“The effect of audit report lag and management discretionary report lag on analyst forecasts: evidence from Korea”

AUTHORS	Chang-Hyun Bae Yong-Sang Woo

ARTICLE INFO	Chang-Hyun Bae and Yong-Sang Woo (2015). The effect of audit report lag and management discretionary report lag on analyst forecasts: evidence from Korea. *Investment Management and Financial Innovations*, *12*(1-2), 318-329
RELEASED ON	Thursday, 30 April 2015
JOURNAL	"Investment Management and Financial Innovations"
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”

NUMBER OF REFERENCES
0

NUMBER OF FIGURES
0

NUMBER OF TABLES
0

Chang-Hyun Bae (Korea), Yong-Sang Woo (Korea)

The effect of audit report lag and management discretionary report lag on analyst forecasts: evidence from Korea

Abstract

In this study, it is investigated the relationship between report lags audit report lag (ARL) and discretionary report lag (DRL) and analysts' forecast error in Korean firms. Auditing procedures require more effort when earnings management in financial statements is suspected or audit risk is high; this increases ARL. However, the uncertainty of financial statements must be eliminated and transparency in financial statements must be increased. The need is greater in companies with long ARL than in others. In addition, analysts' forecast errors are more numerous in cases of long ARL. Managers have incentives to do two conflicting things: to disclose accounting information as soon as possible, and to delay disclosure as long as possible. When information asymmetry between managers and shareholders is high, managers have incentives to disclose accounting information as soon as possible to reduce information asymmetry. However, managers may delay the release of accounting information when a company is in financial distress or a conflict exists between external auditors and managers. Thus, the disclosure of accounting information may be delayed by managers' opportunistic behavior, thereby increasing DRL. In this case, forecast error increases.

The results of the empirical analysis are as follows. First, ARL is positively associated with analysts' forecast error, which increases as ARL increases because information asymmetry intensifies. Second, DRL is negatively associated with analysts' forecast error, which decreases as DRL increases due to improved reliability of financial statements when auditors perform additional audit procedures. In an additional investigation of the relations between ARL, DRL, and forecast bias, the authors learn that analysts forecast future earnings more optimistically as ARL increases, and this tendency decreases as DRL increases. It is also also found that the positive association between ARL and analysts' forecast error is only evident in firm-years in which auditors have long tenure.

Keywords: audit report lag, management discretionary report lag, analysts' forecast error.
JEL Classification: M42.

Introduction

The qualitative characteristics of financial reporting are understandability, relevance, reliability, and comparability. Among these characteristics, there is a trade-off between relevance and reliability. In order for information to be relevant, it should be timely. However, if it is reported before its validity is checked, reliability may be compromised. Therefore, relevance and reliability must be kept in equilibrium.

Analysts help investors to understand forecasted earnings for making decisions on investments. Their forecasts mitigate information asymmetry among interested parties outside of the company. Analysts use accounting information as the basis for their earnings forecasts. Previous studies suggest that earnings forecast error increases proportionally to the difficulty of earnings forecasting (Lim, 2001; Duru and Reeb, 2002). Other studies find that the accuracy of earnings forecasting increases when earnings quality is high (Das et al., 1998; Eames and Glover, 2003).

The period from the fiscal year-end to the point at which accounting earnings are disclosed can be divided into two sub-periods: audit report lag (ARL) and management discretionary report lag (DRL) (Leventis and Weetman, 2004; Lee et al., 2008). ARL is the period from the fiscal year-end to the date on which the audit report is released (Leventis and Weetman, 2004; Ettredge et al., 2006; Lee et al., 2008). DRL is the period from the audit report release date to the earnings release date (Leventis and Weetman, 2004; Lee et al., 2008). ARL has been used as a proxy for the timeliness of accounting information in many previous studies (Givoly and Palmon, 1982; Loudder et al., 1992). Previous researchers have suggested that outside auditors exert more effort and put more time into audit procedures when the audit risk is high. This situation can lead to longer ARL than when audit risk is low. When ARL is long, accounting information may be more reliable because auditors put more effort and time into completing audit procedures than when ARL is short. In this situation, analysts may regard long ARL as a signal of reliability of the accounting information provided by a company. Previous studies suggest that analysts' forecast error decreases as earnings quality improves (Das et al., 1998; Eames and Glover, 2003). Therefore, analysts forecast error would increase when ARL is long. However, the timeliness of accounting information may be impaired by long ARL because information users do not have access to accounting information at the proper time. Long ARL may also signal that conflicts of opinion exist between external auditors and managers; in this situation, accounting information

Chang-Hyun Bae, Ph.D. Candidate, School of Business, Yonsei University, Korea.
Yong-Sang Woo, corresponding author, Assistant Professor, The College of Business Administration, Ewha Womans University, Korea.
This work is supported by the Ewha Womans University Research Grant of 2012.

may lack transparency, and analysts may feel pressured to report earnings forecasts sooner. It is difficult for analysts to forecast future earnings without transparency of accounting information, and as a result, analysts' forecast error may increase.

When audit procedures are complete (i.e., after the audit report has been released), managers have the power to decide the time at which financial statements will be disclosed. They may choose to do so immediately, but there are also incentives to delay the disclosure of financial information (Lee and Jahng, 2008; Lee et al., 2008). When information asymmetry between managers and shareholders is high, managers may release accounting information immediately after the audit report date in order to reduce information asymmetry. This situation minimizes DRL and increases the reliability of the accounting information provided by the company. Therefore, analysts' forecast error decreases as DRL decreases. Managers may also delay disclosure of financial statements when a company records a net loss or experiences financial distress. This managerial behavior aggravates information asymmetry and impairs the timeliness of release of accounting information. In these circumstances, analysts' forecast error is likely to increase as DRL increases. However, auditors have time to collect additional audit evidence when earnings disclosure is delayed. In this situation, earnings quality may increase and analysts' forecast error may decrease.

The contributions of this study are as follows. First, we conduct the first empirical study on the relationships between ARL, DRL, and the accuracy of analysts' earnings forecasts. Many previous studies use ARL or DRL as a proxy of the timeliness of financial reporting. However, they mostly examined the determinants of ARL or DRL. Unlike in previous studies, we analyze the effects of ADL and DRL on analysts' behavior. Second, we provide empirical evidence of the relationships between ARL, DRL, and the reliability of financial statements. Many previous studies on ARL or DRL identified their determinants. However, other aspects of these two constructs must be analyzed, such as the effects of ARL and DRL on reliability of financial statements. In this study, these other aspects of this relationship are examined.

This study is organized as follows. Relevant literature is discussed and hypotheses are developed in the first section. The research model is presented in the second section. The final section outlines our empirical results and is followed by the conclusion.

1. Literature review and hypothesis development

1.1. Audit report lag (ARL) and management discretionary report lag (DRL). In many previous studies on ARL and DRL, changes in ARL and DRL based on the characteristics of auditors and auditees have been examined. Previous studies on the effect of auditors' and auditees' characteristics on ARL and DRL are as follows. Ashton et al. (1989) examine the empirical analysis on the determinants of ARL using data of listed companies on the Toronto Stock Exchange. They find that auditor size, industry classification, existence of extraordinary items, and sign of net income are significantly associated with ARL. Carslaw and Kaplan (1991) analyze the effect of auditors' and auditees' characteristics on ARL using data of companies in New Zealand from 1987 to 1988. They present that auditees' size and sign of income are significantly associated with ARL in whole sample period. Industry classification, existence of extraordinary items, audit opinion, governance structure and debt ratio of auditee are significantly associated with ARL in only one year in whole sample period. Whittred (1980) presents that qualified audit opinion increases preliminary lag (the number of days from the fiscal year-end to the receipt of the preliminary final statement by the Sydney Stock Exchange) and auditor's signature lag (the number of days from the fiscal year-end to the audit report date). Elliott (1982) finds that reporting delay is changed by the types of qualified audit opinion. Newton and Ashton (1989) present that ARL increases as the audit approaches are more structured. Ettredge et al. (2006) examine the effect of SOX adoption on ARL with comparing pre-SOX period (2003) with SOX period (2004). They find that the material weakness of internal control increases ARL in SOX period.

There are also many previous studies on the relationships between ARL, DRL and earnings management. Whittred and Zimmer (1984) use three different measures for estimating reporting lag: preliminary lag, auditor's signature lag, and total lag. Preliminary lag is the number of days from fiscal year-end to the receipt of the preliminary final statement. Auditor's signature lag is the number of days from fiscal year-end to the date recorded as the opinion signature date on the auditor's report. Total lag is the number of days from fiscal year-end to the date of receipt of the published report by the Sydney Stock Exchange. They report that companies in financial distress have longer auditor's signature lags and total lags. Ashton et al. (1987) examine determinants of the length of ARL. They suggest that ARL is longer for companies that receive qualified audit opinions, are not in the financial industry, are not publicly traded, have a fiscal year-end in a month other than December, have poor internal control systems, and have a greater amount of audit work performed after fiscal year-end than before it. Bamber et al. (1993) also investigate determinants of the length of ARL. They find that the amount of audit work required is positively

associated with ARL, while incentives to provide timely reports are negatively associated with ARL. In addition, they find an association between audits by auditors with a structured approach and longer ARL. Knechel and Payne (2001) assert that incremental audit effort, the presence of contentious tax issues, and auditing by less experienced audit staff are positively associated with ARL. In that study, when management advisory and tax services were provided by incumbent auditors, ARL was reduced. Lee and Jahng (2008) find a negative association between ARL and several factors, including non-audit fees to incumbent auditors, the use of Big 4 auditors, unqualified audit opinions, abnormal audit hours, and provision of tax services and services relating to the design of internal control systems by incumbent auditors. Lee et al. (2008) find shorter DRL and total report delay (TRL) in multinational firms compared to those of domestic firms.

1.2. Analysts' forecasts. In many previous studies on analysts' forecasts, forecast accuracy and its determinants are investigated. The random walk model is frequently used to determine the accuracy of analysts' forecasts (Brown and Rozeff, 1978; Collins and Hopwood, 1980; Brown et al., 1987). It is reported that analysts do not only have outstanding ability to analyze the financial statements of companies, but also have various information source which common investors don't have (Bhushan, 1989; Brown et al., 1987). Some previous studies suggest that analysts mitigate information asymmetry between companies and investors in capital market (Healy and Palepu, 2001; Asquith et al., 2005).

Previous studies on the determinants of forecast accuracy mainly examine its relationship with firm characteristics. The results indicate that analysts' forecast accuracy decreases as earnings quality decreases (Das et al., 1998; Eames and Glover, 2003), firms become more geographically diversified (Duru and Reeb, 2002), and debt ratio increases (Eddy and Scifert, 1992; Behn et al., 2008). Other previous studies on the determinants of analysts' forecast accuracy suggest that it decreases as audit quality increases (Davidson and Neu, 1993; Behn et al., 2008). Analysts' forecast becomes more accurate as the number of analysts following increases (O'Brien and Bhushan, 1990; Das et al., 1998; Duru and Reeb, 2002). The number of analyst following increases as the disclosure rating increases (Healy et al., 1999). Analysts forecast error and deviation is low when the disclosure rating is high (Lang and Lundholm, 1993).

No empirical study on the relationships between ARL, DRL, and analysts' forecast accuracy has been conducted. This is the first empirical study on this relationship.

1.3. Hypothesis development. In this study, we examine the association between ARL, which is used as a proxy of auditor effort, and DRL, which is used as a proxy of management's discretionary decision-making, and analysts' forecast error. According to previous studies, auditor effort increases when discretionary earnings management is possible or audit risk is high. An increase in audit effort causes an increase in ARL. When accounting transparency is low, auditors must spend extra time and effort completing audit procedures, thereby increasing ARL. High ARL suggests good reliability of financial statements due to the auditor's effort. Therefore, analysts' forecast error would decrease. However, an increase in ARL can be interpreted as a signal that the information which a company provides is inaccurate. Therefore, high ARL may also be the result of lack of transparency and high uncertainty about a company's accounting information. In this situation, the reliability of financial statements may be questioned. Because financial statements may contain inaccurate information when reliability of financial statements is low, analysts' forecast error may increase. Based on these points, we set up the following null hypothesis relating analysts' forecast error to ARL:

Hypothesis 1: Ceteris paribus, audit report lag (ARL) is not significantly associated with analysts' forecast error.

Managers decide the timing of earnings disclosure by considering the costs and benefits of releasing information at different time points. When information asymmetry between managers and shareholders is high, a company must spend much more time monitoring, and external financing costs may be much higher. Therefore, when information asymmetry between managers and shareholders is high, managers have an incentive to reduce information asymmetry by increasing the timeliness of the release of accounting information (Lee et al., 2008). However, managers may also opportunistically choose to delay earnings disclosure after all audit procedures are complete. Managers tend to disclose bad news later than good news because they want to avoid rapid declines in stock price. For companies in bad financial condition or where there is a conflict between auditors and managers, earnings disclosure may also be delayed. Analysts' forecast error increases in this situation. However, the reliability of financial statements increases when DRL is long because auditors have more time to collect additional audit evidence. In this situation, analysts' forecast error decreases. The following hypothesis is developed to capture these conflicting inferences:

Hypothesis 2: Ceteris paribus, management discretionary report lag (DRL) is not significantly associated with analysts' forecast error.

2. Research design

2.1. Research model. Model (1) is used to test Hypotheses 1 and 2. The main independent variables are ARL and DRL, and the dependent variable is analysts' forecast error. Other independent variables are used as control variables in this model.

$$FORE\_ERR(1M/3M/6M)_t = \beta_0 + \beta_1 ARL_t(DRL_t) + \beta_2 BIG4_t + \beta_3 AFP_t + \beta_4 TENURE_t + \beta_5 SIZE_t + \beta_6 LEV_t + \beta_7 ROA_t + \beta_8 MTB_t + \beta_9 LOSS_t + \beta_{10} FOR_t + \beta_{11} OWN_t + \beta_{12} FOL_t + \beta_{13} HIGHTECH_t + \beta_{14} COD_t + \Sigma YEAR_t + \varepsilon_t, \quad (1)$$

where $FORE\_ERR(1M/3M/6M)_t$: analysts' forecast error during 1 month (3 months/6 months) before the end of year t; ARL_t: audit report lag in year t; DRL_t: management discretionary report lag in year t; $BIG4_t$: 1 if audit is performed by a Big 4 auditor in year t, otherwise 0; AFP_t: 1 if a company pays audit fees at a premium in year t, otherwise 0; $TENURE_t$: 1 if audit tenure is longer than the sample median in year t, otherwise 0; $SIZE_t$: natural logarithm of total assets in year t; LEV_t: ratio of total debt to total assets in year t; ROA_t: return on assets in year t; MTB_t: ratio of market value to book value of a company's equity in year t; $LOSS_t$: 1 if a company reports negative earnings in year t, otherwise 0; FOR_t: ownership percentage of foreign shareholders in year t; OWN_t: ownership percentage of manager in year t; FOL_t: the number of analysts following a company in year t; $HIGHTECH_t$: 1 if a company operates a high-tech business in year t, otherwise 0; and COD_t: total financial expenses (interest expense, gain or loss on redemption of bond) divided by interest bearing debt; *YEAR*: year dummy.

ARL is defined as the number of days between the date of fiscal year-end and the date of release of the audit report (Carslaw and Kaplan, 1991). *DRL* is defined as the number of days between the date of the release of the audit report and the date of earnings release (Leventis and Weetman, 2004; Lee et al., 2008). *FORE_ERR* is analysts' forecast error, which is estimated as the absolute value of the difference between the average of analysts' EPS forecast and the reported EPS divided by the stock price at the beginning of the year. The average value of analysts' EPS forecast is estimated at 1 month, 3 months, and 6 months before year-end. When *FORE_ERR* is low, analysts' forecast accuracy is high.

$$FORE\_ERR_t = \left| \text{Average Analysts' EPS Forecast (1 month, 3 months, and 6 months before year-end)} - \text{Reported EPS} \right| / \text{Stock Price at the Beginning of the Year}. \quad (2)$$

If β_1 of *ARL* is significantly positive, analysts' forecast error increases as *ARL* increases. Lack of transparency and uncertainty of accounting information are high when *ARL* is long, and analysts' forecast accuracy is impaired by lack of transparency in accounting information. If β_1 of *ARL* is significantly negative, analysts' forecast error will decrease as *ARL* increases. In this situation, the reliability of accounting information is high when *ARL* is long, and analysts' forecast accuracy is improved by the reliability of accounting information.

If β_1 of *DRL* is significantly positive, analysts' forecast error will increase as *DRL* increases. In this situation, analysts' forecast accuracy is low when *DRL* is long because managers may discretionarily delay disclosure of financial statements, making accurate forecasting of earnings difficult for analysts. However, β_1 of *DRL* may also be significantly negative, because auditors spend additional time collecting evidence, which may increase *DRL* and increase the reliability of financial statements.

With reference to previous studies, we include variables that are expected to have an effect on analysts' forecast error as control variables in Model (1). Whether an auditor works for one of the Big 4 audit firms or not (*BIG*4), whether the audit fee is paid at a premium or not (*AFP*), the number of continuous years of audit engagement (*TENURE*), company size (*SIZE*), debt ratio (*LEV*), return on assets (*ROA*), the ratio of market value to book value of a company's equity (*MTB*), whether a company reports negative earnings or not (*LOSS*), the ownership percentage of foreign shareholders (*FOR*), the ownership percentage of managers (*OWN*), the number of analysts following the company (*FOL*), and whether or not a company operates a high-tech business (*HIGHTECH*) are used as control variables in Model (1).

If an audit is conducted by a big audit firm known for its high audit quality, analysts' forecast error decreases because the reliability of financial statements increases (Behn et al., 2008). Abnormal audit fees indicate that auditors have spent a lot of time and effort in completing audit procedures; in these circumstances, the reliability of financial statements increases and analysts' forecast error decreases. In order to estimate *AFP*, the audit fee must be identified to determine if it is paid at a premium or not by comparison to normal audit fees. Therefore, normal audit fees must be estimated. The following model is used to estimate normal audit fees:

$$AF_t = \beta_0 + \beta_1 SIZE_{t-1} + \beta_2 INVREC_{t-1} + \beta_3 EMPLOY_{t-1} + \beta_4 LIQUID_{t-1} + \beta_5 LEV_{t-1} + \beta_6 ROA_{t-1} + \beta_7 BIG_t + \beta_8 OWN_{t-1} + \beta_9 FOR_{t-1} + \beta_{10} INITIAL_t + \varepsilon_t, \quad (3)$$

where AF_t: natural logarithm of audit fees in year t; $SIZE_{t-1}$: natural logarithm of total assets in year $t-1$; $INVREC_{t-1}$: ratio of total inventory and receivables to total assets in year $t-1$; $EMPLOY_{t-1}$: natural logarithm of the number of employees in year $t-1$; $LIQUID_{t-1}$: ratio of total current assets to total current liability in year $t-1$; LEV_{t-1}: ratio of total debt to total assets in year $t-1$; ROA_{t-1}: return on assets in year $t-1$; BIG_t: 1 if the audit is performed by a Big 4 auditor in year t, otherwise 0; OWN_{t-1}: ownership percentage of manager in year $t-1$; FOR_{t-1}: ownership percentage of foreign shareholders in year $t-1$; and $INITIAL_t$: 1 if an auditor is an initial auditor in year t, otherwise 0.

Earnings management reportedly decreases as audit tenure increases (Myers et al., 2003). Thus, audit tenure can reduce analysts' forecast error. In addition, analysts' forecast error is lower in larger companies because more information is available (Das et al., 1998). Because the incentive for managers to engage in earnings management increases as leverage increases, it is difficult for analysts to forecast future earnings accurately in companies where managers have a lot of leverage (Behn et al., 2008). Because business performance can affect analysts' forecasting (Eames and Glover, 2003), *ROA* is used as a proxy for business performance in this study. The ratio of market value to book value of a company's equity is herein used as a proxy of business growth, which may be associated with analysts' forecast error. If a company reports a net loss, analysts' forecasts may be biased optimistically, thereby increasing analysts' earnings forecast error (Das, 1998). The percentage of ownership of foreign shareholders and the percentage of ownership of managers are used as proxies of governance structure. In this study, we predict that analysts' forecast error decreases when foreign shareholders are effective supervisors. Furthermore, the possibility of earnings management occurring is high when the percentage of ownership of managers is high. Therefore, analysts' forecast error increases as the percentage of ownership of managers increases. For the purpose of controlling for the effect of frequency of analysis on forecast error, the number of analysts following a company is included in Model (1) (Das et al., 1998; Duru and Reeb, 2002). A high-tech industry dummy and year dummy are used to control for the effects of industry and year.

2.2. Sample selection. Our sample consists of companies that are listed in the Korea Exchange (KRX) from 2004 to 2010. Analysts' earnings forecast data used in this study are available on the FnDataGuidePro[1] database . We use the average of EPS forecasts from securities firms reported at 1 month, 3 months, and 6 months from the fiscal year-end. Audit report dates and earnings announcement dates are publicly available via the DART System provided by the Korean Financial Supervisory Services. Firm-years in which ARL is shorter than 15 days or longer than 83 days and in which DRL is 0 are excluded. Other data related to financial statements are collected from the Kis-Value database. We eliminated firm-years with a fiscal year-end other than December 31 and those operating in the financial industry. The final sample thus consists of 989 firm-years.

Table 1 shows the distribution of the sample by year and industry. We classify sample firms into 13 industries. The firms represent a wide range of industries, as follows: Chemicals/Pharmaceuticals/ Rubber/Plastic (161 firm-years), Service (115 firm-years), and Electricity/Gas/Construction (114 firm-years). In total, 162 firm-years in 2005 are the largest and 115 firm-years in 2010 are the smallest in the sample distribution by year. In our sample, no large fluctuation in distribution by year is observed.

Table 1. Sample distribution by years and industries[1]

	2004	2005	2006	2007	2008	2009	2010	Total
Farm/Fish/Coal/Food	11	12	6	5	9	6	9	58
Textile/Clothes/Fur/Bag	4	1	2	3	4	2	3	19
Lumber/Pulp/Furniture/Publishing	5	6	4	8	3	4	3	33
Chemicals/Pharmaceuticals/Rubber/Plastic	21	32	25	20	20	28	15	161
Nonmetallic mineral/Metal	11	12	13	18	13	14	14	95
Electronic Components	13	14	13	10	10	13	12	85
Machinery/Equipment	12	11	9	10	9	10	13	74
Automobile/Transportation equipment	17	17	12	13	13	9	10	91
Electricity/Gas/Construction	18	18	22	16	17	13	10	114
Wholesale/Retail	9	8	8	9	9	8	7	58
Transportation	5	6	6	6	8	5	3	39
Broadcasting/Communication	6	6	6	8	8	7	6	47
Service	20	19	21	16	14	15	10	115
Total	152	162	147	142	137	134	115	989

[1] DataGuide Pro database operated by FnGuide (The FnGuide databases in Korea are equivalent to the COMPUSTAT and CRSP databases for publicly listed firms in U.S., providing financial and analysts forecast data for firms listed on the Korea Exchange).

3. Empirical results

3.1. Descriptive statistics. Table 2, Panel A presents descriptive statistics for the main dependent and independent variables used in this study.

Table 2. Descriptive statistics

Panel A). Main variables					
	Mean	St. dev.	Min	Median	Max
FORE_ERR(1*M*)	0.0810	0.2585	0.0003	0.0184	2.1078
FORE_ERR(3*M*)	0.0841	0.2736	0.0003	0.0185	2.3020
FORE_ERR(6*M*)	0.0864	0.2762	0.0004	0.0197	2.3042
ARL	45.6582	14.7412	18	46	76
DRL	19.8908	13.4724	1	19	56
Panel B). Control variables					
	Mean	St. dev.	Min	Median	Max
*BIG*4	0.8736	0.3325	0	1	1
TENURE	0.8251	0.3801	0	1	1
AFP	0.5602	0.4966	0	1	1
SIZE	20.9505	1.4931	17.5925	20.8547	23.8348
LEV	1.1458	0.9004	0.0792	0.9295	6.6997
ROA	0.0585	0.0571	-0.3576	0.0545	0.2064
MTB	1.4664	1.1289	0.1465	1.1614	6.3407
LOSS	0.0779	0.2681	0	0	1
FOR	0.1960	0.1614	0	0.1558	0.6518
OWN	0.3725	0.1466	0	0.3602	0.9
FOL	9.4540	7.3531	1	7	29
HIGHTECH	0.2528	0.4348	0	0	1
COD	0.0660	0.0616	0.0007	0.0563	0.5059

Notes: Variables definitions: *FORE_ERR*(1M/3M6M): analysts' forecast errors during 1 month (3 months/6 months) before the end of year; defined as the absolute difference between the forecast and actual earnings, scaled by price; *ARL*: audit report lag; *DRL*: management discretionary report lag; *BIG*4: 1 if the audit firm is Big 4, otherwise 0; *TENURE*: 1 if an audit tenure is longer than the sample median, otherwise 0; *AFP*: 1 if a company pays audit fee at a premium, otherwise 0; *SIZE*: natural logarithms of total assets; *LEV*: ratio of total debt to total assets; *ROA*: return on asset; *MTB*: ratio of market value to book value of a company's equity; *LOSS*: 1 if a company reports negative earnings, otherwise 0; *FOR*: ownership percentage of foreign shareholders; *OWN*: ownership percentage of manager; *FOL*: the number of analysts following of a company; *HIGHTECH*: 1 if a company operates high-tech business, otherwise 0; *COD*: total financial expenses divided by interest bearing debt.

The mean of *FORE_ERR* decreases from 0.0864 to 0.0810 as the forecast period decreases from 6 months to 1 month. This result means that the noise of analysts' forecast error decreases as the forecast period increases. The mean and median values of *ARL* are 45.6582 and 46.0, respectively. Thus, the audit report dates of the sample companies are on or around February 16. The mean and median values of *DRL* are 19.8908 and 19.0, respectively. This means that on average, audit reports were disclosed 20 days after the audit report date for the firms in our sample.

Table 2, Panel B shows the descriptive statistics for the other variables included in this study. The mean of *BIG*4 is 0.8736, indicating that about 87% of companies in our sample wereaudited by Big 4 audit firms. The mean of *LEV* is 1.1458, indicating that the debt ratio of the sample companies is approximately 115%. The mean value of *LOSS* is 0.0779, which suggests that 8% of the companies in our sample reported loss during the study period.

3.2. Regression results. Table 3 presents the results of a multivariate regression analysis conducted for testing of *Hypothesis 1*. The empirical results show that the coefficients of *ARL* are significant for all dependent variables (*FORE_ERR* (1*M/3M/6M*)) and that *ARL* is positively associated with *FORE_ERR* (1*M/3M/6M*). This result suggests that analysts' forecast error increases as ARL increases. We interpret this result to mean that analysts' forecast accuracy (error) decreases (increases) when an increase in *ARL* is regarded as a signal of information asymmetry and lack of transparency in disclosure of accounting information. Though auditors may spend considerable time and effort in completing audit procedures, information asymmetry and lack of transparency in accounting information are not alleviated. Therefore, when analysts regard long *ARL* as a signal of information asymmetry and lack of transparency in accounting information, the accuracy of their forecasts is impaired.

The results of the empirical analysis for control variables are as follows. First, the coefficient of *SIZE* is significantly negative, which means that analysts' forecast error decreases as company size increases. Various interested parties may be required to disclose greater amounts of information in large companies, which decreases information asymmetry (Das et al., 1998). Second, the coefficient of *LEV* is significantly positive. This result indicates that analysts' forecast error increases when the debt ratio is high because managers have more opportunity to manipulate accounting numbers (Eddy and Seifert, 1992; Behn et al., 2008). The coefficient of *MTB* is significantly negative. High *MTB* indicates that the possibility of an increase in earnings in future increases as *MTB* increases. Thus, analysts' forecast error decreases as *MTB* increases.

Table 3. Regression results on Hypothesis 1

$$FORE\_ERR(1M/3M/6M) = \beta_0 + \beta_1 ARL + \beta_2 BIG4 + \beta_3 AFP + \beta_4 TENURE + \beta_5 SIZE + \beta_6 LEV + \beta_7 ROA + \beta_8 MTB + \\ + \beta_9 LOSS + \beta_{10} FOR + \beta_{11} OWN + \beta_{12} FOL + \beta_{13} HIGHTECH + \beta_{14} COD + \Sigma YEAR + \varepsilon$$

Variables	*FORE_ERR*(6*M*)		*FORE_ERR*(3*M*)		*FORE_ERR*(1*M*)	
	Estimated coefficients	t-stat	Estimated coefficients	t-stat	Estimated coefficients	t-stat
Intercept	0.6482	3.35***	0.6396	3.34***	0.5872	3.25***
ARL	0.0018	2.65***	0.0019	2.70***	0.0018	2.78***
BIG4	-0.0502	-1.81*	-0.0441	-1.60	-0.0419	-1.61
AFP	-0.0130	-0.71	-0.0150	-0.83	-0.0137	-0.81
TENURE	-0.0001	0.00	0.0012	0.06	0.0000	0.00
SIZE	-0.0329	-3.37***	-0.0329	-3.39***	-0.0302	-3.31***
LEV	0.1977	3.13***	0.1877	3.00***	0.1838	3.11***
ROA	-0.0335	-0.15	-0.0758	-0.35	-0.0459	-0.23
MTB	-0.0174	-1.88*	-0.0162	-1.77	-0.0162	-1.87*
LOSS	0.0400	1.03	0.0333	0.86	0.0342	0.94
FOR	-0.0162	-0.23	-0.0121	-0.17	-0.0121	-0.18
OWN	-0.0544	-0.85	-0.0445	-0.70	-0.0515	-0.86
FOL	0.0014	0.73	0.0016	0.79	0.0013	0.68
HIGHTECH	-0.0392	-1.93*	-0.0401	-1.99**	-0.0373	-1.96*
COD	0.0648	0.46	0.0593	0.42	0.0558	0.42
YEAR	Included					
Observations	989		989		989	
Adj R²	0.051		0.049		0.052	
F-value	3.65***		3.53***		3.71***	

Notes: ***, ** and * denote significance at the 1 percent, 5 percent and 10 percent levels, respectively, based on a two-tailed test. See Model (1) for definitions of the variables used.

Table 4 presents the results of a multivariate regression analysis conducted for testing of *Hypothesis* 2. The results show that *DRL* is significantly and negatively associated with *FORE_ERR* (1*M/3M/6M*). These results indicate that analysts' forecast error decreases as *DRL* increases because auditors have more time to collect additional audit evidence, which makes accounting information more reliable, although earnings disclosure is delayed. The results of the empirical analysis for other control variables are similar to those presented in Table 3.

Table 4. Regression results on Hypothesis 2

$$FORE\_ERR(1M/3M/6M) = \beta_0 + \beta_1 DRL + \beta_2 BIG4 + \beta_3 AFP + \beta_4 TENURE + \beta_5 SIZE + \beta_6 LEV + \beta_7 ROA + \beta_8 MTB + \\ + \beta_9 LOSS + \beta_{10} FOR + \beta_{11} OWN + \beta_{12} FOL + \beta_{13} HIGHTECH + \beta_{14} COD + \Sigma YEAR + \varepsilon$$

Variables	*FORE_ERR*(6*M*)		*FORE_ERR*(3*M*)		*FORE_ERR*(1*M*)	
	Estimated coefficients	t-stat	Estimated coefficients	t-stat	Estimated coefficients	t-stat
Intercept	0.7955	4.17***	0.7867	4.16***	0.7276	4.08***
DRL	-0.0023	-3.04***	-0.0022	-2.99***	-0.0020	-2.94***
BIG4	-0.0516	-1.86*	-0.0451	-1.64	-0.0424	-1.63
AFP	-0.0096	-0.53	-0.0116	-0.64	-0.0105	-0.62
TENURE	-0.0022	-0.12	-0.0009	-0.05	-0.0018	-0.11
SIZE	-0.0344	-3.52***	-0.0343	-3.54***	-0.0315	-3.45***
LEV	0.2125	3.38***	0.2027	3.25***	0.1982	3.37***
ROA	-0.0291	-0.13	-0.0718	-0.33	-0.0425	-0.21

Table 4 (cont.). Regression results on Hypothesis 2

Variables	*FORE_ERR*(6*M*)		*FORE_ERR*(3*M*)		*FORE_ERR*(1*M*)	
	Estimated coefficients	t-stat	Estimated coefficients	t-stat	Estimated coefficients	t-stat
MTB	-0.0164	-1.77*	-0.0152	-1.66*	-0.0152	-1.76*
LOSS	0.0430	1.10	0.0363	0.94	0.0371	1.02
FOR	-0.0229	-0.32	-0.0185	-0.26	-0.0178	-0.27
OWN	-0.0491	-0.77	-0.0395	-0.62	-0.0472	-0.79
FOL	0.0015	0.73	0.0016	0.79	0.0012	0.66
HIGHTECH	-0.0361	-1.78*	-0.0370	-1.84*	-0.0342	-1.80*
COD	0.0637	0.45	0.0580	0.41	0.0543	0.41
YEAR	Included					
Observations	989		989		989	
Adj R²	0.053		0.050		0.053	
F-value	3.77***		3.62***		3.76***	

Notes: ***, ** and * denote significance at the 1 percent, 5 percent and 10 percent levels, respectively, based on a two-tailed test. See Model (1) for a definitions of the variables used.

3.3. Additional discussion. *3.3.1. Analysts' forecast bias.* According to Das et al. (1998), analysts disclose more optimistic forecast and maintain a friendly relationship with management of target companies in order to raise forecast accuracy on the companies that it is difficult to forecast future earnings. Thus, we will examine the effect of *ARL* and *DRL* on the direction of analysts' forecast error (optimistic vs. pessimistic) in an additional investigation. We use analysts' forecast bias to estimate the direction of analysts' forecast error. Analysts' forecast bias is estimated by the model (4).

$$FORE\_BIAS_t = (Average\ Analysts'\ EPS\ Forecast\ (1\ month, 3\ months,\ and\ 6\ months\ before\ year\text{-}end) - Reported\ EPS)/Stock\ Price\ at\ the\ Beginning\ of\ the\ Year \quad (4)$$

We conducted an additional investigation of the relationships between *ARL*, *DRL*, and analysts' forecast bias. If audit risk is high and transparency in accounting information is lacking, auditors may be forced to spend a lot of time and effort in completing audit procedures in order to eliminate opaqueness and reduce audit risk to an acceptable level. Therefore, the noise of accounting information and forecast error will be high when *ARL* is long. In previous studies on analysts' forecasting, analysts are found to report optimistically when uncertainty is high. Therefore, analysts' forecasts for companies with long *ARL* would be more optimistic than for those with short *ARL*.

Table 5 presents the results of our analysis of the relationships between *ARL*, *DRL*, and analysts' forecast bias. The *FORE_BIAS*(1*M*/3*M*/6*M*) variables are proxies of analysts' forecast bias at 1 month, 3 months, and 6 months before fiscal year-end. *FORE_BIAS* is estimated by determining the difference between the average value of analysts' EPS forecast and the reported EPS divided by the stock price at the beginning of the year. The average of analysts' EPS forecast is estimated at 1 month, 3 months, and 6 months before year-end. When *FORE_BIAS* is positive, analysts' forecasts are optimistic. By contrast, analysts' forecasts are pessimistic when *FORE_BIAS* is negative.

ARL is significantly and positively associated with *FORE_BIAS* (1*M*/3*M*/6*M*), which means that analysts' reports grow more and more optimistic as *ARL* increases. The coefficient of *DRL* is significantly negative. This means that the tendency of analysts to report optimistic earnings forecasts decreases because the uncertainty of earnings forecasting decreases as the reliability of financial statements increases due to additional audit work put in by auditors.

Table 5. Additional test-analysts' forecast bias

Descriptive statistics					
	Mean	St. dev.	Min	Median	Max
FORE_BIAS(1*M*)	0.0509	0.2559	-0.2077	0.0052	1.9767
FORE_BIAS(3*M*)	0.0542	0.2785	-0.2683	0.0055	2.3020
FORE_BIAS(6*M*)	0.0557	0.2815	-0.3019	0.0060	2.3042

$FORE\_BIAS(1M/3M/6M) = \beta_0 + \beta_1 ARL(DRL) + \beta_2 BIG4 + \beta_3 AFP + \beta_4 TENURE + \beta_5 SIZE + \beta_6 LEV + \beta_7 ROA + \beta_8 MTB + \beta_9 LOSS + \beta_{10} FOR + \beta_{11} OWN + \beta_{12} FOL + + \beta_{13} HIGHTECH + \beta_{14} COD + \Sigma YEAR + \varepsilon$

Panel A. *ARL*

Variables	*FORE_BIAS*(6*M*)		*FORE_BIAS*(3*M*)		*FORE_BIAS*(1*M*)	
	Estimated coefficients	t-stat	Estimated coefficients	t-stat	Estimated coefficients	t-stat
Intercept	0.8692	4.41***	0.8697	4.46***	0.8017	4.48***
ARL	0.0021	2.92***	0.0020	2.89***	0.0018	2.86***

Table 5 (cont.). Additional test-analysts' forecast bias

Panel A. *ARL*						
Variables	*FORE_BIAS*(6*M*)		*FORE_BIAS*(3*M*)		*FORE_BIAS*(1*M*)	
	Estimated coefficients	t-stat	Estimated coefficients	t-stat	Estimated coefficients	t-stat
BIG4	-0.0360	-1.27	-0.0316	-1.13	-0.0323	-1.26
AFP	-0.0110	-0.59	-0.0124	-0.68	-0.0116	-0.69
TENURE	0.0031	0.17	0.0041	0.22	0.0021	0.13
SIZE	-0.0443	-4.45***	-0.0445	-4.52***	-0.0410	-4.53***
LEV	0.0855	1.33	0.0854	1.34	0.0954	1.63
ROA	-0.6942	-3.13***	-0.6497	-2.96***	-0.5536	-2.75***
MTB	-0.0048	-0.51	-0.0050	-0.54	-0.0061	-0.71
LOSS	0.0089	0.22	0.0064	0.16	0.0128	0.35
FOR	0.0125	0.17	0.0164	0.23	0.0090	0.14
OWN	-0.0191	-0.29	-0.0206	-0.32	-0.0250	-0.42
FOL	0.0038	1.86*	0.0038	1.91*	0.0035	1.93*
HIGHTECH	-0.0369	-1.78*	-0.0371	-1.80*	-0.0329	-1.74*
COD	0.0543	0.38	0.0500	0.35	0.0345	0.26
YEAR	Included					
Observations	989		989		989	
Adj R^2	0.0513		0.0483		0.0509	
F-value	3.67***		3.51***		3.65***	
Panel B. *DRL*						
Variables	*FORE_BIAS*(6*M*)		*FORE_BIAS*(3*M*)		*FORE_BIAS*(1*M*)	
	Estimated coefficients	t-stat	Estimated coefficients	t-stat	Estimated coefficients	t-stat
Intercept	1.0250	5.27***	1.0224	5.30***	0.9389	5.30***
DRL	-0.0021	-2.81***	-0.0021	-2.79***	-0.0018	-2.66***
BIG4	-0.0356	-1.26	-0.0313	-1.12	-0.0317	-1.23
AFP	-0.0073	-0.39	-0.0088	-0.48	-0.0083	-0.49
TENURE	0.0013	0.07	0.0024	0.13	0.0007	0.04
SIZE	-0.0457	-4.58***	-0.0459	-4.64***	-0.0422	-4.65***
LEV	0.1018	1.59	0.1013	1.59	0.1099	1.88
ROA	-0.6916	-3.12***	-0.6471	-2.95***	-0.5516	-2.73***
MTB	-0.0037	-0.40	-0.0040	-0.43	-0.0052	-0.6
LOSS	0.0120	0.30	0.0094	0.24	0.0155	0.43
FOR	0.0070	0.10	0.0111	0.15	0.0045	0.07
OWN	-0.0152	-0.23	-0.0167	-0.26	-0.0218	-0.37
FOL	0.0037	1.81*	0.0037	1.86*	0.0034	1.86*
HIGHTECH	-0.0333	-1.61	-0.0336	-1.64	-0.0297	-1.58
COD	0.0519	0.36	0.0477	0.33	0.0322	0.25
YEAR	Included					
Observations	989		989		989	
Adj R^2	0.0507		0.0477		0.0499	
F-value	3.64***		3.48***		3.59***	

Notes: Variables definitions: FORE_BIAS(1*M*/3*M*/6*M*): analysts' forecast errors during 1 month (3 months/6 months) before the end of year; defined as the difference between the forecast and actual earnings, scaled by price. ***, ** and * denote significance at the 1 percent, 5 percent and 10 percent levels, respectively, based on a two-tailed test. See Model (1) for a definitions of the variables used.

3.3.2. Auditors' tenure. We conducted an additional test to detect changes in the relationships between *ARL*, *DRL*, and analysts' forecast error according to auditors' tenure. For this analysis, we separate our sample into two groups by the length of tenure of the auditors who performed audits in the sample firms. If an auditor's tenure at a company is greater than the median value for tenure for the entire sample, the company is classified in the long tenure group. Otherwise, it is included in the short tenure group. We then analyze the relationships between *ARL*, *DRL*, and analysts' forecast error in these two separate groups. Table 6 presents the empirical results. The results of this empirical analysis suggest that *ARL* is significantly and positively associated with analysts' forecast error only in the long tenure group. This result means that analysts' forecast error is higher in these firms because audit quality becomes more and more impaired as the auditor's tenure increases (Chi and Huang, 2005; Carey and Simnett, 2006).

Table 6. Additional test-auditor's tenure

$$FORE\_ERR(6M) = \beta_0 + \beta_1 ARL(DRL) + \beta_2 BIG4 + \beta_3 AFP + \beta_4 SIZE + \beta_5 LEV + \beta_6 ROA + \beta_7 MTB + \beta_8 LOSS + \\ + \beta_9 FOR + \beta_{10} OWN + \beta_{11} FOL + \beta_{12} HIGHTECH + \beta_{13} COD + \Sigma YEAR + \varepsilon$$

Panel A. *ARL*				
Variables	The long tenure group (N: 482)		The short tenure group (N: 507)	
	Estimated coefficients	t-stat	Estimated coefficients	t-stat
Intercept	0.4245	1.39	0.8419	3.41
ARL	0.0036	3.37***	-0.0002	-0.27
BIG4	-0.1468	-3.55***	0.0530	1.42
AFP	0.0084	0.30	-0.0189	-0.78
SIZE	-0.0252	-1.68*	-0.0417	-3.28***
LEV	0.2358	2.45**	0.2205	2.66***
ROA	-0.3116	-0.95	0.3465	1.21
MTB	-0.0112	-0.82	-0.0249	-1.97**
LOSS	0.0336	0.55	0.0576	1.18
FOR	-0.0769	-0.76	0.0586	0.57
OWN	0.0118	0.12	-0.0932	-1.09
FOL	0.0010	0.35	0.0015	0.58
HIGHTECH	-0.0220	-0.73	-0.0342	-1.21
COD	0.0694	0.40	0.2217	0.83
YEAR	Included			
Adj R^2	0.0904		0.037	
F-value	3.52***		2.02***	
Panel B. *DRL*				
Variables	The long tenure group (N: 482)		The short tenure group (N: 507)	
	Estimated coefficients	t-stat	Estimated coefficients	t-stat
Intercept	0.7316	2.42**	0.8507	3.49***
DRL	-0.0029	-2.62***	-0.0010	-1.02
BIG4	-0.1448	-3.48***	0.0417	1.11
AFP	0.0153	0.55	-0.0193	-0.81
SIZE	-0.0299	-1.98**	-0.0417	-3.29***
LEV	0.2732	2.81***	0.2110	2.55**
ROA	-0.3010	-0.91	0.3376	1.18
MTB	-0.0097	-0.7	-0.0236	-1.86*
LOSS	0.0419	0.68	0.0551	1.13
FOR	-0.0797	-0.79	0.0500	0.49
OWN	0.0113	0.11	-0.0895	-1.05
FOL	0.0010	0.34	0.0018	0.71
HIGHTECH	-0.0144	-0.48	-0.0347	-1.23
COD	0.0663	0.38	0.1994	0.74
YEAR	Included			
Adj R^2	0.0816		0.0389	
F-value	3.25***		2.08***	

Notes: ***, ** and * denote significance at the 1 percent, 5 percent and 10 percent levels, respectively, based on a two-tailed test. See Model (1) for a definitions of the variables used.

Conclusion

In this study, we investigate the relation between report lag (audit report lag, *ARL* and management discretionary report lag, *DRL*) and analysts' forecast error in a Korean sample of firms. In previous studies, audit report lag (*ARL*) is used as a proxy for the timeliness of accounting information and auditor effort, defined as the number of days from fiscal year-end to the audit report date. According to the results of these previous studies, auditors spend more time and effort in completing audit procedures when earnings management in financial statements is suspected or audit risk is high. This extra time spent increases audit report lag (*ARL*). However, this incremental audit work would be insufficient to eliminate uncertainty, lack of transparency in financial statements, and audit risk. These problems are more serious in companies with long *ARL* than in others. Therefore, we expect that the reliability of financial statements and analysts' forecast accuracy should decrease in companies with long *ARL*. In addition, managers have incentives to do two

conflicting things: to disclose accounting information as soon as possible, and to delay it as long as possible. If information asymmetry between managers and shareholders is high, managers have incentive to disclose accounting information as early as possible to reduce information asymmetry. However, they may choose to delay the release of accounting information when the company is in financial distress or there is a conflict between external auditors and managers. Thus, disclosure of accounting information may be delayed by managers' opportunistic behavior, thereby increasing management discretionary report lag (*DRL*). In this case, analysts' forecast error increases.

The results of the empirical analysis are as follows. First, *ARL* is significantly positively associated with analysts' forecast error. This result suggests that analysts' forecast error increases as *ARL* increases because information asymmetry becomes a greater problem as time goes on. Second, *DRL* is significantly negatively associated with analysts' forecast error. This result indicates that analysts' forecast error decreases as *DRL* increases because the reliability of financial statements increases as a result of auditors putting in extra hours to complete additional audit procedures. We additionally investigate the relationships between *ARL*, *DRL*, and analysts' forecast bias. In this subanalysis, analysts forecast future earnings more optimistically as *ARL* increases, and their tendency to report optimistic earnings forecasts decreases as *DRL* increases. We also find that *ARL* is positively associated with only the firms in the sample in which the auditor has had a long tenure with the firm.

The results of this study extend those of previous studies on the relationship between audit quality and analysts' forecast error. However, it does have some limitations, as follows. Other variables not included in the regression model may also have an effect on analysts' forecast error. In future, researchers may investigate the effect of governance structure on the relationships between *ARL*, *DRL*, and analysts' forecast error. In many previous studies, the corporate governance structure has been suggested to have an effect on information asymmetry.

References

1. Ashton, R., P. Graul and J. Newton (1989). Audit Delay and the Timeliness of Corporate Reporting, *Contemporary Accounting Research*, 5 (2), pp. 657-673.
2. Ashton, R., J. Willingham and R. Elliott (1987). An Empirical Analysis of Audit Delay, *Journal of Accounting Research*, 25 (2), pp. 275-292.
3. Asquith, P., M. Mikhail and A. Au (2005). Information Content of Equity Analyst Reports, *Journal of Financial Economics*, 75 (2), pp. 245-282.
4. Bamber, E., L. Bamber and M. Schoderbek (1993). Audit Structure and Other Determinants of Audit Report Lag: An Empirical Analysis, *Journal of Practice & Theor*y, 12 (1), pp. 1-23.
5. Behn, B., J. Choi and T. Kang (2008). Audit Quality and Properties of Analyst Earnings Forecasts, *The Accounting Review*, 83 (2), pp. 327-349.
6. Bhushan, R. (1989). Firm Characteristics and Analyst Following, *Journal of Accounting and Economics*, 11 (2), pp. 255-274.
7. Brown, L., R. Hagerman, P. Griffin and M. Zmijewski (1987). Security Analyst Superiority Relative to Univariate Time-Series Models in Forecasting Quarterly Earnings, *Journal of Accounting and Economics*, 9 (1), pp. 66-88.
8. Brown, L. and M. Rozeff (1978). The Superiority of Analyst Forecasts as Measures of Expectations: Evidence from earnings, *The Journal of Finance*, 33 (1), pp. 1-16.
9. Carey, P. and R. Simnett (2006). Audit Partner Tenure and Audit Quality, *The Accounting Review*, 81 (3), pp. 653-676.
10. Carslaw, C. and S. Kaplan (1991). An Examination of Audit Delay: Further Evidence from New Zealand, *Accounting and Business Research*, 22 (85), pp. 21-32.
11. Chi, W. and H. Huang (2005). Discretionary Accruals, Audit-Firm Tenure and Audit-Partner Tenure: Empirical Evidence from Taiwan, *Journal of Contemporary Accounting & Economics*, 1 (1), pp. 65-92.
12. Collins, W. and W. Hopwood (1980). A Multivariate Analysis of Annual Earnings Forecasts generated from Quarterly Forecasts of Financial Analysts and Univariate Time-Series Models, *Journal of Accounting Research*, 18 (2), pp. 390-406.
13. Das, S. (1998). Financial Analysts' Earnings Forecasts for Loss Firms, *Managerial Finance*, 24 (6), pp. 39-50.
14. Das, S., C. Levine and K. Sivaramakrishnan (1998). Earnings Predictability and Bias in Analysts' Earnings Forecasts, *The Accounting Review*, 73 (2), pp. 277-294.
15. Davidson, R. and D. Neu (1993). A Note on the Association between Audit Firm Size and Audit quality, *Contemporary Accounting Research*, 9 (2), pp. 479-488.
16. Duru, A. and D. Reeb (2002). International Diversification and Analysts' Forecast Accuracy and Bias, *The Accounting Review*, 77 (2), pp. 415-433.
17. Eames, M. and S. Glover (2003). Earnings Predictability and the Direction of Analysts' Earnings Forecast Errors, *The Accounting Review*, 78 (3), pp. 707-724.
18. Eddy, E. and B. Seifert (1992). An Estimation of Hypotheses Concerning Earnings Forecast Errors, *Quarterly Journal of Business and Economics*, 31 (2), pp. 22-37.

19. Elliott, J.A. (1982). Subject to Audit Opinions and Abnormal Security Returns – Outcomes and Ambiguities, *Journal of Accounting Research*, 20 (2), pp. 617-638.
20. Ettredge, M., C. Li and L. Sun (2006). The Impact of SOX Section 404 Internal Control Quality Assessment on Audit Delay in the SOX Era, *Auditing: A Journal of Practice & Theory*, 25 (2), pp. 1-23.
21. Givoly, D. and D. Palmon (1982). Timeliness of Annual Earnings Announcements: Some Empirical Evidence, *The Accounting Review*, 57 (3), pp. 486-508.
22. Healy, P., A. Hutton and K. Palepu (1999). Stock Performance and Intermediation Changes Surrounding Sustained Increases in Disclosure, *Contemporary Accounting Research*, 16 (3), pp. 485-520.
23. Healy, P., and K. Palepu (2001). Information Asymmetry, Corporate Disclosure, and the Capital Markets: A Review of the Empirical Disclosure Literature, *Journal of Accounting and Economics*, 31, pp. 405-440.
24. Knechel, W. and J. Payne (2001). Additional Evidence on Audit Report Lag, *Auditing: A Journal of Practice & Theory*, 20 (1), pp. 137-146.
25. Lang, M. and R. Lundholm (1993). Cross-Sectional Determinants of Analyst Ratings of Corporate Disclosures, *Journal of Accounting Research*, 31 (2), pp. 246-271.
26. Lee, H. and G. Jahng (2008). Determinants of Audit Report Lag: Evidence from Korea – An Examination of Auditor-Related Factors, *Journal of Applied Business Research*, 24 (2), pp. 27-44.
27. Lee, H., V. Mande and M. Son (2008). A Comparison of Reporting Lags of Multinational and Domestic Firms, *Journal of International Financial Management and Accounting*, 19 (1), pp. 28-56.
28. Leventis, S. and P. Weetman (2004). Timeliness of Financial Reporting: Applicability of Disclosure Theories in an Emerging Capital Market, *Accounting and Business Research*, 34 (1), pp. 43-56.
29. Lim, T. (2001). Rationality and Analysts' Bias, *Journal of Finance*, 56 (1), pp. 369-385.
30. Louuder, M., Khurana, I., Sawyers, R., Cordery, C., Johnson, C., Lowe, J. and Wunderele, R. (1992). The Information Content of Audit Qualifications, *Auditing: A Journal of Practice and Theory*, 11 (1), pp. 69-82.
31. Myers, N., L. Myers and T. Omer (2003). Exploring the Term of the Auditor Client Relationship and the Quality of Earnings: A Case for Mandatory Auditor Rotation? *The Accounting Review*, 78 (3), pp. 779-799.
32. Newton, J. and R. Ashton (1989). The Association between Audit Technology and Audit Delay, *Auditing: Journal of Practice & Theory*, 8 (Suppl.), pp. 22-37.
33. O'Brien, P. and R. Bhushan (1990). Analyst Following and Institutional Ownership, *Journal of Accounting Research*, 28 (3), pp. 55-76.
34. Whittred, G. (1980). Audit Qualification and the Timeliness of Corporate Annual Reports, *The Accounting Review*, 55 (4), pp. 563-577.
35. Whittred, G. and I. Zimmer (1984). Timeliness of Financial Reporting and Financial Distress, *The Accounting Review*, 59 (2), pp. 287-295.