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

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[*] The authors are greatly indebted to anonymous reviewers of 2009 AAA Auditing Section Meeting and Concurrent Papers Sessions of JCAE for their helpful suggestions. We also appreciate comments from participants at National Chengchi University Accounting Workshop and 2007 Accounting Theory and Practice Conference. Funding provided by the National Science Council (96-3114-H-004-001) and the Center for Service and Innovation of National Chengchi University was gratefully acknowledged.
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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 individual auditor disciplinary action and infers that both reputation effect and deterrent effect drive the other non-sanctioned fellow auditors to improve their quality thereafter. Using data from Taiwan, our empirical results show that the improvement on firm quality is found only in the Big N firm group, but not the non-Big N counterpart group, probably due to the stronger reputation effect existed in Big N firms. However, further tests on separate firm data find that not every Big N firm shows significant improvement on 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.

INTRODUCTION

Many countries in the world enforce disciplinary actions against individual Certified Public Accountants[1] (CPAs) and believe that other auditors can learn from fellow practitioners' wrongdoing. 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 relevant question. Chang et al. (2007) examine the appropriateness and effectiveness of auditor sanction system in Taiwan and focus on audit quality of sanctioned auditor, i.e., at the level of individual CPAs. In this study, we extend 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 improvement of audit firms after a disciplinary action is issued against one partner.

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 the same firm improve their audit quality as a result.

[1] For example, Singapore, United States, United Kingdom, Japan and Taiwan.

Since Becker et al. (1998) suggest that reputation effect is more important for Big N firms. To disentangle these effects, we further examine the improvement of firm quality by separating the full sample into Big N and non-Big N firms. Since previous studies have developed various measurements to proxy audit quality, e.g., ERC (Ghosh and Moon 2005) and industry expertise (Balson et al. 2003), and their results show that not all Big N firms are selected as high audit quality by these measurements, we 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, by statute auditors are required to sign the audit report in their own names as well as in the name of the audit firm, and statutory enforcements, such as warning, reprimand, suspension and disbarment[2], are ruled against individual auditors. The regulators through their administrative arms, the Finacial 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 16,511 observations, which correspond to 62 individual auditors' sanction

[2] The Securities Exchange Act, Sections 37 and Accountant Code, Section 40.

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. However, we find no evidence of audit quality improvement for all clients of such audit firms after enforcements are released. Second, 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, this paper documents 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. Fourth, 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 action into reputation effect and deterrent effect and conclude that firm reputation is probably a more important driver which caused partners to improve audit quality of the firm after individual sanction actions. Two, it helps regulators gain more knowledge about relationships between sanction enforcements against an individual auditor and audit quality of his/her entire 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 accruals after individual auditor sanctions. Our results provide evidence that Big N firms as a group make better improvement after individual auditor disciplinary actions, but not every Big N firm does so.

The following section will review previous research and develop research hypotheses. We will then discuss the research methodology and summarize the empirical findings. The final section of the paper will contain a conclusion of our research.

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 an 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 Stewardship

(Monitoring) Hypothesis states that the principal of a corporation has incentive to monitor his agent, because there is information asymmetry between the principal and the agent and hence, the principal is willing to undertake monitoring activities to protect himself from dysfunctional decisions made by the agent. One of the most widespread monitoring activities is to hire a professional third party to assure the reliability of the information presented in financial statements. In addition to competent professional knowledge and proficient skills, one imperative characteristic of this monitoring party is the 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 certify for the reliability of the financial statements (Balvers et al. 1988; Beatty 1989). Wilson and Grimlund (1990) conclude that the 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 firms, and individual auditors, 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 attempt to improve their firm's professional image and audit quality so as to reverse the course 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 of a fellow auditor may also explain the reason for the audit quality improvement found thereafter in the named audit firm.

Based on above statements, 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 extend to 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 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. In sum, prior studies presume Big N audit firms provide higher audit quality.

Big N firms not only are regarded as high audit quality in academic literature, but generally enjoy superior reputation in practice. It is understandable that Big N firms have stronger reputation effects than non-Big N firms. In other words, Big N firms are expected to show great incentive to make more 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 Big N firms make greater improvement in firm audit quality relative to non-Big N firms, following the announcement by the regulatory authority of an enforcement decision against a fellow individual auditors.

Above statements lead to hypotheses 3a and 3b:

H3a: After an enforcement decision against an individual auditor of a Big N firm is released, for all Big N firms as a group, the audit quality of the sanctioned auditor's firm is significantly improved.

H3b: After an enforcement decision against an individual auditor of a non-Big N firm is released, for all non-Big N firms as a group, 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 be equivalent to 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 an 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 firm 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 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 stayed 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.

RESEARCH DESIGN

Measurement of audit quality

Audit quality is defined as the joint probability of detecting a breach in the client's accounting system and reporting the breach (DeAngelo 1981). That is, high quality audits discover misstated information with higher probability, and hence, the management attempts to prepare financial statements more upstanding for dreading the auditors. In other words, high audit quality is demonstrated by the ability of the auditors to restrict the audit client using discretionary accruals to reach certain intentions and to restrain earnings management further (Becker et al. 1998). Recently, many researchers have begun to argue that companies may employ special tools, other than discretionary accruals, to manipulate earnings numbers. We summarize 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. Kothari et al. (2005) argue that the misspecification problem is mitigated by performance-matching 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 following regressions.

Data sources and sampling

Either the Financial Supervisory Commission itself or the CPA Sanction Committee, which is authorized by FSC, 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 released auditor enforcements during the period 1997 to 2007, and exclude cases whose sanction reasons are not relevant to financial auditing related issues or whose associated audit firms fail to exist any more when the enforcement actions are finally released. This paper includes the sanction announcement for one individual auditor once in one year. More specifically, if there are two or more

enforcement releases for one auditor in one year, we select only the first sanction enforcement for this auditor in that year.

Because we intend to examine the improvement on audit quality of the firm after an individual CPA sanction enforcement is released, 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 auditor enforcement release year[3]. 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 select 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

[3] 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.

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 in the same audit firm are aware of this investigation. Since these auditors may be 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 will 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 effect of reputation (deterrent) may start to impact auditors in Time III (and 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 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 Table2 here

We follow the industry classification system revised by Chang et al. (2003)[4]. Then we eliminate certain industries from the sample because their capital market decisions are fundamentally different and there exist major deviations in their

[4] Chang et al. (2003) classify companies into 10 major industries, including electronics, plastics and chemical, construction, textiles, electric machinery, etc.

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 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 modified cross-sectional Jones model and adjusted by financial performance. The equation is:

$$TA_{it} = \delta_0 + \delta_1(1 / ASSETS_{i-1}) + \delta_2 \triangle SALE_{it} + \delta_3 PPE_{it} + \delta_4 \mathrm{ROA}_{it} + \nu_{it} \qquad (1)$$

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;

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

$\triangle PPE$ = 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 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).

For this paper examines the improvement of firm audit quality after individual auditors are sanctioned (as H1), the following regression equation is estimated for a sample of 16,511 observations:

$$ABSDA_t \text{ or } DA_t = \beta_0 + \beta_1 POST_t + \beta_2 CPATYPE_t + \beta_3 POST*CPATYPE_t + \beta_4 MVE_t$$
$$+ \beta_5 BM_t + \beta_6 ZMESKI_t + \beta_7 CFFO_t + \beta_8 GROWTH_t + \beta_9 ABSTACC_t$$

$$+ \beta_{10} LAGROA_t + \beta_{11} LEV_t + \beta_{12} FINANCE_t + \beta_{13} INDBOARDR_t +$$

$$\beta_{14} DEVIATE_t + \beta_{15} BLOCK_t + \beta_{16} DUAL_t + \beta_{17\text{-}28} D\_CPAFIRM \qquad (2)$$

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; 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 an 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 also 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 for controlling 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's (1984), to control the 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 showes 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 when CEO is the chairman of the board (Beasley 1996, Erickson et al. 2006, Zhao and Chen 2008). *D_CPAFIRM* are the dummy variables for every audit firm to control the fixed effect.

Because H3a and H3b examine if the audit quality of the sanctioned auditor's firm is significantly improved after individual sanction actions for Big N firms and non-Big N firms respectively, we estimate the following model to test the improvement using observations from Big N group and non-Big N group separately.

$$ABSDA_t \text{ or } DA_t = \beta_0 + \beta_1 POST_t + \beta_2 MVE_t + \beta_3 BM_t + \beta_4 ZMESKI_t + \beta_5 CFFO_t + \beta_6 GROWTH_t + \beta_7 ABSTACC_t + \beta_8 LAGROA_t + \beta_9 LEV_t + \beta_{10} FINANCE_t + \beta_{11} INDBOARDR_t + \beta_{12} DEVIATE_t + \beta_{13} BLOCK_t + \beta_{14} DUAL_t + \beta_x D\_CPAFIRM \quad (3)$$

where:

D_CPAFIRM= dummy variables for every audit firm to control the fixed effect. The suffix of the coefficient of *D_CPAFIRM*, x, is 15-20 and 15-19 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.

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. For H3a and H3b, We can infer that there are differences between Big N and non-Big N firms, and some Big N firms improve their audit

quality significantly. Furthermore, for H4, different reactions among Big N firms are observed. Panel B of Table 3 presents these values on the signed *DA*. 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 presents 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, significant changes in financing activities and higher *LAGROA*. 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 he 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 asymmetric relationships between the independent variables and positive and 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) and negative (income-decreasing) *DA* and estimates the regression models separately on these two samples. All four models are highly significant and have adjusted R^2s between 32.90 percent and 71.96 percent.

If reputation effect and deterrent effect work, these effects can make audit firms provide higher audit quality after auditor sanction enforcements are released; therefore, we expect lower unsigned (absolute) amounts of *DA* will be found thereafter (Carey and Simnett 2006; Myers et al. 2003; Frankel et al. 2002; Reynolds

and Francis 2001; Francis et al. 1999). However, *POST* is insignificantly positive and does not support our H1. In the signed *DA* regression, *POST* is positive and significant, which represents that other non-sanctioned auditors either do not feel vigilant or make no improvement after sanction enforcement. That is, in the full sample, there is no significant reputation and deterrent effect on firms when sanctions are enforced against individual auditors.

The *CPATYPE* variable is insignificant in four *DA* regressions, and only show negative coefficient in income-decreasing *DA* regression. This result shows that Big N auditees and non-Big N auditees are similar in pre- and post-sanction periods.

Therefore, we focus on audit quality improvements of Big N firms. The negative and insignificant *POST*CPATYPE* interaction term in unsigned *DA* regression shows that Big N firms do not improve their audit quality significantly after sanction actions. However, in signed *DA* regression, *POST*CPATYPE* is negative and significant. As our H2 conjectures, quality improvement of Big N firms is different from non-Big N firms. We can draw the conclusion that after disciplinary actions are released Big N firms improve audit quality because they possess greater reputation and reputation effect dominates in the post-sanction behavior of fellow auditors.

All control variables are significant in at least two regressions. Except for *DEVIATE*, other control variables consist with predicted signs in *ABSDA* regression.

The coefficients on *ZMESKI* and *CFFO* are significant in four regressions, and negative on *CFFO* in all specifications, consistent with findings in Myers et al. (2003). *LEV* and *FINANCE* are significant in almost all regressions, and show that the change of discretionary accruals is influenced by the managers when companies borrow money and issue stocks. Corporate governance variables are also related to discretionary accruals significantly.

Insert Table 6 here

Since we infer that Big N firms have stronger reputation incentives to improve their 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 examine the coefficient on *POST* for the Big N group firms. The explanatory power decreases slightly, except for negative *DA* regression.

POST is significantly negative in *ABSDA* and income-increasing regressions; as to income-decreasing regression, *POST* is significantly positive. That is, not only *ABSDA* is lower and significant but income-increasing and income-decreasing regressions show clients of Big N firms tend to decrease the magnitude of *DA* significantly, hence, we can infer that, after sanction, 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 release on non-Big N firms. *POST* is positive and significant only in signed *DA* regression. Our result 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 effect than their Big N counterparts; therefore, demonstrate less incentive to improve audit quality of the firm after the release of fellow auditor enforcement actions.

Insert Table 8 here

In Table 9, we estimate model equation (3) without audit firm fixed effect variables and using the absolute values of discretionary accruals. The variable *POST* is not significantly negative for each Big N firm. In the two Big N firms with positive

signs, one even shows significant deterioration after auditor sanction enforcement. Accordingly, our results support H4 and provide evidence that not every Big N firm improves its quality thereafter. In other words, these results show that not all Big N firms have identical reaction 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

Overall, we find no evidence to support that individual auditor sanction enforcements are associated with subsequent improvement on audit quality of all audit firms. That is, although the reputation effect and deterrent effect provide incentives to improve audit firm quality after individual auditor sanction is released, the quality of all audit firms, including Big N and non-Big N firms, does not improve significantly. Furthermore, we infer that reactions of Big N firms are different from non-Big N firms because Big N firms have greater reputation effect. And, our result indicates that Big N firms improve their quality thereafter. To test the 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. These empirical results also indicate that Big N firms show significant improvement as a result of the more powerful reputation effect in Big N firms. Finally, we find not every Big N firm improves its audit quality after individual CPA sanction enforcements are released.

Sensitivity Analyses

We conduct several robustness tests to confirm empirical results. There are two sanction authorities in Taiwan, i.e. the Financial Supervisory Commission, Executive Yuan (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 first rerun the primary analysis including a dummy variable for sanction actions decreed directly by FSC. *POST* is negative related to *ABSDA* with 0.01 significant level in full sample and Big N sample but not non-Big N sample. Consistent with our main results, Big N audit firms receive more auditor sanction effect, i.e. reputation effect, than non-Big N audit firms do, which is.. Moreover, *FSC* and *POST*FSC* significantly affect all kinds of discretionary accruals in full and Big N sample, but not in non-Big N sample. 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 auditees of sanction enforcements decreed by FSC show more conservative accruals after disciplinary actions are

released.

After the Sarbanes-Oxley Act, enacted 2002/07/30, the responsibilities of management and auditors concerning credibility of financial statements become more stringent. Some may argue that post-SOX enforcement announcements are more powerful. Therefore, we add *SOX* control variable, which equals to 1 for sanction enforcements released in post-SOX period and 0 for pre-SOX period, to our regressions. Furthermore, we also include an additional interaction term between *POST* and *SOX*, i.e. *POSTSOX*. *POST* shows significantly and negatively related to *ABSDA* in full sample and Big N sample, but not in non-Big N sample. *SOX* is negative and significant in ABSDA regressions in full sample and Big N sample. *ABSDA* are lower after SOX. The interaction control variable *POSTSOX* is negative significantly ($p < .01$) in signed *DA*, income-increasing *DA* and income-decreasing *DA* regressions, but significantly positive in absolute value *DA* regression. That is, in post-SOX period, auditors become more conservative and avoid using income-increasing discretionary accruals after sanction enforcements are released.

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 firms denoted as both pre- and post-sanction in the same year. There are six audit firm/year with dual classification and 4,427

company/year observations are involved. Hence, we eliminate these six firm/years, i.e. 4,427 observations, from our sample. The sign and significant level of reduced sample (sample size decreases to 11,812 in absolute value *DA* and *DA* regressions, 5,911 and 5,901 in income-increasing and income-decreasing *DA* regressions respectively) are identical to Table 6, 7 and 8 except *POST* is significant and positive in signed *DA* regression in Big N sample.

In our sample, *BM* and *GROWTH* have some extreme large values. Hence we drop top one percent of these two variables, and re-run regressions with reduced sample of 15,922 companies. And these results are similar with our prior results. Thus, our findings are not influenced by the extreme values of *BM* and *GROWTH*. In summary, based on the sensitivity analyses performed, the reported results appear robust.

CONCLUSIONS

In this study, we examine the improvement on the audit quality of entire firm after an individual auditor sanction is released. Since many countries in the world enforce disciplinary actions on individual auditors, it is important for the regulators to know the impact of individual sanctions on the entire firm. Cases of Taiwanese auditor sanction enforcements during 1997 – 2007 are observed, and the absolute

values of performance-adjusted discretionary accruals are used to proxy for audit quality.

The results show that the audit quality in full sample, including all Big N and non-Big N firms, is not improved significantly after sanction enforcements are released. Furthermore, based on the assumption that Big N firms have greater reputation effect than their non-Big N counterparts, our H2 conjectures that the reactions of Big N firms are different from non-Big N firms. In separated samples, our results support H2 and indicate Big N firms improve their quality significantly. Conversely, 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 more 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 sanction 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 Big N firms make significant improvement in audit quality after fellow partner enforcement actions. Our

explanation is that reputation effect is a more powerful driver for quality improvement, and Big N firms have greater reputation incentive than non-Big N firms to improve audit quality after such enforcement actions are released. Our study also provides some useful information for regulators in Taiwan. Under the current individual sanction system, significant quality improvements are observed only for Big N firms.

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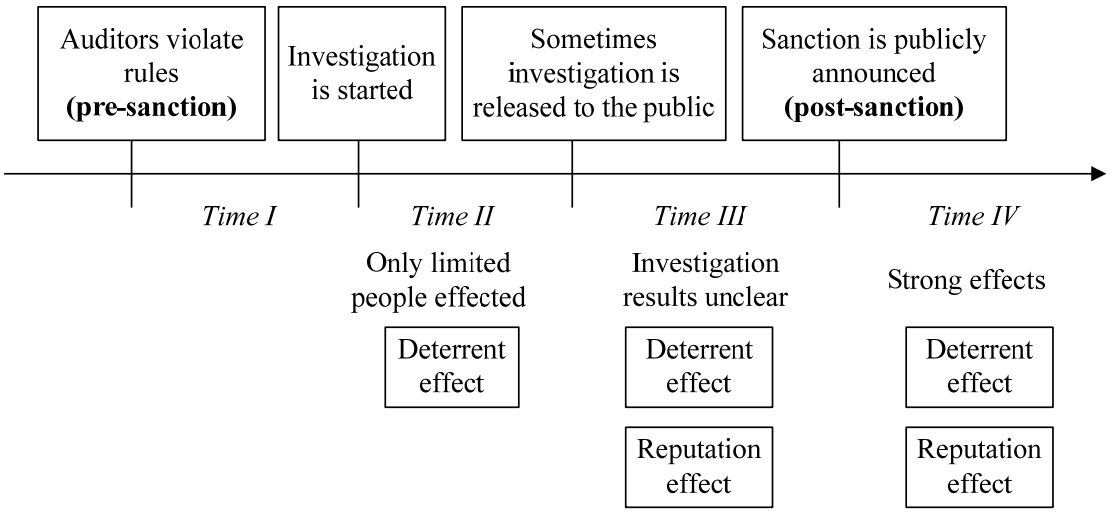

Figure 1

Timeline for Auditor Sanction Progress

Table 1

Number of Enforcement Cases by Firm and Year of Sanction Release

Associated firm at time of violation \ Year of sanction release	1997	1999	2000	2001	2002	2003	2004	2005	2006	2007	Total
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
Total	2	2	7	2	4	2	13	9	5	12	58

Table 2

Corresponding Pre- and Post-Sanction Sample Size by Firm

	number of sanction	corresponding sample size		
CPA firm	**enforcements**	**pre-sanction**	**post-sanction**	**total**
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
total	58	6,072	10,167	16,239

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	corresponding sample size		*ABSDA* mean		difference test for *ABSDA*		
	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[†]	N/A[†]
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

[†]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

	corresponding sample size		*DA* mean		difference test for *DA*		
CPA firm	**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[†]	N/A[†]
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

[†]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

pre-sanction(N=6072)				
Variable	**Mean**	**Std. Dev.**	**Min**	**Max**
ABSDA	0.0922	0.1238	0.0000	1.5135
DA	0.0023	0.1543	-1.4230	1.5135
MVE	14.8972	1.5610	6.9078	20.9755
BM	2.2259	25.6411	0.0444	1111.6930
ZMESKI	-35.8835	46.2208	-216.2770	239.2330
CFFO	0.0563	0.1310	-1.0788	0.7268
GROWTH	0.1871	0.8734	-0.9958	29.2992
ABSTACC	0.0858	0.1042	0.0000369	1.613957
LAGROA	0.0855	0.0993	-0.3892	0.7055
LEV	0.4032	0.1576	0.0207	0.9243
FINANCE	0.5585	0.4966	0.0000	1.0000
INDBOARDR	0.0777	0.1374	0.0000	0.6667
DEVIATE	2.4569	9.5738	0.0000	359.5700
BLOCK	0.8452	0.3618	0	1
DUAL	0.3139	0.4641	0	1
post-sanction(N=10167)				
Variable	**Mean**	**Std. Dev.**	**Min**	**Max**
ABSDA	0.0860	0.1029	0.0001	1.5559
DA	0.0027	0.1341	-0.7485	1.5559
MVE	14.5911	1.7046	6.9078	21.1587
BM	7.6078	127.9018	-0.7069	5248.4760
ZMESKI	-40.0286	49.6302	-227.3742	207.9854
CFFO	0.0576	0.1415	-1.5129	0.7224
GROWTH	0.1955	0.7237	-0.9958	40.9109
ABSTACC	0.0945	0.1086	0.0000369	1.523974
LAGROA	0.0922	0.1023	-0.3892	0.9217
LEV	0.4120	0.1641	0.0155	1.1124
FINANCE	0.5713	0.4949	0.0000	1.0000
INDBOARDR	0.1329	0.1596	0.0000	0.6000
DEVIATE	2.3850	9.7309	0.0000	267.7100
BLOCK	0.8928	0.3094	0	1
DUAL	0.3244	0.4682	0	1

Table 4 (continued)

Panel B: Descriptive Statistics by CPA Firm type

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

Table 4 (continued)

Panel C: Descriptive Statistics for full sample

pool sample (N=16239)				
Variable	**Mean**	**Std. Dev.**	**Min**	**Max**
ABSDA	0.0883	0.1112	0.0000	1.5559
DA	0.0025	0.1420	-1.4230	1.5559
MVE	14.7055	1.6589	6.9078	21.1587
BM	5.5955	102.4415	-0.7069	5248.4760
ZMESKI	-38.4787	48.4236	-227.3742	239.2330
CFFO	0.0571	0.1376	-1.5129	0.7268
GROWTH	0.1924	0.7830	-0.9958	40.9109
ABSTACC	0.0912	0.1071	0.0000369	1.613957
LAGROA	0.0897	0.1012	-0.3892	0.9217
LEV	0.4087	0.1618	0.0155	1.1124
FINANCE	0.5665	0.4956	0.0000	1.0000
INDBOARDR	0.1123	0.1541	0.0000	0.6667
DEVIATE	2.4119	9.6722	0.0000	359.5700
BLOCK	0.8750	0.3307	0	1
DUAL	0.3205	0.4667	0	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
D_CPAFIRM = dummy variables for every audit firm to control the fixed effect.

Table 5
Pearson Correlation Matrices

	POST	*CPATYPE*	*MVE*	*BM*	*ZMESKI*	*CFFO*	*GROWTH*	*ABSTACC*	*LAGROA*	*LEV*	*FINANCE*	*INDBOARDR*	*DEVIATE*	*BLOCK*	*DUAL*
POST	1														
CPATYPE	0.0113	1													
MVE	-0.0893*	0.0003	1												
BM	0.0254*	0.0018	-0.1844*	1											
ZMESKI	-0.0414*	-0.0479*	-0.2972*	-0.0308*	1										
CFFO	0.0045	0.0491*	0.1619*	0.0165*	-0.4570*	1									
GROWTH	0.0052	0.0254*	0.0732*	0.0362*	-0.1677*	-0.0089	1								
ABSTACC	0.0391*	0.0099	-0.0608*	-0.0056	0.0650*	-0.4198*	0.0865*	1							
LAGROA	0.0323*	0.0549*	0.2296*	0.0251*	-0.6859*	0.3772*	-0.0072	0.0025	1						
LEV	0.0263*	0.0552*	-0.0934*	0.0028	0.3096*	-0.3476*	0.0366*	0.1832*	-0.2733*	1					
FINANCE	0.0125	0.0127	-0.0437*	0.0220*	-0.0771*	-0.012	0.0607*	0.1068*	0.1283*	-0.1271*	1				
INDBOARDR	0.1736*	0.1011*	-0.1551*	0.0511*	-0.2053*	0.0988*	0.0517*	0.0643*	0.2673*	0.0172*	0.0976*	1			
DEVIATE	-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		
BLOCK	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	
DUAL	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

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

Table 6

OLS Regression Results for H1 (Full Sample)

$$ABSDA_t \text{ or } DA_t = \beta_0 + \beta_1 POST_t + \beta_2 CPATYPE_t + \beta_3 POST*CPATYPE_t + \beta_4 MVE_t + \beta_5 BM_t + \beta_6 ZMESKI_t + \beta_7 CFFO_t + \beta_8 GROWTH_t + \beta_9 ABSTACC_t + \beta_{10} LAGROA_t + \beta_{11} LEV_t + \beta_{12} FINANCE_t + \beta_{13} INDBOARDR_t + \beta_{14} DEVIATE_t + \beta_{15} BLOCK_t + \beta_{16} DUAL_t + \beta_{17\text{-}28} D\_CPAFIRM$$

	predicted	ABSDA		DA		DA>0		DA<0	
Variables	**sign**	**Estimated Coefficient**	**P-value**	**Estimated Coefficient**	**P-value**	**Estimated Coefficient**	**P-value**	**Estimated Coefficient**	**P-value**
Intercept	?	0.0169	0.4810	-0.0369	0.1690	0.0129	0.0610*	-0.0043	0.8880
POST	-	-0.0074	0.2700	0.0134	0.0730*	-0.0151	0.0600*	0.0167	0.0890*
CPATYPE	-	0.0238	0.3040	0.0224	0.3890	0.0475	0.8780	-0.0204	0.4810
*POST*CPATYPE*	-	-0.0075	0.2690	-0.0154	0.0440**	0.0005	0.9520	-0.0006	0.9520
MVE	-	-0.0009	0.0230**	0.0027	0.0000***	0.0001	0.7680	0.0008	0.1560
BM	-	0.0000	0.2660	0.0000	0.2640	0.0000	0.3640	0.0000	0.2220
ZMESKI	-	-0.0003	0.0000***	-0.0011	0.0000***	-0.0004	0.0000***	-0.0001	0.0220**
CFFO	-	-0.0247	0.0000***	-0.9236	0.0000***	-0.3814	0.0000***	-0.3562	0.0000***
GROWTH	+	0.0031	0.0000***	-0.0023	0.0100***	-0.0005	0.6570	-0.0051	0.0000***
ABSTACC	+	0.7083	0.0000***	0.0087	0.2370	0.0060	0.0000***	-0.4548	0.0000***
LAGROA	+	0.0087	0.3230	0.0522	0.0000***	0.0358	0.0010***	0.0196	0.1190
LEV	+	0.0182	0.0000***	-0.0311	0.0000***	-0.0209	0.0000***	-0.0426	0.0000***
FINANCE	+	0.0081	0.0000***	-0.0006	0.6930	0.4592	0.0000***	-0.0091	0.0000***
INDBOARDR	-	-0.0271	0.0000***	-0.0170	0.0010***	-0.0479	0.0000***	0.0205	0.0010***
DEVIATE	+	0.0000	0.6190	0.0000	0.9410	0.0000	0.6140	0.0001	0.2100
BLOCK	-	-0.0043	0.0240**	0.0076	0.0000***	0.0039	0.0950*	0.0107	0.0000***
DUAL	+	0.0039	0.0030***	-0.0046	0.0020***	0.0006	0.6600	-0.0071	0.0000***
D_CPAFIRM									
Sample size		16239		16239		7926		8313	
Adjusted R^2		50.80%		62.04%		71.96%		32.90%	
F-value (P-value)		621.85	0.0000***	983.86	0.0000***	783.38	0.0000***	151.97	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 7

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

$$ABSDA_t \text{ or } DA_t = \beta_0 + \beta_1 POST_t + \beta_2 MVE_t + \beta_3 BM_t + \beta_4 ZMESKI_t + \beta_5 CFFO_t + \beta_6 GROWTH_t + \beta_7 ABSTACC_t + \beta_8 LAGROA_t + \beta_9 LEV_t + \beta_{10} FINANCE_t + \beta_{11} INDBOARDR_t + \beta_{12} DEVIATE_t + \beta_{13} BLOCK_t + \beta_{14} DUAL_t + \beta_{15\text{-}20} D\_CPAFIRM$$

	predicted	ABSDA		DA		DA>0		DA<0	
Variables	**sign**	**Estimated Coefficient**	**P-value**	**Estimated Coefficient**	**P-value**	**Estimated Coefficient**	**P-value**	**Estimated Coefficient**	**P-value**
Intercept	?	0.0404	0.0000 ***	-0.0147	0.0690 *	0.0619	0.0000 ***	-0.0246	0.0180 **
POST	-	-0.0148	0.0000 ***	-0.0020	0.1770	-0.0144	0.0000 ***	0.0160	0.0000 ***
MVE	-	-0.0010	0.0230 **	0.0026	0.0000 ***	0.0000	0.9930	0.0008	0.1880
BM	-	0.0000	0.2920	0.0000	0.3060	0.0000	0.3960	0.0000	0.2720
ZMESKI	-	-0.0003	0.0000 ***	-0.0011	0.0000 ***	-0.0003	0.0000 ***	-0.0001	0.0090 ***
CFFO	-	-0.0138	0.0180 **	-0.9199	0.0000 ***	-0.3666	0.0000 ***	-0.3667	0.0000 ***
GROWTH	+	0.0033	0.0000 ***	-0.0021	0.0230 **	-0.0002	0.8420	-0.0049	0.0000 ***
ABSTACC	+	0.7004	0.0000 ***	0.0098	0.1880	0.4618	0.0000 ***	-0.4470	0.0000 ***
LAGROA	+	0.0077	0.3880	0.0489	0.0000 ***	0.0365	0.0010 ***	0.0215	0.0890 *
LEV	+	0.0224	0.0000 ***	-0.0308	0.0000 ***	-0.0197	0.0000 ***	-0.0459	0.0000 ***
FINANCE	+	0.0082	0.0000 ***	-0.0001	0.9290	0.0062	0.0000 ***	-0.0089	0.0000 ***
INDBOARDR	-	-0.0261	0.0000 ***	-0.0181	0.0000 ***	-0.0468	0.0000 ***	0.0194	0.0020 ***
DEVIATE	+	-0.0001	0.4310	0.0000	0.6250	0.0000	0.7660	0.0001	0.0720 *
BLOCK	-	-0.0056	0.0040 ***	0.0087	0.0000 ***	0.0031	0.1820	0.0127	0.0000 ***
DUAL	+	0.0042	0.0020 ***	-0.0046	0.0020 ***	0.0016	0.3230	-0.0068	0.0000 ***
D_CPAFIRM									
Sample size		15642		15642		7610		8032	
Adjusted R^2		49.58%		61.69%		70.65%		33.58%	
F-value (P-value)		769.95	0.0000 ***	1260.36	0.0000 ***	916.63	0.0000 ***	203.99	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)

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

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	?	0.0861	0.1340	-0.0401	0.5580	0.0035	0.9630	-0.2031	0.0360 **
POST	-	-0.0067	0.4210	0.0210	0.0340 **	-0.0113	0.3050	0.0162	0.1770
MVE	-	-0.0042	0.2140	0.0067	0.0980 *	0.0040	0.3770	0.0129	0.0240 **
BM	-	-0.0001	0.0910 *	0.0001	0.5050	-0.0024	0.2540	0.0002	0.0350 **
ZMESKI	-	-0.0002	0.1240	-0.0004	0.0290 **	-0.0006	0.0060 ***	-0.0001	0.6520
CFFO	-	-0.2106	0.0000 ***	-1.0973	0.0000 ***	-0.5925	0.0000 ***	-0.2108	0.0100 ***
GROWTH	+	-0.0001	0.9950	-0.0399	0.0020 ***	0.0136	0.5040	-0.0118	0.3610
ABSTACC	+	0.7425	0.0000 ***	-0.1243	0.0190 **	0.3802	0.0000 ***	-0.5713	0.0000 ***
LAGROA	+	0.1636	0.0200 **	0.3300	0.0000 ***	0.0516	0.5700	-0.0832	0.4690
LEV	+	-0.0586	0.0170 **	-0.0354	0.2240	-0.0559	0.0660 *	0.1016	0.0170 **
FINANCE	+	0.0070	0.3920	-0.0228	0.0200 **	-0.0058	0.5790	-0.0129	0.3560
INDBOARDR	-	-0.0260	0.5700	0.0848	0.1210	0.0161	0.8170	0.1044	0.1010
DEVIATE	+	0.0004	0.4220	-0.0014	0.0130 **	-0.0005	0.4280	-0.0016	0.0190 **
BLOCK	-	0.0095	0.2930	-0.0050	0.6390	0.0127	0.2820	-0.0262	0.0500 **
DUAL	+	-0.0009	0.9140	-0.0143	0.1670	-0.0170	0.0880 *	-0.0227	0.1210
D_CPAFIRM									
Sample size		597		597		316		281	
Adjusted R^2		70.24%		69.27%		85.17%		21.53%	
F-value	(P-value)	75.03	0.0000 ***	71.71	0.0000 ***	101.47	0.0000 ***	5.04	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)

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

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