

Earnings Management: Do large investors care?

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Abstract

Institutional investors seem to be able to detect the existence and decipher the direction of corporate earnings management efforts before the public release of earnings information. The finding is based on a study of US corporate financial statement reports and quarterly institutional investor ownership information between 1990 and 2000. Corporate efforts to manage earnings are responsible for the corporate meltdown occurring over the last few years. As the investment community seeks answers to what might have been overlooked in firms' financial statements, little is known about institutional investors' ability to discern earnings abuses.

I. Introduction

Until recently, the investment community has traditionally perceived that, once externally audited, a firm's financial statements provide information that can be relied upon and are thus useful in evaluating the firm's current and future financial prospects. This belief, along with investor confidence in general, has been steadily diminishing in conjunction with recent high profile accounting failures. WorldCom, Enron, Tyco, and Global Crossing are names that a decade ago symbolized all the wealth, security, and prestige representing corporate America. Today, they conjure up a completely different vision; one of accountants slaving over a hot stove "cooking the books." The idea of companies managing/manipulating their reported earnings was counter-intuitive to the average man-on-the-street. After all, an objective third party audited the financial statements, so they could be relied upon to make investment decisions. However, management's use of "income smoothing" to meet performance expectations is now better understood by the public at large. Interestingly, it appears that these smoothing efforts may have been transparent to institutional investors for some time.

Incidentally, pressure on corporate managers to match or exceed expected quarterly earnings especially from institutional investors is widely documented and remains unabated. [See Bushee (1998, 2001), Jiambalvo, Rajgopal, and Venkatachalam (2002), and Balsam, Bartov and Marquardt (2002).] In a recent survey of corporate executives by Graham, Harvey and Rajgopal (2004), found that the "preference to smooth earnings is so strong that 78% of the surveyed executives would give up economic value in exchange for smooth earnings." In spite of this, still on investors' minds are the past failures of WorldCom (now MCI), Enron, and Tyco reminding them of the need to cautiously peer through firms' financial statements.

II. Earnings Management

Healy and Wahlen (1999) provide a more explicit definition of earnings management. They state that 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.” The efforts by management could result in increased reported earnings (also called earnings inflation) or in decreased reported earnings depending on the motives of management.

Earnings abuses, hence, result when managers sometimes in collaboration with the firms’ external auditors undermine the allowable discretion in financial reporting. For instance, accruals management, which encompasses judgments allowed within the scope of generally accepted accounting principles (GAAP), does not necessarily fall into the category of fraudulent reporting. The discretion allowed is necessary to enable managers to make accounting choices that best represent their firms’ economic resource opportunities. [See Healy and Wahlen (1999).] Fraudulent reporting, however, results from corporate maneuvers using accruals management to evolve desirable earnings that are eventually reported to the public.

While evidence indicates that earnings management appears to mislead investors in the short run, both academic research and anecdotal evidence indicate that the market eventually punishes managers who provide misleading earnings information. Academic evidence includes Moeller (2000), who examines firms reporting high discretionary current accruals¹. He determines that these firms exhibit high returns both before and during the period of the high accruals, followed by low returns during the subsequent period. Teoh, Welch and Wong (1998) report similar results for firms making initial public stock offerings (IPOs), in that IPO firms reporting income-increasing discretionary accruals at the time of their initial offer subsequently exhibit long-term stock price reversals.

Anecdotal evidence of market sanctions includes the one-day loss of over \$14 billion in market capitalization for the Cendant Company following their admission that they had misstated their financial statements between 1995 and 1997. [See Bryant (1998).] The collapse of Enron and the bankruptcy filing of WorldCom also reaffirm the intolerance of investors to the discovery of accounting malfeasance. WorldCom’s earnings were inflated by the capitalizing of operating expenses resulting into a boost in the firm’s earnings of about \$11 billion.

Finally, regulatory agencies have also expressed concern over the potential for earnings management to mislead investors. A speech by the former chair of the SEC, Arthur Levitt (1998), included a discussion of the potential for earnings management to damage both the quality of earnings themselves and of the overall financial markets. Following the highly publicized accounting scandals in 2002, President Bush, the Congress, and the Senate have been more vocal than ever regarding issues of accounting manipulation. Proposed solutions to the current financial reporting problems include measures to increase the culpability of CEOs found guilty of defrauding shareholders, along with demands for increased regulation of the accounting profession and changes in the methods of compensation for financial analysts. These proposals have initiated ongoing debates between individuals advocating the need for new and more stringent accounting standards versus those who believe the current reporting problems are due to lax enforcement of existing standards rather than the inadequacy of the standards themselves.

¹ Discretionary current accruals (referred to as DCAs in the paper) are the primary proxy used for measuring earnings management in empirical work. A discussion of how the discretionary current accruals used in this paper are obtained is included in Appendix 1.

The Sarbanes-Oxley Act of 2002, for instance, provides legislation that sets the platform for current corporate internal monitoring and compliance.

Two universal behavioral characteristics can be said to underlie and reinforce the practice of earnings management. First, from the capital markets standpoint, the investment community, consisting primarily of analysts, institutional, and individual investors are fixated on firms' abilities to match or exceed earnings milestones on a quarterly basis. A penalty or reward follows released earnings manifested in stock price changes, making for a losers and winners capital markets game. The earnings-results mania by investors has been characterized as having a short-term focus inherently undermining shareholders' primary goal of wealth maximization. [See Bushee (1998) and (2001).] Needless to say, the investment community's fixation on earnings is overbearing and leads to the next behavioral trait.

Second, from the corporate governance perspective, corporate managers see their firms as being under intense pressure to meet earnings expectations. Failure to meet earnings forecasts jeopardizes their tenure with the firm. Ideally, managers are agents of the firm's owners. Their stated objective is to create wealth for the firm's owners. However, managers have incentives to act in their own self-interest, frequently referred to as opportunistic behavior. This acting in one's self-interest can encourage managers to smooth or even manipulate earnings (e.g., WorldCom).

Thus far, it has not been very clear how well the investment community can catch on to earnings management, if at all they can. Especially important is evidence regarding their ability to decipher the direction of earnings management efforts by corporate managers before earnings information becomes public.

III. Hypotheses Development

As mentioned in the previous section, recent earnings management literature indicates that managers may be able to mislead investors, at least in the short term. Whether this is true for the majority of investors, or only for certain subgroups of investors, has not yet been determined. According to Lev (1988), capital market information is asymmetric in that some types of investors are better informed than others. Thus, it is logical to assume that some investor groups are more likely than others to be able to understand and undo managers' cosmetic accounting choices. In order to increase the likelihood of capturing investor behavior related to earnings management, it is necessary to examine only those investors most likely to have this ability.

Generally, institutional investors are considered sophisticated investors who are better informed than individuals and have high incentives to monitor their existing and potential investments. They also have the ability and resources to access, gather, assimilate and use more information in decision making than individual investors. They hire, train and maintain sophisticated security analysts on a full-time basis and spend vast amounts of money on equipment, data and other research support to facilitate investment decisions.

In addition, corporations generally prefer institutional over individual ownership and 'woo' institutional investors through their investor-relations information and analyst conferences.

According to a spokesperson from the Meredith Corporation, a media and publishing company based in Des Moines, Iowa, targeting individual shareholders requires more resources than the firm considers worthwhile. Meredith also finds it expensive and time consuming to manage odd lots of less than one hundred shares². Along the same lines, Parrino, Sias, and Starks (2002) relate that corporate boards, in general, are interested in their shareholder composition, as evidenced by the hiring of consultants to monitor significant shifts in composition and to assist firms in attracting their desired type of institutional investor.

In sum, institutional investors have access to significant resources that can be used to evaluate firms, are sufficiently sophisticated to interpret firm disclosures, and are likely to have their business actively courted by firms. Therefore, institutional investors make up a subgroup of the overall market that is likely to identify earnings management on a timely basis and thus, adjust their investments accordingly.

We test whether a relationship exists between changes in the number of institutional owners of firms and the firms' earnings management during the fourth quarter of the year in which the earnings management is observed. As such, following Hartzell and Starks (2003), we assume that institutional investors have both the ability and the incentive to monitor the activities of managers and through this monitoring, are able to infer firms' earnings management during the period in which it occurs.

Earnings management has been examined non-directionally in studies of its association with institutional investor ownership in recent studies. Specifically, most studies have aggregated discretionary current accruals even though the effects of managed accruals could be either income-increasing or income-decreasing. Much as earnings news may affect the "direction and magnitude of firms earnings management" as noted by Abarbanell and Lehavy (2003), we believe that the direction earnings are managed is interesting for ownership by institutional investors and needs to be explored. Moreover, given that institutional investors are considered relatively sophisticated and hence may be better informed, as found in O'Brien and Bhushan (1990) and Walther (1997), we assess their ability to decipher corporate earnings management activity before earnings are reported.

Our findings are reviewed in light of the capital market implications of high and low accruals management before and after earnings management as documented in Moeller (2000). He found that firms exhibiting high discretionary current accruals experience high returns both before and during the high accruals period followed by low returns during subsequent periods and vice versa for firms exhibiting low discretionary accruals. Effectively, this study provides evidence regarding the behavior of one group of investors during, and subsequent to, years in which firms appear to engage in earnings management.

The first hypothesis relates to firms that manage earnings upward. As the portion of income due to earnings management is merely cosmetic and will eventually reverse, it is likely that positive earnings management efforts signal lower future earnings rather than an increase in the

² Meredith Corporation reaches these groups of investors through sell-side analysts since the analysts share their research with several brokerage firms.

underlying value of the firm. Therefore, it is expected that sophisticated investors look unfavorably upon firms managing their earnings upward. This leads to Hypothesis 1a.

Hypothesis 1a

The change in the level of a firm's institutional ownership during the fourth quarter of the years in which the firm employs positive earnings management is negatively related to the magnitude of the earnings management.

In addition to using earnings management to artificially increase income, the reverse is also true. The phenomenon frequently referred to as 'big bath' accounting, involves managers taking large discretionary charges in years in which earnings are already depressed. This not only allows managers to clean up their financial statements in the period of the write-offs, but should also result in earnings increases in subsequent years due to decreased depreciation, etc. Thus, sophisticated investors may interpret downward earnings management as a signal of positive future results and look favorably upon these firms. Conversely, evidence provided by Fried, Schiff, and Sondhi (1989) indicates that firms frequently follow write-downs in one year with additional write-downs in subsequent years. It is also possible, therefore, that sophisticated investors may interpret downward earnings management as a signal of future earning declines, thus leading to negative impressions of these firms.

In summary, it is likely that sophisticated investors can look upon negative earnings management either favorably or unfavorably. Thus, while we expect a relationship between the changes in institutional ownership and the magnitude of negative earnings management, we make no directional predictions regarding relationship. This leads to Hypothesis 1b.

Hypothesis 1b

The change in the level of a firm's institutional ownership during the fourth quarter of the years in which the firm employs negative earnings management is related to the magnitude of the earnings management.

It is possible, however, that even sophisticated investors may not be able to undo earnings management at the time when it occurs. Although they are assumed to possess the skills and information to undo reported earnings manipulations, this may not necessarily translate to their having the ability to foresee earnings management prior to the release of public earnings information. Even if institutional investors were able to infer the existence of earnings management at an early date, they may not be able to determine the full extent of the earnings management until additional information becomes publicly available. This scenario is consistent with that reported by Kim, Krinsky and Lee (1997), in which the authors find a higher volume of trading by institutional (as opposed to individual) investors around the arrival of new earnings information.

Changes in firms' institutional ownership during the first quarter of the year following that in which the earnings management is observed, therefore, is also examined. We do not make directional predictions regarding the relationship between changes in institutional ownership and

the magnitude of the prior period's earnings management during this time period based on the following rationale. If institutional investors are unable to undo firms' earnings management in a given year until the first quarter of the subsequent year, the same directional relationships stated for hypotheses 1a and 1b are likely. Conversely, if institutional investors respond to the existence of earnings management in the period in which it occurs, the direction of their ownership change in the subsequent period is dependent upon their prior quarter's change of ownership. Specifically, if institutional investors initially overestimated the level of earnings management, they may partially reverse their prior period decisions and vice versa. This leads to Hypothesis 2.

Hypothesis 2

The change in a firm's institutional ownership during the first quarter of the year subsequent to that in which the firm employs either positive or negative earnings management is related to the magnitude of the earnings management.

Although Hypothesis 2 is non-directional, we do evaluate income-increasing and income-decreasing earnings management samples separately, for the reasons stated previously. The next section of the paper provides a description of the data and empirical methodology. A discussion of results and conclusion follow thereafter.

IV. Data and Methods

Sample firms are generated by merging the relevant institutional ownership data with data derived from firms' financial statements for the period 1990-2000. The period over which our study is conducted (1990-2000) is ideal given that the number of confounding effects were relatively minimal during that period compared with the years after 2000. The period after 2000 is characterized by a host of corporate scandals, an economic recession, the destruction of the World Trade Center in New York and the associated fears of terrorism, the weakening of the dollar, and several other significant macro-economic forces all which may compromise the ability to detect and examine institutional investors' ownership behavior with respect to earnings managements.

Financial statements data are compiled from Compustat's Research Insight. The data is used in the computation of earnings management measure; discretionary current accruals (DCA) using a procedure explained in Appendix 1. Data are partitioned into five groups (quintiles) based on their level of DCA. Only the bottom (quintile 1), middle (quintile 3), and top (quintile 5) quintiles are used in the study. The quintile that consists of firms that exhibit large positive discretionary current accruals (quintile 5) is referred to in the study as the income-increasing sample. The quintile that consists of firms that exhibit large negative discretionary current accruals (quintile 1) is referred to in the study as the income-decreasing sample. The middle quintile (quintile 3) is designated the control sample consisting of firms with DCAs close to zero³. By using extreme DCA quintiles (top and bottom), small changes in discretionary accruals

³ Since the quintiles are DCA-based, not all of a given firm's observations will be in a single quintile. Further, a test of the equality between the DCAs of income-increasing and income-decreasing quintiles was rejected at the 1% level of significance.

(quintiles 2 and 4) are eliminated since they may arise from normal accruals process and are not true indicators of actual earnings management.

Institutional ownership data are obtained from CDA Investment Technologies Inc., which compiles 13(f) filings, by institutional investors. All institutional investors with holdings over \$100 million in equities are required to file quarterly 13(f) forms, disclosing their equity holdings to the Securities and Exchange Commission (SEC) in accordance with the institutional disclosure program mandated by the Securities and Exchange Act of 1934⁴. The quarterly filing information provides the raw number of institutional investors holding a firm's stock at the end of each quarter.

Overall, the merged data had 23,182 observations over all quintiles. Missing data for some variables in the merged data, however, causes slight variation in the sample sizes reported for the three quintiles used in the analyses. Table 1 provides summary means for the three quintiles. Firms in the income-increasing and income-decreasing accrual samples, on average, tend to be relatively smaller than firms in the control sample with an average capitalization of \$774.34 million and \$829.46 million for the income-decreasing and income-increasing samples, respectively, versus \$2,141.93 million for the control sample. Effectively, earnings management appears to be an inverse function of firm size⁵. Interestingly, changes in the number of institutional investors are greater in the quarter preceding firms' years-end than after.

Consistent with extant institutional ownership studies such as Sias, Starks, and Titman (2001), the change in the level institutional ownership for a given firm is computed as the difference between the number of institutional investors over two quarters. Letting t denote the last quarter of a given year over which the accruals measure (DCA_i) is obtained, the change in the number of institutional investors in the last quarter is computed by equation (1).

$$\Delta Inst_{i,t} = \text{No. of institutions in firm } i_t - \text{No. of institutions in firm } i_{t-1} \quad (1)$$

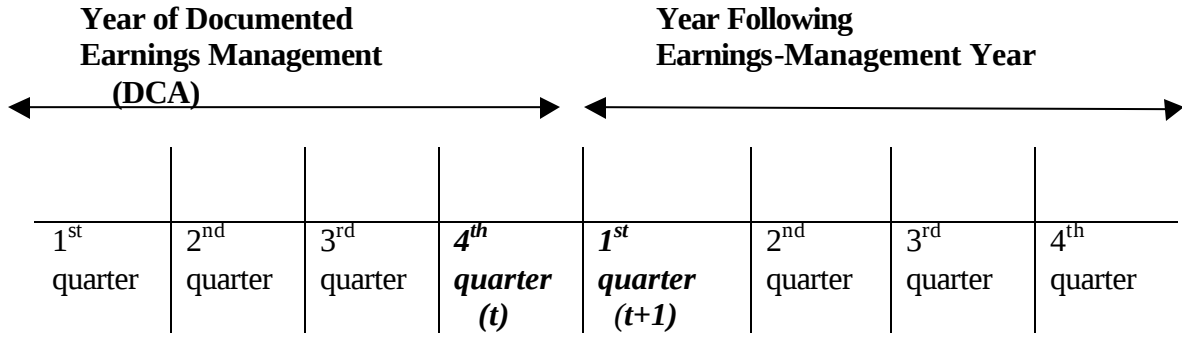
In other words, the change in the level of institutional ownership for firm i in quarter t is found as the difference between the level at the end of quarter t and the previous quarter's level. For purposes of clarity, Figure 1 illustrates the timing of the predicted relationship between instances of firms engaging in earnings management and changes in institutional investors' holdings of these firms. Institutional investors' holdings are expected to change in either the fourth quarter of the year in which earnings management occurs, (Hypotheses 1a and 1b), or the first quarter of the following year, (Hypothesis 2).

Since first and fourth quarter institutional ownership changes are used in this study, we collect first, third, and fourth end of quarter information on the outstanding number of institutional investors owning sample firms. The first quarterly change in our study is the final quarter in 1990 and the last quarterly change is the first quarter in 2000.

⁴ Section 13(f) of the 1934 act was added as a portion of the 1975 Securities Act Amendments. For a comprehensive discussion of the 13(f) data, refer to Lemke (1987).

⁵ A test of equality between the market-capitalization means of the of the income-increasing and the control quintiles was rejected at the 1% level of significance, and that of the equality between the market capitalization means of the income-decreasing and control quintiles was also rejected at the 1% level of significance.

Figure 1: Time Line for Hypothesized Relationships



Quarters in bold are ones over which the change in institutional holdings are obtained.

To test Hypotheses 1a and 1b the regression model specified by equation (2) is estimated for each of the three quintiles.

$$\Delta Inst_{i,t} = a + b_1 DCA_i + b_2 RET_i + b_3 BM_i + b_4 \ln Mcap_i + b_5 PDCA_i + e_i \quad (2)$$

where: $\Delta Inst_{i,t}$ = the change in the level of institutional ownership in the final quarter in any given year in which earnings management is computed
 DCA_i = current earnings management for firm i
 $PDCA_i$ = prior year's earnings management for firm i
 $\ln Mcap_i$ = current market size for firm i
 BM_i = current book-to-market ratio for firm i
 RET_i = returns for last month of quarter t

Returns for the last month of each quarter, book-to-market ratio, log of firm market capitalization and previous year's discretionary current accruals are used as control variables. It is well known that institutional investors have a preference for larger firms. Additionally, large firms generally receive greater coverage by analysts and, thus, tend to have more information available between earnings announcements than small firms, which may influence institutional investors' buying and selling decisions. To control for possible ownership changes due to firm size, the natural log of market capitalization at the beginning of the year is used. Book-to-market is used as a control variable since prior studies, such as Gompers and Metrick (2001), show institutional investors prefer stock with high book-to-market ratios. This is likely due to the fact that firms with high book-to-market ratios have historically exhibited high returns.

Extant literature documents instances of herding behavior among institutional investors, in which similar buying or selling decisions appear to be made in response to some common signal. Prior studies document a strong positive relationship between annual changes in institutional ownership and stock returns. [See, for example, Nofsinger and Sias (1999), Bushee (2001), Gompers and Metrick (2001).] While the use of returns controls for potential herding behavior, it may also capture differences in the amounts of other, non-earnings management information known about a given firm. Additionally, as shown in Gompers and Metrick (2001), institutional investors may view differences in returns as indicators of differences in risk. Any ownership

behavior associated with firms' previous earnings management efforts are controlled for by the variable PDCA_i.

Consistent with Hypotheses 2, the relationship between institutional ownership changes following released earnings information and earnings management over the prior year is investigated. Control factors similar to those of equation (2) are used in equation (3).

$$\Delta Inst_{i,t+1} = a + b_1 DCA_i + b_2 RET_i + b_3 BM_i + b_4 \ln Mcap_i + e_i \quad (3)$$

where: $\Delta Inst_{i,t+1}$ = change in level of institutional ownership in the quarter subsequent to a given year in which earnings management are computed

Tables 2 and 3 report our results.⁶

V. Institutional ownership and earnings managements

The results reported in Table 2 suggest that efforts by firms to manage their earnings upwards seem to lure institutional investors. For firms managing earnings upwards (income-increasing sample), results show a significant positive association between the accruals and the changes in the number of institutional investors after controlling for other characteristics that affect institutional ownership. For firms managing earnings downwards (income-decreasing accruals), results indicate that this acts as a disincentive to institutional ownership.⁷

If decreasing accruals signal additional write-downs in subsequent years, as hypothesized by Fried et al. (1989), then institutional investors would distance themselves from these firms. However, if income-decreasing accruals imply that an earnings reversal is eminent, ownership of these firms should be attractive to institutional investors. The latter, however, is not supported by our results as Table 3 shows no further association between institutional ownership and income-decreasing accruals in the prior period. The evidence that institutional investors walk away from negative earnings management firms in the year of earnings management supports the contention in Fried et al (1989) that they may be avoiding such firms for fear that further write-downs are potentially underway. Finally, the control sample shows no association between institutional ownership and discretionary accruals, suggesting that the relationship stated above may not be incidental.

Overall, the results from Table 2 can be interpreted in several different ways. First, it is clearly evident that managing earnings in and of itself, regardless of the direction of the earnings management efforts, has an effect on ownership by institutional investors. Second, it appears that investors have the ability to detect firms' earnings-management activity before year-end reporting. Third, and more importantly, it appears that institutional investors are able to detect,

⁶ A pooled regression combining the three quintiles was also performed. Three additional variables were created that equal either a given quintile's DCA (one variable per quintile) or zero. Similar results as those discussed below are obtained.

⁷ It should be noted here, that while the coefficient is positive, the accruals in this quintile are *negative*. Thus, a positive relationship with changes in ownership indicates a *decrease* in the number of institutional investors holding a firm.

distinguishably, income-increasing from income-decreasing earnings management efforts by firms. They also appear to employ a consistent investment strategy of increasing ownership in firms that manage their earnings upwards and shave their holdings in firms perceived to manage their earnings downwards. Further affirmation of this as an 'investment strategy' is given when we examine institutional ownership changes subsequent to firms' financial reporting.

Table 3 reports the results of the regression of institutional ownership changes during the quarter following the year in which earnings management occurs. Strikingly, ownership by institutional investors in firms that managed earnings upwards during the prior quarter significantly diminishes. The coefficient on earnings management is negative and significant at a 1 percent level. Conversely, no association between prior earnings management and changes in institutional ownership is observed during this period for both the income-decreasing accruals and the control samples. These results are consistent with, and augmented by, prior studies. As previously mentioned, Moeller (2000) found that firms that exhibited increasing DCA's in one period experienced negative returns in the next period and vice versa. But also, Balsam et al (2002) report institutional investors appear to be able to detect abnormal accruals prior to the time of earnings announcement, which gives them a temporary trading advantage over unsophisticated investors.

Thus, the results of Tables 2 and 3 can be interpreted in either of two ways. The first is that institutional investors are sophisticated enough to take advantage of their early knowledge of earnings management. They strategically increase ownership in firms whose stock prices will likely increase when earnings are announced, then subsequently sell to unsophisticated investors at inflated prices, taking advantage of firms' earnings-management efforts. Alternatively, the institutional investors are not sophisticated enough to anticipate earnings management, and instead trade in anticipation of increased earnings, followed by a decrease in ownership of high accrual firms immediately following the availability of SEC's 10-Qs. The former assessment seems more logical, primarily because we do not see the ownership reversal for the income-decreasing accruals firms.

VI. Conclusion

Institutional investment activity and behavior is an area that has become more interesting in recent times and so much work has been done so far. This paper contributes to this area by documenting the effect of earnings management activity on institutional investor ownership especially by distinguishing the ownership changes in response to the direction of earnings management efforts. Results suggest that institutional investors increase ownership in firms that manage earnings upwards and decrease ownership in firms that manage earnings downward before end-of-year reporting. Moreover, the increases observed during an observed upwards earnings-managing activity are followed by decreases in ownership in these firms in the subsequent quarter, which may suggest resource allocation between large and small investors.

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Table 1: Descriptive Statistics Based on DCA Quintiles

DCA_i is the current earnings management for firm i ; $PDCA_i$ is the prior year's earnings management for firm i ; $\Delta INST_{i,t}$ is the change in the level of institutional ownership in the fourth quarter of a firm i 's fiscal year; $\Delta INST_{i,t+1}$ is the change in level of institutional ownership in the first quarter of firm i 's fiscal year; $LnMcap_i$ is the log of the current market size for firm i ; RET_i is the returns for last month of quarter.

<i>Variables ?</i>	<i>Sample ?</i> Income- increasing (N = 4370)	Income- decreasing (N = 4341)	control sample (N = 4380)
DCA_i^+	-0.2345 (-9.73)***	0.2214 (41.04)***	0.0026 (22.87)***
$PDCA_i$	0.0114 (1.24)	(2.32)** 0.0375	-0.0003 (-0.14)
$?INST_{i,t}^{++}$	0.0536 (3.45)***	0.1042 (7.34)***	0.0232 (8.33)***
$?INST_{i,t+1}$	0.0072 (2.52)**	0.0139 (5.03)***	0.0063 (3.60)***
$LnMcap_i^{+++}$	774.35 (15.61)***	829.46 (13.68)***	2141.93 (20.24)***
RET_i	-0.0329 (-6.20)***	-0.0139 (-2.75)**	-0.0074 (-1.94)*

t-statistics are reported in brackets. ***, **, and * denote 1%, 5% and 10% levels of significance, respectively.

⁺ A test of equality between the DCAs (Accruals Management) of income-increasing and income-decreasing quintiles was rejected at the 1% level of significance.

⁺⁺ A test of equality between the fourth quarter change in institutional ownership of income-increasing and income-decreasing quintiles was rejected at the 5% level of significance.

⁺⁺⁺ A test of equality between the means of the market capitalization of the income-increasing and the control quintiles, and that of income-decreasing and control quintiles was rejected at the 1% level of significance.

Table 2: Results of Regressing Changes in the Level of Institutional Ownership in the Fourth Quarter of Firm i's Fiscal Year

$$\Delta Inst_{i,t} = a + b_1 DCA_i + b_2 RET_i + b_3 BM_i + b_4 \ln Mcap_i + b_5 PDCA_i + e_i$$

$\Delta INST_{i,t}$ is the change in the level of institutional ownership in the fourth quarter of firm i's fiscal year; DCA_i is firm i's current earnings management; $PDCA_i$ is firm i's prior year's earnings management; $\ln Mcap_i$ is the log of firm i's current market size; BM_i is the current book-to-market ratio; RET_i is the return for last month of quarter.

<i>Sample ?</i> <i>Variables ?</i>	Income-Increasing (n = 4474)	Income-decreasing (n = 4466)	Control sample (n = 4481)
Intercept	-0.1775 (-4.24)***	-0.0839 (-3.15)***	0.0132 (1.52)
DCA_i	0.5131 (12.72)***	0.0739 (11.61)***	0.3814 (1.04)
RET_i	0.1636 (3.78)***	0.0827 (2.75)***	0.0736 (6.55)***
BM_i	0.0022 (0.14)	-0.0158 (-1.10)	-0.0098 (-1.54)
$\ln Mcap_i$	0.0362 (4.59)***	0.0328 (6.09)***	0.0018 (1.25)
$PDCA_i$	-0.0165 (-1.21)	-0.0401 (-2.38)**	-0.1081 (-6.08)***
Adj. R – Square	4.18%	4.67%	1.93%

t-statistics are reported in parenthesis. ***, **, and * denote 1%, 5% and 10% levels of significance, respectively.

Table 3: Results of Regressing Changes in Level of Institutional Ownership in the First Quarter of Firm i's Fiscal Year

$$\Delta Inst_{i,t+1} = a + b_1 DCA_i + b_2 RET_i + b_3 BM_i + b_4 \ln Mcap_i + e_i$$

$\Delta INST_{i,t+1}$ is the change in level of institutional ownership in the first quarter of firm i's fiscal year; DCA_i is firm i's current earnings management; $\ln Mcap_i$ is the log of firm i's current market size; BM_i is the current book-to-market ratio; RET_i is the return for last month of quarter.

<i>Sample ?</i> <i>Variables ?</i>	Income-Increasing (n = 4474)	Income-decreasing (n = 4466)	Control sample (n = 4481)
Intercept	0.0273 (3.40)***	-0.0069 (-0.93)	0.0229 (4.29)***
DCA_i	-0.0306 (-3.99)***	-0.0002 (-0.13)	-0.1435 (-0.64)
RET_i	0.0822 (9.90)***	0.0827 (2.75)***	0.0772 (11.21)***
BM_i	-0.0029 (-0.93)	-0.0014 (-0.35)	-0.0074 (-1.89)*
$\ln Mcap_i$	-0.0011 (-0.74)	0.0035 (2.32)**	-0.0027 (-3.07)***
Adj. R – Square	2.51%	1.24%	2.68%

The respective *t*-statistics are reported in parenthesis. ***, **, and * denote 1%, 5% and 10% levels of significance, respectively.

Appendix 1: Measuring Earnings Management

Earnings management is commonly measured using accruals subject to management discretion. While firms' financial statements include both current and long term accruals, the former are considerably more prone to adjustment by management than the latter, as documented by Guenther (1994). Thus, this study confines its examination to discretionary current accruals.

We follow the methodology of Teoh, Welch, and Wong (1998) and estimate current accruals based on changes in balance sheet accounts.⁸ Specifically, current accruals (CA) are computed as the difference between the change in non-cash current assets and the change in operating liabilities, which consist of current liabilities minus current maturities of long-term debt.

To isolate the discretionary component of CA, we again follow Teoh, Welch, and Wong (1998). For each sample firm i , the estimation regression specified in equation (1A) is run on all other firms within the same two-digit SIC code as the sample firm (excluding the sample firm).

$$\frac{CA_{f,t}}{TA_{f,t-1}} = a_0 \left[\frac{1}{TA_{f,t-1}} \right] + a_1 \left[\frac{\Delta Sales_{f,t}}{TA_{f,t-1}} \right] + e_{f,t} \quad (1A)$$

where, f represents estimation firms with the same two-digit SIC code as a given sample firm,
CA _{f,t} are current accruals for estimation firm f in year t ,
 $\Delta Sales_{f,t}$ is the change in sales for estimation firm f in year t , and
TA _{$f,t-1$} equals total assets for estimation firm f in year $t-1$.

The use of beginning-of-year total assets to scale the variables is to reduce the potential for heteroscedasticity within the model.

Using the coefficients estimated in equation (1A) along with the change in trade receivables, we remove the non-discretionary component of current accruals. The inclusion of the change in trade receivables is to capture potential earnings management arising when increases in sales are driven by increased leniency in a firm's credit policy rather than by economic conditions. Thus, the remaining accruals are assumed to be independent of economic changes in a firm's industry and are, instead, subject to management manipulation. These discretionary current accruals (DCA _{i,t}) serve as our proxy for earnings management, as shown in equation (2A).

⁸ Hribar and Collins (2002) argue that using balance sheet items instead of cash flow items to estimate accruals may result in measurement errors. This problem can be critical if there is a correlation between the variable(s) used to specify earnings management and incidences of mergers, acquisitions and/or discontinued operations. The sample firms in the current study have not been selected based on participation in any specific activity (such as asset write-downs or equity offerings), but instead consist of all firms included in the 1990-2000 COMPUSTAT Research Insight database with requisite financial and institutional ownership data available. As such, we have no reason to believe the accruals are likely to exhibit a systematic correlation with both mergers and acquisitions or discontinued operations.

$$DCA_{i,t} = \frac{CA_{i,t}}{TA_{i,t-1}} - \hat{a}_0 \left(\frac{1}{TA_{i,t-1}} \right) + \hat{a}_1 \left(\frac{\Delta Sales_{i,t} - \Delta TR_{i,t}}{TA_{i,t-1}} \right) \quad (2A)$$

where, $\Delta TR_{i,t}$ is equal to the change in trade receivables in year t for sample firm i ,

$\hat{a}_0$ and $\hat{a}_1$ are the coefficients estimated in equation (1A), and

all other variables as previously described (although for sample firms, rather than their estimation counterparts).