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## Studying Audit Quality as a Link between Accounting Conservatism and Aggregated Accounting-based Earnings Quality: Theoretical and Empirical Perspectives from Emerging Economy

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### Abstract

**Research Purpose**—the Paper has explored the nexus between accounting conservatism and accounting-based earnings quality. This paper also examines how Audit Quality moderates this nexus in the emerging economy (Pakistan) context.

**Design/methodology/approach**—the top 70 non-financial firms from 2014 to 2023 are included in the study sample and are sourced from the sites of PSX and NBP. The study used various estimators including Pooled OLS, Random Effects, and Fixed Effects models to ascertain which model well predicts the results of the Research Study. The Fixed Effects Model estimates better coefficients than the others in light of carrying out different tests for testing the reported hypothesis.

**Research Findings**—the empirical findings depict that Accounting Conservatism has a significant positive impact on accounting-based Earnings Quality. Likewise, Audit quality has been found to positively moderate the link between the said variables, which boosts earnings quality by reducing earnings management in the respective firms.

**Research limitations**—The sample size of this Research study is somewhat limited (small), and thus the effects of the findings cannot be applied to all unlisted firms; rather, they can only be used to firms that are listed on the Pakistan Stock Exchange.

**Originality**—this study is the new one to explore the effect of Audit Quality (Big4) on the link between Accounting conservatism (C-Score) and earnings. It can explain part of the reasons for the mixed and inconsistent results in the literature.

**Practical implications**—Policymakers should concentrate their attention on accounting standards and policies, mainly on firms that operate in highly competitive sectors to reap the most results. This study has an immense influence on encouraging non-adopter countries to implement Accounting Conservatism for the transparency of Earnings quality by discouraging Agency conflict and Earnings Management in all relevant Firms.

**Keywords:** Accounting Conservatism (C-Score), Audit Quality (Big4), Earnings Quality, Agency theory.

### 1 Introduction

#### 1.1 Accounting conservatism

Accounting conservatism is an important principle of accounting through which the expenses/losses and revenue/profit are managed more effectively to save the firms from misrepresentation. Accounting conservatism under GAAP is a basic principle of accounting that is the better choice for creating the appropriate firm's financial statements and reports. This accounting principle states that all losses should be reported as soon as they are anticipated to happen, and gains should be reported as quickly as they will certainly happen, occur, or be received (Zhong & Li, 2017). In summary, it helps prevent opportunistic firms and EM managers from acting in a way that could raise the value of the company. The following goals will be accomplished when adhering to this principle:

- Assets and profit should not be overstated for receipts of loans/goods and extension of business contracts.
- Liability and expenses should not be understated for reducing taxes. (Simply not to record them i.e., these two are understated while equity, assets, and earnings are overstated automatically).
- Regular impairment of assets (IAS 36) is required.

Understatement or overstatement hurts the firm if it pays management, shareholders, and other stakeholders. In this sense, managers are restrained by accounting conservatism from increasing earnings and current assets (Welch, 2020).

## 1.2 Earnings quality

Accounting Earnings quality in this research has been used as the dependent variable. Earnings quality is a actually measure of how stable a firm's accounting earnings are for evaluating the present and future performance of the firm. High earnings quality typically indicates that the earnings are free from managerial influence and provide an accurate indicator of future earnings produced by the firm (Alves, 2023). The Financial Accounting Standard Board states that the most important goal of financial reporting is to provide all relevant stakeholders with accurate and transparent accounting information about the corporate entity. A company's higher level of accounting conservatism enhances the quality of its accounting results by reducing the agency problem that arises from the information asymmetry between shareholders and agents in firms (Biduri, Maryanti, & Ahmed, 2023).

Any corporation's financial reporting has financial implications, which are made available to the public at various times. Prior research has employed multi-model techniques and evaluations to quantify the quality of financial reporting. One method used to measure the quality of financial reporting is earning quality. This method states that the accounting reporting quality of the individual enterprises increases with the earning quality. Accounting proxies, such as earnings quality, are used to measure the quality of financial reporting. (Dichev, Graham, Harvey, & Rajgopal, 2013; Perotti & Wagenhofer, 2014).

### 1.2.1 Accruals quality

The main cause of the gap or discrepancy between a company's cash and earnings is accruals (Yousaf Khan, Ahmad, & Malik, 2021).

### 1.2.2 Earning Persistence

Persistence refers to the current earnings that will continue in the upcoming period and the accuracy of the earnings as reported (Mahjoub & Khamoussi, 2013).

### 1.2.3 Earnings-Predictability

The ability and proficiency of past firm earnings to forecast the corresponding firm's future earnings in a given time frame (Chhaochharia, Kumar, & Zhang, 2023).

### 1.2.4 Earnings Smoothness

It alludes to the reported corporate earnings' reduced volatility over a given time frame. It is computed by dividing both the model firms' OCF and the SD ( $\sigma$ ) of reported earnings (Cao, Rees, & Zhang, 2023).

## 2.4.5 Standardized aggregate EQ Score

Following the analysis of this research, a standardized aggregate EQ Score derived from the four accounting measures was created to look into the impact of accounting conservatism in Pakistani sample firms between 2014 and 2023 (Yousaf Khan et al., 2021).

## 1.3 Audit Quality

This study uses audit quality as a moderating variable. The firms have engaged this audit firm. A notional value of "1" is regarded as such if the audit firm is one of the Big 4 (PWC KPMG, E&Y & Deloitte); otherwise, "0." When a variable's effect in a test increases or weakens the relationships b/w two variables, such as DV and IV of the research study, it is referred to as a moderating variable. In this study, audit quality is used as a moderating variable, while Big4 is used as its proxy (Oroud, Almashaqbeh, Almahadin, Hashem, & Altarawneh, 2023). The fundamental theory of this study is agency-theory, which describes the dynamic between a corporation's principal (One party) and manager (second party). Because of their separation and shared consideration of personal gain, agency conflict arises between the company's two parties. Any business using conservative accounting can reduce or eliminate this conflict (Shleifer & Vishny, 1997).

Shareholders of any firms access to Financial statements of respective firms to know about the financial performance and positions for the purpose of investment or not investment therein (Lee, 2004). Researchers out of accounting measures focus on Earnings in order to measure the financial performance of respective firms for the information of Shareholders. Accounting Earnings figures in light of previous literature rationally forecasts future cash flow and current cash flows. Accounting scandals and irregularities perpetrated by the company's management to falsify and alter financial reports of companies in order to deceive investors and the board and skew their decisions are known as corporate scandals. The main source of corporate accounting scandals, which have the potential to bring down entire companies, is deliberate manipulation of accounting reports or incompetent management practices within the different corporations. These deliberate scandals typically involve misappropriation of funds, stock price manipulation, loans disguised as sales, false overstatement of revenue, concealing massive debts from the B/sheet, ostensibly portraying loans as firm's revenue, understatement of firm's expenses, overstating the cost of firm's assets, and underreporting the relevant firm's liabilities (Domashova et al., 2022).

Numerous academics have looked into the relationship between accounting conservatism and various dependent variables both in Pakistan and around the world. These comprehension-focused research studies have been displayed in many categories. For instance, group 1 Garanina and Kim (2023) in Russian Emerging Economy have described the effect of Accounting Conservatism and CSR disclosure in presence of moderating variable that is State ownership. Group 2, Lara, Osmá, and Penalva (2016) have explored the relationship between Conservatism and Firm investment efficiency in registered firms Spain. Group-3, El-Habashy (2019) have investigated the effect of Accounting Conservatism on the

Corporate Performance (ROA, ROE ) of the Top 40 active firms of Egypt for period from 2009 to 2014 for testing the formulated hypothesis. Group-4, O'connell (2006) has studied to explore the relationship between Conservative Accounting and compensation-relevance of earnings in UK. Group-5, Sa'ad, Abubakar, and Salami (2023) have written a research paper of investigates the effect of accounting conservatism on the corporate tax avoidance in Nigerian registered non-financial firms. Group-6, Talawa and Badwan (2024) have explored the influence of conservatism and corporate governance on stock price in firms registered in Palestine Stock-Exchange. Group-7, Aladwan, Samara, Hani, and Alrajabi (2024) verify the influence of conservative accounting on financial adequacy measured by four measures (ROA, ROE, EPS and P-BV) Jordanian firms. They have also used corporate governance as moderator to verify their nexus of Jordanian firms.

In terms of gap, this research study differs from the other studies in much esteem, including: 1- This study used the direct influence of Acc conservatism on composite accounting-based earnings quality (persistence, accrual, smoothness and predictability) measured under the latest approach of Khan & Watts. 2- This study has also used the indirect influence of audit quality on the relationship of Acc Conservatism on aggregate accounting-base earnings quality by establishing of a composite score of Earnings Quality following the PCA. 3- Latest and updated Panel data of Top-financial firms acquired from the websites of PSX and SBP and Open-door for all for period from 2014 to 2023.

### 1.3 Problem Statement

Shareholders meekly trust financial statements submitted by concerned managers without challenging them, whether they have little or no access to information about accounting or do not have forensic accounting and finance expertise. Therefore, it fosters management's opportunistic approach toward corporate scandals, scams, and meddling that weakens investors' confidence. Previous research on this issue, both in Pakistan and internationally, revealed that several large corporations, such as Enron, Parmalat, WorldCom, Lehman Brothers, Satyam, Taj Co., Pakistan Railways, OGDCL, Kohinoor Textile Mills, SNGPL, Lucky Cement, PTCL and PIA faced failure as a result of inadequate plans. Several states, including Pakistan in light of several well-known scandals, have quickly looked at accounting strategies to boost financial transparency and accountability (Ajayi-Nifise, Falaiye, Olubusola, Daraojimba, & Mhlono, 2024). Several researchers (Garanina & Kim, 2023; Guo, Shi, Rus, & Yau, 2022) have carried out the up-to-date research in filed field but none of the concerned have paid consideration to this matter to work thereon. This room (gap) exists and is filled in the existing literature by exploring the influence of conditional accounting conservatism on aggregate accounting-based earnings quality in the existence of audit quality used as a moderating variable in sample firms of PSX for the era 2014-2023.

The rest of the article is laid out as follows: The second section develops the theoretical framework and hypotheses while presenting the literature. The research methodology is laid out in Section 3, and the outcomes of the analysis are shown in Section 4. The Conclusion and policy implications are covered in Section 5 and Section 6 focuses on the Limitations and future research avenues.

## 2. Literature review and hypotheses development

### 2.1 Theoretical Perspective

#### 2.1.1 Agency theory

The agency theory (underpinning theory of this study) states that the information asymmetry that results from the seclusion of managers and shareholders in the corporate sector leads to agency challenges which can harm firm financial positions and shareholder expectations. To address this problem, conservative control develops as an arsenal of proactive measures to keep an eye on managers' actions and limit the disparity in information between investors and the managers of the Firms (Wilson, 2024).

#### 2.1.2 Resource Dependency theory

The theory argues that resource providers may have an impact on the relevant firms' choices. The government and general public in Pakistan are the sources' providers. (Jiang, Luo, Xia, Hitt, & Shen, 2023).

#### 2.1.3 Stakeholders theory

Since only shareholders were considered to be the interested parties of the corporate sector in the previous theory, a vacuum was left unfilled by the establishment of stakeholder theory. Instead of focusing on just one principle group impacted by agency difficulties, stakeholder theory considers the interests of multiple principals (Stoelhorst & Vishwanathan, 2024).

#### 2.1.4 Positive accounting theory

PAT does not prescribe the method that should be used; instead, it reflects the prediction of accounting procedures adopted in firms for their accounting records. For the benefit of pertinent enterprises, this approach thereby limits the opportunistic behavior of the management. (Averio, 2023).

#### 2.1.5 Stewardship Theory

This significant idea holds that managers behave more like stewards (overseers) than agents because they put the interests of their enterprises ahead of their motivations. According to this idea, the principal-agent relationship is aligned since both parties consider the firm's interest rather than their personal goals (Jasir, Khan, & Barghathi, 2023).

#### 2.1.6 Signaling theory

The behavior of two parties with asymmetric information is described by this theory. The actions of two parties when they possess disparate financial knowledge about the organization, as outlined in the present paper (Brusse, 2023). Investors and

management are these two stakeholders in the signaling theory. Investors decipher the signals provided by management through the financial reports they receive.

## 2.2 Empirical perspective

Agency issues arise from the appropriate corporation zone's separation of managerial control and shareholdings. Investors lack the extra time necessary to oversee and run businesses, and managers, on the other hand, lack the extra money needed to finance their participation in the companies. As a result, the company's shareholders put their faith in the management and use their excess money to invest in any successful management businesses to earn a profit. In such a phenomenon, the enterprises' management has an assessment that can be advantageous to them rather than the owners and firms (Yousaf Khan et al., 2021). The aforementioned tension has been brought to the attention of shareholders and similar patrons through literary works (Shleifer & Vishny, 1997). In this context, the Pakistani SEC established the initial CG code in 2002 and mandated compliance and implementation from registered companies. Thus, by mitigating agency conflict and lowering firms' problematic agency expenses, accounting conservatism serves as a directed instrument to safeguard the interest (investment) of shareholders in corporations (Zhou et al., 2016). Poor quality, lax standard compliance, and investment switching are all blatant instances of agency costs that result from disparate assessments (interest) and an uneven information flow between the relevant parties. A significant amount of theoretical and empirical research has been written to explain the relationship and linkage between earnings quality and conservatism that has been highlighted. The theme of this study is the relationships between conservatism and profits.

### 2.2.1 Accounting Conservatism, Earnings quality

One of the most important metrics and norms for assessing the expected return for the respective firms is the reported earnings for which Shareholders of the firms waiting. Expecting future profits serves as a signal for projecting future returns on capital investments. Therefore, profit numbers are more important to shareholders than other performance metrics like cash flows, dividends, and changes in earnings.

It has been accepted by managers, financial analysts, shareholders, standard setters, and other financial officials that it is better to concentrate on improving the quality of accounting-based earnings since it may help to reduce asymmetrical information (Abdou, Ellemly, Elamer, Hussainey, & Yazdifar, 2021; Zadeh, Askarany, & Asl, 2022).

Previous literature has examined the impact of accounting conservatism on earnings quality, but the results are inconclusive. The findings are erratic, contradicting, and mixed to some extent, which provides room in the literature.

Asri (2017) conducted research by collecting the Data from the stock Exchange of Indonesia for the period from 2010 to 2015. The Purposive sampling technique was used by him for collection of Data. They have reported a positive and significant influence of Accounting Conservatism on earnings quality. They have also put forward that the proper application of accounting conservatism in respective corporate sector may definitely boost up the desired earnings quality.

A study by Zadeh et al. (2022) found a statistically significant positive correlation between Accounting conservatism and Earnings quality in Tehranian firms for the period from 2012 to 2017.

According to Feltham and Ohlson (1995) Conservative accounting upsets the quality of the numbers shown in the Income Statement as well as in balance sheet of the respective firms (Zadeh et al., 2022).

Stefani (2016) carried out research study in Indonesia by examining the impact of Conservatism on Earnings quality. All Indonesian-listed manufacturing firms between 2010 and 2014 were used as the study's population. They have reported positive influence of Conservatism on Earnings quality in firms of Indonesia.

Stefani (2016) have documented that the implementation of Accounting conservatism in respective firms discourages the earnings management and consequently boost up the Earnings quality.

Some Academics (Abd-Elnaby & Aref, 2019; Permatasari & Yulianto, 2020) in their studies have shown that accounting conservatism is a critical factor that needs to be implemented in the corporate sector immediately to increase the quality of information regarding finances. Thus, the following first hypothesis ( $H_1$ ) is reported in light of the above relevant theories and arguments of literatures:

$H_1$ : Accounting conservatism is positively associated with aggregate Accounting-based Earnings quality in Emerging economy compared to developed economies.

### 2.2.2 Accounting Conservatism, Earnings quality and Audit quality

Accounting conservatism has been viewed as a useful Principle for managing accounting statistics and reducing agency conflicts that arise in corporations between owners and management as a result of the asymmetric information flow (M. A. Khan, Yau, Sarang, Gull, & Javed, 2024). It outlines how powerful systems within companies promote management oversight and, as a result, calls for cautious accounting practices in representative businesses in emerging economies like Pakistan.

This study uses audit quality as a dummy variable. It takes value one (1) if the related firms are audited by the Big Four (E&Y, Deloitte, PWC, and KPMG); otherwise, it takes value zero (Yousaf Khan et al., 2021). The Big Four auditing companies, or one of them, are regarded as conservative since they keep a close eye on the actions of opportunistic management. (Ahmad, Hunjra, Islam, & Zureigat, 2023). In sample firms, the association between Accounting conservatism and Earnings quality can be improved by the existence of Big Four firms. Furthermore, it suggests that Big 4 audits carefully guarantee the dependability and integrity of financial reports that the Boards of Directors provide to interested shareholders of the businesses. The knowledge imbalance that exists between two stakeholders inside a corporation, such as shareholders and management, is discouraged by Big 4 audit firms.

According to agency theory, the presence of the Big Four in audit companies makes the board of directors more prudent in their task observation. Low accounting conservatism is ultimately the result of the audit's poor performance, which leads to agency conflict brought on by the flow of asymmetric information. On the other hand, because agent and principal have symmetrical information, quality audit deters agency conflicts and ultimately promotes accounting conservatism in the corresponding firms.

Zadeh et al. (2022) carried out research by examining the moderating effect of Corporate Governance on the nexus of Accounting conservatism and Earnings quality. Collecting of Data made from the stock Exchange of Tehran for the period from 2012 to 2017. They have reported that Corporate Governance is positively moderating the relationship between Accounting conservatism and Earnings quality.

Utomo, Pamungkas, and Machmuddah (2018) have conducted research in Indonesia to empirically investigate the influence of Conservatism on earnings quality (Equality) by using the moderating role of managerial-ownership, independent commissioners & audit. The population that is all companies in LQ-45 that are on IDX for the period from 2014 to 2016. The multiple regression analysis carried out for testing the formulated hypothesis. Positive effect has been shown between Accounting conservatism and quality of earnings. Managerial ownership (Moderator) has a significant effect while Independent commissioners and audit committee do not have a significant impact on the nexus between accounting conservatism to earnings. Thus the following second hypothesis is proposed in light of the above literature and theories:

**H<sub>2</sub>:** The impact of audit quality on the relationship between conservatism and earnings quality is stronger in emerging economies compared to developed economies.

### 2.3 Conceptual Framework

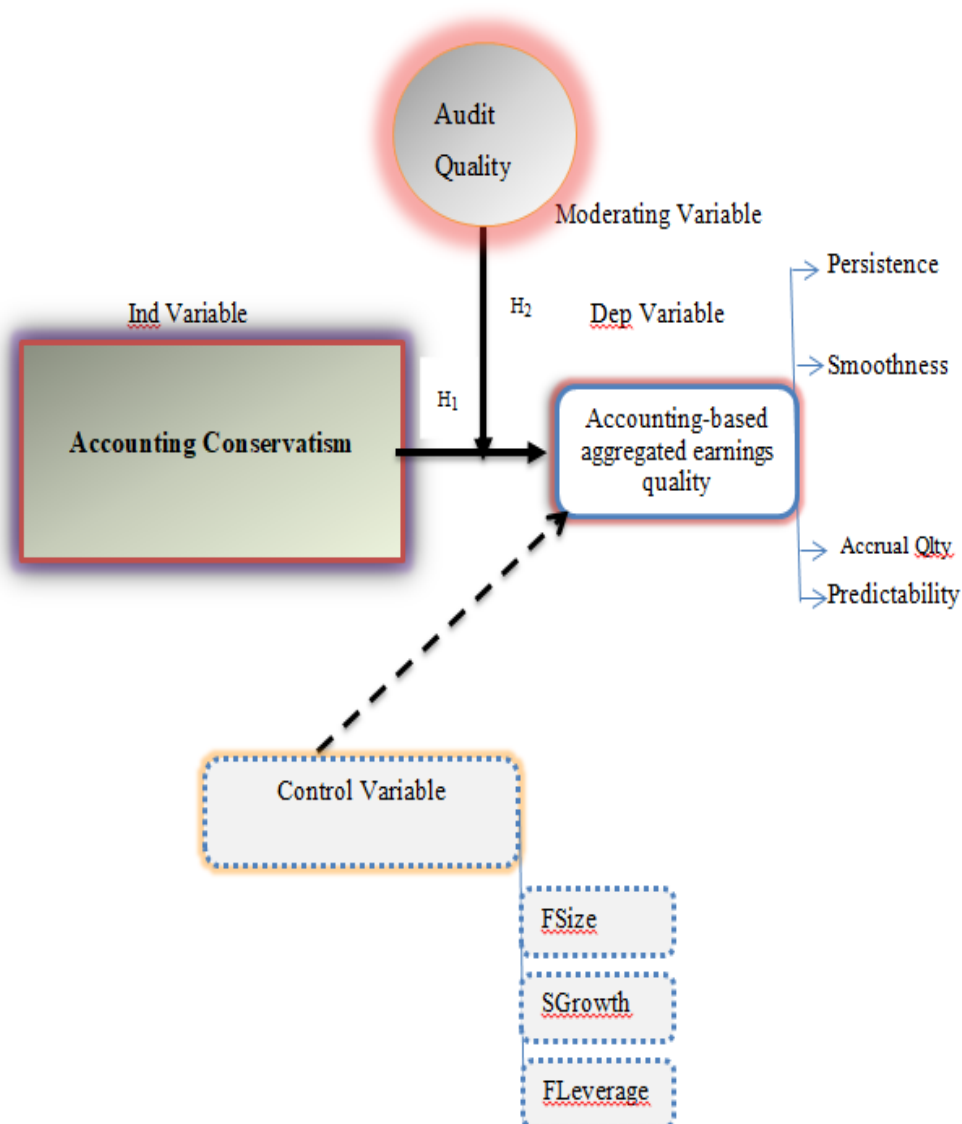


Figure 2.1 Conceptual model

Figure 2.1 illustrates the relationship between Accounting Conservatism and Earnings Quality where Audit Quality serves as a Moderator in PSX firms during the 2013–2014 period.



### **3. Methodology**

#### **3.1 Research Philosophy**

The complete research process, from theoretical underpinnings to data collection, analysis, and implications, is termed research methodology (Y. Khan & Arshad, 2024; Saliya, 2023). Though it may appear complicated initially, it guides the viewpoint in formulating questions, organizing a study, choosing a research design, and determining how to gather, process, and evaluate data.

This study's guiding philosophy is agency theory, which adheres to the positivist philosophical school of thought (positivism approach). Based on the availability of prior studies and theories, a deductive approach has been used in this study. In this current study, the theory is tested by the relevant quantitative techniques and approaches.

#### **3.2 Research Approach**

Research attitude in general can be divided into two primary categories: deductive and inductive. (Proudfoot, 2023). The deductive approach, referred to as the theory testing approach, thrives when both, that is, theory and literature, are available, whereas researchers employ the inductive approach when there is previous literature available in the research market for addressing a new theory.

#### **3.3 Research Design**

Research design, according to Proudfoot (2023), is a comprehensive plan sketch based on several research components being obtained, such as

#### **3.4 Sample Selection & Data**

This section aids in the presentation of details about the population as a whole, sample selection, and the kinds and sources of data used in this research endeavor. The following subsections have been formed to organize this section:

##### **3.4.1 Population**

This research study's population consists of all 100 firms that are listed on PSX between 2014 and 2023. The primary justification for using 100 firms as a population is that they represent the most actively traded companies, primarily from the PSX's top 35 industries, in terms of market capitalization, strong economic performance, and degree of conservatism.

##### **3.4.2 Sample selection criteria**

In order to choose the sample, some firms are eliminated from the research population based on the following criteria. (i) Companies in the banking, insurance, mutual fund, leasing, and modarabas industries are distinguished by their distinct accounting standards (Latif, 2018; Sarun, 2016). (ii) Dissolved firms (iii) recently established firms (iv.) The sample size is 70 firms after the unnecessary enterprises are eliminated. For the entire duration, there have been 700 observations, or  $10 \times 70$ .

##### **3.5.3 Sample period**

The research's population (Pop.) consists of 100 firms that are slated to operate in PSX between 2014 and 2023. Based on their high market capitalization, 100 listed companies were selected from the PSX and added to the sample.

##### **3.5.4 Sample size and sampling Technique**

Sampling refers to the processes that are used in research to choose a sample from the population. Using the purposive sampling technique (also known as non-prob sampling), 100 of the largest non-financial companies in terms of capital were chosen for the samples throughout the preceding ten years.

##### **3.5.5 Data Sources and Data Collection**

Secondary data are used in this research study for analysis. Therefore, for the companies included in the sample, secondary data of the Top Non-Financial Firms are gathered from the Annual Reports of the Relevant Firms downloaded from Pakistan PSX, SBP, and other Reliable Online Sources (Aslam, 2013; Batool, Khan, Arshad, & Bashir, 2024).

##### **3.5.6 Statistical Tools, Techniques and models for Data Analysis**

The data from non-financial enterprises has been analyzed using STATA version 16 tools by the previously defined hypotheses. The study hypothesis has been tested and necessary results have been obtained through the application of correlation and regression approaches.

##### **3.5.7 Panel Data**

Panel data are data that are cross-sectioned over a period of time or produced periodically for a set of entities (Hsiao, 2005). Time and entity effects are interpreted in the research study using panel data. As a result, panel data yields different results than time-series and cross-section regression. One of panel data's primary advantages over time series and cross-sectional studies is that it manages the heterogeneity problem. The study's panel data comes from ten (10) years in Pakistan, from 2014 to 2023.

### 3.6 Operational definition along with Measurement of Variables

#### 3.6.1 Measurement of A/c conservatism

As of today, there isn't a single proxy or measure for conservatism that is widely accepted and used in worldwide studies (Francis, Hasan, & Wu, 2013). Several academics have measured conservatism using a variety of proxies and measurements in their prior literature. A new & revised measure of accounting conservatism, the C-score, based on Basu's (1997) AT method metric, was proposed by Khan and Watts (2009). C-score adds firm-specific characteristics (size, MTB, and leverage) to annual cross-sectional data in order to focus on both, i.e., firm and year variation in accounting conservatism. Regression by Basu (1997) (Francis et al., 2013). They have utilized corporate-specific timeframe estimates for both good and negative news, denoted by G and C scores, respectively, and have included C scores in their report to show how accounting conservatism is connected to these predictions (Muslim & Setiawan, 2023). Below is the measurement of the stated G-Score and C-Score:

$$E_{it} = \beta_0 + \beta_1 D_{it} + \beta_2 R_{it} + \beta_3 D_{it} \wedge R_{it} + \epsilon_{it} \text{-----Eq no 1 (Basu's Model, 1997)}$$

$$G\text{-Score} = \beta_2 = \mu_0 + \mu_1 \text{Size} + \mu_2 \text{MTB} + \mu_3 \text{Lev} + \epsilon_i \text{-----Eq no2}$$

$$C\text{-Score} = \beta_3 = \lambda_0 + \lambda_1 \text{Size} + \lambda_2 \text{MTB}_i + \lambda_3 \text{Lev} + \epsilon_i \text{-----Eq no3}$$

In Reg. Eq 1., swapping out  $\beta_2$  (G-Score) and  $\beta_3$  (C-Score) in Equations (2) and (3). Consequently, the following equation is produced:

$$E_{it} = \beta_0 + \beta_1 D_{it} + R_{it} \wedge (\mu_0 + \mu_1 \text{Size}_i + \mu_2 \text{MTB}_i + \mu_3 \text{Lev}_i) + D_{it} \wedge R_{it} (\lambda_0 + \lambda_1 \text{Size}_i + \lambda_2 \text{MTB}_i + \lambda_3 \text{Lev}_i) + (\sigma_0 \text{Size}_i + \sigma_1 \text{MTB}_i + \sigma_2 \text{Lev}_i + \sigma_3 D_{it} \wedge \text{Size}_i + \sigma_4 D_{it} \wedge \text{MTB}_i + \sigma_5 D_{it} \wedge \text{Lev}_i) + \epsilon_{it} \text{---Eq no4}$$

For yearly cross-sectional regressions, we employ equation (4). To determine the level of accounting conservatism unique to a certain firm, solve equation Equation 3 using the value and estimations from equation 4. A higher C-Score indicates a higher degree of accounting conservatism inside the company.

Under:

Under Francis et al. (2013) , I used leverage, MTB, and firm size (FSize) as control variables in regression tests. I also used these variables to calculate the C-score, which helped to reduce multicollinearity in the process.

#### 3.6.2 Measuring of earnings quality

In line with (Hung & Van, 2020) this study has also created a standardized aggregate EQuality Score using the four accounting indicators to investigate the impact of accounting conservatism in Pakistani sample companies from 2014 to 2023. In the main research analysis, this study created an aggregate score for four accounting metrics for accounting earnings quality, which are also utilized in earlier work by Hung and Van (2020).

#### 3.6.3 Measurement of Audit Quality

Audit quality is used as a moderator in this study. A binary/dummy variable is used to quantify the audit quality of this study. It is coded as 1 if the relevant firm is audited by an auditor who is a member of the Big4 or its affiliated audit firms, and otherwise Zero (0) (Nasr & Ntim, 2018).

#### 3.6.4 Measurement of Control Variables

First control variable is Firm Size which is calculated by taking the log of each firm's total assets (Vuong, 2021).

$FSize_{it} = \text{Log of Total Assets}$

The second control variable is Sale Growth which is calculated by taking the percentage growth in firms' total sales for the specific study.

$SGrowth = \%age \text{ growth in Total Sale}$

The third control variable is financial leverage which is calculated by using the following formulated (Hernawati, 2021).

$$\text{Financial Leverage} = \frac{\text{liability of respective firms}}{\text{Assets of Respective firms}}$$

### 3.7 Empirical Research Model

This study uses three models to test the hypotheses and pooled OLS, random effects, and fixed effects models are used to estimate the parameters of the models. The findings of the Hausman test are used to decide the efficiency of the methods mentioned above.

#### Model 1

The following first econometric model of the study is used to examine the effect of Accounting Conservatism (IV) on earnings quality (DV).

$$EQuality_{it} = \beta_0 + \beta_1 AccKonsr_{it} + \beta_2 FSize_{it} + \beta_3 FLeverage_{it} + \beta_4 SGrowth_{it} + \epsilon_{it}$$

#### Model no 2

The Second econometric model of this study is used to regress earnings quality (Equality) over Accounting Conservatism (AccKonsr) in existence of moderating variable that is audit quality.

$$EQuality_{it} = \beta_0 + \beta_1 AccKonsr_{it} + \beta_2 AQLty_{it} + \beta_3 (AccKonsr_{it} * AQLty_{it}) + \beta_4 FSize_{it} + \beta_5 FLeverage_{it} + \beta_6 SGrowth_{it} + \epsilon_{it}$$

Furthermore, control variables (CV) including  $SGrowth_{it}$ ,  $FLeverage_{it}$  and  $FSize_{it}$  are also used in relevant model of the study. All variables (DV, IV, MV and CV) have been described, measured & operationalized.

#### 4. Empirical Analysis

Seventy companies from the years 2014 to 2023 can be made use of as samples based on the sample criteria. All required variables have been collected, and the samples have undergone an in-depth check.

##### 4.1 Diagnostic tests

The sample data used for this research study has to undergo a number of diagnostic tests in order for the analysis to be viable. In truce with past studies, the sample data was put through a diagnostic process provided in Table 1 hereunder (Alkordi, Al-Nimer, & Dabaghia, 2017).

##### 4.1.1 Normality Test

This study will use the Kolmogorov-Smirnov Normality Test to figure out whether the data are normal or not. The results of this test will tell us whether the distribution of the data is normal or abnormal. The following are the criteria used to make the decision:

- i. If the P-value (Significant Value) is greater than 0.05 meaning that the Data is normally distributed.
- ii. If the P-value (Significance Value) is greater than 0.05, meaning that the Data is abnormal distributed.

##### 4.1.2 Multicollinearity Test

The relation between each independent variable has been tested. For the regression model to meet its requirements there shouldn't be a relationship between any of the independent variables. This study has use the VIF test. The following are the criteria used to make the decision:

- i. if the VIF is less than 10 and the tolerance is more than 0.1 then in such situation It can be stated that there is no issue of multicollinearity.
- ii. If VIF greater than 10 and Tolerance is less than 0.1 then it can be stated that there is the issue of multicollinearity.

##### 4.1.3 Heteroscedasticity Test

The Glejser Test is used in this research study to calculate the residual value or error distribution for each independent variable. It regressed independent variable with its absolute residual value. To satisfy the requirement of the regression model, the residual value should be the same for each IV (independent variable). The following are the criteria used to make the decision:

- i. If P-value (significance value) is greater than 0.05 meaning that there is no issue of heteroscedasticity.
- ii. If P-Value (significance value) is less than 0.05 then it could be stated that there is the issue of heteroscedasticity.

##### 4.1.4 Autocorrelation Test

This study has tested the correlation between residual value in one period and another period. The condition for 'regression model' is the absence of correlation of residual value from period to period. The DW (Durbin-Watson) test has been used to know about the existence of correlation. The following are the criteria used to make the decision:

- i. If  $d < dL$  or  $d > 4-dL$ , then it could be addressed that there is the issue of autocorrelation.
- ii. If  $dU < d < 4-dU$ , then it could be addressed that there is the no issue of autocorrelation.

This section of this article is included on: (i) diagnostics tests (ii) Desrpt statistics (iii) corre matrix and (iv) Multi regression analysis and (v) detail of proposed hypothesis.

**Table 1: Diagnostic Tests**

Particular	Test	X2	Prob. Chi Sq.	VIF	1/VIF	F	Prob
Normality	Jarque-Bera test	0.533	0.331	-	-	-	-
Serial-Correlation	Breusch-Godfrey LM test	0.063	0.132	-	-	-	-
Heteroscedasticity	Breusch-Pagan-Godfrey test	0.703	0.534	-	-	-	-
Multicollenearity	VIF (IFRS)	-	-	1.01	0.968743	-	-
	VIF (CGI)	-	-	1.09	0.918251	-	-
	VIF (CGI*IFRS)	-	-	1.66	0.917665	-	-
	VIF (Firms)	-	-	1.05	0.946564	-	-
	VIF (Levrg  )	-	-	1.04	0.945678	-	-
	VIF (GnS)	-	-	1.02	0.98446	-	-
Endogeneity	RESET test		-	-	-	2.29	0.0310



#### 4.1 Descriptive Statistics

The total number of observations, mean, and standard deviation values for the study's sample variables are shown in Table 3. The smallest and highest values of the sample data from this study are highlighted in the table of descriptive statistics. The term "arithmetic mean" is also used to refer to the mean or arithmetic average. It is calculated by adding up each number in a set of data, then dividing that total by the number of items in the dataset (Ravid, 2024). The standard deviation specifically depicts how widely dispersed your data is from the mean.

**Table 2 Descriptive statistics**

Variable of Study	Obs	Mean	Std. Dev.	Min	Max
EQuality	700	8.954	12.006	1.000	26
AccKonser (C-Score)	700	0.860	0.123	-0.943	0.259
AccKonser <sub>it</sub> *AQLty <sub>it</sub>	700	0.990	0.97	-0.252	0.95
FSize	700	11.443	0.588	7.175	12.04
SGrowth	700	0.503	0.654	-0.537	2.342
FLeverage	700	0.455	0.265	0.103	.6534

The table represents the descriptive statistics of Pakistani Registered firm. EQuality represents Earnings Quality which actually dependent variable of this study. AccKonser is representing Accounting Conservatism which is used in this study as independent variable. FSize, SGrowth and FLeverage are all control variables and these are representing Total Assets, Sale Growth and Financial Leverage respectively.

#### 4.2 Correlation

The statistical method known as correlation explains the relationship between two variables and establishes its strength, moderateness, or weakness. It also establishes whether an association exists at all. It displays the degree of correlation between the variables. a statistical measure that demonstrates how two or more variables are interdependent. Correlation coefficients must be used in order to give some preliminary data that supports the study's hypotheses. The correlation's value lies between -1 and +1. Values nearer +1 indicate a significant but positive correlation between the variables, while values nearer -1 indicate a significant but negative correlation (Cooper, 2023). A weak association between the variables is indicated by a correlation coefficient value between .01 and 0.29, a moderate relationship by a value between 0.3 and 0.69, and a high relationship by a value between 0.7 and 1.0. The absence of a linear correlation between the study's necessary variables is indicated by the number 0 (zero).

**Table 2 Pearson correlation matrix**

Variable	EQuality	AccKonser	AQLty*AccKonser	FirmS	Levrg	Grwth
EQuality	1					
AccKonser	0.453	1				
AQuality*AccKonser	0.472	0.494	1			
FirmS	-0.0820	-0.042	-0.0234	1		
Levrg	0.1849	-0.0835	0.149	0.164	1	
Grwth	0.259	-0.0669	.246	0.135	0.0522	1

Sig. Levels: \*\*\* p<0.1 (1%), \*\* p<0.05 (5%), \* p<0.01 (10%),

Table 3 depicts a correlation matrix that illustrates the association and pattern throughout all study variables. The correlation matrix displays a value of .453 which demonstrates that Accounting conservatism and Earnings quality have a substantial positive association, supporting the hypothesis H<sub>1</sub> of the study. Similar the association between interaction terms (AQuality\*AccKonser) and EQuality is similarly positive (0.472), providing strong evidence for our study's relevant hypothesis that the implementation of AccKonser may increase the scope of Earnings Quality for firms. The association between interaction term and Earning Quality has similar higher results, meaning that implementation of Accounting conservatism and Audit may help to boost up the level of Accounting-based earnings quality of the respective PSX firms.

#### Model specification

The repercussions of choosing the right model for the analysis of panel data must be grasped. In order to identify the best model, this study used the Likelihood test between CEM and FEM, the Lagrange multiplier (LM) test between CEM and REM, and the Hausman test between the FEM and REM models. A Likelihood-test was conducted by an expert to determine which of the two-panel data estimate models, CEM or FEM, was the best.

Hypothesis:

H<sub>0</sub>: Common Effect Model

H<sub>1</sub>: Fixed Effect Model

Basis decision:

H<sub>0</sub> is accepted if the Chi-square probability is greater than 0.05. H<sub>0</sub> value is rejected if the Chi-square probability is less than 0.05. The likelihood test findings matching CEM and FEM are as follows:

**Table 3: Results of Likelihood-Test**

Effect Test	Statistics	df	Prob
Cross-section F	14.257254	(16.45)	.0000
Chi-square cross-section	142.878554	16	0.000

According to the results of the Chow test in Table 5, the probability is 0.0000 based on the Chi-square value. Based on the results of the Chow test, the Fixed Effect Model is the best panel data estimating model because the likelihood of new Chi-square values being less than 0.05 suggests  $H_0$  is not accepted.

### Hausman-Test

The Hausman specification test is then used to determine which of the random effect and fixed effect models is the fit. Given that the p-value is significant, the Hausman test result demonstrates that the fixed effect model is preferable to the Random effect model. Relevant test results in the development of two null and alternate hypotheses, which are as follows:

$H_0$ : REM.

$H_1$ : FEM

### Basis decision:

$H_0$  is acceptable if the possibility chi-square is greater than 0.05.  $H_0$  is disproved if the probability chi-square is less than 0.05. A fixed effect regression model containing xtreg, a dependent variable, an independent variable, a control variable, and FE has been run in STATA for the purposes of conducting this test. This was then entered into STATA and saved using the command "estimations fixed store." The same random effect model is run in STATA using the xtreg command, followed by the re command, and then saved using the command "estimations random store." Once the fixed and random effect models were operational and stored, the Durbin-Wu-Hauman (DWH) test was performed using the command "Hausman fixed random," and the following result came up:

**Table 4: Hausman test**

	Coeff.
Chi-square test value	32.321
P-value	0.000

The result as it is presented above in Table 5 is statistically significant, meaning that the prob value of the Chi-Square is less than 5% (.05), which means that the "fixed effect model" is a better model for this study's panel data analysis. We reject  $H_0$  and accept  $H_1$  (alternative) since the p-value is smaller than 0.05. Relevant tests clearly show that the Hausman test has rejected the random effect model. That is why the use of the fixed effect model has increased (Cooper, 2023).

## 4.3 Regression Analysis along-with Discussion

**Table 6: Result of Fixed Effect Model**

Variables	Model I			Model II		
	Coeff	Std. Err.	P-value	Coeff	Std. Err.	P-value
Equality						
AccKonser	0.306017	0.21770	0.000***	.3400435	.245034	0.001***
AQuality*AccKonser	-	-	-	.4456460	.158974	0.002***
FSize	0.019515	0.082211	0.812	.0308943	.071835	0.007***
FLeverage	0.041929	0.015546	0.007***	.0504454	.0164853	0.009***
SGrowth	-0.016458	0.041570	0.692	-.014934	.051423	0.855
Summary	Model-I			Model-II		
R-value	0.501			0.615		
Adj. R-Square	0.341			0.4013		
F-Statistics	121.342			32.45		
Prob > F	0.000			0.000		

Table 6 shows the results of Model-1 and Model-2 explores the effects of Accounting conservatism on EQuality and AQuality is also used as a moderator to check its impact on the nexus of AccKonser and EQuality of the sampled firms of the PSX for the period from 2014 to 2023. These findings of both models show that the R-value of sample firms is 50.1%, and 60.5% respectively which is a higher value. 'Total firms' explanatory power can be determined by an R2 (R-Square) value of 34.1%. and 40.1%. for model-1 and Model-2 respectively. These results demonstrate that Accounting conservatism describes 34.1% and 40.1% (Values of models 1 and two) of the change in the Earnings Quality in the sample firms of Pakistan. The table further shows that the computed value of F of models 1 and 2, which are higher, i.e., 21.342 and 32.45. The results show that Conservatism significantly improves respective firms' Earnings quality. The above table 6 of the regression analysis shows the results of 1st and 2nd hypotheses ( $H_1$  &  $H_2$ ) as reported in the literature Review.

### 4.3.1 Results of Testing the 1<sup>st</sup> Hypothesis ( $H_1$ )

The first hypothesis (formulated in literature) of this research assumes that there is a direct and significant nexus between accounting conservatism and Accounting-based earnings quality. The econometric model that is used for testing this first hypothesis is given below.

$$EQuality_{it} = \beta_0 + \beta_1 AccKonsr_{it} + \beta_2 FSize_{it} + \beta_3 FLeverage_{it} + \beta_4 SGrowth_{it} + \epsilon_{it}$$

The above Table 6 exhibits the findings of this first model that Accounting conservatism has a significantly positive effect on Earnings Quality in a sample top non-financial firms of emerging economy (Pak). The significance level of the effect of AccKonsr in the model is 0.001, and the coefficient of the variable is 0.3400435. Thus the first hypothesis of this study is confidently accepted in light of findings of analysis. This finding is consistent with those of Asri (2017), Stefani (2016) and Zadeh et al. (2022). It implies that the statistical model that was tested was appropriate. The table further illustrates that the Conservatism results in a greater rate of Earnings quality by using regression coefficients to demonstrate that Conservatism positively affects the rate of Earnings.

#### 4.3.2 Results of Testing the 2<sup>nd</sup> Hypothesis (H<sub>2</sub>)

The second hypothesis examines the moderating effect of Audit quality on the relationship between accounting conservatism (AccKonsr) and Accounting-based earnings quality (Aearnings). The following model is used to test this hypothesis, and the results are shown in above Table 6.

$$EQuality_{it} = \beta_0 + \beta_1 AccKonsr_{it} + \beta_2 (AccKonsr_{it} * AQuality_{it}) + \beta_3 FSize_{it} + \beta_4 FLeverage_{it} + \beta_5 Sgrowth_{it} + \epsilon_{it}$$

The significance level of the effect of interaction term (Audit Quality) in the model is 0.002, and the coefficient of the variable is .4456460. So, the findings suggest that Audit quality has a positive effect on the relationship between accounting conservatism and Accounting-based earnings quality, and thus this effect is significant. It indicates that Big4 audited entities are more cautious because they focused on opportunistic behavior of managers and keep them away from manipulation and other misrepresentation (Yousaf Khan et al., 2021). It implies that proper implementation of Audit quality has the potential to promote the relationship between AccKonsr and Earning quality. It also means that Big4 audit companies reduce information asymmetry between the parties involved (Yousaf Khan et al., 2021). So, the findings provide supporting evidence for acceptance of Hypothesis 2 (H<sub>2</sub>) of the study. This finding of the study is in line with the results of Zadeh et al. (2022) and Utomo et al. (2018). Several influences may affect AccKonsr and Equality which we considered as control variables. Out-of-control variables like firm size and leverage are positively (+ve) significant, but Sale growth (Sgrowth) is adversely significant with Earnings Quality.

### 5. Conclusion and policy implications

The Paper has examine nexus between accounting conservatism and earnings quality. This paper also explores how Audit Quality moderates this nexus in the context of the emerging economy (Pakistan) for period from 2014 to 2023. Accounting conservatism (AccKonsr) may boost the Earnings quality by addressing information asymmetry and agency problems while restoring shareholder confidence in the individual companies of emerging economies like Pakistan. Financial reporting and corporate disclosures are essential for a company's performance and competitive success in today's cutthroat business environment. The purpose of this study was to look into how Conservatism influence accounting-based performance (Earnings Quality). Top non-financial firms were considered as being typical of the other PSX firms. The findings confirm the results of earlier research that foresaw similar outcomes, proving that Conservatism has a very significant impact on the Earnings of these picked top non-financial companies of PSX (Asri, 2017; Batoool et al., 2024; Stefani, 2016; Zadeh et al., 2022). As the findings of our study indicated that the Conservatism made a substantial effect on Earnings, firms in Pakistan should have well-adequate and internally certified accounting and reporting systems to entice stakeholders' confidence in purchasing shares of the different entities. Likewise Audit quality has also positive impact on the relationship of Accounting conservatism and Earnings quality. This finding is similar to the findings of Zadeh et al. (2022) and Utomo et al. (2018). Such efforts will aid the profit maximization strategies of corporations listed on the PSX, as well as serve as a wake-up call for the rest of the firms in other industries to focus on discloser quality. Based on the findings, the SECP should make several aspects of corporate disclosure mandatory for listed corporations that have registered under it. Furthermore, the current financial reporting of these PSX-registered enterprises has to show compliance with Accounting standards and principles. In addition, non-compliance with accounting rules must result in the de-listing of the firm (s) as a penalty notice if found during an audit by Big4.

### 6. Limitations and future research avenues

One of these limitations is the limited sample size, which is due to the low number of listed firms in Pakistan during the study period from 2014 to 2023. Future research may use larger company sample sizes to achieve more productive outcomes in the studies they conduct. In the historical setting of Pakistan, future studies ought to integrate accounting basis qualities such as persistence, accrual quality, predictability, and smoothness with market base attributes such as accounting conservatism and accounting deadlines. Similar future studies could use Audit quality as a mediating on the nexus of Accounting conservatism and Earnings quality. Furthermore, in similar studies, a comparison of the US textile sector with the Pakistan textile sector can be a strong addition to the literature. Because our research is limited to top non-financial entities, the findings will not apply to other industries. Second, differing variable research procedures and sample sizes could impact the results of the research study.

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