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The effect of analyst coverage on accounting conservatism

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Abstract
Purpose – This study examines whether high analyst coverage increases or decreases accounting conservatism.
Design/methodology/approach – This study selects sample firms from the Compustat and I/B/E/S databases for years 1989-2006. We use both accrual-based and market-value-based measures of accounting conservatism. We also use the extent to which negative cash flow from operations is more timely recognized via accruals than positive cash flow from operations to measure accounting conservatism. The regression analyses are conducted to test the hypotheses.
Findings – We find strong evidence that analyst coverage is positively associated with accounting conservatism. The results suggest that firms choose more conservative accounting methods when they are followed by more analysts than when they are followed by fewer analysts. The results are robust to a battery of sensitivity analyses.
Originality/value – This study sheds light on how analyst coverage affects firms' accounting choices. We extend the limited research on the monitoring role of analyst coverage. Our findings are consistent with the notion that analyst coverage plays an important corporate governance role in the financial reporting process. This study also adds to the literature on the economic determinants of accounting conservatism, and provides some implications for practitioners.
Keywords Analyst coverage, Accounting conservatism, Corporate governance.
Paper type Research paper

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1. Introduction

Conservative accounting recognizes losses as they are discovered, but defers gains until they are verified. Consequently, bad news is more timely reflected in accounting earnings than good news. Accounting conservatism can reduce agency problems arising from managers' opportunistic use of accounting discretion. Prior research (e.g., Watts, 1993; Ahmed et al., 2002; Zhang, 2008) investigates the economic consequence of accounting conservatism. These studies suggest that accounting conservatism can increase the efficiency of contracts written between conflicted parties. Prior research also examines the economic determinants of accounting conservatism. For example, Ahmed and Duellman (2007) find that board governance quality is positively associated with accounting conservatism. Likewise, Garcia Lara et al. (2009) document a positive association between accounting conservatism and a composite measure of corporate governance quality. These studies suggest that strong corporate governance may lead to more conservative accounting.

Analysts play an information intermediary role in the capital market because their work involves interpreting, acquiring, and communicating information for other market participants. These information intermediary duties facilitate analysts to monitor the management. Analysts can effectively scrutinize firms' financial reporting because they have great experience on tracking corporate financial statements and substantial industry-wide knowledge. Recently, Yu (2008) and Knyazeva (2007) find that firms with high analyst coverage engage in less earnings management than do firms with low analyst coverage, suggesting that analysts play an important monitoring role in financial reporting. Analyst coverage may directly or indirectly affect managers' accounting choices. Analysts can directly monitor the management by issuing research reports and raising questions when they interact with the management. Analysts may also indirectly monitor the management by alerting other corporate governance mechanisms including board of directors and external auditors so that the later ones can more effectively monitor firms' financial reporting. Thus, high analyst coverage may lead to high accounting conservatism if analyst coverage serves as a corporate governance role.

On the other hand, high analyst coverage can mitigate information asymmetry between managers and outside investors as analysts play an information intermediary role. LaFond and Watts (2008) argue that accounting conservatism can reduce managers' incentives and ability to manipulate accounting numbers and so reduce information asymmetry. They find that firms with more information asymmetry demand more accounting conservatism. Their findings suggest that high analyst coverage may lead to a low demand for accounting conservatism because information asymmetry is low for firms with high analyst coverage. Therefore, it is not clear whether high analyst coverage increases or decreases accounting conservatism. If analysts' monitoring role dominates over their information intermediary role in firms' accounting choices, we expect a positive association between analyst coverage and accounting conservatism. However, analyst coverage will be negatively associated with accounting conservatism if the effect of analysts' information intermediary role on accounting choices is greater than that of analysts' monitoring role.

This study examines whether high analyst coverage increases or decreases accounting conservatism. Using a sample of 9,924 firm-year observations over the period 1989 to 2006, we document strong evidence that firms adopt more conservative accounting when they are followed by more analysts than when they are followed by fewer analysts. The results still hold after allowing for the autocorrelation of time-series data, the endogeneity of analyst coverage, the potential confounding effects of competing corporate governance mechanisms, and using asymmetric loss recognition test. These findings are consistent with the notion that analyst coverage plays an important corporate governance role in the financial reporting process.

This study contributes to the literature in the following ways. First, this study sheds light on how analyst coverage affects firms' accounting choices. Since whether analyst coverage positively or negatively affects accounting conservatism is not clear in the literature, it is warranted to make some clarifications on this issue. Second, this study extends the limited research on the monitoring role of analyst coverage. Unlike Yu (2008) and Knyazeva (2007), we focus on conservative accounting choices. This study provides further evidence on analysts' governance role by examining the relationship between analyst coverage and accounting conservatism. Third, this study also adds to the literature on the economic determinants of accounting conservatism. Although prior research (e.g., Ahmed and Duellman, 2007; Garcia Lara et al., 2009) finds that high quality corporate governance increases accounting conservatism, this is the first study to examine whether governance mechanism arising from analyst coverage affects accounting conservatism. This study provides further evidence to support the argument that there exists a positive impact of corporate governance on accounting conservatism.

The rest of the paper is organized as follows. Section 2 reviews the literature on the economic determinants of accounting conservatism. Section 3 discusses role of analysts. Section 4 develops the hypotheses. Section 5 addresses the research design. Section 6 presents empirical results. Section 7 concludes.

2. Economic determinants of accounting conservatism

There is a growing literature that examines the economic determinants of accounting conservatism. Ahmed et al. (2002) investigate the relationship between accounting conservatism and bondholder-shareholder conflicts over dividend policy. They find that firms facing more severe bondholder-shareholder conflicts over dividend policy adopt more conservative accounting. Lobo and Zhou (2006) examine whether the enactment of the Sarbanes-Oxley Act affects accounting conservatism. They document evidence on an increase in conservatism in financial reporting following the Sarbanes-Oxley Act. Bushman and Piotroski (2006) examine whether legal and political institutions affect financial reporting incentives for conservative accounting. They find that accounting is more conservative in countries with both high quality judicial regimes and high relative usage of private bonds, and in countries with both high quality judicial regimes and more diffuse ownership structures.

Ahmed and Duellman (2007) examine the association between accounting conservatism and board characteristics. They find that accounting conservatism is

positively associated with the proportion of outside directors and the percentage of outside directors' shareholding, suggesting that accounting conservatism can assist outside directors in reducing agency costs. Using a sample of listed companies in Spain, Garcia Lara et al. (2007) find that accounting conservatism decreases in the CEO's influence over the board of directors, measured by board characteristics including board size, the proportion of non-executive directors, the proportion of independent directors, the existence of a executive board chairman, and the existence of an audit committee, a nomination or remuneration committee, and an executive committee. Chung and Wynn (2008) investigate the effect of managerial legal liability coverage on accounting conservatism. Using directors' and officers' liability insurance coverage and cash for indemnification as a proxy for managerial legal liability coverage, they find that accounting earnings are less conservative for firms with high managerial legal liability coverage than for firms with low managerial legal liability coverage.

Jenkins and Velury (2008) examine whether auditor tenure affects accounting conservatism, and find that earnings conservatism is positively associated with the length of the auditor-client relationship. LaFond and Watts (2008) find that accounting conservatism increases in information asymmetry between managers and outside investors. Their findings suggest that firms with high information asymmetry have a higher demand for conservatism in financial reporting. LaFond and Roychowdhury (2008) argue that the high severity of agency problem increases the demand for accounting conservatism, and find a negative association between managerial ownership and accounting conservatism. Using a composite measure of corporate governance, Garcia Lara et al. (2009) also find that stronger corporate governance is associated with a high degree of accounting conservatism in U.S. Nichols et al. (2009) examine whether there is a difference in the degree of accounting conservatism between public and private banks. They find that public banks adopt more conservative accounting than private banks as the former faces greater agency costs.

3. Role of analysts

Analysts play an information intermediary role in the capital market as they can interpret public information, and acquire and convey private information to investors (Healy and Palepu, 2001). There is a large body of research that examines the information intermediary role of analysts. For instance, Hong et al. (2000) examine whether analyst coverage affects the profitability of momentum strategies. They find that momentum strategies are less profitable for firms with high analyst coverage, suggesting that information about those firms is more available to the investing public. Ayers and Freeman (2003) investigate the association between analyst coverage and the pricing of future earnings, and document that prices incorporate future earnings earlier for firms with high analyst coverage than for firms with low analyst coverage. Frankel and Li (2004) use insider trading profits as a proxy for information asymmetry between managers and outside investors. They find that insider trading profits are lower when firms have high analyst coverage. These studies suggest that the information intermediary role of analysts mitigates information asymmetry.

Analysts can also monitor financial reporting in the process of information intermediary. For example, analysts can interact directly with the management and raise questions in earnings release conferences. Since analysts have great experience on tracking corporate financial statements and substantial industry-wide knowledge, they can effectively scrutinize firms' financial reporting. Thus, analyst coverage can act as a magnifying lens of managerial opportunism. Dyck et al. (2006) find that analysts are more likely to detect corporate fraud than the Securities and Exchange Commission and auditors. This suggests that analyst coverage is an effective channel to monitor managers.

Although analysts can play an important corporate governance role, the research on this topic is limited in the literature. The governance role of analyst coverage has been investigated by Yu (2008) and Knyazeva (2007). Yu (2008) examines whether analyst coverage affects earnings management. He finds that analyst coverage is negatively associated with the level of discretionary accruals, suggesting that firms followed by more analysts engage in less earning management than firms followed by fewer analysts. Moreover, he finds that firms with high analyst coverage are less likely to just beat or meet earnings benchmarks than firms with low analyst coverage, consistent with the results based on discretionary accruals. Knyazeva (2007) investigates the effect of analyst coverage on firm behavior. She also documents a negative association between analyst coverage and earnings management, and argues that analyst coverage can serve as a partial substitute to other governance mechanisms in constraining earnings management.

4. Hypotheses development

Agency costs can be mitigated by writing contracts between the parties with conflicting interests. Since accounting numbers are used in the contracts, managers may have incentives to adopt aggressive accounting policies to defer (expedite) the recognition of losses (gains) at the expense of some parties' interests. As a result, contracting itself cannot fully solve the agency problems. Corporate governance mechanisms can improve the efficiency of contracts and reduce agency problems by monitoring firms' financial reporting. Watts (1993) suggests that accounting conservatism increases the efficiency of debt contracts written between shareholders and bondholders. Accounting conservatism can also reduce managers' short-term behavior to expropriate shareholders' wealth because conservative accounting has the propensity to recognize losses earlier and gains later (Ball and Shivakumar, 2005). Thus, accounting conservatism is an important way to reduce agency costs, which is expected in a strong corporate governance environment. Consistent with this notion, Garcia Lara et al. (2009) document evidence that strong corporate governance leads to more accounting conservatism. Since analyst coverage serves as a corporate governance mechanism through issuing research reports and raising questions when analysts interact with managers, firms with high analyst coverage are more likely to have high corporate governance quality and so adopt more conservative accounting.

Analysts' reputations and compensation depend on the quality of their research and the accuracy of their forecasts and recommendations. Analysts have incentives to search for private information in order to increase their job performance. Through acquiring private information, analysts may enhance the effectiveness of firms' other corporate governance mechanisms in monitoring financial reporting. For example, bad news can be more quickly communicated to the public by analysts when firms are followed by more analysts. This will give a warning signal to outside directors and external auditors in these firms that they should be concerned with the firms' accounting treatment of bad news. Thus, bad news could be more quickly incorporated into accounting numbers when firms have high analyst coverage. Based on the above discussions, we hypothesize that firms with high analyst coverage adopt more conservative accounting than do firms with low analyst coverage. The first hypothesis is formulated as follows:

H1 Analyst coverage is positively associated with accounting conservatism.

While monitoring financial reporting, analysts also interpret and produce information to the investing public. Prior research (e.g., Hong et al., 2000; Frankel and Li, 2004) suggests that high analyst coverage can reduce information asymmetry between managers and outside investors. LaFond and Watts (2008) examine the effect of information asymmetry on accounting conservatism. They find that firms with more information asymmetry adopt more conservative accounting than do firms with less information asymmetry. Since high analyst coverage leads to less information asymmetry, we also hypothesize that accounting is less conservative for firms with high analyst coverage than for firms with low analyst coverage. Thus, the second hypothesis is developed as follows:

H2. Analyst coverage is negatively associated with accounting conservatism.

5. Research design

5.1 Data collection

We begin to select all firm-year observations over the period 1988 to 2007 from the Compustat's industrial annual data file.[1] Since data for year *t*-1 to *t*+1 are used for computing the measure of accounting conservatism at year *t*, the sample period for testing the hypothesis is 1989 to 2006. Next, the raw sample from Compustat is merged with the I/B/E/S detail file to identify firms that are covered by both Compustat and I/B/E/S. After excluding observations with missing data for computing accrual-based measure of accounting conservatism and independent variables used in the main analysis, the final sample consists of 9,924 firm-year observations over the period 1989 to 2006.

Table I reports the frequency and percent of sample firms for each two-digit SIC industry from which there are at least 100 observations in the sample. Industries including *business services* (17.86%), *electrical and electronic equipment* (11.32%), *industrial machinery and equipment* (10.42%), *instruments and related products* (9.67%), and *chemicals and allied products* (9.52%) are most widely represented in the sample. In addition, the sample size is reduced to 5,148 firm-year observations when

market-value-based measure of accounting conservatism is used for testing the hypothesis.[2]

Table I. Distribution of sample firms across industries

Two-Digit SIC Codes	Industry Description	Frequency	Percent(%)
20	Food products	219	2.21
28	Chemicals and allied products	945	9.52
30	Rubber and plastics products	138	1.39
34	Fabricated metal products	113	1.14
35	Industrial machinery and equipment	1,034	10.42
36	Electrical and electronic equipment	1,123	11.32
37	Transportation equipment	245	2.47
38	Instruments and related products	960	9.67
39	Miscellaneous manufacturing	197	1.99
48	Communications	172	1.73
53	General merchandise stores	208	2.10
54	Food stores	113	1.14
55	Automotive dealers and gasoline service	113	1.14
56	Apparel and accessory stores	418	4.21
57	Home furniture and equipment stores	255	2.57
58	Eating and drinking places	346	3.49
59	Miscellaneous retail	461	4.65
73	Business services	1,772	17.86
79	Amusement and recreation services	133	1.34
Others		959	9.62
Total		9,924	100

5.2 Measure of accounting conservatism

Following Ahmed et al. (2002), we use both an accrual-based and a market-value-based measure of accounting conservatism. The accrual-based measure of accounting conservatism (i.e., *CONAC*) is computed as the mean of total accruals deflated by total assets for year *t*-1 to *t*+1 where *t* is the year of interest, multiplied by -1.[3] Like Givoly and Hayn (2000), we measure total accruals as net income before extraordinary items plus depreciation less cash flow from operations.[4] Since *CONAC* increases in the amount of negative accruals, a high value of *CONAC* indicates a high level of accounting conservatism.

The market-value-based measure of accounting conservatism (i.e., *CONBM*) is computed by estimating the following fixed-effect regression model:

$$BM_{it} = \alpha + \alpha_i + \alpha_t + \sum_{k=0}^{6} \beta_k RET_{it-k} + \varepsilon_{it} \qquad (1)$$

where

BM_{it} = the book-to-market ratio for firm *i* at year *t*,
RET_{it-k} = the stock return (including dividends) for firm *i* at year *t-k*.

Equation (1) is estimated for year t-1 to t+1, where t is the year of interest.[5] α_i is the firm-specific bias component of the book-to-market ratio, which reflects a firm's accounting conservatism relative to the other firms in the sample. α_t is the year-specific bias component of the book-to-market ratio. Based on prior research (e.g., Beaver and Ryan, 2000; Ahmed et al., 2002), *CONBM* is measured as α_i, multiplied by -1. High accounting conservatism is expected to yield higher values of *CONBM*.

5.3 Regression analysis

The following regression model is used for testing the hypotheses:

$$CON = b_0 + b_1 ANALYST + b_2 DIV + b_3 DEBT + b_4 ROA + b_5 SIZE + b_6 SGROW + b_7 RDADV + Industry\ dummies + Year\ dummies + \varepsilon \quad (2)$$

where

CON = *accounting conservatism*, measured by either *CONAC* or *CONBM*,
ANALYST = *analyst coverage*, measured as the total number of analysts who issue forecasts of year t+1's earnings per share for a firm during year t (Yu, 2008),
DIV = common dividends divided by total assets,
DEBT = long-term debt divided by total assets,
ROA = net income before extraordinary items divided by total assets,
SIZE = the logarithm of total assets,
SGROW = the annual percentage change in sales,
RDADV = the sum of R&D expense and advertising expense divided by sales.

The coefficient on *ANALYST*, i.e., b_1, will be positive and significant if H_1 is supported, but will be negative and significant if H_2 is supported. We include *DIV* and *DEBT* in equation (1) to control for the effect of bondholder-shareholder conflicts over dividend policy on accounting conservatism (Ahmed et al., 2002). Since firms demand for more accounting conservatism when bondholder-shareholder conflicts over dividend policy are severer, the coefficients on both *DIV* and *DEBT*, i.e., b_2 and b_3, are expected to be positive.

Following Ahmed et al. (2002), we also add other variables in the regression to control for profitability, size, sales growth, and growth opportunities. Ahmed et al. (2002) argue that high profitable firms can better afford accounting conservatism. Thus, earnings profitability may positively affect accounting conservatism. The coefficient on *ROA*, i.e., b_4, is expected to be positive when *CONBM* is used in the regression. However, we expect that b_4 will be negative when *CONAC* is used in the regression because Ahmed et al. (2002) suggest that the mechanical, negative association between *CONAC* and *ROA* dominates the positive association between accounting conservatism and profitability. Large firms have high political costs, resulting in high accounting conservatism (Zmijewski and Hagerman, 1981). Thus, the coefficient on *SIZE*, i.e., b_5, is expected to be positive. Like Ahmed et al. (2002), we expect that the coefficient on *SGROW*, i.e., b_6, will be negative or positive when *CONAC* or *CONBM* is used in the regression, respectively, because sales growth may positively affect either accruals or the market's expectation of future growth reflected in *CONBM*. Klein (2002) suggests that growth opportunities are positively associated with aggressive accounting choices.

Moreover, growth opportunities may be captured in *CONBM*. Thus, the coefficient on *RDADV*, i.e., b_7, is expected to be negative or positive when *CONAC* or *CONBM* is used in the regression, respectively. To control for the industry-fixed effect and the year-fixed effect, we include both industry dummies and year dummies in the regression model.[6] We conduct the main analysis by estimating equation (2) on pooled data over the period 1989 to 2006.

We also conduct several additional regression analyses. First, we estimate equation (2) separately for each year to apply Fama-MacBeth test to avoid the autocorrelation of time-series data in the pooled regression. Fama-MacBeth test is based on the separate estimation of equation (2) for each of 18 years, i.e., 1989-2006.[7] .

Second, we run the two-stage regression to allow for the potential endogeneity of analyst coverage. The relationship between accounting policy and analyst coverage is likely to be endogenous because analysts can self-select firms. We estimate the first-stage model as follows:

$$ANALYST = a_0 + a_1 SPIND + a_2 DEBT + a_3 ROA + a_4 SIZE + a_5 RDADV + \varepsilon \quad (3)$$

In equation (3), *SPIND* is a dummy variable coded "1" if a firm is included in the S&P 500 index and "0" otherwise. Following Yu (2008), we choose *SPIND* as the instrumental variable because it can capture the variations in analyst coverage that are exogenous to firms' accounting choices. We include *DEBT*, *ROA*, *SIZE*, and *RDADV* in equation (3) since prior research (e.g., Yu, 2008; Chang, Dasgupta, and Hilary, 2006) suggests that these firm characteristics may affect analyst coverage. The second-stage model (i.e., equation (2)) is estimated by replacing *ANALYST* with the fitted value of *ANALYST* from equation (3) (i.e., *ANALYST_F*).

Third, we examine whether the role of analysts in increasing accounting conservatism is dominated over or overlapped by the role of outside directors and institutional shareholders. We consider these two competing governance mechanisms because they may affect managerial behavior in choosing accounting policy. Klein (2002) finds that outside directors play an important role in constraining earnings management. Koh (2007) suggests that long-term institutional shareholders can reduce aggressive earnings management. Thus, equation (2) is expanded by including board independence and institutional shareholding:

$$CON = b_0 + b_1 ANALYST + b_2 BRDIND + b_3 INSTHOLD + b_4 DIV + b_5 DEBT + b_6 ROA + b_7 SIZE + b_8 SGROW + b_9 RDADV + Industry\ dummies + Year\ dummies + \varepsilon \quad (4)$$

where

BRDIND = *board independence*, measured as the proportion of outside directors on the board,

INSTHOLD = *institutional shareholding*, measured as the percentage of shares held by institutional investors.

We collect the data of board independence and institutional shareholding from IRRC database. Since IRRC database provides the data of institutional shareholding only for year 1999 to 2001, the sample size is reduced to 673 and 477 firm-year observations for *CONAC* and *CONBM*, respectively.

Fourth, we conduct the asymmetric loss recognition test based on Ball and Shivakumar (2005). We estimate the following model:

$$ACC = b_0 + b_1DP + b_2CFO + b_3DP*CFO + b_4ANALYST + b_5ANALYST*CFO + b_6ANALYST*DP*CFO + b_7DEBT + b_8ROA + b_9SIZE + b_{10}SGROW + b_{11}BM + b_{12}SALES + Industry\ dummies + Year\ dummies + \varepsilon \quad (5)$$

where

ACC = *accruals*, measured as income before extraordinary items less cash flow from operations deflated by the beginning total assets,

DP = a dummy variable coded "1" if cash flow from operations is negative and "0" otherwise,

CFO = cash flow from operations deflated by the beginning total assets,

BM = the book value of common equity divided by the market value of common equity,

SALES = sales divided by total assets.

In equation (5), the coefficient on *CFO* is expected to be negative, while the coefficient on *DP*CFO* is expected to be positive (Ball and Shivakumar, 2005). The positive coefficient on *DP*CFO* means that negative cash flow from operations is more timely recognized via accruals than positive cash flow from operations, which reflects accounting conservatism. Thus, the coefficient on *ANALYST*DP*CFO* can capture the effect of analyst coverage on accounting conservatism. If firms with high analyst coverage adopt more (less) conservative accounting choices, b_6 is expected to be significantly positive (negative). We add several firm characteristics including *DEBT*, *ROA*, *SIZE*, *SGROW*, *BM*, and *SALES* as prior research (e.g., Klein, 2002; Ahmed et al., 2002) suggests that they may affect the level of accruals. The coefficients on *ROA*, *SGROW*, and *SLAES* are expected to be positive, while the coefficients on *DEBT*, *SIZE*, and *BM* are expected to be negative.

6. Empirical results

Table II presents descriptive statistics of the variables. The mean of *CONAC* is 0.018, suggesting that on average accruals are negative. The mean of *CONBM* is 0.221. Usually, there are about nine analysts following a firm, consistent with the average number of analyst followings in Yu (2008). The mean return on assets is 0.001, which is close to that in Yu (2008). The mean total assets of the sample firms are $359 million.

Table II. Descriptive statistics

Variable	N	Mean	Median	Std	Q1	Q3
CONAC	9,924	0.018	0.008	0.079	-0.019	0.039
CONBM	5,148	0.221	0.259	1.099	-0.135	0.598
ANALYST	9,924	9.279	6.000	8.970	3.000	13.000
DIV	9,924	0.008	0.000	0.017	0.000	0.008
DEBT	9,924	0.133	0.064	0.165	0.000	0.220
ROA	9,924	0.001	0.048	0.192	-0.008	0.094
SIZE	9,924	5.884	5.613	1.984	4.423	7.100
SGROW	9,924	0.241	0.118	0.509	0.021	0.280
RDADV	9,924	0.150	0.077	0.267	0.031	0.170

Notes: *CONAC* is *accrual-based measure* of accounting conservatism, measured as the mean of total accruals deflated by total assets for year *t*-1 to *t*+1 where *t* is the year of interest, multiplied by -1. *CONBM* is *market-value-based measure* of accounting conservatism, measured as the firm-specific bias component of the book-to-market ratio, which is estimated using equation (1). *ANALYST* is *analyst coverage*, measured as the total number of analysts who issue forecasts of year *t*+1's earnings per share for a firm during year *t* (Yu, 2008). *DIV* is common dividends divided by total assets. *DEBT* is long-term debt divided by total assets. *ROA* = net income before extraordinary items divided by total assets. *SIZE* is the logarithm of total assets. *SGROW* is the annual percentage change in sales. *RDADV* is the sum of R&D expense and advertising expense divided by total assets.

Table III reports Pearson correlations among the independent variables. Large firms are followed by more analysts (r = 0.59). Firms with high R&D and advertising intensity are less profitable (r = -0.53). Since the absolute values of all correlation coefficients are less than 0.60, multicollinearity is unlikely to be a severe issue for the regression.

Table III. Pearson correlations

Variable	*DIV*	*DEBT*	*ROA*	*SIZE*	*SGROW*	*RDADV*
ANALYST	0.229***	0.002	0.198***	0.594***	-0.040***	-0.060***
DIV		0.025**	0.223***	0.322***	-0.135***	-0.112***
DEBT			-0.022**	0.249***	-0.099***	-0.107***
ROA				0.280***	-0.131***	-0.529***
SIZE					-0.153***	-0.218***
SGROW						0.276***

Notes: ***, ** significant at 1% and 5% levels, respectively (two-tailed tests).

Table IV provides the main results on testing the hypotheses. Columns 3 and 4 in Table IV report the results when the accrual-based measure of accounting conservatism is used as the dependent variable. We find that the association between *CONAC* and *ANALYST* is significantly positive (t-statistic = 7.46, p-value < 0.01), consistent with H_1 but inconsistent with H_2. This suggests that firms adopt more conservative accounting choices when they are followed by more analysts. Thus, the effect of analysts' monitoring role on accounting conservatism dominates over that of analysts' information intermediary role. In addition, we find that *CONAC* is positively associated with *DIV*, consistent with the notion that firms with severe bondholder-shareholder conflicts over dividend policy employ more conservative accounting (Ahmed et al., 2002). A strong negative relation between *CONAC* and *ROA* is documented, suggesting that the mechanical relation dominates the relation between accounting conservatism and profitability. We find that large firms are more conservative in accounting choices when conservatism is measured by *CONAC*. Contrary to the prediction, sales growth is

positively associated with *CONAC*. As expected, firms with high growth opportunities have low *CONAC*.

Table IV. The association between accounting conservatism and analyst coverage

	CONAC			*CONBM*		
Variable	Predicted sign	Coefficient	*t*-statistic	Predicted sign	Coefficient	*t*-statistic
Intercept	?	-0.010	-2.31**	?	-0.236	-2.62***
ANALYST	+/-	0.001	7.46***	+/-	0.012	6.44***
DIV	+	0.249	5.79***	+	2.305	3.02***
DEBT	+	-0.006	-1.26	+	0.364	3.79***
ROA	-	-0.226	-53.50***	+	0.332	2.26**
SIZE	+	0.001	2.91***	+	-0.103	-10.64***
SGROW	-	0.004	2.88***	+	0.672	10.03***
RDADV	-	-0.016	-5.22***	+	0.119	0.80
Industry dummies			Included			Included
Year dummies			Included			Included
N			9,924			5,148
F-statistic			126.84***			37.95***
Adj R^2			35.29%			20.99%

Notes: The regression model is equation (2). ***, ** significant at 1% and 5% levels, respectively (two-tailed tests).

Columns 6 and 7 in Table IV present the results when *CONBM* is used as a proxy for accounting conservatism. We find that *CONBM* is positively associated with *ANALYST* (*t*-statistic = 6.44, *p*-value < 0.01), supporting H_1. The results suggest that high analyst coverage can increase accounting conservatism. We also find that *CONBM* is high when firms have severe bondholder-shareholder conflicts over dividend policy measured by either *DIV* or *DEBT*. As opposed to *CONAC*, *CONBM* is positively associated with profitability. The results show that *CONBM* is negatively associated with *SIZE*, inconsistent with the prediction. Also, we document that *CONBM* is positively associated with *SGROW*.

Table V reports the results using Fama-MacBeth test. When *CONAC* is used as the dependent variable, the results show that the mean coefficient on *ANALYST* is significantly positive (*t*-statistic = 4.70, *p*-value <0.01), consistent with H_1. Similar to the results using the pooled regression, *CONAC* is positively associated with *DIV* and *SIZE*, and is negatively associated with *ROA* and *RDADV*. When accounting conservatism is measured by *CONBM*, we find a positive association between *CONBM* and *ANALYST* (*t*-statistic = 3.86, *p*-value <0.01), suggesting that analyst coverage positively affects accounting conservatism. We also find that *CONBM* is positively related to *DIV*, *DEBT*,

and *SGROW*. Unlike the results of the main analysis, *CONBM* is only marginally significantly associated with *SIZE*, and is positively associated with *RDADV*.

Table V. Fama-MacBeth test

	CONAC			*CONBM*		
Variable	Predicted sign	Mean coefficient	*t*-statistic	Predicted sign	Mean coefficient	*t*-statistic
Intercept	?	-0.005	-0.63	?	0.349	1.21
ANALYST	+/-	0.001	4.70***	+/-	0.011	3.86***
DIV	+	0.250	4.91***	+	2.488	2.05*
DEBT	+	0.000	0.11	+	0.438	4.95***
ROA	-	-0.223	-18.35***	+	0.433	1.46
SIZE	+	0.002	2.44**	+	-0.080	-1.84*
SGROW	-	-0.002	-0.59	+	0.531	3.22***
RDADV	-	-0.018	-2.57**	+	0.295	2.63**
Industry dummies			Included			Included
N			18			18
RMSE			0.062***			0.641***

Notes: ***, **, and * significant at 1%, 5%, and 10% levels, respectively (two-tailed tests).

Table VI presents the results on the two-stage model. We find that *CONAC* is positively related to *ANALYST_F* (*t*-statistic = 2.89, *p*-value <0.01), which supports the hypothesis. We also find that *CONAC* is positively related to *DIV*, *SIZE*, and *SGROW*, and is negatively related to *ROA* and *RDADV*. Similarly, we document a positive relationship between *CONBM* and *ANALYST_F* (*t*-statistic = 2.50, *p*-value <0.05). Again, we find that *CONBM* is positively related to *DIV*, *DEBT*, *ROA*, and *SGROW*, and is negatively related to *SIZE*. Thus, the results still hold after controlling for the endogeneity of analyst coverage.

Table VI. Two-stage regression

	CONAC			*CONBM*		
Variable	Predicted sign	Coefficient	*t*-statistic	Predicted sign	Coefficient	*t*-statistic
Intercept	?	-0.011	-2.32**	?	-0.260	-2.41**
ANALYST_F	+/-	0.001	2.89***	+/-	0.011	2.50**
DIV	+	0.253	5.86***	+	2.397	3.13***
DEBT	+	-0.004	-0.96	+	0.383	3.72***
ROA	-	-0.225	-52.94***	+	0.411	1.96*
SIZE	+	0.002	1.83*	+	-0.097	-6.31***
SGROW	-	0.004	3.15***	+	0.666	10.48***
RDADV	-	-0.015	-5.21***	+	0.297	0.75
Industry dummies			Included			Included
Year dummies			Included			Included
N			9,924			5,148
F-statistic			125.14***			36.75***
Adj R^2			34.98%			20.45%

Notes: *ANALYST_F* is the fitted value of *ANALYST* from equation (3). The second-stage regression model is equation (2). ***, **, and * significant at 1%, 5%, and 10% levels, respectively (two-tailed tests).

Table VII reports the results after controlling for the possible effects of board independence and institutional shareholding on accounting conservatism. We still find that analyst coverage positively affects accounting conservatism measured by either *CONAC* or *CONBM* (*t*-statistic = 2.25 or 5.21, *p*-value < 0.05 or 0.01, respectively), consistent with H_1. Nevertheless, we do not document any significant evidence on the association of accounting conservatism with board independence and institutional shareholding. Overall, these results suggest that it is less likely that analyst coverage is dominated over or overlapped by the competing governance mechanisms of boards and institutional shareholders in terms of increasing accounting conservatism.

Table VII. Control for board governance and institutional shareholding

	CONAC			*CONBM*		
Variable	Predicted sign	Coefficient	*t*-statistic	Predicted sign	Coefficient	*t*-statistic
Intercept	?	0.036	2.44**	?	0.704	2.26**
ANALYST	+/-	0.001	2.25**	+/-	0.032	5.21***
BRDIND	+	-0.007	-0.76	+	-0.252	-1.13
INSTHOLD	+	0.007	0.76	+	0.179	0.92
DIV	+	0.306	2.34**	+	3.769	1.43
DEBT	+	-0.027	-2.09**	+	0.157	0.52
ROA	-	-0.320	-23.44***	+	-0.203	-0.46
SIZE	+	-0.002	-1.20	+	-0.192	-4.45***
SGROW	-	0.037	6.50***	+	0.668	3.33***
RDADV	-	-0.041	-2.73***	+	0.467	1.10
Industry dummies			Included			Included
Year dummies			Included			Included
N			673			477
F-statistic			36.99***			6.90***
Adj R^2			58.20%			22.91%

Notes: The regression model is equation (4). *BRDIND* is *board independence*, measured as the proportion of outside directors on the board. *INSTHOLD* is *institutional shareholding*, measured as the percentage of shares held by institutional investors. ***, ** significant at 1% and 5% levels, respectively (two-tailed tests).

Table VIII presents the results of the asymmetric loss recognition test. Consistent with Ball and Shivakumar (2005), we find that the coefficient on *CFO* is negative, and that the coefficient on *DP*CFO* is positive. Similarly, we find that the coefficient on the three-way interaction term *ANALYST*DP*CFO* is positive and significant (*t*-statistic = 7.09, *p*-value < 0.01). Thus, the extent to which negative cash flow from operations is more timely recognized via accruals than positive cash flow from operations (i.e., another proxy for accounting conservatism) is positively associated with analyst coverage. This supports the hypothesis that firms with high analyst coverage adopt more conservative accounting choices. In addition, we find that total accruals are positively associated with *ROA* and *SALES*, and are negatively associated with *DEBT*, *SIZE*, *SGROW*, and *BM*.

Table VIII. Asymmetric loss recognition test

Variable	Predicted sign	Coefficient	*t*-statistic
Intercept	?	0.023	3.44***
DP	?	0.055	18.35***
CFO	-	-0.602	-42.93***
*DP*CFO*	+	0.230	11.34***
ANALYST	?	0.001	3.00***
*ANALYST*CFO*	?	-0.003	-2.76***
*ANALYST*DP*CFO*	+/-	0.017	7.09***
DEBT	-	-0.020	-3.80***
ROA	+	0.645	107.31***
SIZE	-	-0.005	-7.82***
SGROW	+	-0.020	-10.52***
BM	-	-0.015	-7.20***
SALES	+	0.004	2.40**
Industry dummies			Included
Year dummies			Included
N			9,582
F-statistic			331.46***
Adj R^2			62.34%

Notes: The regression model is equation (5). ***, ** significant at 1% and 5% levels, respectively (two-tailed tests).

7. Conclusion

This study examines whether analyst coverage positively or negatively affects accounting conservatism. We find strong evidence that analyst coverage is positively associated with accounting conservatism. The results show that firms choose more conservative methods when they are followed by more analysts than when they are followed by fewer analysts. We find similar results after allowing for issues including the autocorrelation of time-series data, the endogeneity of analyst coverage, and the effect of the competing governance mechanisms. We also find that the extent to which negative cash flow from operations is more timely recognized via accruals than positive cash flow from operations (i.e., another proxy for accounting conservatism) is higher for firms with high analyst coverage than for firms with low analyst coverage. Our findings suggest that the effect of analysts' monitoring role on accounting conservatism is greater than that of analysts' information intermediary role.

This study makes the following contributions to the literature. First, this study provides an answer to the question of whether high analyst coverage increases or decreases accounting conservatism. Since it is not clear whether analysts' monitoring

role dominates over their information asymmetry role in firms' accounting choice, it is warranted to document empirical evidence on this issue. Second, our study extends the limited research on the corporate governance role of analyst coverage by focusing on conservative accounting choices. This study provides further evidence on analysts' governance role by examining the effect of analyst coverage on accounting conservatism. Third, this study also adds to the research into the economic determinants of accounting conservatism. This is the first study to examine whether analyst coverage is an economic determinant of accounting conservatism. Our study provides further evidence that corporate governance exhibits a positive impact on accounting conservatism.

This study provides some implications for practitioners. Our study implies that financial analysts in the capital market may protect the interests of investors. Policymakers and regulators may increasingly support the development of the financial analyst profession as watchdogs. Managers should constrain their opportunistic behavior as external governance mechanisms including analyst coverage can effectively monitor them.

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Notes

[1] 1988 is chosen as the first year because firms did not report cash flow from operations before 1988, which is used in computing total accruals.

[2] The sample size is reduced because six lagged years' data are used in computing market-value-based measure of accounting conservatism.

[3] The year of interest includes 1989 to 2006.

[4] I measure total accruals by including depreciation because accounting conservatism in depreciation calculation cannot be captured in total accruals before depreciation (Ahmed et al. 2002). .

[5] The estimation for year t-1 to t+1 uses the data over the period t-7 to t+1.

[6] An industry dummy is code "1" if a firm belongs to a two-digit industry from which there are at least 100 observations in the sample and "0" otherwise.

[7] Year dummies are excluded because the estimation is based on the data for a specific year.