, which correspond to 58 individual auditors' sanction rulings released during 1997–2007. First, we use the sanctioned individual auditor sample to examine the impact of individual sanctions on audit quality of the entire firm. Our result shows that audit quality is improved for all clients after enforcements are released and provides evidence that sanction enforcements against individual auditors will improve the audit quality of the firm. Subsequently, consistent with our conjectures, Big N firms are found to show significant reaction to individual partner disciplinary rulings probably due to their possession of greater reputation effect. Third, we document some support for the fact that the audit quality provided by Big N firms as a group is higher whereas only limited improvements are found for the group of non-Big N firms after individual auditor sanction enforcements are released. Finally,

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<sup>2</sup> The Securities Exchange Act, Sections 37 and Accountant Code, Section 40.

we find that subsequent to partner sanction releases, not every Big N firm improves its audit quality significantly.

This paper makes several contributions. One, this paper contributes to auditor sanction literature in attempting to decompose the impact of disciplinary actions into reputation effect and deterrent effect and conclude that firm reputation is probably a more important driver causing partners to improve audit quality of the firm after individual sanction actions. Two, it helps regulators gain more insight about relationships between sanction enforcements against an individual auditor and subsequent audit quality of his/her associated firm. Our findings suggest that to more effectively improve audit quality for all CPA firms, big or small, enforcing only sanctions against individual auditors may not be sufficient. Other measures including enforcements against audit firms may need to be codified into the law. Three, previous studies posit that Big N firms provide superior audit quality than non-Big N firms and this conjecture is reflected in the fact that clients of Big 4 audit firms have lower discretionary accruals (Becker et al., 1998), lower litigation rates (St. Pierre and Anderson 1984; Palmrose 1988; Lys and Watts 1994), higher audit fees (Beatty 1989; Craswell et al. 1995), and higher earnings response coefficients (Ghosh and Moon 2005; Teoh and Wong 1993). These studies adopt measurements other than Big N as proxies for audit quality which imply that probably not all Big N firms are of equally

high quality. Therefore, we infer that not all Big N firms show higher audit quality by making improvement in discretionary accruals after individual auditor sanctions. Our results provide evidence that Big N firms as a group make significant improvement after individual auditor disciplinary actions, but not every Big N firm does so.

The following section reviews previous research and develops research hypotheses. We discuss the research methodology and summarize the empirical findings thereafter. The final section of the paper contains a conclusion of our research.

## **II. Literature Review and Hypotheses Development**

The goals of SEC's enforcement releases are maintaining the credibility of financial statements and preventing the erosion of accounting principles (Feroz et al. 1991). Dechow et al. (1996) and Beneish (1999) use companies subject to accounting (and auditing) enforcement actions by the Securities and Exchange Commission (SEC) as samples, and investigate earning management related issues. However, there are few studies which focus on the effectiveness of auditor sanction system (Chang et al. 2007). Furthermore, DeFond and Francis (2005) state that prior studies provide no guidance on whether a particular legal system would probably result in the optimal level of audit quality. Therefore, we examine the relationship between sanction enforcement against auditors and audit firm quality, that is, whether disciplinary

actions against individual auditors impact on other non-sanctioned auditors of the same firm. Accordingly, we hypothesize as follows:

**H1:** After an enforcement decision against one individual auditor is released, the audit quality of the sanctioned auditor's firm is significantly improved.

Maintaining a reputation of high quality is of paramount importance for accounting firms (Krishnamurthy et al. 2006). Wallace (1980) analyzes the markets of audit and presents several hypotheses of demand for audit services. The monitoring hypothesis states that one of the most widespread monitoring activities is to hire a professional accountant who has competent professional knowledge, proficient skills and total trust placed by the principal on him.

Previous literature shows that reputation is crucial for auditors and audit firms because the widespread opinion among client companies is that reputable auditors perform higher-quality audits and better assure the reliability of the financial statements (Balvers et al. 1988; Beatty 1989). Wilson and Grimlund (1990) conclude that SEC disciplinary actions involving audit firms have adverse reputation effects on the firms. Reynolds and Francis (2001) examine discretionary accruals based on client importance and suggest that reputation protection effect dominates economic dependence effect. In other words, both investors and auditors view the reputation of audit firm, and individual auditor, as the most salient precondition. When a sanction

announcement is released, the public will label or classify the sanctioned auditor and his associated audit firm as “low audit quality” and reject to place trust on the financial statements signed by the said firm any more. Consequently, other non-sanctioned auditors of the same firm would attempt to improve their firm’s professional image and audit quality even if they are not personally involved with the afore-mentioned sanction enforcement. In this paper, we refer to this phenomenon as reputation effect.

Shockley (1982) opines that the threat of disciplinary actions by professional organizations or State Boards of Accountancy should have influenced auditors’ ability to withstand client pressure. Shafer et al. (1999) state that the threat of disciplinary means such as negative peer review results serves as a significant deterrent to unethical behavior by auditors and sanctions may be effective deterrents to clear violations of ethical principles. Based on these studies, we propose deterrent effect as another factor that may drive the improvement after an auditor sanction. The deterrent effect describes the fact that other non-sanctioned fellow auditors are threatened by the disciplinary action, and as a result intentionally avoid any wrongdoings in the future. Thence, we conjecture that the deterrent effect caused by the disciplinary action against a fellow auditor may also explain the reason for the audit quality improvement found thereafter in the named audit firm.

Based on above arguments, we can infer that both reputation effect and deterrent effect drive the improvement of audit firm quality after auditor disciplinary actions. Furthermore, Becker et al. (1998) state that Big N firms have superior reputation; hence, we can conjecture that Big N firms also possess greater reputation effect. In other words, Big N and non-Big N firms have undistinguished deterrent effects, but Big N firms are likely to show greater reputation effect than non-Big N firms. Similar to Reynolds and Francis (2001) who investigate interactions between economic dependence and reputation protection, we predict that reputation effect will dominate deterrent effect and cause Big N firms to make more improvement in audit quality after auditor sanction enforcement. Consequently, we posit that the audit quality improvement in the firm of the sanctioned auditor is more significant for Big N firm auditors. This leads to our hypothesis 2:

**H2:** After an enforcement decision against an individual auditor is released, the audit quality improvement in the sanctioned auditor's firm is significantly greater for Big N firms.

Several prior studies use the Big N firms as a proxy for audit quality (DeAngelo 1981; Palmrose 1988; Becker et al. 1998; Pittman and Fortin 2004; Fan and Wong 2005). DeAngelo (1981) defines the audit quality as the joint probability of detecting a breach in the client's accounting system and reporting the breach. She also indicates

that a particular client's quasi-rent might provide incentives for auditors to compromise with the client. On the contrary, the quasi-rents from other clients act as a collateral bond against such opportunistic behavior. Therefore, we can infer that the more clients the audit firm has the more potential audit fee they can lose. Becker et al. (1998) note that "the most common proxy for audit quality is a dummy variable for Big 6/non-Big 6 membership" and suggest that non-Big 6 auditors allow more income-increasing discretionary accruals than Big 6 auditors.

Big N firms not only are regarded as high audit quality in academic literature, but generally enjoy superior reputation in practice. They are expected to show greater incentive to make improvement in audit quality so as to recover any reputation damage caused in the event of disciplinary enforcements. Moreover, Big N firms possess richer resources (Louis 2005) to establish fine quality control and risk management system in order to maintain high audit quality. Over all, we conjecture that Big N firms, relative to non-Big N firms, make greater improvement in audit quality of the firm following the announcement of an enforcement decision against one fellow individual auditor by the regulatory authority. Above statements lead to hypotheses 3a and 3b:

**H3a:** All Big N firms considered as a group, after an enforcement decision against one individual auditor of a Big N firm is released, the audit quality

of the sanctioned auditor's firm is significantly improved.

**H3b:** All non-Big N firms considered as a group, after an enforcement decision against an individual auditor of a non-Big N firm is released, the audit quality of the sanctioned auditor's firm is significantly improved.

As previously discussed, many studies adopt audit firm type as a proxy for audit quality (Palmrose 1988; Becker et al. 1998; Pittman and Fortin 2004; Fan and Wong 2005), and show that Big N firms are with high audit quality. Still there are other studies which adopt different measures as proxies for audit quality, such as Palmrose (1989) and Kadous (2000), who use audit failure rates, Teoh and Wong (1993) and Ghosh and Moon (2005), who adopt ERC, Balsam et al. (2003), who use industry expertise, etc. Their empirical data often support that not all Big N firms are of higher quality. In other words, not every Big N firm is found to show high audit quality in their results. Furthermore, in practice, every audit firm has its own standard procedures, quality control system and management policy. It is legitimate to query if all Big N firms make significant improvement in firm quality after an enforcement decision against a fellow auditor from their firm is released. Formally stated, our hypothesis 4 is as follows:

**H4:** After an enforcement decision against one individual auditor of a Big N firm is released, not every firm of the sanctioned auditor improves its audit

quality significantly.

Sanction enforcements harm reputation of auditors and the audit firms they belong to, but these actions can also harm their auditees' reputation in an indirect way. Barton (2005) states that the management may change sanctioned auditor/audit firm to signal their credibility when their reputations are impaired. Krishnan (2007) also posits that both managers and auditors, particularly Big-N auditors, have market-based incentives to reduce risk of litigation by enhancing earnings conservatism. Based on these studies, both auditors and managers will make efforts to protect their quality and reputation. However, in this study, we attribute most sanction effects, including reputation and deterrent effect, to auditors instead of the management for two reasons. First, the reputations of auditees are only at risk slightly for disciplinary actions are directed toward their auditors (for their improper deeds in auditing other companies) instead of themselves. Second, following the thinking of Barton (2005), management often opt to change auditors if they worry their reputations are at stake. In other words, the clients who stay with sanctioned auditors and their fellow partners after disciplinary actions basically do not have strong concerns about improving audit quality. Therefore, we attribute most sanction effects, i.e., improvement in discretionary accruals, to auditors and add control variables for management input.

### **III. Research Design**

#### **Measurement of audit quality**

Many believe that high audit quality is demonstrated by the ability of the auditors to restrict the audit clients from using discretionary accruals to reach certain intentions and to restrain earnings management further (Becker et al. 1998). Recently, many researchers argue that companies may employ special tools, other than discretionary accruals, to manipulate earnings numbers. We find three earnings management tool types from prior literature, including discretionary accruals (Jones 1991), real transaction activities (Cohen et al. 2005; Roychowdhury 2006), and transaction structuring (Nelson et al. 2002). However, the last two measurements involve with companies' business models, daily operations and decisions which may extend far beyond an auditor's normal attestation obligation. Thence, we employ discretionary accruals in this study to measure the level of audit quality.

Prior literature provides evidence of the association between accruals and proxies for audit quality, including auditor litigation (Heninger 2001), audit failures (Geiger and Raghunandan 2002), and the issuance of qualified audit opinions (Bartov et al. 2001). Myers et al. (2003) states that extreme management reporting decisions can be mitigated by high-quality audits, that is, discretionary accruals are related to audit quality. A number of studies employ the discretionary accruals as a proxy for

either audit quality (Nagy 2005) or financial reporting quality which in turn is affected by audit quality (Balsam et al. 2003; Johnson et al. 2002; Bartov et al. 2001; Francis et al. 1999). Nagy (2005) takes the position that absolute values of discretionary accruals could be used as reasonable indicators for audit quality. Therefore, the absolute value of discretionary accruals has been used as the substitution variable of audit quality in this study<sup>3</sup>. Kothari et al. (2005) argue that the misspecification problem is mitigated by performance-matching samples when estimating levels of abnormal accruals. Therefore, this paper includes ROA on discretionary accruals estimations, i.e., performance-adjusted discretionary accruals are calculated, in order to mitigate any possible residual effect of company financial performance. We further discuss performance-adjusted discretionary accruals and their absolute values in the following regressions.

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<sup>3</sup> Another audit quality proxy we use is the auditor's propensity to issue a going-concern opinion. Prior literature attempts to associate the issuance of going-concern opinion with certain level of audit quality (DeFond et al. 2002; Reynolds and Francis 2001; Mutchler et al. 1997; Hopwood et al. 1989). Consistent with the approach of Reynolds and Francis (2001), the following logistic regression model estimates the auditor's probability of issuing a going-concern opinion to a financially distressed client:

$$OPINION = \beta_0 + \beta_1 POST + \beta_2 PBANK + \beta_3 LOSS + \beta_4 DEBTCHG + \beta_5 MITIGATE + \beta_6 SALES + \beta_7 PRIORG + \varepsilon$$

where *OPINION* is 1 if going-concern opinion, 0 otherwise; *POST* is 1 if post-sanction period, 0 otherwise; *PBANK* is the probability of bankruptcy computed based on Altman's Z-score; *LOSS* equals 1 if the company has a loss in both the current and previous years, 0 otherwise; *DEBTCHG* is the change ratio of total debt to total assets; *MITIGATE* is the mitigating factor, equal to 1 if the client sold assets or issued new debt or new equity in the subsequent year; *SALES* is the log sales; and *PRIORG* is 1 if the company received a going-concern opinion in the prior year, 0 otherwise.

For the going concern analysis, the initial sample of 16,239 observations in previous section is reduced to include only companies that are potentially distressed financially. Companies having negative net income and/or negative cash flows from operations are deemed potentially distressed. This screen results in a sample of 6,321 potentially distressed companies from 55 Big N auditor sanction announcements. Going-concern opinions are issued for 2.12% of these companies and all going-concern opinions are reported by Big N firms. *POST* is positive, however, insignificant in Big N logistic regression, and we find at least one out of seven Big N firms has positive *POST* significantly.

## **Data sources and sampling**

Either the Financial Supervisory Commission itself or the CPA Sanction Committee has the statutory power to enforce disciplinary actions against CPAs in Taiwan. As a result, we use sanction announcements released by both regulatory agencies in the past as our research sample. Disciplinary enforcement information is obtained from the websites of National Federation of CPA Associations, Taiwan CPA Association and Securities and Futures Bureau (SFB), a department of FSC. Furthermore, we scrutinize official government gazettes for CPA enforcement actions announced by the Executive Yuan and the Ministry of Finance for cross-reference and accuracy check. The calculations of various variables are based on the database of Taiwan Economic Journal (TEJ).

We collect all auditor enforcements released during the period 1997 to 2007, and exclude cases whose sanction reasons are not relevant to financial audit issues or whose associated audit firms fail to exist when the enforcement actions are finally released. We include only the first sanction announcement for any particular individual auditor in one year. That is, if there are two or more enforcement releases against one auditor in a year, we adopt only the first sanction enforcement in our sample.

Because we intend to examine the improvement on audit quality of the firm after

a sanction enforcement is released against an individual CPA, we trace every single sanctioned auditor to the cause of his/her enforcement, and find the audit firm associated with his/her name on the financial statements which are investigated for auditor wrongdoings. Further, this paper denotes the cause year, i.e., the year which the sanctioned auditor violates professional provisions during audit process and subjects himself/herself to subsequent disciplinary actions, as the pre-sanction year. And the post-sanction year is the enforcement release year<sup>4</sup>. Since all listed companies in our sample have calendar year ends, for sanctions released during January, February or March, it is possible that some audited financial reports of the earlier year, whose field work are completed subsequent to the aforementioned release date, may be affected. Restricted by the fact that all clients of the entire firm are used as our observation, we use the enforcement release year as the post-sanction year.

This paper tests whether sanction announcements have impacts on sanctioned auditors and other auditors in the same audit firm, hence, we examine variations in auditee companies after sanction enforcements against their auditors are formally released. Figure 1 illustrates the timeline for auditor sanction progress. In Time II, investigation is started but the information not available to public. Probably only few partners inside the firm are aware of this investigation. Since these auditors may be

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<sup>4</sup> Twenty-four auditor enforcements involve more than one cause year. In this paper, we assume each wrongdoing is independent and thus match each cause year with a corresponding post-sanction year. Consequentially, the client companies of the enforcement release year will be included iteratively for those multi-cause year cases.

afraid to get sanctioned in the future, there exists deterrent effect in Time II for those people who are informed of the investigation. Once the investigation is released to public through mass media, investors may start to question the credibility of auditors under investigation and the reputation of the audit firm may be harmed. However, because investigation results are still unclear at the time (Time III), we argue that both deterrent and reputation effects in Time III are deemed weaker relative to Time IV when actions are formally announced. Though the reputation (deterrent) effect may start to impact auditors in Time III (Time II), we can nonetheless examine most of the impact in Time IV when both effects are existent but not one-hundred percent. In sum, we examine and test the effects of auditor enforcement found in Time IV to answer our research questions.

[Insert Figure 1 here]

The final sample of auditor enforcements we use is illustrated in Table 1, which reports the audit firm that the sanctioned-auditor belongs to and the release year of enforcement action for each case. Table 1 shows that sanction enforcements increase quite a bit in 2004, because there were a series of fraudulent financial statement scandals in Taiwan. For example, Procomp and Infordisc scandals in 2004 and Asia Pacific Wire & Cable in 2003. Moreover, the regulatory authorities became more timely and punctilious when scrutinizing improper audit process after Sarbanes-Oxley

Act. As a result, sanction announcements increased in 2004. In this study, we treat each disciplinary release independently and take in for each case the financial data of all client companies of the associated CPA firm at the pre-sanction year and the post-sanction year as corresponding audit quality observations. As a consequence, particular firm/year client companies may be included more than once. Table 2 shows the corresponding pre-sanction and post-sanction sample size of client companies for each audit firm observed.

[Insert Table 1 and Table 2 here]

We follow the industry classification system revised by Chang et al. (2003)<sup>5</sup>. Then we eliminate certain industries from the sample because their capital market decisions are fundamentally different and there exist major deviations in their regulation and operation/financial nature (Whisenant et al. 2003; Carey and Simnett 2006). For example, the debt-like liabilities of banks, securities firms and insurance companies are not strictly comparable to the debt issued by non-financial companies (Pittman and Fortin 2004), and these three industries are thus removed from our sample. We also exclude the non-calendar-year companies and companies not traded in public. The final sample consists of 16,239 year/company observations. However, selection bias is a potential limitation in interpreting our findings, because

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<sup>5</sup> Chang et al. (2003) classify companies into ten major industries, including electronics, plastics and chemical, construction, textiles, electric machinery, service & distribution, food, glass & porcelain, paper and automotive.

enforcement actions may reflect specific government or policy agendas and not produce a representative sample of all extant frauds (Bonner et al. 1998).

### **Model specifications**

Consistent with prior studies, this paper posits that higher-quality audits mitigate extreme management reporting decisions (Carey and Simnett 2006). Because Kothari et al. (2005) provide evidence that controlling financial performance helps mitigate model-misspecification issues, we estimate discretionary accruals based on the financial performance adjusted modified cross-sectional Jones model. The equation is:

$$TA_{it} = \delta_0 + \delta_1(1 / ASSETS_{t-1}) + \delta_2 \Delta SALE_{it} + \delta_3 PPE_{it} + \delta_4 ROA_{it} + v_{it} \quad (1)$$

where:

$TA$  = Total accruals, referring to the difference between the net earnings from continuing operations and cash flows of the operating activities, scaled by lagged total assets;

$ASSETS$  = total assets;

$\Delta SALE$  = change in sales scaled by lagged total assets;

$PPE$  = net property, plant and equipment scaled by lagged total assets; and

$ROA$  = return on assets (net income divided by total assets).

To mitigate heteroskedasticity in residuals, we scale all variables (except ROA) by lagged total assets (White 1980; Kothari et al. 2005). Thereupon we use residuals from the annual cross-sectional industry regression model in (1) as the performance-adjusted Jones model discretionary accruals. Nelson et al. (2002)

discover that different auditors have different patterns of tolerance towards the upward or downward adjustment of earnings. If improvement in audit quality occurs after sanction, we expect smaller (income-decreasing) signed and lower unsigned (absolute) amounts of discretionary accruals (Becker et al. 1998; Francis et al. 1999; Reynolds and Francis 2001; Frankel et al. 2002; Myers et al. 2003; Carey and Simnett 2006).

This paper examines the improvement of firm audit quality after individual auditors are sanctioned (as H1), and the following regression equation is developed:

$$\begin{aligned}
 ABSDA_t \text{ or } DA_t = & \beta_0 + \beta_1 POST_t + \beta_2 CPATYPE_t + \beta_3 POST*CPATYPE_t + \beta_4 MVE_t \\
 & + \beta_5 BM_t + \beta_6 ZMESKI_t + \beta_7 CFFO_t + \beta_8 GROWTH_t + \beta_9 ABSTACC_t \\
 & + \beta_{10} LAGROA_t + \beta_{11} LEV_t + \beta_{12} FINANCE_t + \beta_{13} INDBOARDR_t + \\
 & \beta_{14} DEVIATE_t + \beta_{15} BLOCK_t + \beta_{16} DUAL_t + \beta_{17} FSC_t + \beta_{18} POSTFSC_t + \\
 & \beta_{19} SOX_t + \beta_{20} POSTSOX_t + \beta_{21-32} D\_CPAFIRM + \varepsilon
 \end{aligned} \tag{2}$$

Where:

$DA$  = performance-adjusted discretionary accruals calculated following Kothari et al. (2005);

$POST$  = 1 for post-sanction year, and 0 for pre-sanction year;

$CPATYPE$  =  $CPATYPE$  equals to 1 if the company were audited by a Big-N firm, and 0 otherwise;

$POST*CPATYPE$  = the interaction term of  $POST$  and  $CPATYPE$ ;

$MVE$  = log of the market value of equity;

$BM$  = book-to-market equity ratio;

$ZMESKI$  = financial distress index calculating from Zmijewski's (1984) bankruptcy prediction model;

$CFFO$  = cash flow from operations divided by total assets;

$GROWTH$  = sales growth rate;

$ABSTACC$  = the absolute value of total accruals scaled by lagged total assets;

$LAGROA$  = return on assets from the prior year;

$LEV$  = total liabilities divided by total assets;

$FINANCE$  = 1 if number of outstanding shares increased by at least 10 percent or long-term debt increased by at least 20 percent during the year;

$INDBOARDR$  = the proportion of independent outside members on the board, excluding the audit committee;

$DEVIATE$  = the voting rights divided by the cash flow rights;

$BLOCK$  = 1 if at least one outside blockholder has 5 percent or more, 0 otherwise;

$DUAL$  = a dummy variable with a value of 1 if the CEO chairs the board in year t-1, and 0 otherwise;

$FSC$  = 1 if sanction actions are decreed directly by FSC, and 0 otherwise;

$POST*FSC$  = the interaction term of  $POST$  and  $FSC$ ;

$SOX$  = 1 if sanction enforcements are released in post-SOX period, and 0 otherwise;

$POST*SOX$  = the interaction term of  $POST$  and  $SOX$ ; and

$D\_CPAFIRM$  = dummy variables for every audit firm to control the fixed effect.

### ***Main Explanatory Variables***

Our H1 examines whether both the reputation effect and deterrent effect motivate other non-sanctioned auditors in the same audit firm to make improvement in his/her audit quality and collectively improve the entire audit firm quality after an individual auditor enforcement is released. In order to observe that change, we employ the dummy variable *POST* to discriminate between pre- and post-sanction year.

Because Big N firms have greater reputation effects, this paper conjectures that the quality improvement of Big N firms is different from non-Big N firms (H2). We predict that auditee companies of Big N firms make more improvement than non-Big N auditee companies after the enforcement action against one auditor is released. The interaction term *POST\*CPATYPE* is representative of the quality improvement of Big N firms after sanction. *CPATYPE* is included to proxy the Big N audit firms, and we observe this variable to investigate if the Big N firms provide better audit quality than non-Big N firms.

### ***Control variables***

This paper includes variables to control over company size, financial condition, operating cash flow, and sales growth. We include the log of market value of equity (*MVE*) at the end of the period as our measure of firm size to control possible

problems that scaled discretionary accruals are related to firm size (Geiger and North 2006). Because prior research shows that size and *BM* are negatively related to discretionary accruals (Ashbaugh et al. 2003; Butler et al. 2004; Menon and Williams 2004) and Geiger and North (2006) consider *BM* as a representation of the growth opportunities available to the firm, we also include *BM*, the proportion of book value to market value, as a control variable.

Prior studies find evidence that financial health is negatively associated with discretionary accruals (Reynolds and Francis 2001; Ashbaugh et al. 2003; Menon and Williams 2004). Dechow et al. (1995) express concerns that the Jones (1991) model may overestimate accruals for poorly performing companies. Therefore, this paper includes a financial measurement *ZMESKI*, developed by Zmijewski (1984), to control for financial distress. Greater values of *ZMESKI* indicate higher levels of financial stress that firms confront with. We also control operating cash flow measurement (*CFFO*) for prior research shows that *CFFO* is negatively related to abnormal accruals (Ashbaugh et al. 2003; Becker et al. 1998; Chung and Kallapur 2003; Frankel et al. 2002; Geiger and North 2006). Menon and Williams (2004) find that the percentage growth in sales is positively associated with discretionary accruals, so *GROWTH* is included in this model. Becker et al. (1998) state that companies with a higher absolute value of total accruals tend to have greater discretionary accruals,

therefore, we include this variable and define *ABSTACC* as the absolute value of total accruals scaled by lagged total assets. Geiger and North (2006) include lagged return on assets (*LAGROA*) to control for prior financial performance, so we also use this measurement in this model.

Because the change in discretionary accruals could attribute to managers in certain circumstances, e.g., managers need to maintain reputations when borrowing money from banks, we include *LEV* and *FINANCE* to control this problem. Prior research finds that leverage is associated with discretionary accruals (DeFond and Jiambalvo 1994, Becker et al. 1998, Frankel et al. 2002, Balsam et al. 2003). Chung and Kallapur (2003) indicate that significant changes in financing and entering into an acquisition are positively related to discretionary accruals, we include two measures of significant changes (more than 10% increase in outstanding shares or 20% increase in long-term debt) in company financing (*FINANCE*) in this model.

Prior studies find that corporate governance plays an important role in limiting earnings management through accruals (Leuz et al. 2003, Haw et al. 2004), therefore, we include four corporate governance variables in our model. *INDBOSRDR* is the proportion of independent outside members on the board (Klein 2002, Krishnan 2005, Srinivasan 2005). The extent of the divergence of the controlling owner's voting rights from cash flow rights (*DEVIATE*) is defined as the voting rights divided by the

cash flow rights, consistent with Fan and Wong (2002) and Haw et al. (2004). Following Blouin et al. (2007), we also include *BLOCK* as another corporate governance variable. Finally, CEO influence on the board is one when CEO is the chairman of the board (Beasley 1996, Erickson et al. 2006, Zhao and Chen 2008).

There are two sanction authorities in Taiwan, i.e. the Financial Supervisory Commission (FSC) and the CPA Sanction Committee. Sanction announcements released by FSC are relatively more timely and involve with more extensive financial scandals in general. Hence, we include a dummy variable (*FSC*) for sanction actions decreed directly by FSC. After the Sarbanes-Oxley Act, enacted 2002/07/30, the responsibilities of management and auditors concerning credibility of financial statements became more stringent. Some may argue that post-SOX enforcement announcements are more powerful. Therefore, we control *SOX* in our regressions. *D\_CPAFIRM* are the dummy variables for every audit firm to control the fixed effect.

H3a and H3b examine if the audit quality of the sanctioned auditor's firm significantly improves after an individual sanction. We estimate the following model to test the improvement using observations from Big N group and non-Big N group separately.

$$\begin{aligned}
 ABSDA_t \text{ or } DA_t = & \beta_0 + \beta_1 POST_t + \beta_2 MVE_t + \beta_3 BM_t + \beta_4 ZMESKI_t + \beta_5 CFFO_t + \\
 & \beta_6 GROWTH_t + \beta_7 ABSTACC_t + \beta_8 LAGROA_t + \beta_9 LEV_t +
 \end{aligned}$$

$$\beta_{10}FINANCE_t + \beta_{11}INDBOARDR_t + \beta_{12}DEVIATE_t + \beta_{13}BLOCK_t +$$

$$\beta_{14}DUAL_t + \beta_{15}FSC_t + \beta_{16}POSTFSC_t + \beta_{17}SOX_t + \beta_{18}POSTSOX_t +$$

$$\beta_x D\_CPAFIRM + \varepsilon \quad (3)$$

where:

*D\_CPAFIRM*= dummy variables for every audit firm to control the fixed effect. The coefficient of *D\_CPAFIRM*,  $\beta_x$ , is 19-24 and 19-23 in Big N sample and non- Big N sample respectively.

H4 investigates whether every single Big N firm improves its audit quality following partner sanction decrees. Therefore, we remove *D\_CPAFIRM* from model (3) and run the regression for each Big N firm respectively.

#### IV. Empirical Analyses

##### Descriptive Statistics

In Table 3, Panel A shows the sample size, mean and difference test of the absolute value of *DA* (*ABSDA*) for each audit firm. These *ABSDA* means are reported by pre- and post-sanction groups. The results of difference tests between pre- and post-sanction groups are showed. Univariate comparisons in Panel A indicate that three-sevenths of Big N firms decrease their magnitude of *ABSDA* significantly, which means higher audit quality after individual auditors are sanctioned. Since no non-Big N firm improves its audit quality after sanction enforcements, these results

show limited support of H1. Though Panel B shows that only one firm in the Big N and non-Big N group respectively shows lower *DA* on its audited financial statements after disciplinary actions, we find no evidence that Big N firms are different from non-Big firms in this univariate test.

[Insert Table 3 here]

Table 4, Panel A and Panel B present descriptive statistics for each of the variables included in the regression model by pre-sanction/post-sanction and Big N firm/non-Big N firm respectively. Panel C of Table 4 shows these statistics for full sample.

[Insert Table 4 here]

Table 5 presents the correlations among the independent variables. Both post-sanction and Big-N observations tend to show better financial performance and corporate governance. All correlation coefficients are  $<0.8$ , and that means multicollinearity is not a problem in this sample.

[Insert Table 5 here]

### **Multivariate Results**

Table 6 presents the results of the OLS regression equation (2). Myers et al. (2003) state that regulators not only are concerned with absolute values of *DAs* but also income-increasing and income-decreasing accruals, for the former can be used to

inflate current earnings and the latter can be used to create “cookie jar reserves” which allow managers to increase future earnings. Carey and Simnett (2006) analyze income-increasing and income-decreasing abnormal accruals separately, because of the asymmetric relationships between various independent variables and positive/negative *DA*s. Therefore, besides analyzing the absolute value of *DA* and signed *DA*, this paper separates the full sample into companies with positive (income-increasing)/negative (income-decreasing) *DA*s and estimates the regression models separately on these two samples. All four models are highly significant and have adjusted  $R^2$ s between 36.05 percent and 73.33 percent.

If reputation effect and deterrent effect work, their effects can make audit firms provide higher audit quality after sanction enforcements are released; therefore, we expect to find lower *ABSDA* will be found thereafter (Carey and Simnett 2006; Myers et al. 2003; Frankel et al. 2002; Reynolds and Francis 2001; Francis et al. 1999). In the *ABSDA* regression, *POST* is positive and significantly support our H1. The *CPATYPE* variable is insignificant in four *DA* regressions and indicates that Big N auditees and non-Big N auditees are not different.

Next, we focus on audit quality improvements of Big N firms. The negative and significant *POST\*CPATYPE* interaction term in *ABSDA* regression shows that Big N firms improve their audit quality significantly after sanction actions. As our H2

conjectures, quality improvement of Big N firms is different from non-Big N firms in post-sanction period. We can further infer that after disciplinary actions are released, Big N firms improve more than non-Big N firms due to the greater reputation they possess.

Most control variables (including corporate governance and financial variables) are significant. *LEV* and *FINANCE* are significant in almost all regressions, and reflect to some extent the efforts by the managers when companies borrow money and issue stocks. Both *POST\*FSC* and *POST\*SOX* are positive in *ABSDA* and negative in *DA/negative DA* significantly. Givoly and Hayn (2000) suggest consistent predominance of negative accruals across firms over a long period is an indication of conservatism. Accordingly, we can infer that, in post-SOX period or FSC instituted decrees, auditors become more conservative and approve more income-decreasing discretionary accruals after sanction enforcements are released.

[Insert Table 6 here]

To further infer that Big N firms have stronger reputation incentives to improve their audit quality after sanction actions, we use two reduced sample to test these effects for Big N and non-Big N firms separately. In Table 7, we reduce our sample to Big-N firms. *POST* is significantly negative in *ABSDA* and income-increasing regressions; and significantly positive in income-decreasing regression, That is,

clients of Big N firms tend to decrease the magnitude of all discretionary accruals and hence, we can infer that, after auditor sanctions, Big N firms improve their audit quality significantly. This result is consistent with H3a, indicating Big N firms have been driven by reputation and deterrent effects to improve their audit quality after the release of fellow auditors' sanction decrees.

[Insert Table 7 here]

Table 8 demonstrates the influence of individual sanction releases on non-Big N firms. *POST* is insignificant in all regressions and shows no support for H3b. In other words, contrary to significant improvements found in Big N firms, there is no evidence to support that non-Big N firms improve their quality after individual auditor disciplinary decrees. One possible inference drawn from the results is that non-Big N firms are probably less driven by firm reputation than their Big N counterparts; and therefore, demonstrate less incentive to improve audit quality of the firm after the release of enforcement actions against fellow auditors. Since deterrent effect affects both Big N and non-Big N firms. Our results, which show that only Big N firms improve their audit quality after sanctions, indicate that reputation effect prevails in the post-sanction behavior of fellow auditors of only Big N firms.

[Insert Table 8 here]

In Table 9, we estimate model equation (3) without audit firm fixed effect

variables and use the absolute values of discretionary accruals<sup>6</sup>. The variable *POST* is not significantly negative for each Big N firm. In the two Big N firms with positive signs, both show significant deterioration after auditor sanction enforcements. Accordingly, our results support H4 and provide evidence that not every Big N firm improves its quality after disciplinary actions. In other words, these results show that not all Big N firms improve audit quality subsequent to partner sanction enforcements and consist with prior studies that not all Big N firms are viewed as high audit quality providers (Palmrose 1989; Balsam et al. 2003; Ghosh and Moon 2005).

[Insert Table 9 here]

Generally speaking, we find that individual auditor enforcements improve audit quality of audit firms, because we conjecture that the reputation effect and deterrent effect provide incentives for firms to improve audit quality. But reactions of Big N firms may be different from non-Big N firms because Big N firms have greater reputation effect. To further test H3a and H3b, we use reduced samples to examine the reactions of Big N and non-Big N groups separately. These results show that improvements on firm quality are found in the Big N group, but not in the non-Big N group, indicating that Big N firms show significant improvement as a result of the more powerful reputation effect in their firms. Finally, we find not every Big N firm

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<sup>6</sup> We also release control variables *FSC*, *SOX* and their interaction terms, because not every Big N firm has observations across FSC/non-FSC and pre-SOX/post-SOX.

improves its audit quality after individual CPA sanction enforcements are released against their colleagues.

### **Sensitivity Analyses**

We conduct several robustness tests to confirm empirical results. Because we examine the effect of auditor sanction on firm audit quality, *POST* is a primary variable to proxy the difference between pre- and post-sanction. However, in our sample, there are some audit firm/years selected as both pre- and post-sanction samples. There are six audit firm/years with dual classification and the correspondent 4,427 company/year observations are eliminated as a consequence. The signs and significant levels of the reduced sample (sample size decreases to 11,812 in absolute value *DA* and signed *DA* regressions, 5,911 and 5,901 in income-increasing and income-decreasing *DA* regressions respectively) are identical to Tables 6, 7 and 8 except that *POST* is significant and positive in signed *DA* regression in Big N sample.

To avoid possible bias caused by extreme large values of *BM* and *GROWTH* in our sample, we drop top one percent of these two variables, and re-run regressions with reduced sample of 15,922 companies. These results are consistent with our prior findings.

### **V. Conclusions**

In this study, we examine the improvement on audit quality of the firm

following an individual auditor sanction is released. Since many disciplinary authorities enforce sanctions against individual auditors, it is important for regulators to understand the impact of sanctions against individual auditors on the entire firm. Cases of Taiwanese auditor enforcements during 1997 – 2007 are used to calculate the absolute values of performance-adjusted discretionary accruals, a proxy for audit quality.

The results show that although the audit quality in full sample is improved significantly after sanction enforcements are released and Big N firms improve significantly more than non-Big N firms. Based on the assumption that Big N firms have greater reputation effect than their non-Big N counterparts, our conjecture that the reactions of Big N firms are different from non-Big N firms is upheld in H2. In separated samples, our results support H3a only. That is, Big N firms improve their quality significantly, whereas there is no evidence that non-Big N firms improve their audit quality accordingly. These results demonstrate that Big N firms have greater reputation effect and react significantly to disciplinary actions. In addition, our evidence shows not every Big N firm improves its audit quality significantly after fellow auditor sanction enforcements are released. That is, the impact of partner sanctions on the audit quality of every Big N firm is different. This result consists with prior studies that propose not all Big N firms are viewed as high audit quality

providers (Palmrose 1989; Balsam et al. 2003; Ghosh and Moon 2005).

This paper contributes to the literature by documenting the impact of reputation effect on auditor sanction enforcements. We provide evidence that only Big N firms make significant improvement in audit quality, because that Big N firms have greater reputation incentives than non-Big N firms to improve audit quality after enforcement actions against their fellow partners are released. Our study also provides useful information for regulators who enforce individual CPA sanctions, since subsequent improvements on audit quality are observed only in most Big N firms, but not every one.

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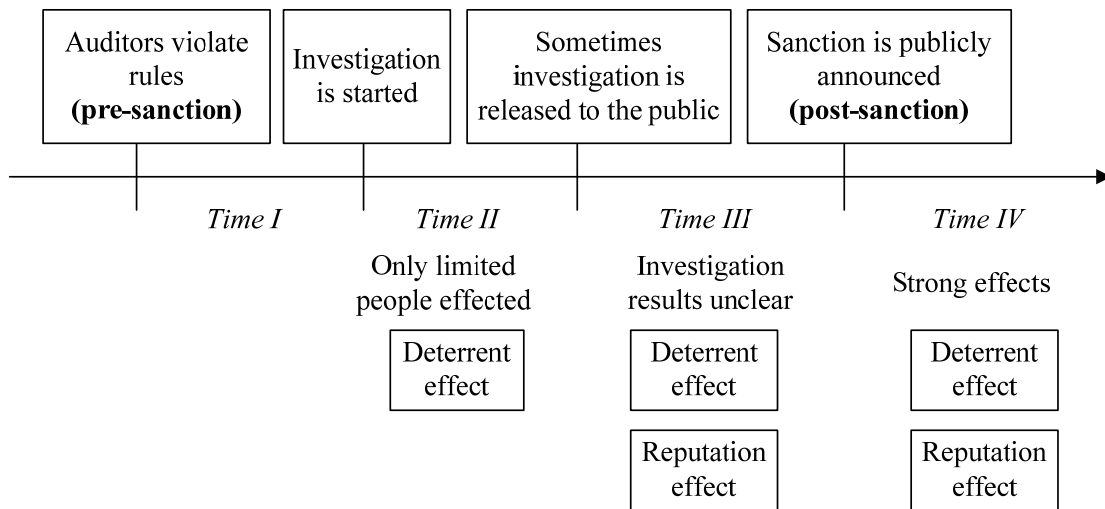
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**Figure 1**  
**Timeline for Auditor Sanction Progress**

**Table 1**  
**Number of Enforcement Cases by Firm and Year of Sanction Release**

<b>Associated firm at time of violation</b>	<b>Year of sanction release</b>										<b>Total</b>
	<b>1997</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	
Big N: A firm	0	0	1	0	0	0	6	2	2	0	4
Big N: B firm	0	0	0	0	0	0	2	0	0	2	7
Big N: C firm	0	0	1	2	2	2	0	0	0	0	4
Big N: D firm	0	0	0	0	0	0	2	0	0	0	11
Big N: E firm	0	2	0	0	0	0	0	2	0	0	2
Big N: F firm	0	0	3	0	0	0	2	0	0	0	2
Big N: G firm	0	0	0	0	0	0	1	1	2	0	4
Non-Big N: A firm	2	0	0	0	0	0	0	2	0	0	7
Non-Big N: B firm	0	0	2	0	2	0	0	0	1	2	2
Non-Big N: C firm	0	0	0	0	0	0	0	0	0	2	4
Non-Big N: D firm	0	0	0	0	0	0	0	0	0	2	5
Non-Big N: E firm	0	0	0	0	0	0	0	2	0	2	4
Non-Big N: F firm	0	0	0	0	0	0	0	0	0	2	2
<b>Total</b>	<b>2</b>	<b>2</b>	<b>7</b>	<b>2</b>	<b>4</b>	<b>2</b>	<b>13</b>	<b>9</b>	<b>5</b>	<b>12</b>	<b>58</b>

**Table 2**  
**Corresponding Pre- and Post-Sanction Sample Size by Firm**

<b>CPA firm</b>	<b>number of sanction enforcements</b>	<b>corresponding sample size</b>		
		<b>pre-sanction</b>	<b>post-sanction</b>	<b>total</b>
Big N: A firm	4	2,215	3,333	5,548
Big N: B firm	7	1,356	1,296	2,652
Big N: C firm	4	605	1,200	1,805
Big N: D firm	11	526	620	1,146
Big N: E firm	2	144	904	1,048
Big N: F firm	2	715	1,064	1,779
Big N: G firm	4	271	1,393	1,664
Non-Big N: A firm	7	6	51	57
Non-Big N: B firm	2	190	258	448
Non-Big N: C firm	4	2	2	4
Non-Big N: D firm	5	4	8	12
Non-Big N: E firm	4	28	30	58
Non-Big N: F firm	2	10	8	18
<b>total</b>	<b>58</b>	<b>6,072</b>	<b>10,167</b>	<b>16,239</b>

**Table 3****Difference Tests between Pre- and Post-Sanction Groups by CPA firms****Panel A: Difference Tests between Pre- and Post-Sanction Groups for ABSDA**

CPA firm	<u>corresponding sample size</u>		<u>ABSDA mean</u>		<u>difference test for ABSDA</u>		
	pre-sanction	post-sanction	pre-sanction	post-sanction	difference (post - pre)	t-value	p-value
Big N: A firm	2215	3,333	0.0957	0.0888	-0.0069	-2.2589	0.0239
Big N: B firm	1356	1,296	0.0752	0.0718	-0.0034	-1.0150	0.3102
Big N: C firm	605	1200	0.1239	0.0806	-0.0433	-5.0831	0.0000
Big N: D firm	526	620	0.0678	0.0733	0.0054	1.2906	0.1971
Big N: E firm	144	904	0.1739	0.0782	-0.0957	-5.2067	0.0000
Big N: F firm	715	1064	0.0870	0.1097	0.0227	4.0490	0.0001
Big N: G firm	271	1393	0.0857	0.0868	0.0011	0.1412	0.8878
Non-Big N: A firm	6	51	0.0336	0.0640	0.0304	2.5049	0.0235
Non-Big N: B firm	190	258	0.1142	0.1096	-0.0046	-0.2877	0.7737
Non-Big N: C firm	2	2	0.0279	0.0799	0.0519	N/A <sup>†</sup>	N/A <sup>†</sup>
Non-Big N: D firm	4	8	0.0202	0.0227	0.0026	0.2417	0.8139
Non-Big N: E firm	28	30	0.0807	0.0732	-0.0075	-0.3471	0.7298
Non-Big N: F firm	10	8	0.0719	0.0930	0.0211	0.6248	0.5435

<sup>†</sup>These CPA firms have too few observations to compute the t-value and its p-value.

**Table 3(continued)****Difference Tests between Pre- and Post-Sanction Groups by CPA firms****Panel B: Difference Tests between Pre- and Post-Sanction Groups for DA**

CPA firm	<u>corresponding sample size</u>		<u>DA mean</u>		<u>difference test for DA</u>		
	pre-sanction	post-sanction	pre-sanction	post-sanction	difference (post - pre)	t-value	p-value
Big N: A firm	2215	3,333	0.0152	0.0019	-0.0133	-3.3681	0.0008
Big N: B firm	1356	1,296	-0.0035	-0.0039	-0.0003	-0.0779	0.9379
Big N: C firm	605	1200	-0.0138	0.0106	0.0244	2.4083	0.0163
Big N: D firm	526	620	0.0016	-0.0053	-0.0070	-1.1767	0.2396
Big N: E firm	144	904	-0.0405	0.0025	0.0430	1.8417	0.0675
Big N: F firm	715	1064	-0.0136	0.0015	0.0151	2.0780	0.0379
Big N: G firm	271	1393	0.0140	0.0010	-0.0130	-1.3211	0.1873
Non-Big N: A firm	6	51	0.0182	0.0280	0.0097	0.5036	0.6238
Non-Big N: B firm	190	258	0.0169	0.0395	0.0225	1.1862	0.2362
Non-Big N: C firm	2	2	-0.0279	-0.0799	-0.0519	N/A <sup>†</sup>	N/A <sup>†</sup>
Non-Big N: D firm	4	8	-0.0202	0.0188	0.0389	4.1828	0.0024
Non-Big N: E firm	28	30	0.0149	0.0076	-0.0072	-0.2431	0.8088
Non-Big N: F firm	10	8	0.0691	-0.0679	-0.1370	-3.1728	0.0059

<sup>†</sup>These CPA firms have too few observations to compute the t-value and its p-value.

**Table 4**  
**Descriptive Statistics of Regression Variables**  
**Panel A: Descriptive Statistics by Pre- and Post-Sanction Groups**

<b>pre-sanction(N=6072)</b>					
<b>Variable</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>	
<i>ABSDA</i>	0.0922	0.1238	0.0000	1.5135	
<i>DA</i>	0.0023	0.1543	-1.4230	1.5135	
<i>MVE</i>	14.8972	1.5610	6.9078	20.9755	
<i>BM</i>	2.2259	25.6411	0.0444	1111.6930	
<i>ZMESKI</i>	-35.8835	46.2208	-216.2770	239.2330	
<i>CFFO</i>	0.0563	0.1310	-1.0788	0.7268	
<i>GROWTH</i>	0.1871	0.8734	-0.9958	29.2992	
<i>ABSTACC</i>	0.0858	0.1042	0.0000369	1.613957	
<i>LAGROA</i>	0.0855	0.0993	-0.3892	0.7055	
<i>LEV</i>	0.4032	0.1576	0.0207	0.9243	
<i>FINANCE</i>	0.5585	0.4966	0	1	
<i>INDBOARDR</i>	0.0777	0.1374	0.0000	0.6667	
<i>DEVIATE</i>	2.4569	9.5738	0.0000	359.5700	
<i>BLOCK</i>	0.8452	0.3618	0	1	
<i>DUAL</i>	0.3139	0.4641	0	1	
<i>FSC</i>	0.8169	0.3868	0	1	
<i>SOX</i>	0.8691	0.3374	0	1	
<b>post-sanction(N=10167)</b>					
<b>Variable</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>	
<i>ABSDA</i>	0.0860	0.1029	0.0001	1.5559	
<i>DA</i>	0.0027	0.1341	-0.7485	1.5559	
<i>MVE</i>	14.5911	1.7046	6.9078	21.1587	
<i>BM</i>	7.6078	127.9018	-0.7069	5248.4760	
<i>ZMESKI</i>	-40.0286	49.6302	-227.3742	207.9854	
<i>CFFO</i>	0.0576	0.1415	-1.5129	0.7224	
<i>GROWTH</i>	0.1955	0.7237	-0.9958	40.9109	
<i>ABSTACC</i>	0.0945	0.1086	0.0000369	1.523974	
<i>LAGROA</i>	0.0922	0.1023	-0.3892	0.9217	
<i>LEV</i>	0.4120	0.1641	0.0155	1.1124	
<i>FINANCE</i>	0.5713	0.4949	0	1	
<i>INDBOARDR</i>	0.1329	0.1596	0.0000	0.6000	
<i>DEVIATE</i>	2.3850	9.7309	0.0000	267.7100	
<i>BLOCK</i>	0.8928	0.3094	0	1	
<i>DUAL</i>	0.3244	0.4682	0	1	
<i>FSC</i>	0.6479	0.4777	0	1	
<i>SOX</i>	0.8551	0.3520	0	1	

**Table 4 (continued)**

**Panel B: Descriptive Statistics by CPA Firm type**

<b>Big N (N=15642)</b>					
<b>Variable</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>	
<i>ABSDA</i>	0.0879	0.1090	0.0000	1.5135	
<i>DA</i>	0.0017	0.1400	-1.4230	1.5135	
<i>MVE</i>	14.7056	1.6701	6.9078	21.1587	
<i>BM</i>	5.6313	103.9675	-0.7069	5248.4760	
<i>ZMESKI</i>	-38.9322	48.7132	-227.3742	239.2330	
<i>CFFO</i>	0.0584	0.1363	-1.0788	0.7268	
<i>GROWTH</i>	0.1963	0.7944	-0.9958	40.9109	
<i>ABSTACC</i>	0.0914	0.1055	0.0000369	1.613957	
<i>LAGROA</i>	0.0908	0.1016	-0.3892	0.9217	
<i>LEV</i>	0.4104	0.1612	0.0155	1.1124	
<i>FINANCE</i>	0.5677	0.4954	0	1	
<i>INDBOARDR</i>	0.1153	0.1551	0.0000	0.6667	
<i>DEVIATE</i>	2.3985	9.7356	0.0000	359.5700	
<i>BLOCK</i>	0.8790	0.3262	0	1	
<i>DUAL</i>	0.3218	0.4672	0	1	
<i>FSC</i>	0.7248	0.4466	0	1	
<i>SOX</i>	0.8692	0.3372	0	1	
<b>Non-Big N (N=597)</b>					
<b>Variable</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>	
<i>ABSDA</i>	0.1002	0.1576	0.0001	1.5559	
<i>DA</i>	0.0261	0.1850	-0.6548	1.5559	
<i>MVE</i>	14.7032	1.3348	6.9078	17.8845	
<i>BM</i>	4.6556	47.3797	0.1031	777.0070	
<i>ZMESKI</i>	-26.5974	38.2585	-203.3490	91.6989	
<i>CFFO</i>	0.0226	0.1645	-1.5129	0.4143	
<i>GROWTH</i>	0.0904	0.3661	-0.7987	3.0369	
<i>ABSTACC</i>	0.0858	0.1421	0.000146	1.523974	
<i>LAGROA</i>	0.0613	0.0863	-0.2429	0.4806	
<i>LEV</i>	0.3630	0.1707	0.0187	0.8332	
<i>FINANCE</i>	0.5343	0.4992	0	1	
<i>INDBOARDR</i>	0.0326	0.0915	0.0000	0.4286	
<i>DEVIATE</i>	2.7620	7.8301	1.0000	75.2800	
<i>BLOCK</i>	0.7705	0.4209	0	1	
<i>DUAL</i>	0.2864	0.4525	0	1	
<i>FSC</i>	0.3518	0.4779	0	1	
<i>SOX</i>	0.6281	0.4837	0	1	

**Table 4 (continued)**

**Panel C: Descriptive Statistics for full sample**

full sample (N=16239)					
Variable	Mean	Std. Dev.	Min	Max	
<i>ABSDA</i>	0.0883	0.1112	0.0000	0.0000	1.5559
<i>DA</i>	0.0025	0.1420	-1.4230	0.0000	1.5559
<i>MVE</i>	14.7055	1.6589	6.9078	0.0000	21.1587
<i>BM</i>	5.5955	102.4415	-0.7069	0.0000	5248.4760
<i>ZMESKI</i>	-38.4787	48.4236	-227.3742	0.0000	239.2330
<i>CFFO</i>	0.0571	0.1376	-1.5129	0.0000	0.7268
<i>GROWTH</i>	0.1924	0.7830	-0.9958	0.0000	40.9109
<i>ABSTACC</i>	0.0912	0.1071	0.0000369	0.0000	1.613957
<i>LAGROA</i>	0.0897	0.1012	-0.3892	0.0000	0.9217
<i>LEV</i>	0.4087	0.1618	0.0155	0.0000	1.1124
<i>FINANCE</i>	0.5665	0.4956	0	0.0000	1
<i>INDBOARDR</i>	0.1123	0.1541	0.0000	0.0000	0.6667
<i>DEVIATE</i>	2.4119	9.6722	0.0000	0.0000	359.5700
<i>BLOCK</i>	0.8750	0.3307	0	0.0000	1
<i>DUAL</i>	0.3205	0.4667	0	0.0000	1
<i>FSC</i>	0.7111	0.4533	0	0.0000	1
<i>SOX</i>	0.8603	0.3466	0	0.0000	1

♦ N is the sample size.

Variable Definitions:

- DA* = performance-adjusted discretionary accruals calculated following Kothari et al. (2005);
- POST* = 1 for post-sanction year, and 0 for pre-sanction year;
- CPATYPE* = *CPATYPE* equals to 1 if the company were audited by a Big-N firm, and 0 otherwise;
- POST\* CPATYPE* = the interaction term of *POST* and *CPATYPE*;
- MVE* = log of the market value of equity;
- BM* = book-to-market equity ratio;
- ZMESKI* = financial distress index calculating from Zmijewski's (1984) bankruptcy prediction model;
- CFFO* = cash flow from operations divided by total assets;
- GROWTH* = sales growth rate;
- ABSTACC* = the absolute value of total accruals scaled by lagged total assets;
- LAGROA* = return on assets from the prior year;
- LEV* = total liabilities divided by total assets;
- FINANCE* = 1 if number of outstanding shares increased by at least 10 percent or long-term debt increased by at least 20 percent during the year;
- INDBOARDR* = the proportion of independent outside members on the board, excluding the audit committee;
- DEVIATE* = the voting rights divided by the cash flow rights;
- BLOCK* = 1 if an outside blockholder has 5 percent or more, 0 otherwise;
- DUAL* = a dummy variable with a value of 1 if the CEO chairs the board in year t-1, and 0 otherwise; and
- FSC* = 1 if sanction actions are decreed directly by FSC, and 0 otherwise;
- SOX* = 1 if sanction enforcements are released in post-SOX period, and 0 otherwise; and
- D\_CPAFIRM* = dummy variables for every audit firm to control the fixed effect.

**Table 5**  
**Pearson Correlation Matrices**

	<i>POST</i>	<i>CPATYPE</i>	<i>MVE</i>	<i>BM</i>	<i>ZMESKI</i>	<i>CFFO</i>	<i>GROWTH</i>	<i>ABSTACC</i>	<i>LAGROA</i>	<i>LEV</i>	<i>FINANCE</i>	<i>INDBOARDR</i>	<i>DEVIATE</i>	<i>BLOCK</i>	<i>DUAL</i>	<i>FSC</i>	<i>SOX</i>
<i>POST</i>	1																
<i>CPATYPE</i>	0.0113	1															
<i>MVE</i>	-0.0893*	0.0003	1														
<i>BM</i>	0.0254*	0.0018	-0.1844*	1													
<i>ZMESKI</i>	-0.0414*	-0.0479*	-0.2972*	-0.0308*	1												
<i>CFFO</i>	0.0045	0.0491*	0.1619*	0.0165*	-0.4570*	1											
<i>GROWTH</i>	0.0052	0.0254*	0.0732*	0.0362*	-0.1677*	-0.0089	1										
<i>ABSTACC</i>	0.0391*	0.0099	-0.0608*	-0.0056	0.0650*	-0.4198*	0.0865*	1									
<i>LAGROA</i>	0.0323*	0.0549*	0.2296*	0.0251*	-0.6859*	0.3772*	-0.0072	0.0025	1								
<i>LEV</i>	0.0263*	0.0552*	-0.0934*	0.0028	0.3096*	-0.3476*	0.0366*	0.1832*	-0.2733*	1							
<i>FINANCE</i>	0.0125	0.0127	-0.0437*	0.0220*	-0.0771*	-0.012	0.0607*	0.1068*	0.1283*	-0.1271*	1						
<i>INDBOARDR</i>	0.1736*	0.1011*	-0.1551*	0.0511*	-0.2053*	0.0988*	0.0517*	0.0643*	0.2673*	0.0172*	0.0976*	1					
<i>DEVIATE</i>	-0.0036	-0.0071	0.0786*	0.0053	-0.0228*	0.0536*	0.0021	0.0166*	0.0202*	-0.0284*	0.0138*	0.0332*	1				
<i>BLOCK</i>	0.0696*	0.0617*	-0.0771*	-0.0267*	0.0088	-0.0244*	0.01	0.0259*	-0.0011	0.0223*	0.0327*	0.1217*	-0.0133*	1			
<i>DUAL</i>	0.0109	0.0142*	-0.1056*	-0.0170*	0.0104	-0.0499*	0.0222*	0.0772*	-0.0204*	-0.01	0.004	0.0257*	-0.0626*	0.0042	1		
<i>FSC</i>	-0.1804*	0.1549*	-0.0025	-0.0596*	0.0041	-0.0116	0.0273*	0.0124	-0.0185*	0.0214*	0.0268*	0.0206*	0.0058	0.0228*	0.0089	1	
<i>SOX</i>	-0.0195*	0.1309*	-0.0718*	0.0175*	-0.0544*	0.0252*	0.0228*	0.0166*	0.0301*	0.0071	-0.0055	0.2750*	0.0088	0.1335*	0.0106	-0.0225*	1

\* indicates significance at  $p < 0.1$ .

*POST* equals to 1 for post-sanction year, and 0 for pre-sanction year; *CPATYPE* equals to 1 if the company were audited by Big-N, and 0 otherwise; *MVE* is log of the market value of equity; *BM* is book-to-market equity ratio; *ZMESKI* is financial distress index (Zmijewski 1984); *CFFO* is cash flow from operations; *GROWTH* is sales growth rate; *ABSTACC* is the absolute value of total accruals scaled by lagged total assets; *LAGROA* is return on assets from the prior year; *LEV* is total liabilities divided by total assets; *FINANCE* equals to 1 if number of outstanding shares increased by at least 10 percent or long-term debt increased by at least 20 percent during the year; *INDBOARDR* is the proportion of independent outside members on the board, excluding the audit committee; *DEVIATE* is the voting rights divided by the cash flow rights; *BLOCK* equals to 1 if an outside blockholder has 5 percent or more, 0 otherwise; *DUAL* is a dummy variable with a value of 1 if the CEO chairs the board in year t-1, and 0 otherwise; *FSC* equals to 1 if sanction actions are decreed directly by FSC, and 0 otherwise; and *SOX* is 1 if sanction enforcements are released in post-SOX period, and 0 otherwise.

**Table 6**  
**OLS Regression Results for H1 (Full Sample)**

$$ABSDA_t \text{ or } DA_t = \beta_0 + \beta_1 POST_t + \beta_2 CPATYPE_t + \beta_3 POST*CPATYPE_t + \beta_4 MVE_t + \beta_5 BM_t + \beta_6 ZMESKI_t + \beta_7 CFFO_t + \beta_8 GROWTH_t + \beta_9 ABSTACC_t + \beta_{10} LAGROA_t + \beta_{11} LEV_t + \beta_{12} FINANCE_t + \beta_{13} INDBOARDR_t + \beta_{14} DEVIATE_t + \beta_{15} BLOCK_t + \beta_{16} DUAL_t + \beta_{17} FSC_t + \beta_{18} POSTFSC_t + \beta_{19} SOX_t + \beta_{20} POSTSOX_t + \beta_{21-32} D\_CPAFIRM$$

Variables	predicted sign	ABSDA		DA		DA>0		DA<0	
		Estimated Coefficient	P-value	Estimated Coefficient	P-value	Estimated Coefficient	P-value	Estimated Coefficient	P-value
Intercept	?	0.0829	0.0010 ***	-0.0512	0.0570	0.1185	0.0010 ***	-0.1267	0.0000 ***
POST	-	-0.0377	0.0000 ***	0.0456	0.0000 ***	-0.0217	0.0100 ***	0.0783	0.0000 ***
CPATYPE	-	0.0279	0.2220	0.0070	0.7850	-0.0133	0.6890	-0.0007	0.9800
POST*CPATYPE	-	-0.0189	0.0060 ***	0.0012	0.8760	0.0008	0.9250	0.0259	0.0100 ***
MVE	-	-0.0013	0.0010 ***	0.0029	0.0000 ***	0.0000	0.9660	0.0012	0.0420 **
BM	-	0.0000	0.2700	0.0000	0.5900	0.0000	0.4830	0.0000	0.3800
ZMESKI	-	-0.0003	0.0000 ***	-0.0011	0.0000 ***	-0.0004	0.0000 ***	-0.0001	0.0270 **
CFFO	-	-0.0220	0.0000 ***	-0.9279	0.0000 ***	-0.4001	0.0000 ***	-0.3764	0.0000 ***
GROWTH	+	0.0028	0.0000 ***	-0.0019	0.0330 **	0.0000	0.9830	-0.0043	0.0000 ***
ABSTACC	+	0.7102	0.0000 ***	0.0058	0.4250	0.4447	0.0000 ***	-0.4535	0.0000 ***
LAGROA	+	0.0013	0.8800	0.0549	0.0000 ***	0.0287	0.0070 ***	0.0302	0.0140 **
LEV	+	0.0179	0.0000 ***	-0.0316	0.0000 ***	-0.0205	0.0000 ***	-0.0432	0.0000 ***
FINANCE	+	0.0070	0.0000 ***	-0.0001	0.9600	0.0051	0.0010 ***	-0.0077	0.0000 ***
INDBOARDR	-	-0.0112	0.0130 **	-0.0126	0.0140 **	-0.0285	0.0000 ***	0.0047	0.4570
DEVIATE	+	0.0000	0.5930	0.0000	0.8830	0.0000	0.6800	0.0001	0.1800
BLOCK	-	0.0003	0.8560	0.0082	0.0000 ***	0.0078	0.0010 ***	0.0048	0.0720 *
DUAL	+	0.0044	0.0010 ***	-0.0045	0.0030 ***	0.0013	0.4050	-0.0076	0.0000 ***
FSC	-	-0.0271	0.0000 ***	-0.0183	0.0000 ***	-0.0351	0.0000 ***	0.0308	0.0000 ***
POSTFSC	-	0.0295	0.0000 ***	-0.0083	0.0190 **	0.0205	0.0000 ***	-0.0494	0.0000 ***
SOX	-	-0.0570	0.0000 ***	0.0236	0.0000 ***	-0.0397	0.0000 ***	0.0813	0.0000 ***
POSTSOX	-	0.0195	0.0000 ***	-0.0503	0.0000 ***	-0.0142	0.0010 ***	-0.0540	0.0000 ***
<i>D_CPAFIRM</i>									
Sample size		16239		16239		7926		8313	
Adjusted R <sup>2</sup>		52.15%		62.71%		73.33%		36.05%	
F-value (P-value)		571.88	0.0000 ***	881.75	0.0000 ***	727.39	0.0000 ***	152.15	0.0000 ***

\*, \*\* and \*\*\* indicate significance at p < 0.1, p < 0.05 and p < 0.01, respectively.

DA (ABSDA) is performance-adjusted discretionary accruals (absolute values) and *D\_CPAFIRM* is the dummy variables for every Big N audit firm to control the fixed effect. The definitions of other variables please see Table 4.

**Table 7**

**OLS Regression Results for H3a (Big-N firms as a group)**

$$ABSDA_t \text{ or } DA_t = \beta_0 + \beta_1 POST_t + \beta_2 MVE_t + \beta_3 BM_t + \beta_4 ZMESKI_t + \beta_5 CFFO_t + \beta_6 GROWTH_t + \beta_7 ABSTACC_t + \beta_8 LAGROA_t + \beta_9 LEV_t + \beta_{10} FINANCE_t + \beta_{11} INDBOARDR_t + \beta_{12} DEVIATE_t + \beta_{13} BLOCK_t + \beta_{14} DUAL_t + \beta_{15} FSC_t + \beta_{16} POSTFSC_t + \beta_{17} SOX_t + \beta_{18} POSTSOX_t + \beta_{19-24} D\_CPAFIRM$$

Variables	predicted sign	ABSDA		DA		DA>0		DA<0		
		Estimated	P-value	Estimated	P-value	Estimated	P-value	Estimated	P-value	
Intercept	?	0.1115	0.0000 ***	-0.0457	0.0000 ***	0.1054	0.0000 ***	-0.1285	0.0000 ***	
POST	-	-0.0562	0.0000 ***	0.0487	0.0000 ***	-0.0188	0.0000 ***	0.1051	0.0000 ***	
MVE	-	-0.0013	0.0010 ***	0.0028	0.0000 ***	-0.0001	0.8220	0.0011	0.0540	
BM	-	0.0000	0.2960	0.0000	0.6650	0.0000	0.5200	0.0000	0.4380	
ZMESKI	-	-0.0003	0.0000 ***	-0.0011	0.0000 ***	-0.0004	0.0000 ***	-0.0001	0.0110 **	
CFFO	-	-0.0111	0.0530 *	-0.9242	0.0000 ***	-0.3861	0.0000 ***	-0.3857	0.0000 ***	
GROWTH	+	0.0031	0.0000 ***	-0.0017	0.0630 *	0.0003	0.7310	-0.0042	0.0000 ***	
ABSTACC	+	0.7013	0.0000 ***	0.0071	0.3330	0.4447	0.0000 ***	-0.4454	0.0000 ***	
LAGROA	+	0.0013	0.8830	0.0523	0.0000 ***	0.0325	0.0020 ***	0.0316	0.0110 **	
LEV	+	0.0224	0.0000 ***	-0.0311	0.0000 ***	-0.0177	0.0010 ***	-0.0464	0.0000 ***	
FINANCE	+	0.0069	0.0000 ***	0.0005	0.7520	0.0052	0.0010 ***	-0.0075	0.0000 ***	
INDBOARDR	-	-0.0098	0.0300 **	-0.0133	0.0090 ***	-0.0279	0.0000 ***	0.0039	0.5310	
DEVIATE	+	-0.0001	0.4220	0.0000	0.5690	0.0000	0.8640	0.0002	0.0560 *	
BLOCK	-	-0.0008	0.6910	0.0093	0.0000 ***	0.0072	0.0020 ***	0.0064	0.0170 **	
DUAL	+	0.0046	0.0010 ***	-0.0044	0.0030 ***	0.0022	0.1630	-0.0072	0.0000 ***	
FSC	-	-0.0269	0.0000 ***	-0.0219	0.0000 ***	-0.0365	0.0000 ***	0.0285	0.0000 ***	
POSTFSC	-	0.0300	0.0000 ***	-0.0053	0.1390	0.0219	0.0000 ***	-0.0479	0.0000 ***	
SOX	-	-0.0580	0.0000 ***	0.0271	0.0000 ***	-0.0377	0.0000 ***	0.0838	0.0000 ***	
POSTSOX	-	0.0186	0.0000 ***	-0.0555	0.0000 ***	-0.0177	0.0000 ***	-0.0567	0.0000 ***	
<i>D_CPAFIRM</i>										
Sample size		15642		15642		7610		8032		
Adjusted R <sup>2</sup>		51.04%		62.47%		72.15%		36.80%		
F-value		680.36	0.0000 ***	1085.65	0.0000 ***	822.49	0.0000 ***	195.82	0.0000 ***	

\*, \*\* and \*\*\* indicate significance at  $p < 0.1$ ,  $p < 0.05$  and  $p < 0.01$ , respectively.

DA (ABSDA) is performance-adjusted discretionary accruals (absolute values) and *D\_CPAFIRM* is the dummy variables for every Big N audit firm to control the fixed effect. The definitions of other variables please see Table 6.

**Table 8**

**OLS Regression Results for H3b (non-Big N firms as a group)**

$$ABSDA_t \text{ or } DA_t = \beta_0 + \beta_1 POST_t + \beta_2 MVE_t + \beta_3 BM_t + \beta_4 ZMESKI_t + \beta_5 CFFO_t + \beta_6 GROWTH_t + \beta_7 ABSTACC_t + \beta_8 LAGROA_t + \beta_9 LEV_t + \beta_{10} FINANCE_t + \beta_{11} INDBOARDR_t + \beta_{12} DEVIATE_t + \beta_{13} BLOCK_t + \beta_{14} DUAL_t + \beta_{15} FSC_t + \beta_{16} POSTFSC_t + \beta_{17} SOX_t + \beta_{18} POSTSOX_t + \beta_{19-23} D\_CPAFIRM$$

Variables	predicted sign	ABSDA		DA		DA>0		DA<0		
		Estimated	P-value	Estimated	P-value	Estimated	P-value	Estimated	P-value	
Intercept	?	0.1332	0.0430 *	-0.0501	0.5240	0.0789	0.3550	-0.2336	0.0320 **	
POST	-	-0.0414	0.1520	0.0163	0.6390	-0.0572	0.1450	0.0465	0.2670	
MVE	-	-0.0043	0.2030	0.0065	0.1110	0.0030	0.5010	0.0118	0.0470 **	
BM	-	-0.0001	0.1160	0.0001	0.5280	-0.0017	0.3920	0.0002	0.0650 *	
ZMESKI	-	-0.0003	0.0680 *	-0.0004	0.0440 *	-0.0008	0.0020 ***	-0.0001	0.7130	
CFFO	-	-0.1992	0.0000 ***	-1.1005	0.0000 ***	-0.5929	0.0000 ***	-0.2479	0.0040 ***	
GROWTH	+	-0.0042	0.6910	-0.0386	0.0030 ***	0.0165	0.4340	-0.0103	0.4530	
ABSTACC	+	0.7586	0.0000 ***	-0.1294	0.0160 **	0.3900	0.0000 ***	-0.5953	0.0000 ***	
LAGROA	+	0.1336	0.0600 *	0.3530	0.0000 ***	-0.0008	0.9930	-0.0444	0.7050	
LEV	+	-0.0618	0.0120 **	-0.0316	0.2810	-0.0650	0.0310 **	0.1051	0.0140 **	
FINANCE	+	0.0075	0.3580	-0.0226	0.0220 **	-0.0039	0.7090	-0.0105	0.4530	
INDBOARDR	-	-0.0146	0.7530	0.0692	0.2140	0.0299	0.6680	0.0710	0.2810	
DEVIATE	+	0.0004	0.4210	-0.0014	0.0120 **	-0.0006	0.3280	-0.0017	0.0140 **	
BLOCK	-	0.0117	0.1970	-0.0069	0.5240	0.0151	0.2020	-0.0281	0.0360 **	
DUAL	+	0.0026	0.7700	-0.0158	0.1330	-0.0133	0.1800	-0.0300	0.0460 **	
FSC	-	-0.0230	0.3710	0.0091	0.7670	-0.0230	0.5140	0.0369	0.3030	
POSTFSC	-	0.0261	0.3300	0.0021	0.9490	0.0480	0.1930	-0.0171	0.6600	
SOX	-	-0.0479	0.0730 *	0.0113	0.7240	-0.0523	0.1500	0.0602	0.1100	
POSTSOX	-	0.0299	0.2580	0.0129	0.6850	0.0329	0.3730	-0.0177	0.6350	
<b>D_CPAFIRM</b>										
Sample size		597		597		316		281		
Adjusted R <sup>2</sup>		70.45%		69.18%		85.68%		22.10%		
F-value		62.78	0.0000 ***	59.17	0.0000 ***	86.67	0.0000 ***	4.45	0.0000 ***	

\*, \*\* and \*\*\* indicate significance at  $p < 0.1$ ,  $p < 0.05$  and  $p < 0.01$ , respectively.

DA (ABSDA) is performance-adjusted discretionary accruals (absolute values) and D\_CPAFIRM is the dummy variables for every Big N audit firm to control the fixed effect. The definitions of other variables please see Table 6.

**Table 9**

**OLS Regression Results for H4 (Only Big-N firms)**

$$ABSDA_t = \beta_0 + \beta_1 POST_t + \beta_2 MVE_t + \beta_3 BM_t + \beta_4 ZMESKI_t + \beta_5 CFO_t + \beta_6 GROWTH_t + \beta_7 ABSTACC_t + \beta_8 LAGROA_t + \beta_9 LEV_t + \beta_{10} FINANCE_t + \beta_{11} INDBOARDR_t + \beta_{12} DEVIATE_t + \beta_{13} BLOCK_t + \beta_{14} DUAL_t$$

	predicted	CPAFIRM A	CPAFIRM B	CPAFIRM C	CPAFIRM D	CPAFIRM E	CPAFIRM F	CPAFIRM G
Variables	sign	Estimated Coefficient	Estimated Coefficient	Estimated Coefficient	Estimated Coefficient	Estimated Coefficient	Estimated Coefficient	Estimated Coefficient
Intercept	?	0.0439 ***	0.0189 *	0.0643 ***	0.0619	0.0547 **	0.0943 ***	0.0413
<i>POST</i>	-	-0.0226 *** (0.0000)	-0.0175 *** (0.0000)	-0.0004 (0.8120)	-0.0489 *** (0.0000)	0.0048 * (0.0970)	-0.0774 *** (0.0000)	0.0126 *** (0.0030)
<i>MVE</i>	-	-0.0016 *	-0.0013 **	-0.0040 ***	-0.0025	-0.0038 ***	0.0019	-0.0011
<i>BM</i>	-	0.0000	0.0000	0.0000 *	-0.0074 *	-0.0002	0.0000	-0.0028
<i>ZMESKI</i>	-	-0.0002 ***	-0.0004 ***	-0.0005 ***	-0.0002 **	0.0000	-0.0001	0.0000
<i>CFFO</i>	-	0.0223	-0.0004	-0.0428 ***	0.0073	0.0486 ***	-0.0829 **	0.0166
<i>GROWTH</i>	+	0.0063	0.0005	0.0000	0.0163 **	0.0065 **	0.0017	0.0535 ***
<i>ABSTACC</i>	+	0.7289 ***	0.7265 ***	0.7270 ***	0.6769 ***	0.5707 ***	0.4727 ***	0.7260 ***
<i>LAGROA</i>	+	-0.0373	-0.0212	-0.0334 **	0.0808 *	0.0381 *	0.0733 *	0.0627 **
<i>LEV</i>	+	0.0194 *	0.0228 ***	-0.0132 **	0.0852 ***	0.0268 ***	0.0027	0.0034
<i>FINANCE</i>	+	-0.0042	0.0049 **	0.0022	0.0234 ***	0.0086 ***	0.0148 **	0.0087 **
<i>INDBOARDR</i>	-	0.0111	-0.0147 **	0.0058	-0.0578 *	-0.0148	-0.0477 **	-0.1190 ***
<i>DEVIATE</i>	+	-0.0003	0.0000	0.0000	-0.0009	-0.0004 **	0.0002	-0.0001
<i>BLOCK</i>	-	-0.0006	0.0072 **	-0.0027	-0.0073	0.0004	-0.0137	-0.0242 ***
<i>DUAL</i>	+	0.0020	0.0081 ***	-0.0055 ***	0.0017	-0.0017	-0.0048	0.0107 ***
Sample size		1664	5548	2652	1805	1146	1048	1779
Adjusted R <sup>2</sup>		64.68%	57.79%	69.00%	32.25%	55.83%	22.29%	55.58%
F-value		218.51 ***	543.44 ***	422.46 ***	62.33 ***	104.38 ***	22.45 ***	159.89 ***
(P-value)		(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)

\*, \*\* and \*\*\* indicate significance at  $p < 0.1$ ,  $p < 0.05$  and  $p < 0.01$ , respectively.

*ABSDA* is absolute values of performance-adjusted discretionary accruals. The definitions of other variables please see Table 6.