Rotate Back or Not after Mandatory Audit Partner Rotation?

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ABSTRACT

Many countries have implemented rules that require an audit partner to rotate off the audit of a specific client after a certain period of time in the belief that rotation will improve independence and will allow for a fresh look at the audit. The rules are either silent on whether or when a partner can rotate back or else they specify a cooling-off period after which the rotating-off partner can resume the audit. Using archival data from China, a country with a two-year cooling-off period, this paper explores whether audit quality is weakened by the audit partner rotation-back practice. We find that audit partners with a lengthy partner-client relationship are more likely to rotate back to their former client. We also find that rotation-back partners tend to treat former clients more favorably than non-rotation-back cases using modified audit opinions and discretionary accruals as proxies for audit quality. Furthermore, the rotation back of audit partners is associated with weakened audit quality in the second year of the cooling-off period. Overall, our findings offer preliminary explanations for and shed light on the consequences of rotation-back/non-rotation-back practice arising from mandatory audit partner rotation requirements and lend support to regulatory concerns on rotation-back practice among audit partners.

*Key Words***:** mandatory audit partner rotation; cooling-off period; rotate back; audit quality

Rotate Back or Not after Mandatory Audit Partner Rotation?

1. Introduction

Mandatory audit partner rotation is now required in many jurisdictions.[1] Rotation is seen as a potential means of enhancing auditor independence and audit quality by reducing partner-client familiarity and bringing in fresh perspectives.[2] However, the benefits of rotation could be lost if the previously rotating-off audit partner rotates back to the client. In 2003, the U.S. Securities and Exchange Commission (SEC 2003) expressed its concern about audit partner rotation-back practice in proposing a rule designed to strengthen auditor independence requirements:

> While the [Sarbanes-Oxley] Act specified that these two partners [the lead and concurring partners] were subject to rotation after five years, the Act is silent with regard to the time out period. One approach to the partner rotation rules could have been to preclude the partner from returning to the audit client after he or she rotates off to that engagement. … The Commission is adopting rules to require the lead and concurring partners to rotate after five years and, upon rotation, be subject to a five-year "time out" period. Because of the importance of achieving a fresh look to the independence of the audit function, we believe that a five-year time out period is appropriate for these two partners.

Prior to the implementation of the SEC 2003 rule, the American Institute of Certified Public Accountants (AICPA) adopted a two-year cooling-off professional practice standard (SEC 2003, footnote 123). After debating various approaches including the permanent barring of audit

[1] Based on an international survey by the GAO (2003, Appendix V), these jurisdictions include France, Germany, Japan, Singapore, Spain, the United Kingdom, and the United States. Australia, the Chinese mainland, and Taiwan also require audit partner rotation.

[2] There is a growing literature that examines the efficacy of audit partner rotation either from the partner-tenure perspective (Chi and Huang 2005; Carey and Simnett 2006; Chen et al. 2008; Manry et al. 2008) or from the perspective of the immediate (i.e., the first-year) effect of mandatory partner rotation (Hamilton et al. 2005; Chi et al. 2009).

partners from rotating back to a former client, the SEC settled on a five-year cooling-off period for lead and concurring audit partners, effective from May 6, 2003. Many professional entities including the AICPA argued for a shorter cooling-off period (SEC 2003, footnote 126). To strike a balance, the SEC (2003) requires that partners subject to rotation requirements other than the lead and concurring partner rotate after no more than seven years and be subject to a two-year time-out. The cooling-off period is shorter than five years in some other jurisdictions where the mandatory audit partner rotation requirement is in place. For example, a two-year cooling-off period is required in both Australia (Hamilton et al. 2005, p. 3, footnote 4) and China (China Securities Regulatory Commission (CSRC) 2003).

Motivated by the regulatory concern about audit partners rotating back, this study capitalizes on the natural laboratory setting of China, a country where audit partner rotation and rotation back rules apply, to explore the following issues: (1) whether there is a difference in audit quality between the pre-rotation off period and the two-year cooling-off period; (2) what determines whether or not the audit partner rotates back when the cooling-off period expires; and (3) whether audit quality is compromised when the rotating-off partner rotates back. Focusing our investigation on China, one of the few jurisdictions to require that two certified public accountants sign the published audit report,[3] allows us to identify audit partners and their rotation status for a given client.

Utilizing data from the mandatory audit partner rotation regime in China during the 2003-2006 period, we find that rotation-back partners tend to treat former clients more favorably than non-rotation-back cases using the propensity to issue modified audit opinions and

[3] According to the relevant Chinese regulations (and in normal situations), one of the two signing auditors must serve as the lead auditor in charge of field work and the other must be at least a deputy executive of the CPA firm and serve as the reviewer of the engagement. These two signing auditors are required to assume the same legal liabilities as each other (unless one can prove the contrary). We use the term "audit partner" to describe the signing auditor even if the audit firm is a limited liability company

discretionary accruals as proxies for audit quality. Furthermore, we find that the rotation back of audit partners is associated with weakened audit quality in the second year of the cooling-off period. We also find that the audit partner is more likely to rotate back if there is a greater degree of familiarity between partner and client and that the audit partner is less likely to rotate back if the client falls into the high–risk category, if the client offers a limited tenure for future audit work, or if the partner is from a Big 4 firm. Our findings offer preliminary explanations for and shed light on the consequences of rotation-back/non-rotation-back practice arising from mandatory audit partner rotation requirements. Our findings also lend support to concerns expressed by investors and regulators about rotation-back practice among audit partners.

Our paper makes several contributions to the extant auditing literature. For countries considering the adoption of mandatory audit rotation rules, our findings have regulatory policy implications for how best to evaluate the effect of mandatory audit rotation rules on audit quality. For countries where mandatory audit partner rotation requirements are in place, our findings have policy implications on the appropriate duration of the cooling-off period. International investors in China's capital market will also benefit from the insights our paper gives into how the Chinese audit market works.[4]

The rest of this paper is structured as follows. Section 2 describes the mandatory audit partner rotation requirement in China. Section 3 analyzes audit quality during the two-year cooling-off period. Section 4 presents the research design and results of an audit partner rotation-back determinant model. Section 5 examines the association between audit quality and rotation-back/non-rotation-back practices, and section 6 concludes the paper.

[4] In 2003, when the QFII (qualified foreign institutional investor) system was introduced to allow foreign investors to invest directly in China's domestic stock market, top international investment banks such as Citigroup, Credit Suisse First Boston, Goldman Sachs, HSBC, and Nomura Securities promptly applied for, and received, their licenses.

2. Mandatory Audit Partner Rotation in China

To enhance auditor independence and bring in a fresh perspective, the CSRC and the Ministry of Finance (MOF) of China jointly issued a mandatory audit partner rotation policy on October 8, 2003 which took effect from the 2003 annual audit. Specifically, the CSRC (2003) prohibits a signing auditor from providing audit services for the same listed company for more than five consecutive years and bars the signing auditor from resuming audit services for the entity concerned for at least two years after he or she rotates off.[5]

Audit reports in China record both the name of the audit firm and the names of the signing auditors. This allows us to use the financial auditing history of each listed Chinese company to identify whether a signing auditor has served for five consecutive years or more. For companies that have been listed for less than five years, we also check the names of the IPO signing auditors because regulations specify that the tenure for an IPO audit is three consecutive years.[6] As shown in Figure 1, we partition the mandatory rotation timeline into the pre-rotation period (PreMR), the mandatory partner rotation period (MR), and the post-mandatory-rotation period (PostMR). In our sample, for partners required to rotate in 2003 (the earliest year in which the regulations were in force), the first mandatory rotation or cooling-off year (MR(1)) is 2003, the second cooling-off year (MR(2)) is 2004, and the first post-cooling-off year (PostMR(1)) is 2005. In a similar fashion, partners who are required to rotate in 2004 have a cooling-off period of 2004 and 2005 and the first post-cooling-off period is 2006. For partners who are required to

[5] There is also one exception whereby if both of the signing auditors have provided audit services for the same entity for the same period of five consecutive years, one of them is allowed to extend his or her term as a signing auditor of the entity concerned by a maximum of one year.

[6] The CSRC (2003) requires that for companies that have recently been listed or are awaiting a listing, signing auditors must not provide audit services for the same initial public offering (IPO) entity for more than two consecutive years after the IPO. This two-year period follows on from the three years for which audited financial statements must be included in the IPO applicant's filing, thus giving partner tenure of 5 years. This requirement is consistent with the (U.S.) SEC Office of the Chief Accountant's interpretation that the signing auditor's term under rotation requirements includes the number of years for which audited financial statements are included in the IPO filing (SEC 2004, "Audit Partner and Partner Rotation" section, question 3).

rotate in 2005, we have only MR(1) and MR(2) observations, but no PostMR(1) observations, as our sample period ends in 2006.[7] In the PostMR period, the former audit partner may resume the audit (partner rotating-back) or may not (we call this "continuous cooling-off").

*** Please Insert Figure 1 Here ***

3. Audit Quality during the Two-year Cooling-off Period

3.1 Empirical Design

To examine the effect of rotating back on audit quality, we first need to identify companies audited by partners who rotate off and examine how this affects audit quality. Our first research question is thus whether there is a difference in audit quality during the two-year cooling-off period. Similar to Chi et al. (2009), we argue that the regulatory intention behind the mandatory partner rotation policy suggests a belief that audit quality is higher among clients audited during the cooling-off period than it is among clients audited during the pre-rotation period.

However, there is no consensus on the duration of the cooling-off period. As noted by Chi et al. (2009, endnote 15), Taiwan has no clear guidance on the cooling-off period after a mandatory partner rotation. Chen et al. (2008) report that over half the partners who rotated off in 2003 or 2004 rotated back onto the client after one year. Bamber and Bamber (2009) comment that a superficial partner rotation requirement is unlikely to have any effect on audit quality. Unlike Taiwan, the Chinese mainland requires a two-year cooling-off period. The effect of mandatory partner rotation with a specified cooling-off period could be different from that without such a clear provision because the incentives and behavior of newly introduced audit partners may differ under these two situations. We expect an improvement in audit quality in the first-year of the cooling-off period. By the second-year of the cooling-off period, some of the

[7] A number of new accounting standards became effective in 2007. To avoid the systematic confounding effect of different accounting standards, we end our sample period in 2006.

newly-introduced partners may believe that the rotated-off partner will resume the audit when the cooling-off period expires. This may lead to less audit effort and hence lower audit quality.

To assess the impact of cooling-off on auditor reporting behavior, we examine the propensity to issue modified audit opinions and record the level of discretionary accruals in the pre-mandatory rotation and cooling-off periods. Modified audit opinions, which are an important manifestation of different audit outcomes and variation in audit quality (Francis 2004), are commonly used as a proxy for audit quality in both the prior auditing literature (e.g., Chow and Rice 1982; Lennox 2000; Craswell et al. 2002; Lennox 2005) and China-related studies (e.g., DeFond et al. 2000; Chen et al. 2001; Chan et al. 2006; Wang et al. 2008; Chan and Wu 2008; Chen et al. 2010). Following this line of research, we use a modified audit opinion (MAO) as a proxy for audit quality. MAOs include unqualified opinions with explanatory notes, qualified, disclaimed and adverse opinions.

We construct the following modified audit opinion model to test the effect of mandatory partner rotation on audit quality during the cooling-off period:

$$\begin{aligned}\text{Logit p}(MAO=1) = {} & b_0+b_1 CoolOff_i+b_2 LTA+b_3 LEV+b_4 RECV+b_5 OPROA \\ & +b_6 Loss+b_7 PreMAO+b_8 Big4+b_9 LocTop10 \\ & +b_{10} StaOwn+b_{11} ListAge+YrDum+IndDum+\varepsilon \qquad (1)\end{aligned}$$

where the variables are defined as follows:

MAO	=	a dummy variable coded 1 for a modified audit opinion and 0 otherwise.
$CoolOff_i$	=	a dummy variable coded 1 if the observation belongs to the cooling-off year and 0 otherwise. i = 1 (2) for the first (second) cooling-off year.
LTA	=	the natural logarithm of total assets.
LEV	=	total liabilities divided by total assets.
RECV	=	accounts receivable divided by total assets.
OPROA	=	operating income divided by total assets.
Loss	=	a dummy variable coded 1 if the firm reports a net loss and 0 otherwise.
PreMAO	=	a dummy variable coded 1 if the client received a modified audit opinion in the previous year and 0 otherwise.
Big4	=	a dummy variable coded 1 if the audit firm is one of the Big 4 auditors and 0 otherwise.
LocTop10	=	a dummy variable coded 1 if the audit firm is one of the top 10 domestic auditors based on the total assets of listed clients and 0 otherwise.

StaOwn = a dummy variable coded 1 if the client is ultimately controlled by the government or a state-owned enterprise and 0 otherwise.
ListAge = the number of years since the initial public offering (IPO).
YrDum = a fiscal year dummy variable.
IndDum = an industry dummy variable based on the CSRC classification.

As the cooling-off period is designed to sever lengthy relationships between audit partners and their clients, we set $CoolOff_i$ as the experimental variable (coded 1 for a cooling-off period observation and 0 for a pre-rotation observation) where i takes the value of 1 (2) for the first (second) cooling-off year. We expect a positive coefficient for $CoolOff_i$, particularly for $CoolOff_1$.

Based on prior China-related studies (DeFond et al. 2000; Chen et al. 2001; Chan et al. 2006; Wang et al. 2008; Chen et al. 2010), we include *LTA*, *LEV*, *RECV*, *OPROA*, *Loss*, *StaOwn*, and *ListAge* to control for basic client characteristics such as client size, financial condition, financial results, state ownership, and listing age. To control for the effect of receiving a modified audit opinion in the prior year, we include *PreMAO* in the model (Monroe and Teh 1993). As prior research generally finds that brand name audit firms play a greater monitoring role in conducting an audit (Becker et al. 1998; Francis et al. 1999), we include *Big4* to control for the brand name auditors. However, because the Chinese auditing market is characterized by a low level of Big 4 auditor participation, we follow DeFond et al. (2000) to include a large local audit firm dummy variable *LocTop10* (coded 1 if the audit firm is one of the top 10 domestic auditors based on the total assets of listed clients and 0 otherwise), and also test the effect of partner rotation on non-Big 4 audit quality by excluding Big 4 observations. Finally, we include both year and industry dummies to control for any macroeconomic events that occurred during the sample period and certain industry-related correlated variables, which have been omitted.

In addition to MAOs, prior audit tenure and rotation literature has made extensive use of

discretionary accruals as a proxy for financial reporting and audit quality (e.g., Johnson et al. 2002; Myers et al. 2003; Chi and Huang 2005; Hamilton et al. 2005; Chen et al. 2008; Manry et al. 2008; Chi et al. 2009). We follow this line of research and use performance-adjusted modified Jones discretionary accruals (DAs) as a proxy for audit quality (Kothari et al. 2005; Blouin et al. 2007). Model (2) is used to estimate modified Jones DAs:

$$TACC_{it}/TA_{it-1} = \alpha_0+\alpha_1(1/TA_{it-1})+\alpha_2[(\Delta REV_{it} - \Delta RECV_{it})/TA_{it-1}]+\alpha_3(PPE_{it}/TA_{it-1})+\varepsilon_{it} \quad (2)$$

where:

$TACC_t$ = total accruals in year t, = operating income – cash flow from operations.
ΔREV_t = change in total revenue between year t and year t-1.
$\Delta RECV_t$ = change in accounts receivable between year t and year t-1.
PPE_t = net value of property, plant, and equipment at the end of year t.
TA_{t-1} = total assets at the end of year t-1.

We estimate Model (2) cross-sectionally in each year for each CSRC industry classification with at least eight observations. The required data are retrieved from the China Stock Market and Accounting Research (CSMAR) database. Following Kothari et al. (2005), we include an industry-year intercept (α_0) to mitigate heteroskedasticity and omitted scale effects. Discretionary accruals are defined as the error term from the above regressions. Following Kothari et al. (2005) and Blouin et al. (2007), we adjust the modified Jones discretionary accruals by subtracting the median industry-*OPROA* decile discretionary accruals, where *OPROA* is operating income over beginning total assets.

As investors and regulators are more concerned about income overstatements and auditors are thus unlikely to place as much weight on income-decreasing accruals as they are on income-increasing accruals (Becker et al. 1998; Kim et al. 2003; Hamilton et al. 2005; Caramanis and Lennox 2008; Manry et al. 2008), we use signed discretionary accruals as our dependent variable. The following model is constructed:

$$DA = b_0 + b_1 CoolOff_i + b_2 LTA + b_3 CashFlow + b_4 LEV + b_5 Big4 + b_6 LocTop10 + b_7 StaOwn + b_8 ListAge + b_9 IndGrow + YrDum + IndDum + \varepsilon \quad (3)$$

For Model (3), we follow prior studies (Myers et al. 2003; Blouin et al. 2007; Manry et al. 2008) in incorporating control variables including client size (*LTA*), cash flow from operating activities (*CashFlow*), financial leverage (*LEV*), auditor type (*Big4*), listing age (*ListAge*), industry growth (*IndGrow*), and year and industry dummies. We also include *StaOwn* to control for differences in the form of client ownership, and *LocTop10* to control for large local audit firms.

3.2 Empirical Results

Table 1 presents the sample selection process (Panel A) and the yearly sample composition (Panel B). As shown in Panel A, we initially identify 485 companies that underwent mandatory partner rotation in 2003, 2004, or 2005. We eliminate 30 companies whose audit partners should have rotated off for two years but rotated back one year early because they represent suspected cases of superficial partner rotation (Bamber and Bamber 2009).[8] We then exclude 76 companies for which both audit partners should have rotated off but one of them invoked the exemption article to stay[9] because a partner with a lengthy tenure with the client remained responsible for the audit in the first cooling-off year.

As shown in Panel B, 379 firms remain in our sample. We have 379, 379, and 341 observations in the one-year pre-rotation period, the first cooling-off year, and the second cooling-off year groups, respectively. The majority of the reduction in sample size in MR(2) is due to audit firm switches.

[8] These companies clearly violated the specified cooling-off requirement and we treat one-year rotations off as cases of superficial rotation.

[9] According to the CSRC (2003), if both of the signing auditors have provided audit services for the same entity for the same period of five consecutive years, one of them is allowed to extend his or her term as a signing auditor for the entity concerned by a maximum of one year.

*** Please Insert Table 1 Here ***

Table 2 provides the descriptive statistics for the main variables in our models during PreMR(-1), MR(1), and MR(2). The percentage of modified audit opinions is 4.0% in the PreMR(-1) sample and increases to 6.9% and 7.9% in the first and second mandatory-rotation years. We also find that financial leverage (*LEV*) increases and operating profitability (*OPROA*) decreases from PreMR(-1) to MR(1).

*** Please Insert Table 2 Here ***

Table 3 reports the regression results of the modified audit opinion model. The results show that the coefficient on $CoolOff_1$ is positive at the 10% significance level in the full sample and is significant at the 5% level in the non-Big 4 sub-sample. This suggests that new audit partners are more likely to issue modified audit opinions in MR(1) than are rotating-off partners in PreMR(-1). Table 4 lists the regression results of the discretionary accruals model. We find that the coefficient on $CoolOff_1$ is significantly negative ($p<0.05$) in both the full sample and the non-Big 4 sub-sample. This finding indicates that new audit partners are less likely to be associated with higher discretionary accruals in MR(1) than are rotating-off partners in PreMR(-1). Taken together, the results shown in Tables 3 and 4 lend support to the prediction that the first cooling-off period has a positive effect on audit quality.

*** Please Insert Tables 3 and 4 Here ***

Table 5 shows the regression results of both the audit opinion model (Panel A) and the DA model (Panel B) when the second-year cooling-off cases are compared with the first-year cooling-off cases. We require a paired comparison between the two groups of cases. Panel A shows that the coefficient on $CoolOff_2$ becomes negative in the full sample and is significant at the 10% level in the non-Big 4 sub-sample. This suggests that audit partners are less likely to

issue modified audit opinions in the second cooling-off year than in the first cooling-off year. Panel B shows that the coefficient on $CoolOff_2$ becomes significantly positive in both the full sample and the non-Big 4 sub-sample, suggesting that audit partners have a greater propensity to be associated with higher discretionary accruals in the second cooling-off year than in the first cooling-off year. The results shown in Table 5 imply that the positive effect of mandatory partner rotation on audit quality is temporary.

*** Please Insert Table 5 Here ***

4. Determinants of Audit Partner Rotation Back/Non-Rotation Back

4.1. Empirical Design

Our second research question examines the possible determinants of audit partner rotation-back vs. non-rotation-back practice. We construct the following probit model with variables that we identify as being associated with the audit partner's decision on whether or not to rotate back:

$$\begin{aligned}\text{Probit}\,(RotBack = 1) = {} & b_0 + b_1 IPOPtn + b_2 PtnTenr + b_3 HighRisk + b_4 StaOwn + b_5 LTA \\ & + b_6 SqSubs + b_7 BODSize + b_8 SBSize + b_9 IndDir \\ & + b_{10} AudCom + b_{11} Big4 + b_{12} Yr2006 + IndDum + \varepsilon \qquad (4)\end{aligned}$$

where the variables are defined as follows:

RotBack	=	a dummy variable coded 1 for a rotation-back client and 0 otherwise.
IPOPtn	=	a dummy variable coded 1 if the rotating-off audit partner served as the initial public offering (IPO) auditor for the client and 0 otherwise.
PtnTenr	=	the number of years for which the audit partner has served as the signing auditor for the client when he or she has to rotate off in line with the mandatory requirement.
HighRisk	=	a dummy variable coded 1 if the client suffers a loss, receives a modified audit opinion, or is subject to a regulatory sanction in any of the three years prior to the first post-cooling-off year and 0 otherwise.
StaOwn	=	a dummy variable coded 1 if the client is ultimately controlled by the government or a state-owned enterprise and 0 otherwise.
LTA	=	the natural logarithm of total assets.
SqSubs	=	the square root of the number of consolidated subsidiaries.

BODSize = the natural logarithm of the number of directors on the board.
SBSize = the natural logarithm of the number of members on the supervisory board.
IndDir = the proportion of independent directors on the board.
AudCom = a dummy variable coded 1 if the client has an audit committee and 0 otherwise.
Yr2006 = a dummy variable coded 1 for a 2006 observation and 0 for a 2005 observation.

We set the dependent variable, *RotBack*, as a dummy variable coded 1 if an observation belongs to the group of clients whose audit partners rotated back when the two-year cooling-off period expired. We set *IPOPtn* and *PtnTenr* as the two experimental variables. Prior studies conducted in other research settings have shown the importance of interpersonal ties in establishing and sustaining the auditor-client relationship (e.g., Seabright et al. 1992; Blouin et al. 2007; Lennox and Park 2007). The SEC (2003) is concerned that if a lengthy partner-client relationship has been established before the mandatory partner rotation, the rotating-off audit partner may be more likely to rotate back (and the client may request a rotation back). We use two proxies for a lengthy partner-client relationship. One proxy is whether the rotating-off audit partner is the IPO signing auditor (*IPOPtn*, coded 1 if yes). If the audit partner has served the client as the IPO signing auditor, the partner-client relationship is likely to be very close because an IPO audit is associated with the long process prior to a successful IPO in which partner and client work closely together to float the company on the stock exchange. The client is likely to feel very comfortable working with this audit partner and to want the partner to rotate back. The financial packaging that is common during Chinese IPOs (Aharony et al. 2000) also suggests that the engagement audit partners may well be familiar with and acquiescent to the client's earnings management or accounting preferences. The other proxy is audit partner tenure since the IPO (*PtnTenr*), i.e., the number of years for which the audit partner has served as the signing auditor for the client when he or she has to rotate off in line with the mandatory requirement. For the

first year of rotation (2003), the affected partners had served for at least five years (which may include the three years of the IPO period), although some had served for up to twelve years. The longer the audit partner tenure, the more familiar the audit partner is with the client. We expect a positive sign for both *IPOPtn* and *PtnTenr*.

The decision to rotate back can be affected not only by a lengthy partner-client relationship, but also by client desirability. We use two variables as proxies for client desirability. One proxy is whether the client presents a high level of risk. Risk avoidance theory and evidence from audit firm portfolio management research suggest that auditors normally avoid audit clients that fall into the high-risk category (Johnstone and Bedard 2004). If the client is risky, the rotating-off audit partner is less likely to be inclined to rotate back. If the client suffers a loss, receives a modified audit opinion, or is subject to a regulatory sanction in any of the three years prior to the first post-cooling-off year, we classify the client as highly risky (*HighRisk* = 1). We expect a negative sign for *HighRisk*.

The other proxy for client desirability is whether the client is controlled by a state-owned entity. The government sometimes forces listed companies controlled by the state to change auditor (SASAC 2004). Thus, audit firm tenure (and thus partner tenure) is less assured for these companies. This may make rotated-off partners less willing to rotate back as they face the uncertainty of losing the audit again if there is a switch of audit firm.[10] *StaOwn* is coded 1 if the client is controlled by a state-owned entity including a government agency. We expect a negative sign for *StaOwn*.

Mandatory auditor rotation normally results in the auditor incurring considerable start-up costs associated with gaining an understanding of the subject entity and conducting an effective

[10] Feedback from our interviews with CPA firms suggests that state-controlled companies are more likely to switch audit firms for regulatory reasons.

audit. The greater the start-up costs, the longer the adaptation process will be. Although this kind of problem is more severe in mandatory audit firm rotation, mandatory audit partner rotation within an audit firm is not immune from it. The new audit partners may be unwilling to accept clients whose audits entail significant start-up costs unless they are assured they will retain the client after the two-year cooling-off period expires. In light of this, rotation back is less likely when the start-up costs for the new partners are high. Client size and complexity have the most significant effects on the cost of an audit (e.g., Simunic 1980). We therefore use *LTA* (client size) and *SqSubs* (the square root of the number of consolidated subsidiaries) as proxies of the client's start-up costs.[11]

Recent experimental studies (Jennings et al. 2006; Kaplan and Mauldin 2008) suggest that the strength of corporate governance plays a role in information users' perceptions of the effectiveness of mandatory auditor rotation. Strong corporate governance may constrain close ties between client management and the audit partner, whereas weak corporate governance would do little to curtail the negative aspects of auditor-client familiarity. As discussed earlier, audit partner rotation back could arguably be perceived as one form of very close auditor-client ties. Companies with stronger corporate governance may thus be less willing to accept a switch back to the rotated-off partner. On the other hand, those charged with governance may perceive that audit quality improves with the level of audit partner familiarity with the client (and/or that strong governance weakens the 'familiarity' effects of long auditor tenure). We use four variables to proxy for the corporate governance strength of a company. Drawing from prior China-based literature (e.g., Firth et al. 2007), we consider the effect of board size (*BODSize*), supervisory

[11] As a counter-argument, large clients may be more desirable due to personal compensation and reputation considerations. We thus make no prediction on the sign on *LTA*. We do not use the number of segments in our research design due to the lack of consistent disclosure practices among most companies in our sample period. A formal Chinese accounting standard on segment reporting took effect from January 1, 2007.

board size (*SBSize*), the proportion of independent directors (*IndDir*), and the existence of an audit committee (*AudCom*) on the incidence of audit partner rotation back. Prior studies suggest that larger boards tend to be less effective than smaller boards (Yermack 1996; Vafeas 2000), possibly due to larger boards being fragmented and less likely to reach agreements among board members. As noted by Firth et al. (2007), listed Chinese companies operate a two-tier board structure: the first tier is the board of directors and the other tier is the supervisory board, which has an oversight or corporate governance role. The size of the supervisory board could have an impact on rotation-back status, although there is no theory or prior empirical evidence to guide us in predicting the sign on the variable. In the last few years, the Chinese regulators have formally required companies to have independent non-executive directors and have encouraged, but not required, an audit committee. Given the reasons stated above, we do not predict the signs of the corporate governance variables.

Prior research findings synthesized in recent literature reviews (Watkins et al. 2004; Bedard et al. 2008) generally show that brand name audit firms provide greater monitoring strength in conducting an audit. As audit partner rotation-back may give the appearance of over-familiarity with the client (and therefore reduces the auditor's independence and objectivity), audit partners from brand name audit firms may be less likely to rotate back. We use Big 4 auditors (*Big4*) as the proxy for brand name audit firms. Note, however, that because the international Big 4 have a much lower market share in China (in practice, Big 4 audits in China are carried out by an affiliated Chinese CPA firm), their impact on audit quality may be different to that in the West. Auditor concentration is far lower in China than in other countries and the pecking order among audit firms is much less established. Nevertheless, we still include the Big 4 as a variable in the model as they have a strong global reputation for high quality audits. We expect a negative sign

for *Big4*. We also include *LocTop10* to control for large local audit firms, and year and industry dummies.

4.2 Empirical Results

Table 6 describes the sample selection for observations available in PostMR(1) based on those available in MR(2). Panel A shows that the majority of the reduction in the sample is due to audit firm switches. Our final sample consists of 248 companies in the first post-cooling-off year. Panel B shows that for 115 (46.4%) of the 248 companies, the previously rotating-off audit partner rotated back when the two-year cooling-off period expired (the RB group), whereas for the other 133 companies (53.6%), the previously rotating-off audit partner did not rotate back (the NRB group). Untabulated statistics show that RB clients and NRB clients have similar industry profiles. The number of firms in each industry is representative of the overall distribution.[12]

*** Please Insert Table 6 Here ***

Panel A of Table 7 provides descriptive statistics for the variables in the audit partner rotation-back probit model. The univariate results show that RB clients are significantly smaller and less complex than their NRB counterparts; in contrast, NRB clients are more likely to be controlled by state-owned entities and to be associated with Big 4 firms. Univariate tests do not show any significant differences between RB and NRB clients in the proxies for partner-client familiarity (*IPOPtn* and *PtnTenr*) or in one proxy for client desirability (*HighRisk*).

Panel B of Table 7 presents the probit model regression results. The model chi-square is significant (p<0.001) and the model has an overall correct classification rate of 69.4%. All the coefficients show the expected signs. First, we find that both of the proxies for partner-client

[12] Although this implies that our main results are not likely to be biased by a particular industry, we nevertheless control for industry fixed effects in our tests.

familiarity (*IPOPtn* and *PtnTenr*) have significantly positive coefficients, which indicates that the audit partner is more likely to rotate back if he or she was the client's IPO signing auditor or has had longer auditor tenure since the IPO. The results for partner-client familiarity are economically meaningful. For example, a partner who was also the IPO partner (*IPOPtn*=1) is 17.5% more likely to rotate back at the end of the cooling-off period than a partner who was not the signing partner for the IPO audit (*IPOPtn*=0). Furthermore, one additional year of partner tenure increases the probability of rotating back by 4.9%. Second, the results indicate that both of the proxies for client desirability have negative coefficients, *HighRisk* being significant at the 5% level and *StaOwn* being significant at the 1% level. The evidence suggests that an audit partner is less likely to rotate back if the client is highly risky or is controlled by the state. Third, *LTA* has a negative and significant coefficient. This corroborates the notion that the greater the start-up costs, the less likely it is that the audit partner will rotate back. Fourth, we find that the coefficient on *BODSize* is significantly positive, while the other three corporate governance proxies (*SBSize*, *IndDir*, and *AudCom*) are not significant. . Overall, the results in Table 7 indicate that rotation-back practice among audit partners is likely to be predictable based on a number of factors that are consistent with social and economic rationales.

*** Please Insert Table 7 Here ***

5. Audit Quality Associated with Audit Partner Rotation Back

5.1 Empirical Design

Our third research question is whether there is a compromise in audit quality when the rotating-off partner rotates back. To see how rotation back affects audit quality, we partition the sample into RB and NRB groups. As our sample period allows us to examine the initial post-cooling-off year, we require paired observations during [MR(1), PostMR(1)] for each

company in the RB or NRB group. We set $CoolOff_2$ and *PostCOF* as experimental variables in models (5) and (6) and use the same control variables as those in models (1) and (3), respectively. The benchmark observations are those in the first cooling-off year. This benchmark is relevant to regulators and researchers because audit partner rotation back may be perceived to compromise the effect, if any, of mandatory rotation (which is subject to the audit carried out by the newly introduced audit partners). Regulators need some empirical evidence to determine an appropriate cooling-off period.

$$\begin{aligned}\text{Logit p}(MAO=1) = {} & b_0+b_1 CoolOff_2+b_2 PostCOF+b_3 LTA+b_4 LEV+b_5 RECV \\ & +b_6 OPROA+b_7 Loss+b_8 PreMAO+b_9 Big4+b_{10} LocTop10 \\ & +b_{11} StaOwn+b_{12} ListAge+YrDum+IndDum+\varepsilon \end{aligned} \quad (5)$$

$$\begin{aligned} DA = {} & b_0+b_1 CoolOff_2+b_2 PostCOF+b_3 LTA+b_4 CashFlow \\ & +b_5 LEV+b_6 Big4+b_7 LocTop10+b_8 StaOwn \\ & +b_9 ListAge+b_{10} IndGrow+YrDum+IndDum+\varepsilon \end{aligned} \quad (6)$$

As another supplemental test, we examine how mandatory rotation affects the cost to clients. As we do not know the internal costs associated with the audit, we base our analysis on the fee charged by the auditor. We draw on Simunic (1980) and Craswell et al. (2002) to identify the variables that influence audit fees. The cost analysis of partner rotation is conducted using the following model:

$$\begin{aligned} LAF = {} & b_0+b_1 CoolOff_1+b_2 LTA+b_3 SqSubs+b_4 LEV+b_5 RECV+b_6 OPROA \\ & +b_7 LOSS+b_8 MAO+b_9 Big4+b_{10} LocTop10+b_{11} StaOwn \\ & +b_{12} ListAge+YrDum+IndDum+\varepsilon \end{aligned} \quad (7)$$

$$\begin{aligned} LAF = {} & b_0+b_1 CoolOff_2+b_2 LTA+b_3 SqSubs+b_4 LEV+b_5 RECV+b_6 OPROA \\ & +b_7 LOSS+b_8 MAO+b_9 Big4+b_{10} LocTop10+b_{11} StaOwn \\ & +b_{12} ListAge+YrDum+IndDum+\varepsilon \end{aligned} \quad (8)$$

$$\begin{aligned} LAF = {} & b_0+b_1 PostCOF+b_2 LTA+b_3 SqSubs+b_4 LEV+b_5 RECV+b_6 OPROA \\ & +b_7 LOSS+b_8 MAO+b_9 Big4+b_{10} LocTop10+b_{11} StaOwn \\ & +b_{12} ListAge+YrDum+IndDum+\varepsilon \end{aligned} \quad (9)$$

where LAF is the natural logarithm of the annual audit fee. In model (7), we compare observations in PreMR(-1) with those in MR(1). In model (8), we compare observations in MR(1)

with those in MR(2). In model (9), we compare observations in PostMR(1) with those in the two-year cooling-off period (i.e., MR(1) and MR(2)), for RB and NRB groups respectively.

5.2 Empirical Results

Table 8 reports the regression results of the modified audit opinion model (Panel A) and the discretionary accruals model (Panel B). For the RB group, we find that both $CoolOff_2$ and *PostCOF* are significantly negatively associated with audit partners' issuance of modified opinions and are significantly positively associated with clients' discretionary accruals. However, for the continuous cooling-off group, the coefficients on $CoolOff_2$ and *PostCOF* are insignificant in both the audit opinion model and the discretionary accruals model.

These results indicate that the deterioration in audit quality in the second cooling-off year (as shown in Table 5) is driven by the rotation-back group and not by the continuous cooling-off group (i.e., the non-rotation-back group). For the RB group, it is likely that the new auditors in the second cooling-off period anticipate that the previously rotating-off partners are going to rotate back in the following year and are thus less motivated to carry out a high quality audit. Table 8 also shows that audit quality continues to deteriorate in the first post-cooling-off period in comparison with audit quality in the first cooling-off period when the previously rotating-off partners rotate back (i.e., the rotation-back group results). This evidence may imply that a two -year cooling-off period is not sufficient, at least in the case of China. Perhaps a five-year cooling-off period, as exists in the U.S., may be more appropriate..

*** Please Insert Table 8 Here ***

Table 9 reports the regression results of models (7)-(9). We do not observe any increase in audit fees in either of the two cooling-off periods. Interestingly, rotation back is associated with significantly higher audit fees (whereas the increase is less pronounced for the continuous

cooling-off group). Given the evidence presented in Table 8, we interpret this as an economic reward for the greater leniency shown by partners who rotate back to the former clients. In any event, cooling-off does not appear to be costly to the client.

*** Please Insert Table 9 Here ***

6. Conclusion

Mandatory audit partner rotation is now required in many jurisdictions. However, investors and regulators have expressed concerns about the practice whereby audit partners rotate back to their former clients. A short cooling-off period may be insufficient to sever the close ties between the rotated-off partner and the client. Using evidence of the mandatory audit partner rotation regime in China, we find that partners who rotate back to their former clients treat them more favorably than non-rotating-back cases based on modified audit opinions and discretionary accruals as proxies for audit quality. Furthermore, the rotation back of audit partners is even associated with compromised audit quality in the second cooling-off period. The evidence of deterioration in audit quality corroborates our findings on the determinants of rotation back among audit partners. We find that audit partners are more likely to rotate back if there is a greater degree of partner-client familiarity and are less likely to rotate back if the client is in the high-risk category, if the client offers a limited tenure for future audit work, or if the partner is from a Big 4 firm. Overall, our evidence is consistent with the concerns raised by investors and regulators about rotation-back practice among audit partners.

Our findings have implications for regulators in China and other jurisdictions where mandatory audit partner rotation requirements are in place. As discussed earlier, the SEC (2003) has imposed a longer cooling-off period (five years) than was previously the case. Based on our evidence, a short cooling-off period seems to be less justified than a longer one. In addition to

ensuring that the close ties between the rotating-off audit partner and the client are severed, a long cooling-off period may also increase the incentives of the newly introduced audit partner to expend more effort on the client from as early as the beginning of the cooling-off period. Regulators in jurisdictions with relatively short cooling-off periods may thus wish to consider implementing longer cooling-off periods.

Our findings also have implications for research that examines the effect of mandatory audit partner rotation. In particular, research designs should ideally differentiate between clients whose audit partners rotate back and clients whose audit partners do not to facilitate a finer assessment of the effect of mandatory partner rotation.

The results of this study are based on archival data from China. Given that non-Big 4 auditors are the main players in the Chinese auditing market, our evidence is more generalizable to smaller audit firms. We are aware that there are other notable differences in the institutional background and auditing regime for auditor rotations between various jurisdictions (e.g., a partner-visible auditing regime in China and Australia vs. a partner-invisible auditing regime in most markets including the United States; a single leading partner regime vs. a two leading partner regime). Readers should thus exercise caution in generalizing our evidence to other jurisdictions with mandatory audit partner rotation practices. In addition, we do not examine audit quality changes in a regime with a longer cooling-off period. Therefore, we cannot draw any strong inferences regarding whether the quality of an audit for a client whose audit partner rotates back will improve as the cooling-off period increases beyond two years. Moreover, we have the same difficulty in distinguishing the leading engagement partner from the reviewing partner as that encountered in prior related studies (e.g., Chen et al. 2008; Chi et al. 2009). Nevertheless, our study supplements the growing literature that focuses on partner-level auditor

independence issues (e.g., Carey and Simnett 2006; Blouin et al. 2007; Chen et al. 2008; Chi et al. 2009). More specifically, we contribute to the auditor tenure and mandatory rotation debate and related literature by employing a wider lens to examine audit partner rotation arrangements within audit firms and showing that such arrangements *ex post* reinforce the regulatory concern about close partner-client relationships.

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Figure 1
The timeline of mandatory partner rotation

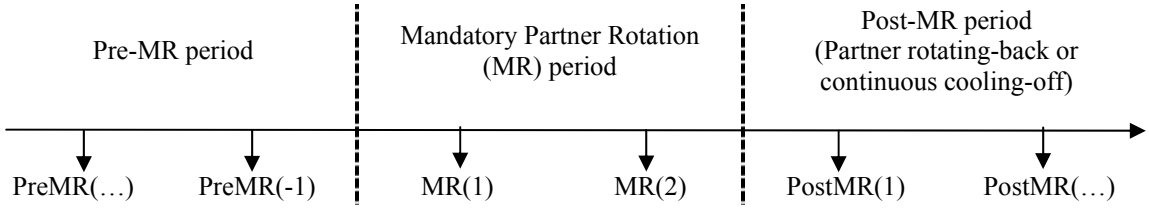

TABLE 1
Sample selection: Mandatory partner rotation and two-year cooling-off period

Panel A: Preliminary sample selection

	MR(1) =2003	MR(1) =2004	MR(1) =2005	Total N
Companies that underwent mandatory partner rotation	162	220	103	485
Less:				
Audit partners should have rotated off for two years but rotated back one year earlier	9	13	8	30
Both audit partners should have rotated off but one of them used the exemption article to remain	17	44	15	76
Sample companies at MR(1)	136	163	80	379

Panel B:Sample size at MR(2)

Event period	Sample size reduction	MR(1) =2003	MR(1) =2004	MR(1) =2005	Total N
PreMR(-1)		136	163	80	379
MR(1)		136	163	80	379
Less:	*Audit firm changed in the following year*	*7*	*17*	*10*	*34*
	The other partner should have rotated off in the following year but did not	*2*	*1*	*1*	*4*
MR(2)		127	145	69	341

TABLE 2
Descriptive statistics: Sample during [PreMR(-1), MR(2)]

	PreMR(-1) (N=379)	MR(1) (N=379)	MR(2) (N=341)	PreMR(-1) vs. MR(1) (379 vs. 379)	MR(1) vs. MR(2) (341 vs. 341)
	Number (Percent)	**Number (Percent)**	**Number (Percent)**	**Pearson Chi-square**	**Pearson Chi-square**
MAO	15 (4.0)	26 (6.9)	27 (7.9)	3.120*	1.120
Loss	28 (7.4)	41 (10.8)	47 (13.8)	2.695	2.368
PreMAO	21 (5.5)	15 (4.0)	17 (5.0)	1.050	1.341
Big4	25 (6.6)	25 (6.6)	18 (5.3)	0.000	0.029
LocTop10	116 (30.6)	103 (27.2)	92 (27.0)	1.085	0.183
StaOwn	272 (71.8)	263 (69.4)	230 (67.4)	0.515	0.244
	Mean (Median)	**Mean (Median)**	**Mean (Median)**	**t-statistic (z-statistic)**	**t-statistic (z-statistic)**
LTA	11.983 (11.902)	12.103 (11.969)	12.215 (12.103)	-1.751* (-1.748*)	-1.198 (-1.181)
LEV	0.458 (0.454)	0.493 (0.485)	0.520 (0.514)	-2.637*** (-2.632***)	-1.873* (-1.786*)
RECV	0.132 (0.112)	0.139 (0.119)	0.135 (0.115)	-0.970 (-0.569)	-0.105 (-0.036)
OPROA	0.018 (0.020)	0.012 (0.014)	0.007 (0.014)	1.409 (1.961**)	1.154 (1.236)
ListAge	5.846 (5.600)	6.846 (6.600)	7.863 (7.737)	-4.577*** (-4.467***)	-4.319*** (-4.260***)
DA [#]	0.002 (-0.000)	-0.004 (0.003)	0.000 (0.001)	0.785 (0.461)	-0.693 (-0.659)
CashFlow	0.054 (0.054)	0.049 (0.052)	0.055 (0.051)	0.573 (0.686)	-0.273 (-0.324)
IndGrow	1.248 (1.264)	1.263 (1.314)	1.220 (1.201)	-2.324** (-4.794***)	6.373*** (5.236***)

***, **, and * indicate two-tailed significance at the 0.01, 0.05, and 0.10 levels, respectively.

Variable definitions:

MAO = a dummy variable coded 1 for a modified audit opinion and 0 otherwise.
Loss = a dummy variable coded 1 if a firm reports a net loss and 0 otherwise.
PreMAO = a dummy variable coded 1 if a client received a modified audit opinion in the previous year and 0 otherwise.
Big4 = a dummy variable coded 1 if the audit firm is one of the Big 4 auditors and 0 otherwise.
LocTop10 = a dummy variable coded 1 if the audit firm is one of the top 10 domestic auditors based on the total assets of listed clients and 0 otherwise.
StaOwn = a dummy variable coded 1 if the client is ultimately controlled by the government or a state-owned enterprise and 0 otherwise.
LTA = the natural logarithm of total assets.
LEV = total liabilities divided by total assets.
RECV = receivables to total assets ratio.
OPROA = operating income to total assets ratio.
ListAge = the number of years since the initial public offering (IPO).
DA = performance-adjusted modified Jones discretionary accruals.

CashFlow = cash flow from operations to total assets ratio.
IndGrow = (industry total sales in year t) / (industry total sales in year t-1).
For the DA variable, the number of observations during [PreMR(-1), MR(2)] is reduced to 369, 369, and 332, respectively, due to the missing values when calculating performance-adjusted modified Jones discretionary accruals.

TABLE 3
The effect of the first cooling-off period: Regression results of modified audit opinion model

Dep. Var. = *MAO*	PreMR(-1) vs. MR(1)			
	Full sample		**Non-Big 4 sample**	
	Coefficient	**z-statistic**	**Coefficient**	**z-statistic**
Experimental variable				
CoolOff1	**0.971**	**1.77***	**1.259**	**2.12****
Control variables				
LTA	-0.442	-1.35	-0.331	-0.89
LEV	2.503	2.09**	2.580	1.88*
RECV	7.758	4.06***	8.470	4.31***
OPROA	-0.353	-0.07	0.130	0.03
Loss	2.070	2.68***	2.131	2.76***
PreMAO	1.900	2.73***	1.248	2.02**
Big4	2.217	2.13**	-	-
LocTop10	-0.082	-0.16	-0.023	-0.04
StaOwn	-0.619	-1.38	-0.573	-1.25
ListAge	0.046	0.62	0.020	0.22
Constant	-1.355	-0.38	-5.021	-1.25
Model Chi-square	123.55		108.02	
(p-value)	(0.000)		(0.000)	
Pseudo-R^2	0.473		0.470	
N	758		702	
N (PreMR(-1))	379		351	
N (MR(1))	379		351	

***, **, and * indicate two-tailed significance at the 0.01, 0.05, and 0.10 levels, respectively.
All reported z-statistics use standard errors corrected for clustering at the company level.
Regression model:

$$\text{Logit } p(MAO=1) = b_0+b_1 CoolOff1+b_2 LTA+b_3 LEV+b_4 RECV+b_5 OPROA+b_6 Loss+b_7 PreMAO +b_8 Big4+b_9 LocTop10+b_{10} StaOwn+b_{11} ListAge+YrDum+IndDum+\varepsilon$$

Variable definitions:

MAO = a dummy variable coded 1 for a modified audit opinion and 0 otherwise.
CoolOff1 = a dummy variable coded 1 for the first cooling-off period observations and 0 otherwise.
LTA = the natural logarithm of total assets.
LEV = total liabilities divided by total assets.
RECV = receivables to total assets ratio.
OPROA = operating income to total assets ratio.
Loss = a dummy variable coded 1 if a firm reports a net loss and 0 otherwise.
PreMAO = a dummy variable coded 1 if a client received a modified audit opinion in the previous year and 0 otherwise.
Big4 = a dummy variable coded 1 if the audit firm is one of the Big 4 auditors and 0 otherwise.
LocTop10 = a dummy variable coded 1 if the audit firm is one of the top 10 domestic auditors based on the total assets of listed clients and 0 otherwise.
StaOwn = a dummy variable coded 1 if the client is ultimately controlled by the government or a state-owned enterprise and 0 otherwise.
ListAge = the number of years since the initial public offering (IPO).

Year and CSRC-classification industry dummies are included in the regression.

TABLE 4
The effect of the first year of cooling-off: Regression results of discretionary accruals model

Dep. Var. = *DA*	PreMR(-1) vs. MR(1)			
	Full sample		**Non-Big 4 sample**	
	Coefficient	**t-statistic**	**Coefficient**	**t-statistic**
Experimental variable				
CoolOff1	**-0.017**	**-2.16****	**-0.017**	**-2.07****
Control variables				
LTA	0.011	2.13**	0.009	1.63
CashFlow	-0.960	-9.94***	-0.965	-9.58***
LEV	-0.113	-3.21***	-0.113	-3.10***
Big4	-0.011	-0.88	-	-
LocTop10	0.001	0.14	0.000	0.00
StaOwn	-0.003	-0.43	-0.003	-0.44
ListAge	-0.002	-1.47	-0.001	-1.13
IndGrow	0.052	0.95	0.052	0.91
Constant	-0.077	-0.87	-0.031	-0.33
Model F-statistic	28.09		26.79	
(p-value)	(0.000)		(0.000)	
Adj. R^2	0.447		0.442	
N	738		686	
N (PreMR(-1))	369		343	
N (MR(1))	369		343	

***, **, and * indicate two-tailed significance at the 0.01, 0.05, and 0.10 levels, respectively.
All reported t-statistics use standard errors corrected for clustering at the company level.
Regression model:

$$DA = b_0 + b_1 CoolOff1 + b_2 LTA + b_3 CashFlow + b_4 LEV + b_5 Big4 + b_6 LocTop10 + b_7 StaOwn + b_8 ListAge + b_9 IndGrow + YrDum + IndDum + \varepsilon$$

Variable definitions:

DA = performance-adjusted modified Jones discretionary accruals.
CoolOff1 = a dummy variable coded 1 for the first cooling-off period observations and 0 otherwise.
LTA = the natural logarithm of total assets.
CashFlow = cash flow from operations to total assets ratio.
LEV = total liabilities divided by total assets.
Big4 = a dummy variable coded 1 if the audit firm is one of the Big 4 auditors and 0 otherwise.
LocTop10 = a dummy variable coded 1 if the audit firm is one of the top 10 domestic auditors based on the total assets of listed clients and 0 otherwise.
StaOwn = a dummy variable coded 1 if the client is ultimately controlled by the government or a state-owned enterprise and 0 otherwise.
ListAge = the number of years since the initial public offering (IPO).
IndGrow = (industry total sales in year t) / (industry total sales in year t-1).

Year and CSRC-classification industry dummies are included in the regression.

TABLE 5
The effect of the second year of cooling-off: Regression results of modified audit opinion and discretionary accruals models

	MR(1) vs. MR(2)			
	Full sample		**Non-Big 4 sample**	
Panel A: Dep. Var. = *MAO*				
	Coefficient	**z-statistic**	**Coefficient**	**z-statistic**
Experimental variable				
CoolOff2	**-0.742**	**-1.55**	**-0.827**	**-1.77***
Control variables				
LTA	-0.021	-0.07	-0.073	-0.22
LEV	2.235	1.49	2.766	1.67*
RECV	4.597	1.64*	4.461	1.61
OPROA	-8.747	-2.10**	-6.851	-1.82*
Loss	2.036	2.80***	2.092	2.87***
PreMAO	2.709	2.90***	2.707	2.95***
Big4	0.870	1.00	-	-
LocTop10	0.083	0.19	0.120	0.28
StaOwn	-1.000	-1.89*	-0.928	-1.77*
ListAge	0.000	0.00	0.032	0.44
Constant	-3.693	-0.97	-3.758	-0.93
Model Chi-square	89.69		83.66	
(p-value)	(0.000)		(0.000)	
Pseudo-R^2	0.555		0.541	
N	682		638	
N (MR(1))	341		319	
N (MR(2))	341		319	
Panel B: Dep. Var. = *DA*				
	Coefficient	**t-statistic**	**Coefficient**	**t-statistic**
Experimental variable				
CoolOff2	**0.013**	**2.29****	**0.015**	**2.47****
Control variables				
LTA	0.004	0.92	0.003	0.57
CashFlow	-0.901	-10.44***	-0.911	-10.04***
LEV	-0.106	-3.12***	-0.107	-3.05***
Big4	-0.002	-0.15	-	-
LocTop10	-0.008	-0.95	-0.009	-1.07
StaOwn	0.001	0.17	0.000	0.07
ListAge	-0.001	-1.41	-0.002	-1.42
IndGrow	-0.061	-0.69	-0.069	-0.76
Constant	0.123	1.01	0.155	1.23
Model F-statistic	26.58		25.90	
(p-value)	(0.000)		(0.000)	
Adj. R^2	0.459		0.458	
N	664		620	
N (MR(1))	332		310	
N (MR(2))	332		310	

All reported z- or t-statistics use standard errors corrected for clustering at the company level.
Regression models:

$$\text{Logit } p(MAO=1) = b_0+b_1 CoolOff2+b_2 LTA+b_3 LEV+b_4 RECV+b_5 OPROA+b_6 Loss+b_7 PreMAO +b_8 Big4+b_9 LocTop10+b_9 StaOwn+b_{10} ListAge+YrDum+IndDum+\varepsilon$$

$$DA = b_0 + b_1 CoolOff2 + b_2 LTA + b_3 CashFlow + b_4 LEV + b_5 Big4 + b_6 LocTop10 + b_7 StaOwn + b_8 ListAge + b_9 IndGrow + YrDum + IndDum + \varepsilon$$

Variable definition:

CoolOff2 = a dummy variable coded 1 for the second cooling-off period observations and 0 otherwise.

For the model with *MAO* (*DA*) as the dependent variable, all the control variables are defined as in Table 3 (4).

TABLE 6
Further sample selection and descriptive statistics: Rotating back vs. Continuous cooling-off

Panel A: Sample size at PostMR(1)

Event period	Sample size reduction	MR(1) =2003	MR(1) =2004	Total N
MR(2)		127	145	272
Less:	*Audit firm changed in the following year*	*7*	*13*	*20*
	The other partner should have rotated off in the following year but did not	*0*	*2*	*2*
	The client was delisted in the following year	*1*	*1*	*2*
PostMR(1)		119	129	248

Panel B: Post-mandatory-rotation sample composition based on rotation-back status

	Rotation-back		Continuous cooling-off		Total N	
	Number	**Percent**	**Number**	**Percent**	**Number**	**Percent**
PostMR(1)	115	46.4	133	53.6	248	100

TABLE 7
Determinants of audit partner rotation-back

Panel A: Descriptive statistics

	***RotBack* = 1 (n=115)**	***RotBack* = 0 (n=133)**	**Test of differences**
Continuous variables	**Mean (Median)**	**Mean (Median)**	**t-statistic (Mann-Whitney Z)**
PtnTenr	5.191 (5)	5. 380 (5)	-0.631 (-0.204)
LTA	12.118 (12.053)	12.455 (12.402)	-2.853*** (-2.582***)
SqSubs	2.588 (2.449)	3.044 (2.828)	-2.144** (-1.734*)
BODSize	0.978 (0.954)	0.963 (0.954)	1.270 (1.516)
SBSize	0.595 (0.477)	0.608 (0.699)	-0.735 (-1.064)
IndDir	0.332 (0.333)	0.345 (0.333)	-1.689* (-1.383)
Categorical variables	**Number (Percent)**	**Number (Percent)**	**Pearson Chi-square**
IPOPtn	67 (58.3)	65 (48.9)	2.184
HighRisk	25 (21.7)	39 (29.3)	1.853
StaOwn	67 (58.3)	101 (75.9)	8.821***
AudCom	61 (53.0)	68 (51.1)	0.091
Big4	2 (1.7)	10 (7.5)	4.474**
LocTop10	42 (36.5)	30 (22.6)	5.838**

Panel B: Probit regression results

Dep. Var. = *RotBack*	**Expected Sign**	**Coefficient**	**z-statistic**	**dF/dx#**
Experimental variables				
IPOPtn	+	0.446	1.97**	0.175
PtnTenr	+	0.123	2.07**	0.049
Control variables				
HighRisk	-	-0.511	-2.35**	-0.196
StaOwn	-	-0.519	-2.77***	-0.205
LTA	-	-0.260	-2.21**	-0.103
SqSubs	-	-0.091	-1.50	-0.036
BODSize	?	2.526	2.26**	1.002
SBSize	?	-0.946	-1.38	-0.375
IndDir	?	-1.680	-1.06	-0.666
AudCom	?	0.028	0.16	0.011
Big4	-	-0.392	-0.76	-0.149
LocTop10	-	0.446	2.24**	0.176
Constant	?	1.509	0.97	
Model Chi-square		38.08		
(p-value)		(0.013)		
Pseudo-R^2		0.141		

N	248
Correct classification	69.4%

***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively (two-tailed).

dF/dx reports the change in the probability for an infinitesimal change in each independent, continuous variable and, by default, the discrete change in the probability for dummy variables.

Regression model:

$$\text{Probit}(RotBack = 1) = b_0 + b_1 IPOPtn + b_2 PtnTenr + b_3 HighRisk + b_4 StaOwn + b_5 LTA + b_6 SqSubs + b_7 BODSize + b_8 SBSize + b_9 IndDir + b_{10} AudCom + b_{11} Big4 + b_{12} LocTop10 + YrDum + IndDum + \varepsilon$$

Variable definitions:

RotBack	=	a dummy variable coded 1 for an *ex post* rotation-back client and 0 otherwise.
IPOPtn	=	a dummy variable coded 1 if the rotating-off audit partner served as the initial public offering (IPO) auditor for the client and 0 otherwise.
PtnTenr	=	the number of years for which the audit partner served as the signing auditor for the client when he or she had to rotate off following line with the mandatory requirement.
HighRisk	=	a dummy variable coded 1 if the client suffers a loss, receives a modified audit opinion, or is subject to a regulatory sanction in any of the three years prior to the end of the first post-cooling-off year and 0 otherwise.
StaOwn	=	a dummy variable coded 1 if the client is ultimately controlled by the government or a state-owned enterprise and 0 otherwise.
LTA	=	the natural logarithm of total assets at the end of the first post-cooling-off year.
SqSubs	=	the square root of the number of consolidated subsidiaries.
BODSize	=	the natural logarithm of the number of directors on the board.
SBSize	=	the natural logarithm of the number of members on the supervisory board.
IndDir	=	the proportion of independent directors on the board.
AudCom	=	a dummy variable coded 1 if the client has an audit committee and 0 otherwise.
Big4	=	a dummy variable coded 1 if the audit firm is one of the Big 4 auditors and 0 otherwise.
LocTop10	=	a dummy variable coded 1 if the audit firm is one of the top 10 domestic auditors based on the total assets of listed clients and 0 otherwise.

Year and CSRC-classification industry dummies are included in the regression.

TABLE 8
Consequences of rotation-back: Before-after analysis

	Rotation-back group [MR(1), PostMR(1)]		Continuous cooling-off group [MR(1), PostMR(1)]	
	Full sample	**Non-Big 4 sample**	**Full sample**	**Non-Big 4 sample**
Panel A: Dep. Var. = *MAO*	**Coefficient (z-statistic)**	**Coefficient (z-statistic)**	**Coefficient (z-statistic)**	**Coefficient (z-statistic)**
Experimental variables				
CoolOff2	**-3.012**	**-3.078**	**-1.105**	**-1.080**
	(-1.87*)	**(-1.99**)**	**(-1.34)**	**(-1.32)**
PostCOF	**-4.878**	**-4.714**	**0.181**	**0.210**
	(-1.73*)	**(-1.75*)**	**(0.15)**	**(0.18)**
Control variables				
LTA	0.971	1.125	-0.197	-0.147
	(1.83*)	(2.12**)	(-0.52)	(-0.36)
LEV	6.535	5.602	2.108	1.992
	(2.13**)	(1.96**)	(1.59)	(1.46)
RECV	-1.514	-2.034	3.202	3.132
	(-0.33)	(-0.44)	(0.94)	(0.90)
OPROA	-2.367	-3.432	-2.257	-2.272
	(-0.36)	(-0.57)	(-0.36)	(-0.36)
Loss	3.948	4.001	1.580	1.585
	(2.14**)	(2.24**)	(2.02**)	(2.05**)
PreMAO	4.379	4.197	2.907	2.887
	(2.08**)	(2.07**)	(3.90***)	(3.87***)
Big4	-[#]	-	-[#]	-
	-	-	-	-
LocTop10	0.533	0.508	-0.758	-0.746
	(0.62)	(0.53)	(-1.40)	(-1.38)
StaOwn	-1.670	-1.755	-0.384	-0.373
	(-1.27)	(-1.32)	(-0.66)	(-0.65)
ListAge	-0.064	-0.074	-0.004	-0.002
	(-0.55)	(-0.67)	(-0.05)	(-0.02)
Constant	-15.852	-17.148	-3.892	-4.442
	(-1.95*)	(-2.16**)	(-0.86)	(-0.94)
Model Chi-square	237.97	200.30	126.38	119.44
(p-value)	(0.000)	(0.000)	(0.000)	(0.000)
Pseudo-R^2	0.627	0.630	0.354	0.344
N	345	330	399	366
N (MR(1))	115	110	133	122
N (MR(2))	115	110	133	122
N (PostMR(1))	115	110	133	122
Panel B: Dep. Var. = *DA*	**Coefficient (t-statistic)**	**Coefficient (t-statistic)**	**Coefficient (t-statistic)**	**Coefficient (t-statistic)**
Experimental variables				
CoolOff2	**0.033**	**0.039**	**0.009**	**0.009**
	(2.62*)**	**(3.09***)**	**(0.86)**	**(0.84)**
PostCOF	**0.051**	**0.059**	**0.010**	**0.007**
	(2.59)**	**(3.02***)**	**(0.59)**	**(0.41)**

Control variables				
LTA	-0.003	-0.004	0.011	0.009
	(-0.57)	(-0.68)	(1.98**)	(1.62)
CashFlow	-1.002	-0.997	-0.934	-0.941
	(-6.36***)	(-6.01***)	(-10.19***)	(-9.85***)
LEV	-0.165	-0.165	-0.090	-0.093
	(-2.53**)	(-2.53**)	(-2.74***)	(-2.77***)
Big4	0.045	-	0.005	-
	(2.97***)	-	(0.26)	-
LocTop10	-0.002	-0.003	-0.010	-0.011
	(-0.23)	(-0.40)	(-0.99)	(-1.06)
StaOwn	0.002	0.003	-0.004	-0.008
	(0.17)	(0.30)	(-0.37)	(-0.71)
ListAge	-0.002	-0.002	-0.002	-0.002
	(-1.02)	(-0.89)	(-1.47)	(-0.98)
IndGrow	-0.020	-0.004	-0.062	-0.049
	(-0.30)	(-0.05)	(-0.57)	(-0.43)
Constant	0.166	0.147	0.040	0.047
	(1.31)	(1.13)	(0.28)	(0.31)
Model F-statistic	14.54	14.09	20.77	20.05
(p-value)	(0.000)	(0.000)	(0.000)	(0.000)
Adj. R^2	0.471	0.462	0.534	0.536
N	336	321	381	348
N (MR(1))	112	107	127	116
N (MR(2))	112	107	127	116
N (PostMR(1))	112	107	127	116

***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively (two-tailed).
All reported z- or t-statistics use standard errors corrected for clustering at the company level.
Regression models:

$$\text{Logit p}(MAO=1) = b_0+b_1 CoolOff2+b_2 PostCOF+b_3 LTA+b_4 LEV+b_5 RECV+b_6 OPROA+b_7 Loss +b_8 PreMAO+b_9 Big4+b_{10} LocTop10+b_{11} StaOwn+b_{12} ListAge +YrDum+IndDum+\varepsilon$$

$$DA = b_0+b_1 CoolOff2+b_2 PostCOF+b_3 LTA+b_4 CashFlow+b_5 LEV+b_6 Big4 +b_7 LocTop10+b_8 StaOwn+b_9 ListAge+b_{10} IndGrow+YrDum+IndDum+\varepsilon$$

Variable definitions:

CoolOff2 = a dummy variable coded 1 for the second cooling-off period observations and 0 otherwise.
PostCOF = a dummy variable coded 1 if the observation belongs to the first post-cooling-off year and 0 otherwise.

For the model with *MAO* (*DA*) as the dependent variable, all the control variables are defined as in Table 3 (4).
As *Big4* = 1 predicts failure perfectly in the modified audit opinion model for the full sample, the *Big4* variable is not included.

TABLE 9
Cost analysis of audit partner rotation: Regression results of audit fee model

Dep. Var. = *LAF*	PreMR(-1) vs. MR(1)	MR(1) vs. MR(2)	Rotation-back group: [MR(1), MR(2)] vs. PostMR(1)	Continuous cooling-off group: [MR(1), MR(2)] vs. PostMR(1)
	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)
Experiment variables				
CoolOff1	**-0.009**			
	(-0.30)			
CoolOff2		**0.023**		
		(0.77)		
PostCOF			**0.099**	**0.038**
			(3.02*)**	**(1.36)**
Control variables				
LTA	0.310	0.301	0.300	0.308
	(11.89***)	(11.32***)	(7.46***)	(8.87***)
SqSubs	0.089	0.090	0.089	0.071
	(6.92***)	(6.40***)	(3.62***)	(3.71***)
LEV	0.054	0.115	-0.137	0.049
	(0.45)	(0.98)	(-0.78)	(0.28)
RECV	0.027	0.086	-0.100	0.119
	(0.13)	(0.43)	(-0.29)	(0.39)
OPROA	-0.400	-0.366	-0.742	-0.558
	(-0.83)	(-0.74)	(-1.26)	(-0.78)
Loss	-0.086	-0.123	-0.118	-0.033
	(-1.35)	(-2.28**)	(-1.83*)	(-0.44)
MAO	0.169	0.063	0.128	-0.024
	(1.95*)	(0.89)	(1.52)	(-0.32)
Big4	0.624	0.686	0.550	0.856
	(4.91***)	(4.88***)	(3.18***)	(4.83***)
LocTop10	0.067	0.114	0.154	0.089
	(1.78*)	(2.98***)	(2.49**)	(1.45)
StaOwn	0.051	0.059	0.045	-0.019
	(1.45)	(1.68*)	(0.75)	(-0.45)
ListAge	-0.021	-0.015	-0.001	-0.011
	(-2.70***)	(-1.99**)	(-0.05)	(-0.83)
Constant	-0.203	-0.053	-0.076	-0.075
	(-0.68)	(-0.17)	(-0.16)	(-0.18)
Model F-statistic	36.89	34.34	16.56	36.16
(p-value)	(0.000)	(0.000)	(0.000)	(0.000)
Adj. R^2	0.568	0.586	0.568	0.720
N	712	614	273	330
N (PreMR(-1))	356			
N (MR(1))	356	307	91	110
N (MR(2))		307	91	110
N (PostMR(1))			91	110

***, **, and * indicate two-tailed significance at the 0.01, 0.05, and 0.10 levels, respectively.
All reported t-statistics use standard errors corrected for clustering at the company level.
Regression models:

$$LAF = b_0+b_1 CoolOff_1+b_2 LTA+b_3 SqSubs+b_4 LEV+b_5 RECV+b_6 OPROA+b_7 LOSS+b_8 MAO +b_9 Big4+b_{10} LocTop10+b_{11} StaOwn+b_{12} ListAge+YrDum+IndDum+\varepsilon$$

$$LAF = b_0+b_1 CoolOff_2+b_2 LTA+b_3 SqSubs+b_4 LEV+b_5 RECV+b_6 OPROA+b_7 LOSS+b_8 MAO +b_9 Big4+b_{10} LocTop10+b_{11} StaOwn+b_{12} ListAge+YrDum+IndDum+\varepsilon$$

$$LAF = b_0+b_1 PostCOF+b_2 LTA+b_3 SqSubs+b_4 LEV+b_5 RECV+b_6 OPROA+b_7 LOSS+b_8 MAO +b_9 Big4+b_{10} LocTop10+b_{11} StaOwn+b_{12} ListAge+YrDum+IndDum+\varepsilon$$

Variable definition:

LAF = the natural logarithm of annual audit fees.

All other variables are defined as in Tables 3, 5, 7, and 8.