Audit Report Lag, Audit Partner Rotation and Audit Firm Rotation: Evidence from Australia

Kam-Wah Lai
School of Accounting and Finance
The Hong Kong Polytechnic University
Hung Hom
Kowloon
Hong Kong
Email: aflkw@inet.polyu.edu.hk
Tel: 852 2766 6963
Fax: 852 2330 9845

Leo M. C. Cheuk
Department of Accountancy
City University of Hong Kong
83 Tat Chee Avenue
Kowloon Tong
Hong Kong
Email: accmcl@cityu.edu.hk.
Tel: 852 3442 6566
Fax: 852 2788 7944

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ABSTRACT

This paper examines the effect of audit partner rotation and various types (lateral, cross-up and cross-down) of audit firm rotation on audit report lags (ARL). Using data of 369 companies in 2001 in Australia where each audit report discloses the name of the audit engagement partner and firm, the trade-off between the stringency of audit timeliness and audit provisions suggested by Whittred (1980) is addressed. In particular, the results show that, contrary to the start-up time hypothesis, audit partner rotation and lateral audit firm rotation do not affect ARL significantly. Nor does cross-down audit firm rotation have any considerable effect, though the number of observations is small. However, a positive and significant association between cross-up audit firm rotation and ARL is observed. Taken collectively, the realignment hypothesis seems to play a more influential role in ARL determination comparing with the start-up time and auditor-timeliness difference hypotheses. More importantly, the findings provide an additional piece of information for regulators to assess the effect of audit partner and audit firm rotation policies from the aspect of audit timeliness.

Key Words: Audit report lag, audit timeliness, audit delay, audit partner rotation, audit firm rotation.

I. INTRODUCTION

As early as 1954, it was recognized that one of the essential elements of adequate disclosures was timeliness of reporting (AAA 1954). Past experience in capital markets shows that timeliness critically affects the investors' chance of being defrauded, the degree of uncertainty on investment evaluation as well as the expected payoff (Feltham 1972; Standish 1975). More precisely, the importance of timely disclosures stems from the equality of information access among investors, without which 'well-informed' investors may use their private information to exploit at the expense of 'less-informed' investors (Hakansson 1977). Therefore, it is not surprising to see policymakers expressing concern about the timeliness of disclosures (FASB 1980; CNCC 1989; CCGG 1999; COB 1999; SEC 2002).

Since there are other competing sources of information, it is suggested that there is an inverse relationship between the value of a financial statement and the time taken to prepare it (Kenley and Staubus 1972; FASB 1980). However, the safeguard against misstatements provided by audit requirements seems to contradict the concept of reporting timeliness[1]. Whittred (1980 p.564) even goes so far as to say that the stricter of either audit or timeliness provision can only be attained at the expense of the other, *ceteris paribus*.

With a series of recent accounting scandals since the Enron debacle, the proposal of mandatory auditor rotation has been put back on the agenda (e.g. the Sarbanes-Oxley Act 2002 and the Corporate Law Economic Reform Program Act 2004). While mandatory audit firm rotation has already been implemented in such countries as Italy, Brazil and Singapore, regulators in the U.S. and the U.K. among others prefer the less restrictive audit partner rotation as a means to restore public confidence in corporate financial reporting due to fierce opposition[2]. Thus far, only a few studies have been conducted to look at the effect of audit

[1] Prior studies indicate that the release of annual financial statements is delayed by the audit function by an average of over 50 days across different countries (Ashton et al. 1987; Newton and Ashton 1989; Carslaw and Kaplan 1991; Jaggi and Tsui 1999).

[2] The General Accounting Office's (GAO) study called on by the U.S. congress concludes that mandatory audit firm rotation might not be the most efficient means to strengthen auditor independence and thus improve audit

partner rotation on earnings and audit quality (Chi et al. 2005; Cheuk 2005; Hamilton et al. 2005). An important but unexplored dimension is the claim made by Whittred (1980) which implies that audit partner rotation, as a stricter audit provision, may undermine reporting timeliness. Given scant evidence in the extant literature in this area, this study utilizes the unique institutional setting in Australia to provide empirical evidence on the effect of audit partner rotation as well as different types of audit firm rotation on audit report timeliness (i.e. audit report lag(s), ARL).

The results show that, contrary to the start-up time hypothesis, audit partner rotation and lateral audit firm rotation do not affect ARL significantly. Nor does cross-down audit firm rotation have any considerable effect, despite the small number of observations. However, a positive and significant association between cross-up audit firm rotation and ARL is observed. Taken collectively, the realignment hypothesis seems to play a more influential role in ARL determination comparing with the start-up time and auditor-timeliness difference hypotheses.

This study provides a number of contributions. First, it provides an additional piece of information for regulators to evaluate the effect of audit partner and audit firm rotation policies from the aspect of audit timeliness. Second, it fills the gap in the extant literature in which empirical evidence of the effect of audit partner rotation is scant. Finally, it further enhances our understanding on the determinants of ARL which is imperative for three reasons. Firstly, ARL play an important role on the timeliness of conveying audit information to markets (Dopuch et al. 1986; Fields and Wilkins 1991; Loudder et al. 1992). Secondly, the timeliness of earnings information is also affected by ARL. Indeed, ARL have been suggested to be the single most important determinant of the timeliness of earnings announcements (Givoly and Palmon 1982) which in turn has been found to be associated with market reactions (Chambers and Penman 1984; Kross and Schroeder 1984). Thirdly, it may provide

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quality given the significant additional costs incurred and current accounting reforms being adopted (GAO-04-216, November 2003, p.50). A similar conclusion is also made by the FEE study (FEE 2004). However, little emphasis is placed on the effect of auditor rotation on audit timeliness.

insights for audit efficiency as proxied by the observable ARL.

The rest of this study is organized as follows. Review of the literature comes up first and is followed by hypothesis development. Section IV and section V discuss research method and sample selection. Finally, empirical results are discussed in section VI with conclusions presented at the last section.

II. LITERATURE REVIEW

An audit report lag or audit delay is a period from a company's year-end date to the audit report date. The determinants of ARL have long been a topic of academic interest. In early univariate studies, company size and the financial industry are found to be negatively associated with ARL (Dyer and McHugh 1975; Courtis 1976). Moreover, companies with year-ends at peak audit seasons generally experience longer ARL (Davies and Whittred 1980; Garsombke 1981). Also, companies receiving qualified audit opinions have comparatively longer ARL (Whittred 1980). Similar evidence is also found by Soltani (2002) in a sample of French publicly held companies. In the same vein, Whittred and Zimmer (1984) observe that companies with financial distress are also associated with longer ARL.

Using multivariate tests, Ashton et al. (1987) find that company size, operational complexity, internal control quality, listing status and mix of interim and final audit work are significant determinants of ARL in their 488 U.S. companies during 1981-82. Similarly, based on 465 listed Canadian companies during 1977-82, reporting of extraordinary items, industry classification, signs of net profit, and types of audit opinion are found to be significantly associated with ARL (Ashton et al. 1989). In a later study, Carslaw and Kaplan (1991) examine a sample of New Zealand public companies during 1987-88 and augment the ARL model used by Ashton et al. (1989) by adding company control and debt proportion as additional explanatory variables. However, the two variables are only significant in either year but not both. Likewise, based on a sample of 393 Hong Kong companies during 1991-93,

Jaggi and Tsui (1999) also find that the variable of family ownership or control is not statistically significant. Similarly, gearing ratios are not found to be a significant determinant of ARL in a sample of 47 non-financial companies listed on the Zimbabwe Stock Exchange in 1994 (Owusu-Ansah 2000). Kinney and McDaniel (1993) further extend prior work by investigating the effect of correction of previously reported interim earnings on ARL. Their results suggest that ARL are longer for companies with the correction, especially for those with interim overstatements and declining annual earnings. More recently, based on a sample of 171 companies listed on the Athens Stock Exchange in 2000, Leventis et al. (2005) find that apart from those factors already examined in prior research, audit fee rates and the number of remarks in audit reports are also significant determinants of ARL.

Rather than focusing on corporate attributes, Williams and Dirsmith (1988) examine the effect of audit technology (structured versus judgmental audit approaches) on audit efficiency proxied indirectly by earnings announcement lags (EAL)[3]. Their results show that clients of structured audit firms experience shorter EAL comparing with those of unstructured audit firms. By contrast, Newton and Ashton (1989) observe that ARL are generally longer for structured audit firms. They impute such disparities in findings to differences in audit efficiency proxies, sample selection and countries examined. Later, Bamber et al. (1993) reconcile the conflicting evidence by investigating the effect of audit structure on ARL and *abnormal* ARL[4]. Their results indicate that clients of structured audit firms tend to have longer ARL generally but shorter *abnormal* ARL in unanticipated events. Furthermore, they propose a more comprehensive ARL model comprising of the extent of audit work, incentive of timely reporting and audit firm technology with comparatively high explanatory power. In a more recent study, Knechel and Payne (2001) take advantage of their proprietary database on 226 audit engagements from an international audit firm and examine factors that are

[3] An EAL is the number of days from a company's year-end date to the public earnings announcement date.
[4] *Abnormal* ARL are defined as the differences between the current year ARL and the median ARL calculated over the sample period (Bamber et al. 1993).

externally unobservable but closely reflect audit production. Their findings show that incremental audit effort, allocation of audit team effort and provision of nonaudit services are significant determinants of ARL.

More closely related to this paper is a study conducted by Schwartz and Soo (1996). They examine a sample of U.S. companies with audit firm switches during 1988-93 and demonstrate that companies that change their audit firms early (late) in their fiscal years are associated with shorter (longer) ARL and EAL. They suggest that their findings are consistent with the timing hypothesis which suggests that early audit firm changes are more likely to be a well-planned and controlled process triggered off by positive reasons and thus associated with shorter ARL and EAL. That paper, however, leaves two issues unexplored. The first one is the effect of audit partner changes on the timeliness of audit reports. Secondly, different types of audit firm changes may provide additional insights on the relationship between audit firm switches and ARL. This paper tries to fill this gap.

III. HYPOTHESIS DEVELOPMENT

Given the complexity and size of modern businesses, in-depth industrial and specific knowledge of clients' operations and risks is vital for quality audits (Hoyle 1978; Garcia 2002). In fact, various analyses and empirical studies have already shown that audit quality is at stake during the initial years of new audit engagements in which such knowledge is most limited (AICPA 1992; Walker et al. 2001; Johnson et al. 2002; Myers et al. 2003; Ghosh and Moon 2005). The main root for the scarcity during those years is argued to be the inalienability of client-specific knowledge between audit firms[5]. However, in the case of audit partner rotation, it seems plausible to assume transferability of such knowledge between audit partners within the same audit firm via hand-over of working papers, discussion or even

[5] Practically, consideration such as confidential audit techniques, the competitive relationship between audit firms, and the voluntary nature may impede the transfer of client-specific knowledge between audit firms.

assistance. Nevertheless, the transferability could, at best, alleviate instead of avoid the loss of client-specific knowledge since it is unreasonable to anticipate perfect alienability even between audit partners within the same audit firm. Moreover, the successive audit partners still need to incur time and effort to learn the knowledge that is transferable. Additionally, audit partner rotation might raise additional administrative tasks such as arrangements of resources across different branches or offices. Taken collectively, audit partner rotation is likely to lengthen the time required to complete audit reports comparing with ongoing engagements and this is tested by the first hypothesis:

H1: *Ceteris paribus,* audit report lags of engagements with audit partner rotation are longer than those of continuous engagements.

In general, audit firm rotation is expected to reduce the timeliness of audit completion as the successive audit firms are forced to build up client-specific knowledge from scratch. Therefore, those audit firms are bounded to incur significant start-up time and costs to become adequately acquainted themselves with clients' businesses and operations [6] (DeAngelo 1981; Arens and Loebbecke 2000). However, Schwartz and Soo (1996) argue that different timing of audit firm rotation could have differential effect on ARL and EAL. Specifically, early audit firm switches during a year are argued to be well-planned and controlled, thereby paving the way for the successive audit firms to plan and perform audit work smoothly. Conversely, audit firm switches occurred late in a year reflect incidences of negotiation breakdown or opinion shopping. Therefore, shorter ARL and EAL are expected for early audit firm rotation and vice versa. While the findings are insightful, Schwartz and Soo (1996 p.355) acknowledge that it is surprising to find shorter ARL and EAL for early audit firm switchers given the significant start-up time on new audit engagements. Alternatively, the effect of audit firm rotation can be examined from the perspective of

[6] In general, more than one year is considered essential for auditors to gain familiarity with clients (Ridyard and de Bolle 1992). Moreover, as suggested by the GAO's study, it generally takes auditors 2 to 3 years to become adequately acquainted themselves with clients' businesses and operations (GAO-04-216, November 2003, p.19).

auditor-client realignments. According to Johnson and Lys (1990), given that audit markets are dynamic and competitive and quality of audit service providers is differentiated, auditors and clients will align themselves to utilize specialized resources and investments efficiently. However, auditor-client matches in any time are likely to be temporary or non-stationary since once clients' attributes change over time, the competitive advantage of the incumbent auditors will be corroded. Consequently, realignments between auditors and clients become necessary until an appropriate match occurs again.

In this paper, audit firms are categorized into two groups. Indeed, it has been documented that audit quality and audit fees of large international auditors (e.g. the Big 4 auditors) are higher because of their huge investments in audit technology, human resources and reputation (Craswell et al. 1995; Becker et al. 1998; Francis et al. 1999). By carrying this logic one step further, audit firm rotation can be classified into lateral (within a group), cross-up (from the low to the high quality group) and cross-down (from the high to the low quality group) rotation. Lateral audit firm switches are likely to be responding to forces other than the realignment effect while cross audit firm rotation represents the outcome of changed clients' characteristics (Johnson and Lys 1990; Gul et al. 2004). Given the presumption of relatively stable clients' attributes and indiscernible differences in audit quality within the same auditor group, lateral audit firm rotation is expected to increase the time required for audit completion based on the start-up time argument. Hence, the second hypothesis is formulated as follows:

H2: *Ceteris paribus*, audit report lags of engagements with lateral audit firm rotation are longer than those of continuous engagements.

The effect on ARL tends to be ambiguous for cross audit firm rotation. In the case of cross-up audit firm rotation, for instance, both the start-up time and realignment arguments suggest that audit completion time would be lengthened because the clients with such switches are likely to have attributes such as size, complexity, risk and agency costs increased,

thereby extending the audit work and time required (Francis and Wilson 1988; Johnson and Lys 1990). Nonetheless, large international audit firms are suggested to complete audits on a timelier basis even though empirical evidence is mixed thus far (Garsombke 1981; Ashton et al. 1989; Carslaw and Kaplan 1991). Similar but opposite reasonings can be applied in the scenario of cross-down audit firm rotation. Since it is impracticable to form *a priori* judgment of which force (start-up time, realignment or auditor-timeliness difference) will dominate, the effect of cross audit firm rotation on ARL remains an empirical issue. Thus, the third and fourth hypotheses are stated in the null form:

H3: *Ceteris paribus,* audit report lags of engagements with cross-up audit firm rotation are no different from those of continuous engagements.

H4: *Ceteris paribus,* audit report lags of engagements with cross-down audit firm rotation are no different from those of continuous engagements.

IV. RESEARCH METHOD

To examine the effect of different types of rotation on ARL, the following model comprising of various control variables recognized by prior research is estimated:

$$\begin{aligned} ARL = {} & \alpha + \beta_1 PART + \beta_2 LATERAL + \beta_3 CROSSUP + \beta_4 CROSSDOWN + \\ & \beta_5 LTA + \beta_6 ENEWS + \beta_7 LOSS + \beta_8 LSUB + \beta_9 FIND + \beta_{10} EI + \beta_{11} QOD \\ & + \beta_{12} GC + \beta_{13} PROBZ + \beta_{14} YE + \beta_{15} BIG5 + \beta_{16} SAUD + \beta_{17} NAS + \varepsilon \end{aligned} \quad (1)$$

where:		Predicted sign
ARL	= number of days from fiscal year-end to audit report date;	NA
PART	= 1 if audit partner rotation within the incumbent audit firm; 0 otherwise;	+
LATERAL	= 1 if audit firm rotation within Big 5 or non-Big 5 audit firms; 0 otherwise;	+
CROSSUP	= 1 if audit firm rotation from non-Big 5 to Big 5 audit firms; 0 otherwise;	?
CROSSDOWN	= 1 if audit firm rotation from Big 5 to non-Big 5 audit firms; 0 otherwise;	?
LTA	= natural logarithm of total assets;	-
ENEWS	= $(EPS_t - EPS_{t-1})/\|EPS_{t-1}\|$[7];	-

[7] Several prior studies define ENEWS as $(EPS_t - EPS_{t-1})/EPS_{t-1}$ (Newton and Ashton 1989; Bamber et al. 1993;

LOSS	=	1 if reported loss before extraordinary item; 0 otherwise;	+
LSUB	=	natural logarithm of the number of subsidiaries[8];	+
FIND	=	1 if financial industry; 0 otherwise[9];	-
EI	=	1 if extraordinary item; 0 otherwise;	+
QOD	=	1 if qualified audit opinion; 0 otherwise;	+
GC	=	1 if going-concern audit opinion; 0 otherwise;	+
PROBZ	=	probability of bankruptcy based on Zmijewski's (1984) bankruptcy prediction model[10];	+
YE	=	1 if non-June 30 year-end; 0 otherwise;	-
BIG5	=	1 if Big 5 auditors; 0 otherwise;	-
SAUD	=	1 if structured audit firm (Deloitte Touche Tohmatsu (DTT) and KPMG) based on Kinney's (1986) study; 0 otherwise[11];	+
NAS	=	1 if provision of non-audit services by the incumbent audit firm; 0 otherwise[12];	-
ε	=	error term;	?

PART, LATERAL, CROSSUP and CROSSDOWN represent the experimental variables of interest[13]. The coefficients of PART and LATERAL are expected to have a positive sign because the start-up time argument expects that the successive audit partners and audit firms need to incur significant time to build up client-specific knowledge. However, in the case of cross audit firm rotation, because of the competing forces involved, no *a priori* expectation is formulated for β_3 and β_4. Following previous research, other variables are added as controls

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Jaggi and Tsui 1999). However, the definition may be problematic in the case of negative EPS. Therefore, the definition used by Henderson and Kaplan (2000) is adopted.

[8] Following Jaggi and Tsui (1999), equation (1) is re-run by replacing LSUB with the square root of the number of subsidiaries. The results, not presented, are substantially similar to those reported later. Moreover, the number of subsidiaries (SUB) is also tried. However, as observed by Leventis et al. (2005), the coefficient of SUB is positive but statistically insignificant.

[9] The classification is based on 1-digit GICS codes.

[10] The calculation is based on 1,200 companies with essential data in year 2001 using the coefficients found by Zmijewski (1984). Since the probability of bankruptcy based on Zmijewski's (1984) model is only valid for non-financial companies, the Sinkey et al. (1987) model should be used for financial companies. However, only a few companies (less than 5 companies) have the data required to calculate the latter. Therefore, to address this concern, equation (1) is re-run by excluding financial companies (29 companies). The results, not reported, are qualitatively similar to those presented later.

[11] Recent studies suggest large international audit firms follow similar audit approaches across countries and the structured versus unstructured classification seems unchanged since Kinney's (1986) study (Lau 1997; Jaggi and Tsui 1999).

[12] A finer separation of non-audit services into management advisory and tax services is adopted by Knechel and Payne (2001). Since the separate disclosures are not mandatory, the finer classification is impracticable in this paper unfortunately.

[13] Following prior tenure studies (Johnson et al. 2002; Myers et al. 2003), audit firm switches attributable to audit firm mergers are considered as continuous engagements.

for other determinants of ARL. Size (LTA) is included because large audit clients generally require more audit work. But large companies also face larger external pressure to release reports promptly (Dyer and McHugh 1975). Moreover, they are likely to have better internal controls for auditors to rely on and greater power to demand timelier completion of audits (Newton and Ashton 1989; Bamber et al. 1993). Taken together, a negative sign is expected for LTA since prior studies generally find a negative coefficient[14] (Carslaw and Kaplan 1991; Bamber et al. 1993; Schwartz and Soo 1996). ENEWS is also added to control for the incentive of timely reporting induced by favorable earnings news since companies tend to announce positive earnings news early but postpone disclosures of bad news (Givoly and Palmon 1982; Kross and Schroeder 1984). Hence, β_6 is expected to be negative. The sign of income (LOSS) is incorporated for similar purposes. To the extent that a loss is a bad news, companies may wish to delay the disclosures. Furthermore, auditors may respond more cautiously and thus extend the audit work for those companies because of the increased likelihood of financial failures or management frauds (Whittred and Zimmer 1984). Thus, a positive sign is expected for β_7. Apart from the incentive consideration, LSUB, FIND, EI, and QOD are included primarily to control for audit complexity. Following Jaggi and Tsui (1999), the number of subsidiaries is used as a proxy for operational complexity which is anticipated to have positive effect on ARL[15]. Also, prior studies find that financial companies which have highly centralized and automatic accounting systems and fewer fixed assets tend to have comparatively shorter ARL because financial assets are easier to audit (Courtis 1976; Ashton et al. 1987; Ashton et al. 1989). Moreover, occurrence of extraordinary items is likely to increase audit work due to additional investigation required to verify the classification and measurement of unusual items (Bamber et al. 1993). Similarly, incidence of qualified audit

[14] Nevertheless, Henderson and Kaplan (2000) report a positive association between size and ARL after controlling for omitted variable and heterogeneity bias by using panel data analysis.

[15] Following prior audit fee research, valid logarithmic transformations are assured by re-coding LSUB to a small positive value (0.00001) if observations have a zero value for this variable (Ferguson and Stokes 2002; Ferguson et al. 2003).

opinions is also expected to lengthen ARL since such opinions will not be issued normally unless auditors have incurred considerable time and effect to pursue extra audit procedures or evidence (Whittred 1980). Therefore, β_8, β_{10} and β_{11} are expected to be positive while β_9 is expected to have a negative sign. GC and PROBZ control for the effect of financial distress which has been found to delay the issuance of audit reports (Whittred and Zimmer 1984). Not surprisingly, companies having a more vulnerable financial position may raise the possibility of management frauds (Palmrose 1987; Kinney and McDaniel 1989). Consequently, auditors will be exposed to greater audit risks for those companies and thus react by expanding audit work (Arens and Loebbecke 2000). Hence, the coefficients of GC and PROBZ are expected to be positive. YE controls for the effect of the peak audit season. June 30 is the most common year-end in Australia. Empirical evidence supports the allegation that a large number of audits clustered around the same period may cause scheduling problems for auditors and thus the completion time of audits (Dyer and McHugh 1975; Carslaw and Kaplan 1991; Knechel and Payne 2001). Thus, a negative sign is expected for β_{14}. Large international audit firms are expected to complete audits more efficiently because they have superior resources and experience (Ashton et al. 1989). Therefore, β_{15} is expected to be negative. Except under abnormal events, audit firms employing a structured audit approach are likely to complete audit reports late because of elaborate documentation and steps (Williams and Dirsmith 1988; Newton and Ashton 1989; Bamber et al. 1993). Hence, SAUD is expected to have a positive coefficient. Finally, audit firms that provide audit and non-audit services concurrently to the same client may enjoy the benefit of 'knowledge spillover' and thus attain more efficient production (Simunic 1984; Palmrose 1986; O'Keefe et al. 1994). Hence, β_{17} is expected to be negative (Knechel and Payne 2001).

V. SAMPLE SELECTION

The sample of this study is drawn from companies listed on Australian Stock Exchange

in year 2001 from the Connect 4 database which provides information of the top 500 Australian companies. The sample year is more recent and could avoid any potential confounding effect arising from a series of accounting scandals and consequential regulation reforms since the Enron debacle such as the Australian government's Corporate Law Economic Reform Program (CLERP) started from year 2002. Financial statement data are obtained from the Aspect Fin Analysis database while audit firm names, audit partner names, audit report dates and other non-financial items are manually-collected from financial statements retrieved from the Connect 4 database. Australian companies are examined because they disclose audit engagement partners' names in audit reports of financial statements. More importantly, each audit report is signed by one audit engagement partner only. This significantly facilitates the measure of audit partner rotation since such signatures provide observable evidence for the identification of the preceding and successive chief audit partners for audit engagements[16].

The sample selection process is summarized in table 1. The initial sample includes all companies covered by the Connect 4 database in year 2001. After excluding observations without required data, 374 companies remain. Then, companies with audit reports signed by joint audit firms or partners are deleted because of the ambiguities induced on the identification of audit firm or partner rotation. Hence, the final usable sample comprises of 369 companies.

(Insert Table 1 here)

VI. EMPIRICAL RESULTS

Descriptive Statistics

Table 2 presents descriptive statistics for the variables of the audit report lag sample. The mean of ARL which is about 73 days is comparable with that reported by Dyer and McHugh

[16] Note that studies (e.g. Chi and Huang 2003; Chen et al. 2004) using data from other countries like Taiwan and China which require more than one audit partner to sign audit reports could encounter ambiguous identification of audit partner rotation, particularly in the case of differential audit work loads between audit partners.

(1975) for Australian companies but is generally longer than the numbers reported in U.S. and Canadian studies (Ashton et al. 1987; Newton and Ashton 1989; Schwartz and Soo 1996). The mean of PART is approximately 17 percent which is comparatively higher than those of LATERAL, CROSSUP and CROSSDOWN. In other words, audit partner rotation is more common in the sample.

(Insert Table 2 here)

Table 3 provides a correlation matrix for the variables. Contrary to expectation, ARL are negatively correlated with both PART and LATERAL. Moreover, ARL and CROSSUP are significantly and positively correlated while ARL and CROSSDOWN have a negative correlation coefficient. Also, CROSSUP and CROSSDOWN only have a few correlation coefficients that are significant. This means that although most variables do not closely represent corporate attributes affecting realignments, the findings suggest that both types of audit firm rotation might not be correlated with the realignment effect. However, it is premature to draw any definite conclusions based on these preliminary results.

(Insert Table 3 here)

Results

The regression results of equation (1) are reported in table 4[17]. As shown in model 1, the coefficients of PART and LATERAL are negative but insignificant. Thus, they do not support hypotheses 1 and 2. In other words, ARL are not considerably increased solely by the start-up time effect induced by audit partner rotation and lateral audit firm rotation. Indeed, the negative and significant relationship between ARL and early audit firm rotation found by Schwartz and Soo (1996) suggests that the start-up time effect is not conclusive as it could be got around by well-planned switches. The variable CROSSUP has a positive and significant coefficient which rejects hypothesis 3. More precisely, coupling with the findings of PART

[17] The maximum value of variance inflation factors (VIF) in table 4 is less than 2, signifying the absence of serious multicollinearity problem.

and LATERAL, the result suggests that the realignment argument may play a more influential role in ARL determination for companies having their audit firms changed from the low to the high quality group. Moreover, the coefficient of CROSSDOWN is neither significant nor consistent with the result of CROSSUP[18].

(Insert Table 4 here)

For the control variables, not only are the coefficients of LTA, LSUB, GC, PROBZ and YE significant and consistent with expectations, but they are also comparable, in terms of direction and significance, with those found in previous research (Ashton et al. 1989; Schwartz and Soo 1996; Jaggi and Tsui 1999; Knechel and Payne 2001). In particular, the results show that companies with smaller sizes, more subsidiaries, going-concern audit opinions, higher probability of bankruptcy and the peak year-end experience longer ARL. Though the coefficients of LOSS, EI and NAS are statistically insignificant, they are in the expected directions and in harmony with prior studies (Newton and Ashton 1989; Carslaw and Kaplan 1991; Knechel and Payne 2001). However, the sign of ENEWS is opposite to expectation but similar to that reported by Henderson and Kaplan (2000) who also adopt the more accurate measurement for ENEWS. Moreover, contrary to expectation, FIND has a positive coefficient, though it is insignificant as reported by previous research (Ashton et al. 1987; Jaggi and Tsui 1999; Knechel and Payne 2001). As in other studies (Ashton et al. 1989; Jaggi and Tsui 1999), the coefficient for QOD is negative. While Ashton et al. (1989) have not offered a reason for this, Jaggi and Tsui (1999) argue that an explanation may be the existence of overwhelming evidence for qualified audit opinions which may cause additional audit work unnecessary[19]. An insignificant positive sign for BIG5 implies that the Big 5 audit

[18] A caveat relating to CROSSDOWN is that the result may not be robust as the number of companies with cross-down audit firm rotation in the sample is just one. In order to alleviate this problem, equation (1) is re-run after excluding the company with cross-down audit firm rotation. The results, not presented, are qualitatively similar to those reported.

[19] The result should be interpreted with caution due to the relatively small number of observations with qualified audit opinions. Similar to the treatment of CROSSDOWN, equation (1) is re-estimated after (1) excluding companies with qualified audit opinions and (2) combining QOD and GC into one dummy. The results of the

firms may not complete audit reports earlier. More importantly, this is consistent with the result for CROSSUP in which the effect of auditor-timeliness difference between the two groups of audit firms on ARL seems negligible. Furthermore, the coefficient of SAUD is neither statistically significant nor in the expected direction. However, the result could be driven by the inappropriate application of Kinney's (1986) classification to the contemporary sample and Australian audit market[20, 21]. Finally, the model achieves an adjusted R^2 of 16.4% which is comparable with prior research in different countries (Ashton et al. 1989; Carslaw and Kaplan 1991; Schwartz and Soo 1996; Jaggi and Tsui 1999).

Sensitivity Tests

Since a number of previous studies examine the natural logarithm of ARL as a way of tackling the non-normal distribution of ARL, equation (1) is re-estimated by replacing the dependent variable ARL with *ln*ARL (Ashton et al. 1987; Ashton et al. 1989; Carslaw and Kaplan 1991; Jaggi and Tsui 1999). The results presented in model 2 of table 4 can be interpreted as the percentage change in ARL in response to changes in the independent variables. As indicated, none of the signs of the variables have changed. More importantly, the findings for all hypotheses are not sensitive to this new specification. Furthermore, the five significant coefficients in model 1 still maintain their significant levels, except for PROBZ which has a weaker significance. Also, the coefficient of SAUD becomes marginally significant in model 2. Finally, the signs and significant levels of other variables as well as the explanatory power of the model are comparable with those of model 1.

Since the data more closely reflecting audit work or production (such as engagement hours, extent of interim audit work and amount of audit managers' and partners' time) accessed by Knechel and Payne (2001) are not available, the observable audit fess are used as

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two separate tests, not tabulated, are substantially similar to those reported. Also, the combined dummy has a positive and significant coefficient.

[20] Kinney's (1986) classification relates to U.S. audit firms during 1981-84.

[21] To address this issue, equation (1) is re-estimated by excluding SAUD. The results, not reported, are qualitatively similar to those reported.

a surrogate of audit work. Thus, equation (1) is re-run by incorporating the natural logarithm of audit fees as an additional control variable. The results reported in model 1 of table 5 are qualitatively similar to those presented in model 1 of table 4 except that the sign of NAS becomes positive. Moreover, the coefficient of LAF is neither statistically significant nor consistent with the expected direction. This could be explained by the confounding effect on audit fees induced by matters such as the low-balling practice (DeAngelo 1981) and the endogeneity between audit fees and ARL (Johnson 1998). Furthermore, the use of audit fees to capture audit work may suffer from measurement problems caused by auditor-client negotiation, imperfect pricing and information asymmetry (Abdel-khalik 1990; O'Keefe et al. 1994).

(Insert Table 5 here)

There is a critical assumption relating to the developed hypotheses that audit quality is not changed considerably by any rotation. Simply put, provided that auditing time is positively related to audit quality, the findings cannot rule out the alternative explanation offered by audit quality changes. For example, the finding that audit partner rotation and lateral audit firm rotation do not affect ARL considerably could be driven by a drop of audit quality which in turn reduces audit work and thus offsets the lengthening effect of the start-up time hypothesis. As a robust check, equation (1) is re-estimated by adding the absolute value of discretionary accruals based on cross-sectional modified Jones's (1991) model as an additional control variable[22]. The findings presented in model 2 of table 5 are substantially comparable to those reported. Additionally, the coefficient of |DA| is positive, though it is statistically insignificant.

Although the above findings provide evidence on the effect of various types of audit

[22] The discretionary accruals are calculated based on 1,028 companies with required data in year 2001. Since it is unclear whether there is any asymmetric effect of the signs of discretionary accruals on ARL, the absolute value of discretionary accruals is employed as a general surrogate for audit quality (Warfield et al. 1995). However, the use of signed discretionary accruals yields similar results.

firm rotation on ARL, it may be interesting to examine the effect of audit firm switches generally. Therefore, equation (1) is re-run by combining LATERAL, CROSSUP and CROSSDOWN into one dummy indicating audit firm rotation, FIRM. The results reported in model 3 of table 5 are qualitatively similar to those presented previously. More importantly, the coefficient of FIRM is positive but statistically insignificant which is comparable to those observed by prior research (Ng and Tai 1994; Henderson and Kaplan 2000; Leventis et al. 2005). Moreover, it suggests that the finer classification of audit firm rotation could be conducive to unveiling the effect of different forces behind such switches.

Finally, in order to examine the effect of ARL determinants on *abnormal* ARL, equation (1) is re-run by replacing the dependent variable ARL with *abnormal* ARL. Following Whittred (1980), *abnormal* ARL are defined as the differences between the current year ARL and the last year ARL. The results, not presented, indicate that only SIZE and ENEWS are significant determinants of *abnormal* ARL while all types of rotation have trivial effect.

VII. CONCLUSION

This paper examines the effect of audit partner rotation and various types (lateral, cross-up and cross-down) of audit firm rotation on audit report lags (ARL). The start-up time hypothesis contends that for all types of rotation, because of the imperfect alienability of client-specific knowledge between audit partners/firms, the successive audit partners/firms need to incur considerable time and effort to build up such knowledge, thereby prolonging the time of audit completion. Surprisingly, the results show that audit partner rotation and lateral audit firm rotation do not affect ARL significantly. By taking the negative relationship between early audit firm rotation and ARL found by Schwartz and Soo (1996) into account, the above findings imply that the ‘teething’ effect is inconclusive in the determination of ARL as it could be avoided by means of well planning.

In the case of cross audit firm rotation, two additional schools of thought are involved.

First, the realignment proposition suggests that cross audit firm switches are responses to the need of the dynamic realignments between clients and auditors (Francis and Wilson 1988). Companies with cross-up audit firm rotation, for example, are expected to have attributes such as size, complexity, risk and agency costs increased, thereby extending the audit work and time required (Johnson and Lys 1990). The opposite is expected to be true for the case of cross-down audit firm switches. Second, the auditor-timeliness difference hypothesis contends that large international auditors could complete audits on a timelier basis because of their superior audit technology, human resources, reputation and experience. Thus, companies with cross-up audit firm rotation are expected to have shorter ARL and vice versa. The results show that there is a positive and significant association between cross-up audit firm rotation and ARL. However, cross-down audit firm rotation seems to have negligible effect in ARL determination, though the number of observations is small. Taken collectively, the realignment hypothesis seems to play a more influential role in ARL determination comparing with the start-up time and auditor-timeliness difference hypotheses. More importantly, the findings provide an additional piece of information for regulators to assess the effect of audit partner and audit firm rotation policies from the aspect of audit timeliness.

While the findings in this paper are insightful, several points are worth mentioning. First, ARL are measured in terms of days instead of actual working hours. Any implication relating to audit efficiency or workload should be inferred with caution. For example, even though the start-up time effect is found to be trivial in the determination of observable ARL, it does not necessarily mean that it is not important at all. Auditors could get around the start-up time effect by means of overtime or additional staffing. Therefore, items more closely reflecting audit work or production such as those accessed by Knechel and Payne (2001) are valuable for improving our understanding on the effect of auditor rotation on audit timeliness after controlling for audit work. However, the data are not available. Second, should the timing postulation of audit firm changes suggested by Schwartz and Soo (1996) be taken into

account in this paper, the hypothesis framework and empirical tests would be more comprehensive. For example, the realignment and auditor-timeliness hypotheses may help to clarify the odd result found by Schwartz and Soo (1996) for the negative relationship between early audit firm switches and ARL. Unfortunately, the required data are not available. Third, the results of this paper are obtained using data in Australia where audit partner rotation was voluntary during the sample period. Since the extant literature has not explored the reasons behind voluntary switches of audit engagement partners within the same audit firm, this paper takes audit partner rotation as given. Thus, the generalizability of the results of audit partner rotation to regimes such as the U.S. where audit partner changes are mandatory is open to question. Finally, only ARL are examined in this paper. There are two types of lags in Australia available for future research of auditor rotation, namely preliminary lags and earnings announcement lags (EAL). Preliminary lags are a proxy for audit work while the lags between preliminary report dates and audit report dates could be viewed as a surrogate for auditor-client negotiation (Dyer and McHugh 1975; Whittred 1980; Whittred and Zimmer 1984). Moreover, since ARL are an important determinant of EAL, whether there is any effect of audit partner rotation on EAL is another area that merits further investigation.

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Table 1 Sample Selection Process	N
Number of companies available in the Connect 4 database in 2001	513
Less: Required financial data from 2000 to 2001 not available	(115)
Less: Required non-financial data other than audit partner and firm names not available	(7)
Less: Required audit firm names from 2000 to 2001 not available	(4)
Less: Required audit partner names from 2000 to 2001 not available	(13)
Number of companies with required data	374
Less: Companies with joint audit partners or joint audit firms	(5)
Number of companies of audit report lag sample	369

Table 2

Descriptive Statistics for Variables of Audit Report Lag Sample (N = 369)

Variable	Mean	Standard Deviation	Min	Q1	Median	Q3	Max
ARL	73.247	16.618	24.000	61.000	74.000	87.000	120.000
PART	0.168	0.374	0.000	0.000	0.000	0.000	1.000
LATERAL	0.027	0.163	0.000	0.000	0.000	0.000	1.000
CROSSUP	0.016	0.127	0.000	0.000	0.000	0.000	1.000
CROSSDOWN	0.003	0.052	0.000	0.000	0.000	0.000	1.000
LTA	19.034	1.800	13.698	17.765	18.779	20.111	25.879
ENEWS	-0.343	11.240	-140.143	-0.735	-0.097	0.335	100.500
LOSS	0.287	0.453	0.000	0.000	0.000	1.000	1.000
LSUB	1.850	3.508	-11.513	1.792	2.485	3.367	6.340
FIND	0.079	0.269	0.000	0.000	0.000	0.000	1.000
EI	0.398	0.490	0.000	0.000	0.000	1.000	1.000
QOD	0.011	0.104	0.000	0.000	0.000	0.000	1.000
GC	0.043	0.204	0.000	0.000	0.000	0.000	1.000
PROBZ	0.433	0.083	0.212	0.382	0.426	0.461	0.999
YE	0.252	0.435	0.000	0.000	0.000	1.000	1.000
BIG5	0.797	0.403	0.000	1.000	1.000	1.000	1.000
SAUD	0.295	0.457	0.000	0.000	0.000	1.000	1.000
NAS	0.921	0.269	0.000	1.000	1.000	1.000	1.000

ARL = number of days from fiscal year-end to audit report date;
PART = 1 if audit partner rotation within the incumbent audit firm; 0 otherwise;
LATERAL = 1 if audit firm rotation within Big 5 or non-Big 5 audit firms; 0 otherwise;
CROSSUP = 1 if audit firm rotation from non-Big 5 to Big 5 audit firms; 0 otherwise;
CROSSDOWN = 1 if audit firm rotation from Big 5 to non-Big 5 audit firms; 0 otherwise;
LTA = natural logarithm of total assets;
ENEWS = $(EPS_t - EPS_{t-1})/|EPS_{t-1}|$;
LOSS = 1 if reported loss before extraordinary item; 0 otherwise;
LSUB = natural logarithm of the number of subsidiaries;
FIND = 1 if financial industry; 0 otherwise;
EI = 1 if extraordinary item; 0 otherwise;
QOD = 1 if qualified audit opinion; 0 otherwise;
GC = 1 if going-concern audit opinion; 0 otherwise;
PROBZ = probability of bankruptcy based on Zmijewski's (1984) bankruptcy prediction model;
YE = 1 if non-June 30 year-end; 0 otherwise;
BIG5 = 1 if Big 5 auditors; 0 otherwise;
SAUD = 1 if structured audit firm (DTT and KPMG) based on Kinney's (1986) study; 0 otherwise;
NAS = 1 if provision of non-audit services by the incumbent audit firm; 0 otherwise;

Table 3
Pearson Correlation Matrix of Variables of Audit Report Lag Sample (N = 369)

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) ARL	1.000									
(2) PART	-0.029	1.000								
(3) LATERAL	-0.042	-0.075	1.000							
(4) CROSSUP	0.134**	-0.058	-0.021	1.000						
(5) CROSSDOWN	-0.004	-0.023	-0.009	-0.007	1.000					
(6) LTA	-0.268***	-0.038	-0.007	-0.026	0.006	1.000				
(7) ENEWS	-0.070	0.048	0.002	-0.007	0.003	-0.017	1.000			
(8) LOSS	0.233***	0.051	0.005	0.060	-0.033	-0.394***	-0.099*	1.000		
(9) LSUB	0.027	-0.011	0.021	-0.052	0.013	0.395***	-0.020	-0.181***	1.000	
(10) FIND	-0.016	0.003	0.075	-0.038	-0.015	0.068	0.013	-0.052	0.063	1.000
(11) EI	0.007	-0.025	-0.034	-0.017	-0.042	0.199***	-0.082	-0.003	0.152***	-0.032
(12) QOD	0.019	0.093*	-0.017	-0.013	-0.005	-0.064	0.003	0.107**	-0.084	-0.031
(13) GC	0.225***	0.082	0.046	-0.027	-0.011	-0.224***	-0.031	0.306***	-0.042	-0.013
(14) PROBZ	0.249***	-0.136***	0.023	0.131**	0.051	0.035	-0.269***	0.344***	0.129**	-0.046
(15) YE	-0.187***	-0.044	0.057	-0.025	0.090*	0.183***	0.080	-0.037	0.013	0.016
(16) BIG5	-0.083	0.083	-0.082	0.065	-0.103**	0.279***	0.044	-0.037	0.007	-0.028
(17) SAUD	-0.088*	0.122**	-0.035	0.011	-0.034	0.063	0.067	-0.070	0.033	-0.035
(18) NAS	-0.081	-0.057	-0.075	0.038	0.015	0.234***	0.002	-0.126**	0.149***	-0.027

Variable	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
(11) EI	1.000							
(12) QOD	0.075	1.000						
(13) GC	0.099*	0.235***	1.000					
(14) PROBZ	0.206***	0.001	0.317***	1.000				
(15) YE	0.191***	-0.001	0.030	0.032	1.000			
(16) BIG5	0.040	0.053	-0.025	0.046	0.154***	1.000		
(17) SAUD	-0.078	-0.010	0.008	0.015	0.035	0.327***	1.000	
(18) NAS	0.094*	-0.067	-0.235***	0.050	0.100*	0.203***	0.079	1.000

*, **, *** designate statistical significance at the 0.10, 0.05 and 0.01 level respectively.

ARL = number of days from fiscal year-end to audit report date;
PART = 1 if audit partner rotation within the incumbent audit firm; 0 otherwise;
LATERAL = 1 if audit firm rotation within Big 5 or non-Big 5 audit firms; 0 otherwise;
CROSSUP = 1 if audit firm rotation from non-Big 5 to Big 5 audit firms; 0 otherwise;
CROSSDOWN = 1 if audit firm rotation from Big 5 to non-Big 5 audit firms; 0 otherwise;
LTA = natural logarithm of total assets;
ENEWS = $(EPS_t - EPS_{t-1})/|EPS_{t-1}|$;
LOSS = 1 if reported loss before extraordinary item; 0 otherwise;
LSUB = natural logarithm of the number of subsidiaries;
FIND = 1 if financial industry; 0 otherwise;
EI = 1 if extraordinary item; 0 otherwise;
QOD = 1 if qualified audit opinion; 0 otherwise;
GC = 1 if going-concern audit opinion; 0 otherwise;
PROBZ = probability of bankruptcy based on Zmijewski's (1984) bankruptcy prediction model;
YE = 1 if non-June 30 year-end; 0 otherwise;
BIG5 = 1 if Big 5 auditors; 0 otherwise;
SAUD = 1 if structured audit firm (DTT and KPMG) based on Kinney's (1986) study; 0 otherwise;
NAS = 1 if provision of non-audit services by the incumbent audit firm; 0 otherwise;

Table 4
Multiple Regression Results of Audit Report Lag Model
(Dependent variable is audit report lag, ARL)
(N=369)

		Parameter Estimate (p value)	
Variable	**Predicted Sign**	ARL [Model 1]	*ln*ARL [Model 2]
Intercept	N/A	102.8136	4.7013
		(0.000)***	(0.000)***
PART	+	-0.9061	-0.0217
		(0.694)	(0.555)
LATERAL	+	-4.9956	-0.0704
		(0.187)	(0.203)
CROSSUP	?	13.7419	0.1852
		(0.000)***	(0.001)***
CROSSDOWN	?	1.2745	0.0523
		(0.653)	(0.216)
LTA	-	-2.3747	-0.0320
		(0.000)***	(0.000)***
ENEWS	-	0.0047	0.0002
		(0.935)	(0.857)
LOSS	+	1.6160	0.0248
		(0.460)	(0.432)
LSUB	+	0.5966	0.0095
		(0.030)**	(0.033)**
FIND	-	0.7906	0.0102
		(0.771)	(0.809)
EI	+	0.5024	0.0090
		(0.754)	(0.713)
QOD	+	-3.2955	-0.0901
		(0.649)	(0.503)
GC	+	9.5135	0.1426
		(0.026)**	(0.015)**
PROBZ	+	35.8289	0.4175
		(0.013)**	(0.057)*
YE	-	-5.6676	-0.0873
		(0.002)***	(0.003)***
BIG5	-	1.1328	0.0152
		(0.575)	(0.607)
SAUD	+	-2.8381	-0.0588
		(0.153)	(0.061)*
NAS	-	-0.7107	-0.0141
		(0.821)	(0.761)
F value for the model (p value)		5.24	4.41
		(0.000)***	(0.000)***
Adjusted R^2		0.164	0.136

p values are based on t statistics adjusted for heteroskedasticity (White 1980).
*, **, *** designate statistical significance (two-tailed) at the 0.10, 0.05 and 0.01 level respectively.

ARL	=	number of days from fiscal year-end to audit report date;
*ln*ARL	=	natural logarithm of number of days from fiscal year-end to audit report date;
PART	=	1 if audit partner rotation within the incumbent audit firm; 0 otherwise;
LATERAL	=	1 if audit firm rotation within Big 5 or non-Big 5 audit firms; 0 otherwise;
CROSSUP	=	1 if audit firm rotation from non-Big 5 to Big 5 audit firms; 0 otherwise;
CROSSDOWN	=	1 if audit firm rotation from Big 5 to non-Big 5 audit firms; 0 otherwise;
LTA	=	natural logarithm of total assets;

ENEWS	=	$(EPS_t - EPS_{t-1})/\|EPS_{t-1}\|$;
LOSS	=	1 if reported loss before extraordinary item; 0 otherwise;
LSUB	=	natural logarithm of the number of subsidiaries;
FIND	=	1 if financial industry; 0 otherwise;
EI	=	1 if extraordinary item; 0 otherwise;
QOD	=	1 if qualified audit opinion; 0 otherwise;
GC	=	1 if going-concern audit opinion; 0 otherwise;
PROBZ	=	probability of bankruptcy based on Zmijewski's (1984) bankruptcy prediction model;
YE	=	1 if non-June 30 year-end; 0 otherwise;
BIG5	=	1 if Big 5 auditors; 0 otherwise;
SAUD	=	1 if structured audit firm (DTT and KPMG) based on Kinney's (1986) study; 0 otherwise;
NAS	=	1 if provision of non-audit services by the incumbent audit firm; 0 otherwise;

Table 5
Multiple Regression Results of Audit Report Lag Model
(Dependent variable is audit report lag, ARL)

Variable	Predicted Sign	Parameter Estimate (p value)		
		ARL [Model 1] N=367	ARL [Model 2] N=351	ARL [Model 3] N=369
Intercept	N/A	102.7097	106.4085	101.7992
		(0.000)***	(0.000)***	(0.000)***
PART	+	-0.6564	-0.4352	-0.8479
		(0.776)	(0.854)	(0.713)
LATERAL	+	-4.9163	-4.5626	
		(0.192)	(0.245)	
CROSSUP	?	13.9973	14.1430	
		(0.000)***	(0.000)***	
CROSSDOWN	?	1.5780	2.0992	
		(0.578)	(0.491)	
LTA	-	-2.0592	-2.6488	-2.4127
		(0.015)**	(0.000)***	(0.000)***
ENEWS	-	0.0061	0.0032	0.0089
		(0.917)	(0.956)	(0.878)
LOSS	+	1.9943	0.4816	1.6634
		(0.362)	(0.833)	(0.447)
LSUB	+	0.7002	0.6237	0.5637
		(0.018)**	(0.032)**	(0.037)**
FIND	-	0.9111	0.5008	0.3856
		(0.737)	(0.868)	(0.888)
EI	+	0.8855	0.7972	0.5514
		(0.592)	(0.630)	(0.735)
QOD	+	-3.3276	-9.6583	-3.1868
		(0.636)	(0.214)	(0.661)
GC	+	10.0011	10.9712	8.6983
		(0.019)**	(0.014)**	(0.043)**
PROBZ	+	35.1660	36.5452	38.5714
		(0.015)**	(0.015)**	(0.009)***
YE	-	-5.8868	-6.0764	-5.9853
		(0.001)***	(0.001)***	(0.001)***
BIG5	-	1.0247	1.2569	1.6181
		(0.622)	(0.551)	(0.416)
SAUD	+	-3.0323	-2.8619	-2.8602
		(0.125)	(0.157)	(0.154)
NAS	-	0.5006	0.0595	-0.3464
		(0.877)	(0.986)	(0.910)
LAF	+	-0.6122		
		(0.673)		
|DA|	?		2.4106	
			(0.454)	
FIRM	+			1.9932
				(0.563)
F value for the model (p value)		5.15	4.87	5.52
		(0.000)***	(0.000)***	(0.000)***
Adjusted R^2		0.170	0.166	0.156

p values are based on t statistics adjusted for heteroskedasticity (White 1980).
*, **, *** designate statistical significance (two-tailed) at the 0.10, 0.05 and 0.01 level respectively.

ARL = number of days from fiscal year-end to audit report date;
PART = 1 if audit partner rotation within the incumbent audit firm; 0 otherwise;

LATERAL	=	1 if audit firm rotation within Big 5 or non-Big 5 audit firms; 0 otherwise;
CROSSUP	=	1 if audit firm rotation from non-Big 5 to Big 5 audit firms; 0 otherwise;
CROSSDOWN	=	1 if audit firm rotation from Big 5 to non-Big 5 audit firms; 0 otherwise;
LTA	=	natural logarithm of total assets;
ENEWS	=	$(EPS_t - EPS_{t-1})/\|EPS_{t-1}\|$;
LOSS	=	1 if reported loss before extraordinary item; 0 otherwise;
LSUB	=	natural logarithm of the number of subsidiaries;
FIND	=	1 if financial industry; 0 otherwise;
EI	=	1 if extraordinary item; 0 otherwise;
QOD	=	1 if qualified audit opinion; 0 otherwise;
GC	=	1 if going-concern audit opinion; 0 otherwise;
PROBZ	=	probability of bankruptcy based on Zmijewski's (1984) bankruptcy prediction model;
YE	=	1 if non-June 30 year-end; 0 otherwise;
BIG5	=	1 if Big 5 auditors; 0 otherwise;
SAUD	=	1 if structured audit firm (DTT and KPMG) based on Kinney's (1986) study; 0 otherwise;
NAS	=	1 if provision of non-audit services by the incumbent audit firm; 0 otherwise;
LAF	=	natural logarithm of audit fees;
|DA|	=	absolute value of discretionary accruals based on modified Jones' (1991) model;
FIRM	=	1 if audit firm rotation; 0 otherwise;