Determinants Of Audit Report Lag: Evidence From Korea - An Examination Of Auditor-Related Factors

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ABSTRACT

This study examines whether audit report lag (ARL) is determined by certain auditor-related factors. Understanding the determinants of ARL is important as ARL is the single most important factor in determining the timing of earnings releases and, therefore, improving the timeliness of companies' announcements of earnings. Unlike prior studies, we are particularly interested in examining various auditor-related factors including audit and non-audit fees received from clients, auditor tenure, type of auditor and audit opinion. Using a recent Korean sample, we find that ARL is negatively associated with non-audit fees paid to incumbent auditors, consistent with "knowledge spillover" from the provision of non-audit services. We also find that ARL is negatively associated with the use of Big 4 auditors and unqualified audit opinions. We are, however, not able to find significant associations between ARL and auditor tenure, or abnormal audit fees paid to incumbent auditors. Additional analyses provide evidence that abnormal audit hours and the provision of tax services, and services relating to the design of internal control systems, significantly reduce ARL.

Keywords: audit report lag, abnormal audit fees, non-audit services, auditor tenure, audit opinion, Korea

1.0   INTRODUCTION

The main purpose of this paper is to examine the effect of auditor-related factors on audit report lag. Audit report lag (ARL) is the time period between a company's fiscal year-end and the audit report date. Examining factors that affect ARL is important for at least two reasons. Firstly, it increases our understanding of the audit process; Bamber et al. (1993), for example, argue that ARL is one of the few variables associated with audit efficiency that is externally observable. Secondly, ARL is directly associated with the timeliness of announcements of company earnings (Givoly and Palmon 1982). The value of information from audited financial statements also generally declines as ARL increases because users will obtain financial information from other potentially more costly sources (Knechel and Payne 2001). To increase the efficiency of markets, the U.S. Securities and Exchange Commission (SEC), for example, has issued rules requiring phased reductions in filing deadlines from 90 days after the financial year-end to 60 days, by 2007 (SEC 2005).

Several studies have examined the determinants of ARL. The results of these prior studies indicate that ARL is affected by client size, the complexity of an audit, and the type of earnings information (Bamber at al. 1993; Ng and Tai 1994). There is, however, very limited evidence on the relationship between auditor-related characteristics and ARL. For example, Knechel and Payne (2001) find that the provision of certain non-audit services increases ARL for a small sample of mostly private firms. Using 171 Greek companies in 2000, Leventis et al. (2005) find a negative association between ARL and auditor type, particularly auditors with international affiliation. No prior study comprehensively examines the association of various characteristics of auditor-related factors with ARL.

Unlike prior studies, which have used survey data and small samples, we examine the determinants of ARL using a large sample, consisting of 8,833 firm-year observations from 1999 to 2005 in Korea. We find a significantly negative association between non-audit and tax services and ARL. With regard to the relationship between ARL and the provision of tax services, our result contradicts that of Knechel and Payne (2001). One possible reason for this contrary finding is that we are able to use the large fees disclosures in recent annual reports of public firms, while Knechel and Payne (2001) use non-audit services provided in 1991 for 226 mostly private firms. We also find that the provision of services relating to the design of internal control systems significantly reduces ARL, which is consistent with "knowledge spillovers." We find that Big 4 auditors spend much less time in completing an audit, which is consistent with greater efficiency, possibly due to the better technology available to Big 4 auditors. Auditors spend much less time on an audit when they issue an unqualified audit opinion as opposed to when they issue other than an unqualified opinion. However, we are unable to find evidence that auditor tenure or abnormal audit fees influence ARL. Regarding control variables, our analyses confirm findings of prior studies showing that client complexity, firm size, a Korea Stock Exchange (KSE) as opposed to a Korea Securities Dealers Automated Quotation (KOSDAQ) listing, ownership concentration, and profitability significantly influence ARL.

The rest of this paper is organized as follows: the next section reviews the relevant literature and develops our research questions. This is followed by a discussion of our research design. Empirical results are presented next, followed by our conclusions.

2.0   LITERATURE REVIEW AND RESEARCH QUESTIONS

2.1   Audit Report Lag

The length of an audit is cited as the single most important factor affecting the timeliness of an earnings announcement (Givoly and Palmon 1982). Studies show that the timeliness of an earnings announcement is directly related to stock price; firms that announce earnings early (late) are, on average, viewed positively (negatively) by a stock market (Chambers and Penman 1984; Kross and Schroeder 1984).

According to the U.S. SEC, a delay before earnings information is released makes the information less valuable to investors (SEC 2002). The Korean Securities and Exchange Act (KSEA 1997, Article 194-3) stipulates the matters necessary for annual reports and for disclosures by listed corporations. The Act requires that audited financial statements be included in companies' annual reports, together with other important matters prescribed by the Presidential Decree to the Korean Financial Supervisory Commission (FSC), which is the Korean equivalent to the U.S. SEC. Recognizing the importance of the timely release of earnings information, the KSEA (1997, Article 186-2) requires that annual reports be filed with the FSC within 90 days of fiscal year-end. In addition, the Korean Commercial Act (1995, Article 363) requires that firms make the audited financial statements available to shareholders two weeks prior to the shareholders' meeting.

2.2   Relationship Between Abnormal Audit Fees And Audit Report Lag

By employing more experienced and/or specialist audit partners and skilled staff, auditors are able to reduce audit report lag. Using highly-skilled audit team members, however, increases the cost of an audit to above-normal levels. Thus, *ceteris paribus*, audit report lag shortens as abnormal audit fees increase. On the other hand, Knechel and Payne (2001) state that an incremental audit effort increases the time needed to complete field work. They argue that, once a required level of audit effort has been achieved, additional audit effort increases audit report lag without increasing overall audit quality. The effect of audit fees being different from those expected (i.e., abnormal audit fees) on ARL is therefore an empirical question. Abnormal audit fees (*ABAUF*) are computed as the residuals from the following model (see Gist 1994; Craswell and Francis 1999; Menon and Williams 2001; Beattie et al. 2001; among others for this audit fee model).

$$LNAUF_{it} = \alpha_0 + \beta_1 \, LNOHNAF_{it} + \beta_2 \, LNTAX_{it} + \beta_3 \, FORSALE_{it} + \beta_4 \, TENURE_{it} + \beta_5 \, BIG4_{it} + \beta_6 \, AUOP_{it} + \beta_7 \, DGC_{it} + \beta_8 \, LNSIZE_{it} + \beta_9 \, ROA_{it} + \beta_{10} \, LEVERAGE_{it} + \beta_{11} \, LOSS_{it}$$

$$+ \beta_{12} \, YEND_{it} + \beta_{13} \, SQSUB_{it} + \beta_{14} \, KSE_{it} + \beta_{15} \, INVREC_{it} + \sum_k \alpha_k YEARDUM_{lit}$$

$$+ \sum_j \alpha_j INDDUM_{lit} + \sum_l \alpha_l FIRMDUM_{li} + \varepsilon_{it} \quad \text{--- (1)}$$

where

LNAUF: natural log of audit service fees paid to incumbent auditors;
LNOHNAF: natural log of non-audit service fees other than tax services paid to incumbent auditors;
LNTAX: natural log of tax service fees paid to incumbent auditors;
FORSALE: percentage of sales abroad over total sales;
TENURE: auditor tenure, measured as the number of continuous years of auditor engagement;
BIG4: 1 if the auditor is one of the Big 4, 0 otherwise;
AUOP: 1 if the auditor's opinion is unqualified, 0 otherwise;
DGC: indicator variable where 1 indicates a going concern modification, 0 otherwise;
LNSIZE: client firm size, measured as the natural log of total assets;
ROA: net income divided by total assets;
LEVERAGE: total debt divided by total assets;
LOSS: 1 if a firm reports negative earnings, 0 otherwise;
YEND: 1 if a firm has a December fiscal year-end, 0 otherwise;
SQSUB: square root of the number of subsidiaries of a client;
KSE: 1 if a firm is listed on Korea Stock Exchange (KSE), 0 if listed on KOSDAQ;
INVREC: proportion of inventory and receivables to total assets;
YEARDUM: year indicators;
INDDUM: industry indicators; and
FIRMDUM: firm indicators.

     LNOHNAF is included since firms paying higher audit fees tend to purchase more non-audit services (Whisenant et al. 2003). Firms purchasing tax services from their incumbent auditors tend to be more complex (Knechel and Payne 2001) possibly because of international operations. Since tax services for international operations are not separately disclosed, we include both *LNTAX* and *FORSALE* to indirectly control for the complexity. *BIG4* auditors and auditors with longer *TENURE* provide higher quality assurance services (Francis et al. 1999; Johnson et al. 2002; Myers et al. 2003). Thus, they may be able to charge higher fees for their quality services. *AUOP* and *DGC* are included since auditors issuing other than unqualified audit opinions require additional audit work (Abbott et al. 2006). Client size (*LNSIZE*) is included since firm size is the most important explanatory variable in determining audit fees (Bell et al. 2001). More complex and risky firms are more likely pay higher audit fees (Craswell and Francis 1999). Thus, we include *SQSUB*, *INVREC*, *ROA*, *LEVERAGE*, and *LOSS* as proxies for client complexity and/or engagement risk. *YEND* is included is since busier season may require additional audit expenses to pay overtime premium. KSE listed firms are subject to stricter rules and regulations and have more interested parties than KOSDAQ listed firms. Thus, KSE listed firms are more likely to pay higher audit fees. Year and industry indicators (i.e., *YEARDUM* and *INDDUM*) are included in order to control for year and industry fixed effects. Finally, in order to control for all company-specific characteristics that are not captured by the other variables, we include dummy variables for firms (*FIRMDUM*) in the sample. The results of the model (1) are generally consistent with our expectations and prior studies. The model is highly significant at the one percent level (the results are available upon request).

2.3   Relationship Between Non-Audit Fees And Audit Report Lag

     Prior studies have suggested that the provision of non-audit services to audit clients results in "knowledge spillover" (Simunic 1984; Palmrose 1986; O'Keefe et al. 1994). These studies argue that the provision of non-audit services reduces start-up time and/or makes staff members more efficient. Knechel and Payne (2001) also argue that the provision of non-audit services by incumbent auditors reduces audit effort, reducing audit report lag, and find

evidence consistent with their expectation. Their results, however, cannot be applied more generally to the population of publicly-traded firms because 80 percent of the 226 sample firms are private firms from a proprietary database. While Knechel and Payne (2001) use a dummy variable to identify non-audit services, we measure non-audit services (*LNNAF*) as the natural log of non-audit fees paid to incumbent auditors. We expect a negative association between audit report lag (ARL) and non-audit fees.

2.4   Relationship Between Auditor Tenure And Audit Report Lag

The U.S. General Accounting Office (GAO 2003) reports that it takes auditors at least two to three years to become adequately acquainted with a client's operations. Johnson et al. (2002) provide evidence that short-tenured auditors (tenure of two to three years) are associated with lower-quality audits when compared with medium-tenured auditors (tenure of four to eight years). Carcello and Nagy (2004) find a higher incidence of fraudulent financial reporting in the early years of an auditor-client relationship. These findings support the notion that auditors gain a fuller and more complete understanding of client operations as their tenure increases.

Ashton et al. (1987) suggest that there should be an increase in reporting lag with a new audit client because of the start-up time required for an auditor to become familiar with the client's records, operations, internal controls and the prior period working papers. They do not report evidence of an association between ARL and tenure from their sample of 488 firms from survey data obtained from a single audit firm in 1982.

The above studies suggest that newer auditors will need to spend more time learning about their client's operations, and their risk and accounting systems, in the initial years of the engagement. As auditor tenure increases, therefore, audit efficiency is expected to increase, leading to shorter ARLs. While Ashton et al. (1987) use a six point scale to measure tenure (tenure greater than five years is assigned a value of six), we measure tenure (*TENURE*) using a continuous variable.

2.5   Relationship Between Big 4 Auditors And Audit Report Lag

Auditor type can also influence ARL. Big 4 accounting firms have better access to advanced technologies and specialist staff when compared to non-Big 4 firms. Differences in well-programmed audit procedures and technologies can lead to differences in audit report lags between the two groups of auditors (Schwartz and Soo 1996). This study includes a dichotomous variable to classify auditors into Big 4 and non-Big 4 categories. We expect a negative association between ARL and audit by Big 4 auditors (*BIG4*).

2.6   Relationship Between Type Of Audit Opinion And Audit Report Lag

Korean Auditing Standards (KICPA 2005) require auditors to issue either qualified or adverse reports for departures from generally accepted accounting practices (GAAP), and a qualified opinion or disclaimer for a limitation of scope. Whittred (1980) reports that auditors of clients receiving an unqualified audit opinion generally complete their audits earlier, shortening ARL. Soltani (2002) finds similar evidence in a sample of publicly traded French companies. Schwartz and Soo (1996) also report a longer ARL when an auditor's opinion needs modification. Based on the above studies, we suggest that auditors perform their audits less efficiently when departures from GAAP or a scope limitation are involved. Auditor opinion (*AUOP*) is measured as an indicator variable with a value of 1 if the audit opinion is unqualified and 0 otherwise (Whittred 1980; Butler et al. 2004). Consistent with prior studies, we expect a negative association between *AUOP* and ARL.

3.0   RESEARCH DESIGN

3.1   Sample

Our initial sample includes 8,950 firm-years, representing 1,560 firms, from 1999 to 2005 for which audit report dates and audit fees are available in audit and annual reports. All data used in this study are publicly available via the Dart System of Korean Financial Supervisory Services (KFSS). KFSS has, since fiscal 2001, required

publicly traded firms to disclose in their annual reports the audit and non-audit fees paid to incumbent auditors for the current and past 2 years. We then delete 19 firm-years with an audit report lag longer than the 90 days consistent with the requirement of the KSEA (1997, Article 186-2) and the Act on External Audit of Corporations (AEAC, 1998, Article 3-2). Results are qualitatively the same when we use several different criteria for deleting extreme ARLs (not reported). Finally, we eliminate firm-years for which the financial data necessary for use in our regressions are not available in the Korea Information Service (KIS) financial database. This reduces the sample size to 8,833 firm-years (655 in 1999; 1,086 in 2000; 1,276 in 2001; 1,388 in 2002; 1,459 in 2003; 1,501 in 2004; 1,468 in 2005), representing 1,537 firms.

3.2   Methodology

Bearing in mind prior studies (Bamber et al. 1993; Henderson and Kaplan 2000; Knechel and Payne 2001), we estimate the following audit report lag model to examine the research questions. Unlike prior studies, we use Poisson regressions that are used for a non-negative integer dependent variable and are censored at 0. Using OLS, however, does not change our conclusions.

$$ARL_{it} = \alpha_0 + \beta_1\, ABAUF_{it} + \beta_2\, LNNAF_{it} + \beta_3\, TENURE_{it} + \beta_4\, BIG4_{it} + \beta_5\, AUOP_{it}$$
$$+ \beta_6\, LNSIZE_{it} + \beta_7\, ROA_{it} + \beta_8\, LEVERAGE_{it} + \beta_9\, LOSS_{it} + \beta_{10}\, YEND_{it} + \beta_{11}\, SQSUB_{it}$$
$$+ \beta_{12}\, KSE_{it} + \beta_{13}\, INVREC_{it} + \beta_{14}\, EXTRA_{it} + \beta_{15}\, OWNCON_{it}$$
$$+ \sum_k \alpha_k YEARDUM_{lit} + \sum_j \alpha_j INDDUM_{lit} + \varepsilon_{it} \;\text{---}\; (2)$$

where

ARL: number of calendar days from fiscal year-end to date of the auditor's report;
$ABAUF$: abnormal audit fees, residuals from audit fee model (1);
$LNNAF$: natural log of non-audit service fees paid to incumbent auditors;
$TENURE$: auditor tenure, measured as the number of continuous years of auditor engagement;
$BIG4$: 1 if an auditor is one of the Big 4, 0 otherwise;
$AUOP$: 1 if the auditor's opinion is unqualified, 0 otherwise;
$LNSIZE$: client firm size, measured as the natural log of total assets;
ROA: net income divided by total assets;
$LEVERAGE$: total debt divided by total assets;
$LOSS$: 1 if a firm reports negative earnings, 0 otherwise;
$YEND$: 1 if a firm has a December fiscal year-end, 0 otherwise;
$SQSUB$: square root of the number of subsidiaries of a client;
KSE: 1 if a firm is listed on Korean Stock Exchange, 0 if listed on KOSDAQ;
$INVREC$: proportion of inventory and receivables to total assets;
$EXTRA$: 1 if a firm reports extraordinary items, 0 otherwise;
$OWNCON$: ownership concentration, measured by shares outstanding divided by the number of shareholders scaled by 1,000;
$YEARDUM$: year indicators; and
$INDDUM$: industry indicators.

3.3   Variables Used

There has been virtually no research using public data examining the effects of a comprehensive set of auditor-related factors on ARL. As discussed in the previous section, auditor-related factors examined in this study include abnormal audit service fees and fees paid to incumbent auditors for non-audit services, auditor tenure, auditor type, and audit opinion.

We use a number of control variables to explain variations in ARL. The auditor's business risk, which is the risk of litigation due to an auditor's failure to detect a material misstatement in the financial statements, is positively related to the extent of audit work performed by an auditor (Bamber et al. 1993). Therefore, the higher an auditor's business risk, the longer the expected ARL. Consistent with Bamber et al. (1993), an auditor's business

risk is proxied by the client's ownership concentration (*OWNCON*), measured as the proportion of shares outstanding to the number of shareholders divided by 1,000, and the client's leverage ratio (*LEVERAGE*). Bamber et al. (1993) argue that as the number of individual investors relying on a client's financial statements increases, the auditor's (and the client's) exposure to litigation also increases. On the other hand, firms with concentrated ownership experience greater information asymmetry in the capital markets. Many Korean firms are managed by owners who hold a significant portion of the firm's equity shares. Controlling shareholders have greater incentive and means to expropriate firm resources than others (Denis and McConnell 2003). The ownership structure of Korean firms is complex due to pyramidal and/or cross-ownership across affiliated firms and family members (La Porta et al. 1999; Claessens et al. 2000). Thus, concentrated ownership may, in fact, increase audit risk. The association between ARL and ownership diversification is therefore an empirical question. Brumfield et al. (1983) suggest that when a client's financial position is weak, the auditor's business risk increases. Thus, ARL is expected to be longer for high leverage firms.

The more diverse and complex are the client's operations, the greater is the likelihood of material errors occurring and the greater is the amount of audit work that must be performed (Bamber et al. 1993). Audit complexity is proxied by the number of subsidiaries (*SQSUB*), measured as the square root of the number of subsidiaries of a firm, and the proportion of inventory and receivables to total assets (*INVREC*). As the number of subsidiaries and the amount of inventory and receivables increases, ARL is likely to increase.

We control for other work-related factors that affect the extent of audit work. Specifically we control for extraordinary items (*EXTRA*), using an indicator with value 1 if a firm reports extraordinary items, and 0 otherwise (Newton and Ashton 1989; Bamber et al. 1993); losses (*LOSS*) are measured using an indicator with value 1 if a firm reports negative earnings, and 0 otherwise (Ashton et al. 1987); profitability (*ROA*) is measured as net income divided by total assets (Jaggi and Tsui 1999); and busy seasons (*YEND*) are measured with an indicator with value 1 if a client-firm has fiscal year-end in December, and 0 otherwise (Davies and Whittred 1980: Garsombke 1981; Knechel and Payne 2001). ARL is expected to be longer when there are extraordinary items and negative earnings (Ashton et al. 1987). Busy seasons (*YEND*) can possibly increase ARL if there is a shortage of audit staff during these periods (Ashton et al. 1989; Newton and Ashton 1989; Knechel and Payne 2001). Firms listed on the Korean Stock Exchange (*KSE*) tend to be well-established firms due to stricter requirements for registration relative to those on KOSDAQ, and ARL is therefore likely to be shorter.

ARL is also a function of the extent to which clients have incentives to report financial information in a timely manner (Bamber et al. 1993). Large audit clients face greater external pressure to report financial information early (Newton and Ashton 1989), suggesting that large firms will have a shorter ARL. Client size (*LNSIZE*) is measured using the natural log of total assets. Finally, ARL is expected to vary across industries (*INDDUM*) and years (*YEARDUM*).

4.0   EMPIRICAL RESULTS

4.1   Descriptive Statistics

Table 1, Panel A, shows the distribution of the sample by industry. Similarly to Frankel et al. (2002) and Ashbaugh et al. (2003), we classify the firms into 25 industry groups. The firms represent a wide range of industries, with about 24.3 percent coming from the Machinery manufacturing and Service industries. ARLs are longer in the Computer and the Farming/Fishing /Coal Mining industries and shorter in the Utilities and the Glass/Ceramics industries. The Ship and Automobile/Transportation Equipment manufacturing industries pay higher audit fees, as firms in these industries are relatively large in size. The Utilities industry pays the highest non-audit fees. The Machinery industry pays more non-audit than audit fees to their auditors, which may reflect greater demand for consulting services due to the highly competitive business environment and/or the need for automation and re-engineering (KAMI 2005).

Table 1, Panel B, shows the sample distribution by year. There are fewer observations in 1999; mainly because the filing of audit reports with the Dart System was not required in 1999. ARL has generally been declining while audit fees have been increasing over time. The decline in ARL is possibly due to management recognition of the increasing importance of timely reporting. Audit fees peaked in 2005 while non-audit fees were highest in 2003.

Table 1
Sample Description

Panel A. Industry Distribution

Industry	Firm-Years		Mean Value						
	N	Percent	ARL	Audit Fees	Non-Audit Fees	ABAUF	Tenure	Big 4	Unqualified Opinion
Farm/Fish/Coal	45	0.5	50.73	50,984	578	-0.0092	4.64	0.4000	1.0000
Food	397	4.5	44.17	67,941	20,798	0.0039	5.14	0.6751	0.9824
Textile	417	4.7	49.10	42,383	2,834	-0.0017	5.32	0.3933	0.9712
Publishing	322	3.6	46.35	48,120	4,214	0.0027	3.64	0.5652	0.9658
Chemicals	595	6.7	42.29	70,277	30,565	-0.0017	5.29	0.5882	0.9882
Phamaceuticals	405	4.6	43.64	41,827	3,793	-0.0015	6.06	0.5358	0.9901
Rubber/Plastic	185	2.1	47.30	41,512	8,027	0.0071	4.11	0.4216	0.9730
Glass/Ceramic	83	0.9	36.57	144,347	6,024	-0.0090	5.94	0.6506	0.9880
Construction Materials	146	1.7	45.97	74,253	10,258	-0.0031	4.40	0.5411	0.9932
Steel	349	4.0	41.74	63,482	25,443	0.0057	4.16	0.6934	0.9713
Non-ferrous Metal	375	4.2	47.55	45,170	12,202	0.0020	4.73	0.4720	0.9813
Computer	113	1.3	50.29	52,649	23,852	0.0259	3.65	0.5575	0.9823
Machinery	969	11.0	47.47	38,542	49,661	0.0028	4.05	0.5315	0.9701
Electricity Equipment	106	1.2	41.33	53,507	8,972	-0.0044	5.04	0.5943	0.9434
Semi-conductor/Electronics	653	7.4	45.77	57,521	15,616	0.0069	4.28	0.5100	0.9786
Communication Equipment	712	8.1	47.90	53,264	40,879	0.0019	4.14	0.4916	0.9691
Automobile Parts	351	4.0	48.07	43,837	5,746	-0.0014	4.64	0.6040	0.9943
Ship Manufacturing	50	0.6	42.86	201,834	49,235	0.0114	6.24	0.8600	1.0000
Automobile/Transportation Equipment	51	0.6	43.59	204,755	43,089	0.0160	6.20	0.7451	0.9216
Funiture	91	1.0	49.97	49,452	5,287	-0.0036	6.12	0.6044	1.0000
Utilities	152	1.7	36.07	155,613	60,722	0.0119	4.59	0.8421	1.0000
Construction	367	4.2	48.24	86,981	16,733	0.0012	4.23	0.7302	0.9728
Retail	584	6.6	47.16	64,194	29,364	0.0055	4.61	0.6301	0.9521
Service	1,172	13.3	44.74	40,748	10,666	0.0047	3.76	0.6288	0.9872
Transportation	143	1.6	40.55	95,527	15,613	0.0030	6.18	0.6923	0.9790
Total	8,833	100.0	45.71	57,754	21,846	0.0027	4.53	0.5779	0.9774

Table 1 (Continued)

Panel B. Year Distribution

Year	Firm-Years		Mean Value						
					Non-Audit				Unqualified
	N	Percent	ARL	Audit Fees	Fees	ABAUF	Tenure	Big 4	Opinion
1999	655	7.4	46.36	44,176	10,821	-0.0054	3.86	0.6275	0.9573
2000	1,086	12.3	47.61	43,626	23,527	0.0161	3.88	0.5737	0.9530
2001	1,276	14.4	46.58	47,721	22,997	0.0078	4.13	0.5854	0.9859
2002	1,388	15.7	45.90	59,706	22,410	0.0019	4.41	0.5829	0.9841
2003	1,459	16.5	46.19	59,808	30,148	0.0011	5.06	0.5833	0.9808
2004	1,501	17.0	44.21	65,654	18,541	-0.0006	5.23	0.5869	0.9807
2005	1,468	16.6	44.15	71,022	19,114	-0.0022	4.54	0.5334	0.9837
Total	8,833	100.0	45.71	57,754	21,846	0.0027	4.53	0.5779	0.9774

Panel C. Auditor Distribution

Year	Firm-Years		Mean Value						
					Non-Audit				Unqualified
	N	Percent	ARL	Audit Fees	Fees	ABAUF	Tenure	Big 4	Opinion
EY	1,620	18.3	45.83	51,659	6,072	-0.0026	4.86	1.0000	0.9759
KPMG	690	7.8	42.63	95,499	14,922	-0.0017	3.22	1.0000	0.9623
DT	987	11.2	42.80	68,037	16,465	-0.0050	3.95	1.0000	0.9858
PWC	1,808	20.5	42.31	84,526	57,645	0.0159	5.46	1.0000	0.9829
Non-Big 4	3,728	42.2	48.63	37,677	14,032	0.0014	4.33	0.0000	0.9759
Total	8,833	100.0	45.71	57,754	21,846	0.0027	4.53	0.5779	0.9774

Notes: ARL: mean value of audit report lag; Audit /Non-Audit Fees: mean values of audit/non-audit fees paid to incumbent auditors in thousands of Korean Won; ABAUF: abnormal audit fees, residuals from audit fee model; Tenure: mean value of auditor tenure; Big 4: proportion of Big 4 auditors; Unqualified Opinion: proportion of unqualified opinions.

The higher audit fees in 2004 and 2005 reflect additional fees paid to incumbent auditors for the newly-required evaluation by auditors of the effectiveness of internal accounting management systems, equivalent to the evaluation of internal control effectiveness over financial reporting in the United States. We therefore use the term 'internal control effectiveness' hereafter when discussing the effectiveness of internal accounting management systems. The AEAC (2003, article 2-3) has required auditors to evaluate and report on the effectiveness of client firms' internal accounting management systems for firms with fiscal year-end after April 1st, 2004. The mean value of audit fees paid to auditors is 57,754,000 Korean Won (U$57,013 based on an exchange rate at the end of 2005 of 1,013 Korean Won to 1 U.S. Dollar). The mean value of non-audit fees paid to incumbent auditors is 21,845,660 Korean Won. Only 2,103 firm-years, from 701 firms, report non-zero non-audit service fees (the mean value of this sample is 91,753,910 Korean Won).

Table 1, Panel C, shows the mean values of key variables by auditors. About 57.8% of sample firm-years are audited by one of Big 4 auditors. Among Big 4 audit firms, PriceWaterhouseCoopers (PwC) accounts for the largest proportion of the sample (around 20.5 percent) and has a shorter ARL, on average, than other audit firms. PwC also receives, on average, the highest audit and non-audit fees and has the longest auditor tenure.

Table 2
Descriptive Statistics
N = 8,833

Variables	Mean	St. Dev.	Min	Q1	Median	Q3	Max
ARL	45.7106	13.9379	0.0000	35.0000	46.0000	55.0000	90.0000
ABAUF	0.0027	0.1913	-0.8206	-0.0998	0.0050	0.1120	0.7245
LNNAF	2.2587	4.1056	0.0000	0.0000	0.0000	0.0000	12.7099
TENURE	4.5321	3.8398	1.0000	2.0000	3.0000	6.0000	23.0000
BIG4	0.5779	0.4939	0.0000	0.0000	1.0000	1.0000	1.0000
AUOP	0.9774	0.1488	0.0000	1.0000	1.0000	1.0000	1.0000
LNSIZE	18.1915	1.4545	15.4977	17.1551	17.9090	18.9775	22.8274
ROA	0.0152	0.1628	-0.7883	0.0037	0.0378	0.0851	0.4191
LEVERAGE	1.2083	1.8147	-3.4597	0.4034	0.8139	1.4573	13.3264
LOSS	0.2317	0.4220	0.0000	0.0000	0.0000	0.0000	1.0000
YEND	0.9378	0.2414	0.0000	1.0000	1.0000	1.0000	1.0000
SQSUB	0.7018	1.2337	0.0000	0.0000	0.0000	1.4142	5.1962
KSE	0.4134	0.4925	0.0000	0.0000	0.0000	1.0000	1.0000
INVREC	0.3023	0.1594	0.0141	0.1826	0.2892	0.4064	0.7056
EXTRA	0.1303	0.3367	0.0000	0.0000	0.0000	0.0000	1.0000
OWNCON	3.9411	4.3341	0.2757	1.1167	2.4500	5.2284	24.4898

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Variable Definitions
ARL: number of calendar days from fiscal year-end to date of the auditor's report;
ABAUF: abnormal audit fee, residuals from the audit fee model (1);
LNNAF: natural log of non-audit service fees paid to incumbent auditors;
TENURE: auditor tenure measured as the number of continuous years of auditor engagement;
BIG4: 1 if an auditor is one of Big 4, 0 otherwise;
AUOP: 1 if the auditor's opinion is unqualified, 0 otherwise;
LNSIZE: client firm size, measured as the natural log of total assets;
ROA: net income divided by total assets;
LEVERAGE: total debt divided by total assets;
LOSS: 1 if a firm reports negative earnings, 0 otherwise;
YEND: 1 if a firm has a December fiscal year-end, 0 otherwise;
SQSUB: square root of the number of subsidiaries of a client;
KSE: 1 if a firm is listed on Korean Stock Exchange, 0 if listed on KOSDAQ;
INVREC: proportion of inventory and receivables to total assets;
EXTRA: 1 if a firm reports extraordinary items, 0 otherwise; and
OWNCON: ownership concentration measured by shares outstanding divided by the number of shareholders scaled by 1,000;

Table 2 presents summary statistics for the variables used in this study. Following Bamber et al. (1993), all continuous explanatory variables except *TENURE* were winsorized at both 1 percent and 99 percent levels to reduce the effects of extreme values. *TENURE* is truncated because 1980 is the first year in which KIS reported auditor identity. The mean (median) value of *ARL* is 45.71 (46), which indicates that it took, on average, one-and-a-half months after fiscal year-end to complete an audit. The mean (median) value of *TENURE* is 4.53 (3), indicating that the client-auditor relationship lasts, on average, for about four-and–a-half years. Table 2 also shows that 2.3 percent of the sample has audit opinions that are other than unqualified (*AOPIN*), and that the Big 4 audit firms audit 57.8 percent of the sample firm-years.

About 41 percent of the sample firms are listed on KSE, with the rest listed on KOSDAQ. Thirteen percent of the sample firms report extraordinary items (*EXTRA*), 23.17 percent suffer a net loss (*LOSS*), and 93.78 percent of the sample firms have fiscal year-end in December (*YEND*). The mean value of total assets is 79,517 million Korean Won.

The Pearson correlation matrix shows that the variables are not highly correlated, with the exception of *LNSIZE* and *SQSUB* (ρ=0.63); *LNSIZE* and *KSE* (ρ=0.60); *ROA* and *LOSS* (ρ=-0.68); *KSE* and *SQSUB* (ρ=0.43). Dropping one or all of *KSE*, *LOSS*, and *SQSUB*, however, does not change our conclusions and provides substantially similar results (not reported).

4.2   Regression Results

In Table 3, we document the results of estimating our regression models. Since the dependent variable is non-negative integers and they are censored at zero, we use Poisson regression. The empirical results show that the coefficient for abnormal audit fees (*ABAUF*) is insignificant, suggesting that higher-than-expected audit fees do not necessarily shorten ARL. This may be because abnormal audit fees are determined by the relative negotiating power of client and auditor, rather than by incremental efforts by auditors to complete their audit earlier. The coefficient for non-audit services (*LNNAF*) is negative and statistically significant at the one percent level. This finding is consistent with the presence of "knowledge spillovers" from non-audit services; in other words, auditors who have improved their understanding of their client's business through non-audit services are able to shorten ARL. *TENURE* is insignificant, suggesting that longer auditor tenure does not necessarily increase audit efficiency in Korea.

Consistent with Leventis et al. (2005), Big 4 audit firms complete their audit earlier than non-Big 4 auditors. This finding confirms that Big 4 auditors are more efficient in performing their services, possibly due to the availability of more advanced technology and specialist staff. *AUOP* is negative and significant at the one percent level, suggesting that auditors spend more time on audits when they issue opinions other than unqualified. This is consistent with Ashton et al. (1989), suggesting that auditors are careful issuing other than an unqualified opinion, which may cause a client to change its auditor.

We also ran OLS diagnostic tests for the presence of multicollinearity in the models. The highest variance inflation factor (VIF) in the model without industry indicators is 3.07 (Model A in Table 3), which suggests that multicollinearity is not a serious concern. When we include 24 industry indicator variables, the highest VIF increases to 20.30 (the service industry indicator) (Model B in Table 3). However, the coefficients and significances of other variables, including all of the auditor-related variables of interest with industry indicators (Model B), are qualitatively the same as those without industry indicators (Model A). The Chi-Square of the Poisson regression model is greater without the industry indicators, while the Psuedo-R^2 of the model is greater with the industry indicators.

The signs of the regression coefficients for the control variables are generally consistent with findings in prior studies. *LNSIZE* and *KSE* are negative and significant at the one percent level, suggesting that auditors for large and KSE-listed firms complete their audits earlier. ARL is negatively associated with *ROA* while it is positively associated with *LOSS*, suggesting that profitable and less-risky firms take less time to audit. Consistent with this, *LEVERAGE* is positive and significant at the one percent level, suggesting that auditors for highly-levered,

and so riskier, firms take more time to complete their audits. *SQSUB* and *INVREC*, proxies for client complexity, consistently show a positive association with ARL, indicating that auditors for complex firms take longer to complete audits. *EXTRA* is also positive and significant at the one percent level, suggesting that auditors for firms reporting extraordinary items take longer to complete their audits. As ownership concentration increases, auditors spend more time completing their audit, suggesting that auditors are more careful in performing their work for clients with a high ownership concentration, possibly because of owner influence over accounting practices and the over-riding of internal control systems by a few influential owner-managers. Finally, the year indicator variables show a decreasing pattern over time, indicating that auditors have shortened their audit process over the sample period.

Table 3
Poisson Regression Results

$$ARL_{it} = \alpha_0 + \beta_1\,ABAUF_{it} + \beta_2\,LNNAF_{it} + \beta_3\,TENURE_{it} + \beta_4\,BIG4_{it} + \beta_5\,AUOP_{it}$$
$$+ \beta_6\,LNSIZE_{it} + \beta_7\,ROA_{it} + \beta_8\,LEVERAGE_{it} + \beta_9\,LOSS_{it} + \beta_{10}\,YEND_{it} + \beta_{11}\,SQSUB_{it}$$
$$+ \beta_{12}\,KSE_{it} + \beta_{13}\,INVREC_{it} + \beta_{14}\,EXTRA_{it} + \beta_{15}\,OWNCON_{it}$$
$$+ \sum_k \alpha_k YEARDUM_{lit} + \sum_j \alpha_j INDDUM_{lit} + \varepsilon_{it}$$

Variables	Expected Sign	(A) Estimated Coefficients (t-value)	(B) Estimated Coefficients (t-value)
Intercept	+/-	4.4141 (134.49)***	4.5523 (111.65)***
ABAUF	+/-	0.0105 (1.27)	0.0115 (1.40)
LNNAF	-	-0.0035 (-8.32)***	-0.0032 (-7.55)***
TENURE	-	0.0004 (0.98)	0.0005 (1.14)
BIG4	-	-0.0842 (-25.26)***	-0.0784 (-23.27)***
AUOP	-	-0.1199 (-12.12)***	-0.1165 (-11.73)***
LNSIZE	-	-0.0245 (-13.79)***	-0.0246 (-12.97)***
ROA	-	-0.2280 (-17.70)***	-0.0237 (-18.21)***
LEVERAGE	+	0.0104 (12.43)***	0.0086 (10.03)***
LOSS	+	0.0553 (10.95)***	0.0586 (11.51)***
YEND	+/-	-0.0042 (-0.64)	-0.0021 (-0.31)
SQSUB	+	0.0289 (16.64)***	0.0313 (17.08)***
KSE	-	-0.0634 (-15.20)***	-0.0738 (-16.74)***
INVREC	+	0.1185 (11.39)***	0.1059 (9.64)***

Table 3 (Continued)

EXTRA	+	0.0290	0.0231
		(5.98)***	(4.72)***
OWNCON	+/-	0.0037	0.0029
		(9.49)***	(7.43)***
Y2000	+/-	0.0118	0.0110
		(1.62)	(1.51)
Y2001	+/-	-0.0180	-0.0189
		(-2.50)**	(-2.62)**
Y2002	+/-	-0.0415	-0.0415
		(-5.77)***	(-5.77)***
Y2003	+/-	-0.0465	-0.0457
		(-6.43)***	(-6.31)***
Y2004	+/-	-0.0927	-0.0914
		(-12.61)***	(-12.42)***
Y2005	+/-	-0.1003	-0.0996
		(-13.58)***	(-13.47)***
Chi-Square		32,445.45***	31,573.95***
Psuedo-R^2		0.1345	0.1578
N		8,833	8,833

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Notes:
The significances are based on one-tailed (two-tailed) tests with (without) expected signs. *, **, and *** represent 10%, 5%, and 1% significances respectively. *Y2000* (*Y2001*..) represents the year indicator. Industry dummies are not reported in model (B) for the sake of brevity. See Table 2 for variable definitions.

4.3　Analyses On Abnormal Audit Hours And The Provisions Of Tax And Internal Control Systems Design Services

Knechel and Payne (2001) examine the effect of incremental audit hours (a proxy for the unobserved incremental audit effort), instead of the effect of incremental audit fees on ARL, using a sample of 226 firms from an international accounting firm. They find incremental audit hours increase ARL. They also find that, while the provision of management advisory service (MAS) is negatively associated with ARL, the provision of tax services is positively associated with ARL. They suggest that "knowledge spillover" from MAS causes this negative association, while complex tax situations result in additional audit efforts that increase ARL. However, we argue that, similar to the provision of other non-audit services, auditors may also be able to utilize "knowledge spillovers" by providing tax services and services relating to the design of internal control systems. Thus, we examine the effects of incremental audit hours, tax services and services relating to the design of internal control systems on ARL in the Korean context. Similar to Knechel and Payne (2001) and Hackenbrack and Knechel (1997), incremental audit hours are computed as the residuals from the following model:

$$LNAHR_{it} = \alpha_0 + \beta_1 LNNAF_{it} + \beta_2 LNSIZE_{it} + \beta_3 TENURE_{it} + \beta_4 AUOP_{it} + \beta_5 GC_{it}$$
$$+ \beta_6 ROA_{it} + \beta_7 LOSS_{it} + \beta_8 LEVERAGE_{it} + \beta_9 INVREC_{it} + \beta_{10} YEND_{it}$$
$$+ \beta_{11} SQSUB_{it} + \beta_{12} KSE_{it} + \beta_{13} BIG4_{it} + \sum_k \alpha_k YEARDUM_{lit}$$
$$+ \sum_j \alpha_j INDDUM_{lit} + \sum_l \alpha_l FIRMDUM_{li} + \varepsilon_{it} \text{ --- (3)}$$

where

LNAHR = natural log of audit hours; and
all other variables are as defined in models (1) and (2).

We then run the following Poisson regression model to examine the effects of incremental audit hours, non-audit services other than tax and the design of internal control systems, tax services, services relating to the design of internal control systems, and other auditor-related factors. The sample size is smaller (6,576 firm-years) than that used for model (2) because the disclosure of audit hours was optional until 2003. In addition, some of the sample firms disclosed the number of days or the period spent on the audit rather than audit hours.

$$ARL_{it} = \alpha_0 + \beta_1\,ABAHR_{it} + \beta_{2\text{-}1}\,LNNAF(NoTaxICS)_{it} + \beta_{2\text{-}2}\,LNTAXF_{it} + \beta_{2\text{-}3}\,LNICSF_{it}$$
$$+ \beta_3\,TENURE_{it} + \beta_4\,BIG4_{it} + \beta_5\,AUOP_{it} + \beta_6\,LNSIZE_{it} + \beta_7\,ROA_{it} + \beta_8\,LEVERAGE_{it}$$
$$+ \beta_9\,LOSS_{it} + \beta_{10}\,YEND_{it} + \beta_{11}\,SQSUB_{it} + \beta_{12}\,KSE_{it} + \beta_{13}\,INVREC_{it} + \beta_{14}\,EXTRA_{it}$$
$$+ \beta_{15}\,OWNCON_{it} + \sum\nolimits_k \alpha_k YEARDUM_{lit} + \sum\nolimits_j \alpha_j INDDUM_{lit} + \varepsilon_{it} \quad \text{--- (4)}$$

where

ABAHR: abnormal audit hours, residuals from model (3);
LNNAF(NoTaxICS): natural log of non-audit fees excluding fees paid for tax services and services relating to the design of internal control systems;
LNTAXF: natural log of tax service fees paid to auditors;
LNICSF: natural log of fees paid to auditors for services relating to the design of internal control systems; and all other variables are as defined in models (1) and (2).

Unlike *ABAUF* in model (3), abnormal audit hours (*ABAHR*) are negative and significant at the one percent level, suggesting that auditors could finish audits earlier by allocating more time than expected. This negative coefficient for *ABAHR* contradicts the finding in Knechel and Payne (2001), that an incremental audit effort increases ARL. Knechel and Payne (2001) also report a positive association between the provision of tax services and ARL, arguing that additional effort is needed because of the complex tax services auditors provide. However, we find evidence for a contrary position, that the provision of tax services (*LNTAXF*) is negatively associated with ARL, suggesting that auditors experience "knowledge spillovers" by providing tax services. The provision of services relating to the design of internal control systems (*LNICSF*) also provides evidence of "knowledge spillovers," these even being stronger than those coming from providing tax services. Using indicator variables instead of the natural log of fees for tax and internal control systems design services provides qualitatively the same results. *LNNAF(NoTaxICS)* is negative and significant at the one percent level, consistent with the finding in Knechel and Payne (2001). All other auditor-related variables and control variables are qualitatively similar to those reported in Table 3.

4.4   Robustness Analyses

We acknowledge the possibility that ARLs are shorter for clients that pay higher non-audit fees because audit firms are more interested in keeping these clients happy. Thus, we examine the models after including an additional control variable for audit quality. The absolute value of discretionary accruals (DACCR), measured based on the Cross Sectional Modified Jones Model (Dechow et al. 1995), is used as a proxy for audit quality (Krishnan 1994; Francis et al. 1999; DeFond and Subramanyam 1998). The results with this additional variable are qualitatively the same as those reported in this paper, while the sample size reduces to 7,511 and DACCR itself is insignificant (e.g., coefficient = 0.2492, p-value = 0.4032 with year/industry dummies) in any of the models (not reported).

Table 4
Poisson Analyses on Abnormal Audit Hours/Tax/System Design Services

$$ARL_{it} = \alpha_0 + \beta_1\, ABAHR_{it} + \beta_{2\text{-}1}\, LNNAF(NoTaxICS)_{it} + \beta_{2\text{-}2}\, LNTAXF_{it} + \beta_{2\text{-}3}\, LNICSF_{it}$$
$$+ \beta_3\, TENURE_{it} + \beta_4\, BIG4_{it} + \beta_5\, AUOP_{it} + \beta_6\, LNSIZE_{it} + \beta_7\, ROA_{it} + \beta_8\, LEVERAGE_{it}$$
$$+ \beta_9\, LOSS_{it} + \beta_{10}\, YEND_{it} + \beta_{11}\, SQSUB_{it} + \beta_{12}\, KSE_{it} + \beta_{13}\, INVREC_{it} + \beta_{14}\, EXTRA_{it}$$
$$+ \beta_{15}\, OWNCON_{it} + \sum_k \alpha_k YEARDUM_{lit} + \sum_j \alpha_j INDDUM_{lit} + \varepsilon_{it} \;\text{--- (4)}$$

Variables	Expected Sign	(C) Estimated Coefficients (t-value)	(C-1) Estimated Coefficients (t-value)	(D) Estimated Coefficients (t-value)	(D-1) Estimated Coefficients (t-value)
Intercept	+/-	4.5993 (107.137)***	4.5884 (106.43)***	4.7679 (91.88)***	4.7575 (91.41)***
ABAHR	+/-	-0.0192 (-5.89)***	-0.0187 (-5.72)***	-0.0196 (-6.01)***	-0.0191 (-5.86)***
LNNAF	-	-0.0035 (-7.31)***		-0.0033 (-6.91)***	
LNNAF(NoTaxICS)	-		-0.0027 (-4.32)***		-0.0025 (-3.91)***
LNTAXF	-		-0.0020 (-3.28)***		-0.0002 (-3.62)***
LNICSF	-		-0.0087 (-6.38)***		-0.0008 (-5.97)***
TENURE	-	-0.0003 (-0.52)	-0.0001 (-0.20)	0.0000 (0.06)	0.0002 (0.37)
BIG4	-	-0.0925 (-23.75)***	-0.0913 (-23.38)***	-0.0880 (-22.29)***	-0.0870 (-21.96)***
AUOP	-	-0.1360 (-10.59)***	-0.1361 (-10.59)***	-0.1298 (-10.07)***	-0.1298 (-10.06)***
LNSIZE	-	-0.0328 (-15.35)***	-0.0324 (-15.10)***	-0.0353 (-15.45)***	-0.0349 (-15.26)***
ROA	-	-0.2133 (-14.41)***	-0.2133 (-14.40)***	-0.2222 (-14.86)***	-0.2219 (-14.84)***
LEVERAGE	+	0.0140 (13.31)***	0.0139 (13.24)***	0.0119 (11.09)***	0.0119 (11.04)***
LOSS	+	0.0434 (7.41)***	0.0432 (7.36)***	0.0455 (7.68)***	0.0452 (7.63)***
YEND	+/-	0.0159 (1.95)**	0.0168 (2.05)**	0.0158 (1.90)**	0.0166 (1.99)
SQSUB	+	0.0313 (15.82)***	0.0318 (15.98)***	0.0336 (16.54)***	0.0340 (16.66)***
KSE	-	-0.0536 (-10.89)***	-0.0054 (-10.95)***	-0.0607 (-11.68)***	-0.0608 (-11.71)***
INVREC	+	0.1096 (9.03)***	0.1107 (9.12)***	0.1003 (7.83)***	0.1012 (7.90)***
EXTRA	+	0.0278 (4.49)***	0.0280 (4.51)***	0.0226 (3.62)**	0.0227 (3.64)**

(Continued on the next page)

Table 4 (Continued)

OWNCON	+/-	0.0003	0.0026	0.0021	0.0002
		(6.14)***	(6.16)***	(4.79)**	(4.80)**
Y2000	+/-	-0.0210	-0.0210	-0.0179	-0.0180
		(-1.06)	(-1.06)	(-0.90)	(-0.90)
Y2001	+/-	-0.0526	-0.0525	-0.0486	-0.0486
		(-2.80)**	(-2.79)***	(-2.58)***	(-2.58)***
Y2002	+/-	-0.0766	-0.0768	-0.0713	-0.0715
		(-4.17)***	(-4.17)***	(-3.87)***	(-3.88)***
Y2003	+/-	-0.0761	-0.0762	-0.0706	-0.0708
		(-4.14)***	(-4.15)***	(-3.84)***	(-3.85)***
Y2004	+/-	-0.1212	-0.1213	-0.1154	-0.1154
		(-6.59)***	(-6.59)***	(-6.25)***	(-6.26)***
Y2005	+/-	-0.1293	-0.1269	-0.1234	-0.1213
		(-7.02)***	(-6.88)***	(-6.68)***	(-6.56)***
Chi-Square		23,576.24***	23,557.83***	23,050.55***	23,031.70***
Psuedo-R^2		0.1489	0.1496	0.1679	0.1685
N		6,576	6,576	6,576	6,576

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Notes:
The significances are based on one-tailed (two-tailed) tests with (without) expected signs. *, **, and *** represent 10%, 5%, and 1% significances respectively. *Y2000* (*Y2001*..) represents the year indicator. *ABAHR*: abnormal audit hours, residuals from audit hour model (3); *LNNAF(NoTaxICS)*: natural log of non-audit fees excluding fees paid for tax and internal control systems design services; *LNTAXF*: natural log of fees paid for tax services; *LNICSF*: natural log of fees paid for internal control systems design services. Industry dummies are not reported in model (D) and (D-1) for the sake of brevity. See Table 2 for variable definitions.

Johnson et al. (2002) find that the short tenure indicator (3 years or less) is positively associated with discretionary accruals, while the long tenure indicator (more than 8 years on the audit) is negatively associated with discretionary accruals. Following Johnson et al. (2002), we include indicator variables representing short and long tenures instead of a continuous variable for auditor tenure. Both short and long tenure indicators, however, are not significant. The association between *TENURE* and ARL may be driven by auditor changes; we therefore run regressions after eliminating firms with auditor changes, but the results remain qualitatively the same.

Finally, we allow each Big 4 auditor to have a separate intercept, as each Big 4 auditors potentially uses different audit technology. When we use the PwC indicator as a base dummy variable, the Ernest Young indicator is positive and significant at the one percent level. KPMG and Deloitte Touche are also positive, but they are not statistically significant (not reported). The findings on the effects of each of the Big 4 on ARL are consistent with the findings in Panel C, Table 1.

5.0   CONCLUSION

In this study, we examine the cross-sectional association between auditor-related characteristics and audit report lag. Audit report lag is one of the few variables associated with audit efficiency that is externally observable. Audit report lag also directly impacts the timeliness of firms' earnings announcements.

We find that incremental audit fees, measured by the residuals from the audit fee model, are not associated with audit report lag; on the contrary, we find that incremental audit hours are negatively associated with ARL. This contrary evidence suggests that higher-than-expected audit fees do not affect audit efficiency and, instead, longer-than-expected audit hours are used to shorten audit report lag. This may suggest that auditors in Korea are willing to spend additional time when they complete their audits earlier while they do not require additional fees. We

discussed this issue with several partners of Big 4 auditors in Korea. They indicate that this could happen in practice temporarily with the auditors' expectation of recovering the additional costs from alternative sources such as non-audit fees and/or quasi-rent from future engagement. The examination of the recovery of audit expenses for additional hours is beyond the coverage of our study and would be an interesting future research topic.

We further investigate associations between the provision of non-audit services, auditor tenure, affiliation with Big 4 auditors, and unqualified audit opinion. We find significant evidence of "knowledge spillovers" from the provision of non-audit services, shortening audit report lag. Further investigation on details of non-audit services reveals evidence that the provisions of tax and internal control systems design services also provide "knowledge spillovers," improving audit efficiency. In particular, the provision of services relating to the design of internal control systems reduces audit report lag more than any other management advisory services. The finding on the provision of tax services contradicts findings from using U.S. data. We also find that Big 4 auditors and auditors who have issued an unqualified opinion take much less time to complete their audits, suggesting greater audit efficiency in these cases.

Unlike previous studies which use small samples and survey data, we analyze the ARLs of a large sample of all publicly-traded firms in Korea over the period from 1999 to 2005, thereby increasing the ability to generalize the results of our findings. Our study adds to the body of literature on the timeliness of earnings announcements by providing new evidence on the determinants of audit report lag. Due to the data constraints, we are not able to examine the separate effects of abnormal audit fees by partner, manager and staff. In a future study, such a separation may provide more useful information to improve audit efficiency. Future research may also investigate the effect of corporate governance on audit report lag.

ACKNOWLEDGMENTS

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