Accounting Conservatism and Financial Performance of Quoted Non-Financial Firms in Nigeria

Lawrence, U. Egbadju
Department of Accounting, Federal University Otuoke,
Otuoke, Bayelsa State, Nigeria
E-mail: lawuvie@gmail.com

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Abstract

This study investigates the impact of accounting conservatism on firm financial performance in Nigeria. The study covers the period from 2005 to 2020 of seventy six firms listed on the floor of the Nigerian Exchange Group (NXG) as information about them were extracted from their financial statements. The results of the generalized method of moments (GMM) reveals that while four of the measure of accounting conservatism (WANG-Default Adjusted Basu (DAB; Market-to-Book (MTB); Basu Asymmetric Timeliness of earnings (AT); Ball and Shivakumar Asymetric Accruals to Cashflow Measures (AACF) are positively significant with firm performance (ROA); another four of the measure of accounting conservatism (Givoly and Hyan Non-Operating Negative Accruals;Skewness; Khan and Watts-CSCORE; Andre-Filip-Paugam) are negatively significant with firm performance (ROA) but Beaver and Ryan measure is insignificant.

Keywords: *Accounting conservatism, Performance, Quoted Non-Financial Firms, GMM, NXG.*

1.0 Introduction

All business organizations generate and display accounting information in the form of financial statements, which are crucial indicators of how well businesses are doing. These financial statements serve as tools for management to demonstrate accountability to interested parties like shareholders, creditors, investors, managers, and the government, to name a few (Egbadju et al., 2023). That is, financial statements are summaries of all business transactions as well as other events, so it is expected that the accounting information in them should greatly assist all stakeholders in making informed business decisions in an effective, economical, and efficient manner (Egbadju & Odey, 2023). Since maximizing wealth is investors' primary goal, the accuracy of financial reporting will undoubtedly have a significant impact on the decisions these investors make, like accurately projecting future earnings and cash flows (Egbadju, 2023).

In order to increase shareholder wealth, company management's overarching objective is to improve performance and value. Financial performance offers an insightful assessment of management’s use of natural, material, and financial resources. It is the degree to which the

organization's management is able to meet the needs and preferences of its numerous stakeholders (Al-Fasfus et al., 2022). Just as the company's stockholders, who are also its main owners or principal proprietors, want to raise more money; it is also necessary to protect and advance the interests of other stakeholder groups, such as management, employees, and creditors. The main goal of financial reporting, generally speaking, is to make sure that a reporting entity's financial information is accessible to both current and potential lenders, investors, and other stakeholders who are to make informed decisions about the resources they provided, according to Iqbal et al. (2019). Since earnings components are a significant component of this financial information and a key tool for decision-making, Munjal et al. (2021) thus pointed out that financial reporting is offered to make sure that important information is made available to investors and that the profits quality is influenced by a variety of criteria.

According to study findings from the previous two decades, financial reporting is frequently cautious or often conservative (Basu 1997; Watts 2003a). Again, Penndorf (1930) as cited in Basu (1997) opined that conservative accounting techniques has been around for centuries in both philosophy and practice in as far as early commercial partnerships in medieval Europe. Accounting conservatism is currently viewed as a subject of interest for scholars who are trying to examine its impact on many other accounting concepts because its application is linked to uncertainties. The company's decision to employ accounting conservatism has a substantial impact on the financial statements because it relates to the accountant's subjective judgement throughout the estimation process. Studies have shown that certain accountants adhere to the accounting conservatism philosophy, which emphasizes prudence and care. Accordingly, numerous accounting metrics are used in situations of doubt and uncertainty due to the fact that different businesses have different accounting procedures and rules, and accountants are obligated to give their financial reports honestly, fairly, objectively and impartially in compliance with those practices (Al-Fasfus et al., 2022).

Accounting conservatism is a crucial element of financial reporting that studies have found to have a significant impact on the accuracy of accounting information (Sterling 1982). According to Li (2020), for decades, the asymmetric timeliness accounting treatments (conservatism) are used in many countries' accounting principles. According to Bliss (1924) in Basu (1997), conservatism is defined as "anticipate no profits but anticipate all losses". This relates to accountants' predisposition to require more verifications before classifying "good news" as gains than before classifying "bad news" as losses (Basu, 1997). To put it another way, good news should be verified differently than bad news, which should be verified as losses (Watts, 2003a; Guay & Verrecchia, 2006). Wang (2013) pointed out that conservatism ensures that we do not understate costs and overstate revenue in the accounts, and this can be achieved by performing higher verifications for assets and revenues but lower verification for liabilities and expenses when faced with economic transactions and/or risk uncertainties (Basu, 1997). Thus, one can conclude that accounting conservatism is exemplified by the requirement for a high level of verification to identify good or positive news in terms of profits and revenues, as opposed to the requirement for a low level of verification to recognize bad or negative news in a manner that is quicker than its impact on good or positive news. That is, the accounting conservative policy relied on delaying the recognition of

profits and disregarding the financial period until they are accomplished and obtained, although in reality they should have been recognized sooner and supported by evidence. This study expands on prior research that showed that accounting conservatism boosts corporate value by reducing the cost of capital, minimizing knowledge asymmetry, and improving monitoring and contracting to promote investment efficiency (Various authors as cited in Cui et al., 2021). Therefore, the main objective of this study is to investigate the impact which accounting conservatism can have on the financial performance of listed non-financial firms in Nigeria. Following this introduction, the rest of the paper is divided into five sections with the literature review in section two, methodology in section three, discuss of results in section four and the fifth section concludes this paper.

2.0 Literature Review

2.1 Theoretical Underpinning or Framework.

2.1.1. Agency Theory: The relationship between principals (shareholders or owners) and agents (managers) within a firm is investigated in economics and finance using the agency theory paradigm. The theory which was propounded in 1976 by Jensen and Meckling focuses on potential knowledge asymmetry and inherent conflicts of interest between principals and agents. According to agency theory, there is an interest conflict between the agent and the principal. This conflict arises as a result of the information asymmetry or informational imbalance that exists between the agent and the principal, when the agency possesses more knowledge about the company than the principal. The agent can manage corporate profits by employing a variety of accounting procedures to generate profits through earnings management, which is often to improve company profits, due to the knowledge asymmetry and when combined with the agent's opportunistic tendency. Conservatism or prudence or caution in financial reporting is required to reduce the incidence of earnings management. According to the accounting conservative concept, the business must promptly acknowledge upcoming losses and debts but postpone doing so for assets and earnings. Thus, reported earnings would seem to be smaller. In contrast, earnings management artificially inflates reported earnings. Additionally, managers will be less aggressive in recognizing earnings if accounting conservatism is strong. Results recognition with a high degree of caution will also result in low reported results that will guarantee the longevity of the companies. This is because accounting conservatism has the consequence of causing gains or revenues not to be recorded in advance despite the chance of occurrence being high while expenses and losses are to be recognized right away (Hartam & Kresnawati, 2021).

2.2. Empirical Literature

Al-Fasfus et al. (2022) empirically tested the impact of accounting conservatism on firm performance in Jordan. The study made use of sampled 23 listed service firms between the period 2015 and 2019. The results of the ordinary least squares (OLS) showed that accounting conservatism proxied by Givoly and Hyans (2000) negative accruals positively but insignificantly influenced both earnings per share (EPS) and return on equity (ROE).

Cui et al. (2021) empirically examined whether accounting conservatism has influenced corporate financial performance in China. The study used secondary panel data over five years period from

2016 to 2020 obtained for 1,909 firms listed on the Shenzhen and Shanghai Stock Exchanges. The OLS regression results indicated that conditional accounting conservatism CSCORE of Khan and watts (2009); conditional accounting conservatism of Ball and Shivakumar (2005) asymmetric accrual to cash-flow measure; unconditional accounting conservatism of Feltham and Ohlson (1995) as well as unconditional accounting conservatism earnings skewness were all positively and significantly related with stock market return while unconditional accounting conservatism of Givoly and Hyans (2000) was insignificant.

Nassar and Al Twerqi (2021) carried out a research study to determine the extent to which accounting conservatism had affected firms' profitability in Jordan. Annual secondary panel data which covered the period 2006 to 2016 collected from 84 of such firms listed on the floor of the Amman Stock Exchange were used. The OLS regression results indicated that Givoly and Hyans accruals-based accounting conservatism was negatively and significantly related with ROE while MTB was positively significant.

Li (2020) researched on the extent to which business strategy and accounting conservatism have influenced corporate performance in China. The study used secondary panel data over five years period from 2008 to 2012 obtained on some firms listed on the Shenzhen and Shanghai Stock Exchanges. The OLS regression results indicated that conditional accounting conservatism CSCORE of Khan and watts (2009) was negatively significant with performance; Givoly and Hyans (2000) was insignificant.

Ugwunta and Ugwuany (2019) embarked on this research to investigate the effect of accounting conservatism on financial performance of firms in Nigeria. The study used secondarily sourced audited reports of 12 consumer goods firms quoted in the Nigerian Exchange Group (NXG) over the period 2005 to 2016. The results of the OLS revealed that accounting conservatism and net profit margin (NPM) were positively insignificant.

El-Habashy (2019) empirically investigated if accounting conservatism has impacted financial performance in Egypt. The study used secondary panel data over the period from 2009 to 2014 obtained for 40 non-financial firms. The OLS regression results indicated that Givoly and Hyans (2000) negative accruals unconditional accounting conservatism positively and significantly impacted both return on assets (ROA) and return on equity (ROE).

Aminu and Hassan (2017) studied whether there is any relationship between accounting conservatism and financial performance of firms in Nigeria. The researchers used annually sourced panel data collected over the period from 2012 to 2016 on 10 selected deposit money banks (DMBs) was used. The results of the OLS revealed that while Basu (1997) asymmetric timeliness conditional conservatism measurement positively and significantly impacted return on assets (ROA); Givoly and Hyans (2000) negative accruals unconditional accounting conservatism negatively and significantly impacted it.

Ademola and Moses (2017) undertook a research study to verify whether there is any relationship between accounting conservatism and the value to shareholders in Nigeria. The researchers used

annually sourced panel data collected over the period from 2006 to 2015 on 20 selected firms. The results of the OLS revealed that conditional conservatism had a positively significantly impact on the value to shareholders.

Sana'a (2016) attempted an empirical examination of how accounting conservatism had affected financial performance of selected insurance firms in Jordan. Secondarily sourced panel data from 2007 to 2014 obtained from 12 Jordanian insurance firms listed on the floor of the Jordan Securities Exchange Commission (SEC).were used. The results of the OLS showed that the unconditional accounting conservatism of Givoly and Hyans (2000) negative accruals positively and significantly impacted ROA, ROE and EPS.

Affes and Sardouk (2016) examined the relationship between accounting conservatism and financial performance in France. Secondarily sourced panel data from 2007 to 2012 obtained from 60 firms listed in the SBF 120 Index were used. The results of the Feasible Generalized Least Squares (FGLS) showed that the conditional accounting conservatism of Khan and Watts (2007) C-Score positively and significantly impacted ROE.

Ramadan (2015) carried out a research to determine the extent to which accounting conservatism, cash holding and firm size had affected earnings quality of manufacturing firms in Jordan. Annual secondary panel data which covered the period 2000 to 2013 collected from 58 of such firms listed on the floor of the Amman Stock Exchange were used. The OLS regression results showed that accounting conservatism had a positively significant relationship with earnings quality.

Kordlouie et al. (2014) carried out a research to determine the effect of accounting conservatism on the quality of financial reporting in Iran. The study used annual secondary panel data obtained on 102 firms listed on the floor of the Tehran Stock Exchange covering the period 2006 to 2010.. The OLS regression model results indicated that accounting conservatism and financial reporting quality were positively and significantly related.

Chiraz and Anis (2013) researched to ascertain the extent to which earnings management has affected firms' financial performance in France. Secondary data collected from annual reports of some selected firms quoted on the floor of the Paris Stock Exchange over certain years was used. The OLS regression results showed that earnings management positively and significantly influenced ROA.

2.3. Gap in Literature: Apart from Cui et al. (2021) who used five measures of conservatism (CSCORE, BS, MTB, SKEWN and GIVOLY) in China; Aminu and Hassan (2017) who used two measures of conservatism (BASU and GIVOLY) in Nigeria; all other authors used only one measure of conservatism. This study uses nine measures of conservatism (BASU, BS, C-SCORE, GIVOLY, MTB, BR, WANG, SKEWN, ANDRE) which to the best of my knowledge none has used. This study also covers a longer time periods (2005 to 2020) than the other studies. With respect to the number of firms, it uses more firms (76) apart from Cui et al. (2021).

3.0 Methodology

3.1 Research Design

Using the ex-post facto research design, often referred to as the descriptive or correlational research design, the study investigates if there is any relationship, if any, between accounting conservatism and financial performance of enterprises in Nigeria. The population of the study consists of 106 non-financial enterprises listed on the floor of the Nigerian Exchange Group (NXG). In order to conduct this study, secondary data from 76 out of 106 organizations' annual reports were gathered over a period of sixteen (16) years, from 2005 to 2020, totaling 1,216 observations.

3.2 Model Specification

In this study, we used the Generalized Method of Moments (GMM) regression estimation technique. GMM is a dynamic panel or longitudinal data estimator that can effectively handle the dynamism in corporate finance in a globalized economic environment with firms and countries individual or specific effects.

The functional equation of financial performance represented by the return on assets (ROA) to test the nine (9) hypotheses specified is stated as:

ROA= f (BASU, BS, C-SCORE, GIVOLY, MTB, BR, WANG, SKEWN, ANDRE, SIZE, LEV)

(1)

Where BASU, BS, C-SCORE, GIVOLY, MTB, BR, WANG, SKEWN, ANDRE are different measurements of accounting conservatism as explained in section 3.3.1 to 3.3.9

The functional testable model will be derived as:

$$ROA = \beta o + \beta_1 BASU + \beta_2 BS + \beta_3 C\text{-}SCORE + \beta_4 GIVOLY + \beta_5 MTB + \beta_6 BR + \beta_7 WANG + \beta_8 SKEWN + \beta_9 ANDRE + \beta_{10} SIZE + \beta_{11} LEV + \varepsilon \quad (2).$$

Since we are using panel data, the model will be specified in the appropriate form as:

$$ROA_{it} = \beta o + \beta_1 BASU_{it} + \beta_2 BS_{it} + \beta_3 C\text{-}SCORE_{it} + \beta_4 GIVOLY_{it} + \beta_5 MTB_{it} + \beta_6 BR_{it} + \beta_7 WANG_{it} + \beta_8 SKEWN_{it} + \beta_9 ANDRE_{it} + \beta_{10} SIZE_{it} + \beta_{11} LEV_{it} + \varepsilon_{it} \quad (3)$$

Including the lagged dependent variable to equation 3, we have:

$$ROA_{it} = \beta o + \beta_1 ROA_{it-1} + \beta_2 BASU_{it} + \beta_3 BS_{it} + \beta_4 C\text{-}SCORE_{it} + \beta_5 GIVOLY_{it} + \beta_6 MTB_{it} + \beta_7 BR_{it} + \beta_8 WANG_{it} + \beta_9 SKEWN_{it} + \beta_{10} ANDRE_{it} + \beta_{11} SIZE_{it} + \beta_{12} LEV_{it} + \varepsilon_{it} \quad (4)$$

The use of lagged dependent variable is, first, to eliminate autocorrelation in the residuals and, secondly, to capture the dynamism in panel data by controlling for endogeneity bias. By including the lagged value of the dependent variable, that is, ROAit-1, due to unobserved heterogeneity transforms the static model to a dynamic one.

Finally, the study included year dummy and industry sector dummy variables to control for specific fixed effect to arrive in equation 5 below.

$$ROA_{it} = \beta o + \beta_1 ROA_{it-1} + \beta_2 BASU_{it} + \beta_3 BS_{it} + \beta_4 C\text{-}SCORE_{it} + \beta_5 GIVOLY_{it} + \beta_6 MTB_{it} + \beta_7 BR_{it} + \beta_8 WANG_{it} + \beta_9 SKEWN_{it} + \beta_{10} ANDRE_{it} + \beta_{11} SIZE_{it} + \beta_{12} LEV_{it} + \beta_{13} YDUM_{it} + \beta_{14} IDUM_{it} + \varepsilon_{it} \quad (5)$$

β1, β2, β3, β4, β5, β6, β7, β8, β9, β10, β11, β12, β13, β14. = Beta coefficient of the lagged dependent variable, the independent and control variables. From this study, we expect β1 to β14 to be greater than zero.

ε_{it} = Stochastic White Noise or Error term.

This study adapted the model previously used by: Al-Fasfus et al. (2022); Cui et al. (2021)

and El-Habashy (2019) but while they all used OLS regression method, this study uses the dynamic generalized method of moments (GMM)

3.3 Measurements and Explanations of Accounting Conservatism Models.

3.3.1 Basu's (1997) – Asymmetric Timeliness of earnings (AT)

In his influential paper, "The Conservatism Principle and the Asymmetric Timeliness of Earnings", Basu (1997) established his measure of conservatism on how accounting results reflect negative economic news more quickly than favorable economic news. He suggested that the impact of these indicators is quite obvious on accounting results and used stock returns as an indicator of good and bad economic news to determine the degree of conservatism. According to Basu, under conservatism, bad news affects profitability more quickly than good news. Because of this, the model used annual stock returns as a proxy for positive and negative news, and accounting earnings as the dependent variable to account for both the positive and negative effects of news.

We have to run a yearly cross-sectional regression analysis for the sample firms for the Basu's model in equation 1 below to obtain the coefficients for β_1, β_2 and β_3.

$$\frac{EPSit}{Pit-1} = \beta o + \beta_1 DR_{it} + \beta_2 R_{it} + \beta_3 DR_{it} * R_{it} + u_{it} \quad (1)$$

Where:

EPS_{it} = Earnings per share for firm *i* in year *t*

P_{it-1} = Beginning stock market price for firm *i* in year *t*

R_{it} = Stock market returns for firm *i* in year *t*

DR_{it} = A dummy variable that is equal to one (1) if the stock market return (R_{it}) for firm *i* in year *t*

is negative, but it is equal to zero (0) if the stock market return (R_{it}) for firm *i* in year *t* is equal to zero or positive.

The β_3 coefficient in the model, according to Basu (1997), captures the sensitivity of earnings to unfavorable news. So the measure of conservatism is β_3. The presence of conservatism in the sample is indicated by a substantial positive β_3; otherwise, the sample is assumed to be non-conservative. Whereas the market return coefficient of β_2 represents how quickly gains are recognized or how quickly earnings respond to positive news. The sum of $\beta_2 + \beta_3$ depicts how fast losses are recognized or how quickly earnings react to bad news. According to Pope and Walker (1999), the 3 coefficient, which is calculated by multiplying the market return by the negative return dummy, measures the incremental timeliness of loss recognition, and the ratio $(\beta_2 + \beta_3)/ \beta_2$ represents the ratio of bad news to good news. A positive and significant coefficient β_3 denotes asymmetric timely loss recognition and, as a result, conditional conservative accounting (André et al., 2015). Despite Basu's approach being criticized, it is still one of the most popular ways to measure conservatism. Additionally, empirical studies utilizing the AT measures have generated findings that are in line with its theoretical predictions, boosting researchers' trust in both the theory and the measure itself.

3.3.2. Ball and Shivakumar-BS- (2005): Asymetric Accruals to Cashflow Measures (AACF)
The AACF measure was created by Ball and Shivakumar (2005) to address the shortcomings of Basu's (1997) measure of conservatism, which is only appropriate for publicly traded or quoted companies due to the availability of stock price information, and which may be appropriate for measuring the degree of conservatism in private and unlisted companies due to the lack of stock price information. The conservative explanatory factors differ from the AACF measure but are comparatively similar to the AT measure. Ball and Shivakumar's (2005) substitutes stock returns in Basu (1997) for cashflow in economic news reporting. Additionally, the earnings component of the AT measure, which was represented as accuracies in the AACF measure, served as a representation for the response variable that will respond to conservatism. In the AACF, coefficient β_3 in the aforementioned regression equation is the measure of conservatism just like Basu (1997). Greater conservatism is indicated by a higher β_3, and vice versa. This AACF is modeled as:

$$TACC_{it} = \beta o + \beta_1 DCFO_{it} + \beta_2 CFO_{it} + \beta_3 DCFO_{it} * CFO_{it} + u_{it}$$

Where:
TACCit = Operating accruals measured as: Δinventory + Δreceivables + Δother current assets - Δpayables – other current liabilities – depreciation
$DCFO_{it}$ = A dummy variable that is equal to one (1) if CFO for firm *i* in year *t* is negative, but it is equal to zero (0) if the CFO for firm *i* in year *t* is equal to zero or positive.

$DCFO_{it}$ = Cashflow from operating activities for firm *i* in year *t*

3.3.3 Givoly and Hyan (2000): Non-Operating Negative Accruals

Givoly and Hyan (2000) used the non-operating negative accrual (NA) as a measure of conservatism. The quantity of negative accruals that are present over time in an entity's financial statement can be utilized as a stand-in for accounting conservatism. He contended that because earnings are frequently reported on an accrual basis, accounting conservatism uses accruals to delay the recognition of economic benefits and hasten the realization of economic losses. Therefore, timely loss recognition and gradual gain recognition will result in negative net accruals. The more caution there is, the higher the level of cumulative negative accruals. The NA is modeled as:

TACC – OPACC

Where:
TACC – Total Accruals (Earnings before extraordinary items – Operating Cash Flow Operating Cash Flow)

OPACC – Operating Accruals(Δinventory + ΔReceivables + ΔOther current assets – Δpayables – Δother current liabilities)

3.3.4. Feltham and Ohlson (1995): Book-toMarket (BTM) or Market-to-Book (MTB) Ratio

The assumption that conservative accounting practices will provide a net book value for a corporation that is far below its actual economic worth forms the basis of the BTM measure of conservatism. Therefore, greater MTB (or lower BTM) is correlated with greater degrees of conservatism, and vice versa. The MTB measure was built on the Residual Income Valuation Model, which was first created by Feltham and Ohlson (1995). It is calculated as:

$$\text{BTM} = \frac{Book\ Value\ of\ Equity}{Market\ Value\ of\ Equity} \qquad \text{or } M\text{TB} = \frac{Market\ Value\ of\ Equity}{Book\ Value\ of\ Equity}$$

3.3.5 Beaver and Ryan-BR- (2000)

Beaver and Ryan (2000) separate the BTM ratio into two parts: the bias component and the lag component because they believe that the MTB ratio is an inaccurate predictor of conservatism. Beaver and Ryan explain the bias component based on the idea that book value is consistently higher (lower) than the market value, causing the BTM ratio to be consistently above (below). The lag component, on the other hand, refers to unexpected economic gains (losses) that are recognized in the book value over time rather than immediately, causing the BTM ratio to be temporarily lower (higher) than it means (i.e. its original value without bias), but tends to return to its original value. Beaver and Ryan (2000) contend that simply the bias component should be used in an effort to evaluate conservatism. To separate the BTM into its bias and lag form, Beaver and Ryan (2000) developed the following fixed effect panel data regression:

$BTM_{it} = \alpha_t + \alpha_i + \beta_1 ROE_{it} + \varepsilon it$

Where:
BTM_{it} = Ratio of Book-To-Market (BTM) for firm *i* in year *t*.
α_t = The BTM common to the sample firms' year-to-year variation

α_i = The bias component of the BTM for firms
ROE_{it} = Return on equity (ROE) for firm *i* in year *t*.
β_1 = Coefficient on ROE_{it}

3.3.6 Khan and Watts-CSCORE- (2009)

Khan and Watts (2009) C-Score is based on the asymmetric timeliness measure credited to Basu (1997). That is, the Basu (1997) asymmetric timeliness measure which is presented in the following regression model can be used as a starting point.

$$\frac{EPSit}{Pit-1} = \beta o + \beta_1 DR_{it} + \beta_2 R_{it} + \beta_3 DR_{it} * R_{it} + u_{it} \quad (1)$$

The Basu (1997) asymmetric timeliness measure, which is proxied by stock market returns, captures the responsiveness of earnings to both good and bad news. Profits are regressed using a variety of factors ($EPS_{i,t}/P_{i,t-1}$), including stock market returns (R_{it}), a variable acting as an indicator of negative returns (DR_{it}), and the interaction between returns and the indicator of negative returns ($DR_{it} * R_{it}$). If the accounting system is conservative, in Wang et al. (2021) opinion,

a positive coefficient on the interaction term means that earnings respond to bad news (negative stock returns) faster than they do to good news (positive stock returns).

Khan and Watts' (2009) earnings-stock yield model, which builds on the regression model of BASU, asserts that the asset size (SIZE), market price-to-book ratio (MTB), and asset-liability ratio (LEV) can each be used to reflect the rate of accounting earnings to validate good news (G-SCORE). The linear function of the three (SIZE-MTB-LEV) can also be used to indicate the speed of verifying bad news (C-SCORE), as seen below:

G-Score = $\beta_2 = \mu_1 + \mu_2$ Size*i* + μ_3 *MTBi* + μ_4 LEV*i;* (2a)
C-Score = $\beta_3 = \lambda_1 + \lambda_2$ Size*i* + λ_3 *MTBi* + λ_4 LEV*i;* (2b)

By substituting Equation 2a and Equation 2b into Equation (1), we obtained Equation (3) below.

$$\frac{EPSit}{Pit-1} = \beta o + \beta_1 DR_{it} + \beta_2 R_{it} (\mu_1 + \mu_2 \text{ Size}i + \mu_3 MTBi + \mu_4 \text{ Lev}i) + \beta_3 DR_{it} * R_{it} (\lambda_1 + \lambda_2 \text{ Size}i + \lambda_3 MTBi + \lambda_4 \text{ Lev}i) + u_{it} \quad (3)$$

According to Khan and Watts (2009), the firm-year characteristics of size (Size), market-to-book ratio (MTB), and leverage (LEV) are linear functions of coefficients β_2 (G-Score) and β_3.(C-Score). Annual cross-sectional regressions are used to determine the coefficients i and i, which

fluctuate over time but not in the cross-section. While the annual coefficients μ_i is used to calculate good news (G-Score), λ_i is used to calculate bad news (C-Score). Cross-sectional variation in C-Score is influenced by cross-sectional change in firm-level characteristics (Size, MTB, and LEV). Therefore, the C-Score is used as the firm-level conservatism over a period of years.

3.3.7 WANG-Default Adjusted Basu (DAB)

A new accounting conservatism metric was put out by Wang (2009), and it is derived by changing the Basu (1997) model's original formulation. The goal is to provide a "conditional" conservatism metric that may both preserve all the desirable characteristics of the original Basu (1997) measure and significantly lessen the bias caused by default risk. He designated this new metric as the accounting conservative Default-Adjusted-Basu (or "DAB") measure. This revised Basu measure's main objective is to reduce default risk's impact on the independent and dependent variables in the Basu regression. Eliminating any impact of default risk is analogous to eliminating any impact of leverage on the firm's earnings and equity values. He argues that the most natural approach to achieve this is to regress net income before interest costs (NIBIit) on the return on the total value of the company (TR_{it}), as illustrated below.

$$\frac{NIBIit}{Vit-1} = \beta o + \beta_1 DTR_{it} + \beta_2 TR_{it} + \beta_3 DTR_{it} * TR_{it} + u_{it}$$

Where:
$NIBI_{it}$ = net income or net profit before interest expenses, that is, add interest expenses to profit after tax for firm *i* in year *t*
V_{it-1} = beginning total value which is the sum of the market values of total debts and equity for firm *i* in year *t*.
TR_{it} = the rate of return of firm's total value (V_{it}) calculated as: Value of the firm this year (V_{it}) minus Value of the firm last year (V_{it-1}) minus Cashflow from Financing Activities this year divided by Value of the firm last year (V_{it-1})

DTR_{it} = A dummy variable that is equal to one (1) if $TR_{it} < 0$, that is negative, for firm *i* in year *t*, but it is equal to or greater than zero (0) if the $TRit \geq 0$ for firm *i* in year *t*.

3.3.8 Skewness = The difference between CFO skewness and PBT skewness for each firm in an industry.

Following Givoly et al. (2007), researchers use the skewness of earnings and cash flows over the previous five years to calculate the skewness-based conservatism score. Earnings generally reflect unpleasant news that requires a lower verification threshold, which causes a substantial decline in earnings and a negatively-skewed earnings run. If a company's results reflect bad news all at once but good news gradually, the earnings are adversely skewed and therefore conservative. The statistical model for skewness is: Skew it = $(X - \mu)^3 / \sigma^3$ where

$Skew_{it}$ = The skew of net income (earnings) or cash flows from operating activities for firm *i* in year t.

X = Earnings or cash flows from operating activities.
μ/σ = Mean and standard deviation of earnings.

3.3.9 Andre-Filip-Paugam (2015) Model

Andre et al. (2015) noted that Pope and Walker (2003) and Beaver and Ryan (2005) indicated that conditional and unconditional conservatism are negatively correlated in order to account for anticipated changes in the level of unconditional conservatism. In order to identify unconditional conservatism, Andre et al. (2015) used the residual of annual cross-sectional regressions of the market-to-book ratio of equity to several variables (market returns, level of intangibles, net value of property, plant, and equipment, capital expenditures, change in sales, return on equity, sales volatility, leverage, and size), shown to be correlated to the dependent variable (market-to-book ratio). As a result, they adjust the market-to-book ratio to account for anticipated growth and accept the residuals as a proxy for unconditional conservatism.

The regression used for each year to determine the level of unconditional conservatism is:
$MTB_{it} = \beta1 + \beta2R_{it} + \beta3INTAN_{it} + \beta4PPEN_{it} + \beta5CAPEX_{it} + \beta6\Delta SALES_{it} + \beta7ROE_{it} + \beta8VOLAT_{it} + \beta9LEV_{it} + + \beta10SIZE_{it} + u_{it}$
where:
MTB_{it} = market-to-book share of firm i in year t.
R_{it} = market returns of the share of firm i in year t.
$INTAN_{it}$ = intangible assets (including goodwill) of firm i at the end of the year t, scaled by total assets.
$PPEN_{it}$ = property plant and equipment of firm i at the end of the year t, scaled by total assets.
$CAPEX_{it}$ = capital expenditures firm i at the end of the year t, scaled by total assets.
$\Delta SALES_{it}$ = percentage change in sales of firm i in year t. It is calculated as this year's sales minus previous year sales divided by previous year's sales.
ROE_{it} = net income firm i in year t, scaled by equity.
$VOLAT_{it}$ = share price volatility of firm i in year t. It is calculated as the standard deviation of share price of each firm for the sampled periods.
LEV_{it} = leverage of firm i in year t defined as total debt divided by market value of equity.

$SIZE_{it}$ = size of the firm i in year t defined as log of the market value of firm i at the end of the year t.

4.0. Method of Data Analysis

4.1 Description of the Estimation Technique Used.

Generalized Method of Moments (GMM) regression estimation technique is a generic method for the estimation of statistical model parameters. The essence of using GMM for a dynamic panel

data is to practically solve the problem of endogeneity bias which simultaneously tackles unobserved heterogeneity (Chung et al.,2018). Endogeneity simply means that the independent or explanatory variables and the disturbance or error term are correlated. When the independent variable and the stochastic disturbance or error term of the regression equation are correlated, we say endogeneity problem has occurred (Ullah et al., 2018). But when the independent variable is uncorrelated with the stochastic disturbance or error term error, the situation is exogenous or orthogonal and this is desirable for our model. The lagged value of the dependent variable was included in a dynamic model to capture its past influence on the current outcome, and this leads to correlation between the independent variable and the stochastic error term; and so OLS estimates are no longer BLUE except those estimators that consider deviations from past or original observation (Arellano & Bond, 1991; Arellano & Bover, 1995). For as much as static models do not consider endogeneity problem, they produce estimation results that are biased and misleading whereas dynamic models results of the generalized method of moments recognizes the various sources of endogeneity such as: unobserved heterogeneity in panel data, omitted variables, measurement error, and simultaneity (Man, 2019). GMM is designed to handle the problems of multicollinearity, heteroscedasticity and autocorrelation but especially second order correlation. Many studies in corporate finance which tries to explain causal-effect relationships often encounter difficulties in dealing with endogeneity and this can lead to inconsistent and biased parameter estimates (Wintoki et al., 2012) or we may not even get the right coefficient sign-positive or negative (Ketokivi & McIntosh, 2017), thereby resulting in misleading inferences, conclusions and interpretations (Li et al., 2021). Li et al. (2021) observed that out of about twelve (12) papers where endogeneity bias were ever mentioned, only three of them used the dynamic model approach while only one applied the rigorous way by reporting the results of the test.

To identify endogeneity in our model, we run a fixed effect regression model for only the independent variables with each independent variable being a dependent variable in turn and then extract its residual. This residual variable is used to replace the main dependent variable in the original regression equation and then, rerun and observe the p-value. If the p-value of the residual variable is less than or equal to 5%, then there is an endogeneity in our model. The endogeneity test results in Table 1 below showed that RESWANG (0.000), RESCSCORE (0.0381) and RESSIZE (0.0002) all have endogeneity problem since their P-values are less than 5%.

Table 1 Endogeneity Test Results

S/N	Estimated Residuals of Variables	P-Values	S/N	Estimated Residuals of Variables	P-Values
1	RESWANG	0.0000	7	RESGIVOLY	0.4474
2	RESANDRE	0.1177	8	RESMTB	0.1179
3	RESBASU	0.3906	9	RESSKEW	0.0691

4	RESBR	0.8834	10	RESSIZE	0.0002
5	RESCSCORE	0.0381	11	RESLEV	0.6698
6	RESBS	0.2525			

Source: Researcher's Computations (2023) Using EViews10 Software.

4.2 Bivariate Data Analysis (Correlation Analysis)

The correlation analyses among the variables are meant to first determine the association between each pair of the dependent and independent variables as well as among the explanatory variables. The degree of association may be weak (0.00 to 0.5), moderate (0.51 to 0.8) or high (0.81 and above). A very high association among the regressors poses a problem of multi-collinearity.

Correlation Statistics

TABLE 2. Covariance Analysis: Ordinary
Date: 09/09/23 Time: 20:48
Sample: 2005 2020
Included observations: 1137
Balanced sample (listwise missing value deletion)

Covariance Correlation	WANG	SKEWN	MTB	GIVOLY	CSCORBR	BASU	B_S	ANDRE	SIZE	LEV
WANG	0.00873 1.00000									
SKEWN	-0.00412 -0.02345	3.53955 1.00000								

MTB	-428.038	-720334.	1.16E+1						
	-0.00013	-0.11235	1.000000						
GIVOLY	0.00347	0.87321	227631 0.	339.147					
	0.00201	0.02524	0.003627	1.00000					
C-SCORE	-200628.	-172063.	-7.73E+1	611936 6	2.11E+17				
	-0.04676	-0.00193	0.049405	-0.00720 0	1.00000				
BR	-0.00033	0.05586	94964.12	0.003567	900136. 5	0.04135			
	-0.01750	0.14587	0.013702	0.000994	0.00964	1.00000			
BASU	-0.08829	-3.21907	118918 8.	6.806540	-3.72E+08	-0.47685	5179.65		
	-0.01312	-0.02374	0.000485	0.005169	-0.01125	-0.03258	1.00000		
BS	-0.24970	0.69054	743922 5.	-11.41880	2.97E+08	0.53658	200.682	6038.38	
	-0.03437	0.00474	0.002809	-0.00799 6	0.008316	0.03395	0.03588	1.00000	
ANDRE	-3775.00	-709413.	1.16E+15	226005.	7.69E+14	82306.9	112280.	643054.	1.15E+1

	0.00119	0.11111	0.9998	0.003644	-0.049382	0.01192	0.00046	0.00243	1.00000		
SIZE	-0.00500	-0.05889	848836 1.	-0.375143	608852 3.	-0.04216	-0.19795	-1.41693	801229 .	1.29738	
	-0.04702	-0.02746	0.218667	-0.017846	-0.011646	-0.18182	-0.00241	-0.01600	0.20728	1.00000	
LEV	-0.01336	-0.05784	373739 .4	-0.000855	183871 52	0.02710 8	0.87284 9	-0.60418 7	317155 .2	-0.21693 9	0.541531
	-0.19429 0	-0.04176 6	-0.01490 2	-6.2E-05	0.054438	-0.18113 9	-0.01648 1	-0.01056 6	-0.01270 0	-0.25881 6	1.000000

Source: Researcher's Computations (2022) Using EViews10 Software.

From Table 2 above, there is only one relationship that has a high degree of association among them. They are: ANDRE with MTB (0.9998); All other associations are weak and this attest to the fact that there is no problem of multicollinearity among the variables.

4.3 Regression Models Estimation Results and Hypotheses Testing.

TABLE 3 Dependent Variable: ROA
Method: Panel Generalized Method of Moments
Transformation: First Differences
Date: 09/09/23 Time: 20:37
Sample (adjusted): 2005 2020
Periods included: 14
Cross-sections included: 76
Total panel (unbalanced) observations: 1216
White period instrument weighting matrix
White period standard errors & covariance (d.f. corrected)
Instrument specification: @DYN(ROA,-2)
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA(-1)	0.321366	0.003584	89.67648	0.0000

WANG	1.847080	0.031643	58.37213	0.0000
SKEWN	-0.114838	0.005488	-20.92660	0.0000
MTB	2.45E-07	5.46E-09	44.82040	0.0000
GIVOLY	-0.002725	0.000322	-8.457888	0.0000
CSCORE	-1.62E-11	1.51E-12	-10.77089	0.0000
BR	0.004146	0.003098	1.338437	0.1811
BASU	3.72E-05	8.26E-06	4.503016	0.0000
BS	0.001447	0.000126	11.49751	0.0000
ANDRE	-2.48E-07	5.43E-09	-45.68201	0.0000
SIZE	-0.163873	0.004827	-33.95058	0.0000
LEV	-0.081393	0.009992	-8.145537	0.0000

Effects Specification			
Cross-section fixed (first differences)			
Mean dependent var	0.002285	S.D. dependent var	0.171094
S.E. of regression	0.242336	Sum squared resid	57.14118
J-statistic	63.62569	Instrument rank	75
Prob(J-statistic)	0.454244		

Source: Researcher's Computations (2023) Using EViews10 Software.

4.3 Discussion of the Regression Results.

Table 3 above shows the regression estimation results of the relationship between accounting conservatism measurements (BASU, BS, C-SCORE, GIVOLY, MTB, BR, WANG, SKEWN, ANDRE,) as well as some control variables (LEV, FSIZE) and financial performance (ROA) of the 76 sampled firms.

A look at the coefficient (0.321366) of ROA (-1) shows that it is positively significant (t-Statistics=89.67648 and p= 0.0000) at the 1% levels of significance. This result is in line with the extant literature that the dependent variable and its lag move in the same direction and must be significant (Egbadju & Jacob, 2022). This means that the current year performance can be directly affected by previous period performance in the light of new information we were not aware of. Again, since the p-value of Sargon statistic or J-Statistic (0.454244) is higher than the threshold of 5% and 10% or even the 25% or more suggested by Roodman (2009), our model is free from the problem of instruments proliferation.

WANG relationship with ROA is positively significant with a coefficient of 1.847080, a t-Statistic of 58.37213 and a p-value of 0.0006 at the 1% levels of significance.. This suggests that an increase in WANG will increase ROA. The sign or direction as well as the size or magnitudes are in line with our expectations. We, therefore, reject the null hypothesis of no significant relationship and accept the alternative hypothesis that there is a significant relationship between WANG and ROA. No previous study used this measurement.

SKEWN relationship with ROA is negatively significant with a coefficient of -0.114838, a t-Statistic of -20.92660 and a p-value of 0.0000 at the 1% levels of significance.. This suggests that an increase in SKEWN will impact negatively on ROA. The sign or direction is contrary to our expectations but the size or magnitude is in line with our expectations. We, therefore, reject the null hypothesis of no significant relationship and accept the alternative hypothesis that there is a significant relationship between SKEWN and ROA. This result is not in line with any previous study but contradicts that of Cui et al. (2021) which had a positively significant relationship.

MTB relationship with ROA is positively significant with a coefficient of 2.45E-07, a t-Statistic of 44.82040 and a p-value of 0.0000 at the 1% levels of significance.. This suggests that an increase in MTB will increase ROA. The sign or direction as well as the size or magnitudes are in line with our expectations. We, therefore, reject the null hypothesis of no significant relationship and accept the alternative hypothesis that there is a significant relationship between MTB and ROA. This result is in line with that of Cui et al. (2021) and Nassar and Al Twerqi (2021).

GIVOLY relationship with ROA is negatively significant with a coefficient of -0.002725, a t-Statistic of -8.457888 and a p-value of 0.0000 at the 1% levels of significance.. This suggests that an increase in GIVOLY will impact negatively on ROA. The sign or direction is contrary to our expectations but the size or magnitude is in line with our expectations. We, therefore, reject the null hypothesis of no significant relationship and accept the alternative hypothesis that there is a significant relationship between GIVOLY and ROA. This result is in line with those of Nassar and Al Twerqi (2021) and Aminu and Hassan (2017) but contradicts those of Cui et al. (2021); Al-Fasfus et al. (2022); El-Habashy (2019) and Sana'a (2016).

BASU relationship with ROA is positively significant with a coefficient of 3.72E-05, a t-Statistic of 4.503016 and a p-value of 0.0000 at the 1% levels of significance.. This suggests that an increase in BASU will increase ROA. The sign or direction as well as the size or magnitudes are in line with our expectations. We, therefore, reject the null hypothesis of no significant relationship and accept the alternative hypothesis that there is a significant relationship between BASU and ROA. This result is in line with that of Aminu and Hassan (2017).

BS relationship with ROA is positively significant with a coefficient of 0.001447, a t-Statistic of 11.49751 and a p-value of 0.0000 at the 1% levels of significance.. This suggests that an increase in BS will increase ROA. The sign or direction as well as the size or magnitudes are in line with our expectations. We, therefore, reject the null hypothesis of no significant relationship and accept the alternative hypothesis that there is a significant relationship between BS and ROA. This result is in line with those of Aminu and Hassan (2017) and Cui et al. (2021).

CSCORE relationship with ROA is negatively significant with a coefficient of -1.62E-11, a t-Statistic of -10.77089 and a p-value of 0.0000 at the 1% levels of significance.. This suggests that an increase in CSCORE will impact negatively on ROA. The sign or direction is contrary to our expectations but the size or magnitude is in line with our expectations. We, therefore, reject the null hypothesis of no significant relationship and accept the alternative hypothesis that there is a

significant relationship between CSCORE and ROA. This result is in line with those of Cui et al. (2021); Li (2020) and Affes and Sardouk (2016).

BR relationship with ROA is positively insignificant with a coefficient of 0.004146, a t-Statistic of 1.338437 and a p-value of 0.1811 at the 18.11% levels of significance which is greater than the 5% threshold. There is no previous study that made used of this variable.

ANDRE relationship with ROA is negatively significant with a coefficient of -2.48E-07, a t-Statistic of -45.68201 and a p-value of 0.0000 at the 1% levels of significance. This suggests that an increase in ANDRE will impact negatively on ROA. The sign or direction is contrary to our expectations but the size or magnitude is in line with our expectations. We, therefore, reject the null hypothesis of no significant relationship and accept the alternative hypothesis that there is a significant relationship between ANDRE and ROA. No previous study used this measurement.

For the control variables, both SIZE (-33.95058) and LEV (-8.145537) are negatively significant with ROA both at the 1% levels of significance.

4.4 Diagnostics Checks

4.4.1 Arellano and Bond Serial Correlation Diagnostic Tests of AR (1) and AR (2).

When an estimator uses lags as instruments with the assumption that the disturbance or error term is white noise, such an estimator would produce inconsistent results if the disturbance terms are indeed serially correlated (Arellano & Bond, 1991). Thus, it is very necessary to be sure of no autocorrelation by carrying out test statistics of no serial correlation by validating the instrumental variables through a second-order residual serial correlation test (Arellano & Bond, 1991). The AR (1) may be or may not be significant but AR (2) must never be insignificant at all. AR (2) is more important in evaluating our results as it shows whether there is second-order serial correlation. If AR (2) is significant, it indicates that some of the lagged dependent variables which might be used as instrumental variables are bad instrument and thus endogenous. Since the p-values of AR (1) = 0.0551 and AR (2) = 0.9145 in Table 4 below are greater than 0.05, we then accept the null hypothesis that there is no serial correlation.

TABLE 4 Arellano-Bond Serial Correlation Test
Equation: Untitled
Date: 09/09/23 Time: 20:35
Sample: 2005 2020
Included observations: 1216

Test order	m-Statistic	rho	SE(rho)	Prob.
AR(1)	-1.918000	-13.881828	7.237660	0.0551
AR(2)	-0.107395	-0.952436	8.868530	0.9145

Source: Researcher's Computations (2023) Using EViews10 Software.

4.5 Additional Tests of Robustness.

Where both the industry fixed effect and year fixed effect dummy variables are introduced as modeled in Equation 5, the regression results did not significantly depart from that of Equation 4 without the dummy variables as shown in Table 5 below. This attest to the robustness of the fact that accounting conservatism has helped in improving the financial performance of firms for the period under consideration.

TABLE 5 Dependent Variable: ROA
Method: Panel Generalized Method of Moments
Transformation: First Differences
Date: 09/12/23 Time: 20:27
Sample (adjusted): 2007 2020
Periods included: 14
Cross-sections included: 75
Total panel (unbalanced) observations: 983
White period instrument weighting matrix
White period standard errors & covariance (d.f. corrected)
Instrument specification: @DYN(ROA,-2)
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA(-1)	0.312412	0.005455	57.27212	0.0000
WANG	1.878384	0.063130	29.75428	0.0000
SKEWN	0.062632	0.014494	4.321309	0.0000
MTB	1.92E-07	8.10E-09	23.75035	0.0000
GIVOLY	-0.001957	0.000240	-8.159336	0.0000
CSCORE	3.85E-11	1.40E-12	27.50069	0.0000
BR	-0.077289	0.004115	-18.78006	0.0000
BASU	7.69E-06	8.72E-06	0.882133	0.3779
B_S	0.000791	8.95E-05	8.834948	0.0000
ANDRE	-1.93E-07	8.06E-09	-23.89083	0.0000
SIZE	-0.140810	0.004866	-28.93664	0.0000
LEV	0.220688	0.012997	16.97989	0.0000
IDUM	-4.990720	0.792575	-6.296839	0.0000
YDUM	-0.008805	0.000604	-14.58071	0.0000
	Effects Specification			
Cross-section fixed (first differences)				

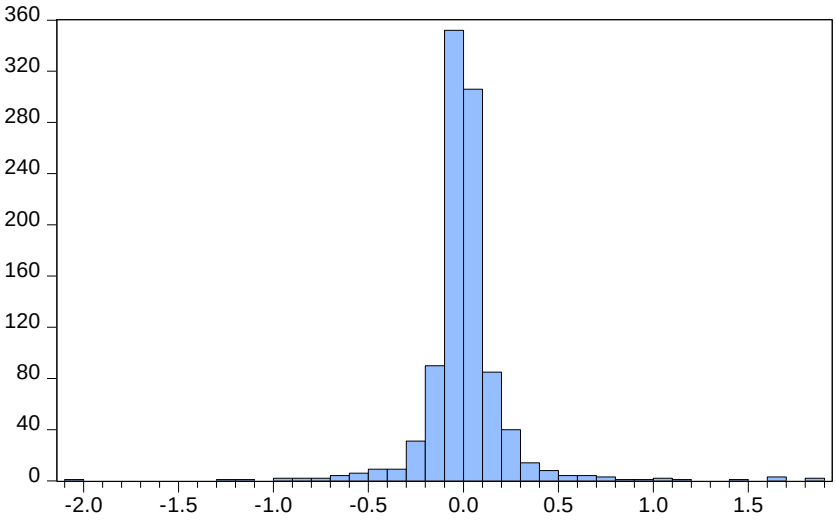
Mean dependent var	0.002379	S.D. dependent var	0.171170
S.E. of regression	0.436531	Sum squared resid	184.6516
J-statistic	60.20156	Instrument rank	75
Prob(J-statistic)	0.504841		

Source: Researcher's Computations (2023) Using EViews10 Software.

4.6 Normality Test

The normality test's goal is to establish whether or not the distribution of data within a group of data or variables is normally distributed. The normality test can be used to determine if data was obtained from a normal population or was distributed normally. Descriptive statistics, correlation, regression, ANOVA, t tests, and other data analysis techniques require normality assumptions. Because picking the inappropriate data set representation can lead to an inaccurate interpretation, this normalcy assumption should be upheld notwithstanding the sample size (Mishra et al., 2019). Since the assumption of normality is essential for the conceptual and methodological validity of inference processes, forecasting, and model specification tests, regression models must be examined for non-normal errors (Alejo et al., 2015). However, Ghasemi and Zahediasl (2012) noted that the central limit theorem (CLT) suggests that breaching the normality assumption shouldn't be a huge concern once the number of observations approaches 100 and more. The Jarque-Bera statistic value and its probability value in Table 6 below demonstrate that the data used to analyze the regression model are not normally distributed because the p-value is less/lower than 0.05, or 5%. There is no problem because there were 1,216 observations.

Table 6: Normality Test



Series: Standardized Residuals	
Sample 2007 2020	
Observations 985	
Mean	0.006851
Median	-0.003092
Maximum	1.897433
Minimum	-2.064912
Std. Dev.	0.240880
Skewness	1.345789
Kurtosis	25.67485
Jarque-Bera	21398.85
Probability	0.000000

Conclusion and Recommendations

This study investigates the relationship between accounting conservatism and the financial performance of listed firms in Nigeria. Using secondary data over the period from 2005 to 2020 of 76 firms listed on the floor of the Nigerian Exchange Group (NXG), the generalized method of moments (GMM) results reveal that four of the measure of accounting conservatism (WANG-Default Adjusted Basu (DAB; Market-to-Book (MTB); Basu Asymmetric Timeliness of earnings (AT); Ball and Shivakumar Asymetric Accruals to Cashflow Measures (AACF) are positively significant with firm performance (ROA). Again, another four of the measure of accounting conservatism (Givoly and Hyan Non-Operating Negative Accruals; Skewness; Khan and Watts-CSCORE; Andre-Filip-Paugam) are negatively significant with firm performance (ROA). Howver, Beaver and Ryan accounting conservatism measurement is insignificant.

Based on the results above, the study recommends that:

- businesses operating in Nigeria need to know that it is more profitable to be conservative in reporting financial transactions as eight out of the no one conservatism measurements in this study have shown.
- since conservatism is regarded as a feature of financial reporting that may influence the choices of potential users of financial statements policymakers, and regulators should take into consideration the adoption of several conservative accounting practices as a corporate governance mechanism.

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