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Evaluation of Audit Quality Based on Financial Statement Information*

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Abstract

The primary objective of this paper is to provide empirical evidence on how financial statements audited by Big-Six auditors convey better information than those audited by non-Big Six auditors to two groups of users: security analysts and investors. Earnings forecast errors, the dispersion of earnings forecasts, and the magnitude of earnings response coefficients are used as surrogates for the quality of financial statement information.

Security analysts significantly improve their accuracy and reach a higher degree of consensus in their earnings forecasts after firms switch their auditors from non-Big Six to Big Six accounting firms, compared to switches within the same class (i.e., from a Big Six [non-Big Six] to a different Big Six [non-Big Six]). Around the auditor switching years, the magnitude of earnings response coefficients also increases significantly for firms which switch their auditors from a non-Big Six to a Big Six firm, compared to those which switch their auditors within the same class. Overall, Big Six auditors seem to provide higher audit quality of financial statements, which is consistent with premises adopted by previous studies.

Key Words: audit quality, earnings forecast errors, the dispersion of earnings forecasts, earnings response coefficients, financial statements, auditor size

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1. Introduction

External auditing is widely viewed as a device to restrict the self-serving behaviour of managers (Jensen and Meckling, 1976; Ng, 1978; Watts and Zimmerman, 1983). Dopuch and Simunic (1982) indicate that users of financial statements evaluate the credibility of external auditors, since highly credible auditing is likely to reduce the probability to successfully conceal the self-serving behaviour of management. In a similar vein, DeAngelo (1981) argues that the *ex ante* value of audits to shareholders and creditors depends on how these users perceive biases underlying financial statements and how auditors truthfully report their findings. Since users of financial statements do not have access to corporate financial records, they need to develop surrogate measures to assess the reliability of the financial statements under review. One such measure is the size or reputation of an auditor retained by the firm. For example, audit opinions of Big Six auditors are likely to be seen as more credible than those of non-Big Six auditors.[1] If product differentiation exists between audits of Big Six and non-Big Six firms, an audit switch between these two classes will result in changes in the perceived quality of financial statements. As a result, accounting earnings information communicated through financial statements audited by Big Six (non-Big Six) auditors might be more (less) useful to users in their investment decisions.

After DeAngelo (1981) and Dopuch and Simunic (1982), the so-called product differentiation hypothesis has been widely recognized in auditing (Francis, 1984; Palmrose, 1986; Ettredge, Shane, and Smith, 1988). Up-to-date, however, no systematic empirical research has been conducted to support that financial statements audited by Big-Six auditors indeed communicate higher quality financial information. Thus, this paper empirically tests for possible differences in the quality of financial statements audited by Big Six versus non-Big Six auditors, by

1) There are now only four big auditors in the USA as Price Waterhouse was merged with Coopers & Lybrand and Ernst & Young was mergerd with KPMG in 1997.

documenting the behaviour of two different user groups: security analysts (sophisticated users) and investors (general market participants). Specifically, this study investigates whether there are significant changes (improvements or degradations) in (1) analysts' earnings forecast errors and the dispersion of earnings forecasts and (2) the earnings-returns relationship for firms that switch their auditors.

The empirical results present that security analysts are able to issue better earnings forecasts, as well as reach greater consensus in their earnings forecasts, as firms switch their auditors from a non-Big Six to a Big Six firm, compared to switches within the same class (i.e., from a Big Six [non-Big Six] to a different Big Six [non-Big Six] firm). Accordingly, analysts seem to better appreciate financial statements audited by Big Six auditors. Also the magnitude of earnings response coefficients increases significantly after an auditor switch for firms that switch their auditors from a non-Big Six to a Big Six firm.

The remainder of the paper is organized as follows: Section Two discusses the development of research hypotheses; Section Three describes measurements of variables and methodologies; Section Four presents sampling procedures; Section Five reports empirical results; and Section Six concludes the paper.

2. Hypotheses Development

Audit quality is evaluated by documenting how well the audited financial statements assist two user groups-security analysts and investors. Security analysts are considered as "information intermediaries" who process and provide financial information for third parties. As indicated by Arnold and Moizer (1984), analysts are an efficient information user group, since they specialize in one market sector and spend most of their time analyzing financial information that is continuously released to capital markets. Investors have been also considered as one of the most important groups that are able to evaluate the quality of financial statements. Thus, this study investigates how financial statements audited by those who have different levels of credibility affect the above-mentioned two typical user

groups in making their investment-related decisions.

The theoretical model of Dopuch and Simunic (1982) depicts how external audits are demanded when there is information asymmetry between management and investors about the integrity of management. In this setting, attestation by a credible auditor may serve one of two functions: (1) to signal management integrity to investors or (2) to restrict the ability of less scrupulous management to conceal, through misrepresentation in financial statements, the consequences of its self-serving decisions.

Many researchers have attempted to explain why there is an increasing trend of auditor switching from smaller to larger audit firms. Research findings can be divided into two general groups. One group of studies indicates that Big Six auditors (BIG hereafter) have advantages in performing audits less expensively than non-Big Six auditors (NONBIG hereafter) due to specialization (Danos and Eichenseher, 1982; Schwartz and Menon, 1985; Simunic and Stein, 1986). The other group of studies focuses on the concept of auditor credibility. Credibility must be associated with observable characteristics, such as auditor reputation, since the details of audits are not publicly available. Audit firms are not equal in terms of their credibility (reputation or audit quality) that evolves over a long period of time. Moreover, there are diverse opportunities and motivations for management in selecting their auditors. Thus, the market for auditing should be characterised by product differentiation. Dopuch and Simunic (1982) present a so-called product-differentiation hypothesis in which large auditors are perceived as providing audits of higher quality than those of small auditors.

DeAngelo (1981) also argues the existence of a positive relationship between the size of audit firms and their audit quality, but from a different angle. She assumes that if auditors are suspected of cheating clients in carrying out their regular audit work, they are less likely to be retained by other existing clients, thereby compromising future audit fees. If audit firms earn client-specific quasi-rents, larger auditors (earning more aggregate quasi-rents from more clients) have greater incentive not to cheat, when compared to smaller auditors. Consequently, the audits of larger auditors will be of higher quality.

2.1 Audit Quality and Analyst Earnings Forecasts

Financial analysts (i.e., information intermediaries) are considered as one important group that builds the pre-disclosure information environment. The superiority of analysts in predicting accounting earnings over univariate time-series models is attributed to their abilities to reflect contemporaneous information on a timely basis (Brown, Griffin, Hagerman, and Zmijewski, 1987).

Analysts have incentives to be precise since their professional credentials are dependent upon their accurate predictions of accounting earnings. Managers, on the other hand, have a substantial degree of discretion in measuring earnings within the boundary of Generally Accepted Accounting Principles (GAAP). This discretion is in part ascribed to the loose link between what a firm reports in its financial statements and what it actually earns. Thus, analysts need to collect and process private information in addition to publicly available information in order to improve the accuracy of their earnings forecasts.

As publicly available information becomes more reliable, approximating more closely what is expected to be measured, analysts might find less need to rely on their own private information. Furthermore, less demand for private information would result in a higher consensus of earnings forecasts because analysts would share a more common information base in issuing their earnings forecasts.

The dispersion of earnings forecasts has been attributed to heterogeneous beliefs among analysts about future earnings (Ajinkya, Atiase, and Gift, 1991; Atiase and Bamber, 1994). Chung, Kim, and Lee (1997) show that analysts are able to reduce the dispersion of earnings forecasts, as well as earnings forecast errors, over the forecast horizon as the date of earnings announcement draws closer. Chung, Kim, and Lee (1997) indicate that analysts can reduce the uncertainty of a firm's economic performance over the forecast horizon as more financial information is gradually disseminated to capital markets from alternative sources.[2] An increase in the quantity

2) However, they document that analysts cannot predict the uncertainty of

of high-quality public information induces security analysts to share more common bases of information in issuing their earnings forecasts.

Suppose that the quality of financial statements is judged based on analysts' capability to closely reflect a firm's economic value by minimizing measurement biases that are induced for non-accounting reasons. Then, high-quality financial statements would be an output of accounting systems that assure a systematic transformation from what a firm economically earns to what it reports in its financial statements.

Craswell, Francis, and Taylor (1995) provide evidence, using Australian publicly listed firms, that Big 6 (now big 4) auditors earn more (around 30% more) than Non-Big 6 auditors; brand name reputations are thought to be better for Big Six auditors.

Menon and Williams (1991) document that clients and investment bankers prefer Big Six auditors at the time of public offering to signal firm commitment. To avoid reputation deterioration (which should be more costly for Big Six auditors) and loss of greater audit fees received, Big Six auditors may spend more time in their auditing processes, thus offering higher quality financial statements. As a result, financial statements audited by BIG would provide less uncertainty to analysts in issuing their earnings forecasts than NONBIG.

This study tests the differential audit-quality hypothesis by examining whether an audit switch has any systematic impact on the accuracy and dispersion of analysts' earnings forecast errors.[3] If product differentiation exists, one might expect to observe smaller forecast errors and smaller dispersion of analysts' earnings forecasts for firms which switch auditors from NONBIG to BIG, *ceteris paribus*[4], compared to switches within

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earnings management effectively.

3) There is a positive correlation between the dispersion of earnings forecasts and earnings forecast errors (Abarbanell, Lanen, and Verrecchia, 1995; Chung, Kim, and Lee, 1997).

4) Alternatively, other studies explain earnings forecast errors as intentional biases (e.g., optimistic forecasts) induced by analysts.. Analysts need to cultivate good relationships with the firms the analysts follow. There are several reasons why security analysts need to maintain good relationships with managers of firms followed. (See Affleck-Graves, David, and Mendenhall, 1990 and McNichols and O'Brien, 1996.) For example, managers are the primary information source for security analysts in updating their earnings forecasts, and the brokerage firm for which security

the same class. This leads to the following hypotheses:

$H1_o$: Compared to switches within the same class, the forecast errors and dispersion of analysts' earnings forecasts in the period that follows an auditor switch from NONBIG to BIG are equal to those in the period preceding the switch.

$H1_a$: Compared to switches within the same class, the forecast errors and dispersion of analysts' earnings forecasts in the period that follows an auditor switch from NONBIG to BIG are smaller than those in the period preceding the switch.[5)]

2.2 Audit Quality and Stock Market Reaction

Prior empirical studies have provided evidence that accounting earnings is related to the value of a firm's equity securities (Ball and Brown, 1968). This empirical relationship is based on the assumption that current earnings serve as a relevant proxy for expected future earnings, which in turn helps predict future cash flows accruing to shareholders' interests (Beaver, 1989). Earlier studies assume that stock prices respond uniformly to a given level of unexpected earnings. However, some recent studies provide evidence that there are considerable cross-sectional variations in the earnings-return relationship. Factors which affect the cross-sectional variations include (1) fundamental characteristics of a firm's earnings-generating process, such as earnings persistence (Kormendi and Lipe, 1987) and risk and growth (Collins and Kothari, 1989; Easton and Zmijewski, 1989), (2) information environment (i.e., firm size, Atiase, 1985),

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analysts are working earns its revenue by providing investment banking services to those firms followed by its security analysts. Therefore, it is not easy to divide earnings forecast errors into intentional biases and prediction errors. Thus, this paper assumes that analysts do not change the amount of their intentional bias, if there is any, around the year in which an audit switch is made.

5) The preliminary examination of the 1995 Compustat Primary, Supplementary, and Tertiary (hereafter, P-S-T) tape shows that there are only six usable sample firms that switch their auditors from BIG to NONBIG auditors. Accordingly, the primary investigation of this study will focus on firms that switch their auditors from NONBIG to BIG.

and (3) the quality of earnings (Lev, 1989).

This paper proposes that differences in auditor credibility affect the quality of earnings; thus, the earnings-returns relationship varies. Accounting earnings numbers audited by more (less) credible auditors are more (less) likely to be reliable and more (less) likely to reflect a firm's underlying economic flows. The differential audit quality hypothesis suggested by Dopuch and Simunic (1982) and DeAngelo (1981) predicts that firms which switch their auditors from NONBIG (BIG) to BIG (NONBIG) may be considered to acquire improved (deteriorated) audit services and to generate more (less) reliable accounting information. If a perceived quality differential in external auditing exists, one might expect to observe a stronger earnings-returns relationship for firms that switch their auditors from NONBIG to BIG, *ceteris paribus*. This leads to the following hypotheses.

$H2_o$: Compared to switches within the same class, the relationship between earnings and security returns in the period that follows an audit switch from NONBIG to BIG is equal to the relationship in the period preceding the switch.

$H2_a$: Compared to switches within the same class, the relationship between earnings and security returns in the period that follows an audit switch from NONBIG to BIG is stronger than that of the period preceding the switch.

3. Methodology

3.1 Accuracy and Dispersion of Earnings Forecasts

This paper uses analysts' earnings forecast data compiled on I/B/E/S tape. Since earnings forecasts of security analysts are considered as a proxy for expected earnings in capital markets, the closer earnings forecasts are to earnings announcements, the better earnings forecasts serve as a proxy. I/B/E/S issues its summary report once a month; thus, this paper uses earnings forecasts in the I/B/E/S summary tape which are is-

sued in the month immediately prior to the date of earnings announcement.

Forecast errors of analysts (FE) are computed as actual earnings per share (EPS)[6] reported by I/B/E/S minus the mean of EPS forecasts, divided by the stock price at the date of earnings announcement.[7]

$$FE_{jt} = (A_{jt} - F_{jt})/P_{jt} \quad (1)$$

where

A_{jt} = actual EPS for firm j reported by I/B/E/S for year t,

F_{jt} = the mean of earnings forecasts (issued prior to earnings announcements) for firm j, year t,

and

P_{jt} = stock price for firm j at the date of earnings announcement for year t.

The dispersion of analysts' earnings forecasts is measured in two different ways, consistent with Bamber and Cheon (1995). One measurement is the standard deviation (STD) of earnings forecasts (deflated by stock prices on the date of earnings announcements) issued in the month prior to the date of earnings announcements. The other measurement is the range (RANGE) between the highest and lowest earnings forecasts (deflated by stock prices on the date of announcements) issued in the month prior to the date of earnings announcements.

The first hypothesis examines whether an auditor switch has any systematic impact on the accuracy and dispersion of analysts' earnings forecasts. To test this hypothesis, the paper compares the dispersion of earnings forecasts and earnings forecast errors of the *pre*-switch period (one or two years before the audit switch) to those of the *post*-switch period (one or two

6) Philbrick and Ricks (1991) report that when I/B/E/S forecasts of EPS are used, prediction errors based on actual EPS reported by I/B/E/S are smaller than those based on actual EPS reported by COMPUSTAT.

7) The magnitude of forecast errors could be affected by the difference in earnings capitalization ratios in the cross-sectional study. Thus, alternatively, earnings forecast errors are computed by using actual EPS as a deflator. Since, however, there is no substantial difference in results between the two deflators, this paper reports empirical results based on stock price as a deflator.

years after the audit switch). The year of auditor switch is excluded from analyses since the switching year will be influenced by both old and new auditors. The first hypothesis can be tested as follows.

$H11_o$: $|FE|_{post,j} - |FE|_{pre,j} = 0$
$H11_a$: $|FE|_{post,j} - |FE|_{pre,j} < 0$, for firm j, which changes its auditor NONBIG to BIG,

and/or
$H12_o$: $STD(orRANGE)_{post,j} - STD(orRANGE)_{pre,j} = 0$
$H12_a$: $STD(orRANGE)_{post,j} - STD(orRANGE)_{pre,j} < 0$, for firm j which changes its auditor from NONBIG to BIG,

where

$|FE|_{pre,j}$ and $|FE|_{post,j}$ = absolute values of earnings forecast errors for firm j in the *pre-* and *post*-switch periods, respectively,

$STD_{pre,j}$ and $STD_{post,j}$ = standard deviations of earnings forecasts for firm j in the *pre-* and *post*-switch periods, respectively, and

$RANGE_{pre,j}$ and $RANGE_{post,j}$ = ranges between the highest and lowest earnings forecasts for firm j in the *pre-* and *post*-switch periods, respectively.

All variables, FE, STD, and RANGE, are deflated by a stock price at the date of earnings announcement and are also computed over one-year as well as two-year observation windows. Over the one-year observation window, *FE*, *STD*, and RANGE are computed for year -1 (year +1) around the year of audit switch for FE_{pre}, STD_{pre}, and $RANGE_{pre}$ (FE_{post}, STD_{post}, and $RANGE_{post}$). These three variables are re-estimated by computing means of *FE*s, *STD*s, and *RANGE*s over years -1 and -2 (years +1 and +2) for FE_{pre}, STD_{pre} and $RANGE_{pre}$ (FE_{post}, STD_{post} and $RANGE_{post}$) for the two-year observation window.

It is possible that the magnitude of analysts' earnings forecast errors and/or the dispersion of earnings forecasts might be

induced by some systematic changes in firm attributes, such as firm size, growth, and/or the number of security analysts following the firm's progress. Prior studies indicate that firm size and/or growth are significantly associated with auditor choice (Healy and Lys, 1986; Johnson and Lys, 1986; Palmrose, 1986; Simunic and Stein, 1986; and Francis and Wilson, 1988), while the accuracy and dispersion of earnings forecasts are affected by firm size and the number of security analysts following the firm (Brown, Richardson, and Swager, 1987; Dempsey, 1989; Chung, Kim, and Lee, 1997).

In addition, a change in firm growth could affect the accuracy and dispersion of earnings forecasts because of changes in the information environment. A firm's growth (GRW) is measured as a percentage change in sales growth, while the natural log of a firm's market value is adopted as a proxy for firm size (SIZE).[8] Therefore, multiple regression models are developed by including these moderating variables as follows.

$$\Delta |FE|_{jt} = b_0 + b_1 D_{jt} + b_2 \Delta GRW_{jt} + b_3 \Delta SIZE_{jt} + b_4 \Delta NO + v_{jt} \quad (2)$$

and

$$\Delta STD(or\ RANGE)_{jt} = c_0 + c_1 D_{jt} + c_2 \Delta GRW_{jt} + c_3 \Delta SIZE_{jt} + c_4 \Delta NO + w_{jt} \quad (3)$$

where

$\Delta |FE|_{jt}$ = changes in $|FE|_{jt}$ from the *pre-* to the *post*-switch period for firm j, year t, in which an auditor switch is made[9]
= $|FE|_{post,jt} - |FE|_{pre,jt}$,

ΔSTD_{jt} = changes in *STD* from the *pre-* to the *post*-switch period for firm j, year t
= $STD_{post,jt} - STD_{pre,jt}$,

$\Delta RANGE_{jt}$ = changes in *RANGE* from the *pre-* to the *post*-switch period for firm j, year t
= $RANGE_{post,jt} - RANGE_{pre,jt}$,

D_{jt} = a dummy variable which has the value

8) In addition, proxies for growth and size are measured based on total assets, but there is no substantial change in results.

9) The change in |FE| is employed to avoid the sign effect.

of 1 if firm j switches its auditor from a NONBIG auditor to a BIG auditor in year t; for other types of switches, this variable takes the value of 0,

ΔGRW_{jt} = changes in *GRW* from the *pre-* to the *post*-switch period for firm j, year t
= $GRW_{post,jt} - GRW_{pre,jt}$,

$\Delta SIZE_{jt}$ = changes in *SIZE* from the *pre-* to the *post*-switch period for firm j, year t
= $(SIZE_{post,jt} - SIZE_{pre,jt}) / SIZE_{pre,jt}$,

ΔNo_{jt} = changes in the number of security analysts following the firm from the *pre-* to the *post*-switch period for firm j, year t,
= $(NO_{post,jt} - NO_{pre,jt}) / NO_{pre,jt}$,

b_0, b_1, b_2, b_3, b_4 and c_0, c_1, c_2, c_3, c_4 = parameters of models (2) and (3), respectively,

v_{jt}, w_{jt} = residuals of models (2) and (3), respectively, and other variables are as defined above.

As explained above, all variables are computed over two observation window lengths: one year and two years. When the two-year observation window is adopted, the mean over two years for each variable is computed around the year of audit switch.

Sample observations are partitioned into four portfolios depending upon the type of audit switch: B-B, N-B, B-N, and N-N. (B-B, N-B, B-N, and N-N represent an audit switch from BIG to BIG, NONBIG to BIG, BIG to NONBIG, and NONBIG to NONBIG, respectively.) Since the group of B-N is too small (six observations) to have stable empirical inference, this group is removed from the multiple regression analysis. The groups of B-B and N-N represent firms that switch their auditors within the same class. Accordingly, if the N-B group (in which firms switch their auditors from NONBIG to BIG) exhibits different magnitudes of earnings forecast errors and dispersions of earnings forecasts from those of the other two groups (B-B and N-N), then this paper can provide empirical evidence that a change in the

class of auditors affects security analysts in issuing their earnings forecasts. As a result, the first hypothesis is tested based on the significance of a dummy variable that is included in each equation. It is expected that b1 (c1) be negative and statistically significant.

3.2 Audit Quality and Stock Market Reaction

A traditional earnings-returns model is employed to test the second hypothesis of whether an audit switch affects the association between earnings and stock returns over a long observation window (one year). Since the quality of financial statements is more likely to be reflected in stock prices over a prolonged period, the long observation window is preferred to the short observation window (one or two days around earnings announcements). The earnings-returns model requires an estimation of proxies for unexpected market returns and unexpected earnings. It is common in information-content studies to com-pute market-adjusted returns (MARTN) as a proxy for unexpect-ed returns (Bowen, Johnson, Shevlin, and Shores, 1989; Biddle, Seow, and Siegel, 1995). MARTN is estimated as follows.[10]

$$MARTN_{jt} = \prod_{m=-11}^{M} (1 + RTN_{jtm} - MRTN_{tm}) \qquad (4)$$

where

$MARTN_{jt}$ = market-adjusted returns for firm i in year t,
RTN_{jtm} = monthly stock returns for firm j in the m^{th} month of year t, and
$MRTN_{tm}$ = equally-weighted market-wide returns in the m^{th} month of year t.[11]

A simple random walk model is employed to describe how

10) Collins and Kothari (1989) indicate that the choice of observation window affects the earnings-returns relationship. Thus, we also compute an additional measure of compound market-adjusted returns over twelve months, up to three months after the end of fiscal year. However, there is no substantial difference in results between these two ways of measurement.

11) When value-weighted market-wide returns are employed, the result is almost the same. Accordingly, this study reports the results based on equally-weighted market-wide returns only.

annual accounting earnings are generated. Unexpected earnings (*UE*) are then determined by subtracting expected earnings (i.e., EPS in the previous year) from actual EPS, both of which are reported in the I/B/E/S database. It is a common practice to use stock price and expected earnings to remove the size effect in measuring unexpected earnings. However, since the ratio of earnings to price is not constant from firm to firm, the measurement of unexpected earnings can be affected by the cross-sectional difference in the capitalization ratio. Thus, the change in EPS is deflated by accounting earnings as follows.[12]

$$UE_{jt} = \frac{A_{jt} - A_{jt-1}}{A_{jt-1}} \tag{5}$$

where

UE_{jt} = earnings - deflated unexpected earnings for firm j, year t, and

A_{jt} = actual EPS for firm j, year t.

According to prior studies, the relationship between unexpected earnings and stock returns is moderated by some systematic changes in a firm's attributes.[13] Therefore, this study includes the annual sales growth rate (GRW) and the natural log of a firm's market value (SIZE) as moderating variables in estimating the association between stock returns and earnings.

$$MARTN_{jt} = q_0 + q_1 UE_{jt} q_2 D * UE_{jt} + q_3 GRW_{jt} * UE_{jt} + q_4 SIZE_{jt} * UE_{jt} + w_{jt} \tag{6}$$

where

D = a dummy variable which has a value of 1 for firm j in the *post*-switch period, and a value of 0 in the *pre*-switch period,

12) We also applied stock price as a deflator in Equation (5). The empirical results were similar to (a little weaker than) those in the case where accounting earnings was applied as a deflator. Accordingly, we only report the results based on the accounting earnings deflator.

13) Factors which moderate earnings response coefficients include: earnings persistence (Kormendi and Lipe, 1987), firm size, risk and growth (Collins and Kothari, 1989; Easton and Zmijewski, 1989). However, for simplicity, this study only includes firm size and sales growth as control variables.

w_{jt} = residuals of the model, and
other variables are as defined above.

Equation (6) includes a dummy variable to estimate the shift in coefficient on UE from the *pre-* to the *post*-switch period. Equation (6) is individually tested for each sample group. As proposed in the above, second hypothesis, investors reflect, in their investment decisions, the information of financial statements that are audited by BIG in a different way than the information of financial statements audited by NONBIG. This paper expects q_2 to be positive and statistically significant for the N-B group, as the quality of financial statements is enhanced by the audit switch.

4. Samples

The Compustat Annual tape includes information on auditor switches, Item 149. This item's code consists of two parts: the first part identifies the auditing firm and the second part codes for audit opinion. The first part ranges from 0 to 27: unaudited financial statements are recorded as 0; financial statements audited by Big-Eight auditors are coded from 1 to 8, respectively; financial statements audited by other auditors are coded from 9 to 27, depending upon the name of the auditor.

A change in the first part of Item 149 represents an auditor switch in a given year. The 1995 Compustat P-S-T Industrial tape shows that 1,317 firms have switched their auditors over the twenty-year period covered by this tape.[14] When a firm switches its auditor over two consecutive years, it is not easy to distinguish the effects of two different types of audit switches on financial statements. Accordingly, the number of sample firms is reduced to 1,259 by removing 58 firm-year observations.

Since empirical testing is done based on two different sets of observation windows: one-year and two-year; two sets of firm-year observations are prepared. For the one-year observation window (the two-year observation window), sample firms need to

14) Name changes of audit firms owing to merging activities are not regarded as auditor switches in this paper.

report accounting variables in one year (over two years) preceding the audit switch as well as one year (two years) following the audit switch. These accounting variables include sales (Computstat Item 12) and price (Compustat Item 24). This process results in 951 (864) firm-year observations for the one-year observation (two-year observation) window.

The I/B/E/S History tape reports the mean and standard deviation of earnings forecasts that are collected from security analysts every month. The observations selected from the Compustat tape need to have at least three security analysts who issue earnings forecasts in the month immediately prior to the date of earnings announcement in order to generate meaningful statistics for the dispersion of earnings forecasts. Consequently, there are 304 (241) firm-year observations for the one-year (two-year) observation window after matching the above-selected firm-year observations with firms available from the I/B/E/S History tape. The final screening process is done by eliminating firm-year observations whose monthly stock returns are not reported on the CRSP tape. The number of sample firms is reduced to 214 (166) for the one-year (two-year) observation window by eliminating 90 (75) firm-year observations whose market returns are not available on the CRSP tape.

The two sets of sample firms are partitioned into four groups: B-B, N-B, B-N, and N-N, respectively. Regarding the one-year-observation window, there are 160, 35, 6 and 13 firm-year observations for B-B, N-B, B-N and N-N, respectively; regarding the two-year observation window, there are 119, 34, 4 and 9 firm-year observations for B-B, N-B, B-N and N-N, respectively. The B-N group is deleted for the further analyses because of its small sample size.

5. Empirical Results

5.1 Earnings Forecast Errors and the Dispersion of Earnings Forecasts

Panel I in Table 1 shows changes in: absolute earnings forecast errors ($|FE|$), standard deviations of earnings forecasts (*STD*), range (*RANGE*), numbers of security analysts following the

Table 1. Means of Changes in Earnings Forecast Errors, Dispersion and Other Variables around the Year of Audit Switch (*t*-statistic)

Panel I: Means of Changes in Variables between Pre- and Post-Switch Periods Based on the Sample of the One-Year-Observation Window

Type	Obs	$\Delta \lvert FE \rvert$	ΔSTD	$\Delta RANGE$	ΔNO	ΔGRW	$\Delta SIZE$
B-B	160	-.002	-.004	-.008	.018	-.110	.078
		(-.24)	(-1.25)*	(-1.32)*	(.61)	(-3.99)***	(2.07)**
N-B	35	-.043	.005	-.015	.045	.002	.247
		(-1.65)*	(1.81)*	(-1.04)	(.70)	(.04)	(2.50)**
N-N	13	-.036	-.007	-.032	.162	-.039	.281
		(-.93)	(-.87)	(-.96)	(1.93)*	(-.33)	(6.00)***

Panel II: Means of Changes in Variables between Pre- and Post-Switch Periods Based on the Sample of the Two-Year-Observation Window

Type	Obs	$\Delta \lvert FE \rvert$	ΔSTD	$\Delta RANGE$	ΔNO	ΔGRW	$\Delta SIZE$
B-B	119	.039	-.002	.002	.120	-.158	.534
		(1.75)*	(-.30)	(.10)	(2.29)**	(-4.43)***	(6.98)***
N-B	34	-.065	-.005	-.032	.057	.173	.731
		(-1.81)*	(-.66)	(-1.70)*	(.39)	(1.56)*	(4.15)***
N-N	9	.010	-.000	-.002	.018	-.003	.150
		(1.07)	(-.19)	(-.36)	(.11)	(-.04)	(1.24)

Notes:
B-B = Group of firm-year observations that switch their auditors from BIG to BIG
N-B = Group of firm-year observations that switch their auditors from NONBIG to BIG
N-N = Group of firm-year observations that switch their auditors from NONBIG to NONBIG

All values in each column represent means of changes between the pre-switch and post-switch periods of the variable in the heading. Each variable is measured as follows:

$\Delta \lvert FE \rvert$ = changes in $\lvert FE \rvert$ (absolute earnings forecast errors) from the pre- to the post-switch period for firm j, year t, in which an audit switch is made: $(= \lvert FE \rvert_{post,jt} - \lvert FE \rvert_{pre,jt})$,

ΔSTD = changes in *STD* from the *pre-* to the *post*-switch period for firm j, year t $(= STD_{post,jt} - STD_{pre,jt})$,

$\Delta RANGE$ = changes in *RANGE* from the *pre-* to the *post*-switch period for firm j, year t $(= RANGE_{post,jt} - RANGE_{pre,jt})$,

ΔNO = changes in numbers of security analysts followed from the *pre-* to the *post*-switch period for firm j, year t, $(= (NO_{post,jt} - NO_{pre,jt}) / NO_{pre,jt})$,

ΔGRW = changes in GRW from the *pre-* to the *post*-switch period for firm j, year t $(= GRW_{post,jt} - GRW_{pre,jt})$,

$\Delta SIZE$ = changes in *SIZE* from the *pre-* to the *post*-switch period for firm j, year t $(= (SIZE_{post,jt} - SIZE_{pre,jt}) / SIZE_{pre,jt})$, and

*, **, and ***: the change is significantly different from 0 at the 0.1, .05, and .01 levels, respectively, in one-tailed tests.

firm's status (*NO*), growth rate (*GRW*), and size (*SIZE*); between the pre-switch and post-switch periods, based on the sample of the one-year observation window. All three groups show a significant increase in firm size around the audit switch. After the audit switch, all three groups experience a decrease in earnings forecast errors, but such a decrease is statistically significant at the level of 0.1 only for the N-B group. Contrary to our expectations, the N-B group shows a significant increase in *STD*, which is inconsistent with the change (decrease) in $|FE|$. (Earnings forecast errors are supposed to be positively associated with the dispersion of earnings forecasts.)

Our conjecture regarding the significant increase in STD is that audit policy changes due to auditor changes may increase heterogeneity in analysts' earnings forecasts. Prior research suggests that certain factors underlying auditor changes, such as opinion shopping (Paully, 1984) and low balling (Eichenseher and Shields, 1983), are regarded by analysts as undesirable switching incentives, particularly for switches within the same class (from BIG [NONBIG] to BIG [NONBIG]).

Panel II in Table 1 shows changes in each variable based on the sample of the two-year observation window. The mean of each variable over two years preceding the auditor switch is computed and then compared with the mean of the same variable over two years following the auditor switch. The N-B group shows decreases in $|FE|$ and *RANGE* that are statistically significant at the 0.1 level; this supports the first alternative hypothesis. However, the B-B group shows a significant increase in $|FE|$ after the auditor switch, which is similar to the results of Panel I.

In sum, both sets of firm-year observations indicate that when a firm switches its auditor from NONBIG to BIG, security analysts are able to issue more accurate earnings forecasts. Also, the dispersion of earnings forecasts (which is measured as the difference between the highest and the lowest earnings forecasts) decreases as a firm switches its auditor from NONBIG to BIG. However, when the dispersion of earnings forecasts is measured as the standard deviation of earnings forecasts, the results are contrary to our expectations.

Table 2 shows the results of the regression model that includes the moderating variables: changes in GRW, RANGE, and

Table 2. Multiple Regression Results: Changes in |FE|, STD, and RANGE around the Audit Switch after Controlling over GRW, SIZE and NO (*t*-statistics)

$$\Delta|FE|_{jt} = b_0 + b_1 D_{jt} + b_2 \Delta GRW_{jt} + b_3 \Delta SIZE_{jt} + b_4 \Delta NO + v_{jt} \quad (2)$$

$$\Delta STD(\text{or } RANGE)_{jt} = c_0 + c_1 D_{jt} + c_2 \Delta GRW_{jt} + c_3 \Delta SIZE_{jt} + c_4 \Delta NO + w_{jt} \quad (3)$$

Panel I: Sample of the One-Year Observation Window (N = 208)

Model	INT	*D*	*ΔGRW*	*ΔSIZE*	*ΔNO*	R^2	F-stat.
|FE|	-.006	-.038	-.017	.022	-.101	.06	4.37***
	(-.53)	(-1.42)*	(-.58)	(.99)	(-3.72)***		
STD	-.004	.010	-.002	-.002	-.004	.00	1.16
	(-1.37)*	(1.59)*	(-.31)	(-.45)	(-.73)		
RANGE	-.011	-.004	-.010	-.007	-.025	.00	1.07
	(-.63)	(-.24)	(-.56)	(-.53)	(-1.51)*		

Panel II: Sample of the Two-Year Observation Window (N = 162)

Model	INT	*D*	*ΔGRW*	*ΔSIZE*	*ΔNO*	R^2	F-stat.
|FE|	.049	-.089	-.029	-.025	-.040	.04	2.68**
	(2.05)**	(-1.95)**	(-.73)	(-1.14)	(-1.37)*		
STD	-.004	.007	-.027	-.007	.011	.04	2.61**
	(-.47)	(.51)	(-2.05)**	(-1.07)	(1.24)		
RANGE	.001	-.008	-.059	-.023	.042	.02	1.82
	(.02)	(-.18)	(-1.44)*	(-1.09)	(1.47)*		

Notes:

INT = the intercept of the model,

D_{jt} = a dummy variable which has the value of 1 if firm *j* switches its auditor from a NONBIG to a BIG in year *t*; otherwise, the value is 0,

$\Delta|FE|$ = changes in |*FE*| (absolute earnings forecast errors) from the pre- to the post-switch period for firm *j*, year *t*, in which an audit switch is made (= $|FE|_{post,jt} - |FE|_{pre,jt}$),

ΔSTD = changes in *STD* from the *pre-* to the post-switch period for firm *j*, year *t* (= $STD_{post,jt} - STD_{pre,jt}$),

$\Delta RANGE$ = changes in *RANGE* from the *pre-* to the *post*-switch period for firm *j*, year *t* (= $RANGE_{post,jt} - RANGE_{pre,jt}$),

ΔGRW = changes in *GRW* from the *pre-* to the *post*-switch period for firm *j*, year *t* (= $GRW_{post,jt} - GRW_{pre,jt}$),

$\Delta SIZE$ = changes in *SIZE* from the *pre-* to the *post*-switch period for firm *j*, year *t* ($SIZE_{post,jt} - SIZE_{pre,jt}$),

ΔNO = changes in the number of security analysts following the firm from the *pre-* to the *post*-switch period for firm *j*, year *t*, (= $(NO_{post,jt} - NO_{pre,jt})/NO_{pre,jt}$), and

*, **, and ***: the change is significantly different from 0 at the 0.1, .05, and .01 levels, respectively, in one-tailed tests.

NO. The regression model assumes that, after an auditor switch, the N-B group has greater changes in |*FE*|, STD, and SIZE than B-B and N-N. According to the table, even when changes in GRW, SIZE and NO around the auditor switch are controlled, there is a significant change in |*FE*| between N-B and the other two groups (B-B and N-N) based on the one-year observation window sample. More specifically, the N-B group has 0.038 more reduction in |FE| than the other two groups, which is statistically significant at the 0.1 level. Contrary to our expectations, there is a significant increase in STD for the N-B group when changes in *GRW*, *SIZE* and *NO* around the auditor switch are controlled.

When the regression model is tested based on the two-year observation window sample, the N-B group shows a greater decrease in |*FE*| than the other groups; this change is statistically significant at the 0.05 level. However, there is no significant difference among N-B, B-B, and N-N groups in terms of the dispersion of earnings forecasts when changes in *GRW*, *SIZE* and *NO* are controlled.

5.2 Earnings Response Coefficients

In this section, the association between earnings and stock returns is estimated for each group of firm-year observations. As shown in Table 3, each group has four sets of firm-year observations: PRE-SWITCH YEAR (POST-SWITCH YEAR) represents firm-year observations in year -1 and year -2 (year +1 and year +2) around the year of auditor switch, while ONE YEAR (TWO YEAR) observations are as defined above.

As consistent with previous studies, all associations between earnings and stock returns are positive.

Table 4 shows earnings-returns relations for each group by controlling over two moderating variables: GRW and SIZE. The change in earnings (UE) is deflated by expected accounting earnings.

Let us focus on the results for firms which switch their auditors from NONBIG to BIG (see N-B type change in the table). As expected, earnings-returns relationships are strengthened for both ONE YEAR and TWO YEAR windows. ERC (the coefficient on the dummy variable in the multiple regression model based

Table 3. Pearson Correlation between Market-Adjusted Annual Returns and Unexpected Changes in Earnings

TYPE	CLASS	Corr. Coef.	*p-value*	OBS
B-B	PRE-SWITCH YEAR	.166	(.00)***	282
	POST-SWITCH YEAR	.009	(.87)	282
	ONE YEAR	.136	(.01)***	320
	TWO YEAR	.095	(.02)**	564
N-B	PRE-SWITCH YEAR	.173	(.15)	69
	POST-SWITCH YEAR	.435	(.00)***	69
	ONE YEAR	.270	(.02)**	70
	TWO YEAR	.243	(.00)***	138
N-N	PRE-SWITCH YEAR	.229	(.28)	24
	POST-SWITCH YEAR	.392	(.05)**	24
	ONE YEAR	.378	(.05)**	26
	TWO YEAR	.366	(.01)***	48

Notes:

PRE-SWITCH YEAR = sample firm-year observations of two years before the audit switch,

POST-SWITCH YEAR = sample firm-year observations of two years after the audit switch,

ONE YEAR = sample firm-year observations of two years around the audit switch,

TWO YEAR = sample firm-year observations of four years around the audit switch,

UE = change in annual earnings deflated by earnings in the previous year, and

OBS = number of firm observations.

*, **, and ***: the correlation coefficients are significantly different from 0 at the 0.1, .05, and .01 levels, respectively.

on ONE YEAR of N-B) increases by 0.051 for the ONE YEAR window, which is statistically significant at the 0.05 level. When the observation window is expanded to two years around the year of auditor switch (TWO YEAR window of N-B), ERC increases by 0.053, which is significant at the 0.01 level.

When firms switch their auditors from BIG to BIG (see type B-B in the table), investors have a tendency to reduce the usefulness of earnings in making investment decisions. The coefficient on the dummy variable in the multiple regression model based on ONE YEAR of B-B is 0.003 which is not

Table 4. Results of Multiple Regression-Unexpected Earnings Deflated by Accounting Earnings (p-value)

$$MARTN_{jt} = q_0 + q_1 UE_{jt} + q_2 D^* UE_{jt} + q_3 GRW_{jt}^* UE_{jt} + q_4 SIZE_{jt}^* UE_{jt} + \omega jt \quad (6)$$

TYPE	SAMPLE	INT	*UE*	*D*UE*	*GRW*UE*	*SIZE*UE*	R^2	F-STAT.
B-B	ONE YEAR	-.315	.005		.033	.016	.05	6.60***
	(N = 320)	(-4.82)	(2.30)**		(.72)	(1.82)**		
		-.283	.005	.003	.049	.037	.06	6.09***
		(-4.23)	(1.94)**	(.51)	(1.03)	(3.89)***		
	TWO YEAR	-.310	-.004		.114	.033	.05	10.89***
	(N = 564)	(-6.32)	(-2.26)**		(2.68)***	(4.68)***		
		-.314	.007	-.006	.111	.032	.06	9.91***
		(-6.16)	(2.82)***	(-1.73)**	(2.57)***	(4.63)***		
N-B	ONE YEAR	-.219	.013		-.019	.034	.09	3.29**
	(N = 70)	(-1.90)	(1.83)**		(-.18)	(2.11)**		
		-.288	.002	.051	.116	.037	.15	4.04**
		(-2.37)	(.25)	(2.29)**	(.99)	(2.29)**		
	TWO YEAR	-.329	.015		.030	.045	.14	6.33***
	(N = 138)	(-4.13)	(2.31)**		(.64)	(3.95)***		
		-.376	.004	.053	.065	.047	.19	9.05***
		(-4.53)	(.64)	(3.05)***	(1.38)*	(4.18)***		
N-N	ONE YEAR	-.689	.104		.319	.092	.29	4.40**
	(N = 26)	(-2.89)	(1.91)**		(1.42)*	(2.52)***		
		-.665	.055	.053	.318	.093	.23	2.86**
		(-2.60)	(.42)	(.35)	(1.35)*	(2.39)***		
	TWO YEAR	-.587	.110		.159	.085	.14	3.55**
	(N = 48)	(-3.00)	(2.52)***		(.87)	(2.86)***		
		-.535	.038	.083	.218	.084	.29	5.79***
		(-2.78)	(.54)	(.97)	(1.24)	(2.93)***		

Notes:

MARTN = market-adjusted return for firm *j*, year *t*; *D*: a dummy variable firm *j* for which has a value of 1 in the *post*-switch period and 0 in the *pre*-switch period; and other variables are as defined earlier.

UE = changes in annual earnings deflated by earnings in the previous year,

GRW = firm's growth measured as a percentage change in sales growth for firm *j*, year *t*

SIZE = the natural log of a firm's market value for firm *j*, year *t*

*, **, and ***: the correlation coefficients are significantly different from 0 at the levels of .1, .05, and .01, respectively, in one-tailed tests.

significant at the 0.10 level. However, when the observation window is expanded to two years around the year of auditor switch (see TWO YEAR of B-B), the coefficient on the dummy variable is -0.006 which is significant at the 0.10 level.

The results on the group of firms which switch their auditors from NONBIG to NONBIG (see type N-N) are presented in the third part of Table 4. The dummy variables do not show statistically significant coefficients for both ONE YEAR and TWO YEAR windows, even though they have positive signs.

6. Conclusions

In previous accounting literature, auditor size has been adopted as a proxy for audit quality, which cannot be easily observed by users. However, there has been inadequate systematic, empirical investigation to support this conceptual assumption. If a higher quality of financial statements is able to communicate the economic performance of a firm to users in more objective and predictable ways, users would take such information into more consideration when making their investment-related decisions.

This paper investigates how security analysts and investors react in different ways to financial statements audited by different classes of auditors. Since Big Six auditors have widely known brand names in the audit industry, auditors are divided into two classes: Big Six and non-Big Six auditors. As assumed in previous studies, if BIG are able to offer a higher quality of financial statements than NONBIG, this paper expects security analysts to have smaller earnings forecast errors and smaller dispersion of earnings forecasts, and also expects investors to incorporate more earnings information in evaluating a firm's value.

When firms switch their auditors from NONBIG to BIG, both the error and dispersion of earnings forecasts issued by security analysts become smaller than those for firms which switch their auditor within the same class (from BIG [NONBIG] to BIG [NONBIG]). However, the improvement in the dispersion of earnings forecasts is not statistically significant when the testing model includes moderating variables such as changes in growth

rate, changes in firm size, and changes in the number of security analysts following the firm.

Firms that switch their auditors from NONBIG to BIG show a significant increase in the magnitude of *post*-auditor-switch earnings response coefficients, compared to other groups of firms which switch their auditors within the same class.

References

Abarbanell, J. S., W. N. Lanen, and R. E. Verrecchia, 1995, Analysts' forecasts as proxies for investor beliefs in empirical research, *Journal of Accounting and Economics*, 31-60.

Affleck-Graves, J., L. R. David, and R. R. Mendenhall, 1990, Forecasts of earnings per share: possible sources of analyst superiority and bias, *Contemporary Accounting Research*, 501-507.

Ajinkya, B., R. K. Atiase, and M. J. Gift, 1991, Volume of trading and the dispersion in financial analysts' earnings forecasts, *The Accounting Review*, 389-401.

Atiase, R., 1985, Market Implications of Predisclosure Information: Size and Exchange Effect, *Journal of Accounting Research* (Spring), 21-36.

Atiase, R. K., and L. S. Bamber, 1994, Trading volume reactions to annual accounting earnings announcements, *Journal of Accounting and Economics*, 309-329.

Arnold, J., and Moizer, P., 1984, A survey of the methods used by UK investment analysts to appraise investments in ordinary shares, *Accounting and Business Research* (Summer), 195-207.

Ball, R., and P. Brown, 1968, An Empirical Evaluation of Accounting Income Numbers, *Journal of Accounting Research* (Autumn), 159-178.

Bamber, L., and Y. Cheon, 1995, Differential Price and Volume Reactions to Accounting Earnings Announcements, *The Accounting Review*, 417-441.

Beaver, W., 1989, *Financial Reporting: The Accounting Revolution*, 2nd Ed. (Prentice Hall, Englewood Cliffs, NJ).

Biddle, G. C., R. M. Seow, and J. S. Siegel, 1995, Relative versus incremental information content, *Contemporary Accounting Research* (Spring), 733-747.

Bowen, R., M. Johnson, T. Shevlin, and D. Shores, 1989, Informational efficiency and the information content of earnings during the stock market crash of 1987, *Journal of Accounting and Economics*, 225-254.

Brown, L., P. Griffin, R. Hagerman, and M. Zmijewski, 1987, Security Analyst Superiority Relative to Univariate Time-series Models in Forecasting Quarterly Earnings, *Journal of Accounting and Economics*, 61-87.

Brown, L., G. Richardson, and S. Swager, 1987, An Information Interpretation of Financial Analysts' Superiority in Forecasting Earnings, *Journal of Accounting Research*, 49-67.

Chung, H., J. Kim, and B. Lee, 1997, The dispersion of earnings forecasts and abnormal accruals over the forecast horizon, Working Paper, Concordia University, Quebec, Canada.

Collins, D., and S. Kothari, 1989, An Analysis of Intertemporal and Cross-Sectional Determinants of Earnings Response Coefficients, *Journal of Accounting and Economics* (July), 143-181.

Craswell, A. T., J. R. Francis, and S. L. Taylor, 1995, Auditor Brand Name Reputations and Industry Specializations, *Journal of Accounting and Economics* 20, 143-181.

Danos, P., and J. W. Eichenseher, 1982, Audit Industry Dynamics: Factors Affecting Changes in Client-Industry Market Shares, *Journal of Accounting Research* (Autumn), 604-616.

DeAngelo, L., 1981, Auditor Size and Audit Quality, *Journal of Accounting and Economics*, 183-199.

De Bondt, W., and R. Thaler, 1985, Does the stock market overreact? *Journal of Finance* 40, 793-805.

Dempsey, S. J., 1989, Predisclosure information search incentives, analyst following and earnings announcement price response, *The Accounting Review*, 748-757.

Dopuch, N., and D. Simunic, 1982, Competition in Auditing: An Assessment, *In Symposium on Auditing Research IV*, 401-450, Urbana, University of Illinois.

Easton, P., and M. Zmijewski, 1989, Cross-Sectional Variation in the Stock Market Response to Accounting Earnings Announcements, *Journal of Accounting and Economics* (July), 117-141.

Eichenseher, J., and D. Shields, 1983, The Correlates of CPA-Firm Change for Publicly-Held Corporations, *Auditing: A Journal of Practice and Theory* (Spring), 23-37.

Ettredge, M., P. Shane, and D. Smith, 1988, Audit Firm Size and the Association Between Reported Earnings and Security Returns, *Auditing: A Journal of Practice and Theory* (Spring), 29-42.

Francis, J., 1984, The Effect of Firm Size on Audit prices: A Study of the Australian Market, *Journal of Accounting and Economics*, 133-151.

Francis, J., and E. Wilson, 1988, Auditor Changes: A Joint Test of Theories Relating to Agency Costs and Auditor Differentiation, *The Accounting Review*, 663-682.

Healy, P., and T. Lys., 1986, Auditor changes following big eight takovers of non-big eight audit firms, *Journal of Accounting and Public Policy*, 251-265.

Jensen, M., and W. Meckling, 1976, Theory of the Firm: Managerial Behaviour, Agency Costs, and Ownership Structure, *Journal of Financial Economics*, 305-360.

Johnson, W. B., and T. Lys., 1986, The market for audit services-evidence from voluntary auditor changes, *Journal of Accounting and Economics*, 281-308.

Kormendi, R., and R. Lipe, 1987, Earnings Innovation, Earnings Persistence, and Stock Returns, *Journal of Business*, 323-345.

Lev, B., 1989, On the Usefulness of Earnings and Earnings Research: Lessons and Directions from Two Decades of Empirical Research, *Journal of Accounting Research* (Supplement), 153-192.

McNichols, M., and P. O'Brien, 1996, Self-selection and analyst coverage, Working paper, Stanford University.

Menon, K., and D. Williams, 1991, Auditor Credibility and Initial Public Offerings, *The Accounting Review* 66, 313-332.

Moizer, P., and J. Arnold, 1984, Share appraisal by investment analysts-portfolio vs. non-portfolio managers, *Accounting and Business Research*, V14, 341-348.

Ng, D., 1978, An Information Economics Analysis of Financial Reporting and External Auditing, *The Accounting review*, 910-920.

Palmrose, Z., 1986, Audit Fees and Auditor Size: Further Evidence, *Journal of Accounting Research*, 97-110.

Paully, D., 1984, Who Will Audit the Auditors? *Newsweek* (December 3, 1984), p. 72.

Philbrick, D. R., and W. E. Ricks, 1991, Using Value Line and IBES Analyst Forecasts in Accounting Research, *Journal of Accounting Research* (Autumn), 397-417.

Schwartz, K., and K. Menon, 1985, Auditor Switches by Failing Firms, *The Accounting Review*, 248-261.

Simunic, D., and M. Stein, 1986, On the Economics of Product Differentiation in Auditing, *Touche Ross Auditing Symposium VIII*, University of Kansas.

Watts, R. and J. Zimmerman, 1983, Agency Problem, Auditing, and the Theory of the Firm: Some Evidence, *Journal of Law and Economics*, 613-633.