Differential Impacts of Discretionary Accrual Directions on Accounting Conservatism

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Abstract

Purpose: While there has been extensive research on discretionary accruals (hereafter, 'DA') and accounting conservatism, interpretations have varied among researchers depending on how discretionary accruals are determined as proxies. This study investigates the relationship between discretionary accruals (DA) and accounting conservatism, focusing on the distinctions between signed DA and absolute DA. **Research design, data and methodology:** Using financial data from companies listed on the KOSPI and KOSDAQ markets from 2010 to 2020, we employ regression analysis to explore how signed and absolute DA impact accounting conservatism. This approach allows us to parse out the effects of positive versus negative discretionary accruals systematically. **Results:** Our findings indicate a divergent impact of DA on accounting conservatism. Specifically, in cases of negative DA, an increase in DA corresponds with heightened accounting conservatism. Conversely, when DA is positive, increases in DA do not exhibit a significant relationship with changes in accounting conservatism. These effects suggest that the nature of DA—whether it represents upward or downward earnings adjustments—critically influences its relationship with conservatism. **Conclusions:** The results elucidate the nuanced role of discretionary accruals in influencing accounting conservatism. The decrease in accounting conservatism associated with absolute increases in DA appears primarily driven by groups with downward earnings adjustments. This suggests that as negative DA diminishes toward zero, accounting conservatism intensifies, whereas positive DA does not have a parallel effect.

Keywords : Discretionary Accurals, Earnings Management, Audit Quality, Accounting Conservatism, Timeliness of Earnings

JEL Classification Code : M40, M41, M42

1. Introduction

Accounting information is prepared and disclosed in compliance with established accounting standards. Numerous countries, including Korea, adhere to the International Financial Reporting Standards (IFRS), which require management to select an accounting method that accurately reflects the economic substance of transactions. Consequently, accounting information may vary depending on manager's decisions, even in response to similar economic events (Dye, 1985; Fields et al., 2001). The factors influencing managerial accounting choices are varied, including managerial compensation and the pursuit of private interests (Healy, 1985; Holthausen & Leftwich, 1983; Watts, 1992). In this process, managers may engage in earnings management, providing distorted financial information that does not reflect the true economic substance of the entity (Dye, 1985). This can result in two primary types of adjustments: inflating or deflating reported earnings to present a more favorable view, or to deferring

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performance outcomes to the next fiscal year.

Discretionary accruals (hereafter, DA) are utilized to measure earnings adjustments within accounting to observe and analyze this phenomenon (Jones, 1991; Dechow et al., 1995; Kothari et al., 2005; Stubben, 2010). From the perspective of accounting conservatism, lower-quality financial reporting corresponds to higher accounting conservatism (Watts, 2003). This is because lower-quality reporting increases information asymmetry, leading managers to withhold negative information (Kim and Zhang, 2016). For instance, Kim and Bae (2009) measured discretionary accruals as proxies for earnings adjustments and examined their relationship with conservatism. Similarly, Cha and Kim (2021a) employed discretionary revenues as introduced by Stubben (2010). Both studies concluded that earnings management positively correlates with conditional conservatism. Park and Ra (2013) explored the relationship between earnings adjustments and conservatism, analyzing deficit avoidance or loss.

Interestingly, signed DA and the absolute value of DA (|DA|) exhibit differing relationships with accounting conservatism. When signed DA is considered a measure of earnings management, it shows a positive relationship with conservatism. However, when |DA| is regarded as a measure of audit quality, the relationship with conservatism is negative. High audit quality, indicated by smaller |DA|, promotes conservative accounting practices to avoid the overstatement of opportunistic earnings by managers or litigation risks due to audit failures (Paek & Yoo, 2005). Thus, higher audit quality (smaller |DA|) is associated with greater accounting conservatism. The underlying reasons for the divergent relationships between signed DA and |DA| with accounting conservatism remain unverified.

Previous research has proposed the conceptual relationship between conservatism and the use of signed DA and |DA|; however, our study aims to analyze why these variables exhibit differential relationships with conservatism. An empirical analysis was conducted using data from the Korean capital market spanning 2010 to 2019. The DA measurement followed the methodologies of Dechow et al. (1995) and Kothari et al. (2005), while accounting conservatism was assessed using the conditional conservatism model proposed by Khan and Watts (2009), based on Basu (1997). Our results are summarized as follows:

In the primary analysis, consistent with previous studies, |DA| and signed DA demonstrated opposite relationships with accounting conservatism. |DA| showed a negative correlation with accounting conservatism, whereas signed DA exhibited a positive correlation. It indicates that lower |DA| corresponds to higher accounting conservatism. As signed DA increases, |DA| also rises, implying that the results differ depending on whether the absolute value is

considered. This leads to varied relationships between |DA| and signed DA with accounting conservatism.

This distinction emerged when signed DA was segmented into positive and negative groups. In the negative DA group, accounting conservatism increased with rising DA. However, in the positive DA group, increases in DA did not correlate with heightened accounting conservatism. Thus, the positive relationship between signed DA and accounting conservatism is predominantly driven by the negative DA group.

The following chapters detail prior research and the formulation of research hypotheses. Chapter 2 introduces prior research and the hypothesis. Chapter 3 outlines the research methodology, including the model and operational definitions of variables, and describes the sample selection process. Chapter 4 presents the results of empirical analysis, including further and robustness analyses. Finally, Chapter 5 summarizes the study's findings, limitations, and implications.

2. Prior Research and Hypothesis

The most widely recognized definition of accounting conservatism attributed to Basu (1997) emphasizes the timeliness in reporting negative news compared to positive news. Accounting conservatism entails the prompt recognition in financial statements, particularly when negative news is incomplete, to reinforce the financial foundation during economic events. Timely reporting of economic events often provides investors with valuable information, which tends to be more aligned with negative news, as it adversely impacts firm value (Park, 2017).

Subsequent studies have largely adhered to Basu's (1997) definition, although opinions diverge on whether accounting conservatism mitigates information asymmetry in capital markets or obstructs investor valuation. The former aligns with effectiveness contract theory, while the latter pertains to valuation theory (Ruch and Taylor, 2015). For instance, effectiveness contract theory studies suggest that accounting conservatism reduces debt costs and promotes efficient decision-making (Watts, 2003; Li, 2019). Conversely, accounting conservatism is linked to reduced earnings persistence, lower earnings predictability, and diminished accuracy in financial analyst forecasts, thereby decreasing the value relevance of earnings. (Ruch & Taylor, 2015).

These conflicting perspectives suggest that the relationship between DA and accounting conservatism is complex and requires empirical analysis. This study aims to explore the relationship between DA and accounting conservatism, focusing on audit quality and earnings management. High audit quality restricts managerial intervention in financial reporting for private gains, thereby

making DA a useful measure of audit quality. For example, Kim et al. (2011) found that higher audit quality correlates with lower |DA| and earnings management, as auditors require verification data to validate facts, which reduces the scope for earnings management. Consequently, superior audit quality is associated with greater accounting conservatism, as it prevents managers from concealing negative information (Chae & Hwang, 2017).

In the context of measuring DA as an indicator of audit quality, a negative relationship between |DA| and accounting conservatism is expected. However, earnings management perspectives (Lee & Lee, 2007; Kim & Bae, 2009; Cha & Kim, 2021a) suggest a positive relationship between signed DA and conservatism. This variation indicates that DA's relationship with conservatism depends on the measurement approach used. Summarizing prior studies, it becomes clear that conclusively synthesizing the relationship between DA and accounting conservatism is challenging, necessitating further investigation. This study sets up the hypothesis in the form of a null hypothesis based on the results of previous studies

H1: The effects of |DA| and DA on accounting conservatism are not different.

3. Methodology

3.1. Research Model and Variables

To test the hypothesis of this study, the following equation was established. In the equation below, i and t refer to the company and the time point, respectively. The dependent variable, accounting conservatism, is measured at time point t+1, while the independent variable is measured at time t, ensuring different time points. This arrangement clarifies the causal relationship.

$$CSCORE_{i,t+1}=\beta_0+\beta_1DACC_{i,t}+\beta_2SIZE_{i,t}+\beta_3LEV_{i,t}+\beta_4CFO_{i,t}+\beta_5GRW_{i,t}+\beta_6MTB_{i,t}+\beta_7RND_{i,t}+\beta_8FOR_{i,t}+\beta_9LAR_{i,t}+\beta_{10}MKT_{i,t}+\Sigma YEAR+\Sigma KSIC+\varepsilon$$

Table 1: Variables Definition

Variables		Operational Definition
CSCORE	:	Accounting Conservatism by Khan and Watts (2009)
DA	:	Discretionary Accruals by Dechow et al. (1995)
DA^{ROA}	:	Discretionary Accruals by Kothari et al. (2005)
|DA|	:	Absolute Value of *DA*
|DAROA|	:	Absolute Value of *DA^{ROA}*
SIZE	:	Firm Size (=natural log of Total Assets)
LEV	:	Leverage (=Total Debt/Total Asset)
CFO	:	Cash Flow (=Cash from Operating / Total Asset)
GRW	:	Sales Growth (= (Sales_t-Sales_{t-1})/Sales_{t-1})

MTB	:	Growth (=Market Value/Book Value)
RND	:	R&D expenditure (=R&D expenditure/Sales)
FOR	:	Foreign Investor Stock Ownership
LAR	:	Large Investor Stock Ownership
MKT	:	Market Dummy (=KOSPI:1, KOSDAQ:0)
ΣYEAR	:	Year Dummy
ΣKSIC	:	Industry Dummy
ε	:	Residuals

The dependent variable, accounting conservatism, as utilized in the study by Khan and Watts (2009), was measured using the methodology proposed by the Basu (1997), which will be elaborated upon in section 3.2. In the specified equation, the variable of interest is discretionary accruals. This study examines two scenarios: one where the absolute value is taken and one where the signed variable is involved. If the regression coefficient of |DAROA| is significantly positive, it indicates that lower audit quality corresponds with greater accounting conservatism. Conversely, a significantly negative coefficient suggests that higher audit quality corresponds with greater accounting conservatism. For the signed variable, a significantly positive coefficient (or a negative one) for DAROA suggests that accounting conservatism increases (or decreases) as earnings adjustments increase.

The study controlled for various factors, referencing LaFond and Roychowdhury (2008), Ahmed and Duellman (2013), and Kim and Zhang (2016), as well as domestic capital market studies (Cha & Kim, 2021b). The control variables included SIZE, LEV, CFO, GRW, MTB, RND, FOR, LAR, and MKT. SIZE, which represents firm size, is measured by the natural logarithm of total assets. These variable impacts accounting conservatism as larger firms face higher political costs (Zimmerman, 1983) and have greater information disclosure, making it difficult for managers to conceal bad news (Hwang et al., 2008; Cha & Park, 2021).

LEV, calculated as total debt divided by total assets, indicates that a higher debt-to-equity ratio leads to more conservative accounting to increase principal and interest recovery. However, higher debt ratios may also decrease stability and restrict capital raising, providing incentives to delay bad news reporting (Biddle et al., 2011; Hsu et al., 2017; Cha, 2021).

GRW and MTB measure growth characteristics. GRW is calculated based on sales growth, while MTB compares the market value to book value, reflecting a company's growth potential (Ahmed & Duellman, 2007; Kim & Zhang, 2016). CFO, calculated as operating cash flow divided by total assets, influences conservative accounting decisions (Hwang et al., 2008; Paek, 2020).

RND, representing R&D expenses divided by sales, impacts conservative accounting policies (Penman & Zhang, 2002; Ruch & Taylor, 2015; Li, 2019). LAR, which measures the share of major shareholders, affects conservative accounting

treatment through either of interest alignment or conflict hypotheses (Ahmed 7 Duellman, 2007; Han & Moon, 2009; Yang & Ki, 2014).

FOR, the foreign equity ratio, is positively associated with accounting conservatism, reflecting higher foreign investor ownership (Kim & Bae, 2006; Lee et al., 2012; Kim & Park, 2014; Cha & Kim, 2021b). Dummy variables for listed market (MKT), year (Σ YEAR), and industry (Σ KSIC) were included to control for fixed effects related to market, year, and industry.

3.2. Conditional Conservatism

In this study, conditional conservatism is assessed using the model that measures the accounting conservatism of individual companies presented by Khan and Watts (2009). There are two main reasons for using this study. First, the conditional conservatism model introduced by the Basu (1997) study and Ball and Shivakumar (2005) has limitations in that it measures conservatism across a broad cross-sectional area, making it difficult to consider the specific context of individual companies. Second, Khan and Watts (2009) refined and adapted the Basu (1997) model by incorporating the investment opportunity set of individual companies into the Basu (1997) research model. To calculate Khan and Watts (2009), first, looking at the Basu (1997) model, it is as follows.

$$EARN_{i,t} = \beta_0 + \beta_1 RET_{i,t} + \beta_2 DRET_{i,t} + \beta_3 RET \times DRET_{i,t} + \varepsilon$$

Table 2: Variables Definition

Variables		Operational Definition
EARN	:	Net income / Total Asset
RET	:	Annual Returns
DRET	:	If RET is negative, then it's 1; otherwise, it's 0

Khan and Watts (2009) refined the Basu (1997) model by incorporating additional variables that reflect investment opportunities. These variables include company size (**SIZE**), debt ratio (**LEV**), and growth potential (**MTB**).

$$EARN_{i,t} = \beta_0 + \beta_1 RET_{i,t} + \beta_2 DRET_{i,t} + \beta_3 RET \times DRET_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 MTB_{i,t} + \beta_6 LEV_{i,t} + \beta_7 RET \times SIZE + \beta_8 RET \times MTB_{i,t} + \beta_9 RET \times LEV_{i,t} + \beta_{10} DRET \times SIZE_{i,t} + \beta_{11} DRET \times MTB_{i,t} + \beta_{12} DRET \times LEV_{i,t} + \beta_{13} RET \times DRET \times SIZE_{i,t} + \beta_{14} RET \times DRET \times MTB_{i,t} + \beta_{15} RET \times DRET \times LEV_{i,t} + \varepsilon_{i,t}$$

Table 3: Variables Definition

Variables		Operational Definition
EARN	:	Net income / Total Asset
RET	:	Annual Returns
DRET	:	If RET is negative, then it's 1; otherwise, it's 0

SIZE	:	Firm Size
MTB	:	Growth
LEV	:	Leverage

In the Khan and Watts (2009) study, the conservatism (**C-SCORE**) of individual companies was quantified by calculating the sum of $\beta_3 + \beta_{13} + \beta_{14} + \beta_{15}$. This sum represents the combined regression coefficients, estimated by industry-year, to measure the level of accounting conservatism.

3.3. Discretionary Accruals

In this study, audit quality is assessed using DA. Accounting profits can be divided into cash flows and accruals, and accruals can be further divided into discretionary accruals (DA) and non-discretionary accruals (NDA). Discretionary accruals are unique among profit components because they allow managers to arbitrarily adjust accounting treatments and intervene in financial reporting. High audit quality can inhibit such manipulations. Previous studies have employed discretionary accruals as a measure of audit quality (Kim et al., 2011; Kwon et al., 2006; Park & Jeon, 2018). In this study, discretionary accruals are measured in two primary ways with the first method following the approach by Dechow et al. (1995). The formula used to calculate this is as follows.

$$TACC_{i,t}/ASSET_{i,t} = \beta_0 + \beta_1 1/ASSET_{i,t} + \beta_2(\Delta SALES_{i,t} - \Delta AR_{i,t})/ASSET_{i,t} + \beta_3 PPE_{i,t}/ASSET_{i,t} + \varepsilon$$

Table 4: Variables Definition

Variables		Operational Definition
TACC	:	Total Accruals
ASSET	:	Total Asset
ΔSALES	:	Annual Change in Sales
ΔAR	:	Accounting Receivable
PPE	:	Tangible Asset

In the above equation, the error term ε represents the discretionary accrual (DA), and taking the absolute value of DA results in |DA|. ε represents the discretionary accrual (DA), and taking the absolute value of DA results in |DA|. The estimation is performed on an annual basis, segmented by industry, using the middle classification of the Korean Standard Industrial Classification. Additionally, this model incorporates Return on Assets (ROA) as per the methodology of Kothari et al. (2005), similar to the estimation approach used in the Dechow et al. (1995) model. In the equation below, the error term ε is identified as the discretionary accrual (DAROA) related to ROA. When the absolute value is taken for DAROA, it is defined as |DAROA|.

$$TACC_{i,t}/ASSET_{i,t}=\beta_0+\beta_1 1/ASSET_{i,t}+\beta_2(\Delta SALES_{i,t}-\Delta AR_{i,t})/ASSET_{i,t}+\beta_3 PPE_{i,t}ASSET_{i,t}+\beta_4 NI_{i,t}/ASSET_{i,t}+\varepsilon$$

Table 5: Variables Definition

Variables		Operational Definition
TACC	:	Total Accruals
ASSET	:	Total Asset
ΔSALES	:	Annual Change in Sales
ΔAR	:	Accounting Receivable
PPE	:	Tangible Asset
NI	:	Net Income

3.4. Sample Selection

The data utilized for hypothesis verification in this study encompasses companies engaged in non-financial activities listed on the KOSPI and KOSDAQ markets. Data sources include the KISVALUE database from NICE Evaluation Information Co., Ltd., and the DATAGUIDE database provided by FnGuide. The analysis period spans from 2010 to 2019, while the period for generating lagged variables extends from 2009 to 2020. Data were excluded based on the following criteria:

(1) Fiscal month not being December.
(2) Classification within the financial industry (K00000) according to the Korean Standard Industrial Classification.
(3) Companies under consideration for delisting by the listed market.
(4) Inability to extract necessary data from the database.

After applying these exclusion criteria, the sample consists of 15,217 firm-years. <Table 6> and <Table 7> display the sample characteristics by year and industry, respectively. The industry distribution is categorized by the major divisions of the Korean Standard Industrial Classification. In <Table 6>, the sample includes 58.97% from the securities market (6,243 KOSPI) and 8,974 from the KOSDAQ market.

The yearly distribution in <Table 6> shows a gradual increase in sample size from 1,244 in 2010 to 1,867 in 2019, without concentration in any particular year. The industry distribution in <Table 7> reveals that the manufacturing industry constitutes the largest proportion at 65.59%, followed by the information and communication industry (11.20%), wholesale/retail industry (8.41%), professional service industry (6.34%), and construction industry (3.24%). Other industries represent around 1%. To mitigate the influence of extreme values, continuous variable data exceeding the 1%

and 99% thresholds were adjusted to these limits.

Table 6: Samples Distribution by Year

year	KOSPI	KOSDAQ	Total
2010	562	682	1,244
2011	584	731	1,315
2012	591	750	1,341
2013	596	798	1,394
2014	610	837	1,447
2015	630	899	1,529
2016	644	963	1,607
2017	655	1,031	1,686
2018	679	1,108	1,787
2019	692	1,175	1,867
Total	6,243	8,974	15,217

Table 7: Samples Distribution by Industry

Industry	Freq.	Percent
Agriculture, forestry, and fishing	48	0.32
Manufacturing	9,981	65.59
Electricity, gas, steam, and air conditioning supply	112	0.74
Water supply; sewage, waste management, materials recovery	47	0.31
Construction	493	3.24
Wholesale and retail trade	1,279	8.41
Transportation and storage	258	1.70
Accommodation and food service activities	32	0.21
Information and communication	1,705	11.20
Real estate activities	30	0.20
Professional, scientific, and technical activities	965	6.34
Business facilities management and business support services	120	0.79
Education	74	0.49
Arts, sports, and recreation related services	73	0.48
Total	15,217	100.00

4. Empirical Results

4.1. Descriptive Statistics

This section presents the descriptive statistics of the variables utilized in this study, which are consistent with those reported in prior research. The primary variable, C-SCORE, had an average of -0.012 with a standard deviation of 0.052, indicating significant variability in accounting conservatism among the sampled firms. The independent variables, |DA| and |DAROA|, had mean values of 0.063 and 0.051, respectively, aligning with distributions found in previous studies on the domestic capital market (Cho & Kim, 2016; Mun, 2017; Park & Jeon, 2018). In contrast, the continuously estimated variables DA and DAROA, calculated by industry-year, recorded nearly zero averages, at 0.001 and -0.000, respectively.

The control variables showed the following statistics: SIZE showed an average (median) of 25.944 (25.6681). LEV was 0.379. CFO averaged slightly above zero at 0.044,

indicating generally positive cash flows. MTB was 1.039, suggesting that market values typically exceeded book values. The average RND was 0.028. The annual average growth rate of revenue (GRW) was 10.2%. Foreign investor ownership (FOR) averaged 6.7% of year-end common shares, while controlling shareholder ownership (LAR) was 41.0%. The presence of a large accounting firm (BIG) was noted in 51.8% of the cases, and the weight of the securities market (MKT) was 41.0%.

Table 8: Descriptive Statistics

Variable	Mean	S.D.	.25	Mdn	.75
C-SCORE	-0.012	0.052	-0.008	0.000	0.000
|DA|	0.063	0.070	0.018	0.041	0.081
|DAROA|	0.051	0.053	0.015	0.035	0.069
DA	0.001	0.094	-0.038	0.003	0.044
DA^{ROA}	-0.000	0.073	-0.037	-0.000	0.034
SIZE	25.944	1.405	25.009	25.681	26.610
LEV	0.379	0.204	0.210	0.373	0.528
CFO	0.044	0.085	0.001	0.043	0.089
MTB	1.039	0.725	0.499	0.863	1.393
RND	0.028	0.098	0.000	0.002	0.022
GRW	0.102	0.453	-0.069	0.039	0.166
FOR	0.067	0.104	0.006	0.022	0.078
LAR	0.410	0.166	0.286	0.406	0.525
BIG	0.518	0.500	0.000	1.000	1.000
MKT	0.410	0.492	0.000	0.000	1.000

4.2. Correlation

<Table 9> presents the results of the correlation analysis. The upper right section of the table displays the Spearman correlation coefficient, while the lower left section shows the Pearson correlation coefficient. The analysis focuses on the Pearson correlation coefficient results.

The variable of interest, C-SCORE, exhibited a significant negative correlation with |DA| at the 1% level, suggesting that increased |DA| is associated with decreased accounting conservatism. Conversely, when DA was measured as a signed variable, a significant positive relationship was observed at the 1% level, indicating that higher DA is associated with increased accounting conservatism. However, this analysis only establishes the relationship between these variables, highlighting the need for further validation incorporating control variables.

The subsequent section reports the results of the multiple regression analysis. Among the control variables, SIZE, CFO, MTB, GRW, FOR, and LAR showed significant positive effects, while LEV and RND had significant negative effects. These findings suggest that accounting conservatism increases with larger company size, higher cash flows, higher growth prospects, greater foreign ownership, and higher controlling shareholder ownership, but decreases with higher debt ratios and higher R&D expenses relative to revenue.

Further analyses considering auditor size (BIG) and listing market dummy variables (MKT) also revealed positive effects. This indicates that accounting conservatism increases with larger auditors and companies listed on the stock market.

Table 9: Correlation

	CSCORE	|DA|	|DAROA|	DA	DA^{ROA}	SIZE	LEV	CFO	MTB	RND	GRW	FOR	LAR	BIG	MKT
CSCORE	1	-0.100***	-0.071***	0.031***	-0.030***	0.188***	-0.156***	0.093***	0.215***	-0.072***	-0.017**	0.140***	0.128***	0.082***	0.149***
|DA|	-0.108***	1	0.630***	0.043***	0.063***	-0.184***	0.085***	-0.145***	-0.173***	0.076***	0.045***	-0.113***	-0.133***	-0.075***	-0.177***
|DAROA|	-0.061***	0.695***	1	0.012	-0.017**	-0.157***	0.059***	-0.012	-0.173***	0.104***	0.079***	-0.083***	-0.102***	-0.055***	-0.176***
DA	0.052***	-0.081***	0.043***	1	0.792***	0.039***	-0.123***	-0.393***	0.033***	-0.004	0.091***	0.029***	0.061***	0.001	-0.011
DA^{ROA}	-0.026***	0.059***	0.061***	0.792***	1	-0.005	0.041***	-0.673***	0.049***	-0.004	0.088***	-0.071***	-0.006	-0.020**	0.018**
SIZE	0.114***	-0.182***	-0.157***	0.057***	-0.017**	1	0.202***	0.103***	0.263***	-0.204***	0.001	0.543***	0.194***	0.367***	0.584***
LEV	-0.144***	0.109***	0.062***	-0.141***	0.028***	0.197***	1	-0.152***	-0.020**	-0.079***	0.029***	-0.126***	-0.100***	0.048***	0.129***
CFO	0.109***	-0.176***	-0.052***	-0.338***	-0.681***	0.121***	-0.142***	1	-0.050***	-0.009	0.119***	0.188***	0.106***	0.092***	-0.009
MTB	0.133***	-0.170***	-0.163***	0.045***	0.033***	0.216***	-0.013	-0.042***	1	-0.267***	-0.160***	-0.041***	0.227***	0.032***	0.238***
RND	-0.024***	0.068***	0.089***	-0.030***	0.042***	-0.153***	-0.107***	-0.200***	-0.187***	1	0.007	-0.004	-0.240***	-0.029***	-0.228***
GRW	0.005	0.097***	0.137***	0.065***	0.104***	-0.028***	-0.001	0.051***	-0.102***	0.027***	1	0.008	0.009	0.015*	-0.043***
FOR	0.078***	-0.106***	-0.074***	0.035***	-0.061***	0.492***	-0.100***	0.186***	-0.056***	-0.037***	0	1	-0.052***	0.225***	0.300***
LAR	0.101***	-0.144***	-0.100***	0.077***	-0.008	0.137***	-0.096***	0.112***	0.199***	-0.150***	-0.014*	-0.036***	1	0.136***	0.176***
BIG	0.047***	-0.068***	-0.056***	0.006	-0.025***	0.380***	0.051***	0.092***	0.033***	-0.025***	-0.005	0.241***	0.138***	1	0.258***
MKT	0.083***	-0.156***	-0.169***	0.005	0.01	0.568***	0.133***	0.001	0.245***	-0.155***	-0.042***	0.254***	0.176***	0.258***	1

Note: *, **, *** indicate significance levels of 10%, 5%, and 1%, respectively.

4.3. Regression Result

The hypothesis of this study posited that DAROA and |DAROA| would convey identical information. <Table 10> presents the analysis results concerning this assumption. It was observed that as |DAROA| (the absolute value of DAROA) increased, future accounting conservatism decreased. Conversely, when DAROA was measured as a signed variable, future accounting conservatism increased

with an increase in DAROA. Consequently, the hypothesis of this study was rejected. The difference may arise because the interpretation of |DAROA| encompasses scenarios where discretionary accruals decrease, which also leads to an increase in |DAROA|. To further investigate these findings, a detailed reanalysis of DAROA will be conducted based on a threshold of 0, as shown in <Table 11>.

Table 10: Regression Result

	(1)	(2)	(3)	(4)
	Dependent Variable: C-SCORE$_{i,t+1}$			
Constant	-0.095*** (-4.64)	-0.099*** (-4.80)	-0.089*** (-4.35)	-0.094*** (-4.59)
|DA|	-0.028*** (-4.64)			
|DAROA|		-0.015* (-1.83)		
DA			0.032*** (6.64)	
DAROA				0.040*** (4.95)
SIZE	0.003*** (7.44)	0.003*** (7.71)	0.003*** (6.77)	0.003*** (7.23)
LEV	-0.032*** (-14.00)	-0.033*** (-14.39)	-0.030*** (-12.66)	-0.032*** (-13.84)
CFO	0.042*** (8.18)	0.046*** (8.84)	0.062*** (10.89)	0.073*** (9.68)
MTB	0.008*** (11.64)	0.008*** (11.95)	0.008*** (12.28)	0.008*** (12.27)
RND	0.005 (0.95)	0.005 (0.98)	0.009* (1.78)	0.007 (1.53)
GRW	0.002** (2.31)	0.002** (2.13)	0.001 (1.22)	0.001 (0.79)
FOR	0.007 (1.39)	0.007 (1.42)	0.006 (1.31)	0.006 (1.32)
LAR	0.015*** (5.82)	0.016*** (6.04)	0.014*** (5.42)	0.015*** (5.72)
MKT	0.001 (1.14)	0.001 (1.21)	0.002* (1.72)	0.002 (1.51)
YEAR	Included	Included	Included	Included
Industry	Included	Included	Included	Included
F-value	27.005	26.720	27.358	27.051
Adj. R²	0.110	0.108	0.111	0.110
N	15,217	15,217	15,217	15,217

Note: *, **, *** indicate significance levels of 10%, 5%, and 1%, respectively.

<Table 11> reevaluates the relationship between DA or DAROA and accounting conservatism, using zero as a threshold. The analysis reveals that when discretionary accruals are less than zero, an increase in discretionary accruals (approaching 0) leads to a increase in future accounting conservatism (Models (1)-(2)). In contrast, when discretionary accruals are greater than 0, no significant relationship with future accounting conservatism was observed (Models (3)-(4)).

Models (3)-(4) show no statistical significance when profits are adjusted upwards from zero, which is consistent

with the principles of accounting conservatism that emphasize the early recognition of adverse events, often resulting in decreased profit levels. The results from <Table 10> and <Table 11> suggest that accounting conservatism increases with DAROA only in samples with downward profit adjustments. From an absolute perspective, accounting conservatism increases as |DAROA| decreases. This study highlights that many research efforts use the absolute value of DA to assess audit quality or earnings quality. Therefore, confirming the direction of profit adjustments is crucial to conclusively determine that accounting conservatism increases when DA increases.

Table 11: Regression Result

	DA<0	DAROA<0	DA>0	DAROA>0
	(1)	(2)	(3)	(4)
	Dependent Variable: C-SCORE$_{i,t+1}$			
|DA|	-0.054*** (-6.03)		-0.002 (-0.21)	
|DAROA|		-0.054*** (-3.83)		0.014 (1.02)
Controls Variables	included	included	included	included
Year & Industry	included	included	included	included
F-value	14.534***	14.916***	14.416***	14.560***
Adj. R²	0.120	0.116	0.107	0.115
N	7,153	7,667	8,034	7,499

Note: *, **, *** indicate significance levels of 10%, 5%, and 1%, respectively.

4.4. Additional Test

<Table 12> reexamines the influence of auditor size on the relationship between DA and accounting conservatism, building on prior research that has suggested variability in this influence. The study investigates how auditor size may affect this relationship. The findings are as follows:

In Panel A, |DAROA| displayed a negative coefficient; however, the results were not statistically consistent. Conversely, DAROA showed a significant positive relationship with accounting conservatism at the 1% level, indicating that as DA increases, so does accounting conservatism. Panel B, |DAROA| exhibited a significant negative relationship with future accounting conservatism, while DAROA showed a significant positive relationship. This suggests that as |DA| increases, future accounting conservatism decreases, but as DA increase, accounting conservatism increases.

These findings suggest a differential impact of auditor size on the relationship between DA and accounting conservatism. Further examination of these nuanced results is warranted, as shown in <Table 12>.

Table 12: Regression Result

Panel A. Big4 Samples(n=7,878)				
	(1)	(2)	(3)	(4)
	Dependent Variable: C-SCORE$_{i,t+1}$			
|DA|	-0.025*** (-2.62)			
|DAROA|		-0.006 (-0.46)		
DA			0.039*** (5.11)	
DAROA				0.050*** (4.00)
Controls Variables	included	included	included	included
Year & Industry	included	included	included	included
F-value	14.341***	14.237***	14.643***	14.485***
Adj. R²	0.109	0.108	0.111	0.110
Panel B. Non Big4 Samples(n=7,339)				
	(1)	(2)	(3)	(4)
	Dependent Variable: C-SCORE$_{i,t+1}$			
|DA|	-0.029*** (-3.75)			
|DAROA|		-0.021** (-2.02)		
DA			0.022*** (3.70)	
DAROA				0.023** (2.26)
Controls Variables	included	included	included	included
Year & Industry	included	included	included	included
F-value	16.582***	16.414***	16.575***	16.431***
Adj. R²	0.128	0.127	0.128	0.127

Note: *, **, *** indicate significance levels of 10%, 5%, and 1%, respectively.

<Table 13> reexamines the role of auditor size based on the direction of earnings management, specifically whether adjustments are upward or downward. The key findings are as follows:

Downward Earnings Adjustments: For samples with downward earnings adjustments, as |DA| decreases, future accounting conservatism increases, indicating that auditor size does not significantly influence this relationship.

Upward Earnings Adjustments: For samples with upward earnings adjustments, models (3)-(4) in each panel did not show clear statistical significance. However, in cases with large auditor size, the magnitude of DAROA showed a significant positive value at the 10% level, suggesting that greater earnings management leads to increased conservatism. No significant results were observed when measured by DA.

These results imply that the relationship between discretionary accruals and accounting conservatism does not vary significantly with auditor size, which is consistent with previous findings by Baek and Yoo (2005) and contrasts with Basu's (1997) conditional conservatism model. The study indicates that the model used, based on Khan and

Watts (2009), may not significantly affect the relationship between earnings management and conservatism. Additionally, the direction and significance of the relationship between DA and conservatism differ depending on whether DA is from a group larger or smaller than zero.

Table 13: Regression Result

Panel A. Big 4 Samples				
	DA<0	DAROA<0	DA>0	DAROA>0
	(1)	(2)	(3)	(4)
	Dependent Variable: C-SCORE$_{i,t+1}$			
|DA|	-0.052*** (-3.69)		-0.001 (-0.04)	
|DAROA|		-0.052** (-2.48)		0.042* (1.82)
Controls Variables	included	included	included	included
Year & Industry	included	included	included	included
F-value	8.066***	8.776***	7.882***	7.726***
Adj. R²	0.121	0.121	0.106	0.113
N	3,682	4,025	4,174	3,817
Panel B. Non-Big 4 Samples				
	DA<0	DAROA<0	DA>0	DAROA>0
	(1)	(2)	(3)	(4)
	Dependent Variable: C-SCORE$_{i,t+1}$			
|DA|	-0.053*** (-4.59)		-0.008 (-0.68)	
|DAROA|		-0.052*** (-2.84)		-0.013 (-0.78)
Controls Variables	included	included	included	included
Year & Industry	included	included	included	included
F-value	9.815***	9.712***	9.501***	9.615***
Adj. R²	0.145	0.138	0.130	0.137
N	3,471	3,642	3,860	3,682

Note: Note: *, **, *** indicate significance levels of 10%, 5%, and 1%, respectively.

5. Results and Discussion

The study found that discretionary accruals (DA) generally exhibited significant positive coefficients across full samples without distinguishing earnings management directions. However, for |DA|, a significant negative coefficient was observed in the overall sample, yet this was not the case within the Big 4 auditor group. Upon further analysis by categorizing DA as either smaller or larger than zero, significantly negative coefficients were consistently noted for DA < 0. In contrast, for DA > 0, the findings showed low significance. These results suggest that increased |DA| is associated with decreased accounting conservatism where downward earnings adjustments are involved. In other words, as negative DA approaches zero, accounting conservatism increases, but this increase is not

evident when DA becomes positive. The study also indicates that Big 4 auditors do not significantly influence these outcomes. Additionally, the findings highlight the importance of distinguishing between DA > 0 and DA < 0 groups in future research. The limitations of the study include potential estimation errors in DA by industry and year, and the incomplete measurement of individual companies' accounting conservatism, necessitating a careful interpretation of the results.

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