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Is earnings management opportunistic or beneficial? An agency theory perspective

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Abstract

Earnings management has been cast into negative light due to the recent corporate scandals and, therefore, is viewed as detrimental to the firm. Enron and Worldcom represent two of the most egregious cases of opportunistic earnings management that led to the largest bankruptcies in U.S. history. However, some argue that earnings management may be beneficial because it improves the information value of earnings by conveying private information to the stockholders and the public. We offer agency theory as a tool to distinguish between the opportunistic and beneficial uses of earnings management. The empirical evidence suggests that firms where earnings management occurs to a larger (less) extent suffer less (more) agency costs. Moreover, a positive relation is documented between firm value and the extent of earnings management. Taken together, the results reveal that earnings management is, on average, not detrimental.

Keywords: Earnings management; Agency theory; Governance; Governance provisions; Agency costs; Corporate governance

1. Introduction

The recent scandals at Enron, Worldcom and elsewhere have generated a public perception that earnings management is utilized opportunistically by firm managers for their own private benefits

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rather than for the benefits of the stockholders. Reinforcing this negative public perception on earnings management is the fact that regulators have lately devised a number of measures for the purpose of combating earnings management. For instance, the Sarbane–Oxley Act, which requires certain board members to possess financial sophistication, is the result of an on-going attempt by Congress to mitigate earnings management. Even the NASDAQ has issued new guidelines requiring its listed firms to have financially literate audit committees. Thus, there seems to be a prevalent perception that earnings management is opportunistic in nature.

However, a number of academic studies have argued that earnings management may be beneficial because it potentially enhances the information value of earnings. Managers may exercise discretion over earnings to communicate private information to stockholders and the public (Arya, Glover, & Sunder, 2003; Demski, 1998; Guay, Kothari, & Watts, 1996; Healy & Palepu, 1993; Holthausen, 1990; Subramanyam, 1996; Watts & Zimmerman, 1986). If this is the case, then, earnings management may not be harmful to the stockholders and the public. In fact, the empirical evidence in Subramanyam (1996) supports the contention that managers exercise their discretion to improve the ability of earnings to reflect fundamental value. Other studies, nevertheless, argue in favor of the opportunistic use of earnings management (Healy & Palepu, 1993, for instance). Misalignment of managers' and shareholders' incentives could induce managers to use the flexibility provided by the Generally Accepted Accounting Principals (GAAP) to manage income opportunistically, thereby creating distortions in the reported earnings.[2]

Thus, earnings management can be viewed as either opportunistic or beneficial. The extant empirical evidence in the literature is somewhat ambiguous. The purpose of this study is to distinguish between the opportunistic and beneficial uses of earnings management. We offer agency theory as a framework in which a distinction can be made between the two hypotheses. Specifically, we relate the severity of agency costs and the extent of earnings management.

If earnings management is utilized primarily opportunistically by managers, firms where agency costs are more severe should exhibit a higher degree of earnings management. In other words, the extent of earnings management is positively related to the gravity of agency conflicts. On the contrary, earnings management may be intended to convey private information and, thus, enhance the information content for earning that would be beneficial to the stockholders. If this is the case, we expect that firms where agency costs are more severe should not exhibit a higher degree of earnings management because managers should not manage earnings to enhance their own private benefits. Thus, the absence of a relation between the severity of agency costs and earnings management would be evidence that firms did not use earnings management opportunistically. In fact, if earnings management is beneficial to the stockholders, firms where agency costs are milder (i.e. where managers are more likely to act in the interests of the stockholders) should exhibit a higher degree of earning management because it improves communication between management and stockholders. Hence, a negative relation between agency costs and earnings management would be evidence supporting the idea that the use of earnings management is beneficial or, at least, not harmful.

The empirical evidence in our study shows that there is an inverse relation between agency costs and earnings management. Hence, our results indicate that managers manage earnings more in firms where agency costs are lower. Earnings management does not appear to provide private benefits to management. In addition, we enhance the power of our study by investigating the

[2] For instance, because compensation components including bonuses and stock options may be contingent upon firm performance, some managers may have incentives to manage earnings to increase their own compensation.

relation between earnings management and firm value. If earnings management is opportunistic and, therefore, harmful to the firm, a higher degree of earnings management should be associated with a lower firm value. On the contrary, if earnings management is beneficial, there should be a positive relation between the extent of earnings management and firm value. We employ Tobin's *q* as a measure of firm value and document a positive relation between earnings management and firm value. This evidence suggests that earnings management is, on average, beneficial. This is consistent with the empirical evidence obtained in the agency cost analysis. The results are robust even when we exclude the outliers, and control for firm size, profitability, leverage, growth opportunities, and informational asymmetry.

Our study contributes to the literature by suggesting an alternative approach to ascertain whether earnings management is opportunistic or beneficial. Hence, our results, at the minimum, complement those of other previous studies that attempt to answer the same question. We find empirical support for the beneficial use of earnings management. The rest of this study is organized as follows. Section 2 discusses previous studies on opportunistic and beneficial earnings management. Section 3 explains the sample selection process and the data. The empirical evidence is presented and discussed in Section 4. Finally, Section 5 concludes.

2. Literature review

2.1. Opportunistic earnings management

Several studies investigate whether managers with incentives to manipulate earnings due to the nature of their compensation contracts actually manage earnings. Healy (1985) finds evidence consistent with the hypothesis that executives manage earnings downwards when their bonuses are at their maximum. Holthausen, Larker, and Sloan (1995) also document similar evidence. Another set of studies focus on top managers' job security and their incentives to manipulate earnings when the managers are faced with a possibility of losing their respective jobs. DeAngelo (1988) reports that, during a proxy contest, incumbent managers may exercise their accounting discretion to paint a favorable picture of their own performance to voting stockholders. Dechow and Sloan (1991) find that CEOs tend to reduce spending on research and development in their final employment years, possibly to increase reported earnings.

Firms may also manage earnings to meet capital market expectations. For example, Teoh, Welch, and Wong (1998a) note that the IPO process is particularly susceptible to earnings management as there is high informational asymmetry between the investors and the issuers at the time of the offering. The researchers report that income-increasing abnormal accruals can be identified prior to initial public offerings. Similar evidence is also found in seasoned equity offerings (Teoh, Welch, & Wong, 1998b). Stock-for-stock mergers are another area where potential earnings management is examined. Erikson and Wong (1999) report that, in the quarters leading up to the merger, acquiring firms manage earnings upward apparently in an attempt to increase their stock prices.

2.2. Beneficial earnings management

Some studies argue that managers exercise discretion over earnings to enhance earnings' information by allowing communication of private information (Healy & Palepu, 1993; Holthausen, 1990; Watt & Zimmerman, 1986 for example). This argument gains empirical support in Subramanyam (1996), who examines whether the stock market prices discretionary accruals. The

evidence suggests that, on average, the market attaches value to discretionary accruals. Subrmanyam (1996) hypothesizes that there are two potential explanations. First, managerial discretion improves the ability of earnings to reflect economic value. As a result, the stock market prices the discretionary accruals. Alternatively, discretionary accruals may be opportunistic and value-irrelevant but priced by an inefficient market. In an attempt to rule out opportunism as an alternative explanation, Subramanyam (1996) also tests if current-period discretionary accruals help predict future cash flows, earnings, and dividends. It is expected that accruals should help predict cash flow if discretionary accruals increase the information content for current earnings-related future performance. He finds evidence consistent with this hypothesis, suggesting that discretionary accruals do add informational content to earnings.

Two recent studies also support the theory that earnings management adds information value. Arya et al. (2003) argue that the notion that earnings management reduces transparency is a simplistic idea. For decentralized organizations, information is dispersed across people. Different people know different things and nobody knows everything. In such an environment, a managed earnings stream can convey more information than an unmanaged earnings stream. Louis (2003) examines the signaling function of discretionary accruals by investigating earnings management around stock splits. He posits that, as firms tend to perform stock splits when managers are optimistic about the firm's performance, discretionary accruals are likely to be used around stock splits to convey positive private information. He finds strong evidence indicating that managers use accruals in conjunction with stock splits to signal favorable performance. The results based on abnormal announcement returns around stock splits also imply that the signal embedded in the discretionary accruals is deemed credible by the market.

3. Sample selection and data

3.1. Sample selection

Our original sample is compiled from the Investor Responsibility Research Center (IRRC). The IRRC collects data on corporate governance that we use as the measure for the extent of agency conflicts. The IRRC collects data only periodically and our sample is, therefore, restricted to the years for which the IRRC has data on corporate governance. For our study, we use data from 1993, 1995, and 1998. The IRRC does not have data for 1994, 1996, and 1997.

The sample is reduced by eliminating firms whose accounting information is not sufficient to estimate the modified Jones (1991) model. Firms in the financial and utility industries are not included as these firms are regulated. Regulations for these firms render their accounting information incomparable to that of firms in other industries. The sample is reduced further down by excluding firms that do not have adequate data to calculate earnings estimates using the Institutional Brokers Estimates System (I/B/E/S). Our market value data comes from the Center for Research in Security Prices (CRSP) and the control variables in the regression analysis are from COMPUSTAT. The final sample consists of 1621 firm–year observations. There are 439, 550 and 632 firm–year observations from 1993, 1995, and 1998 respectively.

3.2. The Governance Index (GINDEX)

Firms where corporate governance tilts the balance of power more in favor of management (and, therefore, less in favor of shareholders) are more vulnerable to agency conflicts (Gompers, Ishii, & Metrick, 2003). Firms where management enjoys more power run a higher risk of

Table 1
Individual governance provisions employed in the construction of the Governance Index

Delay
Blank check
Classified board
Special meeting
Written consent
Protection
Compensation plans
Contracts
Golden parachutes
Indemnification
Liability
Severance
Voting
Bylaws
Charter
Cumulative voting
Secret ballot (confidential voting)
Supermajority
Unequal voting
Other
Anti-greenmail
Directors' duties
Fair price
Pension parachutes
Poison pill
Silver parachutes
State
Anti-greenmail law
Business combination law
Cash-out law
Directors' duties law
Fair price law
Control share acquisition law

Note: The detailed explanation for each governance provision is available in the Appendix of Gompers et al. (2003).

management not acting in the best interests of the shareholders as there is a wider separation of ownership and control.

We employ the Governance Index (GINDEX) developed by Gompers et al. (2003) – henceforth GIM – to measure the level of agency costs.[3] GIM use data from the Investor Responsibility Research Center (IRRC) that publishes detailed listings of corporate governance provisions for individual firms in *Corporate Takeover Defenses* (Rosenbaum 1993, 1995, 1998). The data on governance provisions are derived from various sources including corporate bylaws, charters, proxy statements, annual reports, as well as 10-K and 10-Q documents filed with the Security and Exchange Commission (SEC). The individual governance provisions included in the construction of the Governance Index are displayed in Table 1. The detailed explanation for each governance

[3] The Governance Index is employed in a large number of recent studies. For instance, the Governance Index has been related to capital structure (Jiraporn & Gleason, in press), to the cost of debt financing (Klock, Mansi, & Maxwell, in press), to the cost of equity (Huang, 2004), to corporate diversification (Jiraporn, Kim, Davidson, & Singh, 2006), to dividend policy (Jiraporn & Ning, in press), and to auditor selection (Jiraporn, in press).

provision is available in the Appendix of Gompers et al. (2003). They classify provisions into 5 categories: tactics for delaying hostile bidders (Delay); voting rights (Voting); director/officer protection (Protection); other takeover defenses (Other); and state laws (State).

The Governance Index is constructed as follows. GIM add one point for every provision that restricts shareholder rights (and increases managerial power). While this index does not accurately reflect the relative impacts for the various provisions, this approach has the advantage of being both transparent and easily reproducible. The index does not require any judgments about the efficacy or wealth effects of any of these provisions. GIM only consider the impact on the balance of power.

GIM use the following example in their paper to clarify the logic behind the construction of the Governance Index. The example indicates that classified boards, a provision that staggers the terms and elections of directors, may be employed to slow down a hostile takeover. If management uses this power judiciously, this strategy may possibly lead to an increase in overall shareholder wealth. If management, however, uses this power to maintain private benefits of control, then this provision may be expected to diminish shareholder wealth. Classified boards may enhance the power of managers and weaken the control rights of large shareholders. Hence, the Governance Index appears to capture the balance of power between management and shareholders.

Other corporate provisions may be evaluated by the same logic. Most provisions enable management to resist different types of shareholder activism. These actions include calling special meetings, changing the firm's charter or bylaws, suing the directors, or replacing the directors all at once. GIM note, however, that there are two exceptions, secret ballots (confidential voting) and cumulative voting. First, a secret ballot or confidential voting that designates a third party to count proxy votes may prevent management from observing how specific shareholders vote. Second, cumulative voting may enable shareholders to concentrate their directors' votes so that a large minority shareholder can ensure some board representation. These two provisions are usually proposed by shareholders and opposed by management because the provisions enhance shareholder rights and diminish the management power. GIM add one point to the Governance Index when the firms do not have one of the two provisions. For all other provisions, GIM add one point when firms do have the provision. In summary, the Governance Index is simply the sum of one point for the presence (or absence) of each provision. Hence, the Governance Index attempts to capture the degree of divergence of ownership and control A high index indicates a wider separation between ownership and control. Agency costs are expected to be higher if the company has a high index.[4]

3.3. Accrual estimation

We employ abnormal accruals as a proxy for the degree of earnings management. This approach has been used in a number of studies including Teoh et al. (1998a,b), Xie, Davidson, and Dadalt (2003), and Davidson, Jiraporn, Kim, and Nemac (2004). We estimate accruals that are considered "unexpected" or "abnormal" using the modified Jones (1991) model.[5] The abnormal accruals are decomposed based on two dimensions, time period (current and long-term) and manager control

[4] Gompers et al. (2003) demonstrate that firms with stronger shareholder rights, as measured by the Governance Index, earn abnormal returns of 8.5% per year. This abnormal performance can be attributed to stronger shareholder rights and lower agency costs, which, in turn, result in higher firm value. Managers of firms where shareholder rights are strong suffer a narrower separation of ownership and control and, hence, less severe agency conflicts.

[5] We select the modified Jones (1991) model because the model has been found to have "the most power in detecting earnings management" (Dechow, Sloan, & Sweeney, 1995). In addition, Guay et al. (1996) state that "only the Jones and modified Jones models appear to have the potential to provide reliable estimates of discretionary accruals." Moreover, Bartov et al. (2001) find that only the Jones and modified Jones model are consistently able to detect earnings management.

(discretionary and nondiscretionary). We focus on the firm's current working capital accruals or discretionary current accruals that are considered abnormal compared to industry peers. These abnormal discretionary current accruals are utilized as a proxy for earnings management.

As there is no particular reason to suspect an unusual degree of income-increasing or income-decreasing accruals in our randomly selected sample, we use the unsigned absolute value of the abnormal accruals to capture the extent of earnings management. Other studies have used the same measure as a proxy for the combined effect of income-increasing and income-decreasing earnings management (see, e.g., Bartov, Gul, & Tsui, 2001; Becker, Defond, Jiambalvo, & Subramanyam, 1998; Klein, 2002; Warfield, Wild, & Wild, 1995).

3.4. Informational asymmetry

We control for informational asymmetry in this study. Firms that are more informationally opaque may engage in a higher degree of earnings management because a higher degree of asymmetric information makes it more difficult for shareholders to monitor managers. As a result, managers may be better able to abuse their discretion over earnings. We employ analysts' earnings forecast errors and the dispersion of analysts' earnings forecasts as measures of information asymmetry (see Krishnaswami & Subramaniam, 1999; Thomas, 2002). The analysts' earnings forecast error is measured as the ratio of the absolute difference between actual earnings and the median forecast deflated by the stock price ten days before the earnings announcement date. Firms with higher asymmetric information are expected to have larger analysts' forecast errors. Our other proxy for informational asymmetry is the dispersion of analysts' earnings forecasts that is measured as the standard deviations across different analysts' earnings estimates. The divergence for analysts' forecasts may stem from the lack of available information about the firms. Hence, firms with more severe informational asymmetry are expected to show higher dispersion of analysts' forecasts.

3.5. Tobin's q

Tobin's q is employed as a measure of firm value in this study. Tobin's q is defined as the ratio of the market value to replacement values of a firm's assets. This approach has been used as a proxy for firm value in several studies (Hermalin & Weibach, 1981; Lang & Stulz, 1994; Morck, Shleifer, & Vishny, 1988; Yermack, 1996). We use the q estimator developed by Chung and Pruitt (1994) to compute Tobin's q as follows:

$$\textit{Tobin's } q = (\mathrm{MVE} + \mathrm{PS} + \mathrm{BVINV} + \mathrm{LTDEBT} + \mathrm{CL}-\mathrm{CA})/\mathrm{TA}$$

where MVE is the year-end value for common stock; PS is the liquidation value of the firm's preferred stock; BVINV is the book value of inventory; LTDEBT is the book value of the firm's long-term debt; CL and CA are the book values of, respectively, current assets and liabilities; and TA is the book value of the firm's total assets. Higher Tobin's q reflects higher firm value.

4. Empirical evidence

4.1. Summary statistics

Table 2 presents firm characteristics for our sample. The average firm in the sample has 3514.08 million in sales (1233.70 median) and 3464.20 million in total assets (1077.70 median). We utilize the EBIT/sales ratio as a measure of profitability. On average, firms in the sample are

Table 2
Summary statistics for the full sample

	N	Mean	Median	Max.	Min.	S.D.
Sales	1621	3514.08	1233.70	137,634.00	20.48	7885.09
Total assets	1621	3464.20	1077.70	198,938.00	40.49	8407.79
EBIT/sales	1621	10.45%	9.85%	48.77%	−118.42%	9.89%
Debt ratio	1621	23.41%	22.03%	98.39%	0.00%	17.37%
Capital expenditures/sales	1621	8.04%	5.20%	94.90%	0.00%	10.00%
Advertising expense/sales	1621	1.23%	0.00%	36.08%	0.00%	3.13%
DCA	1621	0.020	0.004	2.674	−0.831	0.153
Abs (DCA)	1621	0.069	0.034	2.674	0.000	0.138
The Governance Index	1621	9.21	9.00	16.00	2.00	2.92
Analysts' forecast errors	1621	0.553	0.083	61.600	0.000	2.567
Analysts' forecast error dispersion	1621	0.297	0.100	16.800	0.000	0.809
Tobin's *q*	1621	1.462	1.115	15.21	−0.120	1.327

Note: EBIT is earnings before interest and taxes. The debt ratio is computed as long-term debt divided by total assets. DCA represents the discretionary current accruals. Abs (DCA) is the unsigned absolute value of the discretionary current accruals. Tobin's *q* is computed as in Chung and Pruitt (1994). The analysts' earnings forecast error is measured as the ratio of the absolute difference between actual earnings and the median forecast deflated by the stock price ten days before the earnings announcement date. All figures are in millions.

profitable with the average EBIT/sales ratio of 10.45%. The ratio, however, ranges from −118.42% to 48.77%, which suggests that some firms suffer losses while other firms enjoy profits. The debt ratio is employed as a measure of financial distress. The average debt ratio is 23.41%. Growth opportunities are represented by the ratio of capital expenditures to sales. The average capital expenditure ratio is 8.04%. Finally, we control for advertising expenses because some prior studies argue that they proxy for customer goodwill. On average, firms spend 1.23% of sales on advertising.

The average discretionary current accruals (DCA) that represent the extent of earnings management are 0.020 (0.004 median). We use the unsigned absolute value of the discretionary current accruals, Abs (DCA), to capture the combined effect of both income-increasing and income-decreasing accruals. The absolute values for the DCA average 0.069 (0.034 median). The Governance Index averages 9.21 (9.0 median). The average firm imposes nine corporate governance provisions for shareholder rights. GIM characterize firms where shareholders enjoy strong shareholder rights (GINDEX < 5) as a "democracy" whereas firms where shareholder rights are severely restricted (GINDEX > 14) are viewed as a "dictatorship". We do have some "democratic" and "dictatorial" firms in the sample as the Governance Index in our sample ranges from two to sixteen.

We employ two alternative measures that gauge the extent of asymmetric information based on the studies conducted by Krishnaswami and Subramaniam (1999) and Thomas (2002). Analysts' forecast errors and analysts' forecast error dispersions are utilized. High forecast errors and a wide dispersion of the errors would indicate a higher degree of asymmetric information. The analysts' forecast errors average 0.553 (0.083 median) while the analysts' forecast error dispersion averages 0.297 (0.100 median). Finally, Tobin's *q* is employed as a measure for firm value. The average Tobin's *q* is 1.462 (1.115 median).

4.2. Earnings management and agency costs

4.2.1. Correlation analysis

We create a correlation matrix in Table 3 to further analyze the relations between earnings management and agency costs. The correlation coefficients between Abs (DCA) and the Governance

Table 3
Correlation matrix for the discretionary current accruals, the Governance Index and the two alternative proxies for asymmetric information

	1	2	3	4	5	6
1. DCA	1					
2. Abs (DCA)	0.676 *** (0.00)	1				
3. The Governance Index	−0.089 *** (0.00)	−0.113 *** (0.00)	1			
4. Analysts' forecast errors	−0.047 * (0.06)	0.015 (0.54)	−0.041 (0.10)	1		
5. Analysts' forecast error dispersion	−0.053 **(0.03)	−0.024 (0.34)	−0.051 ** (0.04)	0.585 *** (0.00)	1	
6. Tobin's *q*	0.140 *** (0.00)	0.154 *** (0.00)	−0.090 *** (0.00)	−0.117 *** (0.00)	−0.178 (0.00)	1

Note: EBIT is earnings before interest and taxes. The debt ratio is computed as long-term debt divided by total assets. DCA represents the discretionary current accruals. Abs (DCA) is the unsigned absolute value of the discretionary current accruals. Tobin's *q* is computed as in Chung and Pruitt (1994). The analysts' earnings forecast error is measured as the ratio of the absolute difference between actual earnings and the median forecast deflated by the stock price ten days before the earnings announcement date.
The *p*-value is shown in parentheses.
* Statistically significant at the 10% level.
** Statistically significant at the 5% level.
*** Statistically significant at the 1% level.

Index are −0.113 (significant at the 1% level). This inverse relationship suggests that firms where earnings management occurs more (less) have less (more) agency costs. Table 3 also shows the correlation coefficients between Abs (DCA) and the two proxies for asymmetric information. The coefficient is 0.015 for the analysts' forecast errors and −0.024 for the error dispersion. Neither of the coefficients is statistically significant. These results imply that there is not a strong relationship between earnings management and asymmetric information.

4.2.2. Multivariate regression analysis

Table 4 displays the regression results. The dependent variable is the absolute value for the discretionary current accruals, Abs (DCA). The test variable is the Governance Index that, as discussed, captures the extent of agency costs. We control for a number of factors that may impact earnings management including asymmetric information, firm size, profitability (EBIT/sales), financial distress (debt ratio), growth opportunities (capital expenditures/sales) and advertising expenses (advertising expense/sales). Model 1 includes the analysts' forecast errors as a proxy for asymmetric information and the other control variables. The coefficient for the Governance Index is −0.004 (significant at the 1% level). This evidence indicates that an inverse association between earnings management and agency costs exists even after controlling for several potentially confounding factors. Model 2 replaces the analysts' forecast errors with the error dispersions. The results in Model 2 are qualitatively similar to those in Model 1 with the coefficient of the Governance Index still negative and highly significant.[6] This inverse association indicates that firms where agency costs are less (more) acute experience a higher (lower) degree of earnings management.[7] This evidence seems to suggest that earnings management is not conducted opportunistically.

[6] The coefficient for the Governance Index is −0.004, which implies that, for each additional governance provision imposed on shareholder rights, there is a decline of 0.4% in the discretionary current accruals.

[7] As a robustness check, we eliminate the extreme 1% observations from the dataset and re-estimate the regression to ensure that our results are not driven by outliers.

Table 4
Regressions of the absolute values of the discretionary current accruals on the Governance Index and controls

	Model 1 (*t*-statistics)	Model 2 (*t*-statistics)
Intercept	0.187*** (9.45)	0.193*** (9.64)
The Governance Index	-0.004*** (−3.58)	-0.004*** (−3.62)
Analysts' forecast errors	0.000 (0.22)	–
Analysts' forecast error dispersion	–	−0.005 (−1.13)
Log (total assets)	−0.009*** (−3.41)	−0.010*** (−3.58)
EBIT to sales	0.019 (0.54)	0.007 (0.20)
Debt ratio	−0.031 (−1.47)	−0.027 (−1.28)
Capital expenditures to sales	−0.068** (−1.97)	−0.064* (−1.84)
Advertising expense to sales	−0.105 (−0.97)	−0.100 (−0.92)
N	1621	1621
F-statistics	6.82***	7.00***
Adjusted R^2	2.5%	2.5%

*, **, ***Indicate statistical significance at the 10%, 5%, and 1% respectively.
Note: EBIT is earnings before interest and taxes. The debt ratio is computed as long-term debt divided by total assets. DCA represents the discretionary current accruals. Abs (DCA) is the unsigned absolute value of the discretionary current accruals. Tobin's *q* is computed as in Chung and Pruitt (1994). The analysts' earnings forecast error is measured as the ratio of the absolute difference between actual earnings and the median forecast deflated by the stock price ten days before the earnings announcement date.

4.3. Earnings management and firm value

We examine the relations between the extent of earnings management and firm value to further investigate whether earnings management is opportunistic or beneficial. If managers manage earnings for self-serving purposes, and not for the purpose of maximizing shareholders' wealth, we should find an inverse relation between the degree of earnings management and firm value. In other words, firms where earnings management occurs to a greater (lesser) extent are expected to have lower (higher) firm value. On the other hand, if earnings management is, by and large, intended to improve earnings information, thereby, facilitating communication between management, on one side, and stockholders and the public, on the other side, we should observe a positive relation between the extent of earnings management and firm value.

We run a regression analysis where Tobin's *q* is the dependent variable. The results are shown in Table 5. The test variable is Abs (DCA). In Model 1, we include all of the control variables and the analysts' forecast errors. In Model 2 we replace the analysts' forecast errors with the error dispersions. The results from both models are qualitatively similar. Therefore, we will discuss the results for Model 1 only. The coefficient of Abs (DCA) is positive and significant at the 1% level indicating that firms with more (less) earnings management have higher (lower) value.[8] Earnings management appears to be beneficial.

The coefficient of the Governance Index that should capture agency costs is negative and significant. These results suggest that firms with high (low) agency costs have lower (higher) firm value. This is consistent with the predictions of agency theory. The coefficients for the two alternative measures of asymmetric information are both negative and significant. Firms with

[8] We exclude the 1% extreme observations and rerun the regression to test if the results are vulnerable to the presence of outliers. The results remain similar after the exclusion of the outliers.

Table 5
Regressions of Tobin's q on the Governance Index, information asymmetry proxies, the absolute values of the discretionary accruals and controls

	Model 1 (t-statistics)	Model 2 (t-statistics)
Intercept	1.473*** (8.43)	1.501*** (8.50)
The Governance Index	−0.024** (−2.33)	−0.024** (−2.36)
Analysts' forecast errors	−0.025** (−2.12)	–
Analysts' forecast error dispersion	–	−0.089** (−2.30)
Abs (DCA)	1.281*** (5.99)	1.265*** (5.91)
Log (total assets)	0.005 (0.21)	0.003 (0.13)
EBIT to sales	4.327*** (14.08)	4.228*** (13.42)
Debt ratio	−1.834*** (−10.20)	−1.809*** (−10.00)
Capital expenditures to sales	0.410 (1.38)	0.485 (1.62)
Advertising expense to sales	3.655*** (3.90)	3.707*** (3.95)
N	1621	1621
F-statistics	58.58***	58.71***
Adjusted R^2	22.1%	22.2%

*, **, ***Indicate statistical significance at the 10%, 5%, and 1% respectively.

Note: EBIT is earnings before interest and taxes. The debt ratio is computed as long-term debt divided by total assets. DCA represents the discretionary current accruals. Abs (DCA) is the unsigned absolute value of the discretionary current accruals. Tobin's q is computed as in Chung and Pruitt (1994). The analysts' earnings forecast error is measured as the ratio of the absolute difference between actual earnings and the median forecast deflated by the stock price ten days before the earnings announcement date.

high (low) asymmetric information are associated with lower (higher) values. The evidence for agency costs and asymmetric information seems to make intuitive sense based on our results.[9]

In addition, the results for the other control variables indicate that the more profitable firms (high EBIT/sales) have higher firm value whereas firms that are more financially distressed (high debt ratio) have lower firm value. Again these results are consistent with our general expectations for profitability and financial distress variables.

5. Concluding remarks

We investigate if earnings management, on average, is opportunistic or beneficial by employing empirical tests based on agency theory. If earnings management is inconsistent with shareholders' wealth maximization, we should see more earnings management in firms where agency costs are more acute. Our empirical evidence demonstrates that this is not the case. Earnings management does not appear to occur to a larger extent in firms with high agency costs. In fact, the results reveal that there is a negative relationship between earnings management and agency costs. We interpret the results as suggesting that earnings management, on average, is not opportunistic, and, perhaps, even beneficial. We test the relationships between firm value and earnings management to further examine this issue. The empirical results show that there is a positive relationship between earnings management and firm value. Again, these results indicate that earnings management is not detrimental to firm value.

Our evidence refutes the perception that earnings management is opportunistic. Several academic studies argue that, in spite of the occasional abuse of managerial discretion over

[9] Moreover, we replicate Subramanyam (1996) by regressing stock returns on the discretionary current accruals. We obtain similar results, suggesting that accruals are priced by the stock market. Earning management appears to add informational value.

earnings, the latitudes given to managers to adjust earnings allow managers to convey private information. Communication may actually be improved. Our evidence is consistent with the view that earnings management is, at least, not detrimental.

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