THE EFFECT OF INSTITUTIONAL OWNERSHIP ON THE INFORMATIVENESS OF DISCRETIONARY ACCRUALS

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Abstract

We examine whether the pricing of discretionary accruals is associated with the level of institutional ownership. We posit that if institutional investors monitor their investment actively, then managers would be discouraged from using the discretion in U.S. GAAP to manage earnings and would be encouraged to convey private information which would translate into greater information content. As a sensitivity test, we also examine the relation between discretionary earnings and future earnings. We find that this association is positively related to the level of institutional ownership. Our results collectively support the notion that institutional investors actively monitor their investments and encourage managers to report informative accruals.

Keyword: Institutional ownership, discretionary accruals, earnings management

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1. Introduction

The flexibility in generally accepted accounting principles (GAAP) provides managers with discretion in the reporting accounting numbers. Researchers in accounting have measured this discretion by examining unexpected accruals (often referred to as discretionary accruals). The reporting of discretionary accruals could be a result of management using discretion in an opportunistic manner to further its own interests. Alternatively, discretionary accruals could be a result of managers using flexibility in GAAP to signal private information and reduce information asymmetry between the shareholders and the firm.

In this paper, we examine the effect of institutional ownership on the informativeness, as measured by the stock market's pricing, of discretionary accruals. Consistent with Bushee (1998), we define institutional investors as large investors who presumably exercise discretion over the investment of others[27]. If institutional investors are long term investors and invest with a view to "own the firm" and thereby actively monitor their investment, then the presence of institutional investors is likely to constrain the discretion managers have in reporting earnings numbers to maximize their self interest. Several reasons exist to support the notion that institutional investors are active monitors. Institutional investors have large resources available to them which enables them to monitor management effectively (Monks and Minor 1995; Cornett et al. 2006). Institutional investors are also capable of more thoroughly analyzing financial information relative to individual investors (e.g., Hand 1990; Kim et al. 1997). Bushee (1998) notes that larger shareholders can monitor through corporate governance practices and also by gathering information from other sources and correctly pricing managerial decisions. In addition, the large shareholdings of institutional investors makes their portfolio less liquid (Maug 1998) resulting in low turnover which is likely to result in long term monitoring. Academic research has generally documented evidence consistent with active monitoring hypothesis and has documented a positive relation between stock price performance, firm profitability (e.g., Brous and Kini, 1994; Opler and Sokobin, 1997) and the quality of earnings (e.g., Bushee, 1998; Chung et al., 2002; Jiambalvo et al., 2002; Cornett et al. 2006) and institutional ownership.

To the extent that the market perceives that the role of institutional monitoring involves encouraging a reduction in the level of information asymmetry between management and investors through

[27] Following prior research (e.g., Bushee, 1998), we define institutional investors as entities such as bank trusts, insurance companies, mutual funds and pension funds that invest on behalf of others and manage at least $100 million in equity. These entities are required to file form 13f with the SEC to report their equity holdings. Entities such as brokerage houses and companies holding stocks for their own portfolio are not required to disclose their equity holdings.

informative discretionary accruals, we would expect a positive relation between institutional ownership and the market's pricing of discretionary accruals. To that end, using a sample of U.S. firms during the period 1992-2001, we examine whether the information content of discretionary accruals is a function of the level of institutional ownership. If the information content of discretionary accruals is positively associated with the level of institutional ownership then it indicates that management uses discretionary accruals to convey private information when the presence of institutional ownership is high. This would be indicative of institutional owners effectively monitoring the management.

Our results indicate that the pricing effect of discretionary accruals is positively related to the level of institutional ownership. We further perform sensitivity tests and examine the relation between current earnings and future earnings. If discretionary accruals have more information content then current earnings should have a greater association with future earnings. Our results show that this association is positively related to the level of institutional ownership. These results suggest that the presence of institutional investors is likely to translate into the reporting of higher quality of earnings.

The remaining paper is organized in the following manner. Section 2 provides background and model development, section 3 presents our empirical results and section 4 concludes.

2. Background and Model Development

2.1 Institutional investors and earnings management

Several studies have investigated the impact of institutional holdings on the quality of earnings by examining whether firms are likely to manage earnings less in the presence of institutional investors. Shipper (1989, p. 98) notes that:

"Concentrated user groups with substantial financial sophistication, material sums at stake, and no contractual friction to inhibit their behavior are, for example, likely candidates for undoing earnings management."

Given the size of the investments by institutional investors, these investors fit the profile of "concentrated user groups."

Academic research has documented a positive relation between R&D expenditure (which reduces current income) and institutional ownership thus finding support for active monitoring hypothesis (e.g., Bushee 1998; Wahal and McConnell 1997, Bange and De Bondt 1998). Using the absolute value of discretionary accruals as a proxy for earnings management, researchers have also documented a negative relation between discretionary accruals and institutional ownership (Chung et al. 2002; Shang 2003). Velury and Jenkins (2006) and Perry and Willimas (1994), however, do not document any association between discretionary accruals and the level of institutional ownership. In this paper, we extend this line of research and test the information content of discretionary accruals and examine whether the information content of discretionary accruals varies as a function of the level of discretionary accruals. In particular, we examine whether the pricing of discretionary accruals is associated with the level of institutional ownership.

2.2 Measurement of Discretionary Accruals

We use the following cross-sectional Jones (1991) model to calculate the expected total accruals:

$$TACCR_{i,t}/TA_{i,t-1} = \alpha_i(1/TA_{i,\,t-1}) + \beta_{1i}(\Delta REV_{i,t})/TA_{i,\,t-1}) + \beta_{2i}(PPE_{i\,t}/TA_{i,t-1})] + \varepsilon_{i\,t} \quad (1)$$

where, for sample firm *i* at the end of year *t:*

TACCR	=	total accruals, defined as net income before extraordinary items less operating cash flows;
TA	=	total assets;
ΔREV	=	change in revenue from year t-1 to year t;
PPE	=	gross property plant and equipment;
ε	=	Error term

The coefficient estimates generated by this model were then used to calculate the normal accruals. Thus, normal accruals for firm *i* at the end of year *t* are:

$$NDACCR = a_i[1/TA_{i,t-1}] + b_{1i}[(\Delta REV_{i,t})TA_{i,t-1}] + b_{2i}[PPE_{i,t}/TA_{i,t-1}] \quad (2)$$

Where;

$NDACCR_{it}$	=	Nondiscretionary accruals for firm *i* in fiscal year *t* deflated by total assets at the beginning of the period;

and discretionary accruals (DACCR) is calculated as the difference as difference between total accruals and non-discretionary accruals.

Because normal accruals change over time due to changes in a firm's economic conditions, the model attempts to control for the changes in economic conditions by including the effect on accruals associated with changes in revenues and property, plant and equipment. Separate calculations were performed for each group of firms with the same two-digit SIC code and fiscal year. Smaller values of discretionary accruals indicate less earnings management and suggest that earnings exhibit a greater degree of neutrality and are thus more useful. We examine the following model to investigate if client firms of industry specialists reported higher discretionary accruals in the recent period.

2.3 Pricing of discretionary accruals

The unconditional pricing of discretionary accruals is measured by the following model by first disaggregating net earnings into its components, cash

flows from operations and total accruals, with total accruals further disaggregated into nondiscretionary and discretionary components based on the Jones model. The components of earnings are then regressed on stock returns to measure the market's pricing of each component. The model is as follows:

$$RET_{it} = \beta_0 + \beta_1 CFO_{it} + \beta_2 NDACCR_{it} + \beta_3 DACCR_{it} + \varepsilon_i \quad \text{(Model 1)}$$

To examine the differential pricing of discretionary accruals conditioned on the level of institutional ownership, we expand Model 1 as follows:

$$RET_{it} = \beta_0 + \beta_1 CFO_{it} + \beta_2 NDACCR_{it} + \beta_3 DACCR_{it} + \beta_4 PIH_{it} + \beta_5 DACCR_{it}*PIH_{it} + \varepsilon_{it} \quad \text{(Model 1a)}$$

Where;

RET_{it}	=	Annual stock return for firm *i* in fiscal year *t*;
PIH	=	Percentage of common shares held by institutions;
CFO_{it}	=	Cash flows from operation for firm *i* in fiscal year *t* deflated by total assets at the beginning of the period;
$DACCR_{it}$	=	Discretionary accruals for firm *i* in fiscal year *t* deflated by total assets at the beginning of the period;

If the pricing of discretionary accruals is higher for firms with greater institutional ownership, then we would expect a positive and significant β_5.

It is possible that the pricing of discretionary accruals could be a function of market mispricing. To account for this possibility, we next examine the relation between future earnings and current discretionary accruals. The unconditional model to measure the relation between future earnings and the components of current earnings is as follows:

$$NI_{it+1} = \beta_0 + \beta_1 CFO_{it} + \beta_2 NDAC + \beta_3 DAC_{it} + \varepsilon_{it} \quad \text{(Model 2)}$$

where:

NI	=	Income before extraordinary items and discontinued operations deflated by total assets at the beginning of the year;

and all other variables as defined earlier.

To examine the differential pricing of discretionary accruals conditioned on the level of institutional ownership, we expand Model 2 as follows:

$$NI_{it+1} = \beta_0 + \beta_1 CFO_{it} + \beta_2 NDACCR_{it} + \beta_3 DACCR_{it} + \beta_4 PIH_{it} + \beta_5 DACCR_{it}*PIH_{it} + \varepsilon_{it} \quad \text{(Model 2a)}$$

If discretionary accruals of firms with higher institutional ownership have greater information value regarding future profitability then there should be a greater association between current discretionary accruals and future profitability. In such a case we would again expect a positive and significant β_5.

2.4 Discrete Measure of Institutional Ownership

To measure the differential pricing of discretionary accruals for observations with relatively high institutional ownership compared to that of observations with relatively low institutional ownership, we re-run models 1a and 2a employing a discrete measure of institutional ownership as follows:

$$RET_{it} = \beta_0 + \beta_1 CFO_{it} + \beta_2 NDACCR_{it} + \beta_3 DACCR_{it} + \beta_4 DINST_{it} + \beta_5 DACCR_{it}*DINST_{it} + \varepsilon_{it} \quad \text{(Model 1b)}$$

$$NI_{it+1} = \beta_0 + \beta_1 CFO_{it} + \beta_2 NDACCR_{it} + \beta_3 DACCR_{it} + \beta_4 DINST_{it} + \beta_5 DACCR_{it}*DINST_{it} + \varepsilon_{it} \quad \text{(Model 2b)}$$

where:

DINST	=	Indicator variable taking the value of one if PIH is 40% or greater and zero otherwise.

For model 1b, if the pricing of discretionary accruals is higher for firms with relatively high institutional ownership, then we would expect a positive and significant β_5. Similarly, if discretionary accruals of firms with higher institutional ownership have greater information value regarding future profitability then we would expect a positive and significant β_5 for model 2b.

2.5 Sample Selection

Our study spans the 10-year period 1992-2001. For a given firm-year observation to be included in the study, information on earnings and stock returns must be available from the COMPUSTAT or CRSP databases and information on institutional ownership must be available from the Compact Disclosure database. In order to mitigate the effect of outliers, we delete the top and bottom 1% of observations for all study variables. These procedures yield 23,904 firm-year observations.

3. Results

Variable definitions and descriptive statistics are provided in Tables 1 and 2, respectively.

[Insert Table 1 here]

We report mean, median, and standard deviation for percentage of institutional ownership (PIH), annual stock return, and earnings levels and changes (both deflated by beginning market value of equity) and categorical variables for negative returns and earnings for the sample. The results show a mean (median) PIH for sample observations of approximately 35.9% (33.0%) years. Regression results for Models 1, 1a and 1b (2, 2a and 2b) are shown in Table 3(4). We

present the expected signs for the variable coefficients, the coefficient values for the unconditional models, and the variable coefficients for models extended to reflect the impact of institutional ownership on the pricing of discretionary accruals.

[Insert Table 2 here]

From Table 3, the positive coefficients β_1, β_2 and β_3 from Models 1, 1a and 1b indicate, as expected, that all components of earnings are positively priced. Further, the positive and significant coefficients for β_5 from Models 1a and 1b indicate a positive association between the pricing of discretionary accruals and institutional ownership.

[Insert Table 3 here]

The results from Model 2 and Model 2a are presented in Table 4. The positive coefficients β_1, β_2 and β_3 from Models 2, 2a and 2b indicate, as expected, that all components of earnings are positively related to future earnings. Also, the positive and significant β_5 from Models 2a and 2b indicate that the relation between current discretionary accruals and future earnings is greater for firms with higher institutional ownership. Overall, these findings indicate that discretionary accruals are priced higher and are more highly associated with future earnings for firms with greater levels of institutional ownership.

[Insert Table 4 here]

4. Conclusion

In this study, we examine whether the information content of discretionary accruals is a function of the level of institutional ownership. We find that institutional ownership is positively and significantly associated with the pricing of discretionary accruals and future profitability. This finding indicates that the market values the role of institutional monitoring as it pertains to the informativeness of discretionary accruals. Further, we find that institutional ownership is positively and significantly associated with future profitability, which seem to support the market's positive perception regarding the informativeness of discretionary accruals in the presence of higher institutional ownership.

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Appendices

TABLE 1
Definition of Variables

PIH	=	Percentage of common shares held by institutions;
DINST	=	Indicator variable taking the value of one if PIH is 40% or greater and zero otherwise;
RET_{it}	=	Annual stock return for firm *i* in fiscal year *t*;
NI_{it}	=	Net income for firm *i* in fiscal year *t* deflated by total assets at the beginning of the period;
CFO_{it}	=	Cash flows from operation for firm *i* in fiscal year *t* deflated by total assets at the beginning of the period;
$NDACCR_{it}$	=	Nondiscretionary accruals for firm *i* in fiscal year *t* deflated by total assets at the beginning of the period;
$DACCR_{it}$	=	Discretionary accruals for firm *i* in fiscal year *t* deflated by total assets at the beginning of the period;

TABLE 2
Descriptive Statistics
(n = 23,904)

Variable	Mean	Median	Std. Dev.
PIH	0.359	0.330	0.272
RET_{it}	0.087	0.058	0.346
NI_{it}	0.015	0.040	0.158
CFO_{it}	0.021	0.003	0.078
$NDACCR_{it}$	-0.084	-0.040	0.206
$DACCR_{it}$	0.078	0.074	0.264

TABLE 3
Regression Results

Model 1: $RET_{it} = \beta_0 + \beta_1 CFO_{it} + \beta_2 NDACCR_{it} + \beta_3 DACCR_{it} + \varepsilon_{it}$

Model 1a: $RET_{it} = \beta_0 + \beta_1 CFO_{it} + \beta_2 NDACCR_{it} + \beta_3 DACCR_{it} + \beta_4 PIH_{it} + \beta_5 DACCR_{it} * PIH_{it}\ \varepsilon_{it}$

Model 1b: $RET_{it} = \beta_0 + \beta_1 CFO_{it} + \beta_2 NDACCR_{it} + \beta_3 DACCR_{it} + \beta_4 DINST_{it} + \beta_5 DACCR_{it} * DINST_{it}\ \varepsilon_{it}$

	Expected Sign	Model 1 (n = 23,904)	Model 1a (n = 23,904)	Model 1b (n = 23,904)
Intercept	?	0.050***	0.043***	0.049***
CFO_{it}	+	1.495***	1.503***	1.515***
$NDACCR_{it}$	+	0.778***	0.778***	0.788***
$DACCR_{it}$	+	0.919***	0.876***	0.893***
PIH_{it}	?		0.000	
$DACCR_{it} * PIH_{it}$	+		0.017***	
$DINST_{it}$				-0.003
$DACCR_{it} * DINST_{it}$				0.127***
R-squared		0.0469	0.0473	0.475

*** Significant at the 0.01 level

TABLE 4
Regression Results

Model 2: $NI_{it+1} = \beta_0 + \beta_1 CFO_{it} + \beta_2 NDACCR_{it} + \beta_3 DACCR_{it} + \varepsilon_{it}$

Model 2a: $NI_{it+1} = \beta_0 + \beta_1 CFO_{it} + \beta_2 NDACCR_{it} + \beta_3 DACCR_{it} + \beta_4 PIH_{it} + \beta_5 DACCR_{it} * PIH_{it} \varepsilon_{it}$

Model 2b: $NI_{it+1} = \beta_0 + \beta_1 CFO_{it} + \beta_2 NDACCR_{it} + \beta_3 DACCR_{it} + \beta_4 DINST_{it} + \beta_5 DACCR_{it} * DINST_{it} \varepsilon_{it}$

	Expected Sign	Model 2 (n = 23,904)	Model 2a (n = 23,904)	Model 2b (n = 23,904)
Intercept	?	0.015***	0.013***	0.014***
CFO_{it}	+	0.384***	0.384***	0.385***
$NDACCR_{it}$	+	0.276***	0.274***	0.275***
$DACCR_{it}$	+	0.271***	0.255***	0.265***
PIH_{it}	?		0.000	
$DACCR_{it} * PIH_{it}$	+		0.008***	
$DINST_{it}$	?			0.001
$DACCR_{it} * DINST$	+			0.034***
R-squared		0.0519	0.0526	0.0523

*** Significant at the 0.01 level