THE IMPACT OF THE FINANCIAL PRESS ON
ACCRUAL ANOMALY AND EARNINGS MANAGEMENT

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ABSTRACT OF THE DISSERTATION

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This dissertation consists of two essays investigating the impact of news released in the financial press on accrual anomaly and earnings management.

Sloan (1996) shows earnings announcements to be information events driving the correction process of the mispricing of accruals. The first essay focuses on news released in the financial press as an additional driver of the correction process. Using 83,016 Wall Street Journal news articles from 1993 to 2006, I find that in addition to earnings announcements, news in the financial press also reveals valuable information for the correction of accruals mispricing.

Prior studies have documented that the existence of information asymmetry between managers and shareholders creates an information environment conducive to earnings management. In the second essay, I investigate the impact of news coverage on earnings management by classifying news articles into two distinct types of news: earnings-related News (EN) and non-earnings-related news (NEN). Based on 48,972 news items reported in the Wall Street Journal and 32,177 firm-years for firms traded on the NYSE/AMEX/NASDAQ between 1994 and 2004 fiscal-years, I find that NEN is positively related to the degree of information asymmetry, whereas EN is negatively related. More importantly, I find that NEN, which increases information asymmetry, is
positively associated with earnings management, while EN, which reduces information asymmetry, is negatively associated. The results also show that these associations of NEN and EN with earnings management are more profound for firms engaging in income-increasing earnings management and for large-size firms.

This dissertation improves the understanding of the role of financial press as an information intermediary in capital markets.
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Dedication

To Jiyeon, Claire, Catherine, and my parents
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Chapter 1  The Impact of the Financial Press on the Accrual Anomaly

1.1  Introduction

This paper examines whether the financial press plays an important role in the correction process of the accrual anomaly. Sloan (1996) provides evidence that, because investors fixate on bottom-line earnings, they overvalue firms with high accruals (income-increasing) and undervalue firms with low accruals (income-decreasing). He also shows that a significant part of the resulting mispricing is corrected during the following year, and finds that approximately forty percent of the correction in the first subsequent year is concentrated around earnings announcements (Sloan 1996, Table 8). Although earnings announcements appear to be an important source of information, a considerable portion of the correction process takes place during periods when there are no earnings announcements. I expand Sloan’s earnings announcement investigation by examining news released in financial press (represented in this paper by the Wall Street Journal) as an additional driver of the correction process.

Theoretical and empirical research on capital markets highlights information as the lifeblood of efficient markets. An important source of information for investors is the financial press, which employs hundreds of journalists and invests substantial resources to deliver valuable financial information about corporations to its readers. I examine one possible value added by the financial press: the role that it plays in the correction process.

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1 Sloan (1996) finds that a hedge portfolio that is long on the lowest accrual decile and short on the highest accrual decile earns 10.4, 4.8 and 2.9 percent abnormal returns during the 1st, 2nd, and 3rd years, respectively.
of the accrual anomaly. My investigation explores the overall role that the business press plays in capital markets, and the mechanism through which markets recover from prior deviations in their valuations.

This paper contributes to the literature on the accrual anomaly in several areas. I conduct the first investigation of the role of news in the correction process of the accrual anomaly. This extends prior studies that examine the accrual anomaly in relation to the corporate information environment (analysts, auditors, and institutional investors). In addition, I add to the ongoing debate on whether the accrual anomaly is a result of risk (Khan 2008) or a manifestation of a delayed price reaction to information (Sloan 1996; Xie 2001; Thomas and Zhang 2002; Mushruwala, Rajgopal, and Shevlin 2004; Hirshleifer, Hou, and Teoh 2010; Cheng and Thomas 2006). Finally, this paper contributes to the literature that studies the role of business news in financial markets (Berry and Howe 1994; Chang and Taylor 1996; Dyck and Zingales 2002, 2003; Bushee, Core, Guay, and Hamm 2010; Chen, Pantzalis, and Park 2009).

To investigate the role that news plays in the correction of the accrual anomaly, I first hand-collect and analyze 83,016 Wall Street Journal news articles from 1993 to 2006 to match with accruals portfolios formed during the fiscal years from 1993 to 2004. I then separate Sloan’s (1996) portfolio holding period into two periods: (1) an information events period, and (2) a non-information events period. I further classify the information events period into two types of windows: (1) earnings announcement windows, and (2) Wall Street Journal news release windows (news windows). Finally, I perform univariate and regression analyses to examine the extent to which portfolio
returns are concentrated around news windows for firms with data available in business news, COMPUSTAT, I/B/E/S, and CRSP.

The univariate analysis results indicate that abnormal returns are concentrated around news windows, as well as around earnings announcement windows. Furthermore, firms belonging to the lowest accruals portfolio experience higher abnormal stock returns than firms belonging to the highest accruals portfolio. The clustering of returns around news windows is consistent with the idea that news reveals information valuable for the correction of the mispricing of accruals. The first regression analysis, controlling for size, price-to-earnings ratio and beta, supports the findings from the univariate analysis, and shows a negative association between abnormal stock returns in news windows and the level of accruals. The second regression analysis indicates that abnormal stock returns are more negatively associated with the level of accruals when the intensity of the news releases is higher.

The remainder of the study is organized as follows. The next section reviews the prior literature and develops hypotheses. Section 1.3 discusses the methodology and sample selection. Section 1.4 describes the empirical results, and Section 1.5 offers conclusions.

1.2 Literature Review and hypothesis development

1.2.1 Literature on the accrual anomaly

The accrual anomaly documented by Sloan (1996) refers to the empirical finding that the current level of accruals is negatively related to abnormal stock returns over the following year of accruals portfolio formation. Firms in the high (low) accruals portfolio
in the current period earn lower (higher) future stock returns, suggesting that the market overreacts to earnings that contain a large accrual component.

Since Sloan’s (1996) study, the accrual anomaly has been further investigated by a number of subsequent studies. Two of these research streams are related to this study. One group of studies examines whether the accrual anomaly is subsumed by a previously known anomaly or whether it is constrained to certain economic circumstances. For example, Beaver (2002) conjectures that the accrual anomaly is disguised in value-glamour mispricing. Along the same lines, Fairfield, Whisenant, and Yohn (2003) show that the accrual anomaly is a special case caused by investors’ inability to value growth in net operating assets, implying that the accrual anomaly is a subset of the value-glamour anomaly. ² Desai, Rajgopal, and Venkatachatam (2004) also suggest that the accrual anomaly could relate to expanded value-glamour mispricing. Thomas and Zhang (2002) find that the accruals mispricing is mainly related to inventory changes. Kraft, Leone, and Wasley (2006) find that accrual mispricing is driven by a small number of extreme firm-year observations, suggesting that the evidence is inconsistent with Sloan’s (1996) naïve fixation hypothesis. By examining the co-variation between accruals and employee growth, Zhang (2007) shows that the accrual anomaly is attributable to the fundamental invest information contained in accruals. Wu, Zhang, and Zhang (2009) argue that accruals mispricing tends to be driven by optimal investment than by investor

² However, Cheng and Thomas (2006) find that the operating cash flows-to-price ratio does not subsume abnormal accruals in explaining future annual returns or future announcements. Their results are inconsistent with the suggestion by Fairfield et al. (2003) that the accrual anomaly is subset of the value-glamour anomaly.
overreaction to excessive growth. Mashruwala, Rajgopal, and Shevlin (2006) find that the accrual anomaly is limited to firms with low-price and low-volume stocks, which have higher transaction costs than other securities, suggesting that transaction costs impose barriers to arbitrage. Similarly, Palmon, Sudit, and Yezegel (2008) examine the relationship between abnormal returns and company size, and find that the accrual anomaly is limited to small firms in the income-decreasing accruals decile and large firms in the income-increasing accruals decile.

A second group of studies examines the relationship between accruals mispricing and the information environment (analysts, auditors, and institutional investors). Bradshaw, Richardson, and Sloan (2001) investigate the behavior of analysts and independent auditors, and show evidence of the market’s inability to interpret accrual data correctly. Collins, Gong, and Hribar (2003) examine the role of institutional investors in the pricing of accruals. They find that companies with high levels of institutional ownership and low levels of active institutional traders have stock prices that reflect the persistence of accruals more accurately. They also find that companies with low institutional ownership tend to be smaller and less profitable, indicating the limitations to arbitrage from exploiting the accrual anomaly. Lev and Nissim (2006) also find evidence that institutional investors do not arbitrage away the accruals mispricing, since extreme accrual firms tend to have characteristics that are undesirable to many institutional investors, such as small size, low profit, and high risk. These studies show that even sophisticated investors, including institutional investors and analysts, do not fully appreciate accruals data. On the other hand, Barth and Hutton (2004) examine the role of financial analysts as information intermediaries in facilitating more accurate
pricing of accruals. They find that firms with consistent accrual and analyst forecast revision signals have less persistent accruals and earnings.

1.2.2 The correction process of the accrual anomaly

Sloan (1996) suggests that the mispricing of accruals will be corrected when the subsequent year’s earnings are lower (higher) than expected, generating negative (positive) abnormal stock returns. He finds that the trading strategy using a hedged portfolio of buying firms belong to the bottom (income-decreasing) accrual portfolio and selling firms in the top (income-increasing) accrual portfolio produces significant positive abnormal returns of more than 10% in the following year of accrual portfolio formation. More importantly, he shows that those returns are concentrated around information events that reveal the anticipated earnings changes, such as subsequent earnings announcement. In his earnings announcement analysis, Sloan finds that over 40% of the abnormal returns cluster around the subsequent year’s earnings announcements, even though the announcement period consist of only twelve trading days, which comprise less than 5% of total trading days. His results regarding the individual portfolios indicate that the bottom accruals portfolio has an announcement period return of 4.5% and a non-announcement period return of 0.9%. This suggests that over 80% of the abnormal returns for the bottom accruals portfolio are clustered in the subsequent earnings announcement period. On the other hand, the top accruals portfolio has an announcement period return of 0.0% and a non-announcement period return of -5.1%. Thus, there are

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3 Sloan (1996), Table 8, 309-313
almost no abnormal stock returns in the subsequent earnings announcements period for the top accruals portfolio. Consequently, the hedge portfolio for the non-announcement period earns 6% return, whereas the portfolio for the announcement period earns a 4.5% return.\footnote{See Sloan (1996), Table 8, 313} However, Sloan (1996) does not provide sufficient explanation concerning why a considerable amount of hedge returns (6%, which represents about 60% of total hedge returns) still exists in the non-announcement period, or the information sources that prompted those hedge returns. Therefore, in the current study, I examine information events that might explain the considerable portion of abnormal returns in the non-announcement period.

Prior studies on news coverage (Mitchell and Mulherin 1994; Chan 2003; Berry and Howe 1994; Chang and Taylor 1996; Dyck and Zingales 2002, 2003; Bushee et al. 2010; Kalev, Liu, Pham, and Jarnecic 2004; Tetlock 2009; Chen et al. 2009) provide a valuable clue for this inquiry. They find the empirical evidence that news releases are important price informative events. Following these studies, therefore, I posit that news releases can be an alternative information source for capital market participants. In this perspective, I expect that news plays a significant role in the correction process for accruals mispricing. On the basis of Sloan (1996) and the news coverage literature, I conjecture that abnormal stock returns will be concentrated around the subsequent year’s information events, which include both news releases and earnings announcements. The propositions above lead to the first hypothesis:
**H1:** Abnormal stock returns associated with accruals portfolio-based trading strategies are clustered around the subsequent year’s information events, which include earnings announcements and news releases.

To investigate the role of news in the correction process of accruals mispricing, I construct news release windows and earnings announcement windows in the information events period, extending Sloan’s (1996) earnings announcement analysis. First, I replicate Sloan’s analysis of the earnings announcement period to my sample period. If the first hypothesis is not rejected, the hypothesis for earnings announcements is:

**H2:** (if H1 is not rejected) Abnormal stock returns associated with accruals portfolio-based trading strategies are clustered around the subsequent year’s earnings announcement dates.

Since I posit that, like earnings announcements, news releases are important information events, I predict that abnormal stock returns will be clustered around news release dates as well as earnings announcement dates. If I find that abnormal stock returns are concentrated around business news events, I can provide additional evidence to the literature that accruals mispricing represents a delayed response, consistent with Sloan (1996). Thus, the hypothesis for news release is:

**H3:** (if H1 is not rejected) Abnormal stock returns associated with accruals portfolio-based trading strategies are clustered around the subsequent year’s news release dates.
Chen et al. (2009) find that mispricing significantly increases with abnormal news coverage, and information risk measures are positively associated with abnormal news coverage. In general, the literature on the accrual anomaly (Sloan 1996; Bradshaw et al. 2001; Xie 2001; Thomas and Zhang 2002; Zach 2003; Beneish and Vargus 2002) shows that the level of accruals is negatively associated with the subsequent year’s stock returns. Based on these prior studies, I conjecture that abnormal stock returns are more negatively associated with the level of accruals when a firm has more news releases. The final hypothesis in this study concerns the sign and magnitude of abnormal stock returns attributable to news releases, as well as the naïve fixation on earnings documented by Sloan (1996):

**H4:** Abnormal stock returns are more negatively associated with the level of accruals when a firm has more news.

### 1.3 Methodology

#### 1.3.1 Sample selection

I obtain accruals and other accounting data from the COMPUSTAT industrial, full coverage, and research files. I retrieve stock return data for NYSE, AMEX, and NASDAQ firms from the Center for Research in Security Prices (CRSP). I merge the COMPUSTAT files with CRSP files to construct the sample. I also collect analyst-related variables from the Institutional Brokers’ Estimates System (I/B/E/S) database. Since the nature of financial service firms’ accruals is different from that of non-financial firms, I exclude financial firms (SIC code 6000~6999), such as banks, life insurance, or property and casualty firms, from the sample. I select *The Wall Street Journal* as a primary news
data source because it provides information to capital market participants on a daily basis, and is a popular and respected news source for market participants. I collect news articles through the LexisNexis Academic database. To retrieve news, I first prepare a list of company names reported in the CRSP database and carefully modified each company name to make it match the Wall Street Journal’s company abbreviations. Using the keywords “Organization name” and “The Wall Street Journal”, I search news from the LexisNexis database. Then I retrieve and parse all news articles into my database. When there is more than one news article in a day for a given firm, I consider it to be only one news release on that date to avoid redundant effects. The final sample includes a total of 83,016 news articles for the calendar years from 1993 to 2006.

Next, I match the news release date to the CRSP trading date, and then merge the news data with the COMPUSTAT and CRSP data. The sample spans fiscal year-ends from 1993 to 2004 for accounting data and calendar years from 1993 to 2006 for stock returns and news announcement data. The initial sample from the COMPUSTAT annual file consists of 56,942 firm-years for 9,274 firms. After merging the data with the I/B/E/S file, the number of firm-years decreases to 43,379 for 6,276 firms in the accruals portfolio formation. Firms without quarterly earnings announcements in the COMPUSTAT and CRSP data files are also excluded from the sample. The final sample therefore consists of 37,510 firm-years for 5,909 firms.

1.3.2 Earnings announcement windows and News release windows

Sloan (1996) divides the total time period under study into two periods: an earnings announcement period and a non-announcement period. To investigate the role that news
plays in the correction process of the accrual anomaly, I reconfigure the periods that Sloan tested into: (1) an information events period that is comprised of earnings announcement windows and news release windows, and (2) a non-information events period. In other words, I split Sloan’s non-announcement period into news release windows included in the information event period and a non-information event period that has neither earnings announcements nor news releases. Figure 1.1 depicts how the news release windows are derived from Sloan’s non-announcement period.

Following previous studies (Bernard and Thomas 1990; Sloan 1996), the earnings announcement window for each quarterly earnings announcement is a three-day period that begins two trading days before the COMPUSTAT earnings announcement date and ends on the announcement date. Consistent with the formation of the earnings announcements windows, the news release window is the three-day period that begins two trading days before each Wall Street Journal news release date and ends on the news date. For cases in which the news release window overlaps the earnings announcement window, I exclude the news release window to avoid redundant effects. If news is released on a non-trading day, such as a weekend or holiday, I match the day to the closest prior trading day.

The non-information events period starts from the day after the announcement of the first quarter’s earnings in the subsequent year (Q1 in year t+1) to three trading days prior to the announcement of the first quarter’s earnings two years after the accruals portfolio formation (Q1 in year t+2), excluding the three intervening quarterly earnings announcement windows and all news release windows. Figure 1.2 shows the formation of
the earnings announcement windows, news release windows, and return calculation periods.

The news release windows average 3.3 trading days, which represent only 27.5% of the earnings announcement trading days, whereas the earnings announcement windows include an average of 12 trading days. On average, the non-information events period consist of 228 days.

1.3.3 Variable measurement

Stock returns

I obtain stock returns data from CRSP and calculate both daily and monthly size adjusted buy-and-hold abnormal stock returns. Based on size deciles of the NYSE, AMEX, and NASDAQ, the size portfolios are constructed in CRSP. First, I use the daily buy-and-hold abnormal stock returns for the time-series means analyses. The daily buy-hold abnormal return is compounded in the period between two days prior to the first quarterly earnings announcement in the year after the accruals portfolio formation (t+1) and three days prior to the first quarterly earnings announcement two years after the accruals portfolio formation (t+2). The buy-and-hold abnormal returns are computed annually over calendar years from 1994 to 2006. Next, I use the monthly returns for the regression analyses. The monthly buy-and-hold abnormal stock returns for regression analyses are measured over one year starting four months after the end of the fiscal year in which the accrual portfolio is formed.

Following Sloan (1996), I compute size-adjusted returns by measuring the difference between each firm’s buy-and-hold return and the buy-and-hold return on a size
decile portfolio of firms with similar market value of equity. The size decile portfolios are based on size deciles of the NYSE, AMEX, and NASDAQ. The decile rankings and returns are provided by CRSP.

Accruals from the balance sheet

I use three types of accrual measures in this study: balance sheet, cash flows, and discretionary accruals. Following Sloan (1996), I use the change in non-cash working capital minus depreciation expense scaled by average total assets as the balance sheet proxy for accruals. The non-cash working capital is calculated as the change in non-cash current assets minus the change in current liabilities less short-term debts and taxes payable:

\[
ACC_{BS} = (\Delta CA - \Delta Cash) - (\Delta CL - \Delta STD - \Delta TP) - Dep
\]

Where:
\[
\Delta CA = \text{Change in current assets}
\]
\[
\Delta Cash = \text{Change in cash and cash equivalents}
\]
\[
\Delta CL = \text{Change in current liabilities}
\]
\[
\Delta STD = \text{Change in debt included in current liabilities}
\]
\[
\Delta TP = \text{Change in income taxes payable}
\]
\[
Dep = \text{Depreciation and amortization expense}
\]

Accruals from the Cash Flow Statement

Based on related previous research (Bradshaw et al. 2001; Zach 2003), I use earnings before extraordinary items and discontinued operations minus net cash flow from
operations as the cash flows proxy for accruals. I calculate accruals from the cash flow statement using following formula:

$$ACC_{CFS} = EBXI - CFO$$  \hspace{1cm} (2)

Where:

$$EBXI =$$ Earnings before extraordinary items and discontinued operations from the cash flow statement

$$CFO =$$ Net cash flow from operations in CFS

**Discretionary accruals**

Xie (2001) finds that accrual mispricing is mostly due to discretionary accruals. I measure discretionary accruals using Dechow, Sloan, and Sweeney’s (1995) modified Jones Model, which I estimate in year t for each industry, based on its 2-digit SIC code:

$$\frac{TA_{it}}{Asset_{it-1}} = \frac{\alpha_1}{Asset_{it-1}} + \frac{\alpha_2 (\Delta Rev_{it} - \Delta Rec_{it-1})}{Asset_{it-1}} + \frac{\alpha_3 PPE_{it}}{Asset_{it-1}} + \epsilon_{it}$$  \hspace{1cm} (3)

Where:

$$TA_{it} =$$ total accruals in year t for firm i

$$Asset_{it} =$$ total assets at the end of year t-1 for firm i

$$\Delta Rev_{it} =$$ change in revenues from year t to t-1 for firm i

$$\Delta Rec_{it} =$$ change in receivables form year t to t-1 for firm i

$$PPE_{it} =$$ gross property, plant and equipment in year t for firm i

$$\epsilon_{it} =$$ error term
I use the coefficients from equation (3) to estimate the nondiscretionary accruals. Following prior studies (Jones 1991; Dechow, et al. 1995), I calculate the nondiscretionary accruals (NonDA) in the event year:

$$NonDA_{it} = \frac{\alpha_1}{Asset_{it-1}} + \frac{\alpha_2 (\Delta Re_{it} - \Delta Re_{c_{it}})}{Asset_{it-1}} + \frac{\alpha_3 PPE_{it}}{Asset_{it-1}}$$

(4)

Where: $\alpha_1$, $\alpha_2$, $\alpha_3$, = coefficient of $\alpha_1$, $\alpha_2$, $\alpha_3$ from the regression model (3)

Thus, the difference between total accruals and nondiscretionary accruals indicates the discretionary accruals.

**News coverage**

Prior research (Mitchell and Mulherin 1994; Berry and Howe 1994; DeGennaro and Shriives 1997; Frankel and Li) suggests that the number of news articles is a relevant measure of news coverage. For example, Mitchell and Mulherin (1994) and Berry and Howe (1994) use the number of articles per day reported by Dow Jones and Reuter’s News, respectively. Using the number of news articles, Frankel and Li (2004) find that news coverage is positively associated with information asymmetry. Following previous research, I use the number of news articles released in the *Wall Street Journal* over the subsequent year of accruals portfolio formation as a proxy for business news coverage. Like the stock return period, the news collection period starts two days before the first earnings announcement in the year after the accruals portfolio formation year (t+1) and ends three days before the first earnings announcement two years after the accruals portfolio formation (t+2). As discussed above, I retrieve the *Wall Street Journal* news articles from the LexisNexis database, and focus on the amount, the timing, and the
period of news, rather than the content of the news. Whenever I find more than one news article for a particular firm on a given day, I treat it as one news article to avoid redundant effects.

1.3.4 Accrual portfolio formation

Following previous studies (Sloan 1996; Xie 2001), I rank the firms in the sample based on the magnitude of accruals at the end of each firm’s fiscal year, and assign the firms to ten portfolios in equal numbers for each fiscal year from 1993 to 2004. After all firms are assigned to deciles, the size-adjusted buy-and-hold abnormal returns for each accrual portfolio are computed for each fiscal year over the 12-year sample period.

1.4 Empirical results

1.4.1 Descriptive statistics

Table 1.1 reports the mean and median of each accrual decile portfolio formed by ranking firms on the level of 1) accruals from the balance sheet, 2) accruals from the cash flow statement, and 3) discretionary accruals. The sizes of the accruals are ranked annually, and firm-years are assigned to the portfolios in equal numbers. The descriptive statistics are similar to previous studies (Sloan 1996; Xie 2001; Zach 2003, etc) Panel A reports the portfolio mean and median values for the accruals from the balance sheet. The mean (median) value of accruals from the balance sheet is -0.26 (-0.22) for the lowest accrual portfolio and 0.17 (0.15) for the highest accrual portfolio. Panel B lists the mean (median) value of accruals from the cash flow statement, and shows -0.43 (-0.33) for the lowest accrual portfolio and 0.16 (0.12) for the highest accrual portfolio. As indicated in
Panel C, the mean (median) value of discretionary accruals is -0.43 (-0.26) for the lowest accrual portfolio and 0.47 (0.25) for the highest accrual portfolio.

Table 1.2 shows the means and standard deviations of the independent variables. The mean (standard deviation) for News, Analyst, and Accruals are 2.27 (7.81), 6.33 (7.84), and -0.04 (0.11) respectively. The mean (standard deviation) for the control variables for firm size, book-to-market ratio, and earnings-to-price ratio are 5.70 (1.88), 0.54 (1.24), and -0.10 (1.18) respectively.

1.4.2 Correlation analysis

Table 1.3 reports the results of correlation analysis between independent variables. The Spearman correlation coefficients are described in the upper diagonal and the Pearson coefficients are presented in the lower diagonal. The results show that, in general, most independent variables are not significantly correlated with each other. However, firm size (Size) and the number of analyst recommendations variables (Analyst) are highly correlated in both the Pearson ($r = 0.657$) and Spearman ($r = 0.713$) tests, indicating that larger firms have more analysts’ recommendations. As expected, the number of news announcement (News) and the interaction term of News*Accruals are highly, negatively correlated in both the Spearman analysis ($r = -0.623$) and the Pearson analysis ($r = -0.504$). The interaction term News*Accruals is highly correlated with the interaction term Analyst*Accruals only in the Spearman analysis. The results also show that the number of news announcement (News) is negatively correlated with total accruals (Accruals), the interaction term News*Accruals, the interaction term Analyst*Accruals, and the book-to-market ratio (BtoM) in both the Spearman and the Pearson analyses. Similar to the
number of news announcement, the number of analyst recommendations (Analyst) is also negatively correlated with total accruals (Accruals), the interaction term News*Accruals, the interaction term Analyst*Accruals, and the book-to-market ratio (BtoM). On the other hand, total accruals (Accruals) are negatively correlated with News, Analyst, and BtoM in the Pearson analysis. In the Spearman analysis, Accruals are negatively correlated only with News and BtoM. Other than those specific relationships, the results of the correlation analysis provide evidence that multicollinearity is not a problem since significant correlations do not exist between most of the independent variables.

1.4.3 Test of hypothesis 1

Hypothesis 1 concerns whether abnormal stock returns associated with accruals portfolio-based trading strategies are clustered around the subsequent year’s information events. To investigate this issue, I conduct univariate analysis by time-series means of the daily size-adjusted abnormal returns for information events periods, which include both earnings announcement and new releases, and for non-information events periods. Results of this analysis are shown in Table 1.4.

Table 1.4 reports the size-adjusted abnormal stock returns on each accrual portfolio based on the level of total accruals from the balance sheet. The results show a significant negative relationship between the accruals ranking and abnormal returns over the total time period, and within both the information events period and the non-information period. Column A of Table 1.4 presents the total period size-adjusted return in the year following the accrual portfolio formation. The strong negative relationship between accruals and abnormal stock returns is consistent with Sloan (1996). The
abnormal returns for the accrual portfolios range from 16.0% (t = 2.06) for the lowest accrual portfolio to -1.2% (t = -0.24) for the highest accrual portfolio. Interestingly, the abnormal returns for the highest accrual portfolio is negative, but not statistically significant, implying that the magnitude of accruals mispricing in the sample period less strong than Sloan’s (1996). The hedge portfolio, which takes a long position in the lowest accruals portfolio and a short position in the highest accruals portfolio, is 17.2% (t = 2.57).

Table 1.4, Column B reports the abnormal stock returns for the information events period, which includes both earnings announcements and news releases. The abnormal returns range between 7.2 % (t = 6.99) for the lowest accruals portfolio and 1.7 % (t = 2.64) for the highest accruals portfolio. This result indicates that the relationship between the level of abnormal accruals and stock returns is still significant when the information events period includes news releases as well as earnings announcement. This finding extends Sloan’s (1996) work by showing that, in addition to earnings announcements, news releases also inform investors and affect stock returns.

Column C in Table 1.4 reports total annual return from the non-information events period, and shows that the abnormal returns in every decile are not statistically significant. Furthermore, although the hedge portfolio return is 8.5%, its t-value (t = 1.56) is not statistically significant. Although Sloan’s non-announcement period still has significant hedge returns (6%, t = 3.41), the non-information events period no longer shows significant hedge returns when I extract the news events and include them in the information event period.
Overall, the results strongly support Hypothesis 1 that abnormal stock returns associated with accruals portfolio-based trading strategies are clustered around the subsequent year’s information events. By expanding Sloan’s announcement period to include both earnings announcements and news releases, I can strengthen the assertion that the accrual anomaly is a manifestation of delayed price response to information events.

Figure 1.3 depicts the annual hedge portfolio returns for each fiscal year in the sample period. The returns in the figure are the daily size-adjusted returns from the subsequent year of accrual portfolio formation. The average of the 12-year hedge portfolio returns is 17.2%, which matches the hedge returns reported in the first column of Table 1.4 and Table 1.5. The hedge returns are positive in seven out of twelve years and negative in the other five years, specifically: 1999 (-13.6%), 2000 (-6.9%), 2001 (-1.0%), 2002 (-5.3%), and 2004 (-7.9%). Interestingly, after fiscal year 1998, the amount of hedge returns drastically decreases, implying that the magnitude of the accruals mispricing has been diminished.

The results from testing Hypothesis 1 indicate that during the information events period, a significant amount of abnormal stock returns are earned by exploiting an accrual portfolio-based trading strategy that takes a long position in the lowest accruals decile stocks and a short position in the highest accruals decile stocks.

1.4.4 Tests of hypothesis 2 and hypothesis 3

To examine the role of news announcement in the correction process of the accrual anomaly, I split the information events period into earnings announcement windows and
news windows, and then conduct a separate univariate analysis on each one. The univariate analysis for the earnings announcements windows in my sample period replicates Sloan (1996) and addresses Hypothesis 2, which is concerned with whether abnormal stock returns are clustered around the subsequent year’s earnings announcement dates.

Column A of Table 1.5 shows the abnormal stock returns for the total sample period, and mirrors the results in Table 1.4. The results of the tests of Hypothesis 2 are presented in the Column B of Table 1.5, and report the annual abnormal returns attributable to the earnings announcements. As Sloan (1996) notes, company earnings are announced on a quarterly basis. Following Sloan’s methodology, analysis in this study is performed over the aggregated earnings announcement windows, which consist of twelve trading days for four quarterly earnings announcements in each fiscal year. The negative relationship between the level of accruals and abnormal stock returns is evident in the results shown in Column B. The abnormal returns range from 5.5% ($t = 7.61$) for the lowest accruals portfolio to 1.7% ($t = 3.79$) for the highest accruals portfolio. The hedge portfolio returns from the earnings announcement period is 3.8% ($t = 5.72$). Thus, in the earnings announcement windows, the mean market reaction for firms belonging to the lowest accruals portfolio is greater than the mean market reaction for firms belonging to the highest accruals portfolio. Consistent with Sloan (1996), this result indicates that the abnormal stock returns are clustered around the earnings announcements in the following year of accruals portfolio formation, which supports Hypothesis 2.

Hypothesis 3 states that abnormal stock returns are clustered around the subsequent year’s business news dates. Since news is released randomly during each
year, tests are conducted across the total accumulative trading days of each three-day news window, and all of the three-day news windows are aggregated in the following year of accruals portfolio formation.

The results of this test are presented in Table 1.5, Column C, which shows the amount of the size-adjusted abnormal returns from all news windows. The negative relationship between the level of accruals and abnormal returns is also evident during this window. The accruals portfolio abnormal returns range from 1.6% \((t = 2.79)\) for the lowest accruals portfolio to -0.1% \((t = -0.45)\) for the highest accruals portfolio. Similar to the results for the total period returns, the \(t\)-value for abnormal returns for the highest accruals portfolio is not statistically significant. The hedge portfolio returns from the total news announcement period is 1.7% \((t = 3.22)\), which is statistically significant. The results indicate that, in the news windows, the hedge portfolio, which takes a long position in the stocks of firms belonging to the lowest accruals portfolio and a short position in the stocks of firms belonging to the highest accruals portfolio, earns positive abnormal stock returns. These results support Hypothesis 3 that the abnormal stock returns associated with accruals portfolio-based trading strategies are clustered around news release dates in the subsequent year of accruals portfolio formation, providing additional evidence to support Sloan’s (1996) finding that the accrual anomaly can be attributed to a delayed price reaction to information.

Figure 1.4 plots the buy-and-hold abnormal returns from the Wall Street Journal news windows for each fiscal year. The size-adjusted buy-and-hold abnormal returns are accumulated over a year starting two days prior to the first earnings announcement day in the fiscal year \((t+1)\) and ending three days prior to the first earnings announcement day in
the fiscal year (t+2) following the accrual portfolio formation. The average for the buy-and-hold returns over the 12-year period is 6%.

Figure 1.5 depicts the hedge portfolio returns from the news windows taking a long position in the stocks of the lowest accruals decile and a short position in the stocks of the highest accruals decile by fiscal year in the sample period. Returns are accumulated over the subsequent year’s three-day news windows. Except for the years 2000 and 2001, the hedge portfolio returns are all positive in the sample period.

These results show that the hedge portfolio returns are 3.8% for the earnings announcement windows, 1.7% for the news windows, and 8.5% for the non-information events period. Although the trading days for the news windows comprise less than 1.4% of the total trading days, about 10% of the total hedge portfolio returns are concentrated around the news release dates in the subsequent year of accrual portfolio formation. This result implies that news can be an important price informative event for capital market participants. More importantly, whereas the average trading days for news windows is only 27.5% of the average trading days for earnings announcement windows, the hedge portfolio return from the total news windows accounts for 44.7% of the earnings announcement windows’ hedge returns.

Figure 1.6 illustrates the ratio of hedge portfolio returns divided by the average trading days (Ratio = Hedge Returns/Number of Trading Days) in the total period, the earnings announcement windows, the news release windows, and the non-information period. This figure shows that the ratio is the highest in the news windows, which indicates that the amount of hedge returns per trading day is greater around news release dates.
In sum, I find that news play an important role in the correction process for accruals mispricing. The findings suggest that the accruals mispricing is corrected not only by earning announcements, but also by other price informative sources such as news releases, implying that news announcements are another important information source for investors.

1.4.5 Additional tests of hypothesis 3

To provide additional evidence on Hypothesis 3, I perform a fiscal-year fixed-effect regression analysis over the 12-year sample period by regressing the size-adjusted daily buy-and-hold abnormal stock returns from the news windows on accruals from the balance sheet, accruals from the cash flow statement, and discretionary accruals. Following Sloan (1996), I control for firm characteristics that are known to forecast stock returns: firm size, book-to-market ratio, earning-to-price ratio, and historical beta. I expect abnormal stock returns from news releases windows to be negatively associated with the level of accruals.

The dependent variable in each panel is the size-adjusted daily buy-and-hold abnormal stock return in the news windows. The daily buy-and-hold abnormal returns is compounded from all of the three-day news windows over the year that starts two days prior to the first earnings announcement date in the subsequent year of the accruals portfolio formation (t+1) and ends three days prior to the first earnings announcement two years after the accruals portfolio formation (t+2). The following regression model is used to perform this additional test of Hypothesis 3:

\[
RET_{t+1} = \beta_0 + \beta_1 Accruals_{it} + \beta_2 Size_{it} + \beta_3 BtoM_{it} + \beta_4 EtoP_{it} + \beta_5 Beta_{it} + \varepsilon_{it}
\] (5)
Where:

\( RET_{it+1} \) = Size-adjusted daily buy-and-hold abnormal return accumulated over all of three-day news windows in the year \( t+1 \)

\( Accruals_{it} \) = Accruals from balance sheet, accruals from the cash flow statement, and discretionary accruals for firm \( i \) in year \( t \)

\( Size_{it} \) = Natural logarithm of market value of the common equity of firm \( i \) in year \( t \)

\( toM_{it} \) = Book-to-market ratio of firm \( i \) in year \( t \)

\( EtoP_{it} \) = Earnings-to-price ratio estimated as earnings per share divided by stock price of firm \( i \) in the end of year \( t \)

\( \varepsilon_{it} \) = Error term

Table 1.6 reports the additional results for the association between the abnormal stock returns in the news windows and the level of accruals, and shows the coefficient estimates, t-statistics and adjusted R-squares from the fixed-effect regressions of the abnormal stock returns in the news announcement period on the level of accruals and control variables. The first column of Table 1.6 shows the results using accruals from the balance sheet. The results provides evidence that the abnormal stock returns in the news windows have a significant negative association with the level of accruals (\( t = -6.27 \)), indicating that news play an important role in the correcting process of the accruals mispricing. The second column of Table 1.6 uses accruals from the cash flow statement. The results in this column also indicate the significant, negative relationship between the abnormal stock returns from the news windows and the level of accruals (\( t = -4.09 \)). In
the third column, I use the discretionary accruals from the modified Jones’ model as a proxy for the level of accruals. The results in this column are consistent with the findings from the other models, showing a significant, negative association between abnormal stock returns in news windows and the level of accruals ($t = -4.94$). As expected, the results show that the abnormal stock returns in news announcement periods have a significant, negative association with firm size in all three models ($t = -7.87, -7.76, -7.53$, respectively), indicating that smaller firms have more abnormal stock returns during news announcement period. The results suggest that the predictive value of accruals is not subsumed by other variables such as $EtoP$, $BtoM$, and historical $Beta$, consistent with Sloan (1996). The findings from the regression analysis indicate that firms with lower levels of accruals earn larger abnormal stock returns during news windows. Consistent with the univariate test results, these results provide additional evidence to support Hypothesis 3 that abnormal stock returns are clustered around the subsequent year’s business news dates.

1.4.6 Tests of hypothesis 4

Hypothesis 4 posits that abnormal stock returns are more negatively associated with the level of accruals when a firm has more news announcements. The purpose of this regression analysis is to demonstrate the robustness of the negative association between accruals and abnormal stock returns, particularly when firms release more news announcements in the business press. I regress the size-adjusted monthly buy-and-hold returns on the number of news announcements, the level of total accruals, the number of analyst recommendations, and the level of accruals interacted with the number of news
announcement after controlling for firm characteristics (book-to-market ratio and earning-to-price ratio). The monthly buy-and-hold abnormal returns are calculated over one year, starting four months after the fiscal year-end in which accrual portfolio is formed. I expect abnormal returns to be negatively related to the level of total accruals (Accruals), and negatively associated with accruals when more news announcements are released (Accruals*News). To test Hypothesis 4, I estimate the following fixed-effect regression by fiscal year:

\[
RET_{it+1} = \beta_0 + \beta_1 \text{News}_{it+1} + \beta_2 \text{Accruals}_{it} + \beta_3 \text{Analyst}_{it+1} + \beta_4 \text{News}_{it+1} \ast \text{Accruals}_{it} + \beta_5 \text{Analyst}_{it+1} \ast \text{Accruals}_{it} + \beta_6 \text{Size}_{it} + \beta_7 \text{BtoM}_{it} + \beta_8 \text{EtoP}_{it} + \epsilon_{it}
\]  

Where:

\(RET_{it+1}\) = Size-adjusted monthly buy-and-hold abnormal stock returns calculated over one year, starting four month after the fiscal year-end of the year in which accrual portfolio is formed

\(\text{News}_{it+1}\) = Number of news announcements released for firm \(i\) in year \(t+1\)

\(\text{Accruals}_{it}\) = Total accruals from balance sheet for firm \(i\) in year \(t\)

\(\text{Analyst}_{it+1}\) = Number of analysts’ recommendations for firm \(i\) in year \(t+1\)

\(\text{News} \ast \text{Accruals}_{it}\) = Interaction term of the number of news announcement and the level of total accruals

\(\text{Analyst} \ast \text{Accruals}_{it}\) = Interaction term of the number of analysts’ recommendations and the level of total accruals

Table 1.7 reports the association between the abnormal stock returns and the number of news announcements, the level of total accruals, the number of analyst recommendations, and interaction terms. Numbers in parentheses are the t-values of the
coefficients. The dependent variable in each panel is the size-adjusted monthly buy-and-hold abnormal stock returns. Column A of Table 1.7 shows the regression of the abnormal stock returns on the level of accruals and control variables. The result indicate a significant, positive relationship between the number of news announcements and the abnormal stock returns (t = 6.64). Column B presents the significant, negative relationship (t = -8.35) between the level of total accruals and the abnormal stock returns and control variables. Column C shows the results of regression on the number of analyst recommendations, and indicate a significant, positive association with the abnormal stock returns (t = 15.60).

Column E shows the regression of the stock returns on News, Accruals, and Analyst. The results report that the abnormal returns are significantly, positively related to News (t = 3.21) and Analyst (t = 14.58), but significantly, negatively associated with Accruals (t = -8.12), indicating that there are more abnormal returns when the number of news announcements and analysts recommendations increase.

Column F reports the relationship between stock returns and News, Accruals, Analyst, and the interaction term News*Accruals. The results show that the abnormal returns are negatively associated with the interaction term News*Accruals (t = -1.98), providing evidence that abnormal stock returns are more negatively associated with the level of accruals when a firm has more news releases. When I add the interaction term News*Accruals to the regression model, the coefficient of the number of news releases is no longer significant (t = 1.43), indicating that interaction variable News*Accruals subsumes the number of news announcements. This also implies that the accruals mispricing is significantly associated with news.
In Column G, I include the additional interaction term \textit{Analyst*Accruals}. The results indicate that, although the coefficient of \textit{Analyst} is still significant, the coefficient for the interaction term \textit{Analyst*Accruals} is not significant. This finding implies the positive relationship between abnormal stock returns and the number of recommendation is not likely to increase incrementally as the number of analyst recommendations increases. This result suggests that the accrual anomaly is not significantly associated with analyst recommendations. On the other hand, the coefficient of the interaction term \textit{News*Accruals} is still significant, consistent with the results in Column F. In all models, the abnormal returns are significantly, negatively associated with the control variables for firm size and earnings-to-price ratio, and significantly, positively associated with the book-to-market ratio.

From this regression analysis, I find that the negative relationship between abnormal stock returns and the level of accruals increases as the number of news releases increases, supporting Hypothesis 4 that abnormal stock returns are more negatively associated with the level of accruals when a firm has more news announcements.

Overall the findings indicate that news plays a significant role in the correction process of the mispricing of accruals.

\section*{1.5 Conclusions}

This study examines whether the financial press plays an important role in the correction process of the accrual anomaly. The results show that news is an essential price informative source for market participants, and plays a pivotal role in the correction process of the mispricing of accruals.
This study has important implications for the accounting literature in several areas. First, this study extends Sloan (1996), the first pioneering work on the accrual anomaly and one of the most cited papers in the accounting literature. He suggests that the correction process of the mispricing of accruals is driven by information events, and shows that the mispricing of accruals is partially corrected by future earnings announcements. However, he does not further investigate other possible information events. I contribute to this issue by focusing on news as a possible information event, and provide evidence that news is another major driver of the correction process of the accrual anomaly. The results add to the literature by showing that news, as well as earnings announcements, can function as crucial information events in the capital market mechanism.

In addition, this study adds strong evidences to the line of studies suggesting that accrual anomaly is a delayed price response to information events. I broaden the information events period by including both news and earnings announcements for all firms traded in NYSE/AMEX/NASDAQ. The findings show that abnormal stock returns are not only concentrated around the overall information events period, but also specifically cluster around news dates and earnings announcement dates. Thus, this extended study both strengthens and generalizes the assertion that the accrual anomaly is a manifestation of a delayed price response to information events.

Finally, the findings provided in this study enhance the understanding of the role of news in the capital market. Although a large body of research has explored information intermediaries, such as analysts and auditors, empirical studies on the role of news are limited. This paper revisits the line of study examining the role and the value of news in
financial markets. I find value-added evidence that news delivers benefits to market participants as an information intermediary and it plays a pivotal role in helping the markets to recover from deviations in stock prices.

Limitations in this study may represent opportunities for future research. A caveat to this study is that I do not cover multiple sources of news, since I collect news events only from the Wall Street Journal. Further investigation with more variety of information events, including other press releases, 8-K filings, and management forecast disclosures would make fertile future research.
### 1.6 Tables for Chapter 1

<table>
<thead>
<tr>
<th>Panel A: Accruals from Balance Sheet</th>
<th>Lowest</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>Highest</th>
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<tr>
<td><strong>Mean</strong></td>
<td>-0.26</td>
<td>-0.13</td>
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<td>0.05</td>
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<td>-0.06</td>
<td>-0.05</td>
<td>-0.03</td>
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<table>
<thead>
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<th>Panel B: Accruals from Cash Flow Statement</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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</tr>
</thead>
<tbody>
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<td>-0.06</td>
<td>-0.04</td>
<td>-0.03</td>
<td>0.00</td>
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<td>0.16</td>
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<tr>
<td><strong>Median</strong></td>
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<td>-0.16</td>
<td>-0.11</td>
<td>-0.08</td>
<td>-0.06</td>
<td>-0.04</td>
<td>-0.02</td>
<td>0.00</td>
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<td>0.12</td>
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</table>

<table>
<thead>
<tr>
<th>Panel C: Discretionary Accruals</th>
<th>Lowest</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<th>7</th>
<th>8</th>
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<td><strong>Mean</strong></td>
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<td>-0.04</td>
<td>-0.02</td>
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<td>0.03</td>
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<td>0.02</td>
<td>0.05</td>
<td>0.10</td>
<td>0.25</td>
</tr>
</tbody>
</table>

Accruals form Balance Sheet:

\[
\text{ACC\_BS} = (\Delta CA - \Delta Cash) - (\Delta CL - \Delta STD - \Delta TP) - \text{Dep},
\]

where \( \Delta CA \) = Change in current assets, \( \Delta Cash \) = Change in cash and cash equivalents, \( \Delta CL \) = Change in current liabilities, \( \Delta STD \) = Change in debt included in current liabilities, \( \Delta TP \) = Change in income taxes payable, \( \text{Dep} \) = Depreciation and amortization expense

Accruals from Cash Flow Statement:

\[
\text{ACC\_CFS} = \text{EBXI} - \text{CFO},
\]

where \( \text{EBXI} \) = Earnings before extraordinary items and discontinued operations from the cash flow statement, \( \text{CFO} \) = Net cash flow from operations in CFS

Discretionary Accruals is the difference between total accruals and nondiscretionary accruals from Dechow, Sloan, and Sweeney’s (1995) modified Jones Model

---

\[5\] 43,379 firm-years with analyst recommendation
### Table 1.2
**Descriptive Statistics of Independent Variables**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of observations</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Q1</th>
<th>Median</th>
<th>Q3</th>
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<tbody>
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<td>7.812</td>
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<td>Accruals (B/S)</td>
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<td>-0.038</td>
<td>0.007</td>
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<tr>
<td>News*Accruals</td>
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<td>1.000</td>
<td>-0.369</td>
<td>-0.055</td>
<td>0.000</td>
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<tr>
<td>Analyst*Accruals</td>
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<td>1.000</td>
<td>-0.369</td>
<td>-0.055</td>
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<tr>
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<td>4.359</td>
<td>5.591</td>
<td>6.897</td>
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<tr>
<td>BtoM</td>
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<td>0.243</td>
<td>0.434</td>
<td>0.706</td>
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<tr>
<td>EtoP</td>
<td>37495</td>
<td>-0.096</td>
<td>1.178</td>
<td>-0.033</td>
<td>0.032</td>
<td>0.063</td>
</tr>
</tbody>
</table>

*News:* The number of news announcements from the *Wall Street Journal* accumulated over one year of buy-and-hold abnormal stock return accumulation period

*Analyst:* The number of analyst recommendations accumulated over one year of buy-and-hold abnormal stock return accumulation period

*Accruals:* Accruals from the Balance Sheet.

Accruals = (ΔCA - ΔCash) – (ΔCL – ΔSTD – ΔTP) – Dep

Where: ΔCA is the change in current assets

ΔCash is the change in cash
ΔCL is the change in current liabilities
ΔSTD is the change in debt included in current liabilities
ΔTP is change in income taxes payable
Dep is depreciation and amortization expense

All values divided by average total assets

*Size:* The natural logarithms of market value of equity at the fiscal year-end

*BtoM:* The book-to-market ratio calculated at the fiscal year-end

*EtoP:* Earnings-to-price ratio (net income divided by the market value of common equity at the fiscal year-end*
Table 1.3
Spearman and Pearson Rank Correlations among Independent Variables from Tests of H4
Spearman correlation coefficients in the upper diagonal; Pearson correlation coefficients in the lower diagonal

<table>
<thead>
<tr>
<th></th>
<th>News</th>
<th>Analyst</th>
<th>Accruals</th>
<th>News*Accruals</th>
<th>Analyst*Accruals</th>
<th>Size</th>
<th>BtoM</th>
<th>EtoP</th>
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</thead>
<tbody>
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<td>-0.504</td>
<td>-0.215</td>
<td>0.478</td>
<td>-0.139</td>
<td>0.076</td>
<td></td>
</tr>
<tr>
<td>Analyst</td>
<td>0.423</td>
<td>0.025</td>
<td>-0.213</td>
<td>-0.423</td>
<td>0.713</td>
<td>-0.304</td>
<td>0.105</td>
<td></td>
</tr>
<tr>
<td>Accruals</td>
<td>-0.028</td>
<td>-0.010</td>
<td>0.480</td>
<td>0.709</td>
<td>0.013</td>
<td>-0.059</td>
<td>0.224</td>
<td></td>
</tr>
<tr>
<td>News*Accruals</td>
<td>-0.623</td>
<td>-0.254</td>
<td>0.207</td>
<td>0.624</td>
<td>-0.289</td>
<td>0.032</td>
<td>0.021</td>
<td></td>
</tr>
<tr>
<td>Analyst*Accruals</td>
<td>-0.203</td>
<td>-0.398</td>
<td>0.533</td>
<td>0.455</td>
<td>-0.354</td>
<td>0.059</td>
<td>0.053</td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>0.432</td>
<td>0.657</td>
<td>0.019</td>
<td>-0.240</td>
<td>-0.251</td>
<td>-0.349</td>
<td>0.198</td>
<td></td>
</tr>
<tr>
<td>BtoM</td>
<td>-0.039</td>
<td>-0.091</td>
<td>-0.021</td>
<td>0.023</td>
<td>0.020</td>
<td>-0.139</td>
<td>0.142</td>
<td></td>
</tr>
<tr>
<td>EtoP</td>
<td>0.020</td>
<td>0.059</td>
<td>0.120</td>
<td>0.001</td>
<td>0.012</td>
<td>0.141</td>
<td>0.465</td>
<td></td>
</tr>
</tbody>
</table>

*News*: The number of news announcements from the Wall Street Journal accumulated over one year of the buy-and-hold abnormal stock return accumulation period

*Analyst*: The number of analyst recommendations accumulated over one year of the buy-and-hold abnormal stock return accumulation period

*Accruals*: Accruals from the Balance Sheet

\[
\text{Accruals} = (\Delta CA - \Delta Cash) - (\Delta CL - \Delta STD - \Delta TP) - \text{Dep}
\]

Where: \(\Delta CA\) is change in current assets
\(\Delta Cash\) is change in cash
\(\Delta CL\) is change in current liabilities
\(\Delta STD\) is change in debt included in current liabilities
\(\Delta TP\) is change in income taxes payable
\(\text{Dep}\) is depreciation and amortization expense

All variables divided by average total assets

*Size*: The natural logarithms of the market value of equity at the fiscal year-end

*BtoM*: The book to market ratio calculated at the fiscal year-end

*EtoP*: Earnings-to-price ratio (net income divided by market value of common equity at the fiscal year-end)
Table 1.4 – Tests of Hypothesis 1
Information Events and Non-information Events Period Size-adjusted Portfolio Stock Returns in the Year (t+1) after Accruals Portfolio Formation

<table>
<thead>
<tr>
<th>Accruals Portfolio</th>
<th>A: Total Period Returns</th>
<th>B: Information Events Period Returns</th>
<th>C: Non-information Events Period Returns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowest</td>
<td>0.160</td>
<td>0.072</td>
<td>0.059</td>
</tr>
<tr>
<td></td>
<td>(2.06)*</td>
<td>(6.99)**</td>
<td>(0.89)</td>
</tr>
<tr>
<td>2</td>
<td>0.093</td>
<td>0.048</td>
<td>0.031</td>
</tr>
<tr>
<td></td>
<td>(2.20)**</td>
<td>(5.82)**</td>
<td>(0.92)</td>
</tr>
<tr>
<td>3</td>
<td>0.061</td>
<td>0.034</td>
<td>0.020</td>
</tr>
<tr>
<td></td>
<td>(2.17)*</td>
<td>(6.42)**</td>
<td>(0.90)</td>
</tr>
<tr>
<td>4</td>
<td>0.032</td>
<td>0.029</td>
<td>-0.003</td>
</tr>
<tr>
<td></td>
<td>(1.44)</td>
<td>(5.94)**</td>
<td>(-0.14)</td>
</tr>
<tr>
<td>5</td>
<td>0.035</td>
<td>0.028</td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td>(1.86)*</td>
<td>(10.00)**</td>
<td>(0.10)</td>
</tr>
<tr>
<td>6</td>
<td>0.031</td>
<td>0.025</td>
<td>-0.001</td>
</tr>
<tr>
<td></td>
<td>(1.83)*</td>
<td>(13.46)**</td>
<td>(-0.08)</td>
</tr>
<tr>
<td>7</td>
<td>0.045</td>
<td>0.026</td>
<td>0.007</td>
</tr>
<tr>
<td></td>
<td>(3.07)**</td>
<td>(7.49)**</td>
<td>(0.51)</td>
</tr>
<tr>
<td>8</td>
<td>0.000</td>
<td>0.023</td>
<td>-0.025</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(5.31)**</td>
<td>(-1.31)</td>
</tr>
<tr>
<td>9</td>
<td>-0.003</td>
<td>0.021</td>
<td>-0.030</td>
</tr>
<tr>
<td></td>
<td>(-0.10)</td>
<td>(4.32)**</td>
<td>(-1.33)</td>
</tr>
<tr>
<td>Highest</td>
<td>-0.012</td>
<td>0.017</td>
<td>-0.026</td>
</tr>
<tr>
<td></td>
<td>(-0.24)</td>
<td>(2.64)**</td>
<td>(-0.55)</td>
</tr>
<tr>
<td>Hedge</td>
<td>0.172</td>
<td>0.055</td>
<td>0.085</td>
</tr>
<tr>
<td></td>
<td>(2.57)**</td>
<td>(6.10)**</td>
<td>(1.54)</td>
</tr>
</tbody>
</table>

Accruals portfolio deciles are formed annually by ranking the magnitude of total accruals from the balance sheet (Sloan 1996). Accruals = (ΔCA−ΔCash) − (ΔCL − ΔSTD − ΔTP) − Dep
Information events periods consist of all of earnings announcement windows and news release windows in the year t+1
The hedge portfolio is formed by taking a long position in the lowest decile and a short position in the highest decile.
The values are means (t-statistics) based on the time-series of accruals portfolio buy-and-hold stock returns.
*** Significant at the 0.01 level using a two-tailed t-test.
**  Significant at the 0.05 level using a two-tailed t-test.
*   Significant at the 0.10 level using a two-tailed t-test.

6 37,510 firm-years between 1993 and 2004
Table 1.5 – Tests of Hypothesis 2 and Hypothesis 3

Earnings Announcement Windows, News Release Windows, and Non-Information Events Period Size-Adjusted Portfolio Stock Returns in the Year (t+1) after Accruals Portfolio Formation

<table>
<thead>
<tr>
<th>Accruals Portfolio</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Period Returns</td>
<td>Earnings Announcement Windows Returns</td>
<td>News Release Windows Returns</td>
<td>Non-information Events Period Returns</td>
</tr>
<tr>
<td>Lowest</td>
<td>0.160</td>
<td>0.055</td>
<td>0.016</td>
<td>0.060</td>
</tr>
<tr>
<td></td>
<td>(2.06)*</td>
<td>(7.61)**</td>
<td>(2.79)**</td>
<td>(0.90)</td>
</tr>
<tr>
<td>2</td>
<td>0.093</td>
<td>0.044</td>
<td>0.004</td>
<td>0.032</td>
</tr>
<tr>
<td></td>
<td>(2.20)**</td>
<td>(6.41)**</td>
<td>(1.57)</td>
<td>(0.97)</td>
</tr>
<tr>
<td>3</td>
<td>0.061</td>
<td>0.028</td>
<td>0.005</td>
<td>0.018</td>
</tr>
<tr>
<td></td>
<td>(2.17)*</td>
<td>(6.19)**</td>
<td>(1.55)</td>
<td>(0.82)</td>
</tr>
<tr>
<td>4</td>
<td>0.032</td>
<td>0.025</td>
<td>0.004</td>
<td>-0.001</td>
</tr>
<tr>
<td></td>
<td>(1.44)</td>
<td>(7.64)**</td>
<td>(1.37)</td>
<td>(-0.02)</td>
</tr>
<tr>
<td>5</td>
<td>0.035</td>
<td>0.020</td>
<td>0.008</td>
<td>-0.000</td>
</tr>
<tr>
<td></td>
<td>(1.86)*</td>
<td>(10.42)**</td>
<td>(3.54)**</td>
<td>(-0.03)</td>
</tr>
<tr>
<td>6</td>
<td>0.031</td>
<td>0.021</td>
<td>0.004</td>
<td>-0.001</td>
</tr>
<tr>
<td></td>
<td>(1.83)*</td>
<td>(11.47)**</td>
<td>(2.35)**</td>
<td>(0.09)</td>
</tr>
<tr>
<td>7</td>
<td>0.045</td>
<td>0.021</td>
<td>0.004</td>
<td>0.007</td>
</tr>
<tr>
<td></td>
<td>(3.07)**</td>
<td>(7.61)**</td>
<td>(2.40)**</td>
<td>(0.51)</td>
</tr>
<tr>
<td>8</td>
<td>0.000</td>
<td>0.025</td>
<td>-0.002</td>
<td>-0.025</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(5.87)**</td>
<td>(-0.69)</td>
<td>(-1.31)</td>
</tr>
<tr>
<td>9</td>
<td>-0.003</td>
<td>0.024</td>
<td>-0.003</td>
<td>-0.030</td>
</tr>
<tr>
<td></td>
<td>(-0.10)</td>
<td>(5.39)**</td>
<td>(-1.50)</td>
<td>(-1.32)</td>
</tr>
<tr>
<td>Highest</td>
<td>-0.012</td>
<td>0.017</td>
<td>-0.001</td>
<td>-0.026</td>
</tr>
<tr>
<td></td>
<td>(-0.24)</td>
<td>(3.78)**</td>
<td>(-0.45)</td>
<td>(-0.55)</td>
</tr>
<tr>
<td>Hedge</td>
<td>0.172</td>
<td>0.038</td>
<td>0.017</td>
<td>0.085</td>
</tr>
<tr>
<td></td>
<td>(2.57)**</td>
<td>(5.72)**</td>
<td>(3.22)**</td>
<td>(1.56)</td>
</tr>
</tbody>
</table>

Accruals portfolio deciles are formed annually by ranking the magnitude of total accruals from the balance sheet (Sloan 1996). Accruals = (ΔCA-ΔCash) – (ΔCL – ΔSTD – ΔTP) – Dep

News release windows consist of all of the three-day news windows in the following year of accruals portfolio formation (t+1)

Earnings announcement windows consist of all of the three-day earnings announcement windows in the following year of accruals portfolio formation (t+1)

The hedge portfolio is formed by taking a long position in the lowest decile and a short position in the highest decile.

The values are means (t-statistics) based on the time-series of accruals portfolio buy-and-hold stock returns.

*** Significant at the 0.01 level using a two-tailed t-test.
** Significant at the 0.05 level using a two-tailed t-test.
* Significant at the 0.10 level using a two-tailed t-test.

7 37,510 Firm-years between 1993 and 2004
### Table 1.6 – Additional Tests of Hypothesis 3
Cross-Sectional Regression Results for the Association between the Level of Accruals and Buy-and-Hold Abnormal Stock Return in News Windows

\[
RET_{t+1} = \beta_0 + \beta_1 Accruals_{it} + \beta_2 Size_{it} + \beta_3 BtoM_{it} + \beta_4 EtoP_{it} + \beta_5 Beta_{it} + \epsilon_{it}
\]

<table>
<thead>
<tr>
<th></th>
<th>Accruals from Balance Sheet</th>
<th>Accruals from Cash Flow Statement</th>
<th>Discretionary Accruals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accruals</td>
<td>-0.098</td>
<td>-0.043</td>
<td>-0.008</td>
</tr>
<tr>
<td></td>
<td>(-6.37)***</td>
<td>(-4.09)***</td>
<td>(-4.94)***</td>
</tr>
<tr>
<td>Size</td>
<td>-0.007</td>
<td>-0.007</td>
<td>-0.007</td>
</tr>
<tr>
<td></td>
<td>(-7.87)***</td>
<td>(-7.76)***</td>
<td>(-7.53)***</td>
</tr>
<tr>
<td>BtoM</td>
<td>0.004</td>
<td>0.004</td>
<td>0.005</td>
</tr>
<tr>
<td></td>
<td>(1.96)**</td>
<td>(2.10)**</td>
<td>(2.27)**</td>
</tr>
<tr>
<td>EtoP</td>
<td>0.002</td>
<td>0.003</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>(1.01)</td>
<td>(1.41)</td>
<td>(0.35)</td>
</tr>
<tr>
<td>Beta</td>
<td>-0.002</td>
<td>-0.002</td>
<td>-0.001</td>
</tr>
<tr>
<td></td>
<td>(-1.06)</td>
<td>(-1.32)</td>
<td>(-0.60)</td>
</tr>
<tr>
<td>Constant</td>
<td>0.051</td>
<td>0.051</td>
<td>0.052</td>
</tr>
<tr>
<td></td>
<td>(7.17)***</td>
<td>(7.25)***</td>
<td>(7.21)***</td>
</tr>
</tbody>
</table>

\[
\text{Adj R}^2 = 0.007 \quad 0.006 \quad 0.006
\]

The results are from fixed-effects regression by fiscal-year.
Numbers in parentheses are t-value of coefficients.
Dependent variable in each panel is the size-adjusted daily buy-and-hold abnormal stock returns in the *Wall Street Journal* news release windows. The buy-and-hold abnormal returns are compounded from each three-day news release window over the period starting two days before the first earnings announcement date in the subsequent year of the accruals portfolio formation year (t+1) and ending three days before the first earnings announcement date two years after the accruals portfolio formation (t+2).
**Analyst:** Number of analyst recommendation during buy-and-hold return calculation period
**Size:** Measured by the natural logarithm of the year-end market value of common equity.
**BtoM** (Book-to-market ratio): Book value of common equity divided by the market value of common equity at year-end.
**EtoP** (Earnings-to-price ratio): Net income divided by the market value of common equity at year-end.
*** Significant at the 1% confidence level
** Significant at the 5% confidence level
* Significant at the 10% confidence level

---

8 16,665 firm-years between 1993 and 2004
Table 1.7 – Tests of Hypothesis 4
Cross-Sectional Regression Results for the Association between News Coverage and Buy-and-Hold Abnormal Stock Returns

\[ RET_{it+1} = \beta_0 + \beta_1 \text{News}_{it} + \beta_2 \text{Accruals}_{it} + \beta_3 \text{Analyst}_{it+1} + \beta_4 \text{News}_{it+1} \ast \text{Accruals}_{it} + \beta_5 \text{Analyst}_{it+1} \ast \text{Accruals}_{it} + \beta_6 \text{Size}_{it} + \beta_7 \text{BtoM}_{it} + \beta_8 \text{EtoP}_{it} + \epsilon_{it} \]

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>News</strong></td>
<td>0.005 (6.64)**</td>
<td>0.005 (6.29)**</td>
<td>0.002 (3.21)**</td>
<td>0.001</td>
<td>0.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Accruals</strong></td>
<td>-0.390 (-8.35)**</td>
<td>-0.377 (-8.07)**</td>
<td>-0.378 (-8.12)**</td>
<td>-0.337 (-6.61)**</td>
<td>-0.366 (-6.40)**</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Analyst</strong></td>
<td>0.014 (15.60)**</td>
<td>0.013 (14.58)**</td>
<td>0.013 (14.55)**</td>
<td>0.013 (13.94)**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>News*Accruals</strong></td>
<td>-0.018 (-1.98)**</td>
<td>-0.023 (-2.27)**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Analyst*Accruals</strong></td>
<td>0.008 (1.12)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Size</strong></td>
<td>-0.048 (-15.24)**</td>
<td>-0.039 (-13.78)**</td>
<td>-0.077 (-20.61)**</td>
<td>-0.048 (-15.14)**</td>
<td>-0.080 (-20.81)**</td>
<td>-0.080 (-20.71)**</td>
<td>-0.080 (-20.70)**</td>
</tr>
<tr>
<td><strong>BtoM</strong></td>
<td>0.015 (2.97)**</td>
<td>0.014 (2.79)**</td>
<td>0.016 (3.23)**</td>
<td>0.012 (2.41)**</td>
<td>0.012 (2.45)**</td>
<td>0.012 (2.48)**</td>
<td>0.012 (2.47)**</td>
</tr>
<tr>
<td><strong>EtoP</strong></td>
<td>-0.016 (-3.09)**</td>
<td>-0.014 (-2.55)**</td>
<td>-0.016 (-3.12)**</td>
<td>-0.011 (-2.10)**</td>
<td>-0.010 (-1.86)**</td>
<td>-0.010 (-1.90)**</td>
<td>-0.010 (-1.86)**</td>
</tr>
<tr>
<td><strong>Constant</strong></td>
<td>0.307 (16.08)**</td>
<td>0.252 (14.05)**</td>
<td>0.396 (20.02)**</td>
<td>0.294 (15.37)**</td>
<td>0.401 (19.61)**</td>
<td>0.401 (19.59)**</td>
<td>0.399 (19.44)**</td>
</tr>
<tr>
<td><strong>Adj R²</strong></td>
<td>0.008</td>
<td>0.009</td>
<td>0.013</td>
<td>0.010</td>
<td>0.015</td>
<td>0.015</td>
<td>0.015</td>
</tr>
</tbody>
</table>

Results are from the fixed-effects regression by fiscal year. Numbers in parentheses are t-values of the coefficients. Dependent variable in each panel is the size-adjusted monthly buy-and-hold abnormal stock returns. The buy-and-hold abnormal returns are calculated over one year starting four month after the fiscal year-end of the year in which accrual portfolio is formed.

News is the number of Wall Street Journal news announcements released during return calculation period.

Analyst: Number of analyst recommendations during return calculation period.

Size: Measured by the natural logarithm of the year-end market value of common equity.

BtoM (Book-to-market ratio): Book value of common equity divided by market value of common equity at year-end.

EtoP (Earnings-to-price ratio): Net income divided by market value of common equity at year-end.

*** Significant at the 1% confidence level
** Significant at the 5% confidence level
* Significant at the 10% confidence level

9 37,510 firm-years between 1993 and 2004
1.7 Figures for Chapter 1

Figure 1.1 Information events period and non-information events period
Sloan’s non-announcement period (1996) is separated into news-release windows included in the information event period and a non-information event period that has neither earnings announcements nor news releases.
Figure 1.2 Formation of earnings announcement windows, news release windows, and the calculation period of buy-and-hold abnormal return.
Figure 1.3 Hedge portfolio returns by fiscal year taking a long position in the stocks of the lowest accruals decile and a short position in the stocks of the highest accruals decile.
**Figure 1.4** Average buy-and-hold abnormal returns by fiscal year from news Windows
Figure 1.5 News windows hedge portfolio returns by fiscal year taking a long position in the stocks of the lowest accruals decile and a short position in the stocks of the highest accruals decile.
Figure 1.6 Ratio of hedge portfolio returns divided by the average trading days from the total period, earning announcement windows, news release windows, and non-information events period.
Chapter 2  The Impact of the Financial Press on Earnings Management

2.1  Introduction

This study examines the role of news released in the financial press (represented in this paper by the *Wall Street Journal*) as an information intermediary in explaining earnings management. Previous analytical and empirical studies document that the existence of information asymmetry between managers and shareholders creates an information environment conducive to earnings management (Trueman and Titman 1988; Dye 1988; Richardson 2000; Lobo and Zhou 2001). More importantly, prior literature on the financial press suggests that news plays an important role as an information intermediary in capital markets and corporate governance (Dyck and Zingales 2002, 2003; Dyck, Morse, Zingales 2007; Frankel and Li 2004; Miller 2006; Bushee, Core, Guay, and Hamm 2010). However, the empirical results of those studies present contradictory views on the relationship between news coverage and information asymmetry. On the one hand, Bushee et al. (2010) find that greater news coverage decreases information asymmetry around earnings announcements. On the other hand, Frankel and Li (2004) show that, inconsistent with their own expectations, news coverage is positively associated with information asymmetry. I attempt to reconcile this conflict by distinguishing between two categories of news: earnings-related news (EN hereafter) and non-earnings-related news (NEN hereafter). I have thoroughly examined a large number of news articles from both
categories. Typical EN items provide new information to the market that generally should reduce information asymmetry regarding upcoming earnings announcements. The type of news classified as NEN is much more diverse, disseminating ambiguous, uncertain, and complicated information regarding events such as mergers and acquisitions (M&A), management changes, litigation, new products, layoff, and plant closing, thereby increasing information asymmetry. These distinct characteristics of EN and NEN lead us to expect that EN (NEN) would decrease (increase) the degree of information asymmetry.

To confirm my expectation, I conduct empirical tests using the dispersion of analysts’ forecast as a proxy for information asymmetry, and find that EN (NEN) is negatively (positively) related to information asymmetry. This finding, coupled with the known association between information asymmetry and earnings management (Richardson 2000; Lobo and Zhou 2001; Yu 2008), suggested the hypothesis that the impact of news on earnings management depends on the type of news. Therefore, I conduct an empirical study to investigate the association between news coverage and the magnitude of earnings management, and examine whether the association is differentiated by the characteristic of news coverage: EN and NEN. Consistent with my expectation, I find that EN (NEN) is negatively (positively) associated with the magnitude of earnings management, as measured by the absolute values of discretionary accruals and unexpected core earnings. The findings show that these associations are

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1 In order to make a preliminary determination of whether news articles could be appropriately classified as EN or NEN, I examined the abstracts of 2,000 news articles and found that they can be separated into these two categories. See examples of abstracts of EN and NEN in the Appendix.
more evident for firms engaging in income-increasing earnings management and for large-size firms.

This study contributes to the accounting and finance literature in two areas. First, it extends prior studies that examine earnings management in relation to the corporate information environment (Richardson 2000; Lobo and Zhou 2001; Yu 2008). Specifically, this study extends Yu (2008) by focusing on news as a potential information source and providing evidence that news coverage is significantly associated with earnings management. I also expand Richardson (2000) by re-visiting the relationship of information asymmetry with earnings management and by examining the distinct influence of distinct news characteristics on earnings management. Second, this study improves the understanding of the role of news as an information intermediary in capital markets by investigating how news coverage influences firms’ information environments (Frankel and Li 2004; Miller 2006; Bushee et al. 2010). In particular, the inconsistency of findings from prior studies on the relationship between news coverage and information asymmetry (Frankel and Li 2004; Bushee et al. 2010) disappears when I separate the news into EN and NEN.

The remainder of the study is organized as follows. Section 2.2 discusses related literature and develops hypotheses. Section 2.3 discusses the methodology and sample selection. Section 2.4 describes the empirical results, and Section 2.5 concludes this study.
2.2 LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.2.1 Role of News in the Financial Press

Prior studies on press news are mostly related to abnormal stock returns (Mitchell and Mulherin 1994; Francis, Schipper, and Vincent 2002), stock prices (Palmon and Schneller 1980; Dyck and Zingales 2003), or information asymmetry (Frankel and Li 2004; Bushee et al. 2010). This study is consistent with the body of research that shows that the financial press (news coverage) plays a role as an information intermediary in capital markets and corporate governance.

The financial press serves two major roles as an information intermediary: 1) reporting what happens in firms to market participants (Bushee et al. 2010), and 2) monitoring firms as a watchdog or a gatekeeper to protect the public from accounting fraud and improprieties (Dyck, Morse, Zingales 2007; Miller 2006; Ronen and Yaari 2008). Since the financial press plays an active role in reporting information on firms in the markets, managers’ financial reporting decisions can be influenced by news coverage. With regard to the press as a monitor, Borden (2007) and Ronen and Yaari (2008) suggest that journalists serve a role of informing the public of accounting violations and fraud. Using 263 firms with accounting violations, identified by the Securities and Exchange Commission and 75 press released articles, Miller (2006) examines whether the press is involved in the early public dissemination of accounting malfeasances. He finds that firms with larger press coverage are likely to have their frauds first identified in the press, suggesting the role of the press in the early identification of accounting violation.
2.2.2 News Coverage and Information Asymmetry

Among the roles of the financial press, in this study, I focus on the reporting aspect. The press’s job of reporting can result in two different effects on firms’ information environment, according to the distinct characteristics of the news subject. On one hand, news released in the financial press is likely to reduce information asymmetry (Bushee et al. 2010). With a sample of medium-sized NASDAQ growth firms, Bushee et al. (2010) examine whether business press coverage during earnings announcements reduces the level of information asymmetry. They find that greater business press coverage is negatively associated with information asymmetry during earnings announcements, and facilitates more trading through both small and large trades. On the other hand, news coverage could increase information asymmetry. By citing Atiase (1985), Frankel and Li (2004) document that the information asymmetry between managers and investors can be affected by pre-emptive news release. They find a positive relationship between the intensity of news releases (Dow Jones News Retrieval) and the level of information asymmetry.

I attempt to reconcile these conflicting views on the relationship between news coverage and information asymmetry by categorizing news into EN and NEN based on its characteristics. My examination of EN shows that EN, such as firms’ earnings, financial reports, etc., delivers direct and clear messages to markets on firm performance, thereby reducing information asymmetry. However, NEN disseminates ambiguous, uncertain, and complicated information such as M&A, management changes, litigation, new products, and lay-offs, which increase information asymmetry. Release of NEN will increase information asymmetry because the firm knows more than outsiders do about the
impact of the news on its future. Additionally, news could increase information asymmetry when firms unintentionally (or intentionally) disseminate a variety of misleading information. I therefore expect different impacts of EN and NEN on the level of information asymmetry. The propositions above lead to Hypothesis 1 as follows:

**H1a:** Earnings-related news is negatively related to the degree of information asymmetry.

**H1b:** Non-earnings-related news is positively related to the degree of information asymmetry.

### 2.2.3 News Coverage and Earnings Management

As noted above, previous analytical and empirical studies document that the existence of information asymmetry between managers and shareholders creates an information environment that is likely to induce managers to engage in earnings management (Trueman and Titman 1988; Dye 1988; Richardson 2000).

Managers have better access to the private information of their firms than shareholders and investors do. Ronen and Yaari (2008) document that opportunistic earnings management stems from the conflict of interest between managers and shareholders, and that possessing private information makes it easier for managers to use it to their advantages at the expense of others.² Therefore, earnings management may

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² Healy and Wahlen (1999) define earnings management as follows: “Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers”. On the other hand, in their book, Ronen and Yaari (2008) offer an alternative definition of earnings management as follows: “Earnings management is a collection of managerial decisions that result in not reporting the true short-term, value-maximizing earnings as known to management”.

easily occur where increased information asymmetry exists because managers will have more opportunities to pursue their own interests at the shareholders’ expense. Warfield, Wild, and Wild (1995) and Richardson (2000) note that if information asymmetry between managements and shareholders is high, shareholders have insufficient access to relevant information to monitor managements. Beatty and Harris (1998) show that the existence of more pervasive earnings management in public banks is consistent with higher agency costs stemming from greater information asymmetry. Richardson (2000) shows a significant relationship between information asymmetry and earnings management by using bid-ask spreads and the dispersion of analysts’ forecast as proxies for information asymmetry. Lobo and Zhou (2001) document that management’s discretionary ability to manage earnings increases as the information asymmetry increases. They find that the quality of corporate disclosure is negatively related to earnings management. Ronen and Yaari (2008) document that opportunity for earnings management is induced by information asymmetry and imperfect audit technology. They also note that the press plays a crucial role in earnings management by collecting and disseminating facts. Yu (2008) shows the significant role of financial analysts in earnings management with evidence that firms with higher analysts following have lower magnitudes of earnings management than firms with lower analysts following. He also finds that firms with analyst following have lower magnitude of earnings management than firms without any analysts following. He documents that financial analysts, as information intermediary agents, reduce the information asymmetry between firms and investors through their role of summarizing and distributing information to investors.
In this study, I focus on news released in the financial press as an important information intermediary to market participants, and examine its role in explaining earnings management. The environment in which greater information asymmetry exists between management and shareholders may provide more opportunities for managers to engage in earnings management. If news coverage has a significant impact on information asymmetry, I can also posit that news coverage is associated with the magnitude of earnings management. More importantly, if the relationship between news coverage and information asymmetry is distinguished by EN and NEN, then the association of news with earnings management is also likely to be differentiated based on the distinct relationships of EN and NEN with information asymmetry. Taken together, I expect the positive (negative) association between the intensity of NEN (EN) and the magnitude of earnings management. The main hypothesis of this study is stated as follows:

**H2a:** (If H1a is not rejected) Earnings-related news that decreases information asymmetry is negatively associated with the magnitude of earnings management.

**H2b:** (If H1b is not rejected) Non-earnings-related news that increases information asymmetry is positively associated with the magnitude of earnings management.
2.3 Methodology

2.3.1 Sample Selection

The initial sample consists of all firms traded in the NYSE, AMEX and NASDAQ. I obtain accounting variables from the COMPUSTAT database and analyst-related variables from the Institutional Brokers’ Estimates System (I/B/E/S) database. I select *The Wall Street Journal* as a primary news data source because it provides timely information to capital market participants, and is a popular and respected news source for the participants. I collect *Wall Street Journal* news articles from the LexisNexis Academic database. I first prepare a list of company names reported in the CRSP database, and use the key words of “Organization name” and “The Wall Street Journal” to search news from the LexisNexis database. I then retrieve news articles for each firm and parse them into my data. When there is more than one news article on a given day for a particular firm, I consider it one news article on that date to avoid redundant effects. In total, there are 48,972 new items in the sample for calendar-years 1993 to 2005. I match the news release date to the trading date from CRSP and then merge this with the COMPUSTAT data. I exclude financial firms such as banks, life insurance or property and casualty firms (SIC code 6000-6999). The sample period spans from 1994 to 2004 fiscal-year-end for accounting data and from 1993 to 2005 calendar-years for news data. The final sample consists of 32,177 firm-years from a total of 5,681 firms. Among those firms, 4,110 firms have at least one news articles during the sample period.

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3 Zhang (2007) documented that “*The Wall Street Journal* is widely considered the most influential and timely business journal and its news filtering system is likely to extract the legislative activities that are most relevant to the business community”, p.79. Also see Ronen and Yaari (2008), p.282 footnote 141.
2.3.2 Variable Measurement

News Coverage

Following the previous research (Mitchell and Mulherin 1994; Berry and Howe 1994; Frankel and Li 2004), I use the number of news articles released in the *Wall Street Journal* as a proxy for the news coverage during the 1993–2005 calendar–year period. Mitchell and Mulherin (1994) and Berry and Howe (1994) use the number of articles per day reported by Dow Jones and Reuter’ News respectively. Similarly, using the number of news articles, Frankel and Li (2004) find that news coverage is positively associated with information asymmetry.

The news collection period for each firm year extends over ten months from 11 month to 2 month prior to the fiscal-year-end date (“Datadate” from COMPUSTAT). I don’t include news articles that are reported during the last two months before the earnings announcement date because, in the process of preparing financial statements, that two-month period is assumed to be too short to manage earnings. Figure 2.1 shows the news collection period for each firm by fiscal-year.

After collecting *Wall Street Journal* news articles from LexisNexis database, I classify them into EN and NEN on the basis of the news subjects provide by LexisNexis. To extract EN from other news, I use terminologies of the news subjects, such as “Annual Financial Results”, “Company Earnings”, “Company Reports”, etc. Table 2.1 shows the list of news subjects that I use to classify and to extract EN. Examples of news classified as EN and NEN are shown in the Appendix.

The total number of news article during the sample period is 48,972. Of this group, 10,627 articles focus on EN and 38,345 articles discuss NEN. My dataset shows
that the percentage of news articles on accounting fraud (or SEC investigation) is less than 2% of NEN, indicating that this study is apparently distinct from the investigation by Miller (2006).

**Information Asymmetry**

Information asymmetry exists when managers have better information than shareholders or investors. The topic of information asymmetry has attracted considerable attention in accounting and finance studies. Prior studies have used proxies to capture the level of information asymmetry because it cannot be observed directly. The dispersion among analysts’ forecasts is one of most often used measure for information asymmetry in previous research (Brown and Han 1992; Healy, Palepu, and Sweeney 1995; Lobo and Tung 1997; Krishnaswami and Subramaniam 1999; Richardson 2000; Kanagaretnam, Lobo, and Whalen 2004). For example, using analyst dispersion as a proxy for information asymmetry, Lobo and Tung (1997) show that firms have higher equity trading volume when they have a higher degree of information asymmetry during the earnings announcement period. Following prior research (Richardson 2000; Kanagaretnam et al. 2004), I employ the dispersion among analysts’ forecasts as a proxy of information asymmetry for the empirical test.

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4 Miller (2006) focus on 263 firms with accounting violations, which are identified by the Securities and Exchange Commission and their 75 press released articles. The approach of this study is more general and broader than his study because I focus on all firms traded on NYSE/AMEX/NASDAQ (5,681 firms) and their news articles (48,972 news articles) including fraud news.

5 Bid-ask spread is another proxy for information asymmetry that has been frequently used in prior studies. However, Bartov and Bodnar (1996) note that bid-ask spreads are not sensitive to changes in the information environment. Clarke and Shastri (2001) also argue that bid-ask
Using the Institutional Brokers’ Estimates System (I/B/E/S) database, I estimate two measures of the dispersion among analysts’ forecasts: 1) the standard deviation of analysts’ forecasts in the year t scaled by absolute value of the median forecast in the year t-1, and 2) the standard deviation of analysts’ forecasts in the year t divided by the stock price as of the forecast date.

\[
\text{Dispersion among Analysts’ forecasts} = \frac{\sigma_i(\text{Analysts’ Forecasts})}{|\text{Median Forecast}_{t-1}|} \quad \text{or} \quad \frac{\sigma_i(\text{Analysts’ Forecasts})}{\text{PRICE}_t} \tag{1}
\]

### Analysts Coverage - Number of analysts following a firm

The number of analysts following a firm is often used in the accounting research as a proxy for the intensity of analyst activity (see Yu 2008; Frankel and Li 2004; Kanagaretnam et al. 2004; Lang and Lundholm 1996; Bhushan 1989). Following previous studies, I collect the number of analysts from the I/B/E/S database for each firm-year.

### Earnings Management - Discretionary Accruals

Recent accounting studies use discretionary accruals as a proxy for earnings management. For example, Healy and Whalen (1999) suggest that investors view discretionary accruals as more likely to indicate earnings management. Following prior studies (Dechow, Sloan, and Sweeney 1995; Richardson 2000; Lobo and Zhou 2001; Yu... spreads cannot present a good indication of the extent of information asymmetry. I therefore decide not to use it in this study.)
2008), I use the absolute value of discretionary accruals as the proxy for earnings management.

Dechow et al. (1995) develop the modified Jones model to identify firms’ earnings management based on the original Jones model (1991), which segregates expected accruals (non-discretionary accruals) from the managed accruals (discretionary accruals). The only difference between the modified Jones model and original Jones model is that the change in revenues is adjusted for the change in receivables.

I estimate the modified Jones model in the year t for each industry based on 2-digit SIC code. The model is estimated as follows:

$$\frac{TA_v}{Asset_{it-1}} = \alpha_1 \frac{\Delta Asset_{it}}{Asset_{it-1}} + \frac{\alpha_2 (\Delta Rev_{it} - \Delta Rec_{it-1})}{Asset_{it-1}} + \frac{\alpha_3 PPE_{it}}{Asset_{it-1}} + \epsilon_{it}$$

(2)

Where:

$TA_{it}$ = total accruals in year t for firm i where $TA = (\Delta CA - \Delta Cash) - (\Delta CL - \Delta STD - \Delta TP) - \text{Dep}$. [\Delta CA is the change in current assets, \Delta Cash is the change in cash and cash equivalents, \Delta CL is the change in current liabilities, \Delta STD is the change in debt included in current liabilities, \Delta TP is the change in income taxes payable, and Dep is Depreciation and amortization expense.]

$Asset_{it}$ = total assets at the end of year t-1 for firm i

$\Delta Rev_{it}$ = change in revenues from year t to t-1 for firm i

$\Delta Rec_{it}$ = change in receivables from year t to t-1 for firm i

$PPE_{it}$= gross property, plant and equipment in year t for firm i

$\epsilon_{it}$ = error term
I use the coefficients from equation (2) to estimate the nondiscretionary accruals. Following prior studies (Jones 1991; Dechow et al. 1995), I calculate the nondiscretionary accruals in the event year (NonDA) as shown below:

\[ \text{NonDA}_{it} = \frac{\alpha_1' \text{Asset}_{it-1}}{\text{Asset}_{it-1}} + \frac{\alpha_2' \left( \Delta \text{Re}_v_{it} - \Delta \text{Re}_c_{it} \right)}{\text{Asset}_{it-1}} + \frac{\alpha_3' \text{PPE}_{it}}{\text{Asset}_{it-1}} \]  

(3)

Where \( \alpha_1' \), \( \alpha_2' \), \( \alpha_3' \), = coefficient of \( \alpha_1 \), \( \alpha_2 \), \( \alpha_3 \) from the regression model (2). The difference between total accruals and nondiscretionary accruals indicate the discretionary accruals.

\[ \text{DA}_{it} = \text{TA}_{it} - \text{NonDA}_{it} \]  

(4)

**Earnings Management - Unexpected Core Earnings**

McVay (2006) examines an earnings management tool that uses the classification of items within the income statement, and finds that managers opportunistically shift core expenses to special items. In addition, she estimates the unexpected core earnings, which are the residuals from the following regression model, as a proxy for earnings management:

\[ \text{CE}_{it} = \alpha + \beta_1 \text{CE}_{i,t-1} + \beta_2 \text{ATO}_{it} + \beta_3 \text{Accruals}_{it-1} + \beta_4 \text{Accruals}_{it} + \beta_5 \Delta \text{Sales}_{it} + \beta_6 \text{Neg}_\Delta \text{Sales}_{it} + \epsilon_t \]  

(5)

Where:

\( \text{CE}_{it} \) = Core Earnings \[ ((\text{Sales} - \text{Cost of Goods Sold} - \text{Selling, General and Administrative Expense}) / \text{Sales}) \]

\( \text{ATO}_{it} \) = The asset turnover ratio \[ ((\text{Net Operating Assets}_{t} + \text{Net Operating Assets}_{t-1})/2), \text{ where Net Operating Assets} = \text{Operating Assets} (\text{Total Assets-Cash-Short Term Investment}) - \text{Operating Liability} (\text{Total Assets-} \]


Total Debt-Book Value of Common and Preferred Equity-Minority Interest

$Accruals_{it} = \text{Operating Accruals} \ [(\text{Net Income before extraordinary items} – \text{Cash from operations})/\text{Sales}]$

$\Delta Sales_{it} = \text{the percentage change in sales from year t-1 to t}$

$Neg_\Delta Sales_{it} = \Delta Sales_{it}$ if $\Delta Sales_{it}$ is negative, and 0 otherwise

$\varepsilon_{it} = \text{Error term, which is the Unexpected Core Earnings}$

Unexpected core earnings are the differences between reported and predicted core earnings. The predicted values are computed by the coefficients from equation (5) which is estimated by industry and fiscal year. Following previous studies (McVay 2006; Cain, Kolev, and McVay 2009), I adopt the absolute value of residual from equation (5) estimated by industry and fiscal year as the second proxy for the magnitude of earnings management. As a test of robustness, I use not only discretionary accruals to capture the balance sheet based earnings management but also unexpected core earnings to evaluate the income statement based earnings management.

Since managers may have incentives to smooth income downward or upward, I use the absolute value of discretionary accruals and unexpected core earnings, which can represent the effects of both upward and downward smoothing. I also divide discretionary accruals into positive and negative discretionary accruals. Positive discretionary accruals indicate income-increasing earnings management, and negative discretionary accruals imply income-decreasing earnings management. By doing this, I explore whether the sign of discretionary accruals causes different effects on the size or pattern of earnings
management. There is greater likelihood of earnings management as the absolute values of discretionary accruals or unexpected core earnings increase.

2.4 Empirical Results

2.4.1 Descriptive Statistics

Table 2.2 presents descriptive statistics for the dependent, independent, and control variables used in this study. I report the means, 25th percentile, medians, 75th percentile, and standard deviations of discretionary accruals (DA), the absolute value of discretionary accruals (Abs_DA), the unexpected core earnings (UXCE), the absolute value of unexpected core earnings (Abs_UXCE), news coverage variable (EN, NEN), information asymmetry variable (IA1, IA2), and control variables (Analyst, Insthold, RD, Size, ROA, BtoM, and Debt). The mean and median values of all variables except the mean of ROA are positive. The mean (median) of discretionary accruals is 0.0022 (0.0012). The mean (median) of the absolute value of discretionary accruals are 0.1130 (0.0615). The mean (median) values of Abs_UXCE are 0.7796 (0.1198). The mean (median) of EN is 0.1550 (0.0000) and that of NEN is 0.4304 (0.0000). The mean (median) of IA_1 is 0.1012 (0.0278) and that of IA_2 is 0.0060 (0.0017). The mean values of control variables (Analyst, Insthold, RD, Size, ROA, BtoM, and Debt) are 1.1204, 0.3455, 0.1858, 5.3997, -0.0397, 0.5814, and 0.4626, respectively.

Panel A of Table 2.3 provides the number of firms with positive or negative discretionary accruals. Among the total of 32,177 firm-years, 15,791 firm-years (49.1%) have positive discretionary accruals, and 16,386 firm-years (50.9%) have negative discretionary accruals. Panel B of Table 2.3 presents the number of firms-years with
positive or negative unexpected core earnings. 16,056 firm-years (49.9%) have positive unexpected core earnings, and 16,121 firm-years (50.1%) have negative unexpected core earnings.

Panel A in Table 2.4 presents the number of EN by fiscal-year. The largest number of EN releases (1,180 news articles) occurs in 1998 and 1999, whereas the smallest number of EN (704 news articles) is in 1994. Panel B reports the number of NEN by fiscal-year. The number of NEN is the largest in 1995 (4,262 news articles), and the smallest in 2004 (2,132 news articles). New coverage, EN and NEN together, is highest (5,318 news articles) in 1998 and lowest (2,952 news articles) in 2004. Interestingly, after fiscal-year 1999 the number of NEN is monotonically decreasing although there is no significant change in the number of EN. This phenomenon may have occurred because of the appearance of alternative sources of news, such as internet websites and cable television channels. The total number of EN articles during the sample period from 1994 to 2004 is 10,627 (21.7%), and that of NEN is 38,345 (78.3%). In sum, the total number of news articles from The Wall Street Journal during the sample period is 48,972. Figure 2.2 and Table 2.4 show the trends for the number of EN and NEN coverage by fiscal-years.

### 2.4.2 Test of Hypothesis 1

Hypothesis 1 focuses on whether the intensity of news coverage is related to the level of information asymmetry, and whether that relationship is distinguished by the type of news (EN or NEN). News coverage can play an important role in firms’ information environment since news can disseminate a variety of information to market participants, reducing the degree of information asymmetry or possibly increasing it. I expect news
coverage to be significantly related to information asymmetry, and the degree of information asymmetry to be positively (negatively) related to the intensity of NEN (EN).

To examine this issue, I conduct regression analysis. I regress the level of information asymmetry, as measured by the dispersion of analysts’ forecast, on the number of EN and NEN. Based on findings from prior studies, I control for the number of analysts following a firm (Frankel and Li 2004; Huddart and Ke 2007), the proportion of institutional ownership (Huddart and Ke 2007), the level of R&D expense (Aboody and Lev 2000; Frankel and Li 2004; Huddart and Ke 2007), book-to-market ratio (Frankel and Li 2004; Huddart and Ke 2007), and debt ratio (Myers and Majluf 1984; Bharath, Pasquariello, and Wu 2009). The following regression model was used to perform the test of Hypothesis 1:

\[
IA_{it} = \beta_0 + \beta_1 EN_{it} + \beta_2 NEN_{it} + \beta_3 Analyst_{it} + \beta_4 InstHold_{it} + \beta_5 RD_{it} + \beta_6 BtoM_{it} + \beta_7 Debt_{it} + \epsilon_{it}
\]  

Where:

\( IA_{it} \) = The level of information asymmetry in firm i, which is the dispersion among analysts’ forecast estimated from 1) the standard deviation of analysts’ forecasts in the year t divided by absolute value of

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6 Frankel and Li (2004) find a negative relationship between analyst following and insider trading profits, implying a negative relationship between analyst following and information asymmetry. Aboody and Lev (2000) find that insider trading profits are higher for firms with R&D expenditures. They document that this association stems from the information asymmetry induced by R&D investment. Huddart and Ke (2007) also find that firm with R&D have higher information asymmetry, and that the percentage of institutional ownership is negatively related to information asymmetry. Myers and Majluf (1984) argue that capital structure of firms is driven by asymmetric information problem. Bharath et al. (2009) also find that information asymmetry affects the capital structure decisions of U.S. firms.
median forecast in the year t-1, and 2) the standard deviation of analysts’ forecasts in the year t divided by the stock price as of the forecast date.

\[ EN_{it} = \text{The number of news articles related to earnings, which is released in The Wall Street Journal in the year t.} \]

\[ NEN_{it} = \text{The number of news articles not related to earnings, which is released in The Wall Street Journal in the year t.} \]

\[ Analyst_{it} = \text{The number of analysts following firm i during the year t.} \]

\[ InstHold_{it} = \text{The proportion of stocks owned by institutions at the fiscal year-end t.} \]

\[ RD_{it} = \text{The level of R&D expense of firm i in the year t.} \]

\[ BtoM_{it} = \text{The book-to-market ratio of firm i measured by the book value of common equity divided by the market value of common equity at the fiscal year-end t.} \]

\[ Debt_{it} = \text{The debt ratio of firm i measured by total liabilities divided by total assets at the fiscal year-end t.} \]

\[ \varepsilon_{it} = \text{error term} \]

Table 2.5 shows the results of the relationship between information asymmetry and news coverage: EN or NEN. Table 2.5 reports the coefficient estimates, t-statistics and adjusted R-squares. The first row of Panel A and Panel B uses the standard deviation of analysts’ forecasts in the year t scaled by absolute value of median forecast in the year t-1 as the first proxy for information asymmetry (IA_1). In the second row of each panel, the standard deviation of analysts’ forecasts in the year t divided by the stock price as of the forecast date is used as the second measure of information asymmetry (IA_2).
In Panel A, I test Hypothesis 1 using a year-fixed-effect regression model. In the first row, the results provide evidence that the degree of information asymmetry has a significant positive relationship with NEN \((t=3.01)\) and a significant negative relationship with EN \((t=-3.00)\) in support of Hypothesis 1. The results of the second row are consistent with that of the first row \((t=-2.54 \text{ for EN}; t=3.35 \text{ for NEN})\). Panel B reports the regression results from a pooled regression model. In accord with the results from Panel A, the findings from both first and second rows of Panel B show that EN is negatively \((t=-3.23, t=-2.60)\), and NEN is positively \((t=3.83, t=4.15)\) related to information asymmetry.

The finding of a negative relationship between information asymmetry and EN coverage is consistent with findings by Bushee et al. (2010). However, I find that this negative relationship is valid only for EN, supporting my expectation that only EN plays a role in reducing information symmetry. On the other hand, a positive relationship of information asymmetry and NEN coverage is consistent with the findings by Frankel and Li (2004). I show that this relationship is applicable only to NEN in support of my conjecture that NEN is likely to increase information asymmetry.

As expected, Analyst (analysts following) and InstHold (institutional holding) which are information intermediary variables are negatively related to the degree of information asymmetry. Firms with a higher percentage of institutional holdings and more number of analysts following have a better information environment due to their better monitoring mechanism (Yu 2008). Therefore, these results support findings of prior studies that institutional ownership and analyst following reduce the degree of information asymmetry between managers and investors. The results also show that,
consistent with prior studies (Aboody and Lev 2000; Frankel and Li 2004), the level of R&D expenditure is positively associated with information asymmetry. The test of Hypothesis 1 is free from multicollinearity problem because independent variables’ sizes of the variance inflation factor (VIF) are far less than 5.7

Consequently, the contradictory results from prior studies on the relationship between information asymmetry and news coverage are reconciled once when I examine the issue by distinguishing between EN and NEN. The findings show that the relationship between information asymmetry and news coverage is clearly differentiated by the type of news: EN and NEN. These statistically significant results of the relationship of EN and NEN with information asymmetry advance us to the test of Hypothesis 2.

2.4.3 Test of Hypothesis 2

The primary purpose of this study is to investigate the impact of news coverage on the magnitude of earnings management. Given that information asymmetry has been shown to be an information environment conducive to earnings management, and if the impact of news on information asymmetry depends on the type of news (EN vs. NEN), then I expect that the association between news and earnings management will depend on the type of news. I therefore hypothesize that EN is negatively associated with the magnitude of earnings management, and NEN is positively associated with earnings management. To test this hypothesis, I perform a regression analysis over the 11-year sample period.

Following previous accounting studies (Dechow et al 1995; Teoh, Welch, and Wang 1998; Richardson 2000; Yu 2008; McVay 2006; Cain et al. 2009), I estimate the

7 In statistics, if VIF is greater than 5 then multicollinearity is high.
absolute value of discretionary accruals from the Modified Jones Model and that of unexpected core earnings from McVay’s model (2006) as proxies of earnings management. I regress the absolute value of discretionary accruals and unexpected core earnings on the number of EN and NEN. Following prior studies (Richardson 2000; Yu 2008), I control for firm characteristics that may affect manager’s intention to manage earnings for better identification of the effect of news coverage on earnings management: institutional ownership (InstHold), firm size (Size), return on asset (ROA), dispersion among analysts’ forecast (Disp), and book-to-market ratio (BtoM). Since Watts and Zimmerman (1978) propose that there exists a relationship between debt ratio and earnings management, I also include the debt ratio (Debt) as an additional control variable.

The following empirical models are derived to test the hypothesis.

\[ |EM_{it}| = \beta_0 + \beta_1 EN_{it} + \beta_2 NEN_{it} + \beta_3 InstHold_{it} + \beta_4 Size_{it} + \beta_5 ROA_{it} + \beta_6 Disp_{it} + \beta_7 BtoM_{it} + \beta_8 Debt_{it} + \varepsilon_{it} \] (7)

Where:

\( EM_{it} \) = 1) The absolute value of firm i’s discretionary accrual calculated by the modified Jones model in the year t and 2) The absolute value of unexpected core earnings which are taken from the residuals of the regression model in McVay (2006).

\( Size_{it} \) = The natural logarithms of the market value of equity for Firm i in the year t

\( ROA_{it-1} \) = Return on asset for firm i, as measured net income divided by total assets at the fiscal-year-end t.
\[ Disp_{it} = \frac{\text{The dispersion among analysts’ forecast estimated from the standard deviation of analysts’ forecasts in the year } t \text{ divided by absolute value of median forecast in the year } t-1}{\epsilon_{it} = \text{error term}} \]

Table 2.6 and Table 2.7 show the results of the estimation of the regression model for the association between the intensity of news coverage and the magnitude of earnings management. These tables report the coefficient estimates, t-statistics and adjusted R-squares. Columns A through C of Table 2.6 and Table 2.7 report results from a year-fixed-effect regressions of earnings management on new coverage (EN, NEN) and control variables, and Columns D through F present results from a pooled regression.

In Table 2.6 I regress discretionary accruals on EN and NEN. As noted above, I use the number of news articles released in the Wall Street Journal as a proxy for news coverage. Column A of Table 2.6 shows a significant, positive association between NEN and discretionary accruals (t=5.87), and a significant, negative association between EN and discretionary accruals (t=-1.93). These results indicate that news coverage is significantly associated with earnings management, and the association is apparently differentiated by the type of news, supporting Hypothesis 2. Column B reports the regression results for firms with positive (income-increasing) discretionary accruals, and Column C provides the results for firms with negative (income-decreasing) discretionary accruals. The findings from Column B and Column C suggest that negative association between EN and discretionary accruals is more evident for firms with positive discretionary accruals (t=-2.63) than those with negative discretionary accruals (t=-0.19).
From Column D to F, I test Hypothesis 2 using a pooled regression. Consistent with Column A of Table 2.6, Column D report a significant, positive association between NEN and discretionary accruals (t=6.69). However, a negative association between EN and discretionary accruals is not statistically significant (t=-1.57). Results from Column E indicate that EN has a significant, negative association (t=-2.27), and NEN has a significant and positive association (t=3.32) with discretionary accruals for firms with income-increasing discretionary accruals. Results from firms with income-decreasing discretionary accruals (Column F) show that only NEN is significantly associated with discretionary accruals (t=5.87). A negative association between EN and discretionary accruals is more evident for firms with positive discretionary accruals (t=-2.27) than those with negative discretionary accruals (t=-0.02), a positive association is stronger for firms with negative discretionary (t=5.87) accruals than those with positive accruals (t=3.32).

In Table 2.7 I regress unexpected core earnings on EN and NEN. Consistent with the results using discretionary accruals, the results from Column A of Table 2.7 show a significant, positive association between NEN and unexpected core earnings (t=8.05), and a significant, negative association between EN and discretionary accruals (t=-3.14). The results also strongly support hypothesis 2. Column B and C of Table 2.7 present the regression results for firms with positive or negative unexpected core earnings. The findings from Column B and C of Table 2.7 suggest that positive (negative) association between NEN (EN) and unexpected core earnings is more profound for firms with positive unexpected core earnings (t=-2.57 for EN; t=7.33 for NEN) than those with negative unexpected core earnings (t=-1.70 for EN; t=3.34 for NEN).
Columns D through F report the regression results from a pooled regression. Column D also show that EN is significantly, negatively associated with unexpected core earnings \((t=-3.22)\), and NEN is significantly, positively associated with \((t=7.99)\). Consistent with the results from Column B and Column C of Table 2.7, the results from Column E and F suggest that positive (negative) association between NEN (EN) and unexpected core earnings is more evident for firms with positive unexpected core earnings \((t=-2.60 \text{ for EN}; \ t=7.07 \text{ for NEN})\) than those with negative unexpected core earnings \((t=-1.87 \text{ for EN}; \ t=3.76 \text{ for NEN})\). In addition, the findings in Table 2.6 and Table 2.7 indicate that the positive (negative) association between NEN (EN) and earnings management is stronger with unexpected core earnings \((t=-3.14, -3.22 \text{ for EN}; \ t=8.05, 7.99 \text{ for NEN})\) than with discretionary accruals \((t=-1.93, -1.57 \text{ for EN}; \ t=5.87, 6.69 \text{ for NEN})\).\(^8\)

With regard to control variables, as expected, the results indicate that the percentage of institutional holdings \((\text{InstHold})\) and firm size \((\text{Size})\) are negatively related to the magnitude of earnings management over all columns, implying that firms are less likely to engage in earnings management as firm size or institutional ownership increase. Larger firms or firms with a higher portion of institutional ownership are more likely to have better monitoring systems (e.g. high quality auditors and better analysts). In that environment, managers have fewer opportunities to engage in earnings management.

In the test of Hypothesis 2, multicollinearity is not a problem because independent variables’ sizes of VIF are far less than 5.

---

\(^8\) I find weaker but consistent results for tests of Hypothesis 1 and 2 when I conduct a firm-fixed-effect regression analysis.
2.4.4 Additional Analysis by Firm Size (Large firms vs. Small firms)

To examine the association between news coverage and earnings management by firm size, I rank firms in the sample based on the magnitude of firm size, as measured by the market value of common equity at the end of each firm’s fiscal year, and construct two groups by firm size. Large firms are in the top 50% group and small firms are in the bottom 50% group.

Table 2.8 presents the results of the association between news coverage and earnings management by firm size. This table shows the coefficient estimates, t-statistics and adjusted R-squares from a year-fixed-effect regression and a pooled regression.

Columns A through D of Table 2.8 show the results using discretionary accruals, as a proxy of earnings management. In Column A and Column B (year-fixed-effect regression), the results show that the positive (negative) association between NEN (EN) and discretionary accruals is stronger for large firms ($t=-3.55$ for EN; $t=4.12$ for NEN) than small firms ($t=0.04$ for EN; $t=1.98$ for NEN). The results are consistent when I use a pooled regression (Column C and D). Columns E through H of Table 2.8 report the results using unexpected core earnings, as a proxy of earnings management. The results from a year-fixed-effect regression (Column E and F) also indicate that a negative association of EN, and a positive association of NEN with unexpected core earnings are more significant for large firms ($t=-4.64$ for EN and $t=7.72$ for NEN) than small firms ($t=0.23$ for EN; $t=4.00$ for NEN). The results from a pooled regression (Column G and H) are in accord with findings from a year-fixed-effect regression (Column E and F), reporting that a negative association of EN, a positive association of NEN with unexpected core earnings are more significant for large firms ($t=-4.31$ for EN and $t=7.52$
for NEN) than small firms (t=0.03 for EN and t=4.23 for NEN). This finding suggests that the positive (negative) association between NEN (EN) and earnings management is more evident for larger firms. The results imply that managers in large firms react more strongly to news than managers in small firms.

Overall, the findings suggest that news coverage can play an important role in managers’ earnings management behavior. I find that news coverage is significantly associated with earnings management, and that the association of EN or NEN with earnings management appears to be different, implying that different types of news have distinct impacts on firms’ information environments and managers’ earnings management behavior. The results also show that a positive association of NEN, a negative association of EN with earnings management is more evident for large-size firms than small-size firms, and for firms engaging in income-increasing earnings management than for firms engaging in income-decreasing earnings management.

2.5 Conclusions

This study examines the role of news released in financial press as an information intermediary in explaining earnings management. To my knowledge, this is the first study that differentiates between the impact of EN and NEN on information asymmetry and earnings management. The results show that the intensity of news coverage has significant association with the magnitude of earnings management. More importantly, I find that EN, which reduces information asymmetry, is negatively associated with earnings management, whereas NEN, which increases information asymmetry, is positively associated with earnings management. The findings indicate that those
associations are more profound for firms engaging in income-increasing earnings management and for large-size firms.

This study has remarkable implications for the accounting literature in several ways. First, by classifying news released in the financial press into EN and NEN, I reconcile the conflicting findings from prior studies on the relationship between news coverage and information asymmetry (Frankel and Li 2004; Bushee et al. 2010). I find that NEN (NE) is positively (negatively) associated with information asymmetry, implying that the association is apparently distinct due to the characteristic of news: EN and NEN. My findings add empirical evidence to the literature that two different types of news affect firms’ information environment differently.

Second, this study extends Yu (2008) by focusing on news as an important information intermediary affecting corporate governance dynamics, and by showing evidence that news coverage is significantly associated with earnings management. This study expands Richardson (2000) by providing results showing that the different relationship of NEN (EN) with information asymmetry induces the contrasting associations between NEN (EN) and earnings management. I not only confirm his finding of the positive relationship between information asymmetry and earnings management, but also further examine whether NEN (EN), which increases (decreases) information asymmetry, has the distinct influence by their characteristics on earnings management.

Finally, this study helps market participants to improve their understanding of the role of news in the mechanism of corporate governance and in capital markets. This study re-visits the body of research investigating the role and the value of news released in the
financial press. The empirical evidence from this study indicates that different types of news have distinct impacts on firms’ information environments and earnings management behaviors. The findings imply that, although news plays a crucial role in the markets as an information intermediary, it does not always deliver benefits to market participants. Instead, it sometimes has a negative impact on the markets by increasing information asymmetry and inducing managers to engage in earnings management.
### 2.6 Tables for Chapter 2

#### Table 2.1
**News Subjects from LexisNexis Used to Classify Earnings-Related News**

<table>
<thead>
<tr>
<th>Terminology of News Subjects related to Earnings</th>
<th>News Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Financial Results</td>
<td>Company Earnings</td>
</tr>
<tr>
<td>Company Losses</td>
<td>Company Profits</td>
</tr>
<tr>
<td>Company Reports</td>
<td>Company Revenues</td>
</tr>
<tr>
<td>Earnings Per Share</td>
<td>Earnings Preannouncements</td>
</tr>
<tr>
<td>EBITDA</td>
<td>Financial Results</td>
</tr>
<tr>
<td>Interim Financial Results</td>
<td>Profit Warnings</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of observations</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Q1</th>
<th>Median</th>
<th>Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>DA</td>
<td>31157</td>
<td>0.0022</td>
<td>0.1779</td>
<td>-0.0616</td>
<td>0.0012</td>
<td>0.0614</td>
</tr>
<tr>
<td>Abs_DA</td>
<td>31157</td>
<td>0.1130</td>
<td>0.1630</td>
<td>0.0264</td>
<td>0.0615</td>
<td>0.1313</td>
</tr>
<tr>
<td>UXCE</td>
<td>31754</td>
<td>0.0301</td>
<td>2.0562</td>
<td>-0.1258</td>
<td>0.0011</td>
<td>0.1150</td>
</tr>
<tr>
<td>Abs_UXCE</td>
<td>31754</td>
<td>0.7796</td>
<td>2.4887</td>
<td>0.0328</td>
<td>0.1198</td>
<td>0.4765</td>
</tr>
<tr>
<td>EN</td>
<td>32177</td>
<td>0.1550</td>
<td>0.4175</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>NEN</td>
<td>32177</td>
<td>0.4304</td>
<td>0.6860</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.6931</td>
</tr>
<tr>
<td>IA_1</td>
<td>19717</td>
<td>0.1012</td>
<td>0.2523</td>
<td>0.0120</td>
<td>0.0278</td>
<td>0.0741</td>
</tr>
<tr>
<td>IA_2</td>
<td>22139</td>
<td>0.0060</td>
<td>0.0151</td>
<td>0.0006</td>
<td>0.0017</td>
<td>0.0046</td>
</tr>
<tr>
<td>Analyst</td>
<td>32177</td>
<td>1.1204</td>
<td>0.8385</td>
<td>0.6931</td>
<td>1.0986</td>
<td>1.7918</td>
</tr>
<tr>
<td>InstHold</td>
<td>32177</td>
<td>0.3455</td>
<td>0.2901</td>
<td>0.0715</td>
<td>0.2995</td>
<td>0.5798</td>
</tr>
<tr>
<td>RD</td>
<td>32177</td>
<td>0.1858</td>
<td>0.7448</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0900</td>
</tr>
<tr>
<td>Size</td>
<td>32130</td>
<td>5.3997</td>
<td>1.7947</td>
<td>4.1227</td>
<td>5.3051</td>
<td>6.5786</td>
</tr>
<tr>
<td>ROA</td>
<td>32119</td>
<td>-0.0397</td>
<td>0.2524</td>
<td>-0.0483</td>
<td>0.0321</td>
<td>0.0766</td>
</tr>
<tr>
<td>BtoM</td>
<td>32130</td>
<td>0.5814</td>
<td>0.6388</td>
<td>0.2470</td>
<td>0.4480</td>
<td>0.7432</td>
</tr>
<tr>
<td>Debt</td>
<td>32176</td>
<td>0.4626</td>
<td>0.2493</td>
<td>0.2592</td>
<td>0.4514</td>
<td>0.6343</td>
</tr>
</tbody>
</table>

Abs_DA: Absolute value of discretionary accruals estimated from the modified Jones model used as a proxy for earnings management
DA: Discretionary accruals estimated from the modified Jones model
Abs_UXCE: Absolute value of unexpected core earnings, used as a proxy for earnings management
UXCE: Unexpected core earnings, which are taken from the residual of the regression model in McVay (2006)
EN: Natural logarithm of one plus the number of news articles related to earnings released in the *Wall Street Journal* in the year t
NEN: Natural logarithm of one plus the number of news articles not related to earnings released in the *Wall Street Journal* in the year t
IA_1: Proxy for information asymmetry, measured by the dispersion among analysts’ forecast estimated from the standard deviation of analysts’ forecasts in the year t divided by absolute value of median forecast in the year t-1
IA_2: Proxy for information asymmetry, measured by the standard deviation of analysts’ forecasts in the year t divided by the stock price as of the forecast date
Analyst: Natural logarithm of one plus the number of analysts following a firm during the year t
InstHold: Proportion of stocks owned by institutions at the fiscal-year-end t
RD: R&D expenditure divided by sales at the fiscal-year-end t
Size: Natural logarithm of the market value of common equity for each firm at the fiscal-year-end t
ROA: Return on asset measured by net income divided by total assets at the fiscal-year-end t
BtoM: Book to market ratio measured by the book value of common equity divided by the market value of common equity at the fiscal-year-end t
Debt: Debt ratio measured by total liabilities divided by total assets of each firm at the fiscal-year-end t

All variables are winsorized by fiscal-year at the extreme 1 percent and 99 percent.
Table 2.3
Number of Firm-Years with Positive/Negative Discretionary Accruals and Unexpected Core Earnings

<table>
<thead>
<tr>
<th>Panel A: Discretionary accruals</th>
<th>Number of firm years</th>
</tr>
</thead>
<tbody>
<tr>
<td>All firms years not missing discretionary accruals</td>
<td>32,177 (100 %)</td>
</tr>
<tr>
<td>Firms years with positive discretionary accruals</td>
<td>15,791 (49.1 %)</td>
</tr>
<tr>
<td>Firms years with negative discretionary accruals</td>
<td>16,386 (50.9 %)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel B: Unexpected core earnings</th>
<th>Number of firm years</th>
</tr>
</thead>
<tbody>
<tr>
<td>All firms years not missing unexpected core earnings</td>
<td>32,177 (100 %)</td>
</tr>
<tr>
<td>Firms years with positive unexpected core earnings</td>
<td>16,056 (49.9 %)</td>
</tr>
<tr>
<td>Firms years with negative unexpected core earnings</td>
<td>16,121 (50.1 %)</td>
</tr>
</tbody>
</table>
Table 2.4
Number of Earnings-Related News (EN) and Non-Earnings-Related News (NEN) Articles by Fiscal Year

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Panel A</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Number of EN</td>
<td>704</td>
<td>813</td>
<td>1,006</td>
<td>1,001</td>
<td>1,180</td>
<td>1,180</td>
<td>1,062</td>
<td>1,153</td>
<td>870</td>
<td>838</td>
<td>820</td>
<td>10,627 (21.7%)</td>
</tr>
<tr>
<td>Panel B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Number of NEN</td>
<td>4,178</td>
<td>4,262</td>
<td>4,115</td>
<td>3,952</td>
<td>4,138</td>
<td>4,104</td>
<td>3,679</td>
<td>2,984</td>
<td>2,630</td>
<td>2,171</td>
<td>2,132</td>
<td>38,345 (78.3%)</td>
</tr>
<tr>
<td>Panel C</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total Number of News</td>
<td>4,882</td>
<td>5,075</td>
<td>5,121</td>
<td>4,953</td>
<td>5,318</td>
<td>5,284</td>
<td>4,741</td>
<td>4,137</td>
<td>3,500</td>
<td>3,009</td>
<td>2,952</td>
<td>48,972 (100%)</td>
</tr>
</tbody>
</table>
### Table 2.5

Regression Results for the Association between News Coverage and Information Asymmetry

\[ IA_{it} = \beta_0 + \beta_1 EN_{it} + \beta_2 NEN_{it} + \beta_3 Analyst_{it} + \beta_4 InstHold_{it} + \beta_5 RD_{it} + \beta_6 BtoM_{it} + \beta_7 Debt_{it} + \epsilon_{it} \]

<table>
<thead>
<tr>
<th></th>
<th>EN</th>
<th>NEN</th>
<th>Analyst</th>
<th>InstHold</th>
<th>RD</th>
<th>BtoM</th>
<th>Debt</th>
<th>Constant</th>
<th>Number of Observations</th>
<th>Adj R²</th>
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<tbody>
<tr>
<td><strong>Panel A</strong></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year-Fixed-Effect Regression</td>
<td><strong>IA_1</strong></td>
<td><strong>IA_2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-0.0141</td>
<td>0.0094</td>
<td>-0.0249</td>
<td>-0.0708</td>
<td>0.0089</td>
<td>0.0238</td>
<td>0.0458</td>
<td>0.1323</td>
<td>19,704</td>
<td>2.45%</td>
</tr>
<tr>
<td></td>
<td>(-3.00)**</td>
<td>(3.01)**</td>
<td>(-8.56)**</td>
<td>(-10.88)**</td>
<td>(3.34)**</td>
<td>(6.77)**</td>
<td>(5.88)**</td>
<td>(19.65)**</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Panel B</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pooled Regression</td>
<td><strong>IA_1</strong></td>
<td><strong>IA_2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-0.0151</td>
<td>0.0117</td>
<td>-0.0279</td>
<td>-0.0777</td>
<td>0.0075</td>
<td>0.0208</td>
<td>0.0444</td>
<td>0.1412</td>
<td>19,704</td>
<td>2.43%</td>
</tr>
<tr>
<td></td>
<td>-0.0007</td>
<td>0.0007</td>
<td>-0.0017</td>
<td>-0.0056</td>
<td>0.0021</td>
<td>0.0048</td>
<td>0.0102</td>
<td>0.0031</td>
<td>22,120</td>
<td>8.21%</td>
</tr>
<tr>
<td></td>
<td>(-2.60)**</td>
<td>(4.15)**</td>
<td>(-11.01)**</td>
<td>(-16.21)**</td>
<td>(15.08)**</td>
<td>(25.01)**</td>
<td>(24.21)**</td>
<td>(9.33)**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Numbers in parentheses are t-values of the coefficients.

Dependent variables in each panel are proxies of the level of information asymmetry.

**IA_1**: Proxy for Information asymmetry, which is the dispersion among analysts’ forecasts measured as the standard deviation of analysts’ forecasts in the year t divided by absolute value of media forecast in the year t-1

**IA_2**: Proxy for information asymmetry, measured by the standard deviation of analysts’ forecasts in the year t divided by the stock price as of the forecast date

**EN**: Natural logarithm of one plus the number of news articles related to earnings from the Wall Street Journal in the year t

**NEN**: Natural logarithm of one plus the number of news articles not related to earnings from the Wall Street Journal in the year t

**Analyst**: Natural logarithm of one plus the number of articles following a firm during the year t

**InstHold**: Proportion of stocks owned by institutions at the fiscal-year-end t

**RD**: R&D expenditure divided by sales at the fiscal-year-end t

**BtoM**: Book to market ratio measured by the book value of common equity divided by the market value of common equity at the fiscal-year-end t

**Debt**: Debt ratio measured by total liabilities divided by total assets of each firm at the fiscal-year-end t

*** Significant at the 1% confidence level

** Significant at the 5% confidence level

* Significant at the 10% confidence level

# The size of VIF for EN, NEN, Analyst, InstHold, RD, BtoM, and Debt is 1.72, 1.78, 1.30, 1.09, 1.05, 1.04, and 1.09 respectively.
Table 2.6
Regression Results for the Association between News Coverage and Earnings Management
(Dependent variable: Discretionary Accruals)

EM = β₀ + β₁ENᵢₜ + β₂NENᵢₜ + β₃InstHoldᵢₜ + β₄Sizeᵢₜ + β₅ROAᵢₑ₋₁ + β₆Dispᵢₜ + β₇BtoMᵢₜ + β₈Debtᵢₜ + εᵢₜ

<table>
<thead>
<tr>
<th></th>
<th>Year-Fixed-Effect Regression</th>
<th></th>
<th></th>
<th></th>
<th>Pooled Regression#</th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Column A</td>
<td>Column B</td>
<td>Column C</td>
<td>Column D</td>
<td>Column E</td>
<td>Column F</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>All Firms</td>
<td>Positive DA</td>
<td>Negative DA</td>
<td>All Firms</td>
<td>Positive DA</td>
<td>Negative DA</td>
<td></td>
<td></td>
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<tr>
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<td>-0.0082</td>
<td>-0.0006</td>
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<td>-0.0072</td>
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<tr>
<td></td>
<td>(-1.93)**</td>
<td>(-2.63)**</td>
<td>(-0.19)</td>
<td>(-1.57)</td>
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<td>0.0061</td>
<td>0.0118</td>
<td>0.0103</td>
<td>0.0071</td>
<td>0.0130</td>
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<td></td>
<td>(5.87)**</td>
<td>(2.85)**</td>
<td>(5.25)**</td>
<td>(6.69)**</td>
<td>(3.32)**</td>
<td>(5.87)**</td>
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<tr>
<td>InstHold</td>
<td>-0.0112</td>
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<td>-0.0182</td>
<td>-0.0151</td>
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<tr>
<td></td>
<td>(-3.48)**</td>
<td>(-1.99)**</td>
<td>(-2.82)**</td>
<td>(-5.78)**</td>
<td>(-3.56)**</td>
<td>(-4.50)**</td>
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<tr>
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<td>(-5.44)**</td>
<td>(-6.48)**</td>
<td>(-9.98)**</td>
<td>(-7.09)**</td>
<td>(-6.66)**</td>
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<td>-0.0055</td>
<td>-0.0745</td>
<td>-0.0383</td>
<td>0.0033</td>
<td>-0.0690</td>
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<td></td>
<td>(-9.32)**</td>
<td>(-0.75)**</td>
<td>(-11.20)**</td>
<td>(-7.90)**</td>
<td>(0.45)</td>
<td>(-10.63)**</td>
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<td></td>
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<td>Disp</td>
<td>0.0115</td>
<td>0.0036</td>
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<td>0.0123</td>
<td>0.0044</td>
<td>0.0180</td>
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<td>(3.35)**</td>
<td>(0.68)**</td>
<td>(3.78)**</td>
<td>(3.53)**</td>
<td>(0.83)</td>
<td>(3.92)**</td>
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<td>-0.0166</td>
<td>-0.0188</td>
<td>-0.0211</td>
<td>-0.0154</td>
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<td>Debt</td>
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<td>-0.0205</td>
<td>-0.0164</td>
<td>-0.0140</td>
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<td>(-5.37)**</td>
<td>(-3.52)**</td>
<td>(-3.92)**</td>
<td>(-4.41)**</td>
<td>(-2.66)**</td>
<td>(-3.37)**</td>
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<tr>
<td>Constant</td>
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<td>0.1432</td>
<td>0.1513</td>
<td>0.1551</td>
<td>0.1541</td>
<td>0.1522</td>
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<td></td>
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<tr>
<td></td>
<td>(30.06)**</td>
<td>(20.75)**</td>
<td>(21.18)**</td>
<td>(32.25)**</td>
<td>(23.08)**</td>
<td>(21.93)**</td>
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</tr>
</tbody>
</table>

Number of observations 19,022 9,704 9,318 19,022 9,704 9,318
Adj R² 2.23% 1.55% 3.64% 2.24% 1.54% 3.61%

Numbers in parentheses are t-values of the coefficients.

Dependent variable in each panel is the absolute value of the discretionary accruals derived from the modified Jones model (Dechow et al. 1995)

EN: Natural logarithm of one plus the number of news articles related to earnings from the Wall Street Journal in the year t
NEN: Natural logarithm of one plus the number news articles not related to earnings from the Wall Street Journal in the year t
InstHold: Proportion of stocks owned by institutions at the fiscal-year-end t
Size: Natural logarithm of the market value of common equity for each firm at the fiscal-year-end t
ROA: Return on asset measured by net income divided by total assets at the fiscal-year-end t
Disp: Dispersion among analysts’ forecasts measured as the standard deviation of analysts’ forecasts in the year t divided by absolute value of median forecast in the year t-1
BtoM: Book-to-market ratio measured by the book value of common equity divided by the market value of common equity at the fiscal-year-end t
Debt: Debt ratio measured by total liabilities divided by total assets of each firm at the fiscal-year-end t
*** Significant at the 1% confidence level
** Significant at the 5% confidence level
* Significant at the 10% confidence level
# The size of VIF for EN, NEN, InstHold, Size, ROA, Disp, BtoM, and Debt is 1.75, 1.88, 1.17, 1.91, 1.06, 1.05, 1.17 and 1.06 respectively.
Table 2.7
Regression Results for the Association between News Coverage and Earnings Management
(Dependent variable: Unexpected Core Earnings)

\[ EM_{it} = \beta_0 + \beta_1 EN_{it} + \beta_2 NEN_{it} + \beta_3 InstHold_{it} + \beta_4 Size_{it} + \beta_5 ROA_{it-1} + \beta_6 Disp_{it} + \beta_7 BtoM_{it} + \beta_8 Debt_{it} + \epsilon_{it} \]

<table>
<thead>
<tr>
<th>Year-Fixed-Effect Regression</th>
<th>Pooled Regression*</th>
<th>(Dependent variable: Unexpected Core Earnings)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Column A</td>
<td>Column B</td>
</tr>
<tr>
<td></td>
<td>All Firms</td>
<td>Positive DA</td>
</tr>
<tr>
<td>( EN )</td>
<td>-0.1176</td>
<td>-0.1409</td>
</tr>
<tr>
<td></td>
<td>(-3.14)***</td>
<td>(-2.57)***</td>
</tr>
<tr>
<td>( NEN )</td>
<td>0.2078</td>
<td>0.2811</td>
</tr>
<tr>
<td></td>
<td>(8.05)***</td>
<td>(7.33)***</td>
</tr>
<tr>
<td>( InstHold )</td>
<td>-0.2246</td>
<td>-0.3265</td>
</tr>
<tr>
<td></td>
<td>(-4.23)***</td>
<td>(-4.07)***</td>
</tr>
<tr>
<td>( Size )</td>
<td>-0.0412</td>
<td>-0.0645</td>
</tr>
<tr>
<td></td>
<td>(-3.31)***</td>
<td>(-3.44)***</td>
</tr>
<tr>
<td>( ROA )</td>
<td>-3.1452</td>
<td>-4.0063</td>
</tr>
<tr>
<td></td>
<td>(-37.72)***</td>
<td>(-29.26)***</td>
</tr>
<tr>
<td>( Disp )</td>
<td>0.1672</td>
<td>0.1051</td>
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<tr>
<td></td>
<td>(2.92)***</td>
<td>(1.25)</td>
</tr>
<tr>
<td>( BtoM )</td>
<td>-0.0670</td>
<td>-0.0125</td>
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<tr>
<td></td>
<td>(-2.25)**</td>
<td>(-0.28)</td>
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<tr>
<td>( Debt )</td>
<td>-1.3860</td>
<td>-1.5226</td>
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<tr>
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<td>(-22.70)***</td>
<td>(-16.52)***</td>
</tr>
<tr>
<td>( Constant )</td>
<td>1.5927</td>
<td>1.8505</td>
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<tr>
<td></td>
<td>(19.44)***</td>
<td>(14.78)***</td>
</tr>
</tbody>
</table>

Number of observations: 19,588
Adj R²: 10.34% 11.52% 10.19% 10.34% 11.51% 10.16%

Numbers in parentheses are t-values of the coefficients.

Dependent variable in each panel is the absolute value of unexpected core earnings, which is a proxy for earnings management from McVay (2006).

\( EN \): Natural logarithm of one plus the number of news articles related to earnings from the Wall Street Journal in the year \( t \)

\( NEN \): Natural logarithm of one plus the number news articles not related to earnings from the Wall Street Journal in the year \( t \)

\( InstHold \): Proportion of stocks owned by institutions at the fiscal-year-end \( t \)

\( Size \): Natural logarithm of the market value of common equity for each firm at the fiscal-year-end \( t \)

\( ROA \): Return on asset measured by net income divided by total assets at the fiscal-year-end \( t \)

\( Disp \): Dispersion among analysts’ forecasts measured as the standard deviation of analysts’ forecasts in the year \( t \) divided by absolute value of median forecast in the year \( t-1 \)

\( BtoM \): Book to market ratio measured by the book value of common equity divided by the market value of common equity at the fiscal-year-end \( t \)

\( Debt \): Debt ratio measured by total liabilities divided by total assets of each firm at the fiscal-year-end \( t \)

*** Significant at the 1% confidence level
** Significant at the 5% confidence level
* Significant at the 10% confidence level

# The size of VIF for \( EN, NEN, InstHold, Size, ROA, Disp, BtoM, \) and \( Debt \) is 1.76, 1.89, 1.16, 1.89, 1.06, 1.05, 1.17 and 1.06 respectively.
Table 2.8
Regression Results for the Association between News Coverage and Earnings Management by Firm Size

\[ EM_t = \beta_0 + \beta_1 EN_{t-1} + \beta_2 NEN_{t-1} + \beta_3 InstHold_{t-1} + \beta_4 ROA_{t-1} + \beta_5 Disp_{t-1} + \beta_6 BtoM_{t-1} + \beta_7 Debt_{t-1} + \epsilon_t \]

<table>
<thead>
<tr>
<th>Discretionary Accruals</th>
<th>Unexpected Core Earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Column A</strong></td>
<td><strong>Column B</strong></td>
</tr>
<tr>
<td><strong>Large Firms</strong></td>
<td><strong>Small Firms</strong></td>
</tr>
<tr>
<td><strong>EN</strong></td>
<td>-0.0084</td>
</tr>
<tr>
<td></td>
<td>(-3.55)**</td>
</tr>
<tr>
<td><strong>NEN</strong></td>
<td>0.0067</td>
</tr>
<tr>
<td></td>
<td>(4.12)**</td>
</tr>
<tr>
<td><strong>InstHold</strong></td>
<td>-0.0111</td>
</tr>
<tr>
<td></td>
<td>(-3.06)**</td>
</tr>
<tr>
<td><strong>ROA</strong></td>
<td>-0.0549</td>
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<tr>
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<td>(-8.07)**</td>
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<tr>
<td><strong>Disp</strong></td>
<td>0.0173</td>
</tr>
<tr>
<td></td>
<td>(3.46)**</td>
</tr>
<tr>
<td><strong>BtoM</strong></td>
<td>-0.0255</td>
</tr>
<tr>
<td></td>
<td>(-8.30)**</td>
</tr>
<tr>
<td><strong>Debt</strong></td>
<td>-0.0459</td>
</tr>
<tr>
<td></td>
<td>(-10.06)**</td>
</tr>
<tr>
<td><strong>Constant</strong></td>
<td>0.1215</td>
</tr>
<tr>
<td></td>
<td>(35.29)**</td>
</tr>
</tbody>
</table>

Number of observations: 12,729, 6,293, 12,729, 6,293, 13,200, 6,388, 13,200, 6,388

Adj R²: 2.23%, 2.19%, 2.28%, 2.15%, 10.99%, 8.78%, 10.95%, 8.94%

Numbers in parentheses are t-values of the coefficients. Dependent variable in each panel is 1) the absolute value of the discretionary accruals derived from the Modified Jones Model (Dechow et al. 1995) and 2) the absolute value of unexpected core earnings which is a proxy for Earnings Management from McVay (2006).

EN: Natural logarithm of one plus the number of news articles related to earnings from the Wall Street Journal in the year t
NEN: Natural logarithm of one plus the number of news articles not related to earnings from the Wall Street Journal in the year t
InstHold: Proportion of stocks owned by institutions at the fiscal-year-end t
ROA: Return on asset measured by net income divided by total assets at the fiscal-year-end t
Disp: Dispersion among analysts’ forecasts measured as the standard deviation of analysts’ forecasts in the year t divided by absolute value of median forecast in the year t-1
BtoM: Book to market ratio measured by the book value of common stock divided by the market value of common equity at the fiscal-year-end t
Debt: Debt ratio measured by total liabilities divided by total assets of each firm at the fiscal-year-end t

***: Significant at the 1% confidence level **: Significant at the 5% confidence level *: Significant at the 10% confidence level
2.7 Figures for Chapter 2

Figure 2.1
News Collection Period

News collection period for each firm-year (10 months)

Fiscal-Year-End Date
Figure 2.2
Number of Earnings-Related News and Non-Earnings-Related News Articles by Fiscal Year
2.8 Appendix

2.8.1 Examples of Abstracts from Earnings-related News (EN)

1999-04-22
“IBM beats analysts' expectations by nearly 10% margin with first-quarter net income of $.47 billion, up 42% from $1.3 billion a year earlier, on revenue up 15% to $20.32 billion”

2000-10-19
“Sun Microsystems Inc. reports net income of $510 million for fiscal first quarter ended Oct 1, up 88% from $271 million a year earlier; trading in Sun shares is suspended after headline on Sun Web site inadvertently breaks news ahead of schedule”

2001-10-25
“Honeywell International Inc. reports third quarter net loss of $308 million after a pretax charge of $1.01 billion; sales fell 6.9% to $5.79 billion”

2002-06-28
“General Electric Co. says it expects to earn 44 cents a share, or $4.4 billion, in the second quarter, meeting analyst expectations”

2002-08-21
“General Motors Corp says it expects to meet annual earnings-per-share target of $10 by mid-decade, despite rising pension costs”

2002-12-19
“Oracle Corp reports fiscal first-quarter net income of $534.9 million as revenue fell 3% to $2.31 billion”

2003-01-17
“Sun Microsystems Inc. announces fiscal second quarter net loss of $2.3 billion as revenue fell 6.2% to $2.92 billion”

2003-04-16
“Microsoft Corp reports strong first-quarter earnings of $2.79 billion for fiscal third quarter, up from $2.74 billion year earlier; new licensing program is cited in gain for net”

2003-05-16
“Dell Computer Corp reports net income of $598 million for fiscal first quarter ended May 2, up 31% from $457 million a year earlier, despite slack industry demand”

2004-01-30
“Exxon Mobil Corp reports fourth-quarter net income of $6.65 billion, including $2.23 billion tax-related gain, up 63% from year-earlier profit of $4.09 billion; revenue rose 17% to $65.95 billion from $56.21 billion”

2.8.2 Examples of Abstracts from Non-Earnings-related News (NEN)

1993-04-09
“Two top executives at Synergen Inc, president and chief executive Jon S. Saxe and vice president of clinical research, Michael A. Catalano resign in wake of disappointing clinical trial results of a major new drug; chairman Larry Stoll will assume CEO position

1996-03-20
“General Motors Corp is slipping behind in antilock-brake technology; powerful rivals with global reach have caught up with GM's brakes and are offering less expensive, more innovative systems; rapid loss of GM's development and pricing edge in antilock-brake system, or ABS, is a big reason for two-week-old strike at two of company's brake-parts plants in Ohio”

1996-05-30
“Texas Instruments Inc's president, chairman and chief executive officer Jerry Junkins dies after suffering heart attack while on a drive through Stuttgart, Germany, where he had been visiting customers; death of physically fit 58-year-old, who had no history of heart ailments, shocks Texas Instruments and forces it to deal with question about succession that it thought it would not have to answer for years; company is expected to announce that vice chairman William P 'Pat' Weber will become interim chairman; Weber and other vice chairman, William B Mitchell, will run the company on a daily basis”

1996-07-03
“Mobil Corp announces plan to spend $500 million to help develop oil and gas deposits in Norwegian Sea”

1997-01-08
“Atlantic Southeast Airlines plans to buy 30 of Bombardier Inc's Canadair Regional Jet aircraft for total of $600 million, largest single order yet for the 50-passenger jet; plans to acquire option for 60 more jets”

1999-02-17
“Delta Air Lines agrees to acquire 72% of ASA Holdings Inc is does not already own for about $700 million; ASA's Atlantic Southeast Airlines feeds Delta hubs in Atlanta (Ga) and Dallas (Tex) and has been plagued by frequent delays and cancellations”

2000-12-05
“Sun Microsystems Inc. announces plans to acquire HighGround Systems Inc a closely held maker of software that manages data across storage systems, for $400 million in stock”

2002-07-18
“Apple Computer Inc. introduces iPod digital-music player that works with Microsoft Corp's Windows operating system as well as Apple's Macintosh”

2002-12-18
“General Electric Co's asset-management arm is planning to shut down five of its 35 mutual funds, giving investors the choice of taking their money back or moving it into another GE fund; the five funds together had about $86 million in assets”

2003-09-18
“In another move to reshape its executive-compensation and corporate-governance policies, General Electric Co. says it will no longer grant CEO Jeffrey Immelt either stock options or restricted stock; instead, GE will tie most of his pay to a new type of stock award that requires him to meet specific performance targets; under the plan, which could set a precedent for other corporations, Immelt has been granted 250,000 'performance share units,' which can eventually turn into stock shares”

2003-10-21
“Microsoft Corp is set for the October 21 release of Office System 2003, the latest version of its popular Office business-productivity software; the release illustrates the hurdles facing Microsoft in expanding its software empire; a key problem is that many customers do not use a vast array of features in Office and see little need for a new version; world-wide, Microsoft estimates that about 400 million people use Office; the new version will be the 11th”

2003-11-17
“Gillette Co. announces $20 million-a-year marketing deal with Nascar and six top drivers, who will be known as the Gillette Young Guns”

2004-10-21
“Clear Channel Communications Inc. names Mark P Mays president and CEO, succeeding his father, L Lowry Mays”

2005-01-12
“Microsoft Corp CFO John Connors is leaving to join venture-capital firm Ignition Partners”
Bibliography


Curriculum Vita

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January 2002 – May 2004 Teaching Assistant, Sogang University, South Korea
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December 2005 M.P.A. Accounting, Indiana University, Bloomington, IN
Fall 2007 Teaching Assistant, Rutgers University, Newark, NJ
Fall 2009 Instructor, Rutgers University, Newark, NJ
January 2008 – May 2011 Research Assistant, Rutgers University, Newark, NJ
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Chair: Professor Dan Palmon